User's Guide

QConvergeConsole CLI

2400, 2500, 2600, 2700 Series Fibre Channel Adapters
3200 Series Intelligent Ethernet Adapters
4000 Series iSCSI Adapters
8100, 8200, 8300 Series Converged Network Adapters
10000 Series FabricCache Adapters

SN0054667-00 Y

Document Revision History	
Revision A, December 13, 2010	
Revision B, March 31, 2011	
Revision C, October 19, 2011	
Revision D, September 12, 2012	
Revision E, November 12, 2012	
Revision F, March 19, 2013	
Revision G, May 6, 2013	
Revision H, October 18, 2013	
Revision J, April 17, 2014	
Revision K, June 17, 2014	
Revision L, July 2, 2014	
Revision M, October 10, 2014	
Revision N, March 23, 2015	
Revision P, August 24, 2015	
Revision R, February 23, 2016	
Revision T, June 28, 2016	
Revision W, September 29, 2016	
Revision X, January 13, 2017	
Revision Y, September 15, 2017	
Changes	**Sections Affected**
Added installation command for Ubuntu (aarch64).	"Installing QConvergeConsole CLI in a Linux Environment" on page 7
Added uninstallation command for Ubuntu (aarch64).	"Uninstalling QConvergeConsole CLI in a Linux Environment" on page 13
Updated the `-i` command example that shows how to determine if the adapter port is not online because the switch port is currently under D_Port diagnostic mode (loop down).	"-i (FC Adapter Information; FC VPD Information; FC VFC Information)" on page 100
Added a new `-mbiv` command example that shows how to display the adapter flash information from the last update.	"-mbiv" on page 113

Added a footnote regarding the **Adapter Type Selection** option.	"Adapter Information" on page 199
Added new option, **FC Flash Information**, to the **FC Adapter Information** menu.	"FC Adapter Information (-i)" on page 199
Added new `Principal Fabric WWN` and `Adjacent Fabric WWN` items in the example output.	"FC Port Information" on page 200
Added information for the new **FC Flash Information** option.	"FC Flash Information" on page 205
Changed the name of the **Fibre Channel Adapter Configuration** menu to **FC Adapter Configuration**.	"Adapter Configuration" on page 205
In the command example, changed the parameter name from `Enable LR` to `Enable LR Ext. Credits`.	"Display HBA Parameters (-c)" on page 209
In the menu example, changed the option from `Enable LR` to `Enable LR Ext. Credits` and added a bullet to the note to indicate that the `Enable LR Ext. Credits` options allow you to enable either 10km or 5km and verify the current setting.	"Configure HBA Parameters (-n)" on page 210
Updated the **FEC Configuration Menu** options.	"FEC (-fec)" on page 242
Changed the name of the **BB Credit** option to **BB Credit Recovery**.	"BB Credit Recovery (-bbcr)" on page 243
Updated the **FC Adapter Update** menu with new and changed options.	"Adapter Updates" on page 243
Changed the name of the **FC SerDes Table Update** option to **FC Board Config Update**. Removed the note that indicated that the option was only for blades and mezzanine adapters.	"FC Board Config Update (-sp)" on page 249
Changed the name of the **FC Dump** option to **FC Firmware Dump**.	"FC Firmware Dump (-fwdump)" on page 249
Changed the name of the **FC Diagnostics** menu to **FC Adapter Diagnostics**, and added and changed items on that menu.	"Adapter Diagnostics" on page 250
Changed the name of the **FC Ping Test** menu to **Device Ping Test**.	"Device Ping Test (-fcp)" on page 259

Added new options on the **FC Adapter Diagnostics** menu.	"Diagnostics Port Test" on page 270 "FC Ping Test" on page 271 "(RDP) Read Diagnostics Parameters" on page 274

Table of Contents

Preface

Intended Audience xxvi
What Is in This Guide xxvi
What Is in the Help System xxviii
Related Materials xxviii
Documentation Conventions xxviii
Command Line Interface Documentation Conventions xxix
Conventions for Interactive Commands xxx
License Agreements xxxi
Technical Support xxxi
Downloading Updates xxxi
Training xxxii
Contact Information xxxii
Knowledge Database xxxii

Part I General CLI Information

1 System Requirements

Hardware Requirements 2
Software Requirements 3
Operating System Requirements 3
Supported QLogic Adapters 4

2 Installing and Uninstalling QConvergeConsole CLI

Downloading QConvergeConsole CLI 5
Installing QConvergeConsole CLI 6
Installing QConvergeConsole CLI in a Windows Environment 6
Standard Windows Interactive (CLI) Installation 6
Quiet or Silent Windows Installation 7
Passive Windows Installation 7
Installing QConvergeConsole CLI in a Linux Environment 7
Installing QConvergeConsole CLI in a Solaris Environment 8
Installation Using Package Files (Solaris 10 or 11) 8
Installation Using p5p Files (Solaris 11 Only) 10

Uninstalling QConvergeConsole CLI 11
Uninstalling QConvergeConsole CLI in a Windows Environment 11
Start Menu Uninstall 12
Control Panel Uninstall 12
Command Line Uninstall 12
Uninstalling QConvergeConsole CLI in a Linux Environment 13
Uninstalling QConvergeConsole CLI in a Solaris Environment 13
Uninstalling a Package Installation (Solaris 10 or 11) 13
Uninstalling a p5p Installation (Solaris 11 Only) 14

3 Getting Started

Using Noninteractive Mode 16
Using Interactive Mode 17
Starting QConvergeConsole CLI 17
Starting QConvergeConsole CLI in Windows 17
Starting QConvergeConsole CLI in Linux 17
Starting QConvergeConsole CLI in Solaris 17
Main Menu 18
Menu Navigation 18
Getting Help 18

Part II Noninteractive Commands

4 General Noninteractive Commands

Viewing General Help 25
Viewing All Inventory 27
Viewing All Flash Image Versions 28
Viewing All Matching Flash Image Versions 29
Viewing All Flash Updates 34

5 NIC Noninteractive Commands

Command Format 36
Command Support for NIC Teaming and VLAN Configuration 38
Command Summary 38
-beacon 39
-c (NIC Port Setting Configuration) 39
-cardreset 39
-ch 39
-d 40
-ei 40
-extloopback 40

NIC Noninteractive Commands (*continued*)

-flashsupport . . . 40
-g . . . 43
-h (Help) . . . 43
-i . . . 43
-icna (CNA Adapter) . . . 44
-idcbx . . . 44
-intloopback . . . 45
-iset (Display Configured Port Settings) . . . 45
-link . . . 46
-minidump . . . 46
-n (Change Port Alias Name [NIC Configuration]) . . . 47
-nh (Adapter Alias [NIC Configuration]) . . . 47
-pinfo (CNA Port Information) . . . 47
-ping . . . 48
-rc . . . 49
-rd . . . 49
-sreset (Reset NIC Statistics) . . . 49
-sriov (SR-IOV Capability) . . . 49
-statport (Display NIC Port Statistics) . . . 54
-sunreset (Undo Reset NIC Statistics) . . . 57
-team_allowCNAsIn8023adTeam (LACP Override) . . . 57
-teamdel (Delete Team) . . . 57
-teaminfo (Display Team Information) . . . 58
-teamlist (Display Teams List) . . . 59
-teamnew (Configure New Team) . . . 59
-teamnew_portspreview . . . 60
-testflash . . . 61
-testhw (Hardware Test) . . . 61
-testinterrupt (Interrupt Test) . . . 62
-testled (Beacon/LED Test) . . . 62
-testlink (Link Test) . . . 62
-testregister (Register Test) . . . 62
-trans (Transceiver Monitoring Interface [DMI]) . . . 62
-updimages (Flash Update) . . . 62
-updimages_viewver . . . 63
-v, -ver (Display Program Version Information) . . . 63
-vlanadd (Add VLAN to Port or Team) . . . 63
-vlanadd_preview . . . 64

NIC Noninteractive Commands (*continued*)
-vlandel (Remove VLAN from Port or Team) . . . 65
-vlandel_preview . . . 65
-vlaninfo (Display VLAN Information) . . . 66
-vlanlist (Display VLAN List) . . . 66
-vpd (CNA VPD Information) . . . 67
-vtcfgview . . . 67
-vtrestore (Restore VLAN & Teaming Configuration) . . . 69
-vtsave (Save VLAN & Teaming Configuration) . . . 71
-zvt (Display Teams List; Display VLAN List; Display VLAN Information) . . . 72

6 Fibre Channel Noninteractive Commands

Displaying System Information (Command Line Options -g, -z) . . . 74
Host Information (Command Line Option -g) . . . 74
Host Configuration (Command Line Option -z) . . . 75
Host Port Configuration . . . 76
Command Format . . . 76
Command Summary . . . 78
-a . . . 79
-b (Flash Update; Save Flash) . . . 80
-bbcr (BB Credit Recovery) . . . 82
-c (Display HBA Parameters) . . . 83
-cna (CNA FCoE Information) . . . 83
-ctp (CT Ping Test) . . . 85
-d (Driver Update) . . . 87
-dm (Transceiver Diagnostics Monitoring Interface [DMI]) . . . 87
-e (Boot Devices Configuration) . . . 87
-ei . . . 91
-f . . . 91
-fcp (Ping Test) . . . 92
-fec (FEC Enable/Disable) . . . 93
-ftr (CT FTR Test) . . . 94
-fg . . . 95
-fs (Driver Parameters) . . . 95
-fwdump (Firmware Dump) . . . 96
-g . . . 97

FC Noninteractive Commands (*continued*)

-gs (Configure Parameters [Monitoring]) . . . 97
-h (Help) . . . 98
-ha (Adapter Alias [FCoE Configuration]) . . . 99
-i (FC Adapter Information; FC VPD Information; FC VFC Information) . . . 100
-kl (Loopback Test) . . . 104
-kr (Read Write Buffer Test) . . . 105
Running a Read/Write Buffer Test . . . 106
Running an Adapter Diagnostics Read/write Buffer Test . . . 107
-l (FC Target/LUN Information) . . . 109
-ls (Display Parameters [HBA Statistics]; Link Status) . . . 110
-m (Selective LUNs) . . . 111
-mbiv . . . 113
-n (Configure HBA Parameters) . . . 114
-o . . . 116
-p (Target Persistent Bindings) . . . 117
-pa (Adapter Port Alias [FCoE Configuration]) . . . 119
-pc (Adapter Personality Change) . . . 119
-pl (Persistent Names (udev) – Linux only) . . . 120
-q (Target Link Speed [iiDMA]) . . . 121
-qos (Quality of Service [QoS]) . . . 122
-r (Parameters Update; Save HBA Parameters) . . . 124
-s . . . 125
-sp (FC Board Config Update) . . . 125
-t (FC Target/LUN Information) . . . 126
-tb . . . 127
-tp . . . 127
-trace (FCE Trace) . . . 127
-u . . . 127
-v . . . 128
-vp (Virtual Ports [NPIV]) . . . 128
-x . . . 129
-x2 . . . 130
-z (All Information) . . . 130

7 iSCSI Noninteractive Commands

Command Format 131
Command Summary 133
-acb 135
-addchap (Add a CHAP Entry) 135
-arp (Display ARP Table) 135
-b (Save Changes and Reset HBA) 135
-binfo (Display BIOS/UEFI Information) 136
-bootcode. 136
-c (CNA Port Information—iSCSI) 136
-ch (CNA Adapter Information—iSCSI). 136
-chapmap (Display Targets Using CHAP Entries) 136
-cpbootcode (Clear Primary Boot Target Information) 137
-csbootcode (Clear Secondary Boot Target Information) 137
-d (Drivers Update). 137
-dc (Display Destination Cache [IPv6]). 137
-dce (Display Connection Error Log) 137
-defbidi (Add a Default BIDI CHAP) 138
-delchap (Delete a CHAP Entry). 138
-df 138
-dp 138
-dr (Display Default Router List [IPv6]). 139
-dspchap (Display CHAP Table). 139
-dtdsp (Display Discovered Targets). 139
-dtdspa (List Targets) 139
-dtdupd (Duplicate a Discovered Target) 139
-dtdupd (Duplicate a Persistent Target) 140
-dtli (Login and Persist a Discovered Target) 140
-dtlia (Login and Persist a Discovered Target) 140
-dtrem (Remove Discovered Target) 140
-dtrema (Remove Discovered Target) 140
-dumpcore 140
-dumpnvram (Retrieve FW Flash & NVRAM Record) 141
-dv 141
-edchap (Edit a CHAP Entry) 141
-ei. 141
-f 142
-g 142
-gcr 142

iSCSI Noninteractive Commands (*continued*)

-h (Help) . . . 142
-i . . . 142
-idcbx (Data Center Bridging) . . . 144
-import (Import HBA Configuration) . . . 144
-ipdhcp (Configure IP Settings) . . . 145
-l (List LUN Information) . . . 145
-lb . . . 146
-lcd (Display Configured Link Configuration) . . . 146
-linkchap (Assign a CHAP Entry to a Target) . . . 146
-lp (Display Local Prefix List [IPv6]) . . . 146
-model . . . 147
-n (Configure iSCSI Settings) . . . 147
-nc (Display Neighbor Cache [IPv6]) . . . 150
-netconf (Configure IPv6 Settings) . . . 150
-netconf6 (Configure IPv6 Settings) . . . 150
-nh (Configure iSCSI Settings) . . . 151
-pa (Add a Target) . . . 152
-pad (CNA Port Target/LUN Information–iSCSI) . . . 152
-pb (Bind Target) . . . 152
-pbootcode (Set Primary Boot Target Information) . . . 152
-pdt (Disable a Target) . . . 152
-pet (Enable a Target) . . . 152
-pinfo (CNA Port Information—iSCSI) . . . 152
-ping (Ping Target) . . . 153
-ps . . . 153
-pu . . . 153
-px . . . 153
-r . . . 154
-rdf . . . 154
-rdh (Port Restore Factory Defaults) . . . 154
-rwt (Read Write Buffer Test—iSCSI) . . . 155
-save (Save Host Configuration) . . . 156
-sbootcode (Set Secondary Boot Target Information) . . . 156
-sbootcodecid (Set Alternative Client ID) . . . 157
-sdmrc . . . 157
-stadd (Add a Send Target) . . . 157
-statport (Display iSCSI Port Statistics) . . . 158
-stathba . . . 158

iSCSI Noninteractive Commands (*continued*)
-stdsp (Display Send Targets) . . . 158
-strd (Mark Send Target for re-discovery) . . . 159
-strem (Remove a Send Target) . . . 159
-strema . . . 159
-t (Display Target Information) . . . 159
-tc (Configure Target Parameters) . . . 160
-tlvdetails (TLV) . . . 160
-tlvraw (TLV) . . . 160
-tp . . . 160
-ts . . . 161
-ver . . . 161
-vpd (CNA VPD Information—iSCSI) . . . 161

8 NIC Partitioning (NPAR) Noninteractive Commands

Command Format . . . 162
Command Summary . . . 163
-ainfo (NPAR Adapter Information) . . . 163
-changepersonality (Change PCI Function Personality) . . . 163
-ei . . . 164
-eswitchinfo . . . 164
-eswitchstats (General eSwitch Statistics) . . . 164
-eswitchvportstats (View All eSwitch Statistics) . . . 164
-feswitchcfg (Function *x* ESwitch Configuration) . . . 164
-finfo . . . 165
-h (Help) . . . 165
-ia . . . 166
-if . . . 166
-ip . . . 166
-peswitchcfg . . . 166
-pinfo (NPAR Port Information) . . . 166
-restoreeswitchcfg (Restore eSwitch Configuration) . . . 167
-setmaxbw (Modify Maximum Bandwidth) . . . 167
-setminbw (Modify Minimum Bandwidth) . . . 167

Part III Interactive Commands

9 NIC Interactive Commands

Adapter Information . . . 170
CNA Adapter Information (-icna) . . . 170
CNA Port Information (-pinfo) . . . 171
CNA VPD Information (-vpd) . . . 172
CNA NIC Information . . . 173
Data Center Bridging . . . 173
TLV . . . 174
Adapter Configuration . . . 176
Adapter Alias (-nh) . . . 176
NIC Port Setting Configuration (-c) . . . 177
Display Configured Port Settings (-iset) . . . 178
Configure Port Settings . . . 178
Change Port Alias Name (-n) . . . 179
Change MAC Alias Name (-n) . . . 179
Port Restore Defaults (-rd) . . . 179
DCBX Port Settings . . . 179
Save Port Configuration . . . 181
Refresh . . . 182
Adapter Updates . . . 182
Flash Update (-updimages) . . . 182
FW Mini Dump . . . 183
Adapter Diagnostics . . . 183
Register Test (-testregister) . . . 183
Hardware Test (-testhw) . . . 184
Flash Test . . . 184
Interrupt Test (-testinterrupt) . . . 185
Loopback Test . . . 185
Link Test (-testlink) . . . 185
Beacon (-testled) . . . 186
Monitoring . . . 186
Display NIC Port Statistics (-statport) . . . 187
Reset NIC Statistics (-sreset) . . . 187
Undo Reset NIC Statistics (-sunreset) . . . 188
NIC Partitioning (NPAR) Information . . . 188
NPAR Adapter Information . . . 188
NPAR Port Information . . . 189

NIC Partitioning (NPAR) Configuration . . . 189
Change PCI Function Personality . . . 190
SR-IOV Capability . . . 190
Capability Information . . . 191
Capability Configuration . . . 192
Physical Function Information . . . 192
Display Virtual Function List . . . 193
Display Virtual Function Details . . . 193
Display Virtual Port List . . . 194
Display Virtual Port Details . . . 195
Display Virtual Queue Details . . . 195
Refresh . . . 196
Help (-h) . . . 197
Exit . . . 197

10 Fibre Channel Interactive Commands

Adapter Information . . . 199
FC Adapter Information (-i) . . . 199
FC Port Information . . . 200
FC VPD Information (-i) . . . 202
FC Target/LUN Information (-t) . . . 203
FC VFC Information (-i) . . . 204
FC Flash Information . . . 205
Adapter Configuration . . . 205
Adapter Alias (-ha) . . . 206
Adapter Port Alias (-pa) . . . 207
HBA Parameters . . . 208
Display HBA Parameters (-c) . . . 209
Configure HBA Parameters (-n) . . . 210
Restore Defaults . . . 211
Target Persistent Binding (-p) . . . 212
Display Configuration . . . 213
Bind Target(s) . . . 213
Unbind Target(s) . . . 214
Persistent Names (-pl) . . . 215
Information . . . 219
Persistent Names . . . 220
Boot Devices Configuration . . . 223
Display Boot Device(s) (-e) . . . 224
Configure Boot Device(s) (-e) . . . 225

Virtual Ports (NPIV) (-vp) . . . 228
Target Link Speed (iiDMA)) (-q) . . . 229
Basic Configuration . . . 230
Advanced Configuration . . . 230
Driver Parameters (-fs) . . . 231
Selective LUNs (-m) . . . 232
Display LUN Configuration . . . 233
Manual Configure LUNs . . . 236
Auto Configure LUNs . . . 236
Quality of Service (QoS) (-qos) . . . 236
Export (Save) Configuration . . . 237
Save Flash (-b) . . . 238
Save HBA Parameters (-r) . . . 238
Generate Reports . . . 238
Personality (-pc) . . . 241
FEC (-fec) . . . 242
BB Credit Recovery (-bbcr) . . . 243
Adapter Updates . . . 243
Flash Update (-b) . . . 244
Driver Update (-d) . . . 245
Parameters Update (-r) . . . 246
Parameters Template Update . . . 246
Firmware Preload Update (-u) . . . 248
FC Board Config Update (-sp) . . . 249
FC Firmware Dump (-fwdump) . . . 249
Adapter Diagnostics . . . 250
Loopback Test (-kl) . . . 250
Display Test Parameters . . . 251
Reset Test Parameters . . . 252
Configure Test Parameters . . . 252
Start Diagnostics Test . . . 253
Read Write Buffer Test (-kr) . . . 253
Display Test Parameters (-kr) . . . 254
Reset Test Parameters . . . 255
Configure Test Parameters (-kr) . . . 255
Start Diagnostics Test (-kr) . . . 256
Transceiver Diagnostics Monitoring Interface (DMI) . . . 256
General (-dm) . . . 256
Details (-dm) . . . 257

Beacon (-a) . . . 258
FCE Trace (-trace) . . . 259
Device Ping Test (-fcp) . . . 259
Display Test Parameters . . . 260
Reset Test Parameters . . . 260
Configure Test Parameters . . . 261
Start Diagnostics Test . . . 261
CT Ping Test (-ctp) . . . 262
Display Test Parameters . . . 263
Reset Test Parameters . . . 263
Configure Test Parameters . . . 264
Start Diagnostics Test . . . 264
CT FTR Test (-ftr) . . . 265
Display Test Parameters . . . 266
Reset Test Parameters . . . 267
Configure Test Parameters . . . 267
Start Diagnostics Test . . . 267
Link Status (-ls) . . . 268
Info . . . 268
Configure . . . 269
Hard Reset . . . 269
Run . . . 270
Diagnostics Port Test . . . 270
Configure . . . 270
Run . . . 271
FC Ping Test . . . 271
Display Test Parameters . . . 271
Reset Test Parameters . . . 272
Configure . . . 272
Run . . . 272
(RDP) Read Diagnostics Parameters . . . 274
Monitoring . . . 276
HBA Statistics . . . 277
Info . . . 277
Default . . . 277
Configure (-gs) . . . 277
Run . . . 278

BB Credit Stats (-bbcr) . . . 278
Info . . . 279
Configure . . . 279
Run . . . 280
FabricCache CLI . . . 280
Adapter Information . . . 281
Adapter Configuration . . . 281
Adapter Updates . . . 282
Adapter Diagnostics . . . 282
Help . . . 282
Exit . . . 283
Refresh . . . 283
Help (-h) . . . 283
Exit . . . 283

11 Converged Network Adapter Interactive Commands

Adapter Information . . . 285
CNA Adapter Information . . . 285
NIC . . . 286
FCoE . . . 287
iSCSI (-ch) . . . 289
CNA Port Information . . . 290
Ethernet . . . 290
FCoE . . . 292
iSCSI (-c; -pinfo) . . . 294
CNA VPD Information . . . 295
Ethernet . . . 296
FCoE . . . 297
iSCSI . . . 298
CNA NIC Information . . . 299
CNA FCoE Information (-cna) . . . 299
Information . . . 300
Data Center Bridging . . . 301
DCE Statistics Menu . . . 303
TLV . . . 307
CNA iSCSI Information . . . 311
Information . . . 312
Data Center Bridging . . . 313
TLV . . . 313

CNA Port Target/LUN Information . . . 322
iSCSI (-pad) . . . 322
FCoE . . . 323
CNA VFC Information . . . 325
Adapter Configuration . . . 326
CNA FCoE Configuration . . . 327
Adapter Alias (-ha) . . . 327
Adapter Port Alias (-pa) . . . 330
HBA Parameters . . . 333
Target Persistent Binding . . . 338
Boot Devices Configuration . . . 342
Virtual Ports (NPIV) . . . 345
Target Link Speed (iiDMA) . . . 349
Driver Parameters . . . 353
Selective LUNs . . . 355
QoS (-qos) . . . 360
Export (Save) Configuration . . . 362
Generate Reports . . . 363
Personality . . . 365
CNA iSCSI Configuration . . . 366
HBA Level Parameter Configuration . . . 366
Port Configuration . . . 368
Port IP Settings . . . 382
Target Configuration . . . 384
Boot Devices Configuration . . . 395
Export (Save) Configuration . . . 398
CNA NIC Configuration . . . 400
Adapter Alias (-nh) . . . 400
NIC Port Setting Configuration . . . 401
VLAN Configuration . . . 404
Team Configuration . . . 409
Export (Save) Configuration . . . 419
Adapter Updates . . . 421
Flash Update . . . 421
Parameters Update . . . 422
Drivers Update (-d) . . . 422
MPI Config Table Update . . . 423
Firmware Preload Table Update (-u) . . . 423
Firmware SerDes Table Update (-sp) . . . 424

Adapter Updates (*continued*)
FCoE Mini Dump . . . 425
FW Mini Dump . . . 425
iSCSI FW Dump Options . . . 426
Adapter Diagnostics . . . 427
Register Test . . . 427
Hardware Test . . . 428
Flash Test . . . 429
Interrupt Test . . . 429
Link Test . . . 430
Loopback Test . . . 431
NIC . . . 431
FCoE . . . 432
iSCSI . . . 434
Read Write Buffer Test . . . 434
FCoE . . . 435
iSCSI (-rwt) . . . 437
Beacon Test . . . 437
Transceiver Diagnostics Monitoring Interface (DMI) (-dmi) . . . 438
General . . . 439
Details . . . 439
iSCSI Adapter Diagnostics (-dumpnvram) . . . 440
iSCSI Port Diagnostics . . . 441
Ping Target (-ping) . . . 442
Perform Read/Write Buffer Test . . . 442
iSCSI Port Logs . . . 443
Display ARP Table (-arp) . . . 444
Display Connection Error Log (-dce) . . . 444
Export Connection Error Log . . . 445
Display Neighbor Cache (IPv6) (-nc) . . . 445
Display Destination Cache (IPv6) (-dc) . . . 445
Display Default Router List (IPv6) (-dr) . . . 446
Display Local Prefix List (IPv6) (-lp) . . . 446
Refresh . . . 446
Adapter Statistics . . . 447
Display NIC Port Statistics . . . 447
Reset NIC Statistics . . . 448
Undo Reset NIC Statistics . . . 449
Display FCoE Port Statistics . . . 449

Adapter Statistics (*continued*)
Display Test Parameters (-gs) . . . 450
Reset Test Parameters . . . 451
Configure Test Parameters (-gs) . . . 451
Display HBA Statistics (-gs) . . . 451
Display FCoE Port Link Status . . . 452
Display Test Parameters . . . 453
Reset Test Parameters . . . 453
Configure Test Parameters (-ls) . . . 453
Display Link Statistics (-ls) . . . 454
Display iSCSI HBA Level Statistics . . . 455
Reset iSCSI HBA Level Statistics . . . 455
Display iSCSI Port Statistics (-stat) . . . 456
Reset iSCSI Port Statistics . . . 459
NIC Partitioning (NPAR) Information . . . 459
NPAR Adapter Information (-ainfo) . . . 459
NPAR Port Information (-pinfo) . . . 460
NIC Partitioning (NPAR) Configuration . . . 462
Bandwidth Configuration . . . 462
Modify Minimum Bandwidth (-setminbw) . . . 463
Modify Maximum Bandwidth (-setmaxbw) . . . 463
Change PCI Function Personality (-changepersonality) . . . 464
ESwitch Configuration . . . 464
Function 1 ESwitch Configuration (-feswitchcfg) . . . 465
Function 3 ESwitch Configuration (-feswitchcfg) . . . 465
Restore ESwitch Configuration (-restoreeswitchcfg) . . . 465
NIC Partitioning (NPAR) Statistics . . . 465
General ESwitch Statistics (-eswitchstats) . . . 466
View All ESwitch Statistics (-eswitchvportstats) . . . 466
Function *x* ESwitch Statistics . . . 468
Refresh . . . 468
Help (-h) . . . 469
Exit . . . 469

12 Setting Up NPAR Using Interactive Commands

Setting Up NIC Partitions . . . 470

Part IV FabricCache Commands

13 Getting Started with FabricCache CLI

Installing FabricCache CLI 477
Obtaining Help 477
Command Line Scripting 477
CLI Usage 478
Command Line Syntax 478
Abbreviation. 479
Input Persistence. 479

14 General FabricCache CLI Keywords

-agent 480
-fca. 481
-help. 481
-quiet 481
-result. 482
-textfile. 482

15 FabricCache CLI Command Reference

?. 487
Add Drive. 488
Add Member 490
Clear Display 491
Clear Log. 492
Clear LUN Statistics 493
Clear Reservation 495
Clear Statistics. 497
Create Cluster 498
Destroy Cluster 499
Disable Beacon 500
Disable Cache 501
Disable FC Port 503
Dump Cache 504
Enable Beacon 505
Enable Cache 506
Enable FC Port 509
Execute Script 510
Factory Reset Adapter. 512
Flush Cache 513

FabricCache Commands (*continued*)

Help . . . 515
Interactive CLI . . . 517
Invalidate Cache . . . 518
List Adapter . . . 520
List Cluster . . . 521
List Device . . . 522
List Drive . . . 523
List Initiator . . . 524
List Log . . . 525
List LUN . . . 527
List Target . . . 528
Merge CSV . . . 529
Modify Cache . . . 530
Remove Cache Pool . . . 533
Remove Drive . . . 534
Remove Member . . . 536
Report Log . . . 537
Restart Adapter . . . 538
Restore Drive Configuration . . . 539
Return Value FCA CLI . . . 540
Save Capture File . . . 541
Save Demonstration File . . . 542
Save Log . . . 543
Save Script . . . 544
Script CSV . . . 545
Set Adapter . . . 548
Set Append . . . 549
Set FC . . . 550
Set Pool . . . 551
Set Target . . . 552
Show Adapter . . . 553
Show Append . . . 554
Show Cluster . . . 555
Show Device . . . 557
Show Drive . . . 558
Show FC . . . 559
Show Health . . . 560
Show Initiator . . . 561

FabricCache Commands (*continued*)
Show LUN 562
Show LUN Statistics 565
Show Memory 568
Show Pool 569
Show Reservation 570
Show SFP 572
Show Statistics 573
Show System Capture 575
Show Target 577
Update Firmware 578
Version Adapter 579
Version 580
View Log 581

16 FabricCache CLI API Error Codes

A NIC Partitioning (NPAR) Overview

What Is NPAR? 588
QLogic Adapters That Support NPAR 589
NIC Partitioning Options 590
Function Type Changes 591
Quality of Service 593
eSwitch 594
NPAR Setup 594
Default Settings 595
Configuration Options 595
NPAR Configuration Parameters and Setup Tools 596
Interoperation of Bandwidth Settings for DCBX and NPAR 597
Using DCBX and NPAR to Set Bandwidth 597

Glossary

Index

List of Figures

Figure		Page
7-1	Adapter Port Information	143
12-1	Selecting Function Type on Linux System	474

List of Tables

Table		Page
6-1	Options Shown by -z	76
6-2	Command Variables	77
6-3	DCE Statistics Parameters	85
6-4	Ping Diagnostics Parameters	86
6-5	Driver Settings Parameters	96
6-6	Adapter Statistics Parameters	98
6-7	Diagnostics Parameters	108
6-8	Data Pattern (DP) Test Patterns	109
6-9	Link Status Parameters	110
6-10	Adapter Parameters	114
7-1	Noninteractive Command Variables	132
7-2	CHAP Parameters	141
7-3	Adapter Configuration Parameters	147
8-1	eSwitch Physical Function Options	165
8-2	eSwitch Physical Port Options	166
11-1	Default Loopback Test Parameter Values	433
11-2	Default Read Write Buffer Test Parameter Values	436
15-1	FabricCache CLI Commands by Category	483
A-1	Ports and NPAR Configuration	592
A-2	Default NPAR Configuration	595
A-3	NPAR Configuration Options	595
A-4	NPAR Configuration Parameters and Setup Tools	596
A-5	NPAR Wake on LAN (WoL) and PXE Boot Support	596
A-6	Using DCBX and NPAR for Bandwidth Settings	598

Preface

This guide describes QConvergeConsole® (QCC) CLI, a management tool that is used to configure and manage QLogic® Fibre Channel Adapters, Intelligent Ethernet Adapters, iSCSI Adapters, Converged Network Adapters, FastLinQ™ Intelligent Ethernet Adapters, and FabricCache® Adapters within SANs.

Intended Audience

This guide is for system administrators who are responsible for installing, configuring, and managing QLogic adapters using QConvergeConsole CLI.

What Is in This Guide

This guide contains the basic information you need to get started with the QConvergeConsole CLI tool.

This preface specifies the intended audience, summarizes the contents of this guide, explains the QConvergeConsole CLI help system, lists related documents, describes the typographic conventions used in this guide, refers you to the QLogic license agreements, and provides technical support and contact information.

The remainder of the user's guide is organized into the following parts and chapters:

Part I General CLI Information

- Chapter 1 System Requirements lists the hardware, software, and operating system requirements needed for successful operation of the QCC CLI tool.
- Chapter 2 Installing and Uninstalling QConvergeConsole CLI describes how to download, install, and uninstall the QCC CLI tool.
- Chapter 3 Getting Started describes how to start the QCC CLI tool on Windows®, Linux®, and Solaris® platforms. This chapter also describes how to view detailed information about command parameters and options.

Part II Noninteractive Commands

- Chapter 4 General Noninteractive Commands describes and shows examples of the general noninteractive commands that apply to protocols supported by the QCC CLI tool: NIC, Fibre Channel, and iSCSI.

- Chapter 5 NIC Noninteractive Commands describes the noninteractive NIC command syntax and parameters.
- Chapter 6 Fibre Channel Noninteractive Commands describes the noninteractive Fibre Channel command syntax and parameters.
- Chapter 7 iSCSI Noninteractive Commands describes the noninteractive iSCSI command syntax and parameters.
- Chapter 8 NIC Partitioning (NPAR) Noninteractive Commands describes the noninteractive NIC Partitioning (NPAR) command syntax and parameters.

Part III Interactive Commands

- Chapter 9 NIC Interactive Commands contains a description of the QCC CLI tool's NIC interactive mode menus.
- Chapter 10 Fibre Channel Interactive Commands contains a description of the QCC CLI Fibre Channel interactive mode menus.
- Chapter 11 Converged Network Adapter Interactive Commands contains a description of the QCC CLI tool's Converged Network Adapter interactive mode menus for the NIC, iSCSI, Fibre Channel, and NPAR functions.
- Chapter 12 Setting Up NPAR Using Interactive Commands contains steps for setting up NIC Partitioning (NPAR) using the interactive mode menus of the QCC CLI tool.

Part IV FabricCache Commands

- Chapter 13 Getting Started with FabricCache CLI provides the general information to help you get started using the FabricCache CLI tool, including installation, getting help, scripting, and usage.
- Chapter 14 General FabricCache CLI Keywords provides the description and syntax for each of the general keywords that apply to all commands.
- Chapter 15 FabricCache CLI Command Reference provides the description, syntax, and examples of each of the common FCA CLI commands. The commands are listed in alphabetic order by category.
- Chapter 16 FabricCache CLI API Error Codes lists the error codes that exist in the API and explains the meaning of each.

- Appendix A NIC Partitioning (NPAR) Overview provides an overview of NIC partitioning.

At the end of this guide is a glossary of terms and an index to help you quickly locate the information you need.

What Is in the Help System

The QConvergeConsole CLI help system (`qaucli -h`) contains a condensed version of the NIC, Fibre Channel, iSCSI, and NPAR noninteractive commands that are described in the following:

- Chapter 5 NIC Noninteractive Commands
- Chapter 6 Fibre Channel Noninteractive Commands
- Chapter 7 iSCSI Noninteractive Commands
- Chapter 8 NIC Partitioning (NPAR) Noninteractive Commands

Related Materials

For additional help installing or using QConvergeConsole CLI, refer to the following related documents posted on the QLogic Web site:

http://driverdownloads.qlogic.com

- *QConvergeConsole CLI Read Me*

For information about the QConvergeConsole GUI tool, refer to the following document:

- *Installation Guide—QConvergeConsole GUI* (part number SN0054669-00)

For additional information related to 10000 Series Adapters, including caching and clustering, refer to the following document:

- *User's Guide—QLogic FabricCache Adapter, 10000 Series* (part number SN0054680-00)

For information related to supported operating systems and known issues, refer to the following documents:

- *QLogic FabricCache 10000 Series Adapter Firmware Read Me* and *Release Notes*
- *Host CLI for QLogic 10000 Series Adapter Read Me* and *Release Notes*

Documentation Conventions

This guide uses the following documentation conventions:

- **NOTE** provides additional information.
- **CAUTION** without an alert symbol indicates the presence of a hazard that could cause damage to equipment or loss of data.

- Text in blue font indicates a hyperlink (jump) to a figure, table, or section in this guide, and links to Web sites are shown in underlined blue. For example:
  - Table 9-2 lists problems related to the user interface and remote agent.
  - See "Installation Checklist" on page 6.
  - For more information, visit www.qlogic.com.
- Text in **bold** font indicates user interface elements such as a menu items, buttons, check boxes, or column headings. For example:
  - Click the **Start** button, point to **Programs**, point to **Accessories**, and then click **Command Prompt**.
  - Under **Notification Options**, select the **Warning Alarms** check box.
- Text in `Courier` font indicates a file name, directory path, or command line text. For example:
  - To return to the root directory from anywhere in the file structure: Type `cd /root` and press ENTER.
  - Issue the following command: **`sh ./install.bin`**.
- Key names and key strokes are indicated with UPPERCASE:
  - Press CTRL+P.
  - Press the UP ARROW key.
- Text in *italics* indicates terms, emphasis, variables, or document titles. For example:
  - For a complete listing of license agreements, refer to the *QLogic Software End User License Agreement*.
  - What are *shortcut keys*?
  - To enter the date type *mm/dd/yyyy* (where *mm* is the month, *dd* is the day, and *yyyy* is the year).
- Topic titles between quotation marks identify related topics either within this manual or in the online help, which is also referred to as *the help system* throughout this document.

Command Line Interface Documentation Conventions

This section discusses documentation conventions that are specific to the command line interface (CLI).

- Plain text indicates items that you must type as shown. For example:
  - **`qaucli -pr nic -ei`**

- < > (angle brackets) around text indicate a variable whose value you specify. For example:
  - `<serial_number>`
- [ ] (square brackets) indicate an optional parameter. For example:
  - `[<file_name>]` means specify a file name, or omit it to select the default file name.
- | (vertical bar) indicates mutually exclusive options; select one option only. For example:
  - `on|off`
  - `1|2|3|4`
- ... (ellipsis) indicates that the preceding item may be repeated. For example:
  - `x...` means *one* or more instances of `x`.
  - `[x...]` means *zero* or more instances of `x`.
- { } (braces) denote a parameter group that you can specify one or more times.
- When used together, ( ) (parentheses) and { } (braces) indicate grouping of parameters to avoid logical ambiguity. For example:
  - `a|b c` is ambiguous
  - `{(a|b) c}` means `a` or `b`, followed by `c`
  - `{a|(b c)}` means either `a,` or `b c`

Conventions for Interactive Commands

Documentation conventions that are specific to the menu-driven CLI commands include the following:

- **Breadcrumbs line:** Section headings for interactive commands include a *breadcrumbs* line that shows the sequence of menu options from the Main Menu to the current topic. For example, the following breadcrumbs line shows that you access the Flash Update option by selecting option 3 (on the Main Menu), option 1 (on the second menu), and option 1 (on the third menu):

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 1. Flash Update

- **Noninteractive command equivalents:** Some interactive commands have noninteractive command equivalents. For such commands, the corresponding noninteractive option is listed at the end of the section heading in parentheses. For example, the following heading for the interactive Fibre Channel command **FC Adapter Information** indicates that the noninteractive equivalent is the `-i` command line option, described in the corresponding (Fibre Channel) noninteractive mode chapter:

FC Adapter Information (-i)

License Agreements

Refer to the *QLogic Software End User License Agreement* for a complete listing of all license agreements affecting this product.

Technical Support

Customers should contact their authorized maintenance provider for technical support of their QLogic products. QLogic-direct customers may contact QLogic Technical Support; others will be redirected to their authorized maintenance provider. Visit the QLogic support Web site listed in Contact Information for the latest firmware and software updates.

For details about available service plans, or for information about renewing and extending your service, visit the Service Program Web page:

http://www.qlogic.com/Support/Pages/ServicePrograms.aspx

Downloading Updates

The QLogic Web site provides periodic updates to product firmware, software, and documentation.

To download firmware, software, and documentation:

1. Go to the QLogic Downloads and Documentation page:

   http://driverdownloads.qlogic.com
2. In the search box, type the name of your QLogic adapter model.
3. In the search results list, locate and select the firmware, software, or documentation for your product.
4. View the product details Web page to ensure that you have the correct firmware, software, or documentation. For additional information, click **Read Me** and **Release Notes** under **Support Files**.
5. Click **Download Now**.
6. Save the file to your computer.
7. If you have downloaded firmware, software, drivers, or boot code, follow the installation instructions in the *Read Me* document.

Instead of typing a model name in the search box, you can perform a guided search as follows:

1. Click the product type tab: **Adapters**, **Switches**, **Routers**, or **ASICs**.
2. Click the corresponding button to search by model or operating system.
3. Click an item in each selection column to define the search, and then click **Go**.

4. Locate the firmware, software, or document you need, and then click the item's name or icon to download or open the item.

Training

QLogic Global Training maintains a Web site at www.qlogictraining.com offering online and instructor-led training for all QLogic products. In addition, sales and technical professionals may obtain Associate and Specialist-level certifications to qualify for additional benefits from QLogic.

Contact Information

QLogic Technical Support for products under warranty is available during local standard working hours excluding QLogic Observed Holidays. For Support phone numbers, see the Contact Support link:

support.qlogic.com

Support Headquarters	QLogic Corporation 12701 Whitewater Drive Minnetonka, MN 55343 USA
QLogic Web Site	www.qlogic.com
Technical Support Web Site	support.qlogic.com
Technical Support E-mail	support@qlogic.com
Technical Training E-mail	training@qlogic.com

Knowledge Database

The QLogic knowledge database is an extensive collection of QLogic product information that you can search for specific solutions. QLogic is constantly adding to the collection of information in the database to provide answers to your most urgent questions. Access the database from the QLogic Support Center:

support.qlogic.com

Part I

General CLI Information

Part I of this guide provides general information about QConvergeConsole CLI in the following chapters:

- Chapter 1 System Requirements
- Chapter 2 Installing and Uninstalling QConvergeConsole CLI
- Chapter 3 Getting Started

1 System Requirements

QConvergeConsole CLI is a management tool that centralizes management and configuration of QLogic adapters within the entire network (LAN and SAN). For optimum performance, QConvergeConsole CLI requires the hardware, software, and operating systems listed in this chapter:

- Hardware Requirements
- “Software Requirements” on page 3
- “Operating System Requirements” on page 3
- “Supported QLogic Adapters” on page 4

Hardware Requirements

NOTE

For the latest information on supported hardware, refer to the QConvergeConsole CLI *Read Me* and *Release Notes*.

QConvergeConsole CLI requires the following minimum hardware for the workstation server:

- **Server.** Single-processor or multiprocessor server or workstation. See “Operating System Requirements” on page 3 for a list of operating systems.
- **Processor.** Intel® Core™ or AMD64 processor.
- **Memory.** 256MB of physical RAM to run QConvergeConsole CLI.
- **Hard disk space.** About 110MB disk space.

The minimum hardware requirements for the adapter are as follows:

- **Adapters.** One or more of the QLogic adapters listed under “Supported QLogic Adapters” on page 4.

The minimum requirements for a SAN environment are as follows:

- **Storage.** Fibre Channel or iSCSI devices, such as disks and RAID subsystems. QConvergeConsole CLI supports most Fibre Channel and iSCSI devices. For details, see the *Interoperability Guide—Storage Networking*, which you can download from the following QLogic Web page:

  http://connect.qlogic.com/interopguide/info.asp

NOTE

Tape devices and backup protection software must support persistent binding.

Software Requirements

NOTE

For the latest information on supported software, refer to the QConvergeConsole CLI Read Me and Release Notes documents.

QConvergeConsole CLI requires the following software for the server on which your adapter is physically installed:

- Administrative privileges to perform management functions
- QLogic adapter drivers for your operating system

NOTE

To download QLogic adapter drivers and agents, see the QLogic Corporation Web site:

http://driverdownloads.qlogic.com

Operating System Requirements

QConvergeConsole CLI runs on the following platforms:

- Microsoft® Windows Server®
- Red Hat® Linux® Advance Server/Enterprise Server
- Novell® SUSE® Linux Enterprise Server (SLES®)
- Oracle® Linux Unbreakable Enterprise Kernel (UEK) R2 (2.6.39-400 kernel)
- Solaris® SPARC® and Solaris x86
- Citrix® XenServer®

NOTE

For an up-to-date list of supported operating system versions, refer to the QConvergeConsole CLI *Read Me*, which can be downloaded from the QLogic Corporation Web site:

http://driverdownloads.qlogic.com

Supported QLogic Adapters

QConvergeConsole CLI supports the following QLogic-branded adapters:

- 2400, 2500, 2600, and 2700 Series Fibre Channel Adapters
- 3200 Series Intelligent Ethernet Adapters
- 4000 Series iSCSI Adapters
- 8100, 8200, and 8300 Series Converged Network Adapters
- 10000 Series FabricCache Adapters

NOTE

For information about QLogic adapters, refer to the QLogic Corporation Web site:

http://www.qlogic.com/Products/adapters

To determine support for OEM-branded adapters, please contact your OEM.

2 Installing and Uninstalling QConvergeConsole CLI

This chapter describes how to download, install, and uninstall QConvergeConsole CLI.

- Downloading QConvergeConsole CLI
- "Installing QConvergeConsole CLI" on page 6
- "Uninstalling QConvergeConsole CLI" on page 11

NOTE

QConvergeConsole CLI configures QLogic adapters on the local system (where it is installed) only. It cannot configure adapters on remote systems.

Downloading QConvergeConsole CLI

Follow this procedure to download the QConvergeConsole CLI package file from the QLogic Web site to your computer.

To download QConvergeConsole CLI from the QLogic Web site:

1. Go to the QLogic Downloads and Documentation page:

   http://driverdownloads.qlogic.com

2. In the search box, type the model name of your QLogic adapter.

   Alternatively, you can use a guided search, as described in "Downloading Updates" on page xxxi.

3. In the search results list, locate and select the QConvergeConsole CLI version for your operating system.
4. View the product details Web page to ensure that you have the correct QConvergeConsole CLI.
5. (Optional) For additional information, click the **Read Me** and **Release Notes** under **Support Files**.

6. Click **Download Now**.
7. Save the file to your computer.

Installing QConvergeConsole CLI

The installation procedures differ depending on the operating system:

- Installing QConvergeConsole CLI in a Windows Environment
- Installing QConvergeConsole CLI in a Linux Environment
- Installing QConvergeConsole CLI in a Solaris Environment

Installing QConvergeConsole CLI in a Windows Environment

You can install QConvergeConsole CLI from the command prompt using the Microsoft® Windows Installer (MSI). Use one of the following methods:

- Standard Windows Interactive (CLI) Installation
- Quiet or Silent Windows Installation
- Passive Windows Installation

NOTE

You can also configure the installation using MSI commands. To see a summary of MSI commands, type `msiexec` at the command prompt.

To obtain more information about MSI, visit the Microsoft Web site.

Standard Windows Interactive (CLI) Installation

To begin a standard installation of QConvergeConsole CLI on a Microsoft Windows operating system, unzip the file that you saved in Step 7 of "Downloading QConvergeConsole CLI" on page 5. Then, issue one of the following commands on a command line:

QConvergeConsoleCLI-<version>_win.msi

or

QConvergeConsoleCLI-<version>_win_x64.msi

where <version> is the version number of the QConvergeConsole CLI.

The default directory for the QConvergeConsole CLI tool is:

```
Program Files\QLogic Corporation\QConvergeConsoleCLI
```

If you want to install QConvergeConsole CLI in a different directory, enter it in the command line. For example:

```
QConvergeConsoleCLI-<version>_win.msi installdir=<directory>
```

or:

```
QConvergeConsoleCLI-<version>_win_x64.msi installdir=<directory>
```

where `<directory>` is the full path name of the installation directory.

Quiet or Silent Windows Installation

A quiet or silent installation installs using defaults. This mode requires no user intervention. Issue the following command for a quiet (silent) installation:

Windows 64-bit:

```
msiexec.exe /qn /package QConvergeConsoleCLI-<version>-win_x64.msi
```

Windows 32-bit:

```
msiexec.exe /qn /package QConvergeConsoleCLI-<version>-win.msi
```

Passive Windows Installation

A passive installation installs using default settings and displays a progress indication only. This is an unattended mode installation. Issue the following command for a passive installation:

Windows 64-bit:

```
msiexec.exe /passive /package QConvergeConsoleCLI-<version>-win_x64.msi
```

Windows 32-bit:

```
msiexec.exe /passive /package QConvergeConsoleCLI-<version>-win.msi
```

Installing QConvergeConsole CLI in a Linux Environment

To install QConvergeConsole CLI on a Linux platform, issue the following commands from the command line:

Linux 32-bit (i386/i686):

```
# rpm -ivh QConvergeConsoleCLI-<version>.i386.rpm
```

Linux 64-bit (x64):

```
# rpm -ivh QConvergeConsoleCLI-<version>.x86_64.rpm
```

The default installation directory on Linux is:

`/opt/QLogic_Corporation/QConvergeConsoleCLI`

Red Hat and SUSE Linux also create a soft link from the `/usr/local/bin` directory to the executable, `qaucli`.

By default, the `/usr/local/bin` directory is in the execution path; you need not add it.

NOTE

- QConvergeConsole CLI does not support PowerPC® (PPC).
- `qaucli` is already installed on Citrix 6.5 and later. To update QConvergeConsole CLI to the latest version, issue the following command:

  `# rpm -Uhv QConvergeConsoleCLI-Citrix-<version>.rpm`

Ubuntu (aarch64):

```
root@ubuntu:~# dpkg -i qconvergeconsolecli_2.2.00-xx_arm64.deb
Selecting previously unselected package qconvergeconsolecli.
(Reading database ... 73321 files and directories currently
installed.)
Preparing to unpack qconvergeconsolecli_2.2.00-xx_arm64.deb ...
Unpacking qconvergeconsolecli (2.2.00-13) ...
Setting up qconvergeconsolecli (2.2.00-13) ...
Library 2.2  already installed at
/lib/aarch64-linux-gnu/libHBAAPI.so.
Library 6.04 build17 already installed at
/lib/aarch64-linux-gnu/libqlsdm.so.
Processing triggers for libc-bin (2.23-0ubuntu5) ...
```

Installing QConvergeConsole CLI in a Solaris Environment

You can install QConvergeConsole CLI on Solaris using package files or p5p files, Refer to the appropriate following section for instructions.

Installation Using Package Files (Solaris 10 or 11)

The following example shows how to install QConvergeConsole CLI on a Solaris SPARC or Solaris x86 environment using package files:

```
#gunzip QConvergeConsoleCLI-1.0.03-23-sol8-sol11-x86.pkg.Z

#pkgadd -d QConvergeConsoleCLI-1.0.03-23-sol8-sol11-x86.pkg
The following packages are available:
  1  QCCLI     QLogic QConvergeConsole CLI (CNA Configuration Utility)
               (i386) 1.00.03 Build 23 (Solaris 8-11)

Select package(s) you wish to process (or 'all' to process all packages).
(default: all) [?,??,q]:
```

```
Processing package instance <QCCLI> from
</qlogic/QConvergeConsoleCLI-1.0.03-23-sol8-sol11-x86.pkg>

QLogic QConvergeConsole CLI (CNA Configuration Utility)(i386) 1.00.03 Build 23
(Solaris 8-11)
QLogic Corporation
## Executing checkinstall script.
## Processing package information.
## Processing system information.
   2 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <QCCLI> [y,n,?] y

Installing QLogic QConvergeConsole CLI (CNA Configuration Utility) as <QCCLI>

## Installing part 1 of 1.
/opt/QLogic_Corporation/QConvergeConsoleCLI/adapters.properties
/opt/QLogic_Corporation/QConvergeConsoleCLI/agent.properties
/opt/QLogic_Corporation/QConvergeConsoleCLI/fc_contents.dat
/opt/QLogic_Corporation/QConvergeConsoleCLI/fcscli-exitcodes.txt
/opt/QLogic_Corporation/QConvergeConsoleCLI/flashcfg.properties
/opt/QLogic_Corporation/QConvergeConsoleCLI/iscli
/opt/QLogic_Corporation/QConvergeConsoleCLI/iscli.cfg
/opt/QLogic_Corporation/QConvergeConsoleCLI/iscsi_contents.dat
/opt/QLogic_Corporation/QConvergeConsoleCLI/libs/libHBAAPI.so
/opt/QLogic_Corporation/QConvergeConsoleCLI/libs/libfcapi.so
/opt/QLogic_Corporation/QConvergeConsoleCLI/libs/libfcapi2.so
/opt/QLogic_Corporation/QConvergeConsoleCLI/libs/libncli2.so
/opt/QLogic_Corporation/QConvergeConsoleCLI/libs/libqlsdm.so
/opt/QLogic_Corporation/QConvergeConsoleCLI/libs/libscixicli2.so
/opt/QLogic_Corporation/QConvergeConsoleCLI/menu.properties
.
.
.
/opt/QLogic_Corporation/QConvergeConsoleCLI/nvramdefs/x8086x34ba/nvram23.dat
/opt/QLogic_Corporation/QConvergeConsoleCLI/qaucli
```

```
/opt/QLogic_Corporation/QConvergeConsoleCLI/qaucli.cfg
/opt/QLogic_Corporation/QConvergeConsoleCLI/qaucli_contents.dat
/opt/QLogic_Corporation/QConvergeConsoleCLI/scli
/opt/QLogic_Corporation/QConvergeConsoleCLI/sfcli.properties
/opt/QLogic_Corporation/QConvergeConsoleCLI/ucli.sig
[ verifying class <none> ]
## Executing postinstall script.

Installation of <QCCLI> was successful.
```

Installation Using p5p Files (Solaris 11 Only)

Follow these steps to install QConvergeConsole CLI using p5p files in either a Solaris 11 SPARC or Solaris 11 x86 environment.

NOTE

Before you begin, install the p5p installer by issuing the following command:

pkg install –g QConvergeConsoleCLI-<version>-solaris-<arch>.p5p qaucli

To install QConvergeConsole CLI using p5p files:

1. To set the environment, issue the following command:

   export PKGREPO=./pkgrepo-qaucli

2. To create the repository, issue the following command:

   pkgrepo create $PKGREPO

3. To receive the package in your repository, issue the following command:

pkgrecv -s QConvergeConsoleCLI-<version>-solaris-<i386|sparc>.p5p -d $PKGREPO qaucli

4. To set the publisher, issue the following command:

   pfexec pkg set-publisher -p $PKGREPO

5. To proceed with the QConvergeConsole CLI installation, issue the following command:

   pkg install qaucli

The following example shows how to install QConvergeConsole CLI in a Solaris 11 x86 environment using p5p files:

```
# export PKGREPO=./pkgrepo-qaucli

# pkgrepo create $PKGREPO
```

```
# pkgrecv -s /qlogic/QConvergeConsoleCLI-1.0.03-23-solaris-i386.p5p -d $PKGREPO qaucli
Processing packages for publisher qlogic ...
Retrieving and evaluating 1 package(s)...
PROCESS                                           ITEMS     GET (MB)    SEND (MB)
Completed                                           1/1      4.1/4.1    19.3/19.3

# pfexec pkg set-publisher -p $PKGREPO
pkg set-publisher:
  Updated publisher(s): qlogic

# pkg install qaucli
           Packages to install:  1
       Create boot environment: No
Create backup boot environment: No
            Services to change:  1

DOWNLOAD                                PKGS         FILES     XFER (MB)    SPEED
Completed                               1/1        285/285       4.1/4.1     0B/s

PHASE                                          ITEMS
Installing new actions                       503/503
Updating package state database                 Done
Updating image state                            Done
Creating fast lookup database                   Done
```

Uninstalling QConvergeConsole CLI

To remove QConvergeConsole CLI from your system, follow the instructions for your operating system:

- Uninstalling QConvergeConsole CLI in a Windows Environment
- Uninstalling QConvergeConsole CLI in a Linux Environment
- Uninstalling QConvergeConsole CLI in a Solaris Environment

Uninstalling QConvergeConsole CLI in a Windows Environment

The Windows operating system (OS) offers the following methods of uninstalling QConvergeConsole CLI:

- Start Menu Uninstall
- Control Panel Uninstall
- Command Line Uninstall

Start Menu Uninstall

To uninstall from the Windows Start menu:

1. Go to **Start**.
2. Point to **All Programs**, point to **QLogic Management Suite**, and then click **Uninstall QConvergeConsole CLI**.

Control Panel Uninstall

To uninstall from the Windows Control Panel:

1. Go to **Start**, and then click **Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Select **QConvergeConsole CLI**.
4. Click **Change/Remove**.

Command Line Uninstall

You can uninstall QConvergeConsole CLI from the command line in interactive, passive, or silent (quiet) mode.

To uninstall interactively from the command line:

Issue one of the following commands from a command prompt:

```
QConvergeConsoleCLI-<version>-win_x64.msi
```

or

```
QConvergeConsoleCLI-<version>-win.msi
```

To uninstall in unattended mode from the command line:

Issue the following command from a command prompt:

```
msiexec /passive /x  QConvergeConsoleCLI-<version>-win_x64.msi
```

or

```
msiexec /passive /x  QConvergeConsoleCLI-<version>-win.msi
```

To uninstall in silent mode from the command line:

Issue the following command from a command prompt:

```
msiexec /q /x QConvergeConsoleCLI-<version>-win_x64.msi
```

or

```
msiexec /q /x QConvergeConsoleCLI-<version>-win.msi
```

Uninstalling QConvergeConsole CLI in a Linux Environment

To uninstall QConvergeConsole CLI on a Red Hat or SUSE Linux operating system, issue the following command:

```
# rpm -e QConvergeConsoleCLI
```

To uninstall QConvergeConsole CLI on an Ubuntu system, issue the following command:

```
root@ubuntu:~# dpkg -r qconvergeconsolecli
(Reading database ... 73791 files and directories currently
installed.)
Removing qconvergeconsolecli (2.2.00-xx) ...
```

Uninstalling QConvergeConsole CLI in a Solaris Environment

If QConvergeConsole CLI was installed using p5p files, refer to “Uninstalling a p5p Installation (Solaris 11 Only)” on page 14. Otherwise, refer to Uninstalling a Package Installation (Solaris 10 or 11).

Uninstalling a Package Installation (Solaris 10 or 11)

If package files were used to install QConvergeConsole CLI in a Solaris 10 or 11 SPARC or x86 environment (see “Installation Using Package Files (Solaris 10 or 11)” on page 8), issue the `pkgrm QCCLI` command to uninstall QConvergeConsole CLI.

For example:

```
# pkgrm QCCLI
The following package is currently installed:
   QCCLI  QLogic QConvergeConsole CLI (CNA Configuration Utility)
          (i386) 1.00.03 Build 23 (Solaris 8-11)

Do you want to remove this package? [y,n,?,q] y

## Removing installed package instance <QCCLI>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package <QCCLI> dependencies in global zone
## Processing package information.
## Executing preremove script.
## Removing pathnames in class <none>
/opt/QLogic_Corporation/QConvergeConsoleCLI/ucli.sig
```

```
/opt/QLogic_Corporation/QConvergeConsoleCLI/sfcli.properties
/opt/QLogic_Corporation/QConvergeConsoleCLI/scli
/opt/QLogic_Corporation/QConvergeConsoleCLI/qaucli_contents.dat
/opt/QLogic_Corporation/QConvergeConsoleCLI/qaucli.cfg
/opt/QLogic_Corporation/QConvergeConsoleCLI/qaucli
/opt/QLogic_Corporation/QConvergeConsoleCLI/nvramdefs/x8086x34ba/nvram23.dat
/opt/QLogic_Corporation/QConvergeConsoleCLI/nvramdefs/x8086x34ba
/opt/QLogic_Corporation/QConvergeConsoleCLI/nvramdefs/x8086x34a0/nvram23.dat
.
.
.
/opt/QLogic_Corporation/QConvergeConsoleCLI/agent.properties
/opt/QLogic_Corporation/QConvergeConsoleCLI/adapters.properties
/opt/QLogic_Corporation/QConvergeConsoleCLI
/opt/QLogic_Corporation <shared pathname not removed>
/opt <shared pathname not removed>
## Executing postremove script.
## Updating system information.

Removal of <QCCLI> was successful.
```

Uninstalling a p5p Installation (Solaris 11 Only)

If p5p files were used to install QConvergeConsole CLI in a Solaris 11 SPARC or x86 environment (see “Installation Using p5p Files (Solaris 11 Only)” on page 10), issue the `pkg uninstall qaucli` command to uninstall QConvergeConsole CLI.

For example:

```
# pkg uninstall qaucli
            Packages to remove:  1
      Create boot environment: No
Create backup boot environment: No
            Services to change:  1

PHASE                                          ITEMS
Removing old actions                         709/709
Updating package state database                 Done
Updating package cache                           1/1
Updating image state                            Done
Creating fast lookup database                   Done
```

```
## Executing postremove script.
## Updating system information.

Removal of <QCCLI> was successful.
```

3 Getting Started

QConvergeConsole CLI manages iSCSI, Ethernet, and Fibre Channel functions on QLogic Fibre Channel Adapters, Intelligent Ethernet Adapters, and Converged Network Adapters. This chapter describes how to start the QConvergeConsole CLI using the noninteractive mode (command line interface) and the interactive mode (menu-driven interface), as well as how to get help.

- Using Noninteractive Mode
- "Using Interactive Mode" on page 17
- "Getting Help" on page 18

Using Noninteractive Mode

Noninteractive mode is a command line interface that executes a command and its parameters, and then terminates. Use the noninteractive mode to run QConvergeConsole CLI from a script file or when you want to perform a single operation. This guide describes the noninteractive mode commands by function in the following chapters:

- Chapter 5 NIC Noninteractive Commands
- Chapter 6 Fibre Channel Noninteractive Commands
- Chapter 7 iSCSI Noninteractive Commands
- Chapter 8 NIC Partitioning (NPAR) Noninteractive Commands

To start the noninteractive QConvergeConsole CLI in Windows[1] or Linux, open an operating system shell, and then type a command with one or more command line switches. For specific command formats, refer to the chapter for the corresponding adapter function. For example, to discover iSCSI ports on a Converged Network Adapter, issue the following command:

```
qaucli -pr iscsi -i
```

QConvergeConsole CLI is case-sensitive. In addition, file names in some operating systems are case-sensitive; in this case, QConvergeConsole CLI is case-sensitive for that specific file.

[1] For Windows 2008 or later, use administrator mode.

Using Interactive Mode

Interactive mode is a menu-driven interface that manages QLogic Ethernet Adapters, QLogic Fibre Channel Adapters, and all functions of QLogic Converged Network Adapters, including NIC, Fibre Channel, iSCSI and NPAR. The interface for each adapter type is described in its own separate chapter:

- Chapter 9 NIC Interactive Commands
- Chapter 10 Fibre Channel Interactive Commands
- Chapter 11 Converged Network Adapter Interactive Commands
- Chapter 12 Setting Up NPAR Using Interactive Commands

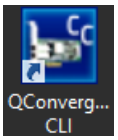
Starting QConvergeConsole CLI

Start the CLI using the method specified for your operating system: Windows, Linux, or Solaris.

Starting QConvergeConsole CLI in Windows

To start QConvergeConsole CLI in interactive mode in Windows, do one of the following:

- Double-click the QConvergeConsole CLI icon on the desktop.



- Click **Start**, point to **All Programs**, point to **QLogic Management Suite**, and then click **QConvergeConsole CLI**.
- Open a command prompt in the installation directory (the default is `C:\Program Files\QLogic Corporation\QConvergeConsoleCLI`), and then issue the following command:

```
qaucli
```

Starting QConvergeConsole CLI in Linux

To start QConvergeConsole CLI in interactive mode in Linux, issue the following command:

```
qaucli
```

Starting QConvergeConsole CLI in Solaris

To start QConvergeConsole CLI in interactive mode in Solaris, issue the following command:

```
#qaucli
```

Main Menu

When you start QConvergeConsole CLI in interactive mode, the Main Menu appears as follows:

```
Main Menu

1:  Adapter Information
2:  Adapter Configuration
3:  Adapter Updates
4:  Adapter Diagnostics
5:  Monitoring
6:  Refresh
7:  FabricCache CLI
8:  Help
9:  Exit

        Please Enter Selection:
```

Menu Navigation

From any menu, type:

- **p** or **0** (zero) to return to the previous menu
- **m** or **98** to return to the Main Menu
- **ex** or **99** to end the QConvergeConsole CLI session

Getting Help

To view help in interactive mode:

Select the **Help** option.

To view help in noninteractive mode:

Use the `-h` switch. For example, to list all of the available command line parameters, issue the following command:

```
qaucli -h
```

To list available online switches, issue the following commands for their respective adapter types:

iSCSI: `qaucli -pr iscsi -h`

NIC: `qaucli -pr nic -h`

Fibre Channel: `qaucli -pr fc -h`

FabricCache: `qaucli -pr fca -h`

The following shows an example of noninteractive help output for iSCSI, NIC, Fibre Channel, and FabricCache adapters:

```
QConvergeConsole
Version 1.1.3 (Build 14)
Copyright (C) 2014 QLogic Corporation
Build Type:  Release
Build Date:  Jun  3 2014 18:24:49

NAME: qaucli

SYNOSYS:
   qaucli [ -pr <nic|iscsi|fc|fca> ] [options]
   qaucli [ -nic | -fc | -iscsi | -fca ] [options]

DESCRIPTION:
qaucli is a unified command line application, which can be
used to manage all QLogic adapter models.
The overall option (i.e.: -pr <protocol> allows user to start
the application with a specific protocol type (NIC/iSCSI/FC)
If no protocol is specified, then all protocols will be enabled
by default.

OPTIONS:
   Menu Mode
   qaucli                        - Start in interactive mode
   qaucli -pr nic [options]      - Launch application with NIC discovery only
   qaucli -pr iscsi [options]    - Launch application with iSCSI discovery only
   qaucli -pr fc [options]       - Launch application with FC discovery only
   qaucli -pr fca [options]      - Launch application with FabricCache
                                   discovery only

   Command Line Mode
   qaucli [options]              - Execute command line options
```

```
   qaucli -npar [options]       - Execute NPAR command line options

   Legacy Modes (Command line mode only):
   qaucli -nic [options]        - Use NIC legacy command line
   qaucli -iscsi [options]      - Use iSCSI legacy command line
   qaucli -fc [options]         - Use FC legacy command line
   qaucli -fca [options]        - Use FabricCache legacy command line

Additional options:
               -h               - Display built-in command line syntax

Help about commands, and command options available for each specific
protocol are available by specifying "-h" to the protocol of interest:

   qaucli -pr nic | -nic -h     - Display NIC protocol usage
   qaucli -pr fc | -fc -h       - Display FC/FCoE protocol usage
   qaucli -pr iscsi | -iscsi -h - Display iSCSI protocol usage
   qaucli -pr fca | -fca -h     - Display FabricCache protocol usage
   qaucli -pr all -h            - Display non-interactive command usage
                                  for all protocols
   qaucli -npar -h              - Display NPAR command usage
   qaucli -h                    - Display this usage

Miscellaneous options:
   qaucli -v                    - Display application version
   qaucli -beacon <all|port_num|mac|wwpn|wwnn|iSCSI name> <on|off|status>
                                - Enable/Disable/Status for Port Beacon
                                - Use qaucli -iport to view port_num
```

The following shows an example of noninteractive help output in debug mode:

```
D:\BUILD\WINDOWS\unified-release-AUTO\uclibuild\ucli\src\windows_x64\Debug_x64
>

"When the following command is executed: qaucli.exe -pr all -h, the help is
printed below

.\qaucli.exe -pr all -h

QConvergeConsole
Version 1.0.1 (Build 28)
Copyright (C) 2012 QLogic Corporation
Build Type:  Release
Build Date:  Jan 26 2012 17:58:07
```

```
Usage: qaucli [options]

The following is a simplified help for extension
of non-interactive commands for all protocols (NIC/FC/iSCSI).

Non-interactive mode syntax:

   qaucli -pr all -switch  [options]

where switch is one of the following command line switches:

   -help     // Display help info

   -h        // Same as -help

   -?        // Same as -help

   ?         // Same as -help

   -ei       // List errors codes for -pr all switches

   -svmtool  [svm-options]          // SVM FW Update Tool
               where [svm-options] are:

          mode=[version|ver|inventory|update]
                // mode of execution

          fwup=fw_file_name

            output=[stdout|stderr|output_file_name]
                 // output in xml format; can be repeated

          mac=[11:22:33:44:55:66|11-22-33-44-55-66]
                //limit update to device with physical mac
          NOTE: mac,wwnn and wwpn switches are exclusive

          wwpn=[11-22-33-44-55-66-77-88]
                //limit update to device with WWN
          NOTE: mac,wwnn and wwpn switches are exclusive

          fwdump=fwdump_file_name   // NOT implemented yet

          comment=[on|true|yes|y|1]
                  // inserts comments into xml output
                  // on mac of the device
                  // and other info if available

          discoverall=[on|true|yes|y|1]
```

```
                // discover all adapters; if not set,
                // only adapters specified in svmtool.cfg
                // will be discovered.
          NOTE: discoverall is applicable only for mode=inventory
                and mode=update

          -all  // same as discoverall=[on|true|yes|y|1]
          all   // same as discoverall=[on|true|yes|y|1]

        -suppress_version_match // suppress match check
                                // for version of flash file
                                // and version in svmtool.cfg
        -supvermatch   // same as -suppress_version_match

         Example 1 - Display vesion only

               qaucli -pr all -svmtool mode=version

         Example 2 - Update FW from file and produce xml
                     output to stdout and to a  file;
                     add comments to xml on mac of the device

             qaucli -pr all -svmtool  mode=update
                     fwup=c:/fw/fw1.bin
                     output=stdout output=c:/xmloutput/1.xml
                     comment=on

         Example 3 - Inventory

            qaucli -pr all -svmtool  mode=update output=stdout

-updimages_viewver <flash_file> // Displays list of IDs that
               // the flash file supports

-updimages_matcher <flash_file>  // Displays matches between
              // flash file and discovered devices
```

The following shows a truncated example of noninteractive help output for FabricCache CLI:

```
QConvergeConsole
Version 1.1.3 (Build 8)
Copyright (C) 2014 QLogic Corporation
Build Type:  Release
Build Date:  Apr 22 2014 16:21:19
```

```
  Usage:
    ? cli

    add drive
        -drive=<WWULN of a san ssd lun or ssd drive>
        [-lun_serial=<LUN Page 0x80 serial number>]
        [-lun_wwuln=<WWULN>]
        [-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
        [-lun_number=<logical unit number>]
        [-fc_target=<Fibre Channel target name>]

    add member
        -clusterid=<cluster ID>
        -member=<locally connected device instance>

    clear display

    clear log

    clear lun_statistics
        [-lun_serial=<LUN Page 0x80 serial number>]
        [-lun_wwuln=<WWULN>]
        [-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
        [-lun_number=<logical unit number>]
        [-fc_target=<Fibre Channel target name>]

.
.
.
For more detail on any of these commands start CLI with
the action and item followed by -help or -?
```

Part II

Noninteractive Commands

Part II of this guide provides details about the noninteractive commands of QConvergeConsole CLI in the following chapters:

- Chapter 4 General Noninteractive Commands
- Chapter 5 NIC Noninteractive Commands
- Chapter 6 Fibre Channel Noninteractive Commands
- Chapter 7 iSCSI Noninteractive Commands
- Chapter 8 NIC Partitioning (NPAR) Noninteractive Commands

NOTE

Noninteractive commands for the 10000 Series Adapter are covered in Part IV FabricCache Commands, Chapter 15 FabricCache CLI Command Reference.

4 General Noninteractive Commands

This chapter describes and shows examples of the general noninteractive commands that apply to all QConvergeConsole CLI supported protocols: NIC, Fibre Channel, and iSCSI. The general commands include the `all` switch.

Use the general noninteractive commands for:

- Viewing General Help
- "Viewing All Inventory" on page 27
- "Viewing All Flash Image Versions" on page 28
- "Viewing All Matching Flash Image Versions" on page 29
- "Viewing All Flash Updates" on page 34

Viewing General Help

To view the general help for all protocols, issue the `-pr all -h` command as follows:

```
qaucli.exe -pr all -h

QConvergeConsole
Version 1.0.1 (Build 28)
Copyright (C) 2012 QLogic Corporation
Build Type:  Release
Build Date:  Jan 26 2012 17:58:07

Usage: qaucli [options]

The following is a simplified help for extension
of non-interactive commands for all protocols (NIC/FC/iSCSI).

Non-interactive mode syntax:

   qaucli -pr all -switch  [options]
```

```
where switch is one of the following command line switches:

   -help     // Display help info

   -h        // Same as -help

   -?        // Same as -help

   ?         // Same as -help

   -ei       // List errors codes for -pr all switches

   -svmtool  [svm-options]          // SVM FW Update Tool
                where [svm-options] are:

          mode=[version|ver|inventory|update]
                // mode of execution

          fwup=fw_file_name

            output=[stdout|stderr|output_file_name]
                 // output in xml format; can be repeated

          mac=[11:22:33:44:55:66|11-22-33-44-55-66]
                 //limit update to device with physical mac
          NOTE: mac,wwnn and wwpn switches are exclusive

          wwpn=[11-22-33-44-55-66-77-88]
                 //limit update to device with WWN
          NOTE: mac,wwnn and wwpn switches are exclusive

          fwdump=fwdump_file_name   // NOT implemented yet

          comment=[on|true|yes|y|1]
                  // inserts comments into xml output
                  // on mac of the device
                  // and other info if available

          discoverall=[on|true|yes|y|1]
                  // discover all adapters; if not set,
                  // only adapters specified in svmtool.cfg
                  // will be discovered.
          NOTE: discoverall is applicable only for mode=inventory
                and mode=update

          -all  // same as discoverall=[on|true|yes|y|1]
```

```
          all   // same as discoverall=[on|true|yes|y|1]

        -suppress_version_match // suppress match check
                                // for version of flash file
                                // and version in svmtool.cfg
        -supvermatch   // same as -suppress_version_match

         Example 1 - Display vesion only

               qaucli -pr all -svmtool mode=version

         Example 2 - Update FW from file and produce xml
                     output to stdout and to a  file;
                     add comments to xml on mac of the device

             qaucli -pr all -svmtool  mode=update
                     fwup=c:/fw/fw1.bin
                     output=stdout output=c:/xmloutput/1.xml
                     comment=on

         Example 3 - Inventory

            qaucli -pr all -svmtool  mode=update output=stdout

-updimages_viewver <flash_file> // Displays list of IDs that
               // the flash file supports

-updimages_matcher <flash_file>  // Displays matches between
             // flash file and discovered devices
```

Viewing All Inventory

To view the inventory for all protocols, issue the `-pr all -svmtool` command as follows:

`qaucli.exe -pr all -svmtool mode=inventory output=stdout fwup=.\p3p10929.bin comment=on`

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Pecos AP (svmtool) version="1.0.01.28" -->
<!-- Content of "svmtool.cfg" -->
<!-- vendorID=1077 subVendorID=1077 deviceID=8020 subDeviceID=0210
version=1.9.29 (line:00) -->
<SVMInventory lang="en">
```

```
        <Device vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" bus="0" device="0" function="1" display="QLogic QME8242
Adapter" >
                <!-- SerialNumber="AFE1020C03193" Protocol="nic" ISIP="19" -->
                <!-- MAC: 00:0e:1e:04:88:59 WWPN: NA WWNN: NA -->
                <Application componentType="FRMW" version="04.09.46"
display="QLogic QME8242 Adapter"/>
        </Device>
        <Device vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" bus="0" device="0" function="3" display="QLogic QME8242
Adapter" >
                <!-- SerialNumber="AFE1020C03193" Protocol="nic" ISIP="19" -->
                <!-- MAC: 00:0e:1e:04:88:5b WWPN: NA WWNN: NA -->
                <Application componentType="FRMW" version="04.09.46"
display="QLogic QME8242 Adapter"/>
        </Device>
        <Device vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" bus="0" device="0" function="0" display="QLogic QME8242
Adapter" >
                <!-- SerialNumber="AFE1020C03193" Protocol="nic" ISIP="19" -->
                <!-- MAC: 00:0e:1e:04:88:58 WWPN: NA WWNN: NA -->
                <Application componentType="FRMW" version="04.09.46"
display="QLogic QME8242 Adapter"/>
        </Device>
        <Device vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" bus="0" device="0" function="2" display="QLogic QME8242
Adapter" >
                <!-- SerialNumber="AFE1020C03193" Protocol="nic" ISIP="19" -->
                <!-- MAC: 00:0e:1e:04:88:5a WWPN: NA WWNN: NA -->
                <Application componentType="FRMW" version="04.09.46"
display="QLogic QME8242 Adapter"/>
        </Device>
</SVMInventory>
```

Viewing All Flash Image Versions

To view the Flash image versions for all protocols, issue the `-pr all -updimages_viewver` command as follows:

```
qaucli.exe -pr all -updimages_viewver p3p10929.bin

Using File          : p3p10929.bin
Flash Image Version : 1.9.29
```

```
Supported ChipIDs: B0, C0
Found 13 entries for supported card types in file: p3p10929.bin
00 - venid=1077 subvenid=ffff devid=0001 subdevid=ffff
01 - venid=1077 subvenid=1077 devid=8020 subdevid=0233
02 - venid=1077 subvenid=1077 devid=8021 subdevid=0234
03 - venid=1077 subvenid=1077 devid=8022 subdevid=0235
04 - venid=1077 subvenid=1077 devid=8020 subdevid=0210
05 - venid=1077 subvenid=1077 devid=8021 subdevid=0211
06 - venid=1077 subvenid=1077 devid=8022 subdevid=0212
07 - venid=1077 subvenid=1028 devid=8020 subdevid=1f64
08 - venid=1077 subvenid=1028 devid=8021 subdevid=1f64
09 - venid=1077 subvenid=1028 devid=8022 subdevid=1f64
10 - venid=1077 subvenid=1077 devid=8020 subdevid=0228
11 - venid=1077 subvenid=1077 devid=8021 subdevid=0229
12 - venid=1077 subvenid=1077 devid=8022 subdevid=0230

Matching svmtool.cfg with p3p10929.bin

1077 1077 8020 0210 = 1.9.29 - IDs:   MATCH (04); Versions:   MATCH Overall:
MATCH
=====================
   MATCH FOUND
=====================
```

Viewing All Matching Flash Image Versions

To view the Flash image versions that match all protocols, issue the `-pr all -updimages_matcher` command as follows:

```
qaucli.exe -pr all -updimages_matcher p3p10929.bin

Loading CNA Data ...
Loading: 1. CNA ... adapters, please wait...
Loading: 1. CNA Physical Port : 1 (Index : 1) ...
Loading: 2. CNA ... adapters, please wait...
Loading: 2. CNA Physical Port : 2 (Index : 1) ...
Loading: 2. CNA Physical Port : 2 (Index : 2) ...
Loading: 2. CNA Physical Port : 1 (Index : 3) ...
Loading: 2. CNA Physical Port : 1 (Index : 4) ...
Loading: 3. CNA ... adapters, please wait...
Loading: 3. CNA Physical Port : 1 (Index : 1) ...
Loading: 3. CNA Physical Port : 2 (Index : 2) ...
```

```
Refreshing interfaces ... Please wait ......
Scanning for QLogic adapters, please wait...
Using config file:
D:\dan\BUILD\WINDOWS\unified-release-AUTO\uclibuild\ucli\src\windows_x64\Debug
_x64\iscli.cfg
Loading iSCSI Data ...
Loading iSCSI Instance: 1 HBA: 1 Physical Port: 1 (CN1000Q , 78-E7-D1-F4-E8-4E)
...
Loading iSCSI Instance: 2 HBA: 1 Physical Port: 2 (CN1000Q , 78-E7-D1-F4-E8-4A)
...
Loading iSCSI Instance: 3 HBA: 2 Physical Port: 1 (QME8242 , 00-0E-1E-04-88-5D)
...
Loading iSCSI Instance: 4 HBA: 2 Physical Port: 2 (QME8242 , 00-0E-1E-04-88-5C)
...
Scanning for QLogic adapters, please wait...
Using File          : p3p10929.bin
Flash Image Version : 1.9.29
Supported ChipIDs: B0, C0
Found 13 entries for supported card types in file: p3p10929.bin
00 - venid=1077 subvenid=ffff devid=0001 subdevid=ffff
01 - venid=1077 subvenid=1077 devid=8020 subdevid=0233
02 - venid=1077 subvenid=1077 devid=8021 subdevid=0234
03 - venid=1077 subvenid=1077 devid=8022 subdevid=0235
04 - venid=1077 subvenid=1077 devid=8020 subdevid=0210
05 - venid=1077 subvenid=1077 devid=8021 subdevid=0211
06 - venid=1077 subvenid=1077 devid=8022 subdevid=0212
07 - venid=1077 subvenid=1028 devid=8020 subdevid=1f64
08 - venid=1077 subvenid=1028 devid=8021 subdevid=1f64
09 - venid=1077 subvenid=1028 devid=8022 subdevid=1f64
10 - venid=1077 subvenid=1077 devid=8020 subdevid=0228
11 - venid=1077 subvenid=1077 devid=8021 subdevid=0229
12 - venid=1077 subvenid=1077 devid=8022 subdevid=0230

Searching for match between image file and detected devices ...

================================================================================
Adapter: SerialNumber=3U702950ET ProtocolType=nic/fcoe/iscsi IsNPARAdapter=0
================================================================================
NO MATCH  Device: vendorID="1077" subVendorID="103c" deviceID="8020"
subDeviceID="3346" (ln:-1;chipMatch:1)
          bus="0" device="0" function="0" ISP=19 (CNA NIC) display="QLogic
CN1000Q Adapter"
```

```
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="78:e7:d1:f4:e8:48" WWPN="NA" WWNN="NA"
NO MATCH  Device: vendorID="103c" subVendorID="103c" deviceID="8021"
subDeviceID="3348" (ln:-1;chipMatch:1)
          bus="0" device="0" function="0" ISP=20 (CNA FCoE) display="QLogic
CN1000Q Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="78:e7:d1:f4:e8:4b" WWPN="21-00-78-E7-D1-F4-E8-4B"
WWNN="20-00-78-E7-D1-F4-E8-4B"
NO MATCH  Device: vendorID="1077" subVendorID="103c" deviceID="8022"
subDeviceID="3347" (ln:-1;chipMatch:1)
          bus="0" device="0" function="0" ISP=21 (CNA iSCSI) display="QLogic
CN1000Q Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="78:e7:d1:f4:e8:4a" WWPN="NA" WWNN="NA"
NO MATCH  Device: vendorID="103c" subVendorID="103c" deviceID="8021"
subDeviceID="3348" (ln:-1;chipMatch:1)
          bus="0" device="0" function="0" ISP=20 (CNA FCoE) display="QLogic
CN1000Q Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="78:e7:d1:f4:e8:4f" WWPN="21-00-78-E7-D1-F4-E8-4F"
WWNN="20-00-78-E7-D1-F4-E8-4F"
NO MATCH  Device: vendorID="1077" subVendorID="103c" deviceID="8022"
subDeviceID="3347" (ln:-1;chipMatch:1)
          bus="0" device="0" function="0" ISP=21 (CNA iSCSI) display="QLogic
CN1000Q Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="78:e7:d1:f4:e8:4e" WWPN="NA" WWNN="NA"
================================================================================
Adapter: SerialNumber=AFE1020C03193 ProtocolType=nic IsNPARAdapter=1
================================================================================
   MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" (ln:04;chipMatch:1)
          bus="0" device="0" function="1" ISP=19 (CNA NIC) display="QLogic
QME8242 Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="00:0e:1e:04:88:59" WWPN="NA" WWNN="NA"
   MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" (ln:04;chipMatch:1)
          bus="0" device="0" function="3" ISP=19 (CNA NIC) display="QLogic
QME8242 Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
```

```
          MAC="00:0e:1e:04:88:5b" WWPN="NA" WWNN="NA"
   MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8022"
subDeviceID="0212" (ln:06;chipMatch:1)
          bus="0" device="0" function="0" ISP=21 (CNA iSCSI) display="QLogic
QME8242 Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="00:0e:1e:04:88:5d" WWPN="NA" WWNN="NA"
   MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8021"
subDeviceID="0211" (ln:05;chipMatch:1)
          bus="0" device="0" function="0" ISP=20 (CNA FCoE) display="QLogic
QME8242 Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="00:0e:1e:04:88:5f" WWPN="20-01-00-0E-1E-04-88-5F"
WWNN="20-00-00-0E-1E-04-88-5F"
   MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" (ln:04;chipMatch:1)
          bus="0" device="0" function="0" ISP=19 (CNA NIC) display="QLogic
QME8242 Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="00:0e:1e:04:88:58" WWPN="NA" WWNN="NA"
   MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" (ln:04;chipMatch:1)
          bus="0" device="0" function="2" ISP=19 (CNA NIC) display="QLogic
QME8242 Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="00:0e:1e:04:88:5a" WWPN="NA" WWNN="NA"
   MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8022"
subDeviceID="0212" (ln:06;chipMatch:1)
          bus="0" device="0" function="0" ISP=21 (CNA iSCSI) display="QLogic
QME8242 Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="00:0e:1e:04:88:5c" WWPN="NA" WWNN="NA"
   MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8021"
subDeviceID="0211" (ln:05;chipMatch:1)
          bus="0" device="0" function="0" ISP=20 (CNA FCoE) display="QLogic
QME8242 Adapter"
          ChipVersion="B0"  versionFlashInBinFile=""
          MAC="00:0e:1e:04:88:5e" WWPN="20-01-00-0E-1E-04-88-5E"
WWNN="20-00-00-0E-1E-04-88-5E"
================================================================================
Adapter: SerialNumber=AFC0902A04501 ProtocolType=nic/fcoe IsNPARAdapter=0
================================================================================
```

```
NO MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8000"
subDeviceID="0179" (ln:-1;chipMatch:0)
          bus="0" device="0" function="0" ISP=17 (CNA NIC) display="QLogic
QLE8142 Adapter"
          ChipVersion="A0"  versionFlashInBinFile=""
          MAC="00:c0:dd:0a:b4:78" WWPN="NA" WWNN="NA"
NO MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8001"
subDeviceID="0179" (ln:-1;chipMatch:0)
          bus="0" device="0" function="0" ISP=18 (CNA FCoE) display="QLogic
QLE8142 Adapter"
          ChipVersion="A0"  versionFlashInBinFile=""
          MAC="00:c0:dd:0a:b4:7a" WWPN="21-00-00-C0-DD-0A-B4-7A"
WWNN="20-00-00-C0-DD-0A-B4-7A"
NO MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8000"
subDeviceID="0179" (ln:-1;chipMatch:0)
          bus="0" device="0" function="1" ISP=17 (CNA NIC) display="QLogic
QLE8142 Adapter"
          ChipVersion="A0"  versionFlashInBinFile=""
          MAC="00:c0:dd:0a:b4:79" WWPN="NA" WWNN="NA"
NO MATCH  Device: vendorID="1077" subVendorID="1077" deviceID="8001"
subDeviceID="0179" (ln:-1;chipMatch:0)
          bus="0" device="0" function="0" ISP=18 (CNA FCoE) display="QLogic
QLE8142 Adapter"
          ChipVersion="A0"  versionFlashInBinFile=""
          MAC="00:c0:dd:0a:b4:7b" WWPN="21-00-00-C0-DD-0A-B4-7B"
WWNN="20-00-00-C0-DD-0A-B4-7B"
=====================
   MATCH FOUND
=====================

Matching svmtool.cfg with p3p10929.bin

1077 1077 8020 0210 = 1.9.29 - IDs:   MATCH (04); Versions:   MATCH Overall:
MATCH
=====================
   MATCH FOUND
=====================
```

Viewing All Flash Updates

To view the Flash update for all protocols, issue the `-pr all -svmtool` command as follows:

qaucli.exe -pr all -svmtool mode=update output=stdout fwup=.\p3p10929.bin comment=on

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Pecos AP (svmtool) version="1.0.01.28" -->
<!-- Content of "svmtool.cfg" -->
<!-- vendorID=1077 subVendorID=1077 deviceID=8020 subDeviceID=0210
version=1.9.29 (line:00) -->
<SVMExecution lang="en">
        <Device vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" bus="0" device="0" function="1" display="QLogic QME8242
Adapter" >
                <!-- SerialNumber="AFE1020C03193" Protocol="nic" ISIP="19" -->
                <!-- MAC: 00:0e:1e:04:88:59 WWPN: NA WWNN: NA -->
                <Application componentType="FRMW" version="01.09.29"
display="QLogic QME8242 Adapter" >
                        <Package version="01.09.29"/>
                        <!-- Updating flash ... -->
                        <!-- Updated flash with nic protocol rc=0 -->
                        <SPStatus result="true">
                                <Message id="0">Update success.</Message>
                        </SPStatus>
                </Application>
        </Device>
        <Device vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" bus="0" device="0" function="3" display="QLogic QME8242
Adapter" >
                <!-- SerialNumber="AFE1020C03193" Protocol="nic" ISIP="19" -->
                <!-- MAC: 00:0e:1e:04:88:5b WWPN: NA WWNN: NA -->
                <Application componentType="FRMW" version="01.09.29"
display="QLogic QME8242 Adapter" >
                        <Package version="01.09.29"/>
                        <SPStatus result="true">
                                <Message id="0">Update success.</Message>
                        </SPStatus>
                </Application>
        </Device>
```

```
        <Device vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" bus="0" device="0" function="0" display="QLogic QME8242
Adapter" >
                <!-- SerialNumber="AFE1020C03193" Protocol="nic" ISIP="19" -->
                <!-- MAC: 00:0e:1e:04:88:58 WWPN: NA WWNN: NA -->
                <Application componentType="FRMW" version="01.09.29"
display="QLogic QME8242 Adapter" >
                        <Package version="01.09.29"/>
                        <SPStatus result="true">
                                <Message id="0">Update success.</Message>
                        </SPStatus>
                </Application>
        </Device>
       <Device vendorID="1077" subVendorID="1077" deviceID="8020"
subDeviceID="0210" bus="0" device="0" function="2" display="QLogic QME8242
Adapter" >
                <!-- SerialNumber="AFE1020C03193" Protocol="nic" ISIP="19" -->
                <!-- MAC: 00:0e:1e:04:88:5a WWPN: NA WWNN: NA -->
                <Application componentType="FRMW" version="01.09.29"
display="QLogic QME8242 Adapter" >
                        <Package version="01.09.29"/>
                        <SPStatus result="true">
                                <Message id="0">Update success.</Message>
                        </SPStatus>
                </Application>
        </Device>
        <RebootRequired>1</RebootRequired>
</SVMExecution>
```

5 NIC Noninteractive Commands

This chapter describes the noninteractive NIC command format and parameters of QConvergeConsole CLI.

NOTE

To view the help, issue the `-h` command.

Command Format

NIC noninteractive commands have the following format:

```
qaucli -pr nic <command_option> [positional_parameters]
```

Where `<command_option>` is one of the command options, and `<positional_parameters>` includes all required or optional parameters, as defined in the Command Summary section of this chapter.

or

```
qaucli -pr nic -<command> [<cna_port_inst>]
```

Where `<cna_port_inst>` is an adapter port instance and `<command>` is one of the following, described in detail in the Command Summary section of this chapter:

- -beacon
- -c (NIC Port Setting Configuration)
- -cardreset
- -ch
- -d
- -ei
- -extloopback
- -flashsupport
- -g
- -h (Help), -?, ?
- -i
- -icna (CNA Adapter)

- -idcbx
- -intloopback
- -iset (Display Configured Port Settings)
- -link
- -minidump
- -n (Change Port Alias Name [NIC Configuration])
- -nh (Adapter Alias [NIC Configuration])
- -pinfo (CNA Port Information)
- -ping
- -rc
- -sreset (Reset NIC Statistics)
- -sriov (SR-IOV Capability)
- -statport (Display NIC Port Statistics)
- -sunreset (Undo Reset NIC Statistics)
- -team_allowCNAsIn8023adTeam (LACP Override)
- -teamdel (Delete Team)
- -teaminfo (Display Team Information)
- -teamlist (Display Teams List)
- -teamnew (Configure New Team)
- -teamnew_portspreview
- -testflash
- -testhw (Hardware Test)
- -testinterrupt (Interrupt Test)
- -testled (Beacon/LED Test)
- -testlink (Link Test)
- -testregister (Register Test)
- -trans (Transceiver Monitoring Interface [DMI])
- -updimages (Flash Update)
- -updimages_viewver
- -v, -ver (Display Program Version Information)
- -vlanadd (Add VLAN to Port or Team)
- -vlanadd_preview
- -vlandel (Remove VLAN from Port or Team)
- -vlandel_preview
- -vlaninfo (Display VLAN Information)
- -vlanlist (Display VLAN List)
- -vpd (CNA VPD Information)
- -vtcfgview
- -vtrestore (Restore VLAN & Teaming Configuration)
- -vtsave (Save VLAN & Teaming Configuration)
- -zvt (Display Teams List; Display VLAN List; Display VLAN Information)

NOTE

- When you issue a command, QConvergeConsole CLI loads the adapter information, executes the command, and then returns you to the command prompt.
- When the optional parameter `cna_port_inst` is omitted, the command action applies to all adapters detected by QConvergeConsole CLI.
- Ensure that you issue only one command at a time.

Command Support for NIC Teaming and VLAN Configuration

The following conditions apply to configuring teaming and VLAN using the QConvergeConsole CLI:

- **Windows Server 2012 and later:**
  QConvergeConsole CLI does not support teaming and VLAN configuration. Use the native Windows teaming interface instead of QConvergeConsole CLI.
- **Windows Server 2008, Windows Server 2008 R2:**
  QConvergeConsole CLI supports teaming and VLAN configuration only for QLogic 3200 Series Intelligent Ethernet Adapters and 8100 Series and 8200 Series Converged Network Adapters. For 8300 Series Converged Network Adapters, use the native Windows teaming interface instead of QConvergeConsole CLI.

Command Summary

This section lists and describes all NIC noninteractive commands in alphabetical order.

NOTE

A parenthetical phrase after a command indicates the equivalent *interactive* menu option. For example, **-c (NIC Port Setting Configuration)** indicates that the `-c` command has an equivalent **NIC Port Setting Configuration** menu option described in Chapter 9 NIC Interactive Commands.

Not all noninteractive commands have equivalent interactive menu options.

-beacon

To toggle on and off the port beacon (LED), issue the `-beacon` command as follows:

qaucli -pr nic -beacon <cna_port_inst> on|off

For example:

```
> qaucli -pr nic -beacon 2 on
Loading: 1. CNA . . .
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Successfully set Beacon to: Enabled
```

-c (NIC Port Setting Configuration)

To view the adapter port configuration, issue the `-c` command as follows:

qaucli -pr nic -c <cna_port_inst>

For example:

```
> qaucli -pr nic -c 1

=== Displaying CNA Port config info for 1. CNA Port Index ===

Port_Alias                          :  None
Port_Physical_MAC_Alias             :  john
Port_LLA_MAC_Alias                  :  paul
```

-cardreset

To activate changes made to the Flash, issue the `-cardreset` command as follows:

qaucli -pr nic -cardreset <cna_port_inst**>**

-ch

To view the adapter configuration, issue the `-ch` command as follows:

qaucli -pr nic -ch <cna_port_inst>

For example:

```
> qaucli -pr nic -ch 1

=== Displaying CNA config info for 1. CNA Port Index ===

CNA_Alias                           :  CNA X54
```

-d

To generate Extensible Markup Language (XML) discovery output, issue the `-d` command as follows:

`qaucli -pr nic -d <flash_file> [<xml_output_file>]`

Where `<flash_file>` is the Flash file and `<xml_output_file>` is the XML discovery output. If you omit `<xml_output_file>`, XML discovery output is written to `stdout.xml`.

-ei

To view error and exit code information for noninteractive mode, issue the `-ei` command as follows:

`qaucli -pr nic -ei`

NOTE

Exit codes are also listed in the `fcscli-exitcodes.txt` file located here:

`C:\Program Files\QLogic Corporation\QConvergeConsoleCLI`

-extloopback

To configure external loopback test parameters before you run the test, issue the `-extloopback` command as follows:

`qaucli -pr nic -extloopback <cna_port_inst> <tests_num> <on_error>`

Where `<tests_num>` specifies the number of tests to run (a value between 1 and 65,535) and `<on_error>` specifies the action to take if an error is encountered in the test (`0` = ignore the error; `1` = abort the test).

To determine `<cna_port_inst>`, issue the following command:

`qaucli -nic -i`

-flashsupport

This command lets you use the Flash Support Tool to manage the Flash memory. To use the Flash Support Tool, issue the `-flashsupport` command as follows:

`qaucli -pr nic -flashsupport [<option>]`

Where **`<option>`** is one of the following options:

`-d` option:

To discover the Converged Network Adapters and generate an XML report, issue the following command:

qaucli -pr nic -flashsupport -d <flash_file> <out_xml_file>

Where <flash_file> is the name of the Flash file to use to update the adapter, and <out_xml_file> is the name of the output XML file.

-u option:

To update the Flash and generate an XML report, issue the following command:

qaucli -pr nic -flashsupport -u <flash_file> <input_xml_file> <out_xml_file>

Where <flash_file> is the name of the Flash file to use to update the adapter, <input_xml_file> is the name of the input XML file, and <out_xml_file> is the name of the output XML file.

-asn option:

To activate an adapter with a specified serial number, issue the following command:

qaucli -pr nic -flashsupport -asn --activate <serial_number>

Where <serial_number> is the adapter's serial number.

-v option:

To display version information, issue the following command:

qaucli -pr nic -flashsupport -v --version

-h option:

To display help information, issue the following command:

qaucli -pr nic -flashsupport -h --help

-vi option:

To view all available interfaces, issue the following command:

qaucli -pr nic -flashsupport -vi --view-all-interfaces

-s option:

To display supported adapters, issue the following command:

qaucli -pr nic -flashsupport -s --supported <flash_file>

Where <flash_file> is the name of the Flash file that will be used to update the adapter.

-i option:

To set the adapter interface, issue the following command:

qaucli -pr nic -flashsupport -i --interface <interface_id>

Where <interface_id> is an interface ID value displayed by the -vi switch.

NOTE

You must use the -i command to specify the adapter interface before using any of the following options: -a, -info, -w0, -w1, -p0, or -p1.

-a option:

To burn or update all Flash regions for the interface specified by the previous -i command, issue the following command:

qaucli -pr nic -flashsupport -a --all [<ql_romimage>]

Where <ql_romimage> is the name of the name of the Flash file that will be used to update the adapter. If the file is not specified, the default file (named ql_romimage) in the working directory is used.

-info option:

To display information for the interface specified by the previous -i command (or all discovered adapters when the interface not specified), issue the following command:

qaucli -pr nic -flashsupport -info --information

-w0 option:

To disable wake on LAN (WoL) for the interface specified by the previous -i command, issue the following command:

qaucli -pr nic -flashsupport -w0 --wol-off

-w1 option:

To enable WoL for the interface specified by the previous -i command, issue the following command:

qaucli -pr nic -flashsupport -w1 --wol-on

-p0 option:

To disable pre-eXecution environment (PXE) LAN for the interface specified by the previous -i command, issue the following command:

qaucli -pr nic -flashsupport -p0 --pxe-off

`-p1` option:

To enable PXE LAN for the interface specified by the previous `-i` command, issue the following command:

```
qaucli -pr nic -flashsupport -p1 --pxe-on
```

-g

To view general system information for the host, issue the `-g` command as follows:

```
qaucli -pr nic -g [<cna_port_inst>]
```

For example:

```
> qaucli -pr nic -g
Using config file: G:\Program Files\QLogic Corporation\
QConvergeConsoleCLI\qaucli.cfg
Installation directory: G:\Program Files\QLogic Corporation\
QConvergeConsoleCLI
Working dir: G:\Documents and Settings\user1
Using config file: G:\Program Files\QLogic Corporation\
QConvergeConsoleCLI\netscli.cfg

Host Name   : APPCRUSHER
Host Version: Service Pack 2 (Build 3790)
Host Type   : Microsoft Windows Server 2003 R2 x64
User Type   : Privileged; CNA setup allowed
```

-h (Help)

To view the help file, issue the `-h` command as follows:

```
qaucli -pr nic -h
```

The QConvergeConsole CLI help file contains a condensed version of the contents of this chapter.

-i

To view a list of all QLogic adapter ports detected, issue the `-i` command as follows:

```
qaucli -pr nic -i [<cna_port_inst>]
```

For example:

```
> qaucli -pr nic -i 1

1. CNA: 1 CNA Port: 1 CNA Model: QLE8142 PortID: 0
```

```
Mac Phys. Address: 00:c0:dd:12:0f:f4 Loc. Mac: 00:c0:dd:12:0f:f4
CNA Serial Number: AFC0916A07152 MPI FW Version: 1.35.00 Adapter Alias: None
Port Alias: CNA X54
IPv4   Address: 192.168.204.201
IPv6 Addresses: fe80::2c0:ddff:fe12:ff4
```

-icna (CNA Adapter)

To view adapter information, issue the `-icna` command as follows:

qaucli -pr nic -icna [<cna_port_inst>]

For example:

> **qaucli -pr nic -icna 2**

```
=== CNA Information for 2. CNA Port Index ===
Hostname                    : WIN-4ZKSPMU5N5L
Adapter Model               : QLE8142
Chip Model                  : 8001
Chip Version                : A1
Adapter Alias               : None
Serial Number               : RFC0916K61116
MAC Address                 : 00:c0:dd:10:27:60
MAC Address                 : 00:c0:dd:10:27:62
Driver Information          : Ndis 6.x 10GbE driver (X86)
Driver Name                 : qlge.sys
Driver Version              : 1.0.1.0
MPI Firmware Version        : 1.35.06
PXE Boot Version            : NA
VLAN & Team Driver Name     :
VLAN & Team Driver Version  :
FCoE Driver Version         : 9.1.8.17
FCoE Firmware Version       : 5.01.03
FCoE SDMAPI Version         : 01.28.00.75
```

-idcbx

To display port data center bridging exchange protocol (DCBX) information, issue the `-idcbx` command as follows:

qaucli -pr nic -idcbx [<cna_port_inst>]

-intloopback

NOTE

An external loopback test requires the installation of a loopback plug in the port SFP.

To configure loopback test parameters before you run the test, issue the `intloopback` command as follows:

`qaucli -pr nic -intloopback <cna_port_inst> <tests_num> <on_error>`

Where `<tests_num>` specifies the number of tests to run (a value between 1 and 65,535) and `<on_error>` specifies the action to take if an error is encountered during the test (`0` = ignore the error; `1` = abort the test).

-iset (Display Configured Port Settings)

To view configured port settings, issue the `-iset` command as follows:

`qaucli -pr nic -iset [<cna_port_inst>]`

NOTE

For Linux and Solaris, the configured port settings and their values are different from what is shown in the following example.

For example:

```
> qaucli -pr nic -iset 1

=== Configured Port Settings for 1. CNA Port Index ===
Header_Data_Split_Enable           : off
IPv4_Large_Send_Offload_v1_Enable  : on
IPv4_Large_Send_Offload_v2_Enable  : on
IPv6_Large_Send_Offload_v2_Enable  : on
IPv4_TCP_Checksum_Offload_Enable   : RxTx
IPv6_TCP_Checksum_Offload_Enable   : RxTx
IPv4_UDP_Checksum_Offload_Enable   : RxTx
IPv6_UDP_Checksum_Offload_Enable   : RxTx
Jumbo_Frames_MTU_9000_Enable_Rx    : off
Jumbo_Frames_MTU_9000_Enable_Tx    : off
LOCAL_Administered_Address_MAC     : 00:c0:dd:12:0f:f4
MAC_Address_Alias                  : paul
Receive_Side_Scaling_Enable        : on
```

```
Receive_Ring_Size                    : 0
Transmit_Ring_Size                   : 0
PromiscuousModeEnabled               : off
```

NOTE

Linux does not support the `Receive_Side_Scaling_Enable` option.

-link

To view the status of the physical link, including the port speed, issue the `-link` command as follows:

qaucli -pr nic -link [<cna_port_inst>]

For example:

```
> qaucli -pr nic -link 1

=== Physical Link Status for 1. CNA Port Index ===
Link Status          : Up
Port Speed           : 10 Gbps
```

-minidump

To dump a firmware core dump into a file for a specific `cna_port_inst`, issue the `-minidump` command as follows:

qaucli -pr nic -minidump <cna_port_inst> <minidump_file>
[force | noforce]

Where:

`minidump_file` = The name of the dump file
`force` = Create new core dump and dump into specified file
`noforce` = Dump existing core dump (if available) into specified file

For example:

```
> qaucli -pr nic -minidump 1 mini.dump

Using config file:
/opt/QLogic_Corporation/QConvergeConsoleCLI/qaucli.cfg
Installation directory:
/opt/QLogic_Corporation/QConvergeConsoleCLI
Working dir: /root
Using config file:
/opt/QLogic_Corporation/QConvergeConsoleCLI/netscli.cfg
```

```
Successfully created FW minidump file: mini.dump.gz
```

-n (Change Port Alias Name [NIC Configuration])

To change a port alias name, issue the `-n` command as follows:

qaucli -pr nic -n <cna_port_inst> <config_name>|<config_alias> <value> [<config_name>|<config_alias> <value>]

You can set the following properties:

- Port_Alias
- Port_Physical_MAC_Alias
- Port_LLA_MAC_Alias

For example:

```
> qaucli -pr nic -n 1 Port_Alias jwm614

Port_Alias                  : jwm614
```

-nh (Adapter Alias [NIC Configuration])

To configure the adapter, issue the `-nh` command as follows:

qaucli -pr nic -nh <cna_port_inst> <config_name>|<config_alias> <value> [<config_name|config_alias> <value>]

For this release, you can only set the `CNA_Alias` property.

For example:

```
> qaucli -pr nic -nh 1 CNA_Alias george

CNA_Alias                  : george
```

-pinfo (CNA Port Information)

To view port information, issue the `-pinfo` command as follows:

qaucli -pr nic -pinfo [<cna_port_inst>]

For example:

```
> qaucli -pr nic -pinfo

=== Port Information for 1. CNA Port Index ===

Hostname                    : STARBLAZER
Adapter Model               : QLE8142
Port Alias                  : None
Physical MAC Address        : 00:c0:dd:12:0f:f4
Physical MAC Address Alias  : paul
```

```
Configured (LLA) MAC Address: 00:c0:dd:12:0f:f4
LAA MAC Address Alias       : paul
IPv4 Address                : 192.168.204.201
IPv4 Subnet Mask            : 255.255.255.0
IPv4 Default Gateway        : 255.255.255.255
IPv4 DHCP Enabled           : No
DNS Servers                 : fec0:0:0:ffff::1
                            : fec0:0:0:ffff::2
                            : fec0:0:0:ffff::3
IPv6 Addresses              : fe80::2c0:ddff:fe12:ff4
                            : fec0:0:0:ffff::1
                            : fec0:0:0:ffff::2
IPv6 Default Router         : fe80::2c0:ddff:fe12:ff4
Link Status                 : Up
MTU                         : 1514
Interface Scope ID          : 91
Interface Speed             : 10 Gbps
Interface Description       : QLogic 10Gb PCI Ethernet Adapter -
Network Load Balancing Filter Device

=== Port Information for 2. CNA Port Index ===
. . .
```

-ping

To run a ping diagnostic, issue the `-ping` command as follows:

qaucli -pr nic -ping <cna_port_inst> <hostname_or_IPv4> [<count> <packet size> <timeout_ms> <TTL>]

Where the default parameter values are as follows:

- `<count>` = 5
- `<packet size>` = 525
- `<timeout_ms>` = 1000
- `<TTL>` = 30

For example:

```
> qaucli -pr nic -ping 1 starblazer
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Got IP: 192.168.104.142 for starblazer
------------------
```

```
ping IPv4
------------------
Got IP: 192.168.104.142 for starblazer
Pinging 192.168.104.142 ...
Ping Response Received, roundtrip=0 ms, hops=0
Ping Response Received, roundtrip=0 ms, hops=0
Ping Response Received, roundtrip=0 ms, hops=0
Ping Response Received, roundtrip=0 ms, hops=0
Ping Response Received, roundtrip=16 ms, hops=0
Summary: ping failed 0, ping success 5 ping timeout 0
```

-rc

To view a list of error codes and their descriptions, issue the `-rc` command as follows:

qaucli -pr nic -rc

-rd

To restore the default parameters on an Ethernet port, issue the `-rd` command as follows:

qaucli –pr nic -rd [<cna_port_inst>]

-sreset (Reset NIC Statistics)

To reset the Ethernet statistics counters, issue the `-sreset` command as follows:

qaucli -pr nic -sreset [<cna_port_inst>]

For example:

```
> qaucli -pr nic -sreset 1

Port statistics reset for 1. CNA Port Index
```

-sriov (SR-IOV Capability)

On an 8300 Series Converged Network Adapter only, to view or configure SR-IOV settings, issue the `-sriov` command as follows:

qaucli -pr nic -sriov <cna_port_inst|mac|SerialNumber|all>
<on|off|x|x1,x2|status|pfstatus|ranges>

Where:

- `<cna_port_inst>` = Specific port instance (for example, as displayed by `-i` option)
- `<mac>` = MAC address of the port
- `<serialnumber>` = Serial number of the adapter
- `all` = All port instances
- `on` = Enable SR-IOV (set number of virtual functions [VFs] to default value 8)
- `off` = Disable SR-IOV (set number of VFs to 0)
- `<x>` = Set same number of VFs to x for both ports
- `<x1>,<x2>` = Set number of VFs to x1 on physical port 1 and to x2 on physical port 2
- `status` = Display SR-IOV status
- `pfstatus` = Display physical function information
- `ranges` = Display SR-IOV available numbers of VFs for x, x1, x2
- `vflist` = Display a list of VFs
- `vfinfo` = Display information about the VF
- `vfstatus` = Display the status of the VF
- `vf_instance` = Instance displayed by the `qaucli -pr nic -sriov all all vflist` option
- `vmqstatus` = Display virtual machine queue status details
- `vmqinfo` = Display virtual machine queue information details
- `vmq_instance` = Instance displayed by the `qaucli -pr nic -sriov all all vmqinfo` option

The following example shows the SR-IOV status:

```
qaucli -pr nic -sriov all status
1. Adapter Serial Number: AFE1226F05754 Model: QLE8362  Chip Revision: B0
Physical Function 0
Adapter supports SR-IOV                  : Yes
SR-IOV Adapter Status                    : Enabled
SR-IOV Driver Status                     : Enabled
Number of VFs on Port 1                  : 8
Number of VFs on Port 2                  : 8
Maximum Physical Functions per Port      : 4
Maximum Virtual Functions per Port       : 64
Maximum Number of VPorts per Port 1      : 121
Maximum Number of MAC Addresses per Port 1: 256 Maximum Number of Queue Pairs
per Port 1  : 121 Successfully got SR-IOV info.
```

The following example shows SR-IOV physical function information:

```
qaucli -pr nic -sriov all pfstatus
1. Adapter Serial Number: AFE1226F05754 Model: QLE8362  Chip Revision: B0
Physical Function 0

Physical Port 1 Physical Function 0
   Number of VFs                    : 4
   Number of VFs Assigned to VMs    : 4
   Total VPs used                   : 5

Physical Port 2 Physical Function 1
   Number of VFs                    : NA
   Number of VFs Assigned to VMs    : NA
   Total VPs used                   : NA
Successfully got SR-IOV info.
```

The following example shows SR-IOV detailed virtual machine queue information:

```
qaucli -pr nic -sriov all all vmqinfo
1. Adapter Serial Number: AFE1226F05754 Model: QLE8362  Chip Revision: B0
Physical Function 0

Virtual Machine Queue for CNA Model: QLE8362   SN: AFE1226F05754     Physical
Port 0 Physical Function   0 CNA Port Instance 1

No VMQ support for this port/adapter

Virtual Machine Queue for CNA Model: QLE8362   SN: AFE1226F05754     Physical
Port 1 Physical Function   1 CNA Port Instance 2

 (  1) Virtual Queue ID:   0
   Virtual Machine State     : Unknown
   Virtual Machine Name      : WIN-OFSEVEMOR55
   Number of Filters         : 0
 (  2) Virtual Queue ID:   1
   Virtual Machine State     : Unknown
   Virtual Machine Name      : WIN-OFSEVEMOR55
   Number of Filters         : 1
 (  3) Virtual Queue ID:   2
   Virtual Machine State     : Unknown
   Virtual Machine Name      : 3
   Number of Filters         : 1
 (  4) Virtual Queue ID:   3
   Virtual Machine State     : Unknown
```

```
   Virtual Machine Name      : 3
   Number of Filters         : 1
 (  5) Virtual Queue ID:   4
   Virtual Machine State     : Unknown
   Virtual Machine Name      : 4
   Number of Filters         : 1
 (  6) Virtual Queue ID:   5
   Virtual Machine State     : Unknown
   Virtual Machine Name      : 4
   Number of Filters         : 1
```

The following examples show SR-IOV VF list and VF status output:

qaucli -pr nic -sriov all all vplist

```
1. Adapter Serial Number: AFE1226F05754 Model: QLE8362  Chip Revision: B0
Physical Function 0

Virtual Port List for CNA Model: QLE8362   SN: AFE1226F05754     Physical Port
0 Physical Function   0 CNA Port Instance 1

  (  1) VF Port ID       0 Attached Function ID: Default VPort State: Active
  (  2) VF Port ID       1 Attached Function ID:   0 State: Active
  (  3) VF Port ID       2 Attached Function ID:   1 State: Active
  (  4) VF Port ID       3 Attached Function ID:   2 State: Active
  (  5) VF Port ID       4 Attached Function ID:   3 State: Active

Virtual Port List for CNA Model: QLE8362   SN: AFE1226F05754     Physical Port
1 Physical Function   1 CNA Port Instance 2

No Virtual Ports to display
```

qaucli -pr nic -sriov all all vpstatus

```
1. Adapter Serial Number: AFE1226F05754 Model: QLE8362  Chip Revision: B0
Physical Function 0

Virtual Port List for CNA Model: QLE8362   SN: AFE1226F05754     Physical Port
0 Physical Function   0 CNA Port Instance 1

  (  1) VF Port ID       0 Attached Function ID: Default VPort State: Active

Virtual Port ID: 0
    Type Virtual Port        : Default
    Attached Function ID     : Default VPort
    Number of Queue Pairs    : 1
```

```
    State                    : Active

  (  2) VF Port ID       1 Attached Function ID:   0 State: Active

Virtual Port ID: 1
    Type Virtual Port        : Non-default
    Attached Function ID     : 0
    Number of Queue Pairs    : 1
    State                    : Active

  (  3) VF Port ID       2 Attached Function ID:   1 State: Active

Virtual Port ID: 2
    Type Virtual Port        : Non-default
    Attached Function ID     : 1
    Number of Queue Pairs    : 1
    State                    : Active

  (  4) VF Port ID       3 Attached Function ID:   2 State: Active

Virtual Port ID: 3
    Type Virtual Port        : Non-default
    Attached Function ID     : 2
    Number of Queue Pairs    : 1
    State                    : Active

  (  5) VF Port ID       4 Attached Function ID:   3 State: Active

Virtual Port ID: 4
    Type Virtual Port        : Non-default
    Attached Function ID     : 3
    Number of Queue Pairs    : 1
    State                    : Active

Virtual Port List for CNA Model: QLE8362   SN: AFE1226F05754     Physical Port
1 Physical Function   1 CNA Port Instance 2

No Virtual Ports to display
```

The following examples shows the virtual machine queue information details:

```
qaucli -pr nic -sriov all all vmqinfo
1. Adapter Serial Number: AFE1226F05754 Model: QLE8362  Chip Revision: B0
Physical Function 0
```

```
Virtual Machine Queue for CNA Model: QLE8362   SN: AFE1226F05754     Physical
Port 0 Physical Function   0 CNA Port Instance 1

No VMQ support for this port/adapter

Virtual Machine Queue for CNA Model: QLE8362   SN: AFE1226F05754     Physical
Port 1 Physical Function   1 CNA Port Instance 2

 (  1) Virtual Queue ID:   0
   Virtual Machine State     : Unknown
   Virtual Machine Name      : WIN-OFSEVEMOR55
   Number of Filters         : 0
 (  2) Virtual Queue ID:   1
   Virtual Machine State     : Unknown
   Virtual Machine Name      : WIN-OFSEVEMOR55
   Number of Filters         : 1
 (  3) Virtual Queue ID:   2
   Virtual Machine State     : Unknown
   Virtual Machine Name      : 3
   Number of Filters         : 1
 (  4) Virtual Queue ID:   3
   Virtual Machine State     : Unknown
   Virtual Machine Name      : 3
   Number of Filters         : 1
 (  5) Virtual Queue ID:   4
   Virtual Machine State     : Unknown
   Virtual Machine Name      : 4
   Number of Filters         : 1
 (  6) Virtual Queue ID:   5
   Virtual Machine State     : Unknown
   Virtual Machine Name      : 4
   Number of Filters         : 1
```

-statport (Display NIC Port Statistics)

To view the Ethernet port statistics, issue the `-statport` command as follows:

qaucli -pr nic -statport [<cna_port_inst>]

For example:

> qaucli -pr nic -statport 1

```
Port statistics for 1. CNA Port Index
```

```
txPkts                  : 12989
txOctets                : 2302620
txMulticastPkts         : 8444
txBroadcastPkts         : 4195
txUnicastPkts           : 350
txControlPkts           : 0
txPausePkts             : 0
txPkts64Octets          : 1013
txPkts65to127Octets     : 8746
txPkts128to255Octets    : 422
txPkts256to511Octets    : 2458
txPkts512to1023Octets   : 0
txPkts1024to1518Octets  : 350
txPkts1519toMaxOctets   : 0
txUndersizePkts         : 0
txOversizePkts          : 0
rxOctets                : 3051428
rxPkts                  : 18724
rxBroadcastPkts         : 5728
rxMulticastPkts         : 12646
rxUnicastPkts           : 350
rxUndersizePkts         : 0
rxOversizePkts          : 0
rxJabberPkts            : 0
rxUndersizeFCSerrorPkts : 0
rxPkts64Octets          : 417
rxPkts65to127Octets     : 9351
rxPkts128to255Octets    : 8252
rxPkts256to511Octets    : 354
rxPkts512to1023Octets   : 0
rxPkts1024to1518Octets  : 350
rxPkts1519toMaxOctets   : 0
rxControlPkts           : 0
rxPausePkts             : 0
txCBFCPauseFrames0      : 0
txCBFCPauseFrames1      : 0
txCBFCPauseFrames2      : 0
txCBFCPauseFrames3      : 0
txCBFCPauseFrames4      : 0
```

```
txCBFCPauseFrames5      : 0
txCBFCPauseFrames6      : 0
txCBFCPauseFrames7      : 0
txFCoEPkts              : 306
txMgmtPkts              : 7921
rxCBFCPauseFrames0      : 0
rxCBFCPauseFrames1      : 0
rxCBFCPauseFrames2      : 0
rxCBFCPauseFrames3      : 0
rxCBFCPauseFrames4      : 0
rxCBFCPauseFrames5      : 0
rxCBFCPauseFrames6      : 0
rxCBFCPauseFrames7      : 0
rxFCoEPkts              : 0
rxMgmtPkts              : 7912
rxPktsPriority0         : 0
rxPktsPriority1         : 0
rxPktsPriority2         : 0
rxPktsPriority3         : 306
rxPktsPriority4         : 0
rxPktsPriority5         : 0
rxPktsPriority6         : 0
rxPktsPriority7         : 0
txPktsPriority0         : 0
txPktsPriority1         : 0
txPktsPriority2         : 0
txPktsPriority3         : 306
txPktsPriority4         : 0
txPktsPriority5         : 0
txPktsPriority6         : 0
txPktsPriority7         : 4762
rxPktsDiscardPriority0  : 0
rxPktsDiscardPriority1  : 0
rxPktsDiscardPriority2  : 0
rxPktsDiscardPriority3  : 0
rxPktsDiscardPriority4  : 0
rxPktsDiscardPriority5  : 0
rxPktsDiscardPriority6  : 0
rxPktsDiscardPriority7  : 0
```

-sunreset (Undo Reset NIC Statistics)

To undo the resetting of Ethernet statistics counters, issue the `-sunreset` command as follows:

```
qaucli -pr nic -sunreset [<cna_port_inst>]
```

For example:

```
> qaucli -pr nic -sunreset 1

Port statistics undo reset for 1. CNA Port Index
```

-team_allowCNAsIn8023adTeam (LACP Override)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To allow Converged Network Adapters in 802.3 teams, issue the `-team_allowCNAsIn8023adTeam` command as follows:

```
qaucli -pr nic -team_allowCNAsIn8023adTeam on|off
```

Where `on` enables the link aggregation control protocol (LACP) override and `off` disables the LACP override. For example:

```
> qaucli -pr nic -team_allowCNAsIn8023adTeam on
...
Successfully configured the Team Settings...

> qaucli -pr nic -team_allowCNAsIn8023adTeam off
...
Successfully configured the Team Settings...
```

-teamdel (Delete Team)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To delete a team, issue the `-teamdel` command as follows:

```
qaucli -pr nic -teamdel <team_inst>|ALL
```

For example:

```
> qaucli -pr nic -teamdel 3

About to delete team: 1 (QLogic VT-IM Miniport Driver #2). Please
wait ...
Successfully deleted team: 1 ()
```

-teaminfo (Display Team Information)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To view information about a team, issue the `-teaminfo` command as follows:

qaucli -pr nic -teaminfo <team_inst>|ALL

For example:

```
> qaucli -pr nic -teaminfo ALL

***** Team: QLogic VT-IM Miniport Driver #2 ******

Team Description: QLogic VT-IM Miniport Driver #2
Team Type       : Fail Over
Driver Name     : qlvtid.sys
Driver Version  : 1.0.0.2
Driver Date     : 05/26/2009
VLAN Enabled    : Disabled
VLAN ID         : None
MAC Address     : 00:c0:dd:0a:b1:a9
MTU             : 1500
IPv4 Address    : 169.254.27.115
Subnet Mask     : 255.255.0.0
IPv6 Address    : fe80::2c0:ddff:fe0a:b1a9
Link Status     : Unknown
```

-teamlist (Display Teams List)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To view a list of all previously configured teams (if any), issue the `-teamlist` command as follows:

qaucli -pr nic -teamlist

For example:

```
> qaucli -pr nic -teamlist

Using config file: .\netscli.cfg
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Team:  1 Team Description: QLogic VT-IM Miniport Driver #2 VLAN ID: None
Team Type: Fail Over
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:c0:dd:0a:b1:a8 Description: QLogic 10Gb PCI
Ethernet Adapter
CNA: 1 CNA Port: 2  MAC: 00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI
Ethernet Adapter #2
```

-teamnew (Configure New Team)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To configure a new team, issue the `-teamnew` command as follows:

qaucli -pr nic -teamnew <team_type> <port_insts>|ALL [<user_assigned_name>]

Where `<team_type>` specifies a numeric team type value, `<port_insts>` specifies a list of comma-separated port indices (such as `1,2`), and `<user_assigned_name>` is an optional user-specified team name.

The `team_type` variable can have the following values:

`1` = Fail-safe team

`2` = Switch independent load balancing

`3` = 802.3ad static team

`4` = 802.3ad dynamic team—active link aggregation control protocol (LACP)

`5` = 802.3ad dynamic team—passive LACP

For example:

```
> qaucli -pr nic -teamnew 1 ALL

User selected CNA Port Indices: ALL

Attempting to create new team:

Team Description:
Team Type: Fail Over
Selected ports : 1, 2

CNA: 1 CNA Port: 1  MAC: 00:c0:dd:0a:b1:a8 Description: QLogic 10Gb PCI
Ethernet Adapter - Network Load Balancing Filter Device
    QLogic 10Gb PCI Ethernet Adapter - Network Load Balancing Filter Device
CNA: 1 CNA Port: 2  MAC: 00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI
Ethernet Adapter #2 - Network Load Balancing Filter Device
    QLogic 10Gb PCI Ethernet Adapter #2 - Network Load Balancing Filter Device

About to create the team. Please wait ...
Successfully created team with interface description: QLogic VT-IM Miniport
Driver #2
```

-teamnew_portspreview

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

To preview ports before you configure a new team, issue the `-teamnew_portspreview` command as follows:

```
qaucli -pr nic -teamnew_portspreview
```

For example:

```
> qaucli -pr nic -teamnew_portspreview
1. CNA: 1 CNA Port: 1 CNA Model: QLE8142 PortID: 0
    Mac Phys. Address: 00:c0:dd:12:0f:f4 Loc. Mac: 00:c0:dd:12:0f:f4
    CNA Serial Number: AFC0916A07152 MPI FW Version: 1.35.02 Adapter Alias: None
    Port Alias: None
    IPv4   Address: 192.168.204.201
    IPv6 Addresses: fe80::2c0:ddff:fe12:ff4
 2. CNA: 1 CNA Port: 2 CNA Model: QLE8142 PortID: 1
    Mac Phys. Address: 00:c0:dd:12:0f:f6 Loc. Mac: 00:c0:dd:12:0f:f6
    CNA Serial Number: AFC0916A07152 MPI FW Version: 1.35.02 Adapter Alias: None
    Port Alias: None
    IPv4   Address: 192.168.205.200
    IPv6 Addresses: fe80::2c0:ddff:fe12:ff6
```

-testflash

To test the Flash memory, issue the `-testflash` command as follows:

qaucli -pr nic -testflash [<cna_port_inst>**]**

NOTE

To stop an active diagnostic test, press ENTER. To use an alternate key to stop tests, modify this line in the `sfcli.properties` configuration file:

Default: `node.app.diag.ascii.abortkey=CR`

Custom: `node.app.diag.ascii.abortkey=<stop key>`

Where `<stop key>` is a–z or A–Z (press SHIFT for uppercase)

Example 1: To set the stop key to **S** (press SHIFT+S to stop the test):

`node.app.diag.ascii.abortkey=S`

Example 2: To set the stop key to **s** (press S to stop the test):

`node.app.diag.ascii.abortkey=s`

-testhw (Hardware Test)

To test the hardware, issue the `-testhw` command as follows:

qaucli -pr nic -testhw [<cna_port_inst>**]**

-testinterrupt (Interrupt Test)

To test the interrupt, issue the `-testinterrupt` command as follows:

qaucli -pr nic -testinterrupt [<`cna_port_inst`**>]**

-testled (Beacon/LED Test)

To test the LED, issue the `-testled` command as follows:

qaucli -pr nic -testled [<`cna_port_inst`**>]**

-testlink (Link Test)

To test the link, issue the `-testlink` command as follows:

qaucli -pr nic -testlink [<`cna_port_inst`**>]**

-testregister (Register Test)

To test the register, issue the `-testregister` command as follows:

qaucli -pr nic -testregister [<`cna_port_inst`**>]**

-trans (Transceiver Monitoring Interface [DMI])

To display transceiver diagnostics monitoring interface (DMI) data, issue the `-trans` command as follows:

qaucli -pr nic -trans [<cna_port_inst>]

-updimages (Flash Update)

To update the Flash (boot and firmware) images, issue the `-updimages` command as follows:

qaucli -pr nic -updimages [<cna_port_inst>] <image_file>

For example:

```
> qaucli -pr nic -updimages 1 "c:\my dir\valid-image-file"
netscli -updimages c:\temp\temp1
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
=== Updating images for 1. CNA Port Index ===
Loading, please wait ...
Successfully updated Flash (Boot & Firmware images) for 1. Port
Index from file: c:\temp\temp1
```

```
=== Updating images for 2. CNA Port Index ===
Loading, please wait ...
Successfully updated Flash (Boot & Firmware images) for 2. Port
Index from file: c:\temp\temp1
```

-updimages_viewver

To view the Flash version, issue the `-updimages_viewver` command as follows:

```
qaucli -pr nic -updimages_viewver <image_file>
```

-v, -ver (Display Program Version Information)

To view the version number of QConvergeConsole CLI, issue the `-v` or `-ver` command as follows:

```
qaucli -pr nic -v
qaucli -pr nic -ver
```

For example:

```
> qaucli -pr nic -ver

Using config file: G:\Program Files\QLogicCorporation\
QConvergeConsoleCLI\qaucli.cfg
Installation directory: G:\Program Files\QLogic Corporation\
QConvergeConsoleCLI
Working dir: G:\Documents and Settings\user1
Using config file: G:\Program Files\QLogic Corporation\
QConvergeConsoleCLI\netscli.cfg
SANsurfer CNA Networking CLI
ncli version : 1.0.00.59
netSDMAPI : 01.01.05
Copyright 1999-2015 QLogic Corp.
```

-vlanadd (Add VLAN to Port or Team)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To add a VLAN to a port or team, issue the `-vlanadd` command as follows:

```
qaucli -pr nic -vlanadd <port_insts> <vlan_id>
```

Where `<port_insts>` specifies a list of comma-separated port indices (for example, `1,2`) and `<vlan_id>` specifies a numeric value 1–4095.

For example:

```
> qaucli -pr nic -vlanadd 2 120
Using config file: .\netscli.cfg
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC:
00:c0:dd:0a:b1:a8 Description: QLogic 10Gb PCI Ethernet Adapter -
Network Load Balancing Filter Device
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC:
00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI Ethernet Adapter #2
- Network Load Balancing Filter Device

User entered ListIndices: 2
User entered VLAN ID: 120
About to set VLAN ID: 120 for ListIndex: 2
Successfully set.
```

-vlanadd_preview

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To preview the VLAN, port, and team information before you add a VLAN to a port or team, issue the `-vlanadd_preview` command as follows:

```
qaucli -pr nic -vlanadd_preview
```

For example:

```
> qaucli -pr nic -vlanadd_preview

VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC:
00:c0:dd:0a:b1:a8 Description: QLogic 10Gb PCI Ethernet Adapter -
Network Load Balancing Filter Device
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC:
00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI Ethernet Adapter #2
- Network Load Balancing Filter Device
```

-vlandel (Remove VLAN from Port or Team)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To remove all VLANs from a port or team, issue the `-vlandel` command as follows:

`qaucli -pr nic -vlandel <port_insts>|ALL <vlan_id>|ALL`

Where `<port_insts>` specifies the port's indices, comma separated (for example, `1,2`) and `<vlan_id>` specifies a numeric value 1–4095.

For example:

```
> qaucli -pr nic -vlandel ALL ALL

VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  2  VLAN ID:   120 MAC:
00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI Ethernet Adapter #2

User entered ListIndices: ALL
User entered VLAN ID: ALL
About to remove VLAN ID(s) for ListIndex: 1. (QLogic 10Gb PCI
Ethernet Adapter #2) Please wait ...
Successfully removed VLAN ID.
```

-vlandel_preview

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To preview the virtual LAN, port, and team information before you delete a VLAN from a port or team, issue the `-vlandel_preview` command as follows:

`qaucli -pr nic -vlandel_preview`

For example:

```
> qaucli -pr nic -vlandel_preview

VLAN List:
```

```
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:   453 MAC:
00:c0:dd:12:0f:f4 Description: QLogic 10Gb PCI Ethernet Adapter
```

-vlaninfo (Display VLAN Information)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To view information about the VLAN, issue the `-vlaninfo` command as follows:

qaucli -pr nic -vlaninfo <vlan_inst>|ALL

For example:

```
> qaucli -pr nic -vlaninfo 1

VLAN(s) Information:
Updating VLANs info ...
Done ...
No VLANs to display.
```

-vlanlist (Display VLAN List)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To view the adapters, ports, teams, VLAN IDs, and descriptions, issue the `-vlanlist` command as follows:

qaucli -pr nic -vlanlist

For example:

```
> qaucli -pr nic -vlanlist

VLAN List:
CNA:  1 CNA Port:  2  VLAN ID:   120 MAC: 00:c0:dd:0a:b1:a9
Description: QLogic VT-IM Miniport Driver #2
```

-vpd (CNA VPD Information)

To display vital product data (VPD) information, issue the `-vpd` command as follows:

qaucli -pr nic -vpd [<cna_port_inst>]

-vtcfgview

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To view the contents of the previously saved VLAN and teaming configuration settings file (see -vtsave (Save VLAN & Teaming Configuration)), issue the `-vtcfgview` command as follows:

qaucli -pr nic -vtcfgview [<state_cfg_file>]

NOTE

If you do not specify a file name, QConvergeConsole CLI reads the default file (`vtstate.cfg`) in the installation directory.

For example:

```
> qaucli -pr nic -vtcfgview c:/system_1.cfg
Using config file: E:\Program Files\QLogic\Corporation\QConvergeConsoleCLI\
netscli.cfg
Accessing file: c:/system_1.cfg

Number of Teams: 1
----------------
type=Fail Over MAC: 00:c0:dd:0a:b4:61 00:c0:dd:0a:b4:60 (VLAN IDs: 555)

Number of Ports: 3
----------------
MAC :00:c0:dd:0a:b4:34 (VLAN IDs: 35)
MAC :00:c0:dd:0a:b4:35 (VLAN IDs: 777)
MAC :None (VLAN IDs:)

Number of VLANS: 3
----------------
.........................
VLAN ID             : 35
```

```
.........................
IPv4Address         : 169.254.132.7
IPv4SubnetMask      : 0.0.0.0
IPv4GatewayAddr     : 0.0.0.0
DHCPServerCount     : 0
IPv6GatewayAddr     :
IPv6AddressCount    : 1
pDHCPServers[    0] : fe80::e9ba:1d3e:8584:8407
DNSServerCount      : 3
pDNSServers[    0]  : fec0:0:0:ffff::1
pDNSServers[    1]  : fec0:0:0:ffff::2
pDNSServers[    2]  : fec0:0:0:ffff::3
.........................
VLAN ID             : 777
.........................
IPv4Address         : 169.254.202.39
IPv4SubnetMask      : 0.0.0.0
IPv4GatewayAddr     : 0.0.0.0
DHCPServerCount     : 0
IPv6GatewayAddr     :
IPv6AddressCount    : 1
pDHCPServers[    0] : fe80::d079:f594:8e03:ca27
DNSServerCount      : 3
pDNSServers[    0]  : fec0:0:0:ffff::1
pDNSServers[    1]  : fec0:0:0:ffff::2
pDNSServers[    2]  : fec0:0:0:ffff::3
.........................
VLAN ID             : 555
.........................
IPv4Address         :
IPv4SubnetMask      :
IPv4GatewayAddr     :
DHCPServerCount     : 0
IPv6GatewayAddr     :
IPv6AddressCount    : 0
DNSServerCount      : 0
```

-vtrestore (Restore VLAN & Teaming Configuration)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To reinstate previously saved VLAN and team settings from a file, issue the `-vtrestore` command as follows:

```
qaucli -pr nic -vtrestore [<file_name>]
```

The default configuration file name for VLAN and teaming is `vtstate.cfg`, which is saved in the QConvergeConsole CLI installation directory. You may have saved your configuration with a different file name or location.

NOTE

The `-vtrestore` command can restore a configuration file produced only by the `-vtsave` command. Similarly, a configuration that is saved using the QLogic Windows Teaming property pages can be restored only with the Windows Teaming property pages.

For example:

```
> qaucli -pr nic -vtrestore c:/system_1.cfg
Using config file: E:\Program Files\QLogic Corporation\QConvergeConsoleCLI\
netscli.cfg
Loading CNA Data ...
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Loading: 2. CNA ...
Loading: 2. CNA Port index : 1 ...
Loading: 2. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Attempting to restore TEAMs and VLANs if configured prior to vtdriver updaate.
 *** Teams:
 *** Ports:
00:c0:dd:0a:b4:34
VLAN IDs:
55

00:c0:dd:0a:b4:35
```

```
VLAN IDs:
55

Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:60
Description: QLogic 10Gb PCI Ethernet Adapter #3
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:61
Description: QLogic 10Gb PCI Ethernet Adapter #4
ListIndex:  3 CNA:  2 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:34
Description: QLogic 10Gb PCI Ethernet Adapter
ListIndex:  4 CNA:  2 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:35
Description: QLogic 10Gb PCI Ethernet Adapter #2

VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:60
Description: QLogic 10Gb PCI Ethernet Adapter #3
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:61
Description: QLogic 10Gb PCI Ethernet Adapter #4
ListIndex:  3 CNA:  2 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:34
Description: QLogic 10Gb PCI Ethernet Adapter
ListIndex:  4 CNA:  2 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:35
Description: QLogic 10Gb PCI Ethernet Adapter #2

Selected ListIndices: 3
Selected VLAN ID: 55
About to set VLAN ID: 55 for ListIndex: 3
Successfully set VLAN ID.
Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:60
Description: QLogic 10Gb PCI Ethernet Adapter #3
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:61
Description: QLogic 10Gb PCI Ethernet Adapter #4
ListIndex:  3 CNA:  2 CNA Port:  1  VLAN ID:    55 MAC: 00:c0:dd:0a:b4:34
Description: QLogic 10Gb PCI Ethernet Adapter
ListIndex:  4 CNA:  2 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:35
Description: QLogic 10Gb PCI Ethernet Adapter #2

VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:60
Description: QLogic 10Gb PCI Ethernet Adapter #3
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:61
Description: QLogic 10Gb PCI Ethernet Adapter #4
```

```
ListIndex:  3 CNA:  2 CNA Port:  1  VLAN ID:    55 MAC: 00:c0:dd:0a:b4:34
Description: QLogic 10Gb PCI Ethernet Adapter
ListIndex:  4 CNA:  2 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:35
Description: QLogic 10Gb PCI Ethernet Adapter #2

Selected ListIndices: 4
Selected VLAN ID: 55
About to set VLAN ID: 55 for ListIndex: 4
Successfully set VLAN ID.
Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
Successfully restored TEAMs/VLANs
```

-vtsave (Save VLAN & Teaming Configuration)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

To save the currently configured VLAN and team settings to a file, issue the `-vtsave` command as follows:

```
qaucli -pr nic -vtsave [<file_name>]
```

NOTE

- If you do not specify a configuration file name, the VLAN and teaming settings are saved in the default file, `vtstate.cfg`, which is saved in the QConvergeConsole CLI installation directory. Saved settings can be later reinstated using the `-vtrestore` option.
- A configuration that is saved with the `-vtsave` command can be restored only with the `-vtrestore` command. Similarly, a configuration that is saved using the QLogic Windows Teaming property pages can be restored only with the Windows Teaming property pages.

```
> qaucli -pr nic -vtsave c:/system_1.cfg
Using config file: E:\Program Files\QLogic Corporation\QConvergeConsoleCLI\
netscli.cfg
Loading CNA Data ...
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Loading: 2. CNA ...
```

```
Loading: 2. CNA Port index : 1 ...
Loading: 2. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Attempting to save TEAMs and VLANs Configuration.

Team:  1 Team Description: QLogic VT-IM Miniport Driver VLAN ID: 555 Team Type:
Fail Over
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:c0:dd:0a:b4:60 Description: QLogic 10Gb PCI
Ethernet Adapter #3
CNA: 1 CNA Port: 2  MAC: 00:c0:dd:0a:b4:61 Description: QLogic 10Gb PCI
Ethernet Adapter #4

VLAN List:

ListIndex:  1 Team:  1 Team Description: QLogic VT-IM Miniport Driver  VLAN ID:
555 MAC: 00:c0:dd:0a:b4:60 Description: QLogic VT-IM Miniport Driver
VLAN List:

Team:  1 Team Description: QLogic VT-IM Miniport Driver  VLAN ID:   555 MAC:
00:c0:dd:0a:b4:60 Description: QLogic VT-IM Miniport Driver #2
Successfully saved TEAMs/VLANs
```

-zvt (Display Teams List; Display VLAN List; Display VLAN Information)

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

To view a display that combines all VLAN and teaming information, issue the `-zvt` command as follows:

```
qaucli -pr nic -zvt
```

The following example shows the output on a system with one team of two ports, plus two additional ports:

```
> qaucli -pr nic -zvt
```

```
*****************************************
*****************************************
*** Displaying VLAN & Teaming Information ***
*****************************************
*****************************************
```

```
***  Display Of Teams List ***

Team:  1 Team Description: QLogic VT-IM Miniport Driver VLAN ID: 555 Team Type:
Fail Over
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:c0:dd:0a:b4:60 Description: QLogic 10Gb PCI
Ethernet Adapter #3
CNA: 1 CNA Port: 2  MAC: 00:c0:dd:0a:b4:61 Description: QLogic 10Gb PCI
Ethernet Adapter #4

***  Display Of VLANs List ***
VLAN List:

Team:  1 Team Description: QLogic VT-IM Miniport Driver  VLAN ID:   555 MAC:
00:c0:dd:0a:b4:60 Description: QLogic VT-IM Miniport Driver #2
***  Display Of VLAN Information ***

VLAN(s) Information:
Updating VLANs info ...
Done ...
Available VLAN ID(s):
555

***** VLAN: 555 (QLogic VT-IM Miniport Driver #2) ******

Driver Name     : qlvtid.sys
Driver Version  : 1.0.0.14
Driver Date     : 10/13/2009
VLAN Enabled    : Enabled
VLAN ID         : 555
MAC Address     : 00:c0:dd:0a:b4:60
MTU             : 1514
IPv4 Address    :
Subnet Mask     :
IPv6 Address    :
Link Status     : Down
```

6 Fibre Channel Noninteractive Commands

This chapter describes the noninteractive Fibre Channel command format and parameters of QConvergeConsole CLI. For a quick reference to informative commands, see Displaying System Information (Command Line Options -g, -z) on this page.

NOTE

To view help, issue the `-h` command.

Displaying System Information
(Command Line Options -g, -z)

When you select one of these options, general information appears in various formats. For example:

- **`qaucli -pr fc -g`** shows the host information (see "Host Information (Command Line Option -g)" on page 74).
- **`qaucli -pr fc -z`** shows the host configuration (see "Host Configuration (Command Line Option -z)" on page 75

Host Information
(Command Line Option -g)

The command format to show host information is:

```
qaucli -pr fc -g
```

Issue the `-g` command to view the following information about the local machine:

- Host name
- OS type
- OS version (patches where applicable)
- SAN device management (SDM) API version

- List of adapters: adapter model, port number, worldwide port name (WWPN), serial number (SN), adapter number (adapter 0–*n*), and status (online or offline). Depending on the model, adapter information may also include the instance number, link status (up or down), diagnostic mode (D_Port), and SFP detection (installed or not).
- Total number of QLogic Fibre Channel Adapters detected

NOTE

The failover and SAN device management APIs are QLogic-specific libraries required for QConvergeConsole CLI. The versions of these libraries are useful for debugging purposes.

Host Configuration
(Command Line Option -z)

The command line option `-z` provides a summary for the selected adapter in a single command. The command format is:

```
qaucli -pr fc -z
```

QConvergeConsole CLI shows the information in "Host Information (Command Line Option -g)" on page 74, as well as the following additional information:

- Adapter general information
- Adapter vital product data (VPD)
- Adapter parameter settings
- Driver settings information:
  - Group: persistent
  - Group: binding
- Device and LUN information
- Selective LUNs information
  - Boot device settings

To show the information for a single adapter, issue the following command:

```
qaucli -pr fc -z  <hba instance>|<hba wwpn>
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name of the adapter

To show the information for all adapters, issue the following command:

```
qaucli -pr fc -z all
```

Host Port Configuration

Use these options to show the information for one or all of the adapter ports in the system. The `-z` option shows the combination of the commands listed in Table 6-1. The commands are listed in alphabetical order.

Table 6-1. Options Shown by -z

CLI	Description	See User 's Guide Section
`-c`	Show adapter settings	"-c (Display HBA Parameters)" on page 83
`-e`	Configure boot device	"-e (Boot Devices Configuration)" on page 87
`-fg`	View driver settings	"-fg" on page 95
`-gs`	Show adapter statistics	"-gs (Configure Parameters [Monitoring])" on page 97
`-i`	Show adapter information	"-i (FC Adapter Information; FC VPD Information; FC VFC Information)" on page 100
`-l`	Show LUN list	"-l (FC Target/LUN Information)" on page 109
`-m`	Configure selective LUNs	"-m (Selective LUNs)" on page 111
`-p`	Configure target persistent binding	"-p (Target Persistent Bindings)" on page 117
`-t`	Show target list	"-t (FC Target/LUN Information)" on page 126

Command Format

The command format for noninteractive mode is:

`qaucli -pr fc -<command> <hba instance>|<hba wwpn> view|info`

Where:

`<command>` = One of the commands listed in "Command Summary" on page 78

`<hba instance>` = Adapter port instance (use the `-g` command to find)

`<hba wwpn>` = Adapter world wide port name

You *cannot* combine the `-f`, `-o`, and `-s` commands with any other options:

- `-f` = Input parameter options from a text file (see "-f" on page 91). For example:

  `qaucli -pr fc -f command.txt`

- `-o` = Output the results to a file (see "-o" on page 116). For example:

  `qaucli -pr fc -l all -o output.txt`

- `-s` = Silent mode (see "-s" on page 125). For example:

  `qaucli -pr fc -i all -s`

You can combine the `-x` command with other options. However, it *must* be at the beginning or at the end of the command line. Use the command as follows:

- `-x` = Outputs the results in XML format (see "-x" on page 129). For example:

  `qaucli -pr fc -i all -x -o output.xml`

In addition, the following general rules for commands apply:

- Only *one* command line option per input file is valid.
- You can use either the hyphen (`-`) character or the forward slash (`/`) character. For example, both of these commands are valid:

  `qaucli -pr fc -g`
  `qaucli -pr fc /g`

Table 6-2 defines the command variables.

Table 6-2. Command Variables

Variable	Definition	Format
`<hba instance>`	Adapter number[a]	—
`<hba wwpn>`	Adapter world wide port name	*xx-xx-xx-xx-xx-xx-xx-xx* or *xxxxxxxxxxxxxx*
`<alias>`	Adapter alias	Symbolic adapter[b] name
`<target wwnn>`	Target world wide node name	*xx-xx-xx-xx-xx-xx-xx-xx* or *xxxxxxxxxxxxxx*
`<target wwpn>`	Target world wide port name	*xx-xx-xx-xx-xx-xx-xx-xx* or *xxxxxxxxxxxxxx*
`<target port id>`	Target port ID	*xx-xx-xx* or *xxxxxx*
`<target id>`	Target ID	—
`<lun id>`	Logical unit number	(0–255)
`<address>`	IP address	*xxx.xxx.xxx.xxx*
`<iidma speed>`	Target link speed	1.2, 4, or 8GHz

[a] You can use the `-g` command to find adapter numbers.

[b] You assign the symbolic name. It is limited to 100 characters in length.

Command Summary

This section lists and describes all Fibre Channel noninteractive commands in alphabetical order.

NOTE

A parenthetical phrase after a command indicates the equivalent *interactive* menu option. For example, **-c** (**Display HBA Parameters)** indicates that the `-c` command has an equivalent **Display HBA Parameters** menu option described in Chapter 10 Fibre Channel Interactive Commands.

Not all noninteractive commands have equivalent interactive menu options.

The Fibre Channel noninteractive commands include the following:

- -a
- -b (Flash Update; Save Flash)
- -bbcr (BB Credit Recovery)
- -c (Display HBA Parameters)
- -cna (CNA FCoE Information)
- -ctp (CT Ping Test)
- -d (Driver Update)
- -dm (Transceiver Diagnostics Monitoring Interface [DMI])
- -e (Boot Devices Configuration)
- -ei
- -f
- -fcp (Ping Test)
- -fec (FEC Enable/Disable)
- -ftr (CT FTR Test)
- -fg
- -fs (Driver Parameters)
- -fwdump (Firmware Dump)
- -g
- -gs (Configure Parameters [Monitoring])
- -h (Help)
- -ha (Adapter Alias [FCoE Configuration])
- -i (FC Adapter Information; FC VPD Information; FC VFC Information)
- -kl (Loopback Test)
- -kr (Read Write Buffer Test)
- -l (FC Target/LUN Information)
- -ls (Display Parameters [HBA Statistics]; Link Status)
- -m (Selective LUNs)
- -mbiv
- -n (Configure HBA Parameters)
- -o

- -p (Target Persistent Bindings)
- -pa (Adapter Port Alias [FCoE Configuration])
- -pc (Adapter Personality Change)
- -pl (Persistent Names (udev) – Linux only)
- -qos (Quality of Service [QoS])
- -r (Parameters Update; Save HBA Parameters)
- -s
- -sp (FC Board Config Update)
- -t (FC Target/LUN Information)
- -tb
- -tp
- -trace (FCE Trace)
- -u
- -v
- -vp (Virtual Ports [NPIV])
- -x
- -x2
- -z (All Information)

-a

Use the `-a` command to view or change the state (`ON` or `OFF`) of an LED beacon.

NOTE

- The adapter must not be in silent mode. See "-s" on page 125 to issue a response to this command.
- Due to a hardware and firmware limitation, the `-a` option is not supported on QLogic 8200 Series Adapters.

To view the adapter port's LED beacon state, issue the following command:

```
qaucli -pr fc -a  <hba instance>|<hba wwpn>  view|info
```

The following message appears:

```
HBA Port x - LED Flashing is <state>.
```

Where `<state>` is `ON` if the LED is flashing, or `OFF` if the LED is not flashing.

In Solaris SPARC, include double quotes around the question mark (`?`) if the system is running with a *csh* or *tcsh* shell. For example:

```
qaucli -pr fc -a <hba> "?"
```

To cause an adapter's LED beacon to start or stop flashing, issue the following command:

qaucli -pr fc -a <hba instance>|<hba wwpn>

QConvergeConsole CLI toggles the LED's state. If the LED is flashing, the flashing stops. If the LED is not flashing, the flashing begins.

If QConvergeConsole CLI is not in silent mode (see "-s" on page 125), one of the following messages appears to indicate the LED's current state:

```
The LED Flashing for <hba instance> <hba wwpn> has been turned ON
The LED Flashing for <hba instance> <hba wwpn> has been turned OFF
```

-b (Flash Update; Save Flash)

Use the `-b` command to:

- Update the BIOS or FCode from a file.
- Save the BIOS or FCode to a file.

To update the Flash of one or all adapters with new BIOS or FCode, issue the following command:

qaucli -b <all>|<hba instance>|<hba wwpn> [-rg <all>] <image file> [<model type>] [--ports]

Where:

`all` = All adapters of the same type in the system are updated with the new BIOS or FCode

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name

`-rg` = Flash region update mode (4Gb adapters only[a])

`all` = Update all regions (BIOS, FCode, or extensible firmware interface (EFI) depending on the Flash image

`<image file>` = Name or path of file containing update BIOS or FCode[b]

`<model type>` = Optional. Update only adapters that match the specified adapter family type:

- `--24xx` 24*xx* Fibre Channel adapter model type
- `--25xx` 25*xx* Fibre Channel adapter model type
- `--80xx` 81*xx* Converged Network Adapter model type
- `--82xx` 82*xx* Converged Network Adapter model type
- `--26xx` 26*xx* Fibre Channel adapter model type
- `--83xx` 83*xx* Converged Network Adapter model type
- `--268x` 268*x* Fibre Channel adapter model type
- `--27xx` 27*xx* Fibre Channel adapter model type

`--ports` = Optional. Repeat Flash update to all other ports.

[a] Region update only supported on QLA/QLE/QMC246*x* adapters.

[b] The path and file name must *not* contain embedded spaces.

To update a single Host Bus Adapter or all Host Bus Adapters using a Flash update configuration template file:

`qaucli -b <all>|<hba instance>|<hba wwpn> <-op> <update mode> -src <template file>] [--ports]`

Where:

`all` = All adapters of the same type in the system are updated with the new BIOS or FCode

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name

`-op` = Flash update mode type when using a template configuration file.

`<update mode>` = Mode of update:

- `0` Force an update to boot code or firmware across multiple Host Bus Adapters (Override mode).
- `1` Force an update to boot code/firmware across multiple Host Bus Adapters that are currently at or below a known revision. Adapters that are currently up revision are ignored.
- `2` Force a downgrade to boot code or firmware across multiple Host Bus Adapters that are currently up a revision. Force to update boot code/firmware across multiple adapters that are currently down a revision. Adapters that are currently at revision are ignored.

`-src` = Specifies a different template file than the default file.

`<template file>` = User-defined configuration template file name. See the sample template file included for complete file syntax and format. If the `<-src>` option is omitted, the QConvergeConsole CLI tries to use the default template file, `flashcfg.properties`.

`--ports` Optional. Repeat Flash update to all other ports.

To save the BIOS or FCode to a file, issue the following command:

```
qaucli -pr fc -b  <hba instance>|<hba wwpn>  SAVE
<BIOS/FCode file name>
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name of the adapter

`<BIOS/FCode file name>` = File name or a path to a file in which to save the BIOS or FCode[a]

[a] The path and file name must *not* contain embedded spaces.

NOTE

- The QLE8242 does not support the option to save the FCode to a file.

On Solaris only:

- Reset is disabled if the system detects storage SR-IOV or VFs.
- The Flash update does not take effect until the system is restarted.

-bbcr (BB Credit Recovery)

Buffer-to-buffer credit recovery (BB-CR) enables two FC peer ports (N_Port, F_Port, or E_Port) to periodically send and receive the quantity of receiver ready (R_RDY) signals transmitted. The BB-CR feature allows the peer port to recover from possible R_RDY signals lost over a lossy link. BB-CR enables two FC ports logged in with each other to recover lost buffer-to-buffer credits. These lost credits can impact throughput, cause link resets, and disrupt traffic flow.

To display current BB credit status of a specific HBA port, issue the following command:

```
qaucli -bbcr <hba instance>|<hba wwpn>|<all> --info
```

To enable a BB credit of `5` to a specific HBA port of the HBA, issue the following command:

```
qaucli -bbcr <hba instance>|<hba wwpn>|<all> --enable 5
```

To disable the BB credit option on a specific HBA port of the HBA, issue the following command:

qaucli -bbcr <hba instance>|<hba wwpn>|<all> --disable 0

To display BB credit statistics on a specific HBA port of the HBA, issue the following command:

qaucli -bbcr <hba instance>|<hba wwpn>|<all> --stats

(To stop running BB credit statistics, press the ENTER key.)

Where:

- <hba instance> = Adapter number (use the -g command to find)
- <hba wwpn> = World wide port name of the adapter
- <all> = All discovered adapters.
- <option> One of the following options:
  - --info
  - --enable
  - --disable
    Disables BB credit on a specific HBA port or all ports
  - --stats
    Displays BB credit statistics on a specific HBA port of an HBA
- <bbcr_val> Quantity of credits (0–15)

-c (Display HBA Parameters)

To show the parameter settings for all adapters in the system, issue the -c command as follows:

qaucli -pr fc -c [all]

To show the parameter settings for a specific adapter, issue the command as follows:

qaucli -pr fc -c <hba instance>|<hba wwpn>

Where:

- <hba instance> = Adapter number (use the -g command to find)
- <hba wwpn> = World wide port name of the adapter

-cna (CNA FCoE Information)

Use the -cna command to work with QLogic Converged Network Adapters (8100 and 8200 Series adapters only).

The `-cna` command line options use the following variables:

`<hba instance>` = Adapter instance number of a Converged Network Adapter port
`<hba wwpn>` = World wide port name of a Converged Network Adapter port
`<mpi file>` = MPI configuration DAT file
`--detail` = View detailed format
`--raw` = View raw format
`<param name>` = Parameter name
`<param alias>` = Parameter alias
`<param value>` = Parameter value

To view general information for the Converged Network Adapter, issue the following command:

`qaucli -cna <hba instance>|<hba wwpn> --geninfo`

To view data center bridging exchange protocol (DCBX) settings, issue the following command:

`qaucli -cna <hba instance>|<hba wwpn> --dcb --info`

To update the message passing interface (MPI) configuration table on an 8100 Series Converged Network Adapter from a file, issue the following command:

`qaucli -cna <hba instance>|<hba wwpn>|all --updatecfg <mpi file>`

To save the MPI configuration table on an 8100 Series Converged Network Adapter to a file, issue the following command:

`qaucli -cna <hba instance>|<hba wwpn> --savecfg <mpi file>`

To view DCBX type-length-value (TLV) data sent and received over the Converged Network Adapter port connection, issue the following command:

`qaucli -cna <hba instance>|<hba wwpn> --tlv --detail|--raw`

The output displays the TLV of the link layer discovery protocol (LLDP) frames meant for exchanging the parameters and their values.

To view data center Ethernet (Cisco® data communications equipment, DCE™) network activity information sent and received over the Converged Network Adapter port connection, issue the following command:

`qaucli -cna <hba instance>|<hba wwpn> --mon --dce`
`[ <param name>|<param alias> <param value> ]`

Table 6-3 lists the DCE statistics parameters, possible values, and a description of each.

Table 6-3. DCE Statistics Parameters

Parameter Name	Parameter Alias	Parameter Value	Description
AutoPoll	AP	0 1–256	Set to auto polling mode Set to manual polling mode (iteration)
SetRate	SR	5–30	Set the polling interval rate (seconds)
Details	DT	0–2	Set the detailed display mode: ■ 0 = Absolute ■ 1 = Rate per second ■ 2 = Baseline

-ctp (CT Ping Test)

NOTE

The `-ctp` command is supported on a Brocade® switch with Fabric OS version 7.1.1 and later.

Use the `-ctp` command to issue a common transport (CT) ping command to one or all discovered targets.

To run a CT ping test using the default parameters, issue the following command:

```
qaucli -ctp <hba instance>|<hba wwpn>
```

To run a CT ping test with custom parameters, issue the following command:

```
qaucli -ctp  <hba instance>|<hba wwpn>|[-ex -exclude
<target wwpn>][<param name>|<param alias>) <param value>]
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name of the adapter

`<target wwpn>` = World wide port name of the target

`<param name>` = One of the following parameter names:

- TestCount
- TestIncrement
- OnError

`<param alias>` = One of the following parameter aliases:

- TC
- TI
- OE

`<param value>` = Value of parameter or alias (see Table 6-4)

Table 6-4. Ping Diagnostics Parameters

Parameter Name	Parameter Alias	Parameter Values	Description
TestCount	TC	0–10,000	0 specifies that the `-fcp` command (see -fcp (Ping Test) continues until the user interrupts it. 1 to 10,000 specifies that the `-fcp` command (see -fcp (Ping Test) stops after sending count pings.
TestIncrement	TI	1–10,000	Specifies the quantity of the test increment, which must be less than the quantity of the test count.
OnError	OE	0–2 = Ignore on error 1 = Stop on error 2 = Loop on error	Specifies how errors are handled during any specific pass: ■ **Ignore on error** indicates that errors are ignored and the test sequence continues ■ **Stop on error** indicates that the test sequence halts when an error is encountered ■ **Loop on error** indicates that the test uses the same data pattern and test when errors are encountered

-d (Driver Update)

Issue the `-d` command to update the driver for Windows. For example:

```
qaucli -pr fc -d <driver file>
```

Where `<driver file>` is either a `.zip`, `.exe`, or `<oemdriver>.inf` file.

-dm (Transceiver Diagnostics Monitoring Interface [DMI])

The `-dm` option allows you to show general or detailed digital diagnostic monitoring interface for optical transceivers.

NOTE

This option is supported only for QLogic QLA/QLE/QEM24*xx* (4Gb) Adapters. Under Solaris, this option is disabled if you are using Linux inbox drivers (SLES 10.0 or RHEL 5.0 or later).

To show transceiver monitoring *general* information, issue the following command:

```
qaucli -pr fc -dm  <hba instance>|<hba wwpn>|all  general|gen
```

To show transceiver monitoring *detailed* information, issue the following command:

```
qaucli -pr fc -dm  <hba instance>|<hba wwpn>|all  details|det
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`all` = All adapters in the system

-e (Boot Devices Configuration)

Use the `-e` command to:

- Show the current boot device selection for all adapters.
- Show the current boot device selection for a specific adapter.
- Set a target device as the boot device for an adapter.
- Selectable boot; the OS boots from the first target the BIOS finds.
- Delete the boot device from an adapter.
- Enable and disable a fabric-assigned boot LUN.

In these commands:

`<hba instance>`	=	Adapter number (use the `-g` command to find)
`<hba wwpn>`	=	World wide port name of the adapter
`<target wwnn>`	=	World wide node name of the target
`<target wwpn>`	=	World wide port name of the target
`<target id>`	=	ID to which the target is bound
`<lun id>`	=	ID of the LUN
`<prim>`	=	Primary boot port name
`<alt1>`	=	Alternate 1 boot port name
`<alt2>`	=	Alternate 2 boot port name
`<alt3>`	=	Alternate 3 boot port name
`<FabricAssignBootLUN>`	=	Enable or disable fabric-assigned boot LUN
`<fb>`		Enable or disable fabric-assigned boot LUN

To view the current boot device selection on all adapters:

`qaucli -pr fc -e all view|info`

To view the current boot device selection for a specific adapter port:

`qaucli -pr fc -e <hba instance>|<hba wwpn> view|info)`

In Solaris SPARC, if the system is running with a csh or tsch shell, include double quotes around the question mark (?). For example:

`qaucli -pr fc -e <hba> "?"`

In Windows and Linux, each adapter's currently selected boot device is shown in the following format:

`<hba instance> <hba wwpn> <target wwnn> <target wwpn> <lun id>`

Solaris shows each adapter's currently selected boot device in the following format:

```
<hba instance> <hba wwpn> <target wwnn> <target wwpn>
<target id> <lun id>
```

If the system does not have an adapter with a boot device selected, the following message appears:

```
There is no boot device selected for any HBA in the system.
```

The following is an example of the boot device option when viewing the boot device for a single adapter. In this example, no boot device is configured (selectable boot is disabled; the boot port name is all zeros).

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8362 Port 1 WWPN 21-00-00-0E-1E-13-49-A0 PortID 01-07-00
Link: Online
-------------------------------------------------------------------------------
Boot Device Settings:
--------------------------------------
Selectable Boot: Disabled
Enable Fabric Assigned LUN: Disabled
--------------------------------------
(Primary    ) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 1) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 2) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 3) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
```

To cause the OS to boot from the first target it finds with a LUN, select a boot port name of `00-00-…00` (selectable boot); this applies only if the boot BIOS is enabled.

To set a specific target as the boot device for a specific adapter, issue the following command:

qaucli -pr fc -e (<hba instance> | <hba wwpn>) <target wwnn> <target wwpn> <target id> <lun id>

NOTE

Because x86 Solaris does not require the target ID, the Solaris command is:

```
qaucli -pr fc -e  <hba instance>|<hba wwpn>
<target wwnn> <target wwpn> <lun id>
```

QConvergeConsole CLI checks all parameters to verify that the adapter, targets, and LUNs are valid.

If you select an adapter with no target or a target with no LUN, QConvergeConsole CLI shows an error message and aborts.

In Solaris SPARC, setting the target ID to the target of the boot-selected LUN is equivalent to persistently binding the target (see "-p (Target Persistent Bindings)" on page 117). Therefore, if the target is persistently bound, its boot device entry must have the same target ID.

For all operating systems, if the adapter already has boot devices defined and they are different from the ones in the command parameter or menu selection, you are prompted to confirm the boot device selection:

```
The HBA already has a boot device(s) selected. Do you want to
replace it with the new one?
```

For all operating systems, if the adapter already has boot devices selected and they are the same as the ones in the command parameter or menu selection, the following message appears:

```
The HBA already has that device selected as boot device.
```

To use selectable boot (the OS boots from the first target the BIOS finds) set the `<target wwpn>`, `<target wwnn>`, and `<lun id>` inputs to all zeros. For example issue the following command:

qaucli -pr fc -e <hba instance>|<hba wwpn> (enable | 0 0 0)

To disable (delete) the boot device for a specific adapter, issue the following command:

qaucli -pr fc -e <hba instance>|<hba wwpn> disable

To set boot parameters for fabric-assigned boot LUNs, issue the following commands:

```
qaucli -pr fc -e <hba instance>|<hba wwpn> <target wwnn> <target
wwpn> <lun id> [prim|alt1|alt2|alt3]
```

To configure the OS to boot from the first target that the BIOS finds (selectable boot), issue the following command:

```
qaucli -pr fc -e <hba instance>|<hba wwpn> enable|0 0 0
```

To clear the selected current boot device settings on an adapter port (primary or alternate boot port name), issue the following command:

```
qaucli -pr fc -e <hba instance>|<hba wwpn> disable
[prim|alt1|alt2|alt3]
```

To enable the fabric-assigned boot LUN setting, issue the following command:

```
qaucli -pr fc -e <hba instance>|<hba wwpn> enable
FabricAssignBootLUN | FB
```

To disable the fabric-assigned boot LUN setting, issue the following command:

```
qaucli -pr fc -e <hba instance>|<hba wwpn> disable
FabricAssignBootLUN | FB
```

-ei

To view error and exit code information for noninteractive mode, issue the `-ei` command as follows:

```
qaucli -pr fc -ei
```

NOTE

Exit codes are also listed in the `fcscli-exitcodes.txt` file located here:

`C:\Program Files\QLogic Corporation\QConvergeConsoleCLI`

-f

NOTE

The `-f` option is valid only in noninteractive mode, and cannot be combined with any other options. Only one command line parameter per file is valid. This option is used when it is run as a script file.

To input parameter options to QConvergeConsole CLI through a text file, type `-f`, followed by the file name. For example:

```
qaucli -pr fc -f <text file name>
```

The text file must be formatted as follows:

- The file must contain a single line.
- The file must contain only parameters.
- The file cannot contain another `-f` option.

The following example shows how to set the connection option of an adapter to default (loop preferred, otherwise point-to-point) and the data rate to auto through a command file that is invoked by the `-f` option:

1. Create a text file (for example, `setadapter0.txt`) containing the following command:

   `-n 0 co 2 dr 2`

2. Save and close the file.
3. Issue the `qaucli -pr fc` command with the `-f` option as follows:

   `qaucli -pr fc -f setadapter0.txt`

4. QConvergeConsole CLI executes the command in file `setadapter0.txt`, which is equivalent to having issued the following command:

   `qaucli -pr fc -n 0 co 2 dr 2`

-fcp (Ping Test)

Issue the `-fcp` command to perform a Fibre Channel ping test.

To run a Fibre Channel ping test using the default parameters, issue the following command:

```
qaucli -fcp <hba instance>|<hba wwpn>
```

To run a Fibre Channel ping test with custom parameters, issue the following command:

```
qaucli -fcp <hba instance>|<hba wwpn>|[-ex -exclude
<target wwpn>][<param name>|<param alias>) <param value>]
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name of the adapter

`<target wwpn>` = World wide port name of the target

`<param name>` = One of the following parameter names:

- TestCount
- TestIncrement
- OnError

`<param alias>` = One of the following parameter aliases:

- TC
- TI
- OE

`<param value>` = Value of parameter or alias (see Table 6-4 on page 86)

-fec (FEC Enable/Disable)

NOTE

The forward error correction (FEC) feature is supported only on QLogic 16Gb and 32Gb Fibre Channel adapters if the current adapter port is connected to a Brocade switch with FEC support. For 32Gb adapters, FEC is enabled by default and cannot be disabled.

Issue the `-fec` command to enable or disable FEC. For example:

```
qaucli -fec <hba instance>|<hba wwpn>|<all> <options> [<--ports>]
```

Where:

`<hba instance>` = Host bus adapter instance number of a host bus adapter port.

`<hba wwpn>` = World wide port name of the adapter

`[<options>]` = Options include the following:

- `--info`
  Display the current FEC settings of a specific host bus adapter port or all ports.
- `--enable`
  Enable FEC on a specific host bus adapter port or all ports of a host bus adapter.
- `--disable`
  Disable FEC on a specific host bus adapter port or all ports of a host bus adapter.
- `--ports`
  Apply to all physical ports of the specified host bus adapter.

-ftr (CT FTR Test)

QConvergeConsole CLI supports common transport (CT) Fibre Channel trace route (FTR) testing. The CT FTR test traces the route to each device attached to the port.

NOTE

All inner-link switches between the initiator and the target must have the Brocade switch firmware 7.1.1 or later for the CT FTR test to work. For best results, QLogic highly recommends using HP P2000G3 or Promise® VTrak™ E610f as a target. To confirm if your target is supported, contact QLogic Support.

Issue the `-ftr` command to issue a CT FTR command to a single or all discovered targets. To run a CT FTR test using the default parameters, issue the following command:

```
qaucli -ftr <hba instance>|<hba wwpn>
```

To run a CT FTR test with custom parameters, issue the following command:

```
qaucli -ftr <hba instance>|<hba wwpn>|[-ex -exclude <target
wwpn>][<param name>|<param alias>) <param value>]
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<target wwpn>` = World Wide port name of the target
`<param name>` = One of the following parameter names:
- TestCount
- TestIncrement
- OnError

`<param alias>` = One of the following parameter aliases:
- TC
- TI
- OE

`<param value>` = Value of parameter or alias (see Table 6-4 on page 86)

-fg

NOTE

The `-fg` option is valid only in noninteractive mode.
The `-fg` option is not supported for Linux and Solaris.

To show the driver settings, issue the following command:

```
qaucli -pr fc -fg <hba instance>|<hba wwpn> view|info
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter

-fs (Driver Parameters)

To configure the driver settings, issue the following command:

```
qaucli -pr fc -fs <hba instance>|<hba wwpn>
 (<param name>|<param alias> <param value>)...
```

Where:

`<hba instance>` = Adapter instance number of an adapter port (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<param name>` = Name of the parameters

`<param alias>` = Alias of the parameters

`<param value>` = New value of the parameters

The pairs `<param name> <param value>` and `<param alias> <param value>` can be repeated to set multiple parameters in a single command.

Table 6-5 lists the driver configuration parameter names and aliases.

Table 6-5. Driver Settings Parameters

Description	Parameter Name <param name>	Alias <param alias>	Value [a] <param value>
Persistently bound target(s) only	PersistentOnly	PO	0, 1
Present persistently bound target(s) plus any new target(s) with driver default	PersistentPlusNew	PN	0, 1
Present targets with driver default	NewOnly [b]	NO	0, 1
Bind devices by WWPN	BindWWPN	BW	0, 1
Bind devices by port ID	BindPortID	BP	0, 1

[a] 0 = Disabled, 1 = Enabled

[b] Driver parameter `NewOnly (NO)` is supported only with the failover driver.

The following restrictions apply:

- Under Solaris, the driver configuration feature is disabled if you are using the driver from the OS installation CDs (QLC driver).
- Under Linux, this feature is disabled if you are using the input/output control (IOCTL) driver.
- Under Mac OS®, the `BindWWPN` and `BindPortID` parameters are not changeable; Mac OS supports only the `BindWWPN` parameter.

-fwdump (Firmware Dump)

NOTE

To force a firmware dump file that can be collected and saved, QConvergeConsole CLI requires a separate utility such as `qlcna.exe`., which is generally used for debugging purposes in the field by a Field Application Engineer (FAE). To obtain this utility please contact QLogic Technical Support (see Contact Information).

To save the current adapter port firmware dump to a file, issue the following command:

qaucli -pr fc -fwdump <hba instance>|<hba wwpn> <file name>

Where:

<hba instance> = Adapter instance number of an adapter port (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
<file name> = Name of the file to save the firmware dump to

-g

To display host and adapter information on a local system, issue the -g command. Example output is as follows:

```
-------------------------------------------------------------------------------
Host Name                       : WIN-EQ0S3D2FE5Q
OS Type                      : Microsoft Windows Server 2012 Datacenter 64-bit
x64
OS Version                      : Build 9200
SDM API Version                 : 1.28.0.109 QLSDM.DLL
-------------------------------------------------------------------------------
HBA Model QLE8362 (SN AFE1223F04535):
  Port   1 WWPN 21-00-00-0E-1E-08-05-20 (HBA instance  0) Link Down
  Port   2 WWPN 21-00-00-0E-1E-08-05-21 (HBA instance  1) SFP Invalid
HBA Model QLE8142 (SN RFC0926L28501):
  Port   1 WWPN 21-00-00-C0-DD-10-E8-41 (HBA instance  2) SFP not installed
  Port   2 WWPN 21-00-00-C0-DD-10-E8-43 (HBA instance  3) SFP not installed
-------------------------------------------------------------------------------
            Total QLogic HBA(s) : 2
```

-gs (Configure Parameters [Monitoring])

To configure the adapter statistics, issue the -gs command as follows:

qaucli -pr fc -gs <hba instance>|<hba wwpn>
[<param name>|<param alias>) <param value>]

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
<param name> = Name of the parameter
<param alias> = Alias of the parameter
<param value> = New value of the parameter

Table 6-6 lists the adapter statistics parameter names, aliases, and values.

Table 6-6. Adapter Statistics Parameters

Description	Name	Alias	Value
Sets how often statistics are retrieved	AutoPoll	AP	0–256 [a] cycles
Sets the polling interval when retrieving statistics	PollRate	SR	5–30 seconds
Saves the adapter's statistics to a CVS log file	LogToFile	LF	Log file name

[a] When the value is 0, statistics are retrieved automatically until you abort the operation. When the value is in the range 1–256, statistics are retrieved for the number of cycles specified.

The following restrictions apply:

- Under Solaris, this feature is disabled if you are using the driver from the OS installation CDs (QLC driver).
- Under Linux, this feature is disabled if you are using the IOCTL driver.

To clear adapter driver statistic counters, issue the `-gs` command with the `-reset` option. For example:

```
qaucli -gs <hba instance>|<hba wwpn> --reset
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter

-h (Help)

To view the help file, issue the `-h` command as follows:

```
qaucli -pr fc -h
```

To view help information for an individual command, issue the following command:

```
qaucli -pr fc <command> -h
```

For example, typing **`qaucli -pr fc -l -h`** shows the following:

```
Using config file: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\qaucli.cfg
Installation directory: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI
Working dir: G:\Documents and Settings\user1
QLogic FCAPI
```

```
v1.7.3 Build 38
Copyright (C) 2003-2011 QLogic Corp.
All rights reserved.
QLogic FC/FCoE Common Library
Build Type:  Release
Build Date:  Dec  7 201x 13:44:03
LUN list.
USAGE:
   Displays all LUNs information of all devices attached on an HBA port.
   scli -l <hba instance>|<hba wwpn>
   Displays all LUNs information of a device attached on an HBA port.
   scli -l <hba instance>|<hba wwpn> <target wwpn>|<target portid>
   Displays a specific LUN information of a target device attached on an HBA port.
   scli -l <hba instance>|<hba wwpn> <target wwpn>|<target portid <lun id>
   Options
      <hba instance>    The HBA instance number of an HBA port.
      <hba wwpn>        The World Wide Port Name of an HBA port.
      <target wwpn>     The World Wide Port Name of a target device.
      <target portid>   The Port ID of a target device.
      <lun id>          The Logical Unit Number of a LUN.
```

NOTE

To view the current version information for QConvergeConsole CLI, issue the `-v` command as described in "-v" on page 128.

-ha (Adapter Alias [FCoE Configuration])

With this command you can view, set or delete the alias of a specific adapter.

To view the alias of a specified adapter, issue the following command:

qaucli -pr fc -ha <hba instance>|<hba wwpn> view|info

To set an alias for a specified adapter, issue the following command:

qaucli -pr fc -ha <hba instance>|<hba wwpn> <alias>

To delete an alias of a specified adapter, issue the following command:

qaucli -pr fc -ha <hba instance>|<hba wwpn> delete

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<alias>` = Symbolic adapter name (100 characters, maximum)

-i (FC Adapter Information; FC VPD Information; FC VFC Information)

To show general adapter information (default), VPD information, or VFC information for a specific adapter or for all adapter ports in the system, issue the `-i` command as follows:

```
qaucli -pr fc -i [all|<hba instance>|<hba wwpn>] [VPD|VFC]
```

Where:

`all` = All adapters in the system (default)
`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`VPD` = Show vital product data information
`VFC` Show Virtual Fibre Channel information

To show general information for all adapter ports in the system, issue the following command:

```
qaucli -pr fc -i all
```

To determine if the specified port is in D_Port diagnostic mode, issue the following command:

```
qaucli -pr fc -i 0
```

To determine if the specified port is enabled with forward error correction (FEC), issue the following command:

```
qaucli -pr fc -i 0
```

NOTE

The forward error correction (FEC) feature is supported only on QLogic 16Gb and 32Gb Fibre Channel adapters if the current adapter port is connected to a Brocade switch with FEC support. For 32Gb adapters, FEC is enabled by default and cannot be disabled.

To show VPD for all adapter ports in the system, issue the following command:

```
qaucli -pr fc -i VPD
```

To show VFC information for all adapter ports in the system, issue the following command:

qaucli -pr fc -i VFC

NOTE

The `-vfc` option is available only on Windows 2012 or later.

The following is an example of the output for the `vfc` option:

qaucli -pr fc -i 0 vfc

```
Computer Name: WIN-G181PBHIEV9
SAN Name     : fcp1
-------------------------------------------------------------
VM Name      : vm1_gh
VM ID        : 36096D14-384C-4796-A893-16C29F1F05CC
WWPN Set A   : C0-03-FF-BD-F9-6E-00-02
WWNN Set A   : C0-03-FF-00-00-FF-FF-00
WWPN Set B   : C0-03-FF-BD-F9-6E-00-03
WWNN Set B   : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------------
VM Name      : vm1_gh
VM ID        : 36096D14-384C-4796-A893-16C29F1F05CC
WWPN Set A   : C0-03-FF-BD-F9-6E-00-04
WWNN Set A   : C0-03-FF-00-00-FF-FF-00
WWPN Set B   : C0-03-FF-BD-F9-6E-00-05
WWNN Set B   : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------------
VM Name      : vm1_gh
VM ID        : 36096D14-384C-4796-A893-16C29F1F05CC
WWPN Set A   : C0-03-FF-BD-F9-6E-00-06
WWNN Set A   : C0-03-FF-00-00-FF-FF-00
WWPN Set B   : C0-03-FF-BD-F9-6E-00-07
WWNN Set B   : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------------
VM Name      : vm1_gh
VM ID        : 36096D14-384C-4796-A893-16C29F1F05CC
WWPN Set A   : C0-03-FF-BD-F9-6E-00-08
WWNN Set A   : C0-03-FF-00-00-FF-FF-00
WWPN Set B   : C0-03-FF-BD-F9-6E-00-09
```

```
WWNN Set B    : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------------
VM Name       : vm2
VM ID         : F19A6571-29B2-4B9A-ACC5-4F36C8355C3E
WWPN Set A    : C0-03-FF-BD-F9-6E-00-09
WWNN Set A    : C0-03-FF-00-00-FF-FF-00
WWPN Set B    : C0-03-FF-BD-F9-6E-00-0A
WWNN Set B    : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------------
VM Name       : vm2
VM ID         : F19A6571-29B2-4B9A-ACC5-4F36C8355C3E
WWPN Set A    : C0-03-FF-BD-F9-6E-00-0B
WWNN Set A    : C0-03-FF-00-00-FF-FF-00
WWPN Set B    : C0-03-FF-BD-F9-6E-00-0C
WWNN Set B    : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------------
VM Name       : vm2
VM ID         : F19A6571-29B2-4B9A-ACC5-4F36C8355C3E
WWPN Set A    : C0-03-FF-BD-F9-6E-00-0D
WWNN Set A    : C0-03-FF-00-00-FF-FF-00
WWPN Set B    : C0-03-FF-BD-F9-6E-00-0E
WWNN Set B    : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------------
VM Name       : vm2
VM ID         : F19A6571-29B2-4B9A-ACC5-4F36C8355C3E
WWPN Set A    : C0-03-FF-BD-F9-6E-00-0F
WWNN Set A    : C0-03-FF-00-00-FF-FF-00
WWPN Set B    : C0-03-FF-BD-F9-6E-00-10
WWNN Set B    : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------
```

To determine if the adapter port is not online (for example, if the switch port is currently under D_Port Diagnostics Mode–loop down), see the `HBA Status` line in the output of the following FC Port Information example:

```
Host Name                       : WIN-RVBIHEFFUVI
HBA Instance                    : 0
HBA Model                       : QLE2694
HBA Description                 : QLE2694 Quad Port 16Gb FC to PCIe Gen3 x8
Adapter
HBA ID                          : 0-QLE2694
```

```
HBA Alias                       :
HBA Port                        : 1
Port Alias                      :
Node Name                       : 20-00-00-24-FF-7B-96-C4
Port Name                       : 21-00-00-24-FF-7B-96-C4
Port ID                         : 03-0F-00
Principal Fabric WWN            : 10-00-00-27-F8-F1-66-A0
Adjacent Fabric WWN             : 20-0F-00-27-F8-6B-26-B4
Adjacent Fabric WWN             : 20-0F-00-27-F8-6B-26-B4
Adjacent Fabric WWN             : Not connected
Serial Number                   : AFD1517Y01892
Driver Version                  : STOR Miniport  9.2.6.20 A2 DBG
BIOS Version                    : 3.54
Running Firmware Version        : 100.07.11
Running MPI Firmware Version    : Not Running
Running PEP Firmware Version    : 1.00.23
Flash BIOS Version              : 3.54
Flash FCode Version             : 4.11
Flash EFI Version               : 6.23
Flash Firmware Version          : 100.07.11
Flash MPI Firmware Version      : 1.02.06
Flash PEP Firmware Version      : 1.00.23
Actual Connection Mode          : Point to Point
Actual Data Rate                : 16 Gbps
Supported Speed(s)              : 4 8 16 Gbps
Chip Model Name                 : ISP2714-based 16/32Gb Fibre Channel to PCIe
Adapter
Chip Revision                   : 0x1(A0)
PortType (Topology)             : NPort
Target Count                    : 1
PCI Bus Number                  : 4
PCI Device Number               : 0
PCI Function Number             : 0
PCI Device ID                   : 0x2071
Subsystem Device ID             : 0x02a3
Subsystem Vendor ID             : 0x1077
PCIe Max Bus Width              : x16
PCIe Negotiated Width           : x8
PCIe Max Bus Speed              : 8.0 Gbps
PCIe Negotiated Speed           : 8.0 Gbps
```

```
HBA Temperature (C)             : 59
HBA Status                      : Online (FEC)
```

-kl (Loopback Test)

Use the `-kl` command to perform an external loopback test.

To perform a loopback test using the default parameters, issue the following command:

```
qaucli -pr fc -kl  <hba instance>|<hba wwpn>
```

To do an external loopback test with custom parameters, issue the following command:

```
# qaucli -pr fc -kl  <hba instance>|<hba wwpn>
[<param name>|<param alias>) <param value>]
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name of the adapter

`<param name>` = One of the following parameter names:

- DataPattern
- DataSize
- TestCount
- TestIncrement
- OnError
- LoopbackType

`<param alias>` = One of the following parameter aliases:

- DP
- DS
- TC
- TI
- OE
- LT

`<param value>` = Value of parameter or alias (see Table 6-7 on page 108)

NOTE

To stop an active diagnostic test, press ENTER. To use a different key to stop tests, modify this line in the `sfcli.properties` configuration file:

Default: `node.app.diag.ascii.abortkey=CR`

Custom: `node.app.diag.ascii.abortkey=<stop key>`

Where `<stop key>` is **a**–**z** or **A**–**Z** (press SHIFT for uppercase).

Example of lowercase stop key:

`node.app.diag.ascii.abortkey=`**`s`** (Press S to stop test)

Example of uppercase stop key:

`node.app.diag.ascii.abortkey=`**`S`** (Press SHIFT+S to stop test)

-kr (Read Write Buffer Test)

Use the `-kr` command to run a read/write buffer test.

To run a read/write test using the default parameters, issue the following command:

```
# qaucli -pr fc -kr <hba instance>|<hba wwpn>
```

To run a read/write test with customized parameters, issue the following command:

```
# qaucli -pr fc -kr <hba instance>|<hba wwpn> [-ex|-exclude
<target wwpn>] <param name>|<param alias> <param value>
```

Where:

- `<hba instance>` = Adapter number (use the `-g` command to find)
- `<hba wwpn>` = World wide port name of the adapter
- `<target wwpn>` = World wide port name of the target device that is excluded from the read/write test
- `<param name>` = One of the following parameter names:
  - DataPattern
  - DataSize
  - TestCount
  - TestIncrement
  - OnError
- `<param alias>` = One of the following parameter aliases:
  - DP
  - DS
  - TC
  - TI
  - OE
- `<param value>` = Parameter or alias value (see Table 6-7 on page 108)

See “Running a Read/Write Buffer Test” on page 106 for command line examples and test results for a read/write buffer test.

Running a Read/Write Buffer Test

The read/write buffer test runs on all devices or on the devices you select on the adapter you select. This test sends the SCSI Write Buffer command to the target devices and uses the SCSI Read Buffer command to read the returned data and do a data comparison.

NOTE

All devices attached to the adapter must support the SCSI Read/Write Buffer commands.

To run a read/write buffer test using the current parameters, issue the following command:

```
qaucli -pr fc -kr <hba instance>|<hba wwpn>
```

To exclude a device or devices on the selected adapter port, issue the following command:

qaucli -pr fc -kr <hba instance>|<hba wwpn> [-ex|-exclude <target wwpn>] [<param name>|<param alias> <param value>]

The following examples run 500 read/write buffer tests with a test increment of 10, a data pattern of FFh, and a data size of 8 bytes. The test stops if an error occurs.

qaucli -pr fc -kr <hba instance> DP FF DS 8 TC 500 TI 10 OE 1

qaucli -pr fc -kr <hba wwpn> DP FF DS 8 TC 500 TI 10 OE 1

To use the current value of a parameter, omit the parameter from the command line. For example, the following command sets the data pattern to FFh and uses the current values for the other parameters:

qaucli -pr fc -kr <hba instance> DP FF

The following example sets the data size to 16 bytes and has the test loop if an error occurs; the other parameters use the current values:

qaucli -pr fc -kr <hba wwpn**> DS 16 OE 2**

The following example shows a successful read/write buffer test:

```
HBA 1: QEM2462 Port 1 WWPN xx-xx-xx-xx-xx-xx-xx-xx Port ID 02-0E-00
------------------
Test Configuration
------------------
Data Pattern                 : Random
Data Size (Bytes)            : 512
Number of test(s) (0-65535)  : 500
Test Increment (1-65535)     : 1
On Error                     : Ignore
Test Continuous              : OFF
--------------------------------------------------------------------------------
```

Running an Adapter Diagnostics Read/write Buffer Test

The `-ex|-exclude <target wwpn>` parameters specify a device to exclude from the read/write buffer test.

The system shows the following information after a read/write buffer test completes:

- Loop ID and status
- Data miscompare
- Link failure
- Loss of sync
- Loss of signal
- Invalid CRC

Table 6-7 lists the values for the `<param name>`, `<param alias>`, and `<param value>` options.

Table 6-7. Diagnostics Parameters

Name	Alias	Value	Description
DataPattern	DP	Test pattern in hex format [a] Customized (00–FF) Random pattern CRPAT [b] CJTPAT [c] CSPAT [d]	00, 55, 5A, A5, AA, FF (see Table 6-8) — — Loopback test only Loopback test only Loopback test only
DataSize [e]	DS	8, 16, 32, 64, 128, 256, 512, 1024, 2048	Actual data transferred during any specified pass of the test
TestCount [f]	TC	0–65,535 0–10,000	Loopback test only Read/write buffer test only
TestIncrement [g]	TI	1–65,535 1–10,000	Loopback test only Read/write buffer test only
OnError	OE	0–2	0 = ignore 1 = stop 2 = loop on error
LoopbackType [h]	LT	0–2	0 = 10-bit internal loopback [i] 1 = 1-bit serial loopback 2 = external loopback

[a] Valid two-character, case-insensitive hexadecimal patterns.

[b] Compliant random data pattern in a valid Fibre Channel frame, as defined by the ANSI document *Methodologies for Jitter and Signal Quality Specification—MJSQ Annex A—Test bit sequences.*

[c] Compliant jitter tolerance pattern in a Fibre Channel frame, as defined by the ASIC document listed above.

[d] Compliant supply noise test sequence in a valid Fibre Channel frame, as defined by the ASIC document listed above.

[e] For read/write buffer test, the maximum size is 128; this is also the default.

[f] 0=test continuously. 1–10,000 and 1–65535=total number of tests that will be executed.

[g] Must be less than the TestCount value.

[h] Loopback test only.

[i] Requires installation of a loopback plug in the port SFP.

Table 6-8. Data Pattern (DP) Test Patterns

Hex	Binary	Hex	Binary
00	00000000	A5	10100101
55	01010101	AA	10101010
5A	01011010	FF	11111111

If the read/write buffer test fails, the system shows the following information:

- **Loop or port ID** (the loop ID of the adapter when operating in loop mode).
- **Status**:
  - **Success**—The test passed.
  - **Error**—A data miscompare or link status firmware error occurred.
  - **Failed**—A link status error, SCSI write buffer error, or SCSI read buffer error occurred.
  - **Unknown**—The target was not present.
  - **Unsupported**—The device does not support this test.
- **Data Miscompare**—The possible values are:
  - 0 (no data miscompares)
  - Device not present
  - Get link status failed
  - Read buffer failed
  - R/W buffer not supported
  - Write buffer failed
- **Link Failure**—Number of link failures
- **Loss of sync**—Number of sync loss errors
- **Loss of signal**—Number of signal loss errors
- **Invalid CRC**—Number of invalid CRCs

-l (FC Target/LUN Information)

The `-l` command shows LUN information for:

- All adapters
- A specific target
- A specific LUN on a specific target

To show the LUN information for *all target* devices for a *specific adapter Instance*, issue the following command:

```
qaucli -pr fc -l  <hba instance>|<hba wwpn>
```

To show the LUN information for a specific device for a specific adapter port, issue the following command:

```
qaucli -pr fc -l  <hba instance>|<hba wwpn>
<target port id>|<target wwpn>
```

To show the LUN information for a specific LUN on a specific target device for a specific adapter port instance, issue the following command:

```
# qaucli -pr fc -l  <hba instance>|<hba wwpn>
<target port id>|<target wwpn>)  <lun id>
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<target port id>` = Port ID of the target
`<target wwpn>` = World wide port name of the target
`<lun id>` = ID of the LUN

-ls (Display Parameters [HBA Statistics]; Link Status)

To view the link status, issue the following command:

```
# qaucli -pr fc -ls  <hba instance>|<hba wwpn>
[ <param name>|<param alias> <param value> ]
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<param name>` = Name of the parameter (see Table 6-9)
`<param alias>` = Alias of the parameter (see Table 6-9)
`<param value>` = New value of the parameter (see Table 6-9)

Table 6-9 defines the link status parameter names, aliases, and values.

Table 6-9. Link Status Parameters

Description	Name	Alias	Value
Sets link-status retrieval period	`AutoPoll`	`AP`	0–256[a] cycles
Sets link-status retrieval polling interval	`PollRate`	`SR`	5–30 seconds
Save link status to CSV log file	`LogToFile`	`LF`	Log file name

[a] When the value is 0, the link status is retrieved automatically until you abort the operation. When the value is in the range 1–256, the link status is retrieved for the number of cycles specified

To reset adapter firmware link status counters, issue the `-ls` command with the `--reset` option as follows:

```
qaucli -ls <hba instance>|<hba wwpn> --reset
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter

For 4Gb and 8Gb adapters, the drivers include the latest firmware that support resetting adapter link status. For 16Gb and 32Gb adapters, you must update the adapter flash firmware to the latest version.

-m (Selective LUNs)

NOTE

- If the current driver setting is Bind by Port ID, this option is not available.
- You must persistently bind the targets before configuring selective LUNs.
- Under Linux, this feature is disabled.
- Under Solaris, if you use the driver from the OS installation CDs (QLC driver), this feature is disabled.
- Under Solaris, the QLA adapter driver supports a maximum of 256 LUNs.
- Under Solaris, the QLC adapter driver supports a maximum of 16K LUNs.

Use the `-m` command to:

- View all selective LUNs for all adapter ports
- View an adapter's selective LUN list
- View the current selective state of a LUN on a specific target
- Enable (select) a LUN on a specific target on a specific adapter
- Disable (deselect) a LUN on a specific target on a specific adapter
- Enable (select) all LUNs on a specific target on a specific adapter
- Disable (deselect) all LUNs on a specific target on a specific adapter
- Enable (select) all LUNs of all targets on a specific adapter
- Disable (deselect) all LUNs of all targets on a specific adapter

For these commands:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<target wwnn>` = World wide node name of the target

<target wwpn> = World wide port name of the target

<lun id> = ID of the LUN

To view all selective LUNs for all adapter ports, issue the following command:

qaucli -pr fc -m all view|info

To view an adapter's selective LUN list, issue the following command:

qaucli -pr fc -m <hba instance>|<hba wwpn> view|info

In Solaris SPARC, include double quotes around the question mark (?) if the system is running with a csh or tsch shell. For example:

qaucli -pr fc -m <HBA> "?"

QConvergeConsole CLI shows the adapter's enabled LUN list in the following format:

<target wwnn> <target wwpn> <lun id>

To view the current select state of a specific LUN, issue the following command:

qaucli -pr fc -m <hba instance>|<hba wwpn> (<target wwnn> <target wwpn> <lun id>) view|info

If the input represents a valid LUN, QConvergeConsole CLI shows that LUN's current state as selected or deselected for that adapter.

To enable (select) a LUN on a specific target on a specific adapter, issue the following command:

qaucli -pr fc -m <hba instance>|<hba wwpn> (<target wwnn> <target wwpn> <lun id> 1|enable|select)...

NOTE

To select multiple LUNs in a single command, repeat the sequence <target wwnn> <target wwpn> <lun id> 1.

To disable (deselect) a LUN on a specific target on a specific adapter, issue the following command:

qaucli -pr fc -m <hba instance>|<hba wwpn> (<target wwnn> <target wwpn> <lun id> 0|disable|deselect)...

NOTE

To select multiple LUNs in a single command, repeat the sequence <target wwnn> <target wwpn> <lun id> 0.

To enable (select) all LUNs for a specific target on a specific adapter, issue the following command:

qaucli -pr fc -m <hba instance>|<hba wwpn> select|enable <target wwnn> <target wwpn>

To disable (deselect) all LUNs for a specific target on a specific adapter, issue the following command:

qaucli -pr fc -m <hba instance>|<hba wwpn> deselect|disable <target wwnn> <target wwpn>

To enable (select) all LUNs of all targets on a specific adapter:

qaucli -pr fc -m <hba instance>|<hba wwpn> select all

To disable (deselect) all LUNs of all targets on a specific adapter:

qaucli -pr fc -m <hba instance>|<hba wwpn> deselect all

-mbiv

To display the adapter's current multi-flash version, issue the `-mbiv` command as follows:

qaucli -mbiv <hba instance>|<hba wwpn>

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name of the adapter

For example:

```
Y:\QConvergeConsoleCLI>qaucli.exe -pr fc -mbiv 6
HBA 6 (QLE2692): Flash Image Version=090000
```

To display the adapter flash information from the last update, issue the `-mbiv` command as follows:

qaucli -mbiv <hba instance>|<hba wwpn> --rec

Example output:

```
QLE2694 (SN AFD1517Y01892)
Port 1 Instance 0
--------------------------
Family FW Version : 14.02.02
MBI Version       : 1.42.10
MBI Build Date    : June 13, 2017
Flash Tool ID     : QConvergeConsole GUI
Flash Tool Version: 4.00.78.00
```

```
Last Update Time  : 11:13:42 June 23, 2017
```

-n (Configure HBA Parameters)

To set a specific parameter on a specific adapter port, issue the following command:

qaucli -n <hba instance>|<hba wwpn> <param name> <param value>

To restore the factory default adapter parameters, issue the following command:

qaucli -n <hba instance>|<hba wwpn> <param alias> <param value>

To update the adapter port parameters using a predefined OEM default template, issue the following command:

qaucli -n <hba instance>|<hba wwpn>|all <default>

Where:

- `<hba instance>` = Adapter number (use the `-g` command to find)
- `<hba wwpn>` = World wide port name of the adapter
- `<param name>` = Name of the parameters
- `<param alias>` = Alias of the parameters
- `<param value>` = New value of the parameters
- `<default>` = One of the following OEM names:
  - EMC = EMC-specific settings
  - HP = HP-specific settings
  - IBM = IBM®-specific settings
  - QLGC = QLogic-specific settings
  - SUN = Sun® or Oracle-specific settings

The pairs `<param name> <param value>` and `<param alias> <param value>` can be repeated to set multiple parameters with a single command.

Table 6-10 lists the adapter parameter names and aliases, alphabetized by name.

Table 6-10. Adapter Parameters

Description	Name	Alias	Value
Connection options	`ConnectionOption`[a]	`CO`	0 = Loop only 1 = Point-to-point only 2 = Loop preferred, otherwise point-to-point 3 = Point-to-point preferred, otherwise loop

Table 6-10. Adapter Parameters (Continued)

Description	Name	Alias	Value
Data rate	DataRate[b]	DR	0 = 1Gbps 1 = 2Gbps 2 = Auto 3 = 4Gbps 4 = 8Gbps 5 = 16Gbps 6 = 32Gbps
Enable BIOS	EnableBIOS[c]	EB	1=Enable, 0=Disable
Enable extended logging	EnableExtendedLogging[d]	EL	1=Enable, 0=Disable
Enable fabric-assigned WWN[e]	EnableFabricAssignWWN	FN	1=Enable, 0=Disable
Enable Fibre Channel tape[f]	EnableFCTape	EF	1=Enable, 0=Disable
Enable HBA hard loop ID	EnableHardLoopID[g]	HL	1=Enable, 0=Disable
Enable LIP full login	EnableLIPFullLogin	FL	1=Enable, 0=Disable
Enable LIP reset	EnableLipReset	LP	1=Enable, 0=Disable
Enable receiving out-of-order frames	EnableReceiveOutOfOrderFrame[h]	EO	1=Enable, 0=Disable
Enable target reset	EnableTargetReset	TR	1=Enable, 0=Disable
Execution throttle[i]	ExecutionThrottle	ET	1–65535
Frame size	FrameSize	FR	512, 1024, 2048
Hard loop ID	HardLoopID[g]	HD	0–125
Interrupt delay timer	InterruptDelayTimer[j]	ID	0–255
Link down time-out	LinkDownTimeOut	LT	0–240
Login retry count	LoginRetryCount	LR	0–255
Maximum LUNs per target	MaximumLUNsPerTarget	ML	0, 8, 16, 32, 64, 128, 256
Operation mode	OperationMode[k]	OM	0 = Interrupt for every I/O completion 5 = Interrupt when interrupt delay timer expires 6 = Interrupt when interrupt delay timer expires or no active I/O

Table 6-10. Adapter Parameters (Continued)

Description	Name	Alias	Value
Port down retry count	PortDownRetryCount	PD	0–255

[a] Connection option is read-only for 10GbE (QLogic 3200/8100/8200 Series Adapters).

[b] Data rate applies to QLogic QLE2562 and 2400/8100/8200 Series Adapters. Read-only for 8100/8200 Series Adapters.

[c] Enable BIOS option is *not* available on PPC64 and SPARC.

[d] Enable extended logging option is *not* available on PPC64 and SPARC.

[e] Enable fabric-assigned WWN option applies to QLogic 2600 and 8300 Series Adapters.

[f] Tape devices and Backup Protection Software must support persistent binding.

[g] Hard Loop ID options are *not* available for QLogic 8200 Series Adapters.

[h] Enable Receive Out of Order Frames option is available *only* for QLogic 2400 Series Adapters.

[i] Execution throttle does *not* apply to 2600 and 8300 Series Adapters. Execution throttle is read-only for 10GbE adapters.

[j] This option is *not* available on Solaris.

[k] Operation Mode option is *not* available on Solaris.

-o

NOTE

- The `-o` option is valid only in noninteractive mode.
- This option can be used with all noninteractive mode options that have a corresponding interactive mode option (see Table 6-1). The option must be the first or last command in the command line.
- If the file already exists, new data are appended to the current file.

To output result and status messages into a file, type `-o`, followed by the file name. For example, to save LUN information to a file named `systemLUNinfo`, issue the following command:

```
# qaucli -pr fc -l -o systemLUNinfo
```

Where the file name is `systemLUNinfo`, all messages are located in the directory indicated for the system platform:

Windows: `syslog.log` in the current directory

Linux: `/var/log/messages`

Solaris: `/var/adm/messages`

-p (Target Persistent Bindings)

Use the `-p` command to:

- Show binding information for one or all adapters.
- Bind a specific target to a selected adapter.
- Bind all targets on a specific adapter or on all adapters.
- Unbind a specific target.
- Unbind all targets on a specific adapter or on all adapters.

NOTE

- Under Solaris, if you use the driver from the OS installation CDs (QLC driver), these features are disabled.
- Under Linux, these features are disabled.

To show target persistent binding information for a specific adapter port, issue the `-p` command as follows:

`qaucli -pr fc -p <hba instance>|<hba wwpn> view|info`

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)

`<hba wwpn>` = World wide port name of the adapter

To show persistent binding information for all adapters, issue the following command:

`qaucli -pr fc -p all view|info`

NOTE

In Solaris SPARC using a csh or tsch shell, include double quotes around the question mark (?). For example:

`qaucli -pr fc -p <HBA> "?"`

The following example is a typical QConvergeConsole CLI output showing all targets currently bound to an adapter:

```
------------------------------------------------------------------------
HBA 0: QLA2462 Port 1 WWPN xx-xx-xx-xx-xx-xx-xx-xx Port ID 11-06-EF
------------------------------------------------------------------------
Bind  Type  Device Node Name          Device Port Name          Port ID   ID
----  ----  ----------------         ----------------          -------   --
No    Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E1
Yes   Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E2   0
Yes   Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E4   1
Yes   Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E8   2
    Press <Enter> to continue:
```

To bind a selected target to a specific adapter, issue the following command:

qaucli -pr fc -p <hba instance>|<hba wwpn> (<target wwnn> <target wwpn> <target port id> <target id>)

Where:

- `<hba instance>` = Adapter number (use the `-g` command to find)
- `<hba wwpn>` = World wide port name of the adapter
- `<target wwnn>` = World wide node name of the target
- `<target wwpn>` = World wide port name of the target
- `<target port id>` = Port ID of the target
- `<target id>` = ID to which the target is bound

To bind multiple targets with a single command, repeat the following group:

`<target wwnn> <target wwpn> <target port id> <target id>`

To bind all targets on a specific adapter or to bind all targets on all adapters, issue the following command:

qaucli -pr fc -p <hba instance>|<hba wwpn>|all bind all

Where:

- `<hba instance>` = Adapter number (use the `-g` command to find)
- `<hba wwpn>` = World wide port name of the adapter

To unbind a specific target, issue the following command:

qaucli -pr fc -p <hba instance>|<hba wwpn> remove|unbind <target wwnn>

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
<target wwnn> = World wide node name of the target

To unbind all targets on a specific adapter port or on all adapter ports, issue the following command:

qaucli -pr fc -p <hba instance>|<hba wwpn>|all remove|unbind all

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter

-pa (Adapter Port Alias [FCoE Configuration])

Use the -pa command to:

- Define the port alias for a specific adapter port
- Delete the port alias from a specific adapter port
- View the port alias for a specific adapter port

To define a port alias for the specified adapter, issue the following command:

qaucli -pr fc -pa <hba instance>|<hba wwpn> <alias>

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
<alias> = Symbolic name you assign to the adapter port

To delete a port alias for the specified adapter port, issue the following command:

qaucli -pr fc -pa <hba instance>|<hba wwpn> delete

To view a port alias for the specified adapter port, issue the following command:

qaucli -pr fc -pa <hba instance>|<hba wwpn> view|info

-pc (Adapter Personality Change)

NOTE

The adapter personality feature is supported only on QLogic 2600 and 8300 Series adapters. This feature lets you set the adapter's personality to Fibre Channel only or Converged Network Adapter.

Use the `-pc` command to change an adapter's personality between Fibre Channel only (FC only) and Converged Network Adapter (CNA).

To display the adapter's current personality, issue the `-pc` command as follows:

```
qaucli -pr fc -pc  <hba instance>|<hba wwpn>|all  --info
```

To change the adapter's personality, issue the `-pc` command as follows:

```
qaucli -pr fc -pc  <hba instance>|<hba wwpn>|all  --type <mode>
```

Where:

- `<hba instance>` = Adapter number (use the `-g` command to find)
- `<hba wwpn>` = World wide port name of an adapter port
- `all` = All adapter ports
- `<mode>` Adapter personality—specify one of the following:
  - **`fc`** or **`fco`** or **`0`**: Fibre Channel
  - **`cna`** or **`1`**: Converged Network Adapter

-pl (Persistent Names (udev) – Linux only)

To display udev persistent device names of a specific LUN or all LUNs, issue the following command:

```
qaucli -pr fc -pl  <hba instance>|<hba wwpn>  --info [<target id> <lun id>]
```

Where:

- `<hba instance>` = Adapter number (use the `-g` command to find)
- `<hba wwpn>` = World wide port name of the adapter
- `<target id>` = Name of the firmware preload table DAT file.
- `<lun id>` ID of the LUN

If both `<target id>` and `<lun id>` are omitted, the `-pl` command lists all udev names that are currently assigned to all devices attached to a physical port on the adapter.

To remove a udev persistent device name from a LUN, issue the following command:

```
qaucli -pr fc -pl <hba instance>|<hba wwpn>  --del (<target ID> <lun ID> <lun name>)...
```

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
<target id> = Name of the firmware preload table DAT file.
<lun id> ID of the LUN
<lun name> Name of the LUN

NOTE

The parameter group <target ID> <lun ID> <lun_name> can be specified more than once. For example:

...targetID1 lunID1 lun_name1 targetID2 lunID2 lun_name2

To add a udev persistent device name to a LUN, issue the following command:

qaucli -pr fc -pl <hba instance>|<hba wwpn> --set (<target ID> <lun ID> <lun name>)

-q (Target Link Speed [iiDMA])

NOTE

The -q option is supported only on 4Gb adapters.

To view the link speed of all targets attached to one adapter or all adapters, issue the -q command as follows:

qaucli -pr fc -q <hba instance>|<hba wwpn>|all [-targets|-t]

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
all = Reports link speed for all targets on all adapters in the system
-targets or -t = All targets

To view the link speed of a specific target attached to an adapter, issue the following command:

qaucli -pr fc -q <hba instance>|<hba wwpn>|<target wwpn>

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
<target wwpn> = World wide port name of the target

To set the link speed of all targets attached to one adapter or all adapters to the designated speed, issue the following command:

qaucli -pr fc -q <hba instance>|<hba wwpn>|all -targets|-t <speed>

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
all = Reports link speed for all targets on all adapters in the system
-targets or -t = All targets
<speed> = Link speed

To set the link speed of selected target(s) attached to one adapter to the designated speed, issue the following command:

qaucli -pr fc -q <hba instance>|<hba wwpn>|all <target wwpn> <speed>

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter
all = Reports link speed for all targets on all adapters in the system
<target wwpn> = World wide port name of the target
<speed> = Link speed

-qos (Quality of Service [QoS])

NOTE

The -qos option is supported on QLogic 8Gb, 16Gb, and 32Gb Fibre Channel Adapters and Converged Network Adapters, and on Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, and Windows Server 2012 R2 operating systems.

To view the current QoS settings of all virtual ports on a physical adapter port, issue the `-qos` command as follows:

qaucli -pr fc -qos <hba instance>|<hba wwpn> info --vp all [--per|--spd]

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`all` = Reports QoS settings for all virtual ports on the adapter port
`--per` = Display bandwidth percentage-related QoS settings only
`--spd` = Display bandwidth speed-related QoS settings only

To view the current QoS settings of a specific virtual port on a physical adapter port, issue the `-qos` command as follows:

qaucli -pr fc -qos <hba instance>|<hba wwpn> info --vp <vport wwpn> [--per|--spd]

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<vport wwpn>` = World wide port name of the virtual port
`--per` = Display bandwidth percentage-related QoS settings only
`--spd` = Display bandwidth speed-related QoS settings only

To change the QoS settings of a specific virtual port, issue the `-qos` command as follows:

qaucli -pr fc -qos <hba instance>|<hba wwpn> --vp <vport wwpn> [<option>]

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<vport wwpn>` = World wide port name of the virtual port
`<option>` One of the following options:
--pri <priority>
--bwspd <speed> [Gbps|Mbps]
--bwper <percent>
--lock <lock op>
--enable <enable op>

--pri option:

To set the QoS on a virtual port by priority, issue the following command:

```
qaucli -pr fc -qos  <hba instance>|<hba wwpn>
--vp <vport wwpn>  --pri <priority>
```

Where <priority> is **1** (low), **3** (medium), or **5** (high).

--bwspd option:

To set the QoS on a virtual port by bandwidth speed, issue the following command:

```
qaucli -pr fc -qos  <hba instance>|<hba wwpn>
--vp <vport wwpn>  --bwspd <speed> [Gbps|Mbps]
```

Where <speed> is the required bandwidth speed in Gbps or Mbps.

--bwper option:

To set the QoS on a virtual port by bandwidth percentage, issue the following command:

```
qaucli -pr fc -qos  <hba instance>|<hba wwpn>
--vp <vport wwpn>  --bwper <percent>
```

Where <percent> is the required percentage in the range 0–100.

--lock option:

To change the QoS setting lock properties on a virtual port, issue the following command:

```
qaucli -pr fc -qos  <hba instance>|<hba wwpn>
--vp <vport wwpn>  --lock <lock op>
```

Where <lock op> is **1** (lock) or **0** (unlock).

--enable option:

To set the QoS setting enable option on a virtual port, issue the following command:

```
qaucli -pr fc -qos  <hba instance>|<hba wwpn>
--vp <vport wwpn>  --enable <enable op>
```

Where <enable op> is **1** (enable) or **0** (disable).

-r (Parameters Update; Save HBA Parameters)

To update the adapter parameters from a file, issue the -r command as follows:

```
qaucli -pr fc -r  <hba instance>|<hba wwpn>|all  <file name>
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter port
`all` = All adapter ports in the system
`<file name>` = File name or a path to a file that contains the updated adapter parameters

To save the adapter parameters to a file, issue the following command:

`qaucli -pr fc -r <hba instance>|<hba wwpn> save <file name>`

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<file name>` = File name or a path to a file to save the adapter parameters

-s

NOTE

- The `-s` option is valid only in noninteractive mode.
- You can use this option with noninteractive mode options that have a corresponding interactive mode option (see Table 6-1 on page 76). You cannot combine this option with the `-o` option. The `-s` option must be the first or last command in the command line.

In noninteractive mode, the system shows result and status messages generated by QConvergeConsole CLI (by default) unless suppressed by silent mode.

-sp (FC Board Config Update)

To update the adapter firmware serializer/deserializer (SerDes) table from a file, issue the following command:

`qaucli -pr fc -sp <hba instance>|<hba wwpn> <file name>`

To save the adapter firmware SerDes table to a file, issue the following command:

`qaucli -pr fc -sp <hba instance>|<hba wwpn> save <file name>`

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<file name>` = Name of the firmware preload table DAT file.

This feature is supported with 8Gb and 16Gb mezzanine and blade adapters. It is not needed with the standard QLE2562 adapters.

-t (FC Target/LUN Information)

To show the target information for *all* adapters in the system, issue the `-t` command as follows:

```
qaucli -pr fc -t [all]
```

To show the target information for a *specific* adapter, issue the following command:

```
qaucli -pr fc -t  <hba instance>|<hba wwpn>
```

To show specific target information for a *specific target* on an adapter, issue the following command:

```
qaucli -pr fc -t  <hba instance>|<hba wwpn>
<target wwpn>|<target port id>
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<target wwpn>` = World wide port name of the target
`<target port id>` = Port ID of the target

To show the target information on all adapters, issue the following command:

```
-t [all]
```

To show the target information on a specific adapter, issue the following command:

```
-t <hba instance>|<hba wwpn>
```

To show the target information for a specific target on a specific adapter, issue the following command:

```
-t  <hba instance>|<hba wwpn>  <target wwpn>|<target port id>
```

iiDMA (intelligent interleaved direct memory access) settings include:

- `—targets | -t` applies to all targets.
- `<speed>` indicates the supported intelligent interleave factor: 1, 2, 4, or 8Gbps.

-tb

To start or stop flashing a target's LED, issue the `-tb` command as follows:

```
qaucli -pr fc -tb  <hba instance>|<hba wwpn>  <target wwpn>
(0|ON) | (1|PRESET)
```

NOTE

- The `0 | ON` option flashes the LED until interrupted.
  The `1 | PRESET` option flashes the LED 12 times.
- This feature is supported only on JBOD ("just a bunch of disks") devices.

-tp

Use the `-tp` option to show the topology configuration of the host:

```
qaucli -pr fc -tp|-topology
```

Under Linux, this feature is enabled only if you are using the 32-bit version.

-trace (FCE Trace)

To save an FCE trace of the current adapter port to a text file:

```
qaucli -pr fc -trace  <hba instance>|<hba wwpn>  <file name>
```

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of the adapter
`<file name>` = Name of the firmware preload table DAT file.

NOTE

After the trace file has been saved, send it to QLogic Technical Support (see "Technical Support" on page xxxi for contact information).

-u

Use the `-u` option to update the firmware preload area of the adapter from a DAT file or to save the current firmware preload area of the adapter to a DAT file.

NOTE

The `-u` option is available only for the QLogic 8Gb, 16Gb, and 32Gb Fibre Channel adapters.

To update the adapter firmware preload table, issue the following command:

qaucli -pr fc -u <hba instance>|<hba wwpn> <file name>

To save the current adapter firmware preload table to a DAT file, issue the following command:

qaucli -pr fc -u <hba instance>|<hba wwpn> save <file name>

Where:

`<hba instance>` = Adapter number (use the `-g` command to find)
`<hba wwpn>` = World wide port name of an adapter port
`<file name>` = Name of the firmware preload table DAT file.

-v

NOTE

The `-v` option is valid only in noninteractive mode.

To show the version number of the QConvergeConsole CLI tool, issue the `-v` command as follows:

qaucli -pr fc -v

The system shows the following information:

```
QConvergeConsole CLI
v1.x.x Build x
Copyright 2003-2009 QLogic Corp.
All rights reserved.
Command Line QLogic FC Host Bus Adapters.
Build Type: Release
Build Date: xx/xx/xxxx xx:xx:xx AM
```

-vp (Virtual Ports [NPIV])

NOTE

A maximum of 31 virtual ports is supported on 8200 Series adapters.

To list, create, and delete virtual ports on a physical adapter port, issue the `-vp` command as follows:

qaucli -pr fc -vp <hba instance>|<hba wwpn> list|create|delete <vport wwpn>|<vport hex>|all

Where:

<hba instance> = Adapter number (use the -g command to find)
<hba wwpn> = World wide port name of the adapter port
<vport wwpn> = World wide port name of the virtual port
<vport hex> = World wide port name of the virtual port with the two hexadecimal digits in byte three supplied by the user

To list a specific virtual port on a physical adapter port, issue the following command:

qaucli -pr fc -vp <hba instance>|<hba wwpn> list <vport wwpn>

To create a virtual port with an automatic WWPN, issue the following command:

qaucli -pr fc -vp <hba instance>|<hba wwpn> create auto

To create a virtual port with a specific WWPN, issue the following command:

qaucli -pr fc -vp <hba instance>|<hba wwpn> create <vport hex>

When prompted, type two hexadecimal digits. The system checks these digits to be sure they are unique and, if they are, puts them into byte 1 of the WWPN.

To delete all virtual ports on a physical adapter port, issue the following command:

qaucli -pr fc -vp <hba instance>|<hba wwpn> delete all

To delete a specific virtual port on a physical adapter port, issue this command:

qaucli -pr fc -vp <hba instance>|<hba wwpn> delete <vport wwpn>

-x

NOTE

The -x option is valid only in noninteractive mode.

You can use the -x option with all noninteractive mode options that have a corresponding interactive mode option (see Table 6-1 on page 76). This option must be the first or last command in the command line.

When you use this option, the system shows all result and status messages in XML format 1, a legacy format. This option is usually combined with the -o option (see “-o” on page 116) to create a text file with XML output so that it can be parsed by an XML-compliant utility. For example to show adapter general information and output it to an XML file named output.xml:

qaucli -pr fc -i all -x -o output.xml

-x2

NOTE

The `-x2` option is valid only in noninteractive mode.

You can use the `-x2` option with all noninteractive mode options that have a corresponding interactive mode option (see Table 6-1 on page 76). This option must be the first or last command in the command line.

When you use this option, the system shows all result and status messages in XML format 2, the standard XML format. This option is usually combined with the `-o` option (see "-o" on page 116) to create a text file with XML output so that it can be parsed by an XML-compliant utility. For example, to show adapter general information and output it to an XML file named `output.xml`:

```
qaucli -pr fc -i all -x2 -o output.xml
```

-Z (All Information)

To show all information for one specific adapter or for all adapters in the system, issue the `-z` command as follows:

```
qaucli -pr fc -z  <hba instance>|<hba wwpn>|all
```

"Host Configuration (Command Line Option -z)" on page 75 covers this command.

7 iSCSI Noninteractive Commands

This chapter describes the noninteractive iSCSI command format and parameters of QConvergeConsole CLI for QLogic 8200 Series Converged Network Adapters.

NOTE

To view help, issue the `-h` command.

Command Format

The noninteractive iSCSI command format is as follows:

```
qaucli -pr iscsi [optional parameters] <command> <variable>...
```

Where:

`<command>` = iSCSI command (see "Command Summary" on page 133)

`<variable>` = One of the command variables described in Table 7-1

Table 7-1 defines the command variables.

Table 7-1. Noninteractive Command Variables

Variable	Definition
<hba_port_inst>	System port
<target_ID >	Target ID
<LUN_ID>	Logical unit number (0–255)
<CHAP_number>	Challenge handshake authentication protocol (CHAP) number
<CHAP_name>	Null-terminated CHAP name, which is sent by the port instance when responding to the CHAP challenge
<CHAP_secret>	CHAP secret used by the port instance when generating the CHAP response
<boot _target>	The target ID of the target device from which to boot
<boot_LUN>	The LUN of the boot device

NOTE

- Commands are case-sensitive. For example, `-g` is not the same as `-G`.
- Only one command line option per input file is valid.
- `<hba_port_inst>` is an instance number from the list of all iSCSI adapter ports in the system. You can see this list with the command `-i`.

The positional parameters vary, depending on the command option specified. For example, to display an adapter's configured settings, issue the command option `-c`, followed by the port instance number (positional parameter). In contrast, the command for providing general information, `-g`, has no positional parameters.

In noninteractive mode, most changes made to the port instance become effective immediately. This functionality sometimes causes the adapter to reset, as specified in the command description. Ensure that the system is prepared for an adapter reset before making changes.

The remainder of this chapter contains an alphabetical list of QConvergeConsole CLI commands used in noninteractive mode.

Command Summary

This section lists and describes all iSCSI noninteractive commands in alphabetical order.

NOTE

A parenthetical phrase after a command indicates the equivalent *interactive* menu option. For example, **-addchap** (**Add a CHAP Entry)** indicates that the `-addchap` command has an equivalent **Add a CHAP Entry** menu option described in Chapter 11 Converged Network Adapter Interactive Commands.

Not all noninteractive commands have equivalent interactive menu options.

The iSCSI noninteractive commands include the following:

- -acb
- -addchap (Add a CHAP Entry)
- -arp (Display ARP Table)
- -b (Save Changes and Reset HBA)
- -binfo (Display BIOS/UEFI Information)
- -bootcode
- -c (CNA Port Information—iSCSI)
- -ch (CNA Adapter Information—iSCSI)
- -chapmap (Display Targets Using CHAP Entries)
- -cpbootcode (Clear Primary Boot Target Information)
- -csbootcode (Clear Secondary Boot Target Information)
- -d (Drivers Update)
- -dce (Display Connection Error Log)
- -defbidi (Add a Default BIDI CHAP)
- -delchap (Delete a CHAP Entry)
- -df
- -dp
- -dr (Display Default Router List [IPv6])
- -dspchap (Display CHAP Table)
- -dtdsp (Display Discovered Targets)
- -dtdspa (List Targets)
- -dtdupd (Duplicate a Discovered Target)
- -dtdupd (Duplicate a Persistent Target)
- -dtli (Login and Persist a Discovered Target)
- -dtlia (Login and Persist a Discovered Target)
- -dtrem (Remove Discovered Target)
- -dtrema (Remove Discovered Target)
- -dumpcore
- -dumpnvram (Retrieve FW Flash & NVRAM Record)

- -edchap (Edit a CHAP Entry)
- -ei
- -f
- -g
- -gcr
- -h (Help)
- -i
- -idcbx (Data Center Bridging)
- -import (Import HBA Configuration)
- -ipdhcp (Configure IP Settings)
- -l (List LUN Information)
- -lcd (Display Configured Link Configuration)
- -linkchap (Assign a CHAP Entry to a Target)
- -lp (Display Local Prefix List [IPv6])
- -model
- -n (Configure iSCSI Settings)
- -nc (Display Neighbor Cache [IPv6])
- -netconf (Configure IPv6 Settings)
- -netconf6 (Configure IPv6 Settings)
- -nh (Configure iSCSI Settings)
- -pa (Add a Target)
- -pad (CNA Port Target/LUN Information–iSCSI)
- -pb (Bind Target)
- -pbootcode (Set Primary Boot Target Information)
- -pdt (Disable a Target)
- -pet (Enable a Target)
- -pinfo (CNA Port Information—iSCSI)
- -ping (Ping Target)
- -ps
- -pu
- -px
- -r
- -rdf
- -rdh (Port Restore Factory Defaults)
- -rwt (Read Write Buffer Test—iSCSI)
- -save (Save Host Configuration)
- -sbootcode (Set Secondary Boot Target Information)
- -sbootcodecid (Set Alternative Client ID)
- -sdmrc
- -stadd (Add a Send Target)
- -statport (Display iSCSI Port Statistics)
- -stathba
- -stdsp (Display Send Targets)
- -strd (Mark Send Target for re-discovery)
- -strem (Remove a Send Target)

- -strema
- -t (Display Target Information)
- -tc (Configure Target Parameters)
- -tlvdetails (TLV)
- -tlvraw (TLV)
- -tp
- -ts
- -ver
- -vpd (CNA VPD Information—iSCSI)

-acb

To inquire whether the address control block (ACB) firmware functions are supported, issue the `-acb` command as follows:

```
qaucli -pr iscsi -acb
```

In general, up-to-date firmware and drivers are required for ACB to be supported.

-addchap (Add a CHAP Entry)

To add a CHAP entry to the persistent CHAP table, issue the `-addchap` command as follows:

```
qaucli -pr iscsi -addchap [-BIDI] <hba_port_inst> <CHAP_name>
<CHAP_secret>
```

The optional parameter `-BIDI` shows that the CHAP entry is bidirectional (BIDI). When this parameter is not specified (default), the CHAP entry is local. Issuing this command resets the adapter.

-arp (Display ARP Table)

The address resolution protocol (ARP) cache keeps a record of host port connections with other hardware (such as targets) on the network. The IP address and MAC address pairs are dynamic entries that are removed after 10 minutes. To view the ARP table, issue the `-arp` command as follows:

```
qaucli -pr iscsi -arp <hba_port_inst>
```

-b (Save Changes and Reset HBA)

To reset the specified adapter after making configuration changes, issue the `-b` command as follows:

```
qaucli -pr iscsi -b <hba_port_inst>
```

NOTE

Issuing this command resets both ports (0 and 1) on two-port adapters.

-binfo (Display BIOS/UEFI Information)

To display the boot code settings for the specified adapter port, issue the `-binfo` command as follows:

```
qaucli -pr iscsi -binfo <hba_port_inst>
```

-bootcode

Boot code (the bootable code image) allows system boot from an iSCSI drive. The `-bootcode` command updates the boot code image, which should be done when QLogic releases a new boot code with bug fixes or enhancements. At the prompt, type the name of the file containing the boot code image to upload to the adapter.

To update the boot code image, issue the `-bootcode` command as follows:

```
qaucli -pr iscsi -bootcode <hba_port_inst>
<bootcode_image_file_name>
```

-c (CNA Port Information—iSCSI)

To view the configured settings for the port, issue the `-c` command as follows:

```
qaucli -pr iscsi -c [<hba_port_inst>]
```

When you specify a port instance, information for only that adapter is shown. When you do not specify a port instance, information for all adapter ports in the system is shown.

-ch (CNA Adapter Information—iSCSI)

To display the adapter's configured settings, issue the `-ch` command as follows:

```
qaucli -pr iscsi -ch [<hba_port_inst>]
```

If you specify a port instance, information for only that adapter is shown. If you do not specify a port instance, information for all adapter ports in the system is shown.

-chapmap (Display Targets Using CHAP Entries)

To display the map of targets to CHAP table entries, issue the `-chapmap` command as follows:

```
qaucli -pr iscsi -chapmap <hba_port_inst>
```

-cpbootcode (Clear Primary Boot Target Information)

To clear the primary boot target and LUN, issue the `-cpbootcode` command as follows:

```
qaucli -pr iscsi -cpbootcode <hba_port_inst>
```

NOTE

This command is not active for the PPC.

-csbootcode (Clear Secondary Boot Target Information)

To clear the secondary boot target and LUN, issue the `-csbootcode` command as follows:

```
qaucli -pr iscsi -csbootcode <hba_port_inst>
```

-d (Drivers Update)

To install an adapter driver for all iSCSI adapters on the system from a `.zip` or `.inf` file, issue the `-d` command as follows:

```
qaucli -pr iscsi -d <file_name>
```

A system reboot may be required; see the log file for details.

-dc (Display Destination Cache [IPv6])

The IPv6 destination cache contains the IP address, next-hop IP address, and path MTU information for both local and remote destinations. For multicast and on-link unicast destinations, the next-hop IP address always matches the destination IP address. For unicast destinations that are off-link, the next-hop IP address is the IP address of the router.

To display the destination cache, issue the `-dc` command as follows:

```
qaucli -pr iscsi -dc <hba_port_inst>
```

-dce (Display Connection Error Log)

To display the connection error logs for up to 100 of the last connections, issue the `-dce` command as follows:

```
qaucli -pr iscsi -dce <hba_port_inst> <target_ID> <file_name>
```

If `<hba_port_inst>` and `<target_ID>` are not specified, all entries for all adapter ports are displayed. If `<file_name>` is specified, the log is written to that file.

-defbidi (Add a Default BIDI CHAP)

To add a default BIDI CHAP entry to the specified `hba_port_inst`, issue the `-defbidi` command as follows:

`qaucli -pr iscsi -defbidi <hba_port_inst> <CHAP_secret>`

Where `<chap_secret>` is the CHAP secret.

The adapter is reset after this command is issued.

-delchap (Delete a CHAP Entry)

To delete the specified CHAP entry, issue the `-delchap` command as follows:

`qaucli -pr iscsi -delchap <hba_port_inst> <CHAP>`

Issuing this command resets the adapter.

-df

To view the firmware properties, issue the `-df` command as follows:

`qaucli -pr iscsi -df <hba_port_inst>`

QConvergeConsole CLI displays information about the adapter: model, serial number, port number, iSCSI name, alias, IP address, instance number, and the following firmware information:

- Firmware information for instance
- Firmware version
- Firmware attribute
- Firmware version 2
- Firmware attribute 2

-dp

Issue the `-dp` command to preinstall an adapter driver specified from a `.zip` or `.inf` file. This operation may be performed without an adapter installed in the system.

You can specify the following actions:

- **`p`** — Preinstall driver package (default)
- **`i`** — Install driver package
- **`u`** — Uninstall driver package
- **`g`** — Get driver package path

You may also specify the following flags:

- `DRIVER_PACKAGE_FORCE`
- `DRIVER_PACKAGE_LEGACY_MODE`
- `DRIVER_PACKAGE_ONLY_IF_DEVICE_PRESENT`

- DRIVER_PACKAGE_REPAIR
- DRIVER_PACKAGE_SILENT

You may need to reboot the system following this command. For details about the success or failure of the driver update operation, view the trace log file.

-dr (Display Default Router List [IPv6])

The IPv6 default router list includes both the active default router and a short list of other routers that advertised themselves as capable of acting as a default router. The active default router always appears first in the list.

To view the default router list, issue the `-dr` command as follows:

```
qaucli -pr iscsi -dr <hba_port_inst>
```

-dspchap (Display CHAP Table)

To view the CHAP table, issue the `-dspchap` command as follows:

```
qaucli -pr iscsi -dspchap <hba_port_inst>
```

-dtdsp (Display Discovered Targets)

To view the discovered targets that are not persistent, issue the `-dtdsp` command as follows:

```
qaucli -pr iscsi -dtdsp <hba_port_inst>
```

-dtdspa (List Targets)

To view discovered targets, including both persistent and nonpersistent, issue the `-dtdspa` command as follows:

```
qaucli -pr iscsi -dtdspa <hba_port_inst>
```

If the specified port instance has no targets assigned, the CLI returns an error.

-dtdupd (Duplicate a Discovered Target)

To duplicate a discovered target that is not persistent, issue the `-dtdupd` command as follows:

```
qaucli -pr iscsi -dtupd <hba_port_inst> <target_instance>
```

To obtain the target instance, issue the command “-dtdsp (Display Discovered Targets)” on page 139.

A duplicate target is assigned a new iSCSI initiator session ID (ISID) and can then be used to create a redundant path.

-dtdupd (Duplicate a Persistent Target)

To duplicate a discovered target that is persistent, issue the `-dtdupd` command as follows:

```
qaucli -pr iscsi -dtdupd <hba_port_inst> <target_ID>
```

A duplicate target is assigned a new iSCSI ISID and can then be used to create a redundant path.

-dtli (Login and Persist a Discovered Target)

To log in a specific discovered target, issue the `-dtli` command as follows:

```
qaucli -pr iscsi -dtli <hba_port_inst> <target_instance>
```

To obtain the target instance, issue the command "-dtdsp (Display Discovered Targets)" on page 139.

-dtlia (Login and Persist a Discovered Target)

To log in all discovered targets, issue the `-dtlia` command as follows:

```
qaucli -pr iscsi -dtlia <hba_port_inst>
```

-dtrem (Remove Discovered Target)

To remove a nonpersistent discovered target, issue the `-dtrem` command as follows:

```
qaucli -pr iscsi -dtrem <hba_port_inst> <target_instance>
```

To obtain the target instance, issue the command "-dtdsp (Display Discovered Targets)" on page 139.

-dtrema (Remove Discovered Target)

To remove all nonpersistent discovered targets, issue the `-dtrema` command as follows:

```
qaucli -pr iscsi -dtrema <hba_port_inst>
```

-dumpcore

To dump the RAM memory to a file name of your choice, issue the `-dumpcore` command as follows:

```
qaucli -pr iscsi -dumpcore <hba_port_inst> <file name>
```

-dumpnvram (Retrieve FW Flash & NVRAM Record)

To dump the NVRAM to a file name of your choice, issue the `-dumpnvram` command as follows:

```
qaucli -pr iscsi -dumpnvram <hba_port_inst> <file name>
```

-dv

To see the version of the iSCSI adapter driver(s) installed, issue the `-dv` command as follows.

```
qaucli -pr iscsi -dv
```

-edchap (Edit a CHAP Entry)

To change the value of the specified CHAP entry, issue the `-edchap` command as follows:

```
qaucli -pr iscsi -edchap  <hba_port_inst> <CHAP>
(<Parameter>|<Parameter_Alias> <Value>). . .
```

You can repeat the `<Parameter>|<Parameter_Alias> <Value>` parameter pair to change multiple values as shown in Table 7-2. Press ENTER after each entry.

Table 7-2. CHAP Parameters

Parameter	Parameter Alias	Value
CHAPName	CNAME	character string
CHAPSecret	CSECRET	character string
CHAPBidi	CBIDI	on or off

-ei

To get information about errors and exit codes for noninteractive mode, issue the `-ei` command as follows (no parameters are required):

```
qaucli -pr iscsi -ei
```

NOTE

Exit codes are also listed in the `fcscli-exitcodes.txt` file located here:

`C:\Program Files\QLogic Corporation\QConvergeConsoleCLI`

-f

The firmware runs the tasks involved in data management, the iSCSI protocol, and general adapter functioning. Issue the `-f` command to update the firmware image.

To update the adapter firmware from a specified file, issue the `-f` command as follows:

```
qaucli -pr iscsi -f <hba_port_inst> <file_name> [reset | noreset]
```

Both parameters are required. The `<hba_port_inst>` is the adapter to update and `<file_name>` specifies the file containing the firmware image to upload to the adapter. Be sure to use full path name. Use `reset|noreset` to specify if there is a reset after the firmware update.

-g

To view general system information, issue the `-g` command as follows:

```
qaucli -pr iscsi -g
```

QConvergeConsole CLI shows the following:

- Host name
- Host version
- Host type
- User type

-gcr

To get crash record information for the specified adapter port, issue the `-gcr` command as follows:

```
qaucli -pr iscsi -gcr <hba_port_inst> <crash_output_file>
```

-h (Help)

To view the QConvergeConsole CLI help file, issue the `-h` command as follows:

```
-h
```

For convenience, you can send the output to a file for easier viewing or printing as follows:

```
qaucli -pr iscsi -h >file.txt
```

-i

Issue the `-i` command to view a list of all detected adapter port instances (“ports”) in the system. Each port instance `<hba_port_inst>` is identified by its number.

To view general adapter information, issue the `-i` command as follows:

```
qaucli -pr iscsi -i [hba_port_inst]
```

When you use the `<hba_port_inst>` option, information for only that adapter port instance is shown. When you do not use the `<hba_port_inst>` option, information for all ports in the system is shown.

The following adapter (port) information is shown:

- Item number (order in which ports were detected)
- Adapter number, that is, the number of this adapter in the detection process
- Adapter port number (0 or 1) for this adapter
- Port instance number in the system (two-port adapters appear twice)
- Port Instance on the adapter
- Adapter model number (for example, QLA4010)
- Adapter serial number (for example, TFC0105C51704)
- Firmware version (for example, 3.0.1.45)
- Connection medium
- IP address (IP address of the adapter port instance)
- iSCSI name (adapter port iSCSI name; the QLogic default name or one you assign)
- Alias (adapter port instance iSCSI alias name that you assign)

Figure 7-1 shows how to read the display.

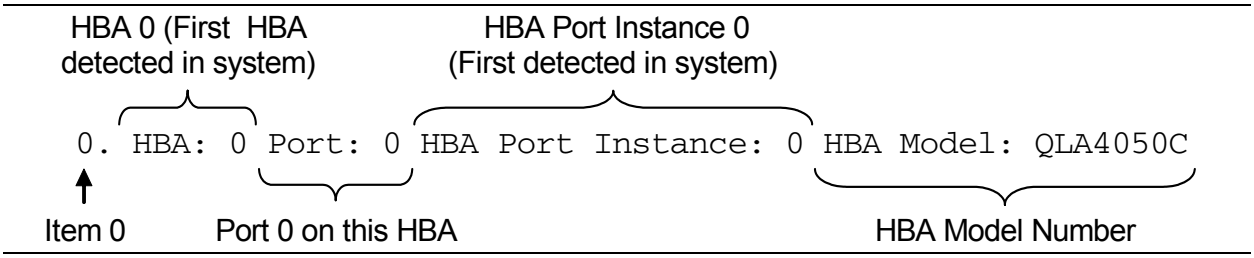


Figure 7-1. Adapter Port Information

The following shows an example of the adapter port information:

```
0.   HBA 0 Port: 0 HBA Port Instance: 0 HBA Model: QLA4050C
     HBA Serial Number: FS20525B03135   FW Version: 2.2.4.45   Type: Copper
     IP Address: 192.168.3.7
     Alias: iSCSI name: iqn.2000-04.com.qlogic.fs10506a02810.1

1.   HBA 1 Port: 0 HBA Port Instance: 1 HBA Model: QLA4062C
     HBA Serial Number: AS40637A04673   FW Version: 3.0.1.18   Type: Copper
     IP Address: 192.168.3.22
     Alias:
```

```
     iSCSI name: iqn.2000-04.com.qlogic.as10506a02810.1

2.   HBA 1 Port: 1 HBA Port Instance: 2 HBA Model: QLA4062C
     HBA Serial Number: AS40637A04673   FW Version: 3.0.1.18   Type: Copper
     IP Address: 192.168.3.38
     Alias: iSCSI name: iqn.2000-04.com.qlogic.as10506a02810.1

3.   HBA 2 Port: 0 HBA Port Instance: 3 HBA Model: QLA4010
     HBA Serial Number: FS20407B03135   FW Version: 3.0.1.17   Type: Copper
     IP Address: 192.168.3.72
     Alias: iSCSI name: iqn.1991-05.com.microsoft.steinway.qlogic.org
```

-idcbx (Data Center Bridging)

NOTE

The `-idcbx` command is not supported on 4000 Series iSCSI adapters.

To list the DCBX information for a specific port instance, issue the `-idcbx` command as follows:

`qaucli -pr iscsi -idcbx <hba_port_inst>`

For an example of the output, refer to "Data Center Bridging" on page 313.

-import (Import HBA Configuration)

To import an adapter configuration from a file (see "-save (Save Host Configuration)" on page 156), issue the `-import` command as follows:

`qaucli -pr iscsi -import <hba_port_inst> <hba_port_inst_source> A | ([F][N][I][T][C][B]) <file_name>`

Where:

- `<hba_port_inst>` = The specific adapter to which the data is written
- `<hba_port_inst_source>` = The file with the adapter configuration you want
  - `A` = Configure all imported parameters (F, N, I, T, C, B).
  - `F` = Configure the firmware.
  - `N` = Configure the network parameters.
  - `I` = Configure the iSCSI name.
  - `T` = Configure the targets.
  - `C` = Configure the CHAP table.

B = Configure the boot parameters (only valid when the T [targets] parameter is also specified).

<file_name> = The XML file with the adapter configuration. See "-save (Save Host Configuration)" on page 156).

-ipdhcp (Configure IP Settings)

To set the adapter to get its IP address, subnet mask, and gateway from the DHCP server, issue the -ipdhcp command as follows:

```
qaucli -pr iscsi -ipdhcp <hba_port_inst> [<option>]
```

If the adapter port had prior values set manually, the DHCP values replace them.

Where <option> is one of the following:

-DISN4 = Disable IPv4 network
-IPV4DHCP = Set DHCP ON
-IP = Set IP Address
-IPNM = Set IP Netmask
-IPGW = Set IP Gateway
-DISN6 = Disable IPv6 network setup
-IPLLA = Set local link address automatically
-IPLL = Set local link address manually
-IPRA = Set IPR0 and IPR1 automatically
-IPR0 = Set routable address 0 manually
-IPR1 = Set routable address 1 manually
-IPRAA = Set router address automatically
-IPRR = Set router address manually

-l (List LUN Information)

Issue the -l command to view the following information about LUNs attached to the selected target:

- Adapter, target, or LUN number
- Vendor name
- Product ID
- Product revision
- LUN size

You can view this information for a specific LUN or for all LUNs attached to the selected target.

To list the LUN information, issue the -l command as follows:

```
qaucli -pr iscsi -l <hba_port_inst> <target_ID> [<LUN_ID>]
```

If you do not include the `<LUN_ID>` parameter, all the LUNs on the specified target are shown.

-lb

Issue the `-lb` command to run a loopback test as follows:

```
qaucli -lb <hba_port_inst> [-STOP] [-EXTLB] [-CNT <test count>]
```

Optional parameters include:

- `[-STOP]` stops the testing if a failure is encountered.
- `[-EXTLB]` performs an external loopback test (the default is internal loopback).
- `[-CNT]` specifies the quantity of loopback tests to perform (the default is1).

-lcd (Display Configured Link Configuration)

To display the configured link settings, issue the `-lcd` command. Note that because a system reset is required for changes in link configuration to take effect, the settings shown here may be different than the operating link configuration.

To list configured link information, issue the `-lcd` command as follows:

```
qaucli -pr iscsi -lcd <hba_port_inst>
```

-linkchap (Assign a CHAP Entry to a Target)

To link a CHAP entry to a target, issue the `-linkchap` command as follows:

```
qaucli -pr iscsi –linkchap <hba_port_inst> <CHAP_number>
<target_ID> [TGTBCA <on|off>]
```

Where `TGTBCA` is an optional parameter to turn BIDI CHAP authentication on or off for this target connection.

For example, to link a CHAP entry 9 on port 2 to target 10 with BIDI CHAP turned on, issue the following command:

```
qaucli -pr iscsi -linkchap 2 9 10 TGTBCA on
```

This command does *not* reset the adapter.

-lp (Display Local Prefix List [IPv6])

The IPv6 local prefix list is created based on prefix information from router advertisements. Destination IP addresses containing these prefixes can be reached directly, without going through an intermediate router.

To display the local prefix list, issue the `-lp` command as follows:

```
qaucli -pr iscsi -lp <hba_port_inst>
```

-model

To view the adapter “model(s)” (board type[s]) in the system, issue the `-model` command as follows:

```
qaucli -pr iscsi -model [<hba_port_inst>]
```

-n (Configure iSCSI Settings)

To set the adapter iSCSI parameters for single-port adapters, issue the `-n` command as follows:

```
qaucli -pr iscsi -n <hba_port_inst> (<config_name|config_alias>
<value>)...
```

After you issue this command, the adapter is reset.

You can repeat the (`<config_name>|<config_alias> <value>`) sequence for as many parameters as you need to configure. Table 7-3 lists these parameters and their ranges of values.

Table 7-3. Adapter Configuration Parameters

Name <config_name>	Alias <config_alias>	Value <value>
Add Firmware Options		
AFW_AutoConnect	AFWC	on or off
AFW_Device_Timeouts	AFWDT	on or off
AFW_Delayed_Ack	AFDACK	on or off
AFW_Serlz_Task_Mngmt	AFWSTM	on or off
ExeThrottle	ET	0–32,767
FirstBurstLen	FB	0–32,767
IP Options		
IP_ARP_Redirect	IPARP	on or off
IP_Address	IPAD	IPv4 address format
IP_Subnet_Mask	IPSM	IPv4 address format
IP_Gateway	IPGW	IPv4 address format
iSCSI Options		
Force_Negotiate_Main_iSCSI_Keys	FNMIK	on or off
iSCSI_Alias	IALS	on or off

Table 7-3. Adapter Configuration Parameters (Continued)

Name <config_name>	Alias <config_alias>	Value <value>
iSCSI_Data_Digests	IDD	on or off
iSCSI_Discovery_Logout	ID	on or off
iSCSI_Header_Digests	IHD	on or off
iSCSI_Immediate_Data	IID	on or off
iSCSI_Initial_R2T	IIR2T	on or off
iSCSI_Snack	ISNACK	on or off
iSCSI_Strict_Login	IS	on or off
TCP Options		
TCP_Auto_Discovery	SLPADIS	on or off
TCP_DHCP	TCPDHCP	on or off
TCP_Nagle	TCPN	on or off
TCPMaxWindowSize	TCPMWS	1000h–FFFFh
TCP_Time_Stamp	TCPTMS	on or off
TCP_Window_Scale	WINSCALE	0 to 14
VLAN Options		
VLAN_Enable	VLAN	on or off
VLAN_User_Priority	VLANUPRIOR	0 to 7
VLAN_ID	VLANID	0 to 4,095
Miscellaneous Options		
KeepAliveTO	KATO	0–65,535
Large_Frames	LRGFRM	on or off[a]
MaxBurstLen	MBL	0–65,535
MaxOutstandingR2T	MOR2T	0–65,535
ZIO	ZIO	2 to 16
FW_ZIO_Enable_Mode	ZIOE	on or off
Task_Management_Timeout	TMTO	0 to 65,535
ENABLE_IPV4	EIPV4	on or off

Table 7-3. Adapter Configuration Parameters (Continued)

Name <config_name>	Alias <config_alias>	Value <value>
ENABLE_4022IPV4	E4022IPV4	on or off
ENABLE_IPV6	EIPV6	on or off
LOC_LINK_AUTO	LOCLA	on or off
ROUTABLE_AUTO	RAUTO	on or off
LDROUTER_AUTO	LDRA	on or off
IPv6_Addr_Local_link	IPLL	IPv6 address format
IPv6_Addr_Routable0	IPR0	IPv6 address format
IPv6_Addr_Routable1	IPR1	IPv6 address format
Default_IPv6_Router	IPRR	IPv6 address format
IPv4TOS	IPV4TOS	0 to 255
IPv4_TOS_ENABLE	TOS_ENABLE	on or off
IPv4TTL	IPV4TTL	0 to 255
IPv6_Port	IPV6PORT	0 to 65,535
IPv6_Gratuitious_Neighbor_Ad_Enable	IPV6GNAE	on or off
IPv6_Redirect_Enable	IPV6RDE	on or off
IPv6_Nagle	TCPV6ND	on or off
IPV6_TCP_Timer_Scale	TCPV6TS	0 to 7
IPv6_TCP_Time_Stamp	TCPV6TST	on or off
IPv6_TCP_Window_Scale	IPV6TCPWS	0 to 14
IPv6_VLAN_ID	IPV6VLANID	0 to 4,095
IPv6_VLAN_User_Priority	IPV6VLANUP	0 to 7
IPv6_VLAN_Enable	IPV6VLANEN	on or off
IPv6_Traffic_Class	IPV6TC	0 to 255
IPv6_Hop_Limit	IPV6HL	0 to 255 [b]
IPv6_ND_Retransmit_Timer	IPV6NDRET	0 to 4,294,967,295b
IPv6_ND_Stale_Timeout	IPV6STO	60,000 to 4,294,967,295b
IPv6_ND_Reachable_Timer	IPV6NDRT	30,000 to 4,294,967,295b

Table 7-3. Adapter Configuration Parameters (Continued)

Name <config_name>	Alias <config_alias>	Value <value>
IPv6_DAD_Count	IPV6DAD	0 to 255

[a] Not for QLA4010

[b] Router may override

-nc (Display Neighbor Cache [IPv6])

To display the neighbor cache (IPv6 only), issue the `-nc` command as follows:

```
qaucli -pr iscsi -nc <hba_port_inst>
```

-netconf (Configure IPv6 Settings)

To configure the network settings, issue the `-netconf` command as follows:

```
qaucli -pr iscsi -netconf <hba_port_inst> [-IP <IP_address>]
[-IPNM <subnet_mask>] [-IPGW <gateway_address>]
```

Where:

`IP <IP_address>` = Set the IP address of the adapter
`IPNM <subnet_mask>` = Set the subnet mask of the adapter
`-IPGW <gateway_address>` = Set the gateway IP address
`-DISN4` = Disable IPv4 network setup
`-IPv4DHCP` = Set DHCP on

Setting the IP address, subnet mask, or gateway turns off DHCP address resolution for the IP configuration, if it is on.

-netconf6 (Configure IPv6 Settings)

To manually configure the IPv6 network settings, issue the `-netconf6` command as follows:

```
qaucli -pr iscsi -netconf6 <hba_port_inst> [-IP <IPv6_address>]
[-IPNM <subnet_mask> <IPv6>] [-IPGW <gateway_address>]
```

Where:

`IP <IPv6_address>` = Set the IP address of the adapter
`-IPNM <subnet_mask>` = Set the subnet mask of the adapter
`-IPGW <gateway_address>` = Set the gateway address
`-DISN4` = Disable IPv4 network setup[a]
`-IPV4DHCP` = Set DHCP on[b]
`-IP` = Set IP address

-IPNM = Set IP netmask
-IPGW = Set IP gateway
-DISN6 = Disable IPv6 network setup[c]
-IPLLA = Automatically set local link address[d]
-IPLL = Manually set local link address
-IPR01A = Automatically set IPR0 and IPR1[d]
-IPR0 = Manually set routable address 0[d]
-IPR1 = Manually set routable address 1[d]
-IPRRA = Automatically set router address[d]
-IPRR = Manually set router address[d]

Notes

[a] Mutually exclusive with the other IPv4 commands

[b] Mutually exclusive with -IP/-IPNM/IPGW

[c] Mutually exclusive with -IPLLA/-IPLL

[d] Manual or automatic—mutually exclusive

Setting the IP address, subnet mask, or gateway turns off DHCP address resolution for the IP configuration, if it is on. Some examples of usage follow.

To set only the local link address, issue the following command:

```
qaucli -pr iscsi -netconf6 0 -IPLL fe80::1
```

To set everything automatically, issue the following command:

```
qaucli -pr iscsi -netconf6 0 -IPLLA -IPR01A -IPRRA
```

To disable the IPv4 network, issue the following command:

```
qaucli -pr iscsi -netconf6 0 -DISN4
```

To disable the IPv4 and IPv6 networks, issue the following command:

```
qaucli -pr iscsi -netconf6 0 -DISN4 DISN6
```

-nh (Configure iSCSI Settings)

To set the adapter-level parameters for multiport adapters, issue the -nh command as follows:

```
qaucli -pr iscsi -nh <hba_port_inst> (<config_name>|<config_alias>
<value>)...
```

The valid parameters and their values are shown in Table 7-3 on page 147.

-pa (Add a Target)

To add persistent targets, issue the `-pa` command as follows:

```
qaucli -pr iscsi -pa <hba_port_inst> <IP_address>
[-PORT <port_number>] [-INAME <iSCSI_name>]
```

If a port number `-PORT <port number>` is not specified, QCC CLI uses the default number, 3260. If an iSCSI name `-INAME <iSCSI_name>` is not specified, QCC CLI uses the default value, an empty string.

-pad (CNA Port Target/LUN Information–iSCSI)

To view all targets for a port, issue the `-pad` command as follows:

```
qaucli -pr iscsi -pad <hba_port_inst>
```

-pb (Bind Target)

To bind a target (make it persistent), issue the `-pb` command as follows:

```
qaucli -pr iscsi -pb <hba_port_inst> <target_ID>
```

-pbootcode (Set Primary Boot Target Information)

To set the primary boot code boot target and LUN, issue the `-pbootcode` command as follows:

```
qaucli -pr iscsi -pbootcode <hba_port_inst> <target> <lun>
```

This command is not active for the PPC.

For information on secondary boot code, see "-sbootcode (Set Secondary Boot Target Information)" on page 156.

-pdt (Disable a Target)

To disable a target, issue the `-pdt` command as follows:

```
qaucli -pr iscsi -pdt <hba_port_inst> <target_ID>
```

-pet (Enable a Target)

To enable a target, issue the `-pet` command as follows:

```
qaucli -pr iscsi -pet <hba_port_inst> <target_ID>
```

-pinfo (CNA Port Information—iSCSI)

To view port information for the specified adapter, issue the `-pinfo` command as follows:

```
qaucli -pr iscsi -pinfo <hba_port_inst>
```

-ping (Ping Target)

To ping the target device, issue the `-ping` command as follows:

`qaucli -pr iscsi -ping <hba_port_inst> <IP_address> <ping_count> <packet_size> <IPv6_source_address>`

The following provides the `<IPv6 source address>` values:

0 = Do not care
1 = Local link
2 = Address 0
3 = Address 1

Where:

`<hba_port_inst>` = The adapter port that sends the ping
`<IP_address>` = The IP address to ping
`<ping_count>` = The number of ping packets you want (1–2^{31}).
`<packet_size>` = The size of the ping packet 0–64kB
`<IPv6_source_address>` = Origin device

-ps

To view persistent targets for an adapter port, issue the `-ps` command as follows:

`qaucli -pr iscsi -ps <hba_port_inst> [<target_ID>]`

If you do not specify the `<target_ID>` option, QConvergeConsole CLI lists all targets for the specified adapter port number. If you do not specify the port instance `<hba_port_inst>` or the target ID `<target_ID>`, QConvergeConsole CLI lists all target IDs for all adapter ports in the system.

-pu

To unbind a persistent target, issue the `-pu` command as follows:

`qaucli -pr iscsi -pu <hba_port_inst> <target_ID>`

-px

To unbind all persistent targets on the adapter, issue the `-px` command as follows:

`qaucli -pr iscsi -px <hba_port_inst>`

-r

Issue the `-r` command option to update the ROM image.

CAUTION

- Before attempting to update the ROM image, contact QLogic Customer Support (see "Contact Information" on page xxxii).
- Before updating the ROM image, ensure that no I/O processes are running.
- An administrator must take necessary actions to ensure changes are fully recognized by the operating system (reboot, flush cache, sync disk, and so forth).
- A ROM update and reset are performed, requiring that all applications accessing impacted LUNs must be shut down.
- Any impacted systems must be unmounted.

Be sure to select **Save changes and reset HBA** afterwards; otherwise, the changes do not take effect.

Type the following command to update the specified adapter's ROM:

```
qaucli -pr iscsi -r <hba_port_inst> <file_name>
```

The `<hba_port_inst>` parameter is the adapter instance to update. The `<file_name>` parameter indicates the file containing the ROM image to upload.

-rdf

To restore the specified adapter port's firmware values to the factory default values, issue the `-rdf` command:

```
-rdf <hba_port_inst>
```

Issuing this command resets the adapter.

-rdh (Port Restore Factory Defaults)

Issue the following command to restore the specified adapter port's settings to their factory defaults:

```
-rdh <hba_port_inst>  A | ([F][N][I][T][C][V])
```

Where:

`<hba_port_inst>` = Adapter port whose factory settings you want to restore.

`A` = Restore the factory settings for the entire adapter (firmware parameters, network parameters, iSCSI name, targets, CHAP table, NVRAM, and Internet Protocol security [IPsec]).

Issuing this command resets the adapter. If you use this option, no others are necessary.

`F` = Restore firmware parameters to the factory default values. Issuing this command resets the adapter.

`N` = Restore network parameters to the factory default values. Issuing this command resets the adapter.

`I` = Restore the iSCSI name to the factory default value. Issuing this command resets the adapter.

`T` = Restore the targets to the factory default values.

`C` = Restore the CHAP table to the factory default values.

`V` = Restore the NVRAM to the factory default values.

If you want to restore all areas of the adapter port, specify either the `A` parameter or no parameter. Otherwise, specify which areas to restore. For example, the following command restores the firmware and NVRAM to the factory defaults:

```
qaucli -pr iscsi -rdh <hba_port_inst> F N
```

-rwt (Read Write Buffer Test—iSCSI)

CAUTION

Before running a read/write buffer test, make sure that the adapter does not have any outstanding I/O operations.

The read/write buffer test writes an 8-byte or 16-byte pattern to the disk's buffer and reads the written buffer back. It is nondestructive to disk data.

To do a read/write buffer test, issue the `-rwt` command as follows:

```
qaucli -pr iscsi -rwt <hba_port_inst> [-STOP] [-RWPAT <n>]
[-CNT <test_count>]
```

Where:

`<hba_port_inst>` = The adapter port tested.

`-STOP` = Stop the test if a failure occurs.

`-RWPAT n` = Set the pattern to write to the buffer, one of the following:

n = 1 (8 bytes of 0x55h) (default)
n = 2 (8 bytes of 0x5Ah)
n = 3 (16 bytes of 0xAAh)
n = 4 (16 bytes of 0xFFh)

`-CNT` = Used with `<test count>` to set the number of tests, with one test as default.

`<test_count>` = The number of tests to do, with one as default. Type a number between 2–(2^{31}) for more than one test.

To continue, press ENTER.

NOTE

To stop an active diagnostic test, press ENTER. To use an alternate key to stop tests, modify this line in the `sfcli.properties` configuration file:

Default: `node.app.diag.ascii.abortkey=CR`

Custom: `node.app.diag.ascii.abortkey=<stop key>`

Where `<stop key>` is a–z or A–Z (press SHIFT for uppercase).

Example 1: To set the stop key to **S** (press SHIFT+S to stop the test):

`node.app.diag.ascii.abortkey=S`

Example 2: To set the stop key to **s** (press S to stop the test):

`node.app.diag.ascii.abortkey=s`

-save (Save Host Configuration)

To save the configuration (in XML) of all adapters detected, issue the `-save` command as follows:

```
qaucli -pr iscsi -save <file_name>
```

-sbootcode (Set Secondary Boot Target Information)

To set the secondary boot target and LUN, issue the `-sbootcode` command as follows:

```
qaucli -pr iscsi -sbootcode <hba_port_inst> <boot_target>
<boot LUN>
```

Issuing this command saves the configuration data to an XML file portable to all platforms supported by iSCSI. This command is not active for PPC.

For primary boot code, see “-pbootcode (Set Primary Boot Target Information)” on page 152.

-sbootcodecid (Set Alternative Client ID)

To set the alternative client ID (seven characters maximum), issue the `-sbootcodecid` command as follows:

```
qaucli -pr iscsi -sbootcodecid <hba_port_inst>
<Alternative Client ID>
```

This command is not active for the PPC.

-sdmrc

To return the SDM library return code, issue the `-sdmrc` command as follows:

```
qaucli -pr iscsi -sdmrc [<simple_pattern>]
```

When `<simple_pattern>` is specified, only the lines containing that string are printed.

-stadd (Add a Send Target)

To add a send target for discovery, issue the `-stadd` command as follows:

```
-stadd <hba_port_inst> <IP_address> [CHAP_index] [TGBCA <value>]
```

Where <value> can be **on** or **off**; **on** causes the send target login to require bidirectional CHAP.

NOTE

To issue the -stdsp, -strd, and -strem commands, you must first issue the -stadd command at least once to add a send target for discovery only (no target login). After issuing the -stadd command to add at least one send target for discovery only, you can issue the -stdsp command to display all send targets for discovery, along with the appropriate index to be used for the -strd and -strem commands. The -strd command (with the target instance from the -stdsp command) must be used to perform the send target discovery to discover all target portals.

After a send target for discovery only has been added by means of the -stadd command and discovered by the -strd command, or the iSNS has been configured (with a valid iSNS server), a list of targets and target portals is discovered. When you issue the -dtdsp command, the discovered target portals are displayed. The displayed discovered target portals are not logged into targets at this time, but are local to QConvergeConsole CLI and are available for login.

- To log a discovered target portal into a target, issue the -dtli command.
- To log all discovered target portals into targets, issue the -dtlia command.
- To remove discovered target portals from the list, issue the -dtrem command.

-statport (Display iSCSI Port Statistics)

To view the port statistics for the specified adapter, issue the -statport command as follows:

```
qaucli -pr iscsi -statport <hba_port_inst>
```

-stathba

To display adapter-level statistics, issue the -stathba command as follows:

```
qaucli -pr iscsi -stathba <hba_port_inst>
```

-stdsp (Display Send Targets)

To view the send targets, issue the -stdsp command as follows:

```
qaucli -pr iscsi -stdsp <hba_port_inst>
```

To issue the `-stdsp` command, you must first issue the `-stadd` command at least once to add a send target for discovery only. For more information, see "-stadd (Add a Send Target)" on page 157.

-strd (Mark Send Target for re-discovery)

To execute a rediscovery of targets for the specified send target, issue the `-strd` command as follows:

```
qaucli -pr iscsi -strd <hba_port_inst> <target_instance>
```

To obtain the target instance, issue the `-dtdsp` command.

To issue the `-strd` command, you must first issue the `-stadd` command at least once to add a send target for discovery only. For more information, see "-stadd (Add a Send Target)" on page 157.

-strem (Remove a Send Target)

To remove the specified send target, issue the `-strem` command as follows:

```
qaucli -pr iscsi -strem <hba_port_inst> <target_instance>
```

To obtain the target instance, issue the `-dtdsp` command.

To issue the `-strem` command, you must first issue the `-stadd` command at least once to add a send target for discovery only. For more information, see "-stadd (Add a Send Target)" on page 157.

-strema

To remove all send targets, issue the `-strema` command as follows:

```
qaucli -pr iscsi -strema <hba_port_inst>
```

-t (Display Target Information)

To view target information, issue the `-t` command as follows:

```
qaucli -pr iscsi -t <hba_port_inst> [<target_ID>]
```

If you only specify the `<hba_port_inst>` parameter, QConvergeConsole CLI lists target information for all targets on the specified adapter port. If you specify the optional parameter `<target_ID>`, QConvergeConsole CLI lists information on the specified target only. This includes both persistent and dynamic targets.

-tc (Configure Target Parameters)

To set target parameter settings, issue the `-tc` command. For a list of target parameters you can configure, issue the following command:

```
qaucli -pr iscsi -tc <hba_port_inst> <target_ID>
<config_name>|<config_alias> <value> <config_name>|<config_alias>
<value>
```

-tlvdetails (TLV)

NOTE

The `-tlvdetails` command is not supported on 4000 Series iSCSI adapters.

To list the TLV details for a specific port instance, issue the `-tlvdetails` command. For example:

```
qaucli -pr iscsi -tlvdetails <hba_port_inst>
```

-tlvraw (TLV)

NOTE

The `-tlvraw` command is not supported on 4000 Series iSCSI adapters.

To list the TLV raw information for a specific port instance, issue the `-tlvraw` command. For example:

```
qaucli -pr iscsi -tlvraw <hba_port_inst>
```

-tp

To see information stored in Flash memory about persistent targets, issue the `-tp` command. If you enter only the adapter port instance number, QConvergeConsole CLI returns information for all targets of that adapter port instance. If you enter the optional target ID, the CLI returns information for that target only, for example:

```
qaucli -pr iscsi -tc <hba_port_inst> <target_ID>
```

-ts

To see summary information about both persistent and nonpersistent targets, issue the `-ts` command as follows:

```
qaucli -pr iscsi -ts [hba_port_inst] [target_ID]
```

-ver

To view the QConvergeConsole CLI tool version, issue the `-ver` command as follows:

```
qaucli -pr iscsi -ver
```

-vpd (CNA VPD Information—iSCSI)

To view VPD information, if any, issue the `-vpd` command as follows:

```
qaucli -pr iscsi -vpd <hba_port_inst>
```

Available VPD information varies by adapter manufacturer. QLogic adapters ship with VPD information shown as `N/A`.

8 NIC Partitioning (NPAR) Noninteractive Commands

This chapter describes the noninteractive NIC partitioning (NPAR) command format and parameters of QConvergeConsole CLI. NPAR is supported by QLogic 3200 Series Intelligent Ethernet Adapters and 8200 and 8300 Series Converged Network Adapters.

NOTE

SR-IOV and NPAR cannot be enabled at the same time. If SR-IOV is enabled on the host, all NPAR-related commands are disabled.

For an overview of NPAR, see Appendix A NIC Partitioning (NPAR) Overview. For instructions on setting up NPAR in interactive mode, see Chapter 12 Setting Up NPAR Using Interactive Commands.

NOTE

To view the help, issue the `-h` command.

Command Format

Noninteractive mode syntax includes the following:

```
qaucli -npar <switch> [<parameters>]
```

Where `<switch>` is one of the following:

- -ainfo (NPAR Adapter Information)
- -changepersonality (Change PCI Function Personality)
- -ei
- -eswitchinfo
- -eswitchstats (General eSwitch Statistics)
- -eswitchvportstats (View All eSwitch Statistics)

- -feswitchcfg (Function x ESwitch Configuration)
- -finfo
- -h (Help), -?, ?
- -ia
- -if
- -ip
- -peswitchcfg
- -pinfo (NPAR Port Information)
- -restoreeswitchcfg (Restore eSwitch Configuration)
- -setmaxbw (Modify Maximum Bandwidth)
- -setminbw (Modify Minimum Bandwidth)

Command Summary

This section lists and describes all NPAR noninteractive commands in alphabetical order.

NOTE

A parenthetical phrase after a command indicates the equivalent *interactive* menu option. For example, **-ainfo** (**NPAR Adapter Information)** indicates that the `-ainfo` command has an equivalent **NPAR Adapter Information** menu option described in Chapter 11 Converged Network Adapter Interactive Commands.

Not all noninteractive commands have equivalent interactive menu options.

-ainfo (NPAR Adapter Information)

To view NPAR adapter information, issue the `-ainfo` command as follows:

```
qaucli -npar -ainfo <adapter_inst>
```

Where `<adapter_inst>` is the adapter number displayed by the `-ia` command.

-changepersonality (Change PCI Function Personality)

To change a physical function's personality (see the Glossary for a definition of *personality*), issue the `-changepersonality` command as follows:

```
qaucli -npar -changepersonality <func_inst> <personality>
```

Where:

- <func_inst> is the physical function number displayed by the -if command.
- Specify one of the following for the <personality> parameter:
  - Specify nic to change the personality type to NIC.
  - Specify iscsi to change the personality type to iSCSI.
  - Specify fcoe to change the personality type to Fibre Channel over Ethernet (FCoE).
  - Specify disable to disable the function.

-ei

To get NPAR command line return codes, issue the -ei command as follows:

```
qaucli -npar -ei
```

-eswitchinfo

To get NPAR eSwitch information, issue the -eswitchinfo command as follows:

```
qaucli -npar -eswitchinfo <port_inst>
```

Where <port_inst> is the physical port number displayed by the -ip command.

-eswitchstats (General eSwitch Statistics)

To display eSwitch statistics, issue the -eswitchstats command as follows:

```
qaucli -npar -eswitchstats <port_inst>
```

Where <port_inst> is the physical port number displayed by the -ip command.

-eswitchvportstats (View All eSwitch Statistics)

To display eSwitch NPAR statistics, issue the -eswitchvportstats command as follows:

```
qaucli -npar -eswitchvportstats <func_inst>
```

Where <func_inst> is the physical function number displayed by the -if command.

-feswitchcfg (Function *x* ESwitch Configuration)

To change eSwitch physical function configuration, issue the -feswitchcfg command as follows:

qaucli -npar -feswitchcfg <func_inst> <option> <value>

Where:

- <func_inst> is the physical function number displayed by the -if command.
- <option> and <value> are one of the option and value pairs listed in Table 8-1.

Table 8-1. eSwitch Physical Function Options

Option	Value
discard_tagged	1 (enable) or 0 (disable) discard tagged configuration
mac_addr_change	1 (enable) or 0 (disable) MAC address change configuration
mac_anti_spoof_chk	1 (enable) or 0 (disable) MAC anti-spoof check
promisc_mode	1 (enable) or 0 (disable) promiscuous mode configuration
rx_mcast_rep	1 (enable) or 0 (disable) receive multicast configuration
tx_mcast_rep	1 (enable) or 0 (disable) transmit multicast configuration
vlan_id	VLAN ID value
vlan_filter	1 (enable) or 0 (disable) VLAN filter configuration
vlan_strip	1 (enable) or 0 (disable) VLAN stripping configuration

-finfo

To view NPAR physical function information, issue the -finfo command as follows:

qaucli -npar -finfo <func_inst>

Where <func_inst> is the physical function number displayed by the -if command.

-h (Help)

To view detailed information on the NPAR command and its options, issue the -h command as follows:

qaucli -npar -h

The following are alternate forms of this command:

qaucli -npar -help

qaucli -npar -?

```
qaucli -npar ?
```

-ia

To view a list of NPAR adapters, issue the `-ia` command as follows:

```
qaucli -npar -ia
```

-if

To view a list of NPAR physical functions, issue the `-if` command as follows:

```
qaucli -npar -if
```

-ip

To view a list of the NPAR physical ports, issue the `-ip` command as follows:

```
qaucli -npar -ip
```

-peswitchcfg

To change eSwitch physical port configuration, issue the `-peswitchcfg` command as follows:

```
qaucli -npar -peswitchcfg <port_inst> <option> <value>
```

Where:

- `<port_inst>` is the physical port number displayed by the `-ip` command.
- `<option>` and `<value>` are the option and value pairs listed in Table 8-2

Table 8-2. eSwitch Physical Port Options

Option	Value
`ipv4_tso`	Enable (1) or disable (0) IPv4 TSO configuration
`ipv6_tso`	Enable (1) or disable (0) IPv6 TSO configuration
`layer4_co`	Enable (1) or disable (0) Layer 4 checksum offload configuration

-pinfo (NPAR Port Information)

To view NPAR port information, issue the `-pinfo` command as follows:

```
qaucli -npar -pinfo <port_inst>
```

Where:

- `<port_inst>` is the physical port number displayed by the `-ip` command.
- `<func_inst>` is the physical function number displayed by the `-if` command.

-restoreeswitchcfg (Restore eSwitch Configuration)

To restore eSwitch configuration, issue the `-restoreeswitchcfg` command as follows:

```
qaucli -npar -restoreeswitchcfg
```

The eSwitch configuration information is restored from the `eswitch.cfg` file in the installation directory.

-setmaxbw (Modify Maximum Bandwidth)

To set the NPAR maximum bandwidth value, issue the `-setmaxbw` command as follows:

```
qaucli -npar -setmaxbw <func_inst> <max_bw_value> [-p]
```

Where:

- `<func_inst>` is the physical function number displayed by the `-if` command.
- `<max_bw_value>` is the maximum bandwidth value to set.
- `-p` is an optional parameter; if specified, the maximum bandwidth will persist across system reboots.

-setminbw (Modify Minimum Bandwidth)

To set the NPAR minimum bandwidth value, issue the `-setminbw` command as follows:

```
qaucli -npar -setminbw <func_inst> <min_bw_value> [-p]
```

Where:

- `<func_inst>` is the physical function number displayed by the `-if` command.
- `<min_bw_value>` is the minimum bandwidth value to set.
- `-p` is an optional parameter; if specified, the minimum bandwidth will persist across system reboots.

Part III

Interactive Commands

Part III of this guide provides details about the interactive commands of QConvergeConsole CLI in the following chapters:

- Chapter 9 NIC Interactive Commands
- Chapter 10 Fibre Channel Interactive Commands
- Chapter 11 Converged Network Adapter Interactive Commands
- Chapter 12 Setting Up NPAR Using Interactive Commands

9 NIC Interactive Commands

This chapter describes the interactive mode command line options for QLogic Intelligent Ethernet Adapters. The interactive mode uses a series of menus from which you select the option you want and type the number for that option.

For information on noninteractive mode operation—in which you simply enter a short code word to perform operations on the adapter—refer to Chapter 5 NIC Noninteractive Commands for the corresponding adapter function

For information on documentation conventions specific to interactive commands, refer to “Conventions for Interactive Commands” on page xxx.

The Main Menu contains the following options:

```
Main Menu

 1:  Adapter Information (see page 170)
 2:  Adapter Configuration (see page 176)
 3:  Adapter Updates (see page 182)
 4:  Adapter Diagnostics (see page 183)
 5:  Monitoring (see page 186)
 6:  NIC Partitioning (NPAR) Information (see page 188)
 7:  NIC Partitioning (NPAR) Configuration (see page 189)
 8:  SR-IOV Capability (see page 190)
 9:  Refresh (see page 196)
10:  Help (see page 197)
11:  Exit (see page 197)

     Please Enter Selection:
```

NOTE

NIC partitioning (NPAR) setup procedures are covered in Chapter 12 Setting Up NIC Partitions.

Adapter Information

1. Adapter Information ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Information** option, and then select the adapter type (**Converged Network Adapter**). The Converged Network Adapter Information menu presents options for viewing information about the adapter, ports, and VPDs. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter Information

1:  CNA Adapter Information
2:  CNA Port Information
3:  CNA VPD Information
4:  CNA NIC Information
```

CNA Adapter Information (-icna)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information

From the Converged Network Adapter Information menu, select the **CNA Adapter Information** option. From the adapter menu, select the adapter (**CNA Model**) for which to view information for the selected adapter. For example:

```
CNA Adapter Information

 1: CNA Model: QLE3242  SN: AFE1030C04339
      Port   1 [Protocol(s): NIC]
      Port   2 [Protocol(s): NIC]

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
-----------------------------------------------------------------
Hostname                    : AppSolDev1
Adapter Model               : QLE8242
Device ISP ID               : ISP8020
Chip Revision               : B0
Adapter Alias               : Roseville Lab2
```

```
Serial Number               : AFE1030C04367
MAC Address Function 1      : 00:0e:1e:04:9c:80
MAC Address Function 2      : 00:0e:1e:04:9c:84
Driver Version              : 200-0307a
Running Firmware Version    : 4.07.32
Flash Package Version       : 1.4.52
PXE Boot Version            : 2.0.3.06
-----------------------------------------------------------------
```

CNA Port Information (-pinfo)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information

From the Converged Network Adapter Information menu, select the **CNA Port Information** option. From the port menu, select a port for which to view port details. For example:

```
    Converged Network Adapter Information

    CNA Model QLE3242  SN: AFE1030C04339
       1. Port   1 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:30
       2. Port   2 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:34

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
-----------------------------------------------------------------

Hostname                    : amd-28
Adapter Model               : QLE3242
Port Alias                  : None
Physical MAC Address        : 00:0e:1e:04:d3:34
Physical MAC Address Alias  : None
Active/LAA MAC Address      : 00:0e:1e:04:d3:34
Active/LAA MAC Address Alias: None
IPv4 Address                :
IPv4 Subnet Mask            :
IPv4 Default Gateway        :
IPv4 DHCP Enabled           : No
DHCP Servers                : Not Available
DNS Servers                 : Not Available
IPv6 Addresses              : Not Available
```

```
IPv6 Default Router          : Not Available
Link Status                  : Down
MTU                          : 1500
Interface Scope ID           :
Interface Speed              : 10 Gbps
Interface Description        : QLE3242 QLogic Pci Express to 10GbE
Dual Channel
SR-IOV Enabled               : No
-----------------------------------------------------------------
```

CNA VPD Information (-vpd)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information

From the Converged Network Adapter Information menu, select the **CNA VPD Information** option. From the port menu, select a port for which to view VPD information. For example:

```
    Converged Network Adapter Information
    CNA Model QLE3242  SN: AFE1030C04339
       1. Port   1 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:30
       2. Port   1 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:34

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
-----------------------------------------------------------------
VPD
Description                  : QLogic PCIe Dual Port 10GbE Adapter
Part Number                    : QLE3242
Serial Number                  : AFE1030C04339
Manufacturing Id               : NE3210404-02  A
Flash Image Version            : 010437
-----------------------------------------------------------------
```

CNA NIC Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA NIC Information

From the Converged Network Adapter Information menu, select the **CNA NIC Information** option. From the port menu, select a port for which to view NIC information. From the NIC Utilities Menu, select options for either **Data Center Bridging** or **TLV**.

Data Center Bridging

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA NIC Information ▸ 1. Data Center Bridging

From the NIC Utilities Menu, select **Data Center Bridging** to view DCBX port settings; for example:

```
-------------------------------------------------------------------
Display DCBX Port Settings
-------------------------
DCBX
-------------------------
DCBxEnabled: true
Willing: true
Port Pause Type: Standard
SAN Priority CoS: 3
FCoE Priority CoS: 3

-------------------------
ETS
-------------------------
Priority Tx Mode: Bandwidth
LAN Bandwidth Percentage: 0
Priority Group 0 Bandwidth Percentage: 50
Priority Group 1 Bandwidth Percentage: 50
Priority Group 2 Bandwidth Percentage: 0
Priority Group 3 Bandwidth Percentage: 0
Priority Group 4 Bandwidth Percentage: 0
Priority Group 5 Bandwidth Percentage: 0
Priority Group 6 Bandwidth Percentage: 0
Priority Group 7 Bandwidth Percentage: 0
LAN Unused Bandwidth To SAN: false
SAN Unused Bandwidth To LAN: false
-------------------------------------------------------------------
```

TLV

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA NIC Information ▸ 2. TLV

From the NIC Utilities Menu, select **TLV** to view either detailed or raw port DCBX TLV parameters.

Detailed example output:

```
-----------------------------------------------------------------
DCBX Parameters Details for CNA instance 1 -
-----------------------------------------------------------------

DCBX TLV (Type-Length-Value) Data
=================================
DCBX Parameter Type and Length
DCBX Parameter Length: N/A
DCBX Parameter Type: N/A

DCBX Parameter Information
   Parameter Type: Current
   Pad Byte Present: N/A
   DCBX Parameter Valid: No

DCBX Parameter Data
   Priority Group ID of Priority 1:0
   Priority Group ID of Priority 0:0

   Priority Group ID of Priority 3:0
   Priority Group ID of Priority 2:0

   Priority Group ID of Priority 5:0
   Priority Group ID of Priority 4:0

   Priority Group ID of Priority 7:0
   Priority Group ID of Priority 6:0

   Priority Group 0 Percentage:0
   Priority Group 1 Percentage:0
   Priority Group 2 Percentage:0
   Priority Group 3 Percentage:0
   Priority Group 4 Percentage:0
   Priority Group 5 Percentage:0
   Priority Group 6 Percentage:0
   Priority Group 7 Percentage:0
```

```
   Number of Traffic Classes Supported:N/A

DCBX Parameter Information
   Parameter Type: Local
   Pad Byte Present: N/A
   DCBX Parameter Valid: No

DCBX Parameter Data
   Priority Group ID of Priority 1:0
   Priority Group ID of Priority 0:0

   Priority Group ID of Priority 3:1
   Priority Group ID of Priority 2:0

   Priority Group ID of Priority 5:0
   Priority Group ID of Priority 4:0

   Priority Group ID of Priority 7:0
   Priority Group ID of Priority 6:0

   Priority Group 0 Percentage:50
   Priority Group 1 Percentage:50
   Priority Group 2 Percentage:0
   Priority Group 3 Percentage:0
   Priority Group 4 Percentage:0
   Priority Group 5 Percentage:0
   Priority Group 6 Percentage:0
   Priority Group 7 Percentage:0

   Number of Traffic Classes Supported:N/A
.
.
.
```

Raw example output:

```
----------------------------------------------------------------
DCBX Parameters Details for CNA instance 1 -
----------------------------------------------------------------

DCBX TLV (Type-Length-Value) Data
=================================
00 00 00 01 0c 00 00 00
00 00 00 18 00 00 00 01
```

```
00 00 00 00 32 32 00 00
00 00 00 00 02 02 02 02
02 02 02 02 01 06 89 08
01 14 89 08 02 bc 0c 10
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
.
.
.
```

Adapter Configuration

2. Adapter Configuration ▸ 1. CNA Configuration

From the main menu, select the **Adapter Configuration** option, and then select the adapter type (**CNA Configuration**). The Converged Network Adapter (CNA) NIC Configuration menu presents options to configure the adapter alias and the NIC port settings. For example:

```
Adapter Type Selection

1:  CNA Configuration
2:  Fibre Channel Configuration

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) NIC Configuration

1:  Adapter Alias
2:  NIC Port Setting Configuration
```

Adapter Alias (-nh)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. Adapter Alias

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **Adapter Alias** option. From the port menu, select a port for which assign an alias. For example:

```
Converged Network Adapter (CNA) NIC Configuration

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30
```

```
         2. Port   12 [Protocol(s): NIC]
            MAC Address: 00:0E:1E:04:D3:34

          (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
          Please Enter Selection: 1
CNA_Alias [None]:adapter_alias
```

NIC Port Setting Configuration (-c)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **NIC Port Setting Configuration** option. From the port menu, select a port to present the Port Settings Menu with options to view configured port settings, configure port settings, change the port alias, change the MAC alias, and save the port configuration. For example:

```
    Converged Network Adapter (CNA) NIC Configuration

    CNA Model QLE3242  SN: AFE1030C04339
       1. Port   1 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:30
       2. Port   2 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:34

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Port Settings Menu

=======================================================
CNA           : 0 Port 2
SN            : AFE1030C04339
CNA Model     : QLE3242
CNA Desc.     : QLE3242 QLogic Pci Express to 10GbE Dual Channel
Ethernet Adapters
MPI Fw Version: 4.07.31
Physical MAC  : 00-0E-1E-04-D3-34
LAA MAC       : 00-0E-1E-04-D3-34
IPv4 Address  : 0.0.0.0
Link          : Down
=======================================================
    1:  Display Configured Port Settings
    2:  Configure Port Settings
    3:  Change Port Alias Name
```

```
4:  Change MAC Alias Name
5:  Port Restore Defaults
6:  DCBX Port Settings
7:  Save Port Configuration
8:  Refresh
```

Display Configured Port Settings (-iset)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 1. Display Configured Port Settings

From the Port Settings Menu, select the **Display Configured Port Settings** option to view the configure port parameters. For example:

```
IPv4_Checksum_Offload_Enable        : RxTx
Jumbo_Frames_MTU_9000_Enable        : off
LOCAL_Administered_Address_MAC      : 00:0e:1e:04:d3:34
Port_Alias                          : None
Port_Wake_On_LAN_Option             : Disabled
Port_PXE_Enable                     : off
Flow_Control                        : Rx Tx Enabled
Max_Jumbo_Buffers                   : 1024
Receive_Buffer_Count                : 4096
Transmit_Buffer_Count               : 1024
```

Configure Port Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 2. Configure Port Settings

From the Port Settings Menu, select the **Configure Port Settings** option to configure port parameters. For example:

```
IPv4_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
Jumbo_Frames_MTU_9000_Enable (on, off)[off]:
WOL available options:
 0 = Disabled,
 1 = Wake on Magic Frame,
Port_Wake_On_LAN_Option [Disabled]:
Port_PXE_Enable (on, off)[off]:
Flow_Control (Rx, RxTx)[Rx Tx Enabled]:
Max_Jumbo_Buffers (128, 256, 512, 1024)[1024]:
Receive_Buffer_Size (1024, 2048, 4096, 8192)[4096]:
Transmit_Buffer_Size (128, 256, 512, 1024)[1024]:
```

Change Port Alias Name (-n)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 3. Change Port Alias Name

From the Port Settings Menu, select the **Change Port Alias Name** option to change the port alias. For example:

```
Port_Alias [None]: port_alias
Successfully saved Port Alias
```

Change MAC Alias Name (-n)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 4. Change MAC Alias Name

From the Port Settings Menu, select the **Change MAC Alias Name** option to change the aliases for the physical MAC address alias and the active/LAA MAC address. For example:

```
Physical MAC Address        : 00:0e:1e:04:d3:34
Enter Port_Physical_MAC_Alias [None]: physicalmac_alias
Successfully saved MAC Alias
Active/LAA MAC Address      : 00:0e:1e:04:d3:34
Enter Port_LAA_MAC_Alias [None]: activemac_alias
Successfully saved MAC Alias
```

Port Restore Defaults (-rd)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 5. Port Restore Defaults

From the Port Settings Menu, select the **Port Restore Defaults** option to restore the port defaults.

DCBX Port Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 6. DCBX Port Settings

From the Port Settings Menu, select the **DCBX Port Settings** option to view, configure, restore, and refresh DCBX parameters for the selected port.

```
    DCBX Port Settings Menu

=======================================================
CNA           : 1 Port 2
SN            : RFE1305H31037
CNA Model     : QLE8362
CNA Desc.     : QLogic 8300 Series 10 Gigabit Converged Network
Adapter #4
```

```
MPI Fw Version: 5.02.17
Physical MAC  : 00-0E-1E-14-0E-78
LAA MAC       : 00-0E-1E-14-0E-78
IPv4 Address  : 0.0.0.0
IPv6 Address  : fe80::b4ae:51cb:abec:45a6
Link          : Down
=======================================================
    1:  Display DCBX Port Settings
    2:  Configure DCBX Port Settings
    3:  Save DCBX Port Configuration
    4:  Refresh
```

Display DCBX Port Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 6. DCBX Port Settings ▸ 1. Display DCBX Port Settings

Displayed DCBX port setting information includes the following:

```
Display DCBX Port Settings
--------------------------
DCBX
--------------------------
DCBxEnabled: true
Willing: true
Port Pause Type: Standard
SAN Priority CoS: 3
FCoE Priority CoS: 3

--------------------------
ETS
--------------------------
Priority Tx Mode: Bandwidth
LAN Bandwidth Percentage: 0
Priority Group 0 Bandwidth Percentage: 50
Priority Group 1 Bandwidth Percentage: 50
Priority Group 2 Bandwidth Percentage: 0
Priority Group 3 Bandwidth Percentage: 0
Priority Group 4 Bandwidth Percentage: 0
Priority Group 5 Bandwidth Percentage: 0
Priority Group 6 Bandwidth Percentage: 0
Priority Group 7 Bandwidth Percentage: 0
```

```
LAN Unused Bandwidth To SAN: false
SAN Unused Bandwidth To LAN: false
```

Configure DCBX Port Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 6. DCBX Port Settings ▸ 2. Configure DCBX Port Settings

The DCBX port configuration feature is not currently available.

Save DCBX Port Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 6. DCBX Port Settings ▸ 3. Save DCBX Port Settings

The save DCBX port configuration feature is not currently available.

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 6. DCBX Port Settings ▸ 4. Refresh

Select the **Refresh** option to load and scan DCBX configuration from the `netscli.cfg` file. For example:

```
Using config file: C:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\netscli.cfg
Loading:  1. CNA ...
Loading:  1. CNA Physical Port : 1 (Index :  1) Function ID :  0
...
Loading:  1. CNA Physical Port : 2 (Index :  2) Function ID :  1
...
Refreshing interfaces ... Please wait ......
Scanning for QLogic adapters, please wait...
```

Save Port Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 7. Save Port Configuration

From the Port Settings Menu, select the **Save Port Configuration** option to save changes to the port parameters and aliases. For example:

```
Only save parameters that were modified? (yes, no) [yes]:yes
About to save configured values ... Please wait ...
```

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 8. Refresh

From the Port Settings Menu, select the **Refresh** option to refresh the port parameters.

Adapter Updates

3. Adapter Updates ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Information** option, and then select the adapter type (**Converged Network Adapter**). The CNA Adapter Update menu provides an option to update Flash memory. For example:

```
Adapter Type Selection
1:  Converged Network Adapter
2:  Fibre Channel Adapter
    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

CNA Adapter Update
1:  Flash Update
2:  FW Mini Dump
```

Flash Update (-updimages)

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 1. Flash Update

From the CNA Adapter Update menu, select the **Flash Update** option to update Flash memory. From the adapter menu, select an adapter for which to update Flash memory, and then type the name of the file that contains the Flash image. For example:

```
Flash Update

 1: CNA Model: QLE3242  SN: AFE1030C04339
      Port   1 [Protocol(s): NIC]
      Port   2 [Protocol(s): NIC]

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
Enter file name containing image:image_filename
```

FW Mini Dump

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 2. FW Mini Dump

From the CNA Adapter Update menu, select the **FW Mini Dump** option to dump a firmware core dump into a file for a specific port.

Adapter Diagnostics

4. Adapter Diagnostics ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Diagnostics** option, and then select the adapter type **(Converged Network Adapter)**. The Converged Network Adapter (CNA) Diagnostics menu includes options to test registers, test hardware, test interrupts, test links, test ports, test links, and test LEDs. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) Diagnostics

1:  Register Test
2:  Hardware Test
3:  Flash Test
4:  Interrupt Test
5:  Loopback Test
6:  Link Test
7:  Beacon Test
```

Register Test (-testregister)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. Register Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Register Test** option. From the port menu, select a port for which to run the register test. For example:

```
CNA Model QLE3242  SN: AFE1030C04339
   1. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30
   2. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
```

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Register Test Starts ...

Test Status:           Passed  (Passed=1, Failed=0, ErrorCode=0)
Register Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0

  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Hardware Test (-testhw)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 2. Hardware Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Hardware Test** option. From the port menu, select a port for which to test the hardware. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE3242  SN: AFE1030C04339
       1. Port   1 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:30
       2. Port   2 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:34

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Hardware Test Starts ...

Test Status:      Passed  (Passed=1, Failed=0, ErrorCode=0)
Hardware Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Flash Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 3. Flash Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Flash Test** option. From the port menu, select a port for which to test the flash. For example:

```
Flash Test Starts ...
```

```
Flash Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Interrupt Test (-testinterrupt)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ ▸ 4. Interrupt Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Interrupt Test** option. From the port menu, select a port for which to test the interrupts. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE3242  SN: AFE1030C04339
       1. Port   1 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:30
       2. Port   2 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:34

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Interrupt Test Starts ...

Test Status:          Passed  (Passed=1, Failed=0, ErrorCode=0)
Interrupt Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Loopback Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 5. Loopback Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Loopback Test** option. From the port menu, select a port to test the port.

Link Test (-testlink)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 6. Link Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Link Test** option. From the port menu, select a port to test the links. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE3242  SN: AFE1030C04339
       1. Port   1 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:30
```

```
        2. Port   2 [Protocol(s): NIC]
           MAC Address: 00:0E:1E:04:D3:34

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Link Test Starts ...

Test Status:          Failed  (Passed=0, Failed=1, ErrorCode=15)
Link Test Results:
  Status=Failed
  Passed=0,  Failed=1, ErrorCode=15
```

Beacon (-testled)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 7. Beacon

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Beacon** option. From the port menu, select a port to view the status, and to enable or disable its beacons (LEDs). The Port Beacon Menu provides the following options:

```
    Port Beacon Menu
=====================================================
    1:  Display Port Beacon Status (shows the LED as Enabled or Disabled)
    2:  Enable Port Beacon (changes the LED status to Enabled)
    3:  Disable Port Beacon (changes the LED status to Disabled)
```

Monitoring

5. Monitoring ▸ 1. Converged Network Adapter

From the main menu, select the **Monitoring** option and then select **Converged Network Adapter**. The Converged Network Adapter (CNA) Statistics menu presents options to view NIC port statistics, reset logging parameters, and undo resetting. For example:

```
    Adapter Type Selection

    1:  Converged Network Adapter
    2:  Fibre Channel Adapter

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Converged Network Adapter (CNA) Statistics

    1:  Display NIC Port Statistics
```

```
2:  Reset NIC Statistics
3:  Undo Reset NIC Statistics
```

Display NIC Port Statistics (-statport)

5. Monitoring ▸ 1. Converged Network Adapter ▸ 1. Display NIC Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display NIC Port Statistics** option. From the port menu, select a port for which to view NIC port statistics. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30
   2. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Ethernet Port Statistics:

txPkts                  : 0
txOctets                : 0
txMulticastPkts         : 0
txBroadcastPkts         : 0
txUnicastPkts           : 0
txControlPkts           : 0
txPausePkts             : 0
txPkts64Octets          : 0
.
.
.
```

Reset NIC Statistics (-sreset)

5. Monitoring ▸ 1. Converged Network Adapter ▸ 2. Reset NIC Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Reset NIC Statistics** option. From the port menu, select a port for which to reset the NIC port statistics counters to zero. For example:

```
Converged Network Adapter (CNA) Diagnostics
```

```
CNA Model QLE3242  SN: AFE1030C04339
   1. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30
   2. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
Ethernet Statistics for the current port are reset
```

Undo Reset NIC Statistics (-sunreset)

5. Monitoring ▸ 1. Converged Network Adapter ▸ 3. Undo Reset NIC Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Undo Reset NIC Statistics** option. From the port menu, select a port for which to restore NIC port statistics counters to their values before the reset. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30
   2. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
Statistics for the current port reset - UNDONE
```

NIC Partitioning (NPAR) Information

6. NIC Partitioning (NPAR) Information

From the main menu, select the **NIC Partitioning (NPAR) Information** option to view NPAR information for adapters and ports.

NPAR Adapter Information

6. NIC Partitioning (NPAR) Information ▸ 1. NPAR Adapter Information

Select the **NPAR Adapter Information** menu option to view a list of available functions for the selected adapter. Select either one function or **View all PCI Functions Information** to view general information for the function or all functions. For example:

```
General information
```

```
------------------
Function Id          : 0
Function Type        : NIC
Minimum bandwidth (%): 0
Maximum bandwidth (%): 100
Physical Port Number : 1
MAC Address          : 00:0E:1E:14:0E:70
```

NPAR Port Information

6. NIC Partitioning (NPAR) Information ▸ 2. NPAR Port Information

Select the **NPAR Port Information** menu option to view a list of available functions for the selected port. Select either one function or **View all PCI Functions Information** to view general information for the function or all functions. For example:

```
General information
------------------
Function Id          : 5
Function Type        : iSCSI
Physical Port Number : 2
MAC Address          : 00:0E:1E:14:0E:7A
```

NIC Partitioning (NPAR) Configuration

7. NIC Partitioning (NPAR) Configuration

From the main menu, select the **NIC Partitioning (NPAR) Configuration** option to access the following NPAR configuration options:

```
    QConvergeConsole
    CLI - Version 2.1.0 (Build 1)

NIC Partitioning (NPAR) Configuration

1:  Change PCI Function Personality
```

Change PCI Function Personality

7. NIC Partitioning (NPAR) Configuration ▸ 1. Change PCI Function Personality

From the **NIC Partitioning (NPAR) Configuration** menu, select Change PCI Function Personality to change the personality of the selected adapter port. For example:

```
NIC Partitioning (NPAR) Port Configuration Selection

CNA Model QLE8362 SN: RFE1305H31037
  1. Port   1
      Function   0 [Type: NIC  ] [MAC Address: 00:0E:1E:14:0E:70] Link Down
  2. Port   2
      Function   1 [Type: NIC  ] [MAC Address: 00:0E:1E:14:0E:78] Link Down

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

    QConvergeConsole

    CLI - Version 2.1.0 (Build 1)

NIC Partitioning (NPAR) PCI Function Configuration Selection

1:  Function: 3 MAC: 00:0E:1E:14:0E:79 Type: FCoE
2:  Function: 5 MAC: 00:0E:1E:14:0E:7A Type: iSCSI
3:  Function: 7 MAC: 00:00:00:00:00:00 Type: Disabled

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
    Currently PCI function 3 is configured for FCoE personality type.
    Select the personality type you want to change it to (0=Disable; 2=NIC;
5=Cancel):2
*********Reboot the system for changes to take effect ************
```

SR-IOV Capability

8. SR-IOV Capability

From the main menu, select the **SR-IOV Capability** option to access capabilities for single-root IOV (SR-IOV). The SR-IOV Option menu contains options viewing and configuring SR-IOV and physical and virtual functions:

```
Select an SR-IOV Option

1:  Capability Information
2:  Capability Configuration
```

```
3:  Physical Function Information
4:  Display Virtual Function List
5:  Display Virtual Function Details
6:  Display Virtual Port List (for Windows only)
7:  Display Virtual Port Details (for Windows only)
8:  Display Virtual Queue Details (for Windows only)

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
```

NOTE

The Display Virtual Port and Display Virtual Queue menu options apply only on Windows systems. On Linux, these options are not available.

Capability Information

8. SR-IOV Capability ▸ 1. Capability Information

To view the selected adapter's SR-IOV capabilities:

1. On the SR-IOV Option menu, select the **Capability Information** option.
2. On the SR-IOV Adapter Selection menu, select the CNA Model.

The following shows example output:

```
Adapter supports SR-IOV                  : Yes
SR-IOV Adapter Status                    : Enabled
SR-IOV Driver Status                     : Enabled
Number of VFs on Port 1                  : 8
Number of VFs on Port 2                  : 8
Maximum Physical Functions per Port      : 4
Maximum Virtual Functions per Port       : 64
Maximum Number of VPorts per Port 1      : 121
Maximum Number of MAC Addresses per Port 1: 256 Maximum Number of
Queue Pairs per Port 1  : 121 Successfully got SR-IOV info.

        Hit <Enter> to continue:
```

Capability Configuration

8. SR-IOV Capability ▸ 2. Capability Configuration

To view the selected adapter's SR-IOV capability configuration:

1. On the SR-IOV Option menu, select the **Capability Configuration** option
2. On the SR-IOV Adapter Selection menu, select the CNA Model.

The following shows example output:

```
You can set VFs to the values: 0 ... 64
Number of VFs on Port 1 [8]:
You can set VFs to the values: 0 ... 64
Number of VFs on Port 2 [8]:
Input did not change. Values will not be (re-)saved.

        Hit <Enter> to continue:
```

Physical Function Information

8. SR-IOV Capability ▸ 3. Physical Function Information

To view information about the selected adapter's physical function:

1. On the SR-IOV Option menu, select the **Physical Function Information** option.
2. On the SR-IOV Adapter Selection menu, select the CNA Model.

The following shows example output:

```
Physical Port 1 Physical Function 0
   Number of VFs                    : 4
   Number of VFs Assigned to VMs    : 4
   Total VPs used                   : 5

Physical Port 2 Physical Function 1
   Number of VFs                    : NA
   Number of VFs Assigned to VMs    : NA
   Total VPs used                   : NA
Successfully got SR-IOV info.

        Hit <Enter> to continue:
```

Display Virtual Function List

8. SR-IOV Capability ▸ 4. Display Virtual Function List

To view a list of the selected adapter port's virtual functions:

1. On the SR-IOV Option menu, select the **Display Virtual Function List** option.
2. On the SR-IOV Adapter Selection menu, select the CNA Model.
3. On the SR-IOV Physical Function Selection menu, select the **CNA Model...Port *x* Physical Function *x***.

The following shows example output:

```
Virtual Function List for CNA Model: QLE8362   SN: AFE1226F05754     Physical
Port 0 Physical Function   0 (CNA Port Instance 1)

 (  1) VF Function ID   0  MAC Address: 00:15:5d:08:19:07  VLAN ID:   0
Bandwidth(min-max):   0-  0 Name: 2
 (  2) VF Function ID   1  MAC Address: 00:15:5d:08:19:0e  VLAN ID:   0
Bandwidth(min-max):   0-  0 Name: 2
 (  3) VF Function ID   2  MAC Address: 00:15:5d:08:19:0d  VLAN ID:   0
Bandwidth(min-max):   0-  0 Name: 1
 (  4) VF Function ID   3  MAC Address: 00:15:5d:08:19:09  VLAN ID:   0
Bandwidth(min-max):   0-  0 Name: 1

        Hit <Enter> to continue:
```

If the selected port has no virtual function, the following message appears:

```
No VF(s) to display
```

Display Virtual Function Details

8. SR-IOV Capability ▸ 5. Display Virtual Function Details

To view a list of available VF function IDs for the selected adapter:

1. On the SR-IOV Option menu, select the **Display Virtual Function Details** option.
2. On the SR-IOV Adapter Selection menu, select the CNA Model.
3. On the SR-IOV Physical Function Selection menu, select the **CNA Model...Port *x* Physical Function *x***.
4. On the SR-IOV Virtual Function Selection menu, select a virtual function ID.

The following shows example output:

```
Virtual Function Info for CNA Model: QLE8362   SN: AFE1226F05754
Physical Port 0 Physical Function   0 CNA Port Instance 1

Virtual Function ID: 0
     Name                       : 2
     VPort ID                   : 1
     Minimum bandwidth          : 0
     Maximum bandwidth          : 0
     VF MAC address             : 00:15:5d:08:19:07
     Anti MAC spoofing support : disabled

        Hit <Enter> to continue:
```

Display Virtual Port List

8. SR-IOV Capability ▸ 6. Display Virtual Port List

This option is available on only on Windows systems.

To view a list of the selected adapter's virtual port IDs and status:

1. On the SR-IOV Option menu, select the **Display Virtual Port List** option.
2. On the SR-IOV Adapter Selection menu, select the CNA Model.
3. On the SR-IOV Physical Function Selection menu, select the **CNA Model...Port *x* Physical Function *x***.

The following shows example output:

```
Virtual Port List for CNA Model: QLE8362   SN: AFE1226F05754     Physical Port
0 Physical Function   0 CNA Port Instance 1

  (  1) VF Port ID       0 Attached Function ID: Default VPort State: Active
  (  2) VF Port ID       1 Attached Function ID:   0 State: Active
  (  3) VF Port ID       2 Attached Function ID:   1 State: Active
  (  4) VF Port ID       3 Attached Function ID:   2 State: Active
  (  5) VF Port ID       4 Attached Function ID:   3 State: Active

        Hit <Enter> to continue:
```

If there are no virtual ports, the following message appears:

```
No Virtual Ports to display
```

Display Virtual Port Details

8. SR-IOV Capability ▸ 7. Display Virtual Port Details

This option is available on only on Windows systems.

To view details of the selected adapter's virtual port:

1. On the SR-IOV Option menu, select the **Display Virtual Port Details** option.
2. On the SR-IOV Adapter Selection menu, select the **CNA Model**.
3. On the SR-IOV Physical Function Selection menu, select the **CNA Model...Port *x* Physical Function *x***.
4. On the SR-IOV Virtual Port Selection menu, select a **VF Port ID**.

The following shows example output:

```
Virtual Port List for CNA Model: QLE8362   SN: AFE1226F05754     Physical Port
0 Physical Function   0 CNA Port Instance 1

  (  1) VF Port ID       0 Attached Function ID: Default VPort State: Active

Virtual Port ID: 0
    Type Virtual Port        : Default
    Attached Function ID     : Default VPort
    Number of Queue Pairs    : 1
    State                    : Active

        Hit <Enter> to continue:
```

If no virtual ports are present on port, the following message appears:

```
Info: No Virtual Ports to display
```

Display Virtual Queue Details

8. SR-IOV Capability ▸ 8. Display Virtual Queue Details

This option is available on only on Windows systems.

To view details of the selected adapter's virtual queue:

1. On the SR-IOV Option menu, select the **Display Virtual Queue Details** option.
2. On the SR-IOV Adapter Selection menu, select the **CNA Model**.
3. On the SR-IOV Physical Function Selection menu, select the **CNA Model...Port *x* Physical Function *x***.

4. On the SR-IOV Virtual Machine Queue (VMQ) Selection menu, select a **Virtual Queue ID**.

The following shows example output:

```
Virtual Machine Queue for CNA Model: QLE8362   SN: AFE1226F05754
Physical Port 1 Physical Function   1 CNA Port Instance 2

 (  1) Virtual Queue ID:   0
   Virtual Machine State     : Unknown
   Virtual Machine Name      : WIN-OFSEVEMOR55
   Number of Filters         : 0

        Hit <Enter> to continue:
```

Refresh

9. Refresh

From the main menu, select the **Refresh** option to refresh (reload) the adapters and adapter port indexes. For example:

```
Scanning for QLogic adapters, please wait...
Using config file: C:\Program Files\...\iscli.cfg
Using config file: C:\Program Files\...\netscli.cfg
Loading: 1. CNA ... adapters, please wait...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ......
Scanning for QLogic adapters, please wait...

        Hit <Enter> to continue:
```

When you run QConvergeConsole CLI, the CLI collects all relevant information, including the number of available ports and the state of each one. Between the time you start QConvergeConsole CLI and the time you perform a specific action or request additional information, changes may have occurred to the port state, network state, or firmware parameters. To ensure that you are viewing the most current information, you should perform a **Refresh**. (In some cases, QConvergeConsole CLI automatically refreshes the information before or after specific commands.)

Help (-h)

10. Help

From the main menu, select the **Help** option to view the syntax and description for each noninteractive command line option. For more detailed information about each command, see the noninteractive chapter for the specific adapter type.

Exit

11. Exit

Close the QConvergeConsole CLI session.

10 Fibre Channel Interactive Commands

This chapter describes the interactive mode command line options for Fibre Channel Adapters. The interactive mode uses a series of menus from which you select the option you want by typing the number for that option.

For information about noninteractive mode operation—in which you simply type a short code to perform operations on the adapter—refer to Chapter 6 Fibre Channel Noninteractive Commands.

For information on documentation conventions specific to interactive commands, refer to “Conventions for Interactive Commands” on page xxx.

The Main Menu contains the following options:

```
Main Menu

1:  Adapter Information (see page 199)
2:  Adapter Configuration (see page 205)
3:  Adapter Updates (see page 243)
4:  Adapter Diagnostics (see page 250)
5:  Monitoring (see page 276)
6:  FabricCache CLI (see page 280)
7:  Refresh (see page 283)
8:  Help (see page 283)
9:  Exit (see page 283)

    Please Enter Selection:
```

Adapter Information

1. Adapter Information ▸ 2. Fibre Channel Adapter

From the main menu, select the **Adapter Information** option. If prompted, select **2** (**Fibre Channel Adapter**) as the **Adapter Type**. The `Adapter Type Selection` option shown below is not available in all QConvergeConsole CLI versions.

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
```

The FC Adapter Information menu provides options to view information about Fibre Channel adapters, ports, VPD, targets, LUNs, VFC, and flash. For example:

```
FC Adapter Information

1:  FC Adapter Information
2:  FC Port Information
3:  FC VPD Information
4:  FC Target/LUN Information
5:  FC VFC Information
6:  FC Flash Information (QLogic adapters for Dell only)
```

FC Adapter Information (-i)

1. Adapter Information ▸ 1. FC Adapter Information

From the Adapter Information menu, select the **FC Adapter Information** option. From the FC Adapter Information menu, select the adapter for which to view adapter information. For example:

```
Adapter Information

1: HBA Model: QLE2692 SN: AFD1536Y03145
     Port   1 WWPN: 21-00-00-24-FF-8F-D8-66 Online
     Port   2 WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
2: HBA Model: QLE2740 SN: AFD1536Y03312
     Port   1 WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
3: HBA Model: QLE2662 SN: AFE1227F06193
     Port   1 WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
     Port   2 WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed
```

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

-------------------------------------------------------------------

Host Name                       : WIN-F5JD7VK2CK4
HBA Model                       : QLE2692
Device ISP ID                   : ISP2261
Chip Revision                   : 0x1(A0)
HBA Description                 : QLE2692 Dual Port 16Gb FC to PCIe
Gen3 x8
Adapter
HBA Alias                       :
Serial Number                   : AFD1536Y03145
Driver Version                  : STOR Miniport  9.2.2.20 Alpha 2
Running Firmware Version        : 8.05.00
Flash Image Version             : 924121
PCI Bus Number                  : 5
PCI Device Number               : 0
PCI Function Number             : 0
-------------------------------------------------------------------
```

FC Port Information

1. Adapter Information ▸ 2. FC Port Information

From the FC Adapter Information menu, select the **FC Port Information** option. From the Adapter Port Information menu, select a port for which to view port information.

```
Host Name                       : WIN-RVBIHEFFUVI
HBA Instance                    : 0
HBA Model                       : QLE2694
HBA Description                 : QLE2694 Quad Port 16Gb FC to PCIe Gen3 x8
Adapter
HBA ID                          : 0-QLE2694
HBA Alias                       :
HBA Port                        : 1
Port Alias                      :
Node Name                       : 20-00-00-24-FF-7B-96-C4
Port Name                       : 21-00-00-24-FF-7B-96-C4
Port ID                         : 03-0F-00
Principal Fabric WWN[1]         : 10-00-00-27-F8-F1-66-A0
```

```
Adjacent Fabric WWN[2]          : 20-05-00-27-F8-6B-26-B4
Adjacent Fabric WWN             : Not connected
Serial Number                   : AFD1517Y01892
Driver Version                  : STOR Miniport  9.2.6.20 A2 DBG
BIOS Version                    : 3.54
Running Firmware Version        : 100.07.11
Running MPI Firmware Version[3] : Not Running
Running PEP Firmware Version[4] : 1.00.23
Flash BIOS Version              : 3.54
Flash FCode Version             : 4.11
Flash EFI Version               : 6.23
Flash Firmware Version          : 100.07.11
Flash MPI Firmware Version      : 1.02.06
Flash PEP Firmware Version      : 1.00.23
Actual Connection Mode          : Point to Point
Actual Data Rate                : 16 Gbps
Supported Speed(s)              : 4 8 16 Gbps
Chip Model Name                 : ISP2714-based 16/32Gb Fibre Channel to PCIe
Adapter
Chip Revision                   : 0x1(A0)
PortType (Topology)             : NPort
Target Count                    : 1
PCI Bus Number                  : 4
PCI Device Number               : 0
PCI Function Number             : 0
PCI Device ID                   : 0x2071
Subsystem Device ID             : 0x02a3
Subsystem Vendor ID             : 0x1077
PCIe Max Bus Width              : x16
PCIe Negotiated Width           : x8
PCIe Max Bus Speed              : 8.0 Gbps
PCIe Negotiated Speed           : 8.0 Gbps
HBA Temperature (C)             : 59
HBA Status                      : Online (FEC)
```

[1] `Principal Fabric WWN` is the WWN of the principal switch in the fabric.

[2] `Adjacent Fabric WWN` is the WWN of the switch to which the adapter port is directly connecting.

[3] If the `Running MPI Firmware Version` description is `Not Running`, the management port interface (MPI) firmware is not currently being loaded nor is it active.

[4] In this example, the `Running PEP Firmware Version` description is available because the PCIe processor (PEP) firmware is currently being loaded.

NOTE

- For a QLE8362 Fibre Channel or Converged Network Adapter, the port information also includes the `HBA Temperature` in degrees Celsius.
- For adapters other than QLE2562 and QLE2764 adapters, the port information's `Running Firmware Version` is labeled `Driver Firmware Version`.
- For QLogic 16Gb and 32Gb Fibre Channel adapters (QLE26*xx*, QLE27*xx*, and QLE83*xx*), the `HBA Status` indicates whether the forward error correction (FEC) option is enabled; for example, `Online (FEC)`. (FEC is disabled by default; to enable FEC, see "FEC (-fec)" on page 242.) The FEC feature is supported only on QLogic 16Gb and 32Gb Fibre Channel adapters if the current adapter port is connected to a Brocade switch with FEC support.
- For QLE27*xx*, if the adapter is connecting and linking up as 32Gb, the FEC feature is automatically always ENABLED, regardless of the setting of FEC as disabled or enabled.

FC VPD Information (-i)

1. Adapter Information ▸ 3. FC VPD Information

From the FC Adapter Information menu, select the **FC VPD Information** option. From the Adapter Information menu, select an adapter port for which to view VPD information. For example:

```
    Adapter Information

    HBA Model QLE2692 SN: AFD1536Y03145
      1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
      2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
    HBA Model QLE2740 SN: AFD1536Y03312
      3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
    HBA Model QLE2662 SN: AFE1227F06193
      4: Port   1: WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
      5: Port   2: WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)

       Please Enter Selection: 1
-----------------------------------------------------------------
HBA           : 0 Port 1
SN            : AFD1536Y03145
HBA Model     : QLE2692
```

```
HBA Desc.      : QLE2692 Dell Dual Port 16Gb FC to PCIe Gen3 x8
Adapter
FW Version     : 8.05.41
WWPN           : 21-00-00-24-FF-8F-D8-66
WWNN           : 20-00-00-24-FF-8F-D8-66
Link           : Online
-----------------------------------------------------------------

HBA Instance 0: QLE2692 Port 1 WWPN 21-00-00-24-FF-8F-D8-66 PortID
01-0A-00
Link: Online
-----------------------------------------------------------------

Product Identifier             : QLE2692 Dual Port 16Gb FC to PCIe
Gen3 x8 Adapter
Part Number                     : QLE2692
Serial Number                   : AFD1536Y03145
Engineering Date Code           : BK3210407-25 01
Flash Image Version             : 924121
```

FC Target/LUN Information (-t)

1. Adapter Information ▸ 4. FC Target/LUN Information

From the FC Adapter Information menu, select the **FC Target/LUN Information** option. From the port menu, select a port to open the Target List Menu with options to select a target device or all targets. For example:

```
   Adapter Information

    HBA Model QLE2462 SN: GFC0718P57753
      1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 online
      2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Target List Menu

=======================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     : 4.00.26
```

```
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
=====================================================

    1:  Device  (Offline)
           Vendor                       : N/A
           Product ID                   : N/A
           Product Rev                  : N/A
           Serial Number                :
           Node Name                    : 50-0A-09-80-87-E9-60-73
           Port Name                    : 50-0A-09-83-87-E9-60-73
           Port ID                      : 2B-00-20

    2:  All Target(s)
```

FC VFC Information (-i)

1. Adapter Information ▸ 5. FC VFC Information

From the FC Adapter Information menu, select the **FC VFC Information** option. From the port menu, select a virtual port to view information on that virtual port. For example:

```
Adapter Information

HBA Model QLE8362 SN: AFE1226F05904
   1: Port   1: WWPN: 21-00-00-0E-1E-08-B7-C0 Online
   2: vPort  0: WWPN: C0-03-FF-C8-95-DB-00-10
   3: vPort  1: WWPN: C0-03-FF-C8-95-DB-00-12
   4: Port   2: WWPN: 21-00-00-0E-1E-08-B7-C1 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
-------------------------------------------------------------
Computer Name            : RPDL360GEN8
SAN Name                 : Hilda_vFC_P1
-------------------------------------------------------------
Virtual Machine Name     : RPDL360GEN8
Virtual ID Name          : RPDL360GEN8
Synthetic WWPN Set A     : C0-03-FF-C8-95-DB-00-10
Synthetic WWNN Set A     : C0-03-FF-00-00-FF-FF-00
Synthetic WWPN Set B     : C0-03-FF-C8-95-DB-00-11
Synthetic WWNN Set B     : C0-03-FF-00-00-FF-FF-00
```

```
Synthetic FC Element Name: Fibre Channel Adapter
Synthetic FC Instance ID :
Microsoft:8CAEDDD7-D9FA-4E3E-9818-CE422939BA8D\726C74
CC-6C46-409A-889E-CA96C06400B1

        Hit <Enter> to continue:
```

FC Flash Information

1. Adapter Information ▸ 6. FC Flash Information

From the FC Adapter Information menu, select **FC Flash Information** to view the family firmware version (FFV). This option appears only for QLogic OEM Dell adapters.

```
    Adapter Flash Information

      3:  1: HBA Model: QLE2740
          Port  1 WWPN: 21-00-00-24-FF-00-27-D5 Online (FEC)

        (p or 0: Previous Menu; m or 98: Main Menu; x or 99: Quit)
        Please Enter Selection: 1
HBA 0 QLE2740 does not appear to have family firmware version.
```

Adapter Configuration

2. Adapter Configuration ▸ 2. FC Adapter Configuration

From the main menu, select the **Adapter Configuration** option, and then select the adapter type (**Fibre Channel Adapter**). The FC Adapter Configuration menu presents options to configure adapter alias and parameters, configure persistent names, configure boot devices, configure target link speed, export a configuration, and generate reports. For example:

```
    Adapter Type Selection

    1:  Converged Network Adapter
    2:  Fibre Channel Adapter

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    FC Adapter Configuration

    1:  Adapter Alias
    2:  Adapter Port Alias
    3:  HBA Parameters
```

```
 4:  Target Persistent Binding (on Windows) or
 4:  Persistent Names (udev) (on Linux)
 5:  Boot Devices Configuration
 6.  Virtual Port (NPIV)
 7:  Target Link Speed (iiDMA) or (NPIV) (see NOTE following this menu)
 8:  Driver Parameters
 9:  Selective LUNs
10:  QoS (on Windows only)
11:  Export (Save) Configuration (#10 on Linux or Solaris)
12:  Generate Reports (#11 on Linux or Solaris)
13:  Personality (QLE267x Adapters only) (#12 on Linux or Solaris)
14:  FEC
15:  BB Credit Recovery
```

NOTE

The options supported and available on the FC Adapter Configuration menu depend on the drivers and operating system detected. You may not see all of the options listed above and described in this section of the guide.

Adapter Alias (-ha)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 1. Adapter Alias

From the FC Adapter Configuration menu, select the **Adapter Alias** option. From the adapter menu, select an adapter to view or change its adapter alias. The adapter's identifying information is displayed followed by a prompt identifying the current adapter alias in brackets. To change the adapter alias, enter the new value and press ENTER. (If you do not want to change the alias, just press ENTER.) The following is an example of changing the adapter alias from 0 to 1:

```
     FC Adapter Configuration

     1: HBA Model: QLE2562 SN: GFC0819H89653
          Port   1 WWPN: 21-00-00-1B-32-0C-95-0C Link Down
          Port   2 WWPN: 21-01-00-1B-32-2C-95-0C Link Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=====================================================
HBA Model     : QLE2562
HBA Desc.     : QLE2562 PCI Express to 8Gb FC Dual Channel
HBA SN        : GFC0819H89653
HBA Alias     : 0
```

```
=====================================================
HBA Alias [0]: 1
Update completed. Changes have been saved to HBA WWNN
20-00-00-1B-32-0C-95-0C!

        Hit <Enter> to continue:
```

Adapter Port Alias (-pa)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 2. Adapter Port Alias

From the FC Adapter Configuration menu, select the **Adapter Port Alias** option. From the port menu, select a port to view or change its port alias. The port's information is displayed followed by a prompt identifying the current port alias in brackets. To change the port alias, enter the new value and press ENTER. (If you do not want to change the alias, just press ENTER.) The following is an example of changing the port alias from 0 to 1:

```
    FC Adapter Configuration

    HBA Model QLE2562 SN: GFC0819H89653
      1: Port   1: WWPN: 21-00-00-1B-32-0C-95-0C Link Down
      2: Port   2: WWPN: 21-01-00-1B-32-2C-95-0C Link Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=====================================================
HBA           : 0
Physical Port : 1
Port Alias    : 0
HBA SN        : GFC0819H89653
HBA Model     : QLE2562
HBA Desc.     : QLE2562 PCI Express to 8Gb FC Dual Channel
WWPN          : 21-00-00-1B-32-0C-95-0C
WWNN          : 20-00-00-1B-32-0C-95-0C
Link          : Link Down
=====================================================
Port Alias [0]: 1
Update completed. Changes have been saved to HBA WWPN
21-00-00-1B-32-0C-95-0C!
```

HBA Parameters

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 3. HBA Parameters

From the FC Adapter Configuration menu, select the **HBA Parameters** option. From the port menu, select a port to open the HBA Parameters Menu with options to view adapter parameters, configure adapter parameters, and restore adapter defaults. For example:

```
    FC Adapter Configuration

    HBA Model QLE2692 SN: AFD1536Y03145
      1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
      2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
    HBA Model QLE2740 SN: AFD1536Y03312
      3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
    HBA Model QLE2662 SN: AFE1227F06193
      4: Port   1: WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
      5: Port   2: WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        QConvergeConsole
        Version 2.1.0 (Build 5)

    HBA Parameters Menu

=========================================================
HBA           : 0 Port: 1
SN            : AFD1536Y03145
HBA Model     : QLE2692
HBA Desc.     : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
FW Version    : 8.05.41
WWPN          : 21-00-00-24-FF-8F-D8-66
WWNN          : 20-00-00-24-FF-8F-D8-66
Link          : Online
=========================================================

    1:  Display HBA Parameters
    2:  Configure HBA Parameters
    3:  Restore Defaults
```

Display HBA Parameters (-c)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 3. HBA Parameters ▸ <port selection> ▸ 1. Display HBA Parameters

From the HBA Parameters Menu, select the **Display HBA Parameters** option to view adapter parameters. For example:

```
------------------------------------------------------------------------------
HBA Instance 0: QLE2692 Port 1 WWPN 21-00-00-24-FF-8F-D8-66 PortID 01-0A-00
Link: Online
------------------------------------------------------------------------------

Connection Options             : 2 - Loop Preferred, Otherwise Point-to-Point
Data Rate                      : Auto
Frame Size                     : 2048
Hard Loop ID                   : 0
Loop Reset Delay (seconds)     : 5
Enable Host HBA BIOS           : Disabled
Enable Hard Loop ID            : Disabled
Enable FC Tape Support         : Enabled
Operation Mode                : 6 - Interrupt when Interrupt Delay Timer expire
s or no active I/O
Interrupt Delay Timer (100us)  : 2
Execution Throttle             : 0
Login Retry Count              : 8
Port Down Retry Count          : 30
Enable LIP Full Login          : Enabled
Link Down Timeout (seconds)    : 30
Enable Target Reset            : Enabled
LUNs Per Target                : 128
Out Of Order Frame Assembly    : Disabled
Enable LR Ext. Credits         : Disabled
Enable Fabric Assigned WWN     : Disabled
```

NOTE

`Execution Throttle` does not apply to 2600 and 8300 Series Adapters and is read-only for 10GbE adapters.

Configure HBA Parameters (-n)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 3. HBA Parameters ▸ <port selection> ▸ 2. Configure HBA Parameters

From the HBA Parameters Menu, select the **Configure HBA Parameters** option to open the Configure Parameters Menu with options to configure connection options, data rate, frame size, hard loop ID, loop reset delay, BIOS, Fibre Channel tape support, operation mode, interrupt delay timer, execution throttle, login retry count, port down retry count, LIP full login, link down timeout, target reset, LUNS per target, receive out-of-order frame, LR extended credits, and fabric-assigned WWN. For detailed information about these parameters, see Table 6-10 on page 114. For example:

```
    Configure Parameters Menu
=========================================================
HBA             : 0 Port: 1
SN              : AFD1536Y03145
HBA Model       : QLE2692
HBA Desc.       : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
FW Version      : 8.05.41
WWPN            : 21-00-00-24-FF-8F-D8-66
WWNN            : 20-00-00-24-FF-8F-D8-66
Link            : Online
=========================================================
    1:  Connection Options
    2:  Data Rate
    3:  Frame Size
    4:  Enable HBA Hard Loop ID
    5:  Hard Loop ID
    6:  Loop Reset Delay (seconds)
    7:  Enable BIOS
    8:  Enable Fibre Channel Tape Support
    9:  Operation Mode
   10:  Interrupt Delay Timer (100 microseconds)
   11:  Execution Throttle
   12:  Login Retry Count
   13:  Port Down Retry Count
   14:  Enable LIP Full Login
   15:  Link Down Timeout (seconds)
   16:  Enable Target Reset
   17:  LUNs per Target
   18:  Enable Receive Out Of Order Frame
```

```
19:  Enable LR Ext. Credits
20:  Enable Fabric Assign WWN
21:  Commit Changes
22:  Abort Changes
```

NOTE

- `Execution Throttle` does not apply to 2600 and 8300 Series Adapters and is read-only for 10GbE adapters.
- `Enable LR Ext. Credits` provides options to enable either 10km or 5km (the 5km option is only available for 269*x* and 274*x* adapters). After you enable either option and commit the changes, the Configure Parameters Menu shows the selected option, either `Enabled (10 km)` or `Enabled (5 km)`. You can verify the change on the Display HBA Parameters (-c) menu.
- `Enable Fabric Assign WWN` applies only to 2600 and 8300 Series Adapters.

Restore Defaults

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 3. HBA Parameters ▸ <port selection> ▸ 3. Restore Defaults

From the HBA Parameters Menu, select the **Restore Defaults** option to reset the adapter parameters to their default values. For example:2

```
Warning:

    Please update the HBA parameters with extreme care.
    Incorrectly updating the HBA parameters may render the HBA inoperable.
    If you currently have boot device information set up in the HBA
    parameters, updating the HBA Parameters from a file
    will preserve that information.

    Do you want to proceed with the operation?

    1:  Yes
    2:  No

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
```

Target Persistent Binding (-p)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 4. Target Persistent Binding (on Windows)

NOTE

The Target Persistent Binding option applies to Windows systems only. On Linux systems, the Persistent Names option is provided (for information, see "Persistent Names (-pl)" on page 215).

From the FC Adapter Configuration menu, select the **Target Persistent Binding** option. From the port menu, select a port to open the Target Persistent Binding Menu with options to display the configuration, bind targets, and unbind targets. For example:

```
    FC Adapter Configuration

    HBA Model QLE8362 SN: AFE1134C09753
      1: Port   1: WWPN: 21-00-00-0E-1E-08-09-10 Online
      2: Port   2: WWPN: 21-00-00-0E-1E-08-09-11 Loop Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Target Persistent Binding Menu

=======================================================
HBA           : 0 Port: 1
SN            : AFE1134C09753
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA (FCoE)
FW Version    : 6.00.10
WWPN          : 21-00-00-0E-1E-08-09-10
WWNN          : 20-00-00-0E-1E-08-09-10
Link          : Online
=======================================================

    1:  Display Configuration
    2:  Bind Target(s)
    3.  Unbind Target(s)
```

Display Configuration

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 4. Target Persistent Binding ▸ <port selection> ▸ 1. Display Configuration

From the Target Persistent Binding Menu, select the **Display Configuration** option to view the target binding configuration. For example:

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
--------------------------------------------------------------------------------
HBA Instance 0: QLE8362 Port 1 WWPN 21-00-00-0E-1E-08-09-10 PortID C5-0D-A5
Link: Online
--------------------------------------------------------------------------------

Bind Type    Target Info             Port Name               Port ID  Target ID
---- ------- ----------------------- ----------------------- --------
---------
Yes   Disk  SANBlaze VLUN FC RAMDisk 2F-FF-00-06-2B-0E-B2-44 C5-07-00 0
Yes   Disk  SANBlaze VLUN FC RAMDisk 2F-DF-00-06-2B-0E-B2-44 C5-08-00 1
Yes   Disk  SANBlaze VLUN FC RAMDisk 2F-FF-00-06-2B-0F-56-99 C5-09-00 2
Yes  Device SANBlaze VLUN FC RAMDisk 2F-DF-00-06-2B-0F-56-99 C5-0A-00 3
```

Bind Target(s)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 4. Target Persistent Bindings ▸ <port selection> ▸ 2. Bind Target(s)

From the Target Persistent Binding Menu, select the **Bind Target(s)** option to bind a target to a port. Select a target and specify a target ID to open the Target Persistent Binding – FC Port Configuration menu with options to select more targets, save changes, or cancel the binding operation. For example:

```
Target Persistent Binding Menu

=======================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
=======================================================
1: Disk
      Vendor                    : SEAGATE
```

```
      Product ID                : ST318453FC
      Port Name                 : 22-00-00-04-CF-9C-24-CA
      Port ID                   : 02-00-E1
      Bind                      : No
      Target ID :               : 1
2: Disk
      Vendor                    : SEAGATE
      Product ID                : ST318453FC
      Port Name                 : 22-00-00-0C-50-68-1E-9A
      Port ID                   : 11-0A-E2
      Bind                      : No
      Target ID                 : 2
   3: All Target(s)
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

Enter Target ID: 1

    Target Persistent Binding - FC Port Configuration

    1:  Select More
    2:  Commit Changes
    3:  Cancel
```

Unbind Target(s)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 4. Target Persistent Bindings ▸ <port selection> ▸ 3. Unbind Target(s)

From the Target Persistent Binding Menu, select the **Unbind Target(s)** option to unbind a target. Select a target to open the Target Persistent Binding – FC Port Configuration menu with options to select more targets, save changes, or cancel the binding operation. For example:

```
Target Persistent Binding Menu

=======================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
```

```
Link          : Online
=======================================================

1: Disk
      Vendor                    : SEAGATE
      Product ID                : ST318453FC
      Port Name                 : 22-00-00-04-CF-9C-24-CA
      Port ID                   : 02-00-E1
      Bind                      : Yes
      Target ID :               : 1
2: Disk
      Vendor                    : SEAGATE
      Product ID                : ST318453FC
      Port Name                 : 22-00-00-0C-50-68-1E-9A
      Port ID                   : 11-0A-E2
      Bind                      : Yes
      Target ID                 : 2
   3: All Target(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Target Persistent Binding - FC Port Configuration

    1:  Select More
    2:  Commit Changes
    3:  Cancel
```

Persistent Names (-pl)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 4. Persistent Names (udev) (on Linux)

NOTE

The Persistent Names option applies to Linux systems only. On Windows systems, the Target Persistent Binding option is provided (for information, see “Target Persistent Binding (-p)” on page 212).

From the FC Adapter Configuration menu, select the **Persistent Names (udev)** option. From the port menu, select a port to open the Target List Menu, and then select the target to display the LUN List Menu, with options to display LUN information or manage persistent names. For example:

```
    FC Adapter Configuration

    HBA Model QLE2672 SN: AFE1224F05259
      1: Port   1: WWPN: 21-00-00-0E-1E-08-F2-00 Link Down
      2: Port   2: WWPN: 21-00-00-0E-1E-08-F2-01 Online

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

        QConvergeConsole

        Version 1.0.3 (Build 40)

    Target List Menu

=======================================================
HBA           : 1 Port: 2
SN            : AFE1224F05259
HBA Model     : QLE2672
HBA Desc.     : QLE8362 Sun Storage 16Gb FC PCIe Universal HBA
FW Version    : 6.06.00
WWPN          : 21-00-00-0E-1E-08-F2-01
WWNN          : 20-00-00-0E-1E-08-F2-01
Link          : Online
=======================================================

    1:  Disk  (Online)
           Vendor                       : SANBlaze
           Product ID                   : VLUN FC RAMDisk
           Product Rev                  : 3.1
           Serial Number                : 2fff00062b0eb24401000000
           Node Name                    : 2F-DF-00-06-2B-0E-B2-44
           Port Name                    : 2F-DF-00-06-2B-0E-B2-44
           Port ID                      : 01-06-01

    2:  Disk  (Online)
           Vendor                       : SANBlaze
           Product ID                   : VLUN FC RAMDisk
           Product Rev                  : 3.1.
```

```
        Serial Number                : 2fff00062b0f569901000000
        Node Name                    : 2F-DF-00-06-2B-0F-56-99
        Port Name                    : 2F-DF-00-06-2B-0F-56-99
        Port ID                      : 01-04-01

3:  Disk  (Online)
        Vendor                       : SANBlaze
        Product ID                   : VLUN FC RAMDisk
        Product Rev                  : 3.1
        Serial Number                : 2fff00062b0eb24400000000
        Node Name                    : 2F-FF-00-06-2B-0E-B2-44
        Port Name                    : 2F-FF-00-06-2B-0E-B2-44
        Port ID                      : 01-06-00

4:  Disk  (Online)
        Vendor                       : SANBlaze
        Product ID                   : VLUN FC RAMDisk
        Product Rev                  : 3.1.
        Serial Number                : 2fff00062b0f569900000000
        Node Name                    : 2F-FF-00-06-2B-0F-56-99
        Port Name                    : 2F-FF-00-06-2B-0F-56-99
        Port ID                      : 01-04-00

5:  Device  (Offline)
        Vendor                       : N/A
        Product ID                   : N/A
        Product Rev                  : N/A
        Serial Number                :
        Node Name                    : 21-00-00-24-FF-6A-51-3C
        Port Name                    : 21-00-00-24-FF-6A-51-3C
        Port ID                      : 01-0A-00

6:  Device  (Offline)
        Vendor                       : N/A
        Product ID                   : N/A
        Product Rev                  : N/A
        Serial Number                :
        Node Name                    : 21-00-00-24-FF-6A-51-88
        Port Name                    : 21-00-00-24-FF-6A-51-88
        Port ID                      : 01-0B-00
```

```
7:  All Target(s)


    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    QConvergeConsole

    Version 1.0.3 (Build 40)

LUN List Menu

HBA Instance 1 (QLE2672 Port 2) : Online

Device
    Product Vendor: SANBlaze
    Product ID    : VLUN FC RAMDisk
    Product Rev   : 3.1
    Node Name     : 2F-DF-00-06-2B-0E-B2-44
    Port Name     : 2F-DF-00-06-2B-0E-B2-44
    Port ID       : 01-06-01

1:  LUN   0
       Vendor                     : SANBlaze
       Product ID                 : VLUN FC RAMDisk
       Port Name                  : 2F-DF-00-06-2B-0E-B2-44
       Port ID                    : 01-06-01
2:  LUN   1
       Vendor                     : SANBlaze
       Product ID                 : VLUN FC RAMDisk
       Port Name                  : 2F-DF-00-06-2B-0E-B2-44
       Port ID                    : 01-06-01
3:  LUN   2
       Vendor                     : SANBlaze
       Product ID                 : VLUN FC RAMDisk
       Port Name                  : 2F-DF-00-06-2B-0E-B2-44
       Port ID                    : 01-06-01
4:  LUN   3
       Vendor                     : SANBlaze
       Product ID                 : VLUN FC RAMDisk
       Port Name                  : 2F-DF-00-06-2B-0E-B2-44
       Port ID                    : 01-06-01
```

```
    5:  All LUN(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        QConvergeConsole

        Version 1.0.3 (Build 40)

    LUN List Menu

=======================================================
HBA           : 1 Port: 2
SN            : AFE1224F05259
HBA Model     : QLE2672
HBA Desc.     : QLE8362 Sun Storage 16Gb FC PCIe Universal HBA
FW Version    : 6.06.00
WWPN          : 21-00-00-0E-1E-08-F2-01
WWNN          : 20-00-00-0E-1E-08-F2-01
Link          : Online
=======================================================

    1:  Information
    2:  Persistent Names
```

Information

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 4. Persistent Names ▸ <port selection> ▸ 1. Information

From the LUN List Menu, select the **Information** option to display information on persistent LUN names. For example:

```
LUN List Menu

=======================================================
HBA           : 1 Port: 2
SN            : AFE1224F05259
HBA Model     : QLE2672
HBA Desc.     : QLE8362 Sun Storage 16Gb FC PCIe Universal HBA
FW Version    : 6.06.00
WWPN          : 21-00-00-0E-1E-08-F2-01
WWNN          : 20-00-00-0E-1E-08-F2-01
Link          : Online
=======================================================
```

```
    1:  Information
    2:  Persistent Names

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Product Vendor              : SANBlaze
Product ID                  : VLUN FC RAMDisk
Product Revision            : 3.1
LUN                         : 0
Size                        : 699.00 MB
Type                        : SBC-2 Direct access block device (e.g. magnetic
disk)
WWULN                       : 60-00-62-B0-00-0E-B2-44-00-00-00-01-00-00-00-00
OS LUN Name                 : /dev/sdr;/dev/sg18;
Persistent LUN Name   0     : jk
------------------------------------------------------------

        Press <Enter> to continue:
```

Persistent Names

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 4. Persistent Names ▸ <port selection> ▸ 2. Persistent Names

From the LUN List Menu, select the **Persistent Names** option to display the Persistent Names Menu, with options to display persistent LUN names, add a persistent LUN name, or delete a persistent LUN name. For example:

```
LUN List Menu

=======================================================
HBA           : 1 Port: 2
SN            : AFE1224F05259
HBA Model     : QLE2672
HBA Desc.     : QLE8362 Sun Storage 16Gb FC PCIe Universal HBA
FW Version    : 6.06.00
WWPN          : 21-00-00-0E-1E-08-F2-01
WWNN          : 20-00-00-0E-1E-08-F2-01
Link          : Online
=======================================================

    1:  Information
    2:  Persistent Names

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
```

```
        Please Enter Selection: 2

        QConvergeConsole

        Version 1.0.3 (Build 40)

    Persistent Names Menu

=======================================================
HBA           : 1 Port: 2
SN            : AFE1224F05259
HBA Model     : QLE2672
HBA Desc.     : QLE8362 Sun Storage 16Gb FC PCIe Universal HBA
FW Version    : 6.06.00
WWPN          : 21-00-00-0E-1E-08-F2-01
WWNN          : 20-00-00-0E-1E-08-F2-01
Link          : Online
=======================================================

    1:  Info
    2:  Add
    3:  Delete
```

Info

From the Persistent Names Menu, select the **Info** option to display persistent LUN names. For example:

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

Product Vendor              : SANBlaze
Product ID                  : VLUN FC RAMDisk
Product Revision            : 3.1
LUN                         : 0
WWULN                       : 60-00-62-B0-00-0E-B2-44-00-00-00-01-00-00-00-00
OS LUN Name                 : /dev/sdr;/dev/sg18;
Persistent LUN Name   0     : jk

        Press <Enter> to continue:
```

Add

From the Persistent Names Menu, select the **Add** option to create a new persistent LUN name. For example:

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
-------------------------------------------------------------
Product Vendor                 : SANBlaze
Product ID                     : VLUN FC RAMDisk
Product Revision               : 3.1
LUN                            : 0
WWULN                         : 60-00-62-B0-00-0E-B2-44-00-00-00-01-00-00-00-00
OS LUN Name                    : /dev/sdr;/dev/sg18;
-------------------------------------------------------------
Enter new persistent LUN name: @Lun0
Persistent LUN name @Lun0 has been added to target 0 LUN 0.

        Press <Enter> to continue:
```

Delete

From the Persistent Names Menu, select the **Delete** option to delete an existing persistent LUN name. For example:

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 3

        QConvergeConsole

        Version 1.1.1 (Build 7)

    Persistent Names Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1317F10351
ENode MacAddr : 00:0E:1E:11:85:13
CNA Model     : QLE8442
CNA Desc.     : QLE8442 QLogic 2-port 10Gb CNA Adapter (FCoE)
FW Version    : 6.02.12
WWPN          : 21-00-00-0E-1E-11-85-10
WWNN          : 20-00-00-0E-1E-11-85-10
Link          : Online
=======================================================
```

```
    1:  lun21

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
-------------------------------------------------------------
Product Vendor                 : DGC
Product ID                     : RAID 5
Product Revision               : 0531
LUN                            : 20
WWULN                          :
60-06-01-60-BA-20-31-00-DA-D0-A3-47-98-06-E2-11
OS LUN Name                    : /dev/sdck;/dev/sg91;
-------------------------------------------------------------
Persistent LUN Name               : lun21
Persistent LUN name lun21 of target 0 LUN 20 has been successfully
deleted.
```

Boot Devices Configuration

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 5. Boot Devices Configuration

From the FC Adapter Configuration menu, select the **Boot Devices Configuration** option. Select a port to open the Boot Device Settings Menu with options to view and configure boot devices. For example:

```
    FC Adapter Configuration

    HBA Model QLE2692 SN: AFD1536Y03145
      1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
      2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
    HBA Model QLE2740 SN: AFD1536Y03312
      3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
    HBA Model QLE2662 SN: AFE1227F06193
      4: Port   1: WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
      5: Port   2: WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        QConvergeConsole
        Version 2.1.0 (Build 5)

    Boot Device Settings Menu

=====================================================
```

```
HBA           : 0 Port: 1
SN            : AFD1536Y03145
HBA Model     : QLE2692
HBA Desc.     : QLE2692 Dell Dual Port 16Gb FC to PCIe Gen3 x8
Adapter
FW Version    : 8.05.41
WWPN          : 21-00-00-24-FF-8F-D8-66
WWNN          : 20-00-00-24-FF-8F-D8-66
Link          : Online
=====================================================

    1:  Display Boot Device(s)
    2:  Configure Boot Device(s)
```

Display Boot Device(s) (-e)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ ▲ 5. Boot Devices Configuration ▸ <port selection> ▸ 1. Display Boot Device(s)

From the Boot Device Settings Menu, select the **Display Boot Device(s)** option to view boot devices. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2692 Port 1 WWPN 21-00-00-24-FF-8F-D8-66 PortID 01-0A-00
Link: Online
-------------------------------------------------------------------------------
Boot Device Settings:
--------------------------------------
Selectable Boot: Disabled
Enable Fabric Assigned LUN: Disabled
--------------------------------------
(Primary    ) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 1) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 2) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
```

```
(Alternate 3) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
```

Configure Boot Device(s) (-e)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s)

From the Boot Device Settings Menu, select the **Configure Boot Device(s)** option to open the Boot Device Settings submenu with options to configure the primary and alternate boot devices. For example:

```
    Boot Device Settings Menu

=======================================================
HBA           : 0 Port: 1
SN            : RFE1305H32151
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
(FCoE)
FW Version    : 7.04.00
WWPN          : 21-00-00-0E-1E-13-49-A0
WWNN          : 20-00-00-0E-1E-13-49-A0
Link          : Online
=======================================================

    1:  Primary Boot Device
    2:  Alternate 1 Boot Device
    3:  Alternate 2 Boot Device
    4:  Alternate 3 Boot Device
    5:  Selectable Boot
    6:  Enable Fabric Assigned Boot LUN
    7:  Commit Changes
```

Primary Boot Device

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s) ▸ 1. Primary Boot Device

From the Boot Device Settings Menu, select the **Primary Boot Device** option to configure the primary boot device. For example:

```
    Boot Device Settings Menu

=======================================================
HBA           : 0 Port: 1
```

```
SN            : AFD1536Y03145
HBA Model     : QLE2692
HBA Desc.     : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
FW Version    : 8.05.41
WWPN          : 21-00-00-24-FF-8F-D8-66
WWNN          : 20-00-00-24-FF-8F-D8-66
Link          : Online
=====================================================

    1:  Device
          (Primary) Boot Port Name: 00-00-00-00-00-00-00-00
```

Alternate 1 (2, 3) Boot Device

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s) ▸ 2 (3, 4). Alternate 1 (2, 3) Boot Device

From the Boot Device Settings Menu, select the **Alternate *n* Boot Device** (n = 1, 2, or 3) option to configure one of three alternate boot devices. For example:

```
    Boot Device Settings Menu

=====================================================
HBA           : 0 Port: 1
SN            : AFD1536Y03145
HBA Model     : QLE2692
HBA Desc.     : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
FW Version    : 8.05.41
WWPN          : 21-00-00-24-FF-8F-D8-66
WWNN          : 20-00-00-24-FF-8F-D8-66
Link          : Online
=====================================================

    1:  Device
          (Alternate 1) Boot Port Name: 00-00-00-00-00-00-00-00
          LUN: 0
```

Selectable Boot

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s) ▸ 5. Selectable Boot

From the Boot Device Settings Menu, select the **Selectable Boot** option to enable or disable selectable boot (the current setting is indicated by "(Current)"). For example, to enable selectable boot when it is currently disabled:

```
   Selectable Boot

   1:  Enable
   2:  Disable (Current)

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 1

       QConvergeConsole
       Version 2.1.0 (Build 5)

   Boot Device Settings Menu

=====================================================
BA           : 0 Port: 1
N            : AFD1536Y03145
BA Model     : QLE2692
BA Desc.     : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
W Version    : 8.05.41
WPN          : 21-00-00-24-FF-8F-D8-66
WNN          : 20-00-00-24-FF-8F-D8-66
ink          : Online
=====================================================

   1:  Primary Boot Device
   2:  Alternate 1 Boot Device
   3:  Alternate 2 Boot Device
   4:  Alternate 3 Boot Device
   5:  Selectable Boot
   6:  Enable Fabric Assigned Boot LUN
   7:  Commit Changes

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 5

       QConvergeConsole
```

```
    Version 2.1.0 (Build 5)

Selectable Boot

1:  Enable (Current)
2:  Disable

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 5

 Selectable Boot

 1:  Enable (Current)
 2:  Disable

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection:
```

Enable Fabric Assigned Boot LUN

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s) ▸ 6. Enable Fabric Assigned Boot LUN

From the Boot Device Settings Menu, select the **Enable Fabric Assigned Boot LUN** option to enable or disable a fabric-assigned boot LUN.

Commit Changes

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s) ▸ 7. Commit Changes

From the Boot Device Settings Menu, select the **Commit Changes** option to save your changes.

Virtual Ports (NPIV) (-vp)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 6. Virtual Ports (NPIV)

From the FC Adapter Configuration menu, select the **Virtual Ports (NPIV)** option. From the port menu, select a port to open the vPorts Menu with options to view, create and delete virtual ports. For example:

```
FC Adapter Configuration

HBA Model QLE2562 SN: GFC0819H89653
  1: Port   1: WWPN: 21-00-00-1B-32-0C-95-0C Link Down
  2: Port   2: WWPN: 21-01-00-1B-32-2C-95-0C Link Down

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    QConvergeConsole
```

```
        Version 1.0.2 (Build 13)

    vPorts Menu

=======================================================
HBA           : 0 Port: 1
SN            : GFC0819H89653
HBA Model     : QLE2562
HBA Desc.     : QLE2562 PCI Express to 8Gb FC Dual Channel
FW Version    : 4.03.02
WWPN          : 21-00-00-1B-32-0C-95-0C
WWNN          : 20-00-00-1B-32-0C-95-0C
Link          : Link Down
=======================================================

    1:  View vPorts Info
    2:  Create vPorts
    3:  Delete vPorts
```

Target Link Speed (iiDMA)) (-q)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 7. Target Link Speed (iiDMA)

From the FC Adapter Configuration menu, select the **Target Link Speed (iiDMA)** option. From the port menu, select a port to open the iiDMA Menu with options for basic and advanced configuration. For example:

```
    iiDMA Menu

=======================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
=======================================================

    1:  Basic Configuration
    2:  Advance Configuration
```

Basic Configuration

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 7. Target Link Speed (iiDMA) ▸ 1. Basic Configuration

From the iiDMA Menu, select the **Basic Configuration** option to specify the link speed. For example:

```
    iiDMA Menu (Basic)

=======================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
=======================================================

    1:  1  Gbps
    2:  2  Gbps
    3:  4  Gbps
```

Advanced Configuration

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 7. Target Link Speed (iiDMA) ▸ 2. Advanced Configuration

From the iiDMA Menu, select the **Advanced Configuration** option to select a target device, specify the link speed, and apply the changes. For example:

```
    iiDMA Menu

=======================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
=======================================================

    1:  Device
          Vendor                      : N/A
```

```
            Product ID                    : N/A
            Product Rev                   : N/A
            Serial Number                 :
            Port Name                     : 50-0A-09-83-87-E9-60-73
            Port ID                       : 2B-00-20
            Intelligent Interleave Factor: 4 Gbps

    2:  Apply Changes to selected Target(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    iiDMA Menu (Advanced)

=====================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
=====================================================

    1:  1  Gbps
    2:  2  Gbps
    3:  4  Gbps (Current)
```

Driver Parameters (-fs)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 8. Driver Parameters

NOTE

This option applies to adapters on Windows systems only.

From the FC Adapter Configuration menu, select the **Driver Parameters** option. From the port menu, select a port to open the Driver Settings Menu with options to configure the driver settings. For example:

```
FC Adapter Configuration

HBA Model QLE2692 SN: AFD1536Y03145
```

```
  1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
  2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
HBA Model QLE2740 SN: AFD1536Y03312
  3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
HBA Model QLE2662 SN: AFE1227F06193
  4: Port   1: WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
  5: Port   2: WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    QConvergeConsole
    Version 2.1.0 (Build 5)

Driver Settings Menu
-----------------------
Target: Display Options
-----------------------
1: Present persistently bound target(s) plus
   any new target(s) with driver default (Current)
2: Present persistently bound target(s) Only
-----------------------
Target: Binding Options
-----------------------
3: Bind by World Wide Port Name (Current)
4: Bind by Port ID
5: Commit Changes
```

Selective LUNs (-m)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 9. Selective LUNs

NOTE

This option applies to adapters on Windows systems only.

From the FC Adapter Configuration menu, select an adapter port to open the **Selective LUNs** menu with options to display the LUN configuration information, manually configure LUNs, or automatically configure LUNs. For example:

```
Selective LUNs Menu

=======================================================
HBA           : 0 Port: 1
```

```
SN              : AFE1134C09753
HBA Model       : QLE8362
HBA Desc.       : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
(FCoE)
FW Version      : 6.00.10
WWPN            : 21-00-00-0E-1E-08-09-10
WWNN            : 20-00-00-0E-1E-08-09-10
Link            : Online
=====================================================

    1:  Display LUN Configuration
    2:  Manual Configure LUNs
    3:  Auto Configure LUNs
```

Display LUN Configuration

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 9. Selective LUNs ▸ 1. Display LUN Configuration

From the Selective LUNs Menu, select the **Display LUN Configuration** option and follow the prompts to display the LUN configuration. For example:

```
    1:  Display LUN Configuration
    2:  Manual Configure LUNs
    3:  Auto Configure LUNs

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        QConvergeConsole

        Version 1.0.2 (Build 15)

    Selective LUN Menu (Display)

=====================================================
HBA             : 0 Port: 1
SN              : AFE1134C09753
HBA Model       : QLE8362
HBA Desc.       : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA (FCoE)
FW Version      : 6.00.10
WWPN            : 21-00-00-0E-1E-08-09-10
WWNN            : 20-00-00-0E-1E-08-09-10
Link            : Online
=====================================================

    1:  Details View
    2:  General View
```

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        QConvergeConsole

        Version 1.0.2 (Build 15)

    Selective LUN Menu (Display)

=====================================================
HBA           : 0 Port: 1
SN            : AFE1134C09753
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA (FCoE)
FW Version    : 6.00.10
WWPN          : 21-00-00-0E-1E-08-09-10
WWNN          : 20-00-00-0E-1E-08-09-10
Link          : Online
=====================================================
    1:  Disk
           Vendor                       : SANBlaze
           Product ID                   : VLUN FC RAMDisk
           Port Name                    : 2F-FF-00-06-2B-0E-B2-44
           Port ID                      : C5-07-00
           Bind                         : Yes
           Target ID                    : 0
    2:  Disk
           Vendor                       : SANBlaze
           Product ID                   : VLUN FC RAMDisk
           Port Name                    : 2F-DF-00-06-2B-0E-B2-44
           Port ID                      : C5-08-00
           Bind                         : Yes
           Target ID                    : 1
    3:  Disk
           Vendor                       : SANBlaze
           Product ID                   : VLUN FC RAMDisk
           Port Name                    : 2F-FF-00-06-2B-0F-56-99
           Port ID                      : C5-09-00
           Bind                         : Yes
           Target ID                    : 2
    4:  Device
           Vendor                       : SANBlaze
           Product ID                   : VLUN FC RAMDisk
           Port Name                    : 2F-DF-00-06-2B-0F-56-99
           Port ID                      : C5-0A-00
           Bind                         : Yes
           Target ID                    : 3

(p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
```

```
        Please Enter Selection: 1

    QConvergeConsole
        Version 1.0.2 (Build 15)
    Selective LUN Menu (Display)
=======================================================
HBA           : 0 Port: 1
SN            : AFE1134C09753
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA (FCoE)
FW Version    : 6.00.10
WWPN          : 21-00-00-0E-1E-08-09-10
WWNN          : 20-00-00-0E-1E-08-09-10
Link          : Online
=======================================================
    1:  LUN   0
           Vendor                       : SANBlaze
           Product ID                   : VLUN FC RAMDisk
           Port Name                    : 2F-FF-00-06-2B-0E-B2-44
           Port ID                      : C5-07-00
    2:  All LUNs

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

-------------------------------------------------------------------------------
HBA Instance 0: QLE8362 Port 1 WWPN 21-00-00-0E-1E-08-09-10 PortID C5-0D-A5
Link: Online
-------------------------------------------------------------------------------
Enable Type     Target/LUN Info         Port Name               LUN ID
------ -------- ----------------------- ----------------------- ------
  Yes    Disk SANBlaze VLUN FC RAMDisk  2F-FF-00-06-2B-0E-B2-44 0
        Press <Enter> to continue: 0
```

Manual Configure LUNs

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 9. Selective LUNs ▸ 2. Manual Configure LUNs

From the Selective LUNs Menu, select the **Manual Configure LUNs** option and follow the prompts to manually configure LUNs.

Auto Configure LUNs

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 9. Selective LUNs ▸ 3. Auto Configure LUNs

From the Selective LUNs Menu, select the **Auto Configure LUNs** option and select either `1` to enable or `2` to disable automatic configuration of LUNs.

Quality of Service (QoS) (-qos)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 10. QoS

NOTE

Quality of service applies to adapters on Windows systems only.

From the FC Adapter Configuration menu, select the **QoS** option. From the port menu, select a port to open the QoS Type Menu with options to set QoS by priority or by bandwidth. For example:

```
    FC Adapter Configuration

    HBA Model QLE2562 SN: GFC0819H89653
      1: Port   1: WWPN: 21-00-00-1B-32-0C-95-0C Link Down
      2: Port   2: WWPN: 21-01-00-1B-32-2C-95-0C Link Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        QConvergeConsole
        Version 1.0.2

    QoS Type Menu

=======================================================
HBA           : 0 Port: 1
SN            : GFC0819H89653
HBA Model     : QLE2562
HBA Desc.     : QLE2562 PCI Express to 8Gb FC Dual Channel
FW Version    : 4.03.02
WWPN          : 21-00-00-1B-32-0C-95-0C
WWNN          : 20-00-00-1B-32-0C-95-0C
Link          : Link Down
```

```
=====================================================

 1:  QoS Priority
 2:  QoS Bandwidth (Current)
```

Export (Save) Configuration

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 11. Export (Save) Configuration

From the FC Adapter Configuration menu, select the **Export (Save) Configuration** option. From the port menu, select a port to open the Export (Save) Configuration menu with options to save Flash memory and adapter parameters. For example:

```
FC Adapter Configuration

HBA Model QLE2692 SN: AFD1536Y03145
  1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
  2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
HBA Model QLE2740 SN: AFD1536Y03312
  3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
HBA Model QLE2662 SN: AFE1227F06193
  4: Port   1: WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
  5: Port   2: WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    QConvergeConsole
    Version 2.1.0 (Build 5)

Export (Save) Configuration

=====================================================
BA           : 0 Port: 1
N            : AFD1536Y03145
BA Model     : QLE2692
BA Desc.     : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
W Version    : 8.05.41
WPN          : 21-00-00-24-FF-8F-D8-66
WNN          : 20-00-00-24-FF-8F-D8-66
ink          : Online
=====================================================

1:  Save HBA Parameters
2:  Save Firmware Preload Table
```

```
    3:  Save Firmware Serdes Table
```

Save Flash (-b)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 11. Export (Save) Configuration ▸ <port selection> ▸ 1. Save Flash

From the Export (Save) Configuration menu, select the **Save Flash** option to save changes to the Flash memory to a file.

NOTE

On Solaris only:

- Reset is disabled if the system detects storage SR-IOV or VFs.
- The flash update does not take effect until the system is restarted.

Save HBA Parameters (-r)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 11. Export (Save) Configuration ▸ <port selection> ▸ 2. Save HBA Parameters

From the Export (Save) Configuration menu, select the **Save HBA Parameters** option to save changes to the adapter parameters to a file.

Generate Reports

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 12. Generate Reports

From the FC Adapter Configuration menu, select the **Generate Reports** option. From the port menu, select a port to for which to generate a report. In the following example, the output is truncated due to length:

```
    FC Adapter Configuration

    HBA Model QLE2692 SN: GFC0718P57753
      1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
      2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
QLogic FCAPI (x64)
v2.1.0 Build 2
Copyright (C) 2003-2016 QLogic Corp.
All rights reserved.
QLogic FC/FCoE Common Library
Build Type:  Release
Build Date:  07/20/2016 4:31:20 PM
```

```
-----------------------------------------------------------------
Host Name                       : WIN-F5JD7VK2CK4
OS Type                        : Microsoft Windows Server 2012 R2 Datacenter 64-
bit  x64
OS Version                      : Build 9600
SDM API Version                 : 1.28.0.134 QLSDM.DLL
-----------------------------------------------------------------
HBA Model QLE2692 (SN AFD1536Y03145):
  Port   1 WWPN 21-00-00-24-FF-8F-D8-66 (HBA instance  0) Online
  Port   2 WWPN 21-00-00-24-FF-8F-D8-67 (HBA instance  1) D-Port
HBA Model QLE2740 (SN AFD1536Y03312):
  Port   1 WWPN 21-00-00-24-FF-00-27-B3 (HBA instance  4) SFP not installed
HBA Model QLE2662 (SN AFE1227F06193):
  Port   1 WWPN 20-01-00-0E-1E-08-D9-A0 (HBA instance  7) SFP not installed
  Port   2 WWPN 20-01-00-0E-1E-08-D9-A1 (HBA instance  8) SFP not installed
HBA Model QLE2562 (SN BFD1303F99139):
  Port   1 WWPN 21-00-00-24-FF-4C-DC-2C (HBA instance  2) SFP not installed
  Port   2 WWPN 21-00-00-24-FF-4C-DC-2D (HBA instance  3) SFP not installed
HBA Model QLE2462 (SN FFC0548D34814):
  Port   1 WWPN 21-00-00-E0-8B-85-DE-1B (HBA instance  5) Link Down
  Port   2 WWPN 21-01-00-E0-8B-A5-DE-1B (HBA instance  6) Link Down
-------------------------------------------------------------------------------

Total QLogic HBA(s) : 5

Time and date:                  Tue Nov 15 12:14:38 2016

-------------------------------------------------------------------------------
HBA General Information
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
Host Name                       : WIN-F5JD7VK2CK4
HBA Instance                    : 0
HBA Model                       : QLE2692
HBA Description                : QLE2692 Dell Dual Port 16Gb FC to PCIe Gen3 x8
Adapter
HBA ID                          : 0-QLE2692
HBA Alias                       :
HBA Port                        : 1
Port Alias                      :
```

```
Node Name                       : 20-00-00-24-FF-8F-D8-66
Port Name                       : 21-00-00-24-FF-8F-D8-66
Port ID                         : 01-0A-00
Serial Number                   : AFD1536Y03145
Driver Version                  : STOR Miniport  9.2.2.20 Alpha 2
BIOS Version                    : 3.43
Running Firmware Version        : 8.05.00
Running MPI Firmware Version    : Not Running
Running PEP Firmware Version    : 2.00.08
Flash BIOS Version              : 3.43
Flash FCode Version             : N/A
Flash EFI Version               : 6.20
Flash Firmware Version          : 8.05.41
Flash MPI Firmware Version      : 100.02.00
Flash PEP Firmware Version      : 2.00.08
Actual Connection Mode          : Point to Point
Actual Data Rate                : 16 Gbps
Device ISP ID                   : ISP2261
Chip Revision                   : 0x1(A0)
PortType (Topology)             : NPort
Target Count                    : 0
PCI Bus Number                  : 5
PCI Device Number               : 0
PCI Function Number             : 0
PCI Device ID                   : 0x2261
Subsystem Device ID             : 0x02a8
Subsystem Vendor ID             : 0x1077
PCIe Max Bus Width              : x8
PCIe Negotiated Width           : x8
PCIe Max Bus Speed              : 8.0 Gbps
PCIe Negotiated Speed           : 8.0 Gbps
HBA Temperature (C)             : 56
HBA Status                      : Online
-------------------------------------------------------------------------------
HBA VPD Information
-------------------------------------------------------------------------------
.
.
.
```

Personality (-pc)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 13. Personality

NOTE

The personality feature is supported only on QLogic QLE267*x* and QLE836*x* Adapters. This feature lets you set the adapter's personality to Fibre Channel only or Converged Network Adapter.

From the FC Adapter Configuration menu, select the **Personality** option to set the adapter personality to Fibre Channel only or Converged Network Adapter. From the adapter menu, select the adapter whose personality is to be changed, and then confirm your selection, as shown in the following examples.

Example of changing Fibre Channel (FC) to Converged Network Adapter (CNA):

```
        QConvergeConsole
        CLI - Version 1.1.0 (Build 2)
    FC Adapter Configuration
     1: HBA Model: QLE8362 SN: 040210A+1238107609
          Port   1 WWPN: 21-00-00-0E-1E-10-65-20 Online
          Port   2 WWPN: 21-00-00-0E-1E-10-65-21 Online

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Change personality to CNA? (y/n): y
Personality type of HBA instance 0 (QLE8362) has been changed
successfully. Please reboot machine. Make sure to change the SFP
module to a compatible one (CNA) before reboot.

        Hit <Enter> to continue:
```

Example of changing Converged Network Adapter (CNA) to Fibre Channel (FC):

```
        QConvergeConsole
        CLI - Version 1.1.0 (Build 2)
        Converged Network Adapter (CNA) FCoE Configuration
      1: CNA Model: QLE8362 SN: AFE1141F01212
          Port   1 [Protocol(s): FCoE]
          Port   2 [Protocol(s): FCoE]
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Change personality to FC? (y/n): y
```

```
Personality type of HBA instance 1 (QLE8362) has been changed
successfully. Please reboot machine. Make sure to change the SFP
module to a compatible one (FC) before reboot.
        Hit <Enter> to continue:
```

FEC (-fec)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 13. FEC

NOTE

The forward error correction (FEC) feature is supported only on QLogic 16Gb Fibre Channel adapters—including the QLE269*x*, QLE267*x*, and the QLE8362 in FC mode—if the current adapter port is connected to a Brocade switch with FEC support. For information on how to enable FEC on the switch side, refer to documentation from Brocade.

For 32Gb adapters, FEC is enabled by default and cannot be disabled.

From the FC Adapter Configuration menu, select the **FEC** option. The following menu options allow you to view, enable, or disable support for FEC on the selected adapter port:

`FEC Configuration Menu`

`1: Status` (shows the FEC status as either Enabled or Disabled)

`2: Enable` (enables FEC; requires a reboot to take effect)

`3: Disable` (disables FEC; requires a reboot to take effect)

`4: Info` (shows the quantity of received correctable and uncorrectable FEC errors)

`5: Reset` (resets the counters for all FEC correctable and uncorrectable errors from the reported FEC information)

To enable FEC for the selected adapter port:

1. From the FEC Configuration Menu, select the **Enable** option.

   QConvergeConsole CLI prompts you to confirm that you want to `Enable FEC on all ports of the selected HBA?`
2. Respond by either typing **`1`** for Yes or **`2`** for No.
3. To confirm that FEC is now enabled, select the **Status** menu option and view the change.
4. For the FEC change to take effect, you must reboot the server.

BB Credit Recovery (-bbcr)

2. Adapter Configuration ▸ 2. FC Adapter Configuration ▸ 14. BB Credit Recovery

Buffer-to-buffer credit recovery (BB-CR) enables two FC peer ports (N_Port, F_Port, or E_Port) to periodically send and receive the quantity of receiver ready (R_RDY) signals transmitted. The BB-CR feature allows the peer port to recover from possible R_RDY signals lost over a lossy link. BB-CR enables two FC ports logged in with each other to recover lost buffer-to-buffer credits. These lost credits can impact throughput, cause link resets, and disrupt traffic flow.

During the login process, the peer ports exchange a nonzero BB_SC_N value. During frame transmission/reception, one port maintains counters to track the R_RDY and frames received. Based on a periodic exchange of BB_SC_N values, the receiving port determines how many R_RDYs should have been received. BB-CR compares this value with the actual counters maintained at the receiving port, from which the receiver can compute the actual quantity of credits lost, and thus recover without incurring a link reset.

By default, BB-CR functionality is enabled on QLogic 269*x* and 2700 Series Adapters that are operating at 16Gbps or higher, and that integrate with Brocade Fabric OS Manager and Brocade Network Advisor.

From the FC Adapter Configuration menu, select the **BB Credit Recovery** option. The following menu options allow you to view, enable, or disable support for BB-CR on the selected adapter port:

```
BB Credit Config Menu
1:  Info (shows the BB Credit Status as Enabled or Disabled)
2:  Enable (enables BB-CR; requires a reboot to take effect)
3:  Disable (disables BB-CR; requires a reboot to take effect)
```

Adapter Updates

3. Adapter Updates ▸ 2. Fibre Channel Adapter

From the main menu, select the **Adapter Updates** option and then select **2** (**Fibre Channel Adapter**). The Fibre Channel Adapter Update menu provides options to update Flash memory, drivers, adapter parameters, the parameter template, and the firmware preload and Fibre Channel SerDes tables, and to perform a Fibre Channel firmware dump. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
```

```
    Please Enter Selection: 2

  FC Adapter Update

  1:  Flash Update
  2:  Driver Update
  3:  Parameters Update
  4:  Parameters Template Update (available only for 8Gb adapters)
  5:  Firmware Preload Update
  6:  FC Board Config Update
  7:  FC Firmware Dump
```

Flash Update (-b)

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 1. Flash Update

From the FC Adapter Update menu, select the **Flash Update** option. From the adapter menu, select the adapter, and then type the Flash update file name. For example:

```
  Flash Update

   1: HBA Model: QLE2692 SN: AFD1536Y03145
        Port   1 WWPN: 21-00-00-24-FF-8F-D8-66 Online
        Port   2 WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
   2: HBA Model: QLE2740 SN: AFD1536Y03312
        Port   1 WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
   3: HBA Model: QLE2662 SN: AFE1227F06193
        Port   1 WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
        Port   2 WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1
Enter a file name or Hit <RETURN> to abort: flash_update
```

NOTE

On Solaris only:

- Reset is disabled if the system detects storage SR-IOV or VFs.
- The flash update does not take effect until the system is restarted.

Driver Update (-d)

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 2. Driver Update

NOTE

Interactive driver update applies to Windows systems only.

From the FC Adapter Update menu, select the **Driver Update** option. From the adapter menu, select the adapter, and then type the driver update file name. The driver update file can be either an `.inf` file or a compressed driver file (`.zip` or `.exe` file). For example, to use an `.inf` driver file:

```
Driver Update

    HBA Model QLE8362 SN: 040210A+1238107609
      1: Port   1: WWPN: 21-00-00-0E-1E-10-65-20 Online
      2: Port   2: WWPN: 21-00-00-0E-1E-10-65-21 Online

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter a file name or Hit <RETURN> to abort:
C:\Drivers\q23wx64Storv911028_whql-1548570-12052012\ql2x00.inf
```

The following is an example of using a compressed driver file (`.zip` in this case):

```
Driver Update

    HBA Model QLE8362 SN: 040210A+1238107609
      1: Port   1: WWPN: 21-00-00-0E-1E-10-65-20 Online
      2: Port   2: WWPN: 21-00-00-0E-1E-10-65-21 Online

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

Enter a file name or Hit <RETURN> to abort:
C:\Drivers\q23wx64Storv911028_whql-1548570-12052012.zip

        This option will install version: STOR Miniport 9.1.10.28
        The current version is: STOR Miniport 9.1.11.20 Alpha 4
        Do you want to perform the operation?

        1: Yes
        2: No
                Enter Selection:
```

Parameters Update (-r)

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 3. Parameters Update

From the FC Adapter Update menu, select the **Parameters Update** option. From the port menu, select a port for which to specify the parameter update, and then type the file name. For example:

```
    Parameters Update

    HBA Model QLE2692 SN: AFD1536Y03145
      1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
      2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
    HBA Model QLE2740 SN: AFD1536Y03312
      3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
    HBA Model QLE2662 SN: AFE1227F06193
      4: Port   1: WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
      5: Port   2: WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter a file name or Hit <RETURN> to abort:parameters_update
```

If the adapter does not support the parameter update option, a notification message appears. For example:

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Option not supported with selected HBA (Instance 0 - QLE8362)!
```

Parameters Template Update

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 4. Parameters Template Update

This option appears only when an 8Gb FC adapter is selected. From the FC Adapter Update menu, select the **Parameters Template Update** option. From the port menu, select a port to open the HBA Parameters Templates Menu with options for various adapter vendors. For example:

```
    Parameters Template Update

    HBA Model QLE2692 SN: AFD1536Y03145
      1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
      2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
    HBA Model QLE2740 SN: AFD1536Y03312
      3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
    HBA Model QLE2662 SN: AFE1227F06193
```

```
      4: Port   1: WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
      5: Port   2: WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed
    HBA Model QLE2562 SN: BFD1303F99139
      6: Port   1: WWPN: 21-00-00-24-FF-4C-DC-2C SFP not installed
      7: Port   2: WWPN: 21-00-00-24-FF-4C-DC-2D SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 6

        QConvergeConsole
        Version 2.1.0 (Build 5)

    HBA Parameters Templates Menu

=====================================================
HBA           : 2 Port: 1
SN            : BFD1303F99139
HBA Model     : QLE2562
HBA Desc.     : QLE2562 PCI Express to 8Gb FC Dual Channel
FW Version    : 8.01.02
WWPN          : 21-00-00-24-FF-4C-DC-2C
WWNN          : 20-00-00-24-FF-4C-DC-2C
Link          : SFP not installed
=====================================================

    1:  HP
    2:  IBM
    3:  NETAPP
    4:  QLGC
    5:  SUN

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 4
Updating HBA Parameters on HBA instance 2 -  QLE2562. Please
wait...
HBA Parameters update complete. Changes have been saved to HBA
instance 2.
```

If the adapter does not support the parameter template update option, a notification message appears. For example:

```
    Parameters Template Update

    HBA Model QLE8362 SN: AFE1223F04535
```

```
        1: Port   1: WWPN: 21-00-00-0E-1E-08-05-20 Online
        2: Port   2: WWPN: 21-00-00-0E-1E-08-05-21 Online

          (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
          Please Enter Selection: 1
Option not supported with selected HBA (Instance 0 - QLE8362)!
```

Firmware Preload Update (-u)

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 5. Firmware Preload Update

NOTE

This option is only for blades and mezzanine adapters.

From the FC Adapter Update menu, select the **Firmware Preload Update** option to update the adapter firmware preload table. From the HBA selection menu, select the adapter to be updated, and then enter a firmware preload table file name (`.dat`).

For example:

```
    Firmware Preload Update

     1: HBA Model: QLE2692 SN: AFD1536Y03145
          Port   1 WWPN: 21-00-00-24-FF-8F-D8-66 Online
          Port   2 WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
     2: HBA Model: QLE2740 SN: AFD1536Y03312
          Port   1 WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
     3: HBA Model: QLE2662 SN: AFE1227F06193
          Port   1 WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
          Port   2 WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed
     4: HBA Model: QLE2562 SN: BFD1303F99139
          Port   1 WWPN: 21-00-00-24-FF-4C-DC-2C SFP not installed
       Port   2 WWPN: 21-00-00-24-FF-4C-DC-2D SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        Firmware Preload Table
        Current version: v2.1.3

Enter a file name or Hit <RETURN> to abort: fwpreload.dat
```

FC Board Config Update (-sp)

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 6. FC Board Config Update

From the FC Adapter Update menu, select the **FC Board Config Update** option to update the adapter firmware SerDes table. From the HBA selection menu, select the adapter to be updated and then enter a firmware SerDes table file name (`.dat`). For example:

```
    FC Board Config Update

     1: HBA Model: QLE2692 SN: AFD1536Y03145
          Port   1 WWPN: 21-00-00-24-FF-8F-D8-66 Online
          Port   2 WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
     2: HBA Model: QLE2740 SN: AFD1536Y03312
          Port   1 WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        Firmware Serdes Table
        Current version: v2.1.2

Enter a file name or Hit <RETURN> to abort: fwserdes.dat
```

FC Firmware Dump (-fwdump)

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 7. FC Firmware Dump

From the FC Adapter Update or CNA Update menu, select the **FC Firmware Dump** option. From the adapter menu, select the adapter, and then enter the name of the firmware dump file to be created. For example:

```
    FC Dump

     1: HBA Model: QLE2692 SN: AFD1536Y03145
          Port   1 WWPN: 21-00-00-24-FF-8F-D8-66 Online
          Port   2 WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
     2: HBA Model: QLE2740 SN: AFD1536Y03312
          Port   1 WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
     3: HBA Model: QLE2662 SN: AFE1227F06193
          Port   1 WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
          Port   2 WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Enter a file name or Hit <RETURN> to abort: fc_dump
```

Adapter Diagnostics

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter

From the main menu, select the **Adapter Diagnostics** option and then select **2** (**Fibre Channel Adapter**). The FC Adapter Diagnostics menu includes options to perform a loopback test, test the read write buffer, and view the transceiver diagnostics information. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

FC Adapter Diagnostics

1:  Loopback Test
2:  Read Write Buffer Test
3:  Transceiver Diagnostics Monitoring Interface (DMI)
4:  Beacon
5:  FCE Trace
6:  Device Ping Test
7:  CT Ping Test
8:  CT FTR Test
9:  Link Status
10:  Diagnostics Port Test
11:  FC Ping Test
12:  (RDP) Read Diagnostics Parameters
```

Loopback Test (-kl)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test

From the FC Adapter Diagnostics menu, select the **Loopback Test** option. From the port menu, select a port to open the FC/FCoE Loopback Test menu with options to view test parameters, reset test parameters, configure test parameters, and run the external loopback test. For example:

```
FC Adapter Diagnostics

HBA Model QLE2692 SN: AFD1536Y03145
  1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
  2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
```

```
    HBA Model QLE2740 SN: AFD1536Y03312
      3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 3

       QConvergeConsole
       CLI - Version 2.1.0 (Build 5)

    FC/FCoE Loopback Test

=========================================================
HBA           : 4 Port: 1
SN            : AFD1536Y03312
HBA Model     : QLE2740
HBA Desc.     : QLE2740 Dell Single Port 32Gb FC to PCIe Gen3 x8
Adapter
FW Version    : 8.03.06
WWPN          : 21-00-00-24-FF-00-27-B3
WWNN          : 20-00-00-24-FF-00-27-B3
Link          : SFP not installed
=========================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Start Diagnostics Test
```

Display Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test ▸ <port selection> ▸ 1. Display Test Parameters

From the Loopback Test menu, select the **Display Test Parameters** option to view the external loopback test parameters. For example:

```
-----------------------------------------------------------------

HBA Instance 0: QLE2692 Port 1 WWPN 21-00-00-24-FF-8F-D8-66 PortID
01-0A-00
Link: Online
-----------------------------------------------------------------

--------------------
Diagnostics Settings
--------------------
Diagnostic Mode          : Loopback
```

```
Data Pattern              : Random
Data Size (Bytes)         : 8
Number of tests (1-65535): 10
Test Increment(1-65535)   : 1
Abort On Error            : Ignore
Test Continuous           : OFF
Loopback Type             : External Loopback
-----------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test ▸ <port selection> ▸ 2. Reset Test Parameters

From the Loopback Test menu, select the **Reset Test Parameters** option to reset the external loopback test parameters to their default values.

Configure Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test ▸ <port selection> ▸ 3. Configure Test Parameters

From the Loopback Test menu, select the **Configure Test Parameters** option to open the Loopback Test menu with options to configure the data pattern, data size, number of tests, test increment, error handling, and loopback type. For detailed information about these parameters, see Table 6-7 on page 108.

For example:

```
    FC/FCoE Loopback Test

=======================================================
HBA           : 0 Port: 1
SN            : AFD1536Y03145
HBA Model     : QLE2692
HBA Desc.     : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
FW Version    : 8.05.41
WWPN          : 21-00-00-24-FF-8F-D8-66
WWNN          : 20-00-00-24-FF-8F-D8-66
Link          : Online
=======================================================
    1:  Data Patterns
    2:  Data Size
    3:  Number Of Test(s)
    4:  Test Increment(s)
    5:  Abort On Error
    6:  Loopback Type
```

Start Diagnostics Test

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test ▸ <port selection> ▸ 4. Start Diagnostics Test

From the Loopback Test menu, select the **Start Diagnostics Test** option to run the external loopback test. For example:

```
--------------------------------------------------------------------------------

HBA Instance 0: QLE2692 Port 1 WWPN 21-00-00-24-FF-8F-D8-66 PortID 01-0A-00
Link: Online
--------------------------------------------------------------------------------

--------------------
Diagnostics Settings
--------------------
Diagnostic Mode          : Loopback
Data Pattern             : Random
Data Size (Bytes)        : 8
Number of tests (1-65535): 10
Test Increment(1-65535)  : 1
Abort On Error           : Ignore
Test Continuous          : OFF
Loopback Type            : External Loopback
--------------------------------------------------------------------------------

---------------------------------
Diagnostics - Loopback Test Result
---------------------------------
Press <Enter> to abort
-----------------------------------------
HBA Test Data Pattern          Status    CRC       Disparity FrameLength
--- ----------------------  ----------- --------- --------- -----------
 0  2B-12-30-2F-5C-35-44-01    Success         0         0           0

Finished 10 iterations in 0 second(s)...
```

Read Write Buffer Test (-kr)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 2. Read Write Buffer Test

From the FC Adapter Diagnostics menu, select the **Read Write Buffer Test** option. From the port menu, select a port to open the Read Write Buffer Test menu with options to view test parameters, reset test parameters, configure test parameters, and run the test. For example:

```
    FC Adapter Diagnostics

    HBA Model QLE2692 SN: AFD1536Y03145
      1: Port   1: WWPN: 21-00-00-24-FF-8F-D8-66 Online
      2: Port   2: WWPN: 21-00-00-24-FF-8F-D8-67 D-Port
    HBA Model QLE2740 SN: AFD1536Y03312
      3: Port   1: WWPN: 21-00-00-24-FF-00-27-B3 SFP not installed
    HBA Model QLE2662 SN: AFE1227F06193
      4: Port   1: WWPN: 20-01-00-0E-1E-08-D9-A0 SFP not installed
      5: Port   2: WWPN: 20-01-00-0E-1E-08-D9-A1 SFP not installed

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 2

       QConvergeConsole
       CLI - Version 2.1.0 (Build 5)

    Read Write Buffer Test

=======================================================
HBA           : 1 Port: 2
SN            : AFD1536Y03145
HBA Model     : QLE2692
HBA Desc.     : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
FW Version    : 8.05.41
WWPN          : 21-00-00-24-FF-8F-D8-67
WWNN          : 20-00-00-24-FF-8F-D8-67
Link          : D-Port
=======================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Start Diagnostics Test
```

Display Test Parameters (-kr)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 2. Read Writer Buffer Test ▸ <port selection> ▸ 1. Display Test Parameters

From the Read Write Buffer Test menu, select the **Display Test Parameters** option to view the read write buffer test parameters. For example:

```
-------------------------------------------------------------
```

```
HBA Instance 1: QLE2692 Port 2 WWPN 21-00-00-24-FF-8F-D8-67 PortID
00-00-00
Link: D-Port
-------------------------------------------------------------------

--------------------
Diagnostics Settings
--------------------
Diagnostic Mode          : R/W Buffer
Data Pattern             : Random
Data Size (Bytes)        : 8
Number of tests (1-10000): 10
Test Increment(1-10000)  : 1
Abort On Error           : Ignore
Test Continuous          : OFF
-------------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 2. Read Write Buffer Test ▸ <port selection> ▸ 2. Reset Test Parameters

From the Read Write Buffer Test menu, select the **Reset Test Parameters** option to reset the read write buffer test parameters to their default values.

Configure Test Parameters (-kr)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 2. Read Write Buffer Test ▸ <port selection> ▸ 3. Configure Test Parameters

From the Read Write Buffer Test menu, select the **Configure Test Parameters** option to open the Read Write Buffer Test submenu with options to configure the data pattern, data size, number of tests, test increment, error handling, and devices. For detailed information about these parameters, see Table 6-7.

For example:

```
    FC/FCoE Read/Write Buffer Test

=====================================================
HBA            : 1 Port: 2
SN             : AFD1536Y03145
HBA Model      : QLE2692
HBA Desc.      : QLE2692 Dual Port 16Gb FC to PCIe Gen3 x8 Adapter
FW Version     : 8.05.41
WWPN           : 21-00-00-24-FF-8F-D8-67
WWNN           : 20-00-00-24-FF-8F-D8-67
```

```
Link          : D-Port
=======================================================
    1:  Data Patterns
    2:  Data Size
    3:  Number Of Test(s)
    4:  Test Increment(s)
    5:  Abort On Error
    6:  Enable/Disable Device(s)
```

Start Diagnostics Test (-kr)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 2. Read Write Buffer Test ▸ <port selection> ▸ 4. Start Diagnostics Test

From the Read Write Buffer Test menu, select the **Start Diagnostics Test** option to run the read write buffer test.

Transceiver Diagnostics Monitoring Interface (DMI)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 3. Transceiver Diagnostics Monitoring Interface (DMI)

From the FC Adapter Diagnostics menu, select the **Transceiver Diagnostics Monitoring Interface (DMI)** option. From the port menu, select a port to open the Transceiver Diagnostics Monitoring Interface (DMI) menu with options to view general and detailed transceiver information. For example:

```
FC Adapter Diagnostics

HBA Model QLE2692 SN: GFC0718P57753
  1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
  2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Transceiver Diagnostics Monitoring Interface (DMI)

1:  General
2:  Details
```

General (-dm)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 3. Transceiver Diagnostics Monitoring Interface (DMI) ▸ <port selection> ▸ 1. General

From the Transceiver Diagnostics Monitoring Interface menu, select the **General** option to view general transceiver diagnostic information. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2692 Port 1 WWPN 21-00-00-24-FF-8F-D8-66 PortID 01-0A-00
```

```
Link: Online
------------------------------------------------------------------------------

------------------------------------------------------------------------------
Media Information
------------------------------------------------------------------------------
              Vendor: FINISAR CORP.
                Type: 800-M5-SN-S
         Part Number: FTLF8529P3BCV-QL
               Speed: 400 MBytes/Sec 1600 MBytes/Sec 800 MBytes/Sec
            Revision: A
       Serial Number: UL40TFY
QLogic SFP Installed: Yes
------------------------------------------------------------------------------

                Temperature   Voltage     Tx Bias     Tx Power    Rx Power
                    (C)         (V)         (mA)        (mW)        (mW)
              --------------  -------     -------     --------    --------
       Value      37.36         3.37        8.43       0.4921      0.5224
      Status     Normal       Normal      Normal      Normal      Normal
  High Alarm      75.00         3.60       12.00       1.0000      1.2589
High Warning      70.00         3.50       11.50       0.7943      1.0000
 Low Warning       0.00         3.10        2.00       0.1585      0.0158
   Low Alarm      -5.00         3.00        1.00       0.1259      0.0100

       Hit <Enter> to continue:
```

Details (-dm)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 3. Transceiver Diagnostics Monitoring Interface (DMI) ▸ <port selection> ▸ 2. Details

From the Transceiver Diagnostics Monitoring Interface menu, select the **Details** option to view general transceiver diagnostic information. In the following example, the output is truncated to save space:

```
------------------------------------------------------------------------------
HBA Instance 0: QLE2692 Port 1 WWPN 21-00-00-24-FF-8F-D8-66 PortID 01-0A-00
Link: Online
------------------------------------------------------------------------------

Optical Transceiver Digital Diagnostic Data:

Address A0
          Identifier: SFP
```

```
      Ext. Identifier: GBIC/SFP defined by serial ID only
            Connector: LC
       Ethernet Speed:
           Compliance: 0x00 0x00 0x00
       FC Link Length: Short Distance (S)
  FC Transmitter Tech: Shortwave Laser w/o OFC (SN)
FC Transmission Media: Multi-mode 50m (M5)
             FC Speed: 400 MBytes/Sec 1600 MBytes/Sec 800 MBytes/Sec
             Encoding: Reserved
          BR, Nominal: 0x8c
    Length (9um) - km: 0x00
         Length (9um): 0x00
        Length (50um): 0x03
      Length (62.5um): 0x00
      Length (Copper): 0x00
          Vendor name: FINISAR CORP.
           Vendor OUI: 0x00 0x90 0x65
            Vendor PN: FTLF8529P3BCV-QL
           Vendor Rev: A
          Wave Length: 0x0352
              CC_BASE: 0xb0
              Options:-Signal Loss, as defined in SFP MSA: 0x1
                      -Signal Loss, inverted from SFP MSA: 0x0
                      -TX_FAULT signal implemented: 0x1
                      -TX_DISABLE implemented & disables serial o/p: 0x1
                      -RATE_SELECT implemented: 0x1
              BR, max: 0x00
              BR, min: 0x00
            Vendor SN: UL40TFY
            Date code: 110727
            .
            .
            .
```

Beacon (-a)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 4. Beacon

From the FC Adapter Diagnostics menu, select the **Beacon** option. From the port menu, select a port to open the Beacon Test menu with options to <turn beacon LED on> and <turn beacon LED off>.

FCE Trace (-trace)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 5. FCE Trace

From the FC Adapter Diagnostics menu, select the **FCE Trace** option and then select a port. At the prompt, type a file name with which to save the trace information. For example:

```
FC Adapter Diagnostics

HBA Model QLE8362 SN: 1234A00-1234567891
1: Port   1: WWPN: 21-00-00-0E-1E-08-F3-10 Link down
2: Port   2: WWPN: 21-00-00-0E-1E-08-F3-11 Online

(p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
Please Enter Selection: 2

Enter File Name to Save: FCE_Trace.log

Diagnostics - FCE Trace Result
------------------------------------------
FCE trace of HBA instance 1 (QLE8362) has been saved successfully
as FCE_Trace.log

Hit <Enter> to continue:
```

Device Ping Test (-fcp)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 6. Device Ping Test

From the FC Adapter Diagnostics menu, select the **Device Ping Test** option, and then select a port. The FC Ping Test menu opens and lists options to view, reset, and configure ping test parameters, and to start the ping test.

For example:

```
FC Adapter Diagnostics

HBA Model QLE8362 SN: 1234A00-1234567891
1: Port   1: WWPN: 21-00-00-0E-1E-08-F3-10 Loop Down
2: Port   2: WWPN: 21-00-00-0E-1E-08-F3-11 Online

 (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
Please Enter Selection: 2

FC Ping Test

=====================================================
HBA           : 1 Port: 2
```

```
SN              : 1234A00-1234567891
HBA Model       : QLE8362
HBA Desc.       : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
(FCoE)
FW Version      : 7.03.00
WWPN            : 21-00-00-0E-1E-08-F3-11
WWNN            : 20-00-00-0E-1E-08-F3-11
Link            : Online
=======================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Start Diagnostics Test
```

Display Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 6. Ping Test ▸ <port selection> ▸ 1. Display Test Parameters

From the FC Ping Test menu, select the **Display Test Parameters** option to view the ping test parameters.For example:

```
-------------------------------------------------------------------------------
HBA Instance 1: QLE8362 Port 2 WWPN 21-00-00-0E-1E-08-F3-11 PortID 21-02-00
Link: Online
-------------------------------------------------------------------------------

--------------------
Diagnostics Settings
--------------------
Diagnostic Mode           : FC Ping
Number of tests (1-10000): 10
Test Increment(1-10000)   : 1
Abort On Error            : Ignore
Test Continuous           : OFF
-------------------------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 6. Ping Test ▸ <port selection> ▸ 2. Reset Test Parameters

From the FC Ping Test menu, select the **Reset Test Parameters** option to reset the ping test parameters to their default values.

Configure Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 6. Ping Test ▸ <port selection> ▸ 3. Configure Test Parameters

From the FC Ping Test menu, select the **Configure Test Parameters** option to open the **FC Ping Test** menu. The FC Ping Test menu lists options to configure the quantity of tests and test increments, set abort on error, and enable or disable devices. For detailed information about these parameters, see Table 6-4 on page 86.

For example:

```
FC Ping Test

=======================================================
HBA           : 1 Port: 2
SN            : 1234A00-1234567891
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA (FCoE)
FW Version    : 7.03.00
WWPN          : 21-00-00-0E-1E-08-F3-11
WWNN          : 20-00-00-0E-1E-08-F3-11
Link          : Online
=======================================================
    1:  Number Of Test(s)
    2:  Test Increment(s)
    3:  Abort On Error
    4:  Enable/Disable Device(s)
```

Start Diagnostics Test

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 6. Ping Test ▸ <port selection> ▸ 4. Start Diagnostic Test

From the Ping Test menu, select the **Start Diagnostics Test** option to run the ping test. For example:

```
-------------------------------------------------
Diagnostics Test Configuration
-------------------------------------------------
Diagnostic Mode          : FC Ping
Number of tests (1-10000): 10
Number of Pass           : 1
Test Increment(1-10000)  : 1
Abort On Error           : Stop
Test Continuous          : OFF
```

```
--------------------------------------------------------------------------------

Diagnostics - Ping test Results

------------------------------------------------
Diagnostics Test Configuration
------------------------------------------------
Diagnostic Mode          : FC Ping
Number of tests (1-10000): 10
Number of Pass           : 10
Test Increment(1-10000)  : 1
Abort On Error           : Stop
Test Continuous          : OFF
--------------------------------------------------------------------------------
---------        ----------          ----------   ----------    ----------
----------    ---------------------
    ID                Data               Link         Sync       Signal
Invalid        Diagnostics
Port/Loop Miscompare    Failure    Loss         Loss           CRC
Status
---------        ----------          ----------   ----------   ----------
----------    ---------------------
21-05-00          0               0              0            0
0         10 replies in 0 ms
```

CT Ping Test (-ctp)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 7. CT Ping Test

From the FC Adapter Diagnostics menu, select the **CT Ping Test** option, and then select a port. The CT Ping Test menu opens and lists options to view, reset, and configure common transport (CT) ping test parameters, and to start the CT ping test.

For example:

```
FC Adapter Diagnostics

HBA Model QLE8362 SN: 1234A00-1234567891
1: Port   1: WWPN: 21-00-00-0E-1E-08-F3-10 SFP not installed
2: Port   2: WWPN: 21-00-00-0E-1E-08-F3-11 Online

(p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
Please Enter Selection: 2

CT Ping Test
```

```
=========================================================
HBA           : 1 Port: 2
SN            : 1234A00-1234567891
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
(FCoE)
FW Version    : 7.03.00
WWPN          : 21-00-00-0E-1E-08-F3-11
WWNN          : 20-00-00-0E-1E-08-F3-11
Link          : Online
=========================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Start Diagnostics Test
```

Display Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 7. CT Ping Test ▸ 1. Display Test Parameters

From the CT Ping Test menu, select the **Display Test Parameters** option to view the parameters for the CT ping test. For example:

```
-------------------------------------------------------------------------------
HBA Instance 1: QLE8362 Port 2 WWPN 21-00-00-0E-1E-08-F3-11 PortID 21-02-00
Link: Online
-------------------------------------------------------------------------------
Diagnostics Settings
-----------------------------
Diagnostic Mode           : CT Ping
Number of tests (1-10000) : 10
Test Increment(1-10000)   : 1
Abort On Error            : Ignore
Test Continuous           : OFF
-------------------------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 7. CT Ping Test ▸ 2. Reset Test Parameters

From the CT Ping Test menu, select the **Reset Test Parameters** option to reset the CT ping test parameters to the default values.

Configure Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 7. CT Ping Test ▸ 3. Configure Test Parameters

From the CT Ping Test menu, select the **Configure Test Parameters** option to open the CT Ping Test submenu. The CT Ping Test menu lists options to configure the quantity of tests and test increments, set abort on error, and enable or disable devices. For detailed information about these parameters, see Table 6-4 on page 86.

For example:

```
=======================================================
HBA             : 1 Port: 2
SN              : 1234A00-1234567891
HBA Model       : QLE8362
HBA Desc.       : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
(FCoE)
FW Version      : 7.03.00
WWPN            : 21-00-00-0E-1E-08-F3-11
WWNN            : 20-00-00-0E-1E-08-F3-11
Link            : Online
=======================================================
    1:  Number Of Test(s)
    2:  Test Increment(s)
    3:  Abort On Error
    4:  Enable/Disable Device(s)
```

Start Diagnostics Test

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 7. CT Ping Test ▸ 4. Start Diagnostic Test

From the CT Ping Test menu, select the **Start Diagnostics Test** option to run the CT ping test. For example:

```
-------------------------------------------------
Diagnostics Test Configuration
-------------------------------------------------
Diagnostic Mode           : CT Ping
Number of tests (1-10000): 10
Number of Pass            : 1
Test Increment(1-10000)   : 1
Abort On Error            : Stop
Test Continuous           : OFF

Diagnostics - CT Ping Test Results
```

```
-------------------------------------------------
Diagnostics Test Configuration
-------------------------------------------------
Diagnostic Mode           : CT Ping
Number of tests (1-10000): 10
Number of Pass            : 10
Test Increment(1-10000)   : 1
Abort On Error            : Stop
Test Continuous           : OFF
-------------------------------------------------------------------------------
---------       ----------      ----------      ----------    ----------
----------        ---------------------
    ID               Data           Link           Sync        Signal
Invalid              Diagnostics
Port/Loop  Miscompare    Failure       Loss       Loss           CRC
Status
---------       ----------     ----------       ----------    ----------
----------       ---------------------
21-05-00         0              0                 0           0
0                   Sucess
```

CT FTR Test (-ftr)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 8. CT FTR Test

QConvergeConsole CLI supports common transport (CT) Fibre Channel trace route (FTR) testing. The CT FTR test traces the route to each device attached to the port.

NOTE

All inner-link switches between the initiator and the target must have the Brocade switch firmware 7.1.1 or later for the CT FTR test to work. For best results, QLogic highly recommends using HP P2000G3 or Promise® VTrak E610f as a target. To confirm if your target is supported, contact QLogic Support.

From the FC Adapter Diagnostics menu, select the **CT FTR Test** option, and then select a port. The CT FTR Test menu opens and lists options to view, reset, and configure CT FTR test parameters, and to start the CT FTR test.

For example:

```
FC Adapter Diagnostics
```

```
HBA Model QLE8362 SN: 1234A00-1234567891
1: Port   1: WWPN: 21-00-00-0E-1E-08-F3-10 SFP not installed
2: Port   2: WWPN: 21-00-00-0E-1E-08-F3-11 Online

(p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
Please Enter Selection: 2

                        CT FTR test

=========================================================
HBA             : 1 Port: 2
SN              : 1234A00-1234567891
HBA Model       : QLE8362
HBA Desc.       : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
(FCoE)
FW Version      : 7.03.00
WWPN            : 21-00-00-0E-1E-08-F3-11
WWNN            : 20-00-00-0E-1E-08-F3-11
Link            : Online
=========================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Start Diagnostics Test
```

Display Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 8. CT FTR Test ▸ 1. Display Test Parameters

From the CT FTR Test menu, select the **Display Test Parameters** option to view the CT FTR test parameters. For example:

```
-------------------------------------------------------------------------------
HBA Instance 1: QLE8362 Port 2 WWPN 21-00-00-0E-1E-08-F3-11 PortID 21-02-00
Link: Online
-------------------------------------------------------------------------------
---------------------------
Diagnostics Settings
---------------------------
Diagnostic Mode           : CT FTR
Number of tests (1-10000): 10
Test Increment(1-10000)   : 1
Abort On Error            : Ignore
```

```
Test Continuous          : OFF
------------------------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 8. CT FTR Test ▸ 2. Reset Test Parameters

From the CT FTR Ping Test menu, select the **Reset Test Parameters** option to reset the CT FTR test parameters to the default values.

Configure Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 8. CT FTR Test ▸ 3. Configure Test Parameters

From the CT FTR Test menu, select the **Configure Test Parameters** option to open the CT FTR Test submenu. The CT FTR Test menu lists options to configure the quantity of tests and test increments, set abort on error, and enable or disable devices. For detailed information about these parameters, see Table 6-4 on page 86.

For example:

```
=====================================================
HBA            : 1 Port: 2
SN             : 1234A00-1234567891
HBA Model      : QLE8362
HBA Desc.      : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
(FCoE)
FW Version     : 7.03.00
WWPN           : 21-00-00-0E-1E-08-F3-11
WWNN           : 20-00-00-0E-1E-08-F3-11
Link           : Online
=====================================================
    1:  Number Of Test(s)
    2:  Test Increment(s)
    3:  Abort On Error
    4:  Enable/Disable Device(s)
```

Start Diagnostics Test

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 8. CT FTR Test ▸ 4. Start Diagnostics Test

From the CT FTR Test menu, select the **Start Diagnostics Test** option to run the CT FTR test. For example:

```
------------------------------------------------
Diagnostics Test Configuration
------------------------------------------------
```

```
Diagnostic Mode           : CT FTR
Number of tests (1-10000): 10
Number of Pass            : 1
Test Increment(1-10000)   : 1
Abort On Error            : Stop
Test Continuous           : OFF

Diagnostics - CT FTR Test Result
------------------------------------------------
Diagnostics Test Configuration
------------------------------------------------
Diagnostic Mode           : CT FTR
Number of tests (1-10000): 10
Number of Pass            : 10
Test Increment(1-10000)   : 1
Abort On Error            : Stop
Test Continuous           : OFF
-------------------------------------------------------------------------------
---------      ----------        ----------      ----------     ----------
----------       ---------------------
   ID          Data          Link         Sync      Signal        Invalid
Diagnostics
Port/Loop Miscompare  Failure       Loss        Loss         CRC
Status
---------     ----------         ----------      ----------   ----------
----------       ---------------------
21-05-00     0               0           0           0            0
Success
```

Link Status (-ls)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status

From the FC Adapter Diagnostics menu, select the **Link Status** option, and then select a port. The Link Status Menu opens and lists options to view, configure, reset, and run port link status counters.

Info

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status ▸ 1. Info

From the FC Adapter Diagnostics menu, select the **Link Status** option, and then select **Info** to view the current values for the AutoPoll (AP), SetRate (SR), and LogToFile (LF) settings.

Configure

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status ▸ 2. Configure

From the FC Adapter Diagnostics menu, select the **Link Status** option, select **Configure**, to view the Link Status Config Menu.

```
Link Status Config Menu
  1:  Auto Poll
  2:  Set Rate
  3:  Enable Log
  4:  Default
```

Auto Poll

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status ▸ 2. Configure ▸ 1. Auto Poll

From the Link Status Config Menu, select the **Auto Poll** option, and then select either **Enable Auto Poll** or **Disable Auto Poll**.

Set Rate

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status ▸ 2. Configure ▸ 2. Set Rate

From the Link Status Config Menu, select the **Set Rate** option, and then for the `Sampling Rate (Seconds)` setting, type a value between 5 and 30; the current value is shown in brackets.

Enable Log

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status ▸ 2. Configure ▸ 3. Enable Log

From the Link Status Config Menu, select the **Enable Log** option to specify the name of a log file in which to store link statistics for the selected port.

Default

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status ▸ 2. Configure ▸ 4. Default

From the Link Status Config Menu, select the **Default** option to restore the default settings for link statistics for the selected port.

Hard Reset

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status ▸ 3. Hard Reset

From the FC Adapter Diagnostics menu, select the **Link Status** option, and then select **Hard Reset** to set to zero all of the counters in the firmware private statistics data. When the command completes successfully, the following firmware counters are cleared:

- Link Failure
- Sync Loss
- Signal Loss
- Invalid CRC

- Seq Proto Error
- Invalid Trans Word

Run

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 9. Link Status ▸ ▸ 4. Run

From the FC Diagnostics menu, select the **Link Status** option, and then select **Run** to start running a link status. Press ENTER to stop running the link status.

```
---------------------------------------
Link Status Settings
---------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): null.csv
-------------------------------------------------------------------------------
HBA Instance 1: QLE2662 Port 2 WWPN 20-01-00-09-0C-00-FF-01 PortID 00-00-00
Link: SFP not installed
-------------------------------------------------------------------------------
Link Status
-----------------------------------------
General keyboard shortcuts:
     R    - Reset current
     C    - Refresh current
     T    - Refresh total
     ENTER - Cancel the current task
-----------------------------------------
Port Name               Link     Sync     Signal   Invalid  Seq Proto  Invalid
                        Failure  Loss     Loss     CRC      Error      Trans Word
----------------------- -------- -------- -------- -------- ---------- ----------
20-01-00-09-0C-00-FF-01        0        0        0        0          0          0
-------------------------------------------------------------------------------
```

Diagnostics Port Test

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 10. Diagnostics Port Test

From the FC Adapter Diagnostics menu, select the **Diagnostics Port Test** option, and then select a port with a link speed of 16Gbps or 32Gbps. The Diagnostics Port Menu opens and lists options to configure and run port, electrical and optical loopback, and link traffic diagnostics on the selected port. This option is not supported on the Oracle Solaris platform,

Configure

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 10. Diagnostics Port Test ▸ 1. Configure

From the Diagnostics Port Config Menu, select one of the following options:

```
1. Disable Diagnostics Port
```

```
2. Enable Diagnostics Port
```

The currently selected mode (enabled or disabled) is indicated by `(Current)`.

Run

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 10. Diagnostics Port Test ▸ 2. Run

When you select **Run**, a warning message advises that running the Diagnostics Port Test will put the port in offline mode and asks if you want to proceed. To continue, select **1: Yes**.

The following shows example test output:

```
Starting diagnostic port test of HBA 0 (QLE2740), please wait...
Start Time: Tue Jul 25 09:20:59 2017

End Time  : Tue Jul 25 09:21:21 2017

-------------------------------------------------------------------------------
HBA Instance 0: QLE2740 Port 1 WWPN 21-00-00-24-FF-00-27-D5 PortID 02-05-00
Link: Link Down
-------------------------------------------------------------------------------
           HBA Port Electrical Loopback    Optical Loopback       Link Traffic
           -------- -------------------    ----------------       ------------
  Value          01                0xD2               0xD3               0xD5
 Status        0x01                0x01               0x01               0x02
  Result      Passed              Passed             Passed            Skipped

Details: 0x0

Details: 0x0
```

FC Ping Test

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 11. FC Ping Test

From the FC Adapter Diagnostics menu, select the **FC Ping Test** option. The FC Ping Test menu opens and lists options to display, reset, and configure ping test parameters, and to run the FC ping test.

Display Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 11. FC Ping Test ▸ 1. Display Test Parameters

From the FC Ping Test menu, select **Display Test Parameters** to view the current diagnostics settings. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2740 Port 1 WWPN 21-00-00-24-FF-00-27-D5 PortID 02-05-00
Link: Online (FEC)
```

```
-------------------------------------------------------------------------------
--------------------
Diagnostics Settings
--------------------
Diagnostic Mode           : FC Ping ELS Echo
Destination WWN           : 10-00-00-27-F8-F1-66-A0
Data Pattern              : Random (RPAT)
Data Size (Bytes)         : 8
Number of Echo Request    : 1
Wait Interval (Seconds)   : 1
Abort On Error            : Ignore
-------------------------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 11. FC Ping Test ▸ 2. Reset Test Parameters

From the FC Ping Test menu, select **Reset Test Parameters** to return the FC ping test parameters to their default values.

Configure

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 11. FC Ping Test ▸ 3. Configure

From the FC Ping Test menu, select **Configure** to select from the following options for the ping test:

```
1:  Display Settings
2:  Destination WWN
3:  Payload Patterns
4:  Payload Size
5:  Number Of Ping(s)
6:  Interval(s)
```

Run

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 11. FC Ping Test ▸ 4. Run

From the FC Ping Test menu, select **Run** to execute the ping test. The following shows example output from the test:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2740 Port 1 WWPN 21-00-00-24-FF-00-27-D5 PortID 02-05-00
Link: Online (FEC)
-------------------------------------------------------------------------------
--------------------
```

```
Diagnostics Settings
--------------------
Diagnostic Mode          : FC Ping ELS Echo
Destination WWN          : 10-00-00-27-F8-F1-66-A0
Data Pattern             : CRPAT (192B)
Data Size (Bytes)        : 8
Number of Echo Request   : N/A
Wait Interval (Seconds)  : 10
Abort On Error           : Ignore
```

Destination WWN	Ping Seq.	Frame Sent	Frame Received	Response Length	Response Time	Echo Status
10-00-00-27-F8-F1-66-A0	1	1	1	12	0.00 ms	Success

Destination WWN	Ping Seq.	Frame Sent	Frame Received	Response Length	Response Time	Echo Status
10-00-00-27-F8-F1-66-A0	1	1	1	12	0.00 ms	Success
Destination WWN	Ping Seq.	Frame Sent	Frame Received	Response Length	Response Time	Echo Status
10-00-00-27-F8-F1-66-A0	1	1	1	12	0.00 ms	Success
Destination WWN	Ping Seq.	Frame Sent	Frame Received	Response Length	Response Time	Echo Status
10-00-00-27-F8-F1-66-A0	1	1	1	12	0.00 ms	Success
Destination WWN	Ping Seq.	Frame Sent	Frame Received	Response Length	Response Time	Echo Status
10-00-00-27-F8-F1-66-A0	1	1	1	12	0.00 ms	Success

(RDP) Read Diagnostics Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 12. (RDP) Read Diagnostics Parameters

From the FC Adapter Diagnostics menu, select the **(RDP) Read Diagnostics Parameters** option, and then select a port. This feature is not supported on the Oracle Solaris platform,

The following example shows the RDP information that appears:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2740 Port 1 WWPN 21-00-00-24-FF-00-27-D5 PortID 02-05-00
Link: Online (FEC)
-------------------------------------------------------------------------------
Diagnostics Parameters Descriptor List Length: 332 Bytes
--------------------------------
Diagnostics Parameters Descriptor
--------------------------------
Descriptor Tag: Link Service Request Information
Descriptor Len: 4 Bytes
Descriptor Value: 0x18000000

--------------------------------
Port Speed Descriptor
--------------------------------
Descriptor Tag: Port Speed
Descriptor Length: 4 Bytes
Port Speed Capabilities: 32 16 8 4 Gbps
Port Operating Speed: 32 Gbps

--------------------------------
Link Error Status Block Descriptor
--------------------------------
Descriptor Tag: Link Error Status Block
Descriptor Length: 28 Bytes
Link Failure Count: 0
Loss Of Sync Count: 0
Loss Of Signal Count: 0
Primary Sequence Error Count: 0
Invalid Transmit Word Count: 0
Invalid CRC Count: 0
PN Port Physical Type: 0x40000000
        The sending VN_Port uses an FC-FS-3 PN_Port or PF Port
```

```
--------------------------------
Port Name Descriptor
--------------------------------
Descriptor Tag: Port Name
Descriptor Length: 16 Bytes
Node WWN: 10:00:00:27:F8:F1:66:A0
Port WWN: 20:05:00:27:F8:F1:66:A0

--------------------------------
Port Name Descriptor
--------------------------------
Descriptor Tag: Port Name
Descriptor Length: 16 Bytes
Node WWN: 20:00:00:24:FF:00:27:D5
Port WWN: 21:00:00:24:FF:00:27:D5

--------------------------------
SFP Diagnostics Param Descriptor
--------------------------------
Descriptor Tag: SFP Diagnostics
Descriptor Length: 12 Bytes
Temperature: 0x3B00 59 (C)
Vcc: 0x813B 3.31 V
Tx Bias: 0x0EF2  7.6520 mA
Tx Power: 0x1B82 0.7042 mW
Rx Power: 0x1F81 0.8065 mW
SFP Flag: 0x0051
        Port Tx Type: Short Wave Laser
        Connector Type: SFP+
        Optical Port: On
        SFP Diagnostics Parameters not valid: Off
        Connector Type: SFP+
        FEC Active: Off

--------------------------------
FEC Status Descriptor
--------------------------------
Descriptor Tag: FEC Status
Descriptor Length: 8 Bytes
Correctable Blocks: 0
```

```
UnCorreatable Blocks: 0

--------------------------------
Buffer Credits Status Descriptor
--------------------------------
Descriptor Tag: Buffer Credit
Descriptor Length: 12 Bytes
FC Port Buffer To Buffer Credits: 20
Attached FC Port Buffer To Buffer Credits: 12
Nominal FC Port RTT: 0 ns

--------------------------------
Optical Product Data Descriptor
--------------------------------
Descriptor Tag: Optical Product Data
Descriptor Length: 60 Bytes
Vendor Name: BROCADE
Part Number: 57-1000333-01
Serial Number: JAF315410000FSU
Revision:
Date: 151007

--------------------------------
Optical Element Data Descriptor
--------------------------------
Descriptor Tag: Optical Element Data
Descriptor Length: 12 Bytes
High Alarm: 75.00
Optical Element Function Flag [0x00] High Alarm: 0x4b
Optical Element Function Flag [0x00] Low Alarm: 0xfffb
Optical Element Function Flag [0x00] High Warning: 0x46
Optical Element Function Flag [0x00] Low Warning: 0x00
```

Monitoring

5. Monitoring ▸ 2. Fibre Channel Adapter

From the main menu, select the **Monitoring** option, and then select the adapter type (**Fibre Channel Adapter**).

The Monitoring menu contains options for monitoring statistics for Host Bus Adapters and buffer-to-buffer credits.

HBA Statistics

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 1. HBA Statistics

From the Monitoring menu, select the **HBA Statistics** option, and then select an adapter port. The **HBA Statistics Menu** provides options to display the current configuration, reset the default configuration, change the configuration, and run HBA statistics.

To reset all the driver statistics counters for the current session, press the R key during run time.

Info

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 1. HBA Statistics ▸ 1. Info

From the HBA Statistics Menu, select **Info** to view the current Monitor Settings for the selected port, including AutoPoll (AP), SetRate (SR), and LogToFile (LF).

Default

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 1. HBA Statistics ▸ 2. Default

From the HBA Statistics Menu, select **Default** to restore all HBA statistics settings to their defaults.

Configure (-gs)

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 1. HBA Statistics ▸ 3. Configure

From the HBA Statistics Menu, select **Configure** to open the Monitoring Config Menu.

```
Monitoring Config Menu
  1.  Auto Poll
  2.  Set Rate
  3.  Enable Log
```

Auto Poll

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 1. HBA Statistics ▸ 3. Configure ▸ 1. Auto Poll

From the Monitoring Config Menu, select the **Auto Poll** option, and then select either **Enable Auto Poll** or **Disable Auto Poll**.

Set Rate

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 1. HBA Statistics ▸ 3. Configure ▸ 2. Set Rate

From the Monitoring Config Menu, select the **Set Rate** option, and then for the `Sampling Rate (Seconds)` setting, type a value between 5 and 30; the current value is shown in brackets.

Enable Log

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 1. HBA Statistics ▸ 3. Configure ▸ 3. Enable Log

From the Monitoring Config Menu, select the **Enable Log** option to specify the name of a log file in which to store HBA statistics for the selected port.

Run

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 1. HBA Statistics ▸ 4. Run

From the HBA Statistics Menu, select **Run** to monitor port statistics. The following shows example output:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2692 Port 1 WWPN 50-00-53-37-A1-52-C0-06 PortID 05-15-00
Link: Online (FEC)
-------------------------------------------------------------------------------
Monitoring
----------------------------------------
General keyboard shortcuts:
     R    - Reset all counters
     ENTER - Cancel the current task
----------------------------------------
HBA Port Errors Device Errors  Reset  I/O Count  IOPS        BPS       Time
--- ----------- ------------- ----- ---------- ----- ---------- -----------
  0           1            19     0      96016     1     891289  11:50:43 AM
```

BB Credit Stats (-bbcr)

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 2. BB Credit Stats

Buffer-to-buffer credit recovery (BB-CR) enables two FC peer ports (N_Port, F_Port, or E_Port) to periodically send and receive the quantity of receiver ready (R_RDY) signals transmitted. The BB-CR feature allows the peer port to recover from possible R_RDY signals lost over a lossy link. BB-CR enables two FC ports logged in with each other to recover lost buffer-to-buffer credits. These lost credits can impact throughput, cause link resets, and disrupt traffic flow.

From the Monitoring menu, select the **BB Credit Stats** option, and then select an adapter port. The BB Credit Stats Menu provides options to display the current configuration, change the configuration, and run BB-CR statistics.

```
BB Credit Stats Menu
1:  Info
2:  Configure
3:  Run
```

To reset all the driver statistics counters for the current session, press the R key during run time.

Info

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 2. BB Credit Stats ▸ 1. Info

From the BB Credit Stats Menu, select **Info** to view the current HBA BB-CR statistics for the selected port, including AutoPoll (AP) and SetRate (SR). For example:

```
--------------------------------------
HBA BBCR Stats
--------------------------------------
AutoPoll (AP): 10
SetRate (SR): 20
```

Configure

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 2. BB Credit Stats ▸ 2. Configure

From the BB Credit Stats Menu, select **Configure** to open the Monitoring Config Menu.

```
BB Credit Stats Menu
1.  Auto Poll
2.  Set Rate
3.  Default
```

Auto Poll

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 2. BB Credit Stats ▸ 2. Configure ▸ 1. Auto Poll

From the BB Credit Stats Menu, select the **Auto Poll** option, and then select either **Enable Auto Poll** or **Disable Auto Poll**.

Set Rate

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 2. BB Credit Stats ▸ 2. Configure ▸ 2. Set Rate

From the Monitoring Config Menu, select the **Set Rate** option, and then for the **Sampling Rate (Seconds)** setting, type a value between 5 and 30; the current value is shown in brackets.

Default

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 2. BB Credit Stats ▸ 2. Configure ▸ 3. Default

From the Monitoring Config Menu, select **Default** to restore all BB-CR statistics settings to their defaults.

Run

5. Monitoring ▸ 2. Fibre Channel Adapter ▸ 2. BB Credit Stats ▸ 3. Run

From the BB Credit Stats Menu, select **Run** to show BB-CR statistics for the selected port. For example:

```
HBA Instance 6: QLE2692 Port 1 WWPN 21-00-00-24-FF-8F-D8-66 PortID 01-0A-00
Link: Online
------------------------------------------------------------------

HBA BBCR Stats
---------------------------------------
General keyboard shortcuts:
        ENTER - Cancel the current task
---------------------------------------
HBA Port Transmitted  Received     Time
No  No   Credit Lost  Credit Lost
--- ---- ------------ ------------ -----------
  6    1               0              0 04:37:36 PM
```

FabricCache CLI

6. FabricCache CLI

From the main menu, select the **FabricCache CLI** option to view the interactive commands for FabricCache adapters. (For noninteractive FabricCache commands, see Part IV FabricCache Commands.) The FabricCache CLI menu contains these options:

```
QConvergeConsole
FabricCache CLI - Version 2.103.6.4

[0:]  Adapter Information
 1:   Adapter Configuration
 2:   Adapter Updates
 3:   Adapter Diagnostics
 4:   Help
 5:   Exit (or use "q")

 (m or 98: Main Menu; q or 99: Quit; h or ?  - Help)
```

Adapter Information

6. FabricCache CLI ▸ 0. Adapter Information

From the FabricCache CLI main menu, select **0** to view FabricCache Adapter information options:

```
QConvergeConsole
FabricCache CLI - Version 2.103.6.4

    [0:] list       [ adapter | cluster | device | initiator | log |
                     lun | target ]
     1:  report     [ log ]
     2:  show       [ adapter | append | cluster | device | drive | fc
                     | health | initiator | lun | lun statistics |
                     memory | pool | reservation | sfp | statistics |
                     system capture | target ]
     3:  view       [ log ]
```

Adapter Configuration

6. FabricCache CLI ▸ 1. Adapter Configuration

From the FabricCache CLI main menu, select **1** to view the following FabricCache Adapter configuration options:

```
QConvergeConsole
FabricCache CLI - Version 2.103.6.4

[0:]  ?              [ cli ]
 1:   add            [ drive | member ]
 2:   clear          [ display | log | lun_statistics | reservation
                     | statistics ]
 3:   create         [ cluster | lun ]
 4:   destroy        [ cluster ]
 5:   disable        [ beacon | cache | fc_port ]
 6:   dump           [ cache ]
 7:   enable         [ beacon | cache | fc_port ]
 8:   execute        [ script ]
 9:   factory_reset  [ adapter ]
10:   flush          [ cache ]
11:   help           [ cli ]
12:   interactive    [ cli ]
13:   invalidate     [ cache ]
14:   lock           [ cache ]
15:   merge          [ csv ]
```

```
16:   modify          [ cache | lun ]
17:   purge           [ cache ]
18:   remove          [ drive | lun | member | cache_pool ]
19:   restart         [ adapter ]
20:   retval          [ cli ]
21:   script          [ csv ]
22:   set           [ adapter | append | fc | password | pool | target ]
23:   unlock          [ cache ]
24:   version         [ adapter | cli ]
25:   wait            [ time ]

 (m or 98: Main Menu; q or 99: Quit; h or ?  - Help)
 Please Enter Selection:
```

Adapter Updates

6. FabricCache CLI ▸ 2. Adapter Updates

From the FabricCache CLI main menu, select **2** to view the following FabricCache Adapter firmware update options:

```
QConvergeConsole
FabricCache CLI - Version 2.103.6.4

[0:]  update              [ firmware ]
```

Adapter Diagnostics

6. FabricCache CLI ▸ 3. Adapter Diagnostics

From the FabricCache CLI main menu, select **3** to view the following FabricCache Adapter diagnostics options:

```
QConvergeConsole
FabricCache CLI - Version 2.103.6.4

[0:]  restore           [ drive_config | fru_file]
 1:   save              [ capture_file | demonstration_file | fru_file
                         | log | script ]
```

Help

6. FabricCache CLI ▸ 4. Help

From the FabricCache CLI main menu, select **4** to view help for the FabricCache Adapter.

Exit

6. FabricCache CLI ▸ 5. Exit

From the FabricCache CLI main menu, select `5` to exit the FabricCache CLI menu.

Refresh

7. Refresh

From the main menu, select the **Refresh** option to refresh (reload) the adapters and adapter port indexes. For example:

```
Scanning for QLogic adapters, please wait...
Using config file: C:\Program Files\...\iscli.cfg
Using config file: C:\Program Files\...\netscli.cfg
Loading: 1. CNA ... adapters, please wait...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ......
Scanning for QLogic adapters, please wait...

        Hit <Enter> to continue:
```

When you run QConvergeConsole CLI, the CLI collects all relevant information, including the number of available ports and the state of each one. Between the time you start QConvergeConsole CLI and the time you perform a specific action or request additional information, changes may have occurred to the port state, network state, or firmware parameters. To ensure that you are viewing the most current information, you should perform a **Refresh**. (In some cases, QConvergeConsole CLI automatically refreshes the information before or after specific commands.)

Help (-h)

8. Help

From the main menu, select the **Help** option to view the syntax and description for each noninteractive command line option. For more detailed information about each command, see the noninteractive chapter for the specific adapter type.

Exit

9. Exit

From the main menu, select the **Exit** option to close the QConvergeConsole CLI session.

11 Converged Network Adapter Interactive Commands

This chapter describes the interactive mode command line options for Converged Network Adapters. The interactive mode uses a series of menus from which you select the option you want by typing the number for that option.

For information on *non*interactive mode operation—in which you simply type a short code to perform operations on the adapter—refer to the following chapters:

- Chapter 5 NIC Noninteractive Commands
- Chapter 6 Fibre Channel Noninteractive Commands
- Chapter 7 iSCSI Noninteractive Commands
- Chapter 8 NIC Partitioning (NPAR) Noninteractive Commands

For information on documentation conventions specific to interactive commands, refer to “Conventions for Interactive Commands” on page xxx.

The Main Menu contains the following options:

```
Main Menu

1:  Adapter Information (see page 285)
2:  Adapter Configuration (see page 325)
3:  Adapter Updates (see page 421)
4:  Adapter Diagnostics (see page 427)
5:  Adapter Statistics (see page 447)
6:  NIC Partitioning (NPAR) Information (see page 459)
7:  NIC Partitioning (NPAR) Configuration (see page 462)
8:  NIC Partitioning (NPAR) Statistics (see page 465)
6:  Refresh (see page 468)
7:  Help (see page 469)
8:  Exit (see page 469)

    Please Enter Selection:
```

NOTE

The NIC Partitioning options are displayed only when there is a connection to a host with at least one Converged Network Adapter that supports NPAR.

Adapter Information

1. Adapter Information ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Information** option, and then select the adapter type (**Converged Network Adapter**). The Converged Network Adapter Information menu provides options for viewing information about the adapter, ports, VPDs, VLANs, teaming, FCoE, iSCSI, and port targets or LUNs. For example:

```
Adapter Type Selection
1:  Converged Network Adapter
2:  Fibre Channel Adapter
    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
    QConvergeConsole
    CLI - Version x.x.x (Build xx)
Converged Network Adapter Information
1:  CNA Adapter Information
2:  CNA Port Information
3:  CNA VPD Information
4:  CNA NIC Information  (8100 Series adapters only)
4:  CNA FCoE Information  (#5 for 8100 Series adapters)
5:  CNA iSCSI Information (8200 and 8300 Series adapters only)
6:  CNA Port Target/LUN Information
7:  CNA VFC Information
```

CNA Adapter Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information

From the Converged Network Adapter Information menu, select the **CNA Adapter Information** option. From the adapter menu, select the adapter model, and then select the information type (NIC, FCoE, or iSCSI) that you want to see. For example:

```
CNA Adapter Information

 1: CNA Model: QLE8362 SN: AFE1227F06201
      Port   1 [Protocol(s): NIC FCoE iSCSI]
```

```
      Port   2 [Pr otocol(s): NIC FCoE iSCSI]
 2: CNA Model: QLE8242 SN: RFE1218G08749
      Port   1 [Protocol(s): FCOE iSCSI]
      Port   2 [Protocol(s): FCoE iSCSI]

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1

CNA Adapter Information

1:  NIC
2:  FCoE
3:  iSCSI
```

NIC

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information ▸ <adapter selection> ▸ 1. NIC

From the CNA Adapter Information menu, select the **NIC** option to view NIC adapter information. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Hostname                    : WIN-8TRTQIHT4VK
Adapter Model               : QLE8140
Device ISP ID               : ISP8000
Chip Revision               : A1
Adapter Alias               : None
Serial Number               : 7777A00-7777777777
MAC Address Function 1      : 00:c0:dd:10:77:04
Driver Information          : QLogic 10Gb PCI Ethernet Adapter
Driver Name                 : qlge.sys
Driver Version              : 1.0.1.20
MPI Firmware Version        : 1.40.08
Flash Package Version       : 2.1.04
PXE Boot Version            : 01.15
VLAN & Team Driver Name     :
VLAN & Team Driver Version  :
FCoE Driver Version         : 9.1.11.11
FCoE Firmware Version       : 5.09.00
FCoE SDMAPI Version         :
-------------------------------------------------------------------------------
```

8200 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Hostname                    : APPDEV4
Adapter Model               : QLE8242
Device ISP ID               : ISP8020
Chip Revision               : C0
Adapter Alias               : None
Serial Number               : AFE1114C06930
MAC Address Function 1      : 00:0e:1e:05:32:70
MAC Address Function 2      : 00:0e:1e:05:32:74
```

```
Driver Information          : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0
Adapter
Driver Name                 : qlxgnd64.sys
Driver Version              : 5.3.4.607
Running Firmware Version    : 4.09.56
Flash Package Version       : 1.9.65
PXE Boot Version            : 2.0.0.24
VLAN & Team Driver Name     : qlxgnd64.sys
VLAN & Team Driver Version  : 5.3.4.607
-------------------------------------------------------------------------------
```

8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Hostname                    : WIN-EQ0S3D2FE5Q
Adapter Model               : QLE8362
Chip Model                  : 8030
Chip Version                : B0
Adapter Alias               : None
Serial Number               : AFE1227F06201
MAC Address Function 1      : 00:0e:1e:08:d1:d0
MAC Address Function 2      : 00:0e:1e:08:d1:d8
Driver Information          : QLogic 8300 Series 10 Gigabit Converged Network Ad
apter
Driver Name                 : qlxgnd64.sys
Driver Version              : 5.1.18.312
Running Firmware Version    : 5.02.18
Flash Package Version       : 2.2.22
PXE Boot Version            : 3.0.0.01
VLAN & Team Driver Name     :
VLAN & Team Driver Version  :
-------------------------------------------------------------------------------
```

FCoE

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information ▸ <adapter selection> ▸ 2. FCoE

From the CNA Adapter Information menu, select the **FCoE** option to view Fibre Channel over Ethernet (FCoE) adapter information. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Host Name                     : WIN-8TRTQIHT4VK
HBA Model                     : QLE8140-S
Device ISP ID                 : ISP8001
Chip Revision                 : 0x2(A1)
HBA Description               : QLE8140 SUN PCI Express to 10 GbE Single Channel
CNA (FCoE)
HBA Alias                     :
Serial Number                 : 7777A00-7777777777
Driver Version                : STOR Miniport  9.1.11.11
Running Firmware Version      : 5.09.00
PCI Bus Number                : 67
PCI Device Number             : 0
PCI Function Number           : 2
-------------------------------------------------------------------------------
```

8200 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
```

```
Host Name                       : APPDEV4
HBA Model                       : QLE8242
Device ISP ID                   : ISP8021
Chip Revision                   : 0x58(C0)
HBA Description                : QLE8242 QLogic Pci Express to 10GbE Dual Channel
CNA (FCoE)
HBA Alias                       :
Serial Number                   : AFE1114C06930
Driver Version                  : STOR Miniport  9.1.11.11 Alpha 5 DBG
Running Firmware Version        : 4.09.56
PCI Bus Number                  : 5
PCI Device Number               : 0
PCI Function Number             : 7
-------------------------------------------------------------------------------
```

8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Host Name                       : WIN-EQ0S3D2FE5Q
HBA Instance                    : 1
HBA Model                       : QLE8362
HBA Description                 : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
HBA ID                          : 1-QLE8362
HBA Alias                       :
HBA Port                        : 1
Port Alias                      :
Node Name                       : 20-00-00-0E-1E-08-D1-D0
Port Name                       : 21-00-00-0E-1E-08-D1-D0
Port ID                         : 00-00-00
Serial Number                   : AFE1227F06201
Driver Version                  : STOR Miniport  9.1.10.18
BIOS Version                    : 3.19
Running Firmware Version        : 6.06.03
Flash BIOS Version              : 3.19
Flash FCode Version             : N/A
Flash EFI Version               : 5.39
Flash Firmware Version          : 6.06.03
Actual Connection Mode          : Loop
Actual Data Rate                : Unknown
Device ISP ID                   : ISP8031
Chip Revision                   : 0x2(B0)
PortType (Topology)             : NLPort
Target Count                    : 0
PCI Bus Number                  : 68
PCI Device Number               : 0
PCI Function Number             : 2
PCI Device ID                   : 0x8031
Subsystem Device ID             : 0x0247
Subsystem Vendor ID             : 0x1077
PCIe Max Bus Width              : x8
PCIe Negotiated Width           : x8
PCIe Max Bus Speed              : 8.0 Gbps
PCIe Negotiated Speed           : 5.0 Gbps
HBA Temperature (C)             : 37
HBA Status                      : SFP not installed
-------------------------------------------------------------------------------
```

iSCSI (-ch)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information ▸ <adapter selection> ▸ 3. iSCSI

From the CNA Adapter Information menu, select the **iSCSI** option to view iSCSI adapter information. For example:

8100 Series Converged Network Adapters: Not applicable

8200 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Adapter Model            : QLE8242
Device ISP ID            : ISP8242
Chip Revision            : C0
Adapter/HBA Alias        : roseville lab
Serial Number            : AFE1114C06930
MAC Address 1            : 00-0E-1E-05-32-72
MAC Address 2            : 00-0E-1E-05-32-76
Driver Version           : 2.1.6.10A15 DBG (STOR wx64)
Running Firmware Version : 4.09.56
ROM Version              : 01.09.65
iSCSI Version            : 0.20
BIOS Version             : 02.12
FCode Version            : NA
EFI Version              : NA
Device ID                : 8022
Vendor ID                : 1077
SubDevice ID             : 0209
SubVendor ID             : 1077
-------------------------------------------------------------------------------
```

8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Board Type               : QLE8362
Chip Model               : ISP8342
Chip Revision            : B0
HBA Alias                : Not-Available
Serial Number            : AFE1227F06201
MAC Address 2            : 00-0E-1E-08-D1-DA
MAC Address 1            : 00-0E-1E-08-D1-D2
Driver Version           : 2.1.5.37 (STOREx wx64)
Running Firmware Version : 5.02.18
ROM Version              : 02.02.22
iSCSI Version            : 0.20
BIOS Version             : 02.16
FCode Version            : NA
EFI Version              : 03.02
Device ID                : 8032
Vendor ID                : 1077
SubDevice ID             : 0248
SubVendor ID             : 1077
-------------------------------------------------------------------------------
```

CNA Port Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information

From the Converged Network Adapter Information menu, select the **CNA Port Information** option to view port information. From the port menu, select a port, and then select the information type (NIC, FCoE, or iSCSI). For example:

```
Converged Network Adapter Information

CNA Model QLE8362 SN: AFE1227F06201
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D0 Link Down
      WWPN: 21-00-00-0E-1E-08-D1-D0 SFP not installed
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4 Link Down
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D8 Link Up
      WWPN: 21-00-00-0E-1E-08-D1-D1 Online
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1DA.5 Link Up
CNA Model QLE8242 SN: AFE1028C03899
   3. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   4. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
CNA Model QLE8142 SN: RFC0926L28501
   5. Port  1 [Protocol(s): NIC FCoE]
      MAC Address: 00:C0:DD:10:E8:40 Link Down
      WWPN: 21-00-00-C0-DD-10-E8-41 SFP not installed
   6. Port  2 [Protocol(s): NIC FCoE]
      MAC Address: 00:C0:DD:10:E8:42 Link Up
      WWPN: 21-00-00-C0-DD-10-E8-43 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

CNA Port Information

1:  Ethernet 00:0E:1E:08:D1:D0
2:  FCoE 21-00-00-0E-1E-08-D1-D0
3:  iSCSI iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4
```

Ethernet

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information ▸ <port selection> ▸ 1. Ethernet

From the CNA Port Information menu, select the **Ethernet** option to view Ethernet port information. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Hostname                    : WIN-8TRTQIHT4VK
Adapter Model               : QLE8140
Port Alias                  : None
Physical MAC Address        : 00:c0:dd:10:77:04
```

```
Physical MAC Address Alias  : None
Active/LAA MAC Address      : 00:c0:dd:10:77:04
Active/LAA MAC Address Alias: None
IPv4 Address                : 192.168.81.146
IPv4 Subnet Mask            : 255.255.240.0
IPv4 Default Gateway        : Not Available
IPv4 DHCP Enabled           : Yes
DHCP Servers                : 192.168.95.1
DNS Servers                 : 2001:558:ff10:870::1
                            : 192.168.95.1
IPv6 Addresses              : 2001:558:ff10:870::d0e7:4f42:c00c
                            : 2001:558:ff10:870:6d0e:138d:56ad:6350
                            : fe80::6d0e:138d:56ad:6350
IPv6 Default Router         : Not Available
Link Status                 : Up
MTU                         : 1514
Interface Scope ID          : 18
Interface Speed             : 10 Gbps
Interface Description       : QLogic 10Gb PCI Ethernet Adapter

-------------------------------------------------------------------------------
```

8200 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Hostname                    : APPDEV4
Physical Port               : 1
Adapter Model               : QLE8242
Port Alias                  : None
Physical MAC Address        : 00:0e:1e:05:32:70
Physical MAC Address Alias  : None
Active/LAA MAC Address      : 00:0e:1e:05:32:70
Active/LAA MAC Address Alias: None
IPv4 Address                : 192.168.105.43
IPv4 Subnet Mask            : 255.255.255.0
IPv4 Default Gateway        : Not Available
IPv4 DHCP Enabled           : No
DHCP Servers                : Not Available
DNS Servers                 : fec0:0:0:ffff::1
                            : fec0:0:0:ffff::2
                            : fec0:0:0:ffff::3
IPv6 Addresses              : fe80::2c9a:f8ed:c4f2:6a67
IPv6 Default Router         : Not Available
Link Status                 : Up
MTU                         : 1514
Interface Scope ID          : 15
Interface Speed             : 10 Gbps
Interface Description       : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0
Adapter
SR-IOV Enabled              : No
HBA Temperature (C)         : 69
Duplex Settings             : Full Duplex
Link Speed                  : 10 Gbps
Link Status                 : Up
Location                    : PCI bus 5 ,device 0 ,function 0
Connection Name             : "QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0
Adapter"
HBA (NIC) Instance          : 7
-------------------------------------------------------------------------------
```

8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Hostname                     : WIN-EQ0S3D2FE5Q
Adapter Model                : QLE8362
Port Alias                   : None
Physical MAC Address         : 00:0e:1e:08:d1:d8
Physical MAC Address Alias   : None
Active/LAA MAC Address       : 00:0e:1e:08:d1:d8
Active/LAA MAC Address Alias: None
IPv4 Address                 : Not Available
IPv4 Subnet Mask             : 255.255.0.0
IPv4 Default Gateway         : Not Available
IPv4 DHCP Enabled            : Yes
DHCP Servers                 : Not Available
DNS Servers                  : fec0:0:0:ffff::1
                             : fec0:0:0:ffff::2
                             : fec0:0:0:ffff::3
IPv6 Addresses               : fe80::c062:1694:309f:ffa0
IPv6 Default Router          : Not Available
Link Status                  : Up
MTU                          : 1514
Interface Scope ID           : 57
Interface Speed              : 10 Gbps
Interface Description        : QLogic 8300 Series 10 Gigabit Converged Network Ad
apter
-------------------------------------------------------------------------------
```

FCoE

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information ▸ <port selection> ▸ 2. FCoE

From the CNA Port Information menu, select the **FCoE** option to view FCoE port information. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Host Name                      : WIN-8TRTQIHT4VK
HBA Instance                   : 2
HBA Model                      : QLE8140-S
HBA Description               : QLE8140 SUN PCI Express to 10 GbE Single Channel
CNA (FCoE)
HBA ID                         : 2-QLE8140-S
HBA Alias                      :
HBA Port                       : 1
Port Alias                     :
Node Name                      : 20-00-00-C0-DD-10-77-05
Port Name                      : 21-00-00-C0-DD-10-77-05
ENode MAC Address              : 00:C0:DD:10:77:05
Port ID                        : 01-10-01
Serial Number                  : 7777A00-7777777777
Driver Version                 : STOR Miniport  9.1.11.11
BIOS Version                   : 3.18
Running Firmware Version       : 5.09.00
Flash BIOS Version             : 3.18
Flash FCode Version            : 3.19
Flash EFI Version              : 3.44
Flash Firmware Version         : 5.09.00
Actual Connection Mode         : Point to Point
```

```
Actual Data Rate               : 10 Gbps
Device ISP ID                  : ISP8001
Chip Revision                  : 0x2(A1)
PortType (Topology)            : NPort
Target Count                   : 0
PCI Bus Number                 : 67
PCI Device Number              : 0
PCI Function Number            : 2
PCI Device ID                  : 0x8001
Subsystem Device ID            : 0x0181
Subsystem Vendor ID            : 0x1077
PCIe Max Bus Width             : x8
PCIe Negotiated Width          : x4
PCIe Max Bus Speed             : 5.0 Gbps
PCIe Negotiated Speed          : 5.0 Gbps
HBA Temperature (C)            : N/A
HBA Status                     : Online
-------------------------------------------------------------------------------
```

8200 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Host Name                      : APPDEV4
HBA Instance                   : 0
HBA Model                      : QLE8242
HBA Description               : QLE8242 QLogic Pci Express to 10GbE Dual Channel
CNA (FCoE)
HBA ID                         : 0-QLE8242
HBA Alias                      :
HBA Port                       : 1
Port Alias                     :
Node Name                      : 20-00-00-0E-1E-05-32-73
Port Name                      : 21-00-00-0E-1E-05-32-73
ENode MAC Address              : 00:0E:1E:05:32:73
Port ID                        : 00-00-00
Serial Number                  : AFE1114C06930
Driver Version                 : STOR Miniport  9.1.11.11 Alpha 5 DBG
BIOS Version                   : 3.08
Running Firmware Version       : 4.09.56
Flash BIOS Version             : 3.08
Flash FCode Version            : N/A
Flash EFI Version              : N/A
Flash Firmware Version         : 4.09.56
Actual Connection Mode         : Loop
Actual Data Rate               : Unknown
Device ISP ID                  : ISP8021
Chip Revision                  : 0x58(C0)
PortType (Topology)            : NLPort
Target Count                   : 0
PCI Bus Number                 : 5
PCI Device Number              : 0
PCI Function Number            : 6
PCI Device ID                  : 0x8021
Subsystem Device ID            : 0x0208
Subsystem Vendor ID            : 0x1077
PCIe Max Bus Width             : x8
PCIe Negotiated Width          : x8
PCIe Max Bus Speed             : 5.0 Gbps
PCIe Negotiated Speed          : 5.0 Gbps
HBA Temperature (C)            : N/A
```

```
HBA Status                      : Link Down
-------------------------------------------------------------------------------
```

8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Host Name                       : WIN-EQ0S3D2FE5Q
HBA Instance                    : 1
HBA Model                       : QLE8362
HBA Description                 : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
HBA ID                          : 1-QLE8362
HBA Alias                       :
HBA Port                        : 1
Port Alias                      :
Node Name                       : 20-00-00-0E-1E-08-D1-D0
Port Name                       : 21-00-00-0E-1E-08-D1-D0
Port ID                         : 00-00-00
Serial Number                   : AFE1227F06201
Driver Version                  : STOR Miniport  9.1.10.18
BIOS Version                    : 3.19
Running Firmware Version        : 6.06.03
Flash BIOS Version              : 3.19
Flash FCode Version             : N/A
Flash EFI Version               : 5.39
Flash Firmware Version          : 6.06.03
Actual Connection Mode          : Loop
Actual Data Rate                : Unknown
Device ISP ID                   : ISP8031
Chip Revision                   : 0x2(B0)
PortType (Topology)             : NLPort
Target Count                    : 0
PCI Bus Number                  : 68
PCI Device Number               : 0
PCI Function Number             : 2
PCI Device ID                   : 0x8031
Subsystem Device ID             : 0x0247
Subsystem Vendor ID             : 0x1077
PCIe Max Bus Width              : x8
PCIe Negotiated Width           : x8
PCIe Max Bus Speed              : 8.0 Gbps
PCIe Negotiated Speed           : 5.0 Gbps
HBA Temperature (C)             : 38
HBA Status                      : SFP not installed
-------------------------------------------------------------------------------
```

iSCSI (-c; -pinfo)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information ▸ <port selection> ▸ 3. iSCSI

From the CNA Port Information menu, select the **iSCSI** option to view iSCSI port information. For example:

8100 Series Converged Network Adapters: Not applicable

8200 and 8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
User Defined IP Address.
IPv4 Address             : 192.168.105.19
Gateway                  : 192.168.105.19
Subnet Mask              : 255.255.255.0

Link Local Address       : fe80::20e:1eff:fe05:3272
IPv6 Local Address State : Valid (0x5)
IPv6 Address 0           : Source Address Not Valid
IPv6 Address 1           : Source Address Not Valid
IPv6 Default Router      : Router Address Not Valid
IPv6 Port Number         : 3260
IPv6 Router Adv Link MTU : 0 bytes

iSNS                     : Disabled.
-------------------------------------------------------------------------------
```

CNA VPD Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information

From the Converged Network Adapter Information menu, select the **CNA VPD Information** option to view vital product data (VPD) information. From the port menu, select a port, and then select the information type (NIC, FCoE, or iSCSI). For example:

```
Converged Network Adapter Information

CNA Model QLE8362 SN: AFE1227F06201
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D0 Link Down
      WWPN: 21-00-00-0E-1E-08-D1-D0 SFP not installed
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4 Link Down
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D8 Link Down
      WWPN: 21-00-00-0E-1E-08-D1-D1 Link Down
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1DA.5 Link Down
CNA Model QLE8242 SN: AFE1028C03899
   3. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   4. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
CNA Model QLE8142 SN: RFC0926L28501
   5. Port  1 [Protocol(s): NIC FCoE]
      MAC Address: 00:C0:DD:10:E8:40 Link Down
      WWPN: 21-00-00-C0-DD-10-E8-41 SFP not installed
   6. Port  2 [Protocol(s): NIC FCoE]
      MAC Address: 00:C0:DD:10:E8:42 Link Up
      WWPN: 21-00-00-C0-DD-10-E8-43 SFP not installed
```

```
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    CNA VPD Information

    1:  Ethernet 00:0E:1E:08:D1:D0
    2:  FCoE 21-00-00-0E-1E-08-D1-D0
    3:  iSCSI iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4
    Converged Network Adapter Information
```

Ethernet

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information ▸ <port selection> ▸ 1. Ethernet

From the CNA VPD Information menu, select the **NIC** option to view NIC port VPD information. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
VPD
Description                   : Sun Storage 10Gb FCOE CNA PCIe, 1 port, SR, QLogic
Part Number                     : 375-3678-77
Serial Number                   : 7777A00-7777777777
Engineering Date Code           : R01
Manufacturing Id                : SUN MICROSYSTEMS, INC.
EFI Driver Version              : 03.44
Firmware Version                : 05.09.00
BIOS Version                    : 03.18
FCode Version                   : 03.19
Flash Image Version             : 020104
Asset Tag                       :
-------------------------------------------------------------------------------
```

8200 Series Converged Network Adapters:

```
-----------------------------------------------------------------
VPD
Description           : QLogic PCI-Express Dual Port 10Gb CNA
Part Number           : QLE8242
Serial Number         : AFE1028C03899
Engineering Date Code : NE3210404-08 01
Flash Image Version   : 010437
-----------------------------------------------------------------
```

8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Hostname                    : WIN-EQ0S3D2FE5Q
Adapter Model               : QLE8362
Port Alias                  : None
Physical MAC Address        : 00:0e:1e:08:d1:d0
Physical MAC Address Alias  : None
Active/LAA MAC Address      : 00:0e:1e:08:d1:d0
Active/LAA MAC Address Alias: None
IPv4 Address                : Not Available
IPv4 Subnet Mask            : Not Available
IPv4 Default Gateway        : Not Available
IPv4 DHCP Enabled           : Yes
DHCP Servers                : Not Available
DNS Servers                 : fec0:0:0:ffff::1
```

```
                                : fec0:0:0:ffff::2
                                : fec0:0:0:ffff::3
IPv6 Addresses                  : fe80::7c34:dd81:9e6c:f8d9
IPv6 Default Router             : Not Available
Link Status                     : Down
MTU                             : 1514
Interface Scope ID              : 59
Interface Speed                 : 10 Gbps
Interface Description           : QLogic 8300 Series 10 Gigabit Converged Network Ad
apter #2
-------------------------------------------------------------------------------
```

FCoE

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information ▸ <port selection> ▸ 2. FCoE

From the CNA VPD Information menu, select the **FCoE** option to view FCoE port VPD information. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------
CNA           : 2 Port 1
SN            : 7777A00-7777777777
ENode MacAddr : 00:C0:DD:10:77:05
CNA Model     : QLE8140
CNA Desc.     : QLE8140 SUN PCI Express to 10 GbE Single Channel CNA (FCoE)
FW Version    : 5.09.00
WWPN          : 21-00-00-C0-DD-10-77-05
WWNN          : 20-00-00-C0-DD-10-77-05
Link          : Online
-------------------------------------------------------------------------
-------------------------------------------------------------------------------
HBA Instance 2: QLE8140-S Port 1 WWPN 21-00-00-C0-DD-10-77-05 PortID 01-10-01
Link: Online
-------------------------------------------------------------------------------
Product Identifier              : Sun Storage 10Gb FCOE CNA PCIe, 1 port, SR,
QLogic
Part Number                     : 375-3678-77
Serial Number                   : 7777A00-7777777777
Engineering Date Code           : R01
Manufacturing Id                : SUN MICROSYSTEMS, INC.
EFI Driver Version              : 03.44
Firmware Version                : 05.09.00
BIOS Version                    : 03.18
FCode Version                   : 03.19
Flash Image Version             : 020104

-------------------------------------------------------------------------
```

8200 Series Converged Network Adapters:

```
-------------------------------------------------------------------------
CNA           : 0 Port 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
```

```
Link          : Online
------------------------------------------------------------------------
------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
------------------------------------------------------------------------
Product Identifier             : QLogic PCI-Express Dual Port 10Gb CNA
Part Number                    : QLE8242
Serial Number                  : AFE1028C03899
Engineering Date Code          : NE3210404-08 01
Flash Image Version            : 010437
```

8300 Series Converged Network Adapters:

```
------------------------------------------------------------------------
CNA           : 1 Port 1
SN            : AFE1227F06201
CNA Model     : QLE8362
CNA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
FW Version    : 6.06.03
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : SFP not installed
------------------------------------------------------------------------
------------------------------------------------------------------------

HBA Instance 1: QLE8362 Port 1 WWPN 21-00-00-0E-1E-08-D1-D0 PortID 00-00-00
Link: SFP not installed
------------------------------------------------------------------------

Product Identifier             : QLE8362 QLogic 2-port 10Gb CNA
Part Number                    : QLE8362
Serial Number                  : AFE1227F06201
Engineering Date Code          : HD8310401-15 03
Flash Image Version            : 020222
```

iSCSI

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information ▸ <port selection> ▸ 3. iSCSI

From the CNA VPD Information menu, select the **iSCSI** option to view iSCSI port VPD information. For example:

8100 Series Converged Network Adapters: Not applicable

8200 Series Converged Network Adapters:

```
------------------------------------------------------------------------
VPD
Description                    : QLogic PCI-Express Dual Port 10Gb CNA
Part Number                    : QLE8242
Serial Number                  : AFE1028C03899
Engineering Date Code          : NE3210404-08 01
Flash Image Version            : 010437
------------------------------------------------------------------------
```

8300 Series Converged Network Adapters:

```
------------------------------------------------------------------------
```

```
VPD
Description                    : QLE8362 QLogic 2-port 10Gb CNA
Part Number                    : QLE8362
Serial Number                  : AFE1227F06201
Engineering Date Code          : HD8310401-15 03
Flash Image Version            : 020222
-------------------------------------------------------------------------
```

CNA NIC Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA NIC Information ▸ <port selection> ▸ NIC Utilities Menu

From the Converged Network Adapter Information menu, select the **CNA NIC Information** option to view general information, configuration, data center bridging information, DCE (Cisco data communications equipment) statistics, and TLV information for a NIC port. From the port menu, select a port. For example:

```
    NIC Utilities Menu

=======================================================
CNA           : 0 Port 1
SN            : 7777A00-7777777777
CNA Model     : QLE8140
CNA Desc.     : QLogic 10Gb PCI Ethernet Adapter
MPI Fw Version: 1.40.08
Physical MAC  : 00-C0-DD-10-77-04
LAA MAC       : 00-C0-DD-10-77-04
IPv4 Address  : 192.168.81.146
IPv6 Address  : 2001:558:ff10:870::d0e7:4f42:c00c
IPv6 Address  : 2001:558:ff10:870:6d0e:138d:56ad:6350
IPv6 Address  : fe80::6d0e:138d:56ad:6350
Link          : Up
=======================================================
```

CNA FCoE Information (-cna)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA FCoE Information ▸ <port selection> ▸ FCoE Utilities Menu

From the Converged Network Adapter Information menu, select the **CNA FCoE Information** option to view general information, configuration, data center bridging information, DCE (Cisco data communications equipment) statistics, and TLV information for an FCoE port. From the port menu, select a port, and then select the information type (Information, Configuration, Data Center Bridging, DCE Statistics Menu, or TLV). For example:

```
Converged Network Adapter Information

CNA Model QLE8362 SN: AFE1227F06201
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D0 Link Down
      WWPN: 21-00-00-0E-1E-08-D1-D0 SFP not installed
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4 Link Down
```

```
      2. Port  2 [Protocol(s): NIC iSCSI FCoE]
         MAC Address: 00:0E:1E:08:D1:D8 Link Up
         WWPN: 21-00-00-0E-1E-08-D1-D1 Online
         iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1DA.5 Link Up
   CNA Model QLE8242 SN: AFE1028C03899
      3. Port  1 [Protocol(s): NIC iSCSI FCoE]
         MAC Address: 00:0E:1E:04:95:E8
         WWPN: 21-00-00-0E-1E-04-95-EB
         Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
      4. Port  2 [Protocol(s): NIC iSCSI FCoE]
         MAC Address: 00:0E:1E:04:95:EC
         WWPN: 21-00-00-0E-1E-04-95-EF
         Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   CNA Model QLE8142 SN: RFC0926L28501
      5. Port  1 [Protocol(s): NIC FCoE]
         MAC Address: 00:C0:DD:10:E8:40 Link Down
         WWPN: 21-00-00-C0-DD-10-E8-41 SFP not installed
      6. Port  2 [Protocol(s): NIC FCoE]
         MAC Address: 00:C0:DD:10:E8:42 Link Up
         WWPN: 21-00-00-C0-DD-10-E8-43 SFP not installed

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 1


   FCoE Utilities Menu

=======================================================
CNA           : 1 Port: 1
SN            : AFE1227F06201
CNA Model     : QLE8362
CNA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
FW Version    : 6.06.03
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : SFP not installed
=======================================================

   1:  Information
   2:  Data Center Bridging
   3:  DCE Statistics Menu
   4:  TLV

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection:
```

Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA FCoE Information ▸ <port selection> ▸ FCoE Utilities Menu ▸ 1. Information

From the FCoE Utilities Menu, select the **Information** option to view general FCoE port information. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
HBA Instance 2: QLE8142 Port 1 WWPN 21-00-00-C0-DD-10-E8-41 PortID 00-00-00
Link: SFP not installed
-------------------------------------------------------------------------------
```

```
-------------------------------------------------
General Info
-------------------------------------------------
MPI FW Version                 : 01.40.06
VN Port MAC Address            : N/A
VLAN ID                        : N/A
Max Frame Size                 : 2500 (Baby Jumbo)
Addressing Mode                : N/A
-------------------------------------------------
```

8200 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
-------------------------------------------------
General Info
-------------------------------------------------
VN Port MAC Address            : 0E:FC:00:11:00:20
VLAN ID                        : 1002
Max Frame Size                 : 2500 (Baby Jumbo)
Addressing Mode                : FPMA
-------------------------------------------------
```

8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
HBA Instance 1: QLE8362 Port 1 WWPN 21-00-00-0E-1E-08-D1-D0 PortID 00-00-00
Link: SFP not installed
-------------------------------------------------------------------------------

-------------------------------------------------
General Info
-------------------------------------------------
CNA FW Version                 : 05.02.18
VN Port MAC Address            : N/A
VLAN ID                        : N/A
Max Frame Size                 : 2500 (Baby Jumbo)
Addressing Mode                : N/A
-------------------------------------------------
```

Data Center Bridging

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA FCoE Information ▸ <port selection> ▸ FCoE Utilities Menu ▸ 2. Data Center Bridging

From the FCoE Utilities Menu, select the **Data Center Bridging** option to view data center bridging (DCBX) information. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------
Data Center Bridging
-------------------------------------------------
Host Name                      : WIN-EQ0S3D2FE5Q
HBA Instance                   : 0
HBA Model                      : QLE8142
Node Name                      : 20-00-00-C0-DD-10-E8-41
Port Name                      : 21-00-00-C0-DD-10-E8-41
HBA Description                : QLE8142 QLogic PCI Express to 10 GbE Dual Chann
el CNA (FCoE)
```

```
----------------------------
DCBX
These DCBX values are the default card/local settings.
To see the running/current settings, use the TLV option.
-----------------------------------------------------
DCBX Enable                    : True
Willing                        : True
Port Pause Type                : Standard
SAN Priority COS               : 3
----------------------------
ETS
These ETS values are the default/local settings.
To see the running/current settings, use the TLV option.
Unused bandwidth are excluded.
-----------------------------------------------------
Priority Tx  Mode              : Bandwidth
SAN Bandwidth Percent          : 50
SAN Unused Bw To LAN           : True
LAN Unused Bw To SAN           : False

        Press <Enter> to continue:
-------------------------------------------------------------------------------
```

8200 Series Converged Network Adapters:

```
-----------------------------------------------------
Data Center Bridging
-----------------------------------------------------
Host Name                      : APPS4055
HBA Instance                   : 0
HBA Model                      : QLE8242
Node Name                      : 20-00-00-0E-1E-04-95-EB
Port Name                      : 21-00-00-0E-1E-04-95-EB
HBA Description                : QLE8242 QLogic Pci Express to 10GbE Dual
                                 Channel CNA (FCoE)
----------------------------
DCBX
These DCBX values are the default card/local settings.
To see the running/current settings, use the TLV option.
-----------------------------------------------------
DCBX Enable                    : True
Willing                        : True
Port Pause Type                : Per Priority Pause
SAN Priority COS               : 3
----------------------------
ETS
These ETS values are the default/local settings.
To see the running/current settings, use the TLV option.
Unused bandwidth are excluded.
-----------------------------------------------------
Priority Tx  Mode              : Bandwidth
SAN Bandwidth Percent          : 50
SAN Unused Bw To LAN           : False
LAN Unused Bw To SAN           : False
```

8300 Series Converged Network Adapters:

```
-----------------------------------------------------
```

```
Data Center Bridging
-----------------------------------------------------
Host Name                       : WIN-EQ0S3D2FE5Q
HBA Instance                    : 1
HBA Model                       : QLE8362
Node Name                       : 20-00-00-0E-1E-08-D1-D0
Port Name                       : 21-00-00-0E-1E-08-D1-D0
HBA Description                 : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
----------------------------
DCBX
These DCBX values are the default card/local settings.
To see the running/current settings, use the TLV option.
-----------------------------------------------------
DCBX Enable                     : True
Willing                         : True
Port Pause Type                 : Standard
SAN Priority COS                : 3
----------------------------
ETS
These ETS values are the default/local settings.
To see the running/current settings, use the TLV option.
Unused bandwidth are excluded.
-----------------------------------------------------
Priority Tx  Mode               : Bandwidth
Priority Group 0                : 50
Priority Group 1                : 50
Priority Group 2                : 0
Priority Group 3                : 0
Priority Group 4                : 0
Priority Group 5                : 0
Priority Group 6                : 0
Priority Group 7                : 0
SAN Unused Bw To LAN            : False
LAN Unused Bw To SAN            : False
```

DCE Statistics Menu

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA FCoE Information ▸ <port selection> ▸ FCoE Utilities Menu ▸ 3. DCE Statistics Menu

From the FCoE Utilities Menu, select the **DCE Statistics Menu** option to open the DCE Statistics menu with options to display and configure DCE logging parameters. For detailed information about these parameters, see Table 6-3.

For example:

8100/8200 Series Converged Network Adapters:

```
    DCE Statistics Menu

=====================================================
CNA           : 0 Port: 1
SN            : RFC0926L28501
ENode MacAddr : 00:C0:DD:10:E8:41
CNA Model     : QLE8142
CNA Desc.     : QLE8142 QLogic PCI Express to 10 GbE Dual Channel CNA (FCoE)
FW Version    : 5.09.00
WWPN          : 21-00-00-C0-DD-10-E8-41
```

```
WWNN          : 20-00-00-C0-DD-10-E8-41
Link          : SFP not installed
=======================================================

    1:  Display Settings
    2:  Auto Polling
    3:  Set Rate
    4:  Set Details
    5:  Start
```

8300 Series Converged Network Adapters:

```
    DCE Statistics Menu

=======================================================
HBA           : 1 Port: 1
SN            : AFE1227F06201
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
FW Version    : 6.06.03
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : SFP not installed
=======================================================

    1:  Display Settings
    2:  Auto Polling
    3:  Set Rate
    4:  Set Details
    5:  Start
```

Display Settings

Select option **1** from the DCE Statistics Menu to view the DCE statistics settings. For example:

8100, 8200, and 8300 Series Converged Network Adapters:

```
--------------------------------------
DCE Statistics Settings
--------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
Details (DT): Absolute
```

Auto Polling

Select option **2** from the DCE Statistics Menu to specify automatic polling or manual polling. For example:

```
    Statistics Poll Menu

    1:  Auto Poll
    2:  Manual Poll (Current)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection:
```

Changing to automatic polling:

Select option **1** from the Statistics Poll Menu to specify automatic polling. For example:

```
        Please Enter Selection: 1
Successfully updated auto polling mode.
```

Changing to manual polling:

Select option **2** from the Statistics Poll Menu to specify manual polling, and then specify the number of poll iterations (from 1 to 256). For example:

```
        Please Enter Selection: 2
Manual Poll iteration [1-256] (0): 10
Successfully updated to manual polling mode.
```

Set Rate

Select option **3** from the DCE Statistics Menu to specify the polling rate in seconds. The valid range is from 5 to 30 seconds.

Set Details

Select option **4** from the DCE Statistics Menu to qualify the polling rate as absolute, per second, or baseline. For example:

```
    DCE Statistics Details Menu

=======================================================
CNA           : 4 Port: 1
SN            : AFE1227F06201
ENode MacAddr : 00:0E:1E:08:D1:D1
CNA Model     : QLE8362
CNA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
FW Version    : 6.06.03
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : SFP not installed
=======================================================

    1:  Absolute (Current)
    2:  Rate (Per Second)
    3:  Baseline


        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection:
```

Start

Select option **5** from the DCE Statistics Menu to begin logging statistics (press ENTER to display the statistics). For example:

```
-------------------------------------------------------------
DCE Statistics Details for CNA Instance 1 - QLE8362
-------------------------------------------------------------
```

```
                    Transmit Packets: 0
                     Transmit Octets: 0
           Transmit Multicast Packets: 0
           Transmit Broadcast Packets: 0
             Transmit Unicast Packets: 0
             Transmit Control Packets: 0
               Transmit Pause Packets: 0
           Transmit Packets 64 Octets: 0
      Transmit Packets 65to127 Octets: 0
     Transmit Packets 128to255 Octets: 0
     Transmit Packets 256to511 Octets: 0
    Transmit Packets 512to1023 Octets: 0
  Transmit Packets 1024to1518 Octets: 0
    Transmit Packets 1519toMax Octets: 0
           Transmit Undersize Packets: 0
            Transmit Oversize Packets: 0
                      Receive Octets: 0
                   Receive Octets Ok: 0
                     Receive Packets: 0
                  Receive Packets Ok: 0
            Receive Broadcast Packets: 0
            Receive Multicast Packets: 0
              Receive Unicast Packets: 0
            Receive Undersize Packets: 0
             Receive Oversize Packets: 0
               Receive Jabber Packets: 0
Receive Undersize FCS Error Packets: 0
             Receive Control Packets: 0
               Receive Pause Packets: 0
            Receive Packets 64Octets: 0
       Receive Packets 65to127Octets: 0
      Receive Packets 128to255Octets: 0
      Receive Packets 256to511Octets: 0
     Receive Packets 512to1023Octets: 0
    Receive Packets 1024to1518Octets: 0
     Receive Packets 1519toMaxOctets: 0
        Transmit CBFC Pause Frames 0: 0
        Transmit CBFC Pause Frames 1: 0
        Transmit CBFC Pause Frames 2: 0
        Transmit CBFC Pause Frames 3: 0
        Transmit CBFC Pause Frames 4: 0
        Transmit CBFC Pause Frames 5: 0
        Transmit CBFC Pause Frames 6: 0
        Transmit CBFC Pause Frames 7: 0
               Transmit FCoE Packets: 0
               Transmit Mgmt Packets: 0
         Receive CBFC Pause Frames 0: 0
         Receive CBFC Pause Frames 1: 0
         Receive CBFC Pause Frames 2: 0
         Receive CBFC Pause Frames 3: 0
         Receive CBFC Pause Frames 4: 0
         Receive CBFC Pause Frames 5: 0
         Receive CBFC Pause Frames 6: 0
         Receive CBFC Pause Frames 7: 0
                Receive FCoE Packets: 0
                Receive Mgmt Packets: 0
          Receive Packets Priority 0: 0
          Receive Packets Priority 1: 0
          Receive Packets Priority 2: 0
```

```
            Receive Packets Priority 3: 0
            Receive Packets Priority 4: 0
            Receive Packets Priority 5: 0
            Receive Packets Priority 6: 0
            Receive Packets Priority 7: 0
           Transmit Packets Priority 0: 0
           Transmit Packets Priority 1: 0
           Transmit Packets Priority 2: 0
           Transmit Packets Priority 3: 0
           Transmit Packets Priority 4: 0
           Transmit Packets Priority 5: 0
           Transmit Packets Priority 6: 0
           Transmit Packets Priority 7: 0
  Receive Packets Discarded Priority 0: 0
  Receive Packets Discarded Priority 1: 0
  Receive Packets Discarded Priority 2: 0
  Receive Packets Discarded Priority 3: 0
  Receive Packets Discarded Priority 4: 0
  Receive Packets Discarded Priority 5: 0
  Receive Packets Discarded Priority 6: 0
  Receive Packets Discarded Priority 7: 0
-------------------------------------------------------------
General keyboard shortcuts:
      A     - Change details display to Absolute
      R     - Change details display to Rate Per Second
      B     - Change details display to Baseline
      C     - Clear Baseline
      [     - Ascending sort by Names
      ]     - Descending sort by Names
      {     - Ascending sort by Values
      }     - Descending sort by Values
      ENTER     - Cancel the current task
-------------------------------------------------------------
```

TLV

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA FCoE Information ▸ <port selection> ▸ FCoE Utilities Menu ▸ 4. TLV

From the FCoE Utilities Menu, select the **TLV** option to open the TLV menu with options to view detailed and raw type-length-value (TLV) information. For example:

8100, 8200, and 8300 Series Converged Network Adapters:

```
    TLV Menu

=======================================================
HBA           : 1 Port: 1
SN            : AFE1227F06201
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
FW Version    : 6.06.03
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : Online
=======================================================
```

```
    1:  Details
    2:  Raw
```

Details

Select this option to view the FCoE TLV details. For example:

8100, 8200, and 8300 Series Converged Network Adapters:

```
-----------------------------------------------------
DCBX Parameters Details for CNA Instance 1 - QLE8362
-----------------------------------------------------

Fri Apr 26 10:36:46 2013

DCBX TLV (Type-Length-Value) Data
=================================
DCBX Parameter Type and Length
        DCBX Parameter Length: 0
        DCBX Parameter Type: 0

DCBX Parameter Information
        Parameter Type: Local
        Pad Byte Present: No
        DCBX Parameter Valid: No
        Reserved: 0

DCBX Parameter Data
        Priority Group ID of Priority 1: 0
        Priority Group ID of Priority 0: 0

        Priority Group ID of Priority 3: 0
        Priority Group ID of Priority 2: 0

        Priority Group ID of Priority 5: 0
        Priority Group ID of Priority 4: 0

        Priority Group ID of Priority 7: 0
        Priority Group ID of Priority 6: 0

        Priority Group 0 Percentage: 0
        Priority Group 1 Percentage: 0
        Priority Group 2 Percentage: 0
        Priority Group 3 Percentage: 0
        Priority Group 4 Percentage: 0
        Priority Group 5 Percentage: 0
        Priority Group 6 Percentage: 0
        Priority Group 7 Percentage: 0

        Number of Traffic Classes Supported: 0

DCBX Parameter Information
        Parameter Type: Local
        Pad Byte Present: No
        DCBX Parameter Valid: No
        Reserved: 0

DCBX Parameter Data
```

```
        Priority Group ID of Priority 1: 0
        Priority Group ID of Priority 0: 0

        Priority Group ID of Priority 3: 0
        Priority Group ID of Priority 2: 0

        Priority Group ID of Priority 5: 0
        Priority Group ID of Priority 4: 0

        Priority Group ID of Priority 7: 0
        Priority Group ID of Priority 6: 0

        Priority Group 0 Percentage: 0
        Priority Group 1 Percentage: 0
        Priority Group 2 Percentage: 0
        Priority Group 3 Percentage: 0
        Priority Group 4 Percentage: 0
        Priority Group 5 Percentage: 0
        Priority Group 6 Percentage: 0
        Priority Group 7 Percentage: 0

        Number of Traffic Classes Supported: 0

DCBX Parameter Information
        Parameter Type: Local
        Pad Byte Present: No
        DCBX Parameter Valid: No
        Reserved: 0

DCBX Parameter Data
        Priority Group ID of Priority 1: 0
        Priority Group ID of Priority 0: 0

        Priority Group ID of Priority 3: 0
        Priority Group ID of Priority 2: 0

        Priority Group ID of Priority 5: 0
        Priority Group ID of Priority 4: 0

        Priority Group ID of Priority 7: 0
        Priority Group ID of Priority 6: 0

        Priority Group 0 Percentage: 0
        Priority Group 1 Percentage: 0
        Priority Group 2 Percentage: 0
        Priority Group 3 Percentage: 0
        Priority Group 4 Percentage: 0
        Priority Group 5 Percentage: 0
        Priority Group 6 Percentage: 0
        Priority Group 7 Percentage: 0

        Number of Traffic Classes Supported: 0


DCBX Parameter Type and Length
        DCBX Parameter Length: 0
        DCBX Parameter Type: 0

DCBX Parameter Information
```

```
        Parameter Type: Local
        Pad Byte Present: No
        DCBX Parameter Valid: No
        Reserved: 0

DCBX Parameter Data
        PFC Enabled on Priority 0: No
        PFC Enabled on Priority 1: No
        PFC Enabled on Priority 2: No
        PFC Enabled on Priority 3: No
        PFC Enabled on Priority 4: No
        PFC Enabled on Priority 5: No
        PFC Enabled on Priority 6: No
        PFC Enabled on Priority 7: No

        Number of Traffic Classes Supported: 0

DCBX Parameter Information
        Parameter Type: Local
        Pad Byte Present: No
        DCBX Parameter Valid: No
        Reserved: 0

DCBX Parameter Data
        PFC Enabled on Priority 0: No
        PFC Enabled on Priority 1: No
        PFC Enabled on Priority 2: No
        PFC Enabled on Priority 3: No
        PFC Enabled on Priority 4: No
        PFC Enabled on Priority 5: No
        PFC Enabled on Priority 6: No
        PFC Enabled on Priority 7: No

        Number of Traffic Classes Supported: 0

DCBX Parameter Information
        Parameter Type: Local
        Pad Byte Present: No
        DCBX Parameter Valid: No
        Reserved: 0

DCBX Parameter Data
        PFC Enabled on Priority 0: No
        PFC Enabled on Priority 1: No
        PFC Enabled on Priority 2: No
        PFC Enabled on Priority 3: No
        PFC Enabled on Priority 4: No
        PFC Enabled on Priority 5: No
        PFC Enabled on Priority 6: No
        PFC Enabled on Priority 7: No

        Number of Traffic Classes Supported: 0
```

Raw

Select this option to view the raw TLV values. For example:

8100, 8200, and 8300 Series Converged Network Adapters:

```
-----------------------------------------------------
DCBX Parameters Raw Data for CNA Instance 1 - QLE8362
-----------------------------------------------------

Fri Apr 26 13:51:57 2013

DCBX TLV (Type-Length-Value) Data
=================================
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
```

CNA iSCSI Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 5. CNA iSCSI Information ▸ <port selection> ▸ iSCSI Utilities Menu

From the Converged Network Adapter Information menu, select the **CNA iSCSI Information** option to view general information, data center bridging information, and TLV information for an iSCSI port. From the port menu, select a port, and then select the information type (Information, Data Center Bridging, or TLV). For example:

```
Converged Network Adapter Information

CNA Model QLE8362 SN: AFE1227F06201
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D0 Link Down
      WWPN: 21-00-00-0E-1E-08-D1-D0 SFP not installed
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4 Link Down
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D8 Link Up1
      WWPN: 21-00-00-0E-1E-08-D1-D1 Online
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1DA.5 Link Up


    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
```

```
    iSCSI Utilities Menu

=======================================================
CNA                  : 0 Port: 1
SN                   : AFE1227F06201
CNA Model            : QLE8362
iSCSI Name           : iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4
FW Version           : 5.02.18
iSCSI MacAddr        : 00:0E:1E:08:D1:D2
IPv4 Address         : 0.0.0.0
IPv6 Addr Routable1  : Not Available
IPv6 Addr Routable2  : Not Available
Ipv6 Addr Local Link : Not Available
=======================================================
    1:  Information
    2:  Data Center Bridging
    3:  TLV


        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection:
```

Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 5. CNA iSCSI Information ▸ <port selection> ▸ iSCSI Utilities Menu ▸ 1. Information

From the iSCSI Utilities Menu, select the **Information** option to view general iSCSI port information. For example:

8100 Series Converged Network Adapters: Not applicable

8200 and 8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
Board Type               : QLE8362
Chip Model               : ISP8342
Chip Revision            : B0
HBA Alias                : Not-Available
Serial Number            : AFE1227F06201
MAC Address 1            : 00-0E-1E-08-D1-D2
Driver Version           : 2.1.5.37 (STORExx wx64)
Running Firmware Version : 5.02.18
ROM Version              : 02.02.22
iSCSI Version            : 0.20
BIOS Version             : 02.16
FCode Version            : NA
EFI Version              : 03.02
Device ID                : 8032
Vendor ID                : 1077
SubDevice ID             : 0248
SubVendor ID             : 1077
Physical Port Number     : 1
Physical Port Count      : 2
PCI Function Number      : 4
Num Iscsi PCI Funcs      : 2
-------------------------------------------------------------------------------
```

Data Center Bridging

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 5. CNA iSCSI Information ▸ <port selection> ▸ iSCSI Utilities Menu ▸ 2. Data Center Bridging

NOTE

Data Center Bridging is not supported on 4000 Series iSCSI adapters.

From the iSCSI Utilities Menu, select the **Data Center Bridging** option to view data center bridging (DCBX) information. For example:

```
-------------------------------------------------------------------------------
Display DCBX Port Settings
-------------------------
DCBX
-------------------------
DCBxEnabled: true
Willing: true
Port Pause Type: Standard
SAN Priority CoS: 3
FCoE Priority CoS: 3

-------------------------
ETS
-------------------------
Priority Tx Mode: Bandwidth
LAN Bandwidth Percentage: 50
SAN Bandwidth Percentage: 50
LAN Unused Bandwidth To SAN: 0
SAN Unused Bandwidth To LAN: 0
-------------------------------------------------------------------------------
```

TLV

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 5. CNA iSCSI Information ▸ <port selection> ▸ iSCSI Utilities Menu ▸ 3. TLV

NOTE

The TLV option is not supported on 4000 Series iSCSI adapters.

From the iSCSI Utilities Menu, select the **TLV** option to view Type-Length-Value (TLV) information. For example:

```
    TLV Menu

=====================================================
CNA                  : 0 Port: 1
SN                   : AFE1227F06201
CNA Model            : QLE8362
iSCSI Name           : iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4
FW Version           : 5.02.18
iSCSI MacAddr        : 00:0E:1E:08:D1:D2
```

```
IPv4 Address         : 0.0.0.0
IPv6 Addr Routable1  : Not Available
IPv6 Addr Routable2  : Not Available
Ipv6 Addr Local Link : Not Available
=====================================================
    1:  Details
    2:  Raw


        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection:
```

Details (-tlvdetails)

Select option **1** from the TLV Menu to view the iSCSI TLV details. For example:

8100, 8200, and 8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------

-----------------------------------------------------------------
DCBX Parameters Details for CNA instance 1 - QLE8362
-----------------------------------------------------------------

DCBX TLV (Type-Length-Value) Data
=================================
DCBX Parameter Type and Length
DCBX Parameter Length: 6
DCBX Parameter Type: 3

DCBX Parameter Information
   Parameter Type: Current
   Pad Byte Present: N/A
   DCBX Parameter Valid: Yes

DCBX Parameter Data
   Priority Group ID of Priority 1:0
   Priority Group ID of Priority 0:0

   Priority Group ID of Priority 3:0
   Priority Group ID of Priority 2:1

   Priority Group ID of Priority 5:0
   Priority Group ID of Priority 4:0

   Priority Group ID of Priority 7:0
   Priority Group ID of Priority 6:0

   Priority Group 0 Percentage:50
   Priority Group 1 Percentage:50
   Priority Group 2 Percentage:0
   Priority Group 3 Percentage:0
   Priority Group 4 Percentage:0
   Priority Group 5 Percentage:0
   Priority Group 6 Percentage:0
   Priority Group 7 Percentage:0

   Number of Traffic Classes Supported: 2
```

```
DCBX Parameter Information
   Parameter Type: Local
   Pad Byte Present: N/A
   DCBX Parameter Valid: Yes

DCBX Parameter Data
   Priority Group ID of Priority 1:0
   Priority Group ID of Priority 0:0

   Priority Group ID of Priority 3:0
   Priority Group ID of Priority 2:1

   Priority Group ID of Priority 5:0
   Priority Group ID of Priority 4:0

   Priority Group ID of Priority 7:0
   Priority Group ID of Priority 6:0

   Priority Group 0 Percentage:50
   Priority Group 1 Percentage:50
   Priority Group 2 Percentage:0
   Priority Group 3 Percentage:0
   Priority Group 4 Percentage:0
   Priority Group 5 Percentage:0
   Priority Group 6 Percentage:0
   Priority Group 7 Percentage:0

   Number of Traffic Classes Supported: 2

DCBX Parameter Information
   Parameter Type: Remote
   Pad Byte Present: N/A
   DCBX Parameter Valid: No

DCBX Parameter Data
   Priority Group ID of Priority 1:0
   Priority Group ID of Priority 0:0

   Priority Group ID of Priority 3:0
   Priority Group ID of Priority 2:0

   Priority Group ID of Priority 5:0
   Priority Group ID of Priority 4:0

   Priority Group ID of Priority 7:0
   Priority Group ID of Priority 6:0

   Priority Group 0 Percentage:0
   Priority Group 1 Percentage:0
   Priority Group 2 Percentage:0
   Priority Group 3 Percentage:0
   Priority Group 4 Percentage:0
   Priority Group 5 Percentage:0
   Priority Group 6 Percentage:0
   Priority Group 7 Percentage:0

   Number of Traffic Classes Supported: 0

DCBX Parameter Type and Length
```

```
DCBX Parameter Length: 6
DCBX Parameter Type: 3

DCBX Parameter Information
   Parameter Type: Current
   Pad Byte Present: N/A
   DCBX Parameter Valid: Yes

DCBX Parameter Data
   PFC Enabled on Priority 0:No
   PFC Enabled on Priority 1:No
   PFC Enabled on Priority 2:No
   PFC Enabled on Priority 3:Yes
   PFC Enabled on Priority 4:Yes
   PFC Enabled on Priority 5:No
   PFC Enabled on Priority 6:No
   PFC Enabled on Priority 7:No

   Number of Traffic Classes Supported: 2

DCBX Parameter Information
   Parameter Type: Local
   Pad Byte Present: N/A
   DCBX Parameter Valid: Yes

DCBX Parameter Data
   PFC Enabled on Priority 0:No
   PFC Enabled on Priority 1:No
   PFC Enabled on Priority 2:No
   PFC Enabled on Priority 3:Yes
   PFC Enabled on Priority 4:Yes
   PFC Enabled on Priority 5:No
   PFC Enabled on Priority 6:No
   PFC Enabled on Priority 7:No

   Number of Traffic Classes Supported: 2

DCBX Parameter Information
   Parameter Type: Remote
   Pad Byte Present: N/A
   DCBX Parameter Valid: No

DCBX Parameter Data
   PFC Enabled on Priority 0:No
   PFC Enabled on Priority 1:No
   PFC Enabled on Priority 2:No
   PFC Enabled on Priority 3:No
   PFC Enabled on Priority 4:No
   PFC Enabled on Priority 5:No
   PFC Enabled on Priority 6:No
   PFC Enabled on Priority 7:No

   Number of Traffic Classes Supported: 0

DCBX Parameter Type and Length
DCBX Parameter Length: 6
DCBX Parameter Type: 3

DCBX Parameter Information
```

```
   Parameter Type: Current
   Pad Byte Present: N/A
   DCBX Parameter Valid: Yes

   Application Protocol ID : 89061

DCBX Parameter Data
   Bit 0 Protocol traffic enabled on Priority 0: No
   Bit 1 Protocol traffic enabled on Priority 1: No
   Bit 2 Protocol traffic enabled on Priority 2: No
   Bit 3 Protocol traffic enabled on Priority 3: Yes
   Bit 4 Protocol traffic enabled on Priority 4: No
   Bit 5 Protocol traffic enabled on Priority 5: No
   Bit 6 Protocol traffic enabled on Priority 6: No
   Bit 7 Protocol traffic enabled on Priority 7: No

   Application Protocol ID : 89147

DCBX Parameter Data
   Bit 0 Protocol traffic enabled on Priority 0: No
   Bit 1 Protocol traffic enabled on Priority 1: No
   Bit 2 Protocol traffic enabled on Priority 2: No
   Bit 3 Protocol traffic enabled on Priority 3: Yes
   Bit 4 Protocol traffic enabled on Priority 4: No
   Bit 5 Protocol traffic enabled on Priority 5: No
   Bit 6 Protocol traffic enabled on Priority 6: No
   Bit 7 Protocol traffic enabled on Priority 7: No

   Application Protocol ID : cbc7

DCBX Parameter Data
   Bit 0 Protocol traffic enabled on Priority 0: No
   Bit 1 Protocol traffic enabled on Priority 1: No
   Bit 2 Protocol traffic enabled on Priority 2: No
   Bit 3 Protocol traffic enabled on Priority 3: No
   Bit 4 Protocol traffic enabled on Priority 4: Yes
   Bit 5 Protocol traffic enabled on Priority 5: No
   Bit 6 Protocol traffic enabled on Priority 6: No
   Bit 7 Protocol traffic enabled on Priority 7: No

DCBX Parameter Information
   Parameter Type: Local
   Pad Byte Present: N/A
   DCBX Parameter Valid: Yes

   Application Protocol ID : 89067

DCBX Parameter Data
   Bit 0 Protocol traffic enabled on Priority 0: No
   Bit 1 Protocol traffic enabled on Priority 1: No
   Bit 2 Protocol traffic enabled on Priority 2: No
   Bit 3 Protocol traffic enabled on Priority 3: Yes
   Bit 4 Protocol traffic enabled on Priority 4: No
   Bit 5 Protocol traffic enabled on Priority 5: No
   Bit 6 Protocol traffic enabled on Priority 6: No
   Bit 7 Protocol traffic enabled on Priority 7: No

   Application Protocol ID : 89147
```

```
DCBX Parameter Data
   Bit 0 Protocol traffic enabled on Priority 0: No
   Bit 1 Protocol traffic enabled on Priority 1: No
   Bit 2 Protocol traffic enabled on Priority 2: No
   Bit 3 Protocol traffic enabled on Priority 3: Yes
   Bit 4 Protocol traffic enabled on Priority 4: No
   Bit 5 Protocol traffic enabled on Priority 5: No
   Bit 6 Protocol traffic enabled on Priority 6: No
   Bit 7 Protocol traffic enabled on Priority 7: No

   Application Protocol ID : cbc7

DCBX Parameter Data
   Bit 0 Protocol traffic enabled on Priority 0: No
   Bit 1 Protocol traffic enabled on Priority 1: No
   Bit 2 Protocol traffic enabled on Priority 2: No
   Bit 3 Protocol traffic enabled on Priority 3: No
   Bit 4 Protocol traffic enabled on Priority 4: Yes
   Bit 5 Protocol traffic enabled on Priority 5: No
   Bit 6 Protocol traffic enabled on Priority 6: No
   Bit 7 Protocol traffic enabled on Priority 7: No

DCBX Parameter Information
   Parameter Type: Remote
   Pad Byte Present: N/A
   DCBX Parameter Valid: No

DCBX Control Parameters
=======================
DCBX Operation Mode: 0
FCoE FIP MisMatch: 0
FCoE Has Bandwidth: 0
DCBX Peer RLV Data Valid: 0
DCBX EnabledInFW: 1
DCBX OperModeOfFIPApp: 0
DCBX OperModeOfFCoEApp: 0
DCBX OperModeOfPFCFeature: 0
DCBX OperModeOfPGFeature: 0
-------------------------------------------------------------------------------
```

Raw (-tlvraw)

Select option **2** from the TLV Menu to view the raw TLV values. For example:

8100, 8200, and 8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------

-----------------------------------------------------------------
DCBX Parameters Raw for CNA instance 1 - QLE8362
-----------------------------------------------------------------

DCBX TLV (Type-Length-Value) Data
=================================
   04 11 00 00 c0 00 00 01
   00 00 32 32 00 00 00 00
   00 00 02 00 06 06 00 00
   c0 00 18 02 08 16 00 00
   c0 00 89 06 00 1b 21 08
```

```
   89 14 00 1b 21 08 0c bc
   01 1b 21 10 04 11 00 00
   c0 00 00 01 00 00 32 32
   00 00 00 00 00 00 02 00
   06 06 00 00 c0 00 18 02
   08 16 00 00 c0 00 89 06
   00 1b 21 08 89 14 00 1b
   21 08 0c bc 01 1b 21 10
   00 00 00 00 00 00 00 00

Current - App Raw TLVs:
  08 16 00 00 c0 00 89 06
  00 1b 21 08 89 14 00 1b
  21 08 0c bc 01 1b 21 10
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00

Current- Pri Flow Control Raw TLVs:
   06 06 00 00 c0 00 18 02
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00

Current - Priority Group Raw TLVs:
   04 11 00 00 c0 00 00 01
   00 00 32 32 00 00 00 00
   00 00 02 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
```

```
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00

Local - App Raw TLVs:
  08 16 00 00 c0 00 89 06
  00 1b 21 08 89 14 00 1b
  21 08 0c bc 01 1b 21 10
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00

Local- Pri Flow Control Raw TLVs:
   06 06 00 00 c0 00 18 02
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00

Local - Priority Group Raw TLVs:
   04 11 00 00 c0 00 00 01
   00 00 32 32 00 00 00 00
   00 00 02 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
```

```
Remote - App Raw TLVs:
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00
  00 00 00 00 00 00 00 00

Remote- Pri Flow Control Raw TLVs:
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00

Remote - Priority Group Raw TLVs:
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
-------------------------------------------------------------------------------
```

CNA Port Target/LUN Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 6. CNA Port Target/LUN Information

From the Converged Network Adapter Information menu, select the **CNA Port Target/LUN Information** option to view port target/LUN information. From the port menu, select a port, and then select the information type (iSCSI or FCoE). For example:

```
Converged Network Adapter Information

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

CNA Port Target/LUN Information

1:  iSCSI
2:  FCoE
```

iSCSI (-pad)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 6. CNA Port Target/LUN Information ▸ <port selection> ▸ 1. iSCSI

From the CNA Port Target/LUN Information menu, select the **iSCSI** option to view iSCSI target/LUN information. For example:

```
-------------------------------------------------------------------------------
inst 1 Targets:
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
HBA/Target/Lun Number = 1/2/0
   Vend   = IET
   ProdID = VIRTUAL-DISK
```

```
   ProdRv = 0
   LunSize = 0.007 GB
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
HBA/Target/Lun Number = 1/3/0
   Vend   = IET
   ProdID = VIRTUAL-DISK
   ProdRv = 0
   LunSize = 0.007 GB
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
HBA/Target/Lun Number = 1/4/0
   Vend   = IET
   ProdID = VIRTUAL-DISK
   ProdRv = 0
   LunSize = 0.007 GB
Target ID: 5  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
HBA/Target/Lun Number = 1/5/0
   Vend   = IET
   ProdID = VIRTUAL-DISK
   ProdRv = 0
   LunSize = 0.007 GB
inst 1 Number of displayed targets: 5
--------------------------------------------------------------------------------
```

FCoE

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 6. CNA Port Target/LUN Information ▸ <port selection> ▸ 2. FCoE

From the CNA Port Target/LUN Information menu, select the **FCoE** option to open the Target List Menu, and then follow the prompts to select the target and LUN to view. For example:

```
    Target List Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================

    1:  Disk (Online)
           Vendor                       : DGC
           Product ID                   : RAID 0
           Product Rev                  : 0324
           Serial Number                : APM00072401408
           Node Name                    : 50-06-01-60-C1-E0-63-25
           Port Name                    : 50-06-01-60-41-E0-63-25
           Port ID                      : 11-00-EF

    2:  Device (Offline)
           Vendor                       : N/A
           Product ID                   : N/A
           Product Rev                  : N/A
           Serial Number                :
           Node Name                    : 20-80-00-C0-FF-D8-32-7F
           Port Name                    : 20-70-00-C0-FF-D8-32-7F
           Port ID                      : 00-00-00

    3:  All Target(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    LUN List Menu

    HBA Instance 0 (QLE8242 Port 1) : Online

    Device
        Product Vendor: DGC
```

```
        Product ID    : RAID 0
        Product Rev   : 0324
        Node Name     : 50-06-01-60-C1-E0-63-25
        Port Name     : 50-06-01-60-41-E0-63-25
        Port ID       : 11-00-EF

    1:  LUN   0
           Vendor                       : DGC
           Product ID                   : RAID 0
           Port Name                    : 50-06-01-60-41-E0-63-25
           Port ID                      : 11-00-EF
    2:  LUN   1
           Vendor                       : DGC
           Product ID                   : RAID 0
           Port Name                    : 50-06-01-60-41-E0-63-25
           Port ID                      : 11-00-EF
    3:  All LUN(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Product Vendor                  : DGC
Product ID                      : RAID 0
Product Revision                : 0324
LUN                             : 0
Size                            : 21.00 GB
Type                            : SBC-2 Direct access block device
                                      (e.g., magnetic disk)
WWULN                         : 60-06-01-60-AE-50-1D-00-54-15-1D-1E-4A-45-DE-11
-------------------------------------------------------------
```

CNA VFC Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 7. CNA VFC Information

From the Converged Network Adapter Information menu, select the **CNA VFC Information** option to view virtual Fibre Channel (VFC) port information. From the port menu, select a port. For example:

```
    Converged Network Adapter Information

    CNA Model QLE8362 SN: AFE1227F06201
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:08:D1:D0 Link Down
          WWPN: 21-00-00-0E-1E-08-D1-D0 SFP not installed
          iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4 Link Down
```

```
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:08:D1:D8 Link Up
          WWPN: 21-00-00-0E-1E-08-D1-D1 Online
          iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1DA.5 Link Up
    CNA Model QLE8142 SN: RFC0926L28501
       3. Port  1 [Protocol(s): NIC FCoE]
          MAC Address: 00:C0:DD:10:E8:40 Link Down
          WWPN: 21-00-00-C0-DD-10-E8-41 SFP not installed
       4. Port  2 [Protocol(s): NIC FCoE]
          MAC Address: 00:C0:DD:10:E8:42 Link Up
          WWPN: 21-00-00-C0-DD-10-E8-43 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
-------------------------------------------------------------
Computer Name: WIN-EQ0S3D2FE5Q
SAN Name     : Fibre Channel SAN CH
-------------------------------------------------------------
VM Name      : Virtual Machine 2012
VM ID        : 41B2E7EA-C3C7-4BD6-99DB-57BFCDBC7131
WWPN Set A   : C0-03-FF-EF-92-24-00-00
WWNN Set A   : C0-03-FF-00-00-FF-FF-00
WWPN Set B   : C0-03-FF-EF-92-24-00-01
WWNN Set B   : C0-03-FF-00-00-FF-FF-00
-------------------------------------------------------------
```

If the selected port has no associated virtual FC information, the CLI displays an message similar to the following:

```
Unable to retrieve VFC information of HBA instance 0 (QLE8142). No Virtual FC/Vi
rtual machine information found!
```

Adapter Configuration

2. Adapter Configuration ▸ 1. CNA Configuration

From the main menu, select the **Adapter Configuration** option, and then select the configuration type (**CNA Configuration**). The Converged Network Adapter (CNA) Protocol Type Selection menu presents options for FCoE, iSCSI, and NIC configuration. For example:

```
Adapter Type Configuration Selection

1:  CNA Configuration
2:  Fibre Channel Configuration

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) Protocol Type Selection

1:  CNA FCoE Configuration
2:  CNA iSCSI Configuration
3:  CNA NIC Configuration
```

CNA FCoE Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration

From the Converged Network Adapter (CNA) Protocol Type Selection menu, select the **CNA FCoE Configuration** option to open the Converged Network Adapter (CNA) FCoE Configuration menu with options to configure adapter parameters, target persistent binding, boot devices, virtual ports, driver parameters, and selective LUNs. Options to export a configuration and generate reports are also available. For example:

```
Converged Network Adapter (CNA) FCoE Configuration

 1:  Adapter Alias
 2:  Adapter Port Alias
 3:  HBA Parameters
 4:  Target Persistent Binding
 5:  Boot Devices Configuration
 6:  Virtual Ports (NPIV)
 7:  Target Link Speed (iiDMA)
 8:  Driver Parameters
 9:  Selective LUNs
10:  QoS
11:  Export (Save) Configuration
12:  Generate Reports
13:  Personality
```

Adapter Alias (-ha)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 1. Adapter Alias

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Adapter Alias** option to create an alias for the adapter. From the adapter menu, select an adapter and type in the alias. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------

    Converged Network Adapter (CNA) FCoE Configuration

     1: CNA Model: QLE8142 SN: RFC0926L28501
          Port   1 [Protocol(s): NIC FCoE]
          Port   2 [Protocol(s): NIC FCoE]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 1
=====================================================
CNA Model     : QLE8142
CNA Desc.     : QLE8142 QLogic PCI Express to 10 GbE Dual Channel CNA (FCoE)
CNA SN        : RFC0926L28501
CNA Alias     :
ENode MacAddr : 00:C0:DD:10:E8:41
```

```
=====================================================
CNA Alias [None]: CNA01
Update completed. Changes have been saved to HBA WWNN 20-00-00-C0-DD-10-E8-41!

        Hit <Enter> to continue:

    Converged Network Adapter (CNA) FCoE Configuration

     1: CNA Model: QLE8142 SN: RFC0926L28501
          Port   1 [Protocol(s): NIC FCoE]
          Port   2 [Protocol(s): NIC FCoE]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=====================================================
CNA Model     : QLE8142
CNA Desc.     : QLE8142 QLogic PCI Express to 10 GbE Dual Channel CNA (FCoE)
CNA SN        : RFC0926L28501
CNA Alias     : CNA01
ENode MacAddr : 00:C0:DD:10:E8:41
=====================================================
CNA Alias [CNA01]:
```

8200 Series Converged Network Adapters:

```
        Converged Network Adapter (CNA) FCoE Configuration

     1: CNA Model: QLE8362 SN: 042000A+1231081592
          Port   1 [Protocol(s): FCoE]
          Port   2 [Protocol(s): FCoE]
     2: CNA Model: QLE8242 SN: RFE1314H59779
          Port   1 [Protocol(s): FCoE]
          Port   2 [Protocol(s): FCoE]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
=====================================================
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
CNA SN        : RFE1314H59779
CNA Alias     :
ENode MacAddr : 00:0E:1E:31:85:9F
=====================================================
CNA Alias [None]: CNA01
Update completed. Changes have been saved to HBA WWNN 20-00-00-0E-1E-31-85-9F!

        Hit <Enter> to continue:

        QConvergeConsole

        CLI - Version 1.1.0 (Build 39)

    Converged Network Adapter (CNA) FCoE Configuration

     1: CNA Model: QLE8362 SN: 042000A+1231081592
          Port   1 [Protocol(s): FCoE]
          Port   2 [Protocol(s): FCoE]
     2: CNA Model: QLE8242 SN: RFE1314H59779
```

```
          Port   1 [Protocol(s): FCoE]
          Port   2 [Protocol(s): FCoE]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
=====================================================
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
CNA SN        : RFE1314H59779
CNA Alias     : CNA01
ENode MacAddr : 00:0E:1E:31:85:9F
=====================================================
CNA Alias [CNA01]:
```

8300 Series Converged Network Adapters:

```
 Converged Network Adapter (CNA) FCoE Configuration

     1: CNA Model: QLE8362 SN: AFE1227F06201
          Port   1 [Protocol(s): NIC FCoE iSCSI]
          Port   2 [Protocol(s): NIC FCoE iSCSI]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=====================================================
CNA Model     : QLE8362
CNA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
CNA SN        : AFE1227F06201
CNA Alias     :
=====================================================
CNA Alias [None]: CNA1
Update completed. Changes have been saved to HBA WWNN 20-00-00-0E-1E-08-D1-D0!

        Hit <Enter> to continue:

    Converged Network Adapter (CNA) FCoE Configuration

     1: CNA Model: QLE8362 SN: AFE1227F06201
          Port   1 [Protocol(s): NIC FCoE iSCSI]
          Port   2 [Protocol(s): NIC FCoE iSCSI]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=====================================================
CNA Model     : QLE8362
CNA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
CNA SN        : AFE1227F06201
CNA Alias     : CNA1
=====================================================
CNA Alias [CNA1]:
```

Adapter Port Alias (-pa)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 2. Adapter Port Alias

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Adapter Port Alias** option to create an alias for an adapter port. From the port menu, select a port and type in the alias. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8142 SN: RFC0926L28501
       1. Port  1 [Protocol(s): NIC FCoE]
          MAC Address: 00:C0:DD:10:E8:40 Link Down
          WWPN: 21-00-00-C0-DD-10-E8-41 SFP not installed
       2. Port  2 [Protocol(s): NIC FCoE]
          MAC Address: 00:C0:DD:10:E8:42 Link Up
          WWPN: 21-00-00-C0-DD-10-E8-43 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=====================================================
CNA           : 0
Physical Port : 1
Port Alias    :
CNA SN        : RFC0926L28501
ENode MacAddr : 00:C0:DD:10:E8:41
CNA Model     : QLE8142
CNA Desc.     : QLE8142 QLogic PCI Express to 10 GbE Dual Channel CNA (FCoE)
WWPN          : 21-00-00-C0-DD-10-E8-41
WWNN          : 20-00-00-C0-DD-10-E8-41
Link          : SFP not installed
=====================================================
Port Alias [None]: Port01
Update completed. Changes have been saved to HBA WWPN 21-00-00-C0-DD-10-E8-41!

        Hit <Enter> to continue:

    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8142 SN: RFC0926L28501
       1. Port  1 [Protocol(s): NIC FCoE]
          MAC Address: 00:C0:DD:10:E8:40 Link Down
          WWPN: 21-00-00-C0-DD-10-E8-41 SFP not installed
       2. Port  2 [Protocol(s): NIC FCoE]
          MAC Address: 00:C0:DD:10:E8:42 Link Up
          WWPN: 21-00-00-C0-DD-10-E8-43 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=====================================================
CNA           : 0
Physical Port : 1
Port Alias    : Port01
CNA SN        : RFC0926L28501
ENode MacAddr : 00:C0:DD:10:E8:41
CNA Model     : QLE8142
```

```
CNA Desc.     : QLE8142 QLogic PCI Express to 10 GbE Dual Channel CNA (FCoE)
WWPN          : 21-00-00-C0-DD-10-E8-41
WWNN          : 20-00-00-C0-DD-10-E8-41
Link          : SFP not installed
=====================================================
Port Alias [Port01]:
```

8200 Series Converged Network Adapters:

```
    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8362 SN: 042000A+1231081592
       1. Port   1 [Protocol(s): FCoE]
          WWPN: 21-00-00-0E-1E-10-55-C0 SFP not installed
       2. Port   2 [Protocol(s): FCoE]
          WWPN: 21-00-00-0E-1E-10-55-C1 SFP Invalid
    CNA Model QLE8242 SN: RFE1314H59779
       3. Port   1 [Protocol(s): FCoE]
          WWPN: 21-00-00-0E-1E-31-85-9B Link Down
       4. Port   2 [Protocol(s): FCoE]
          WWPN: 21-00-00-0E-1E-31-85-9F Link Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 3
=====================================================
CNA           : 0
Physical Port : 1
Port Alias    :
CNA SN        : RFE1314H59779
ENode MacAddr : 00:0E:1E:31:85:9B
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
WWPN          : 21-00-00-0E-1E-31-85-9B
WWNN          : 20-00-00-0E-1E-31-85-9B
Link          : Link Down
=====================================================
Port Alias [None]: Port01
Update completed. Changes have been saved to HBA WWPN 21-00-00-0E-1E-31-85-9B!

        Hit <Enter> to continue:

        QConvergeConsole

        CLI - Version 1.1.0 (Build 39)

    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8362 SN: 042000A+1231081592
       1. Port   1 [Protocol(s): FCoE]
          WWPN: 21-00-00-0E-1E-10-55-C0 SFP not installed
       2. Port   2 [Protocol(s): FCoE]
          WWPN: 21-00-00-0E-1E-10-55-C1 SFP Invalid
    CNA Model QLE8242 SN: RFE1314H59779
       3. Port   1 [Protocol(s): FCoE]
          WWPN: 21-00-00-0E-1E-31-85-9B Link Down
       4. Port   2 [Protocol(s): FCoE]
```

```
          WWPN: 21-00-00-0E-1E-31-85-9F Link Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 3
=====================================================
CNA           : 0
Physical Port : 1
Port Alias    : Port01
CNA SN        : RFE1314H59779
ENode MacAddr : 00:0E:1E:31:85:9B
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
WWPN          : 21-00-00-0E-1E-31-85-9B
WWNN          : 20-00-00-0E-1E-31-85-9B
Link          : Link Down
=====================================================
Port Alias [Port01]:
```

8300 Series Converged Network Adapters:

```
    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8362 SN: AFE1227F06201
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:08:D1:D0 Link Down
          WWPN: 21-00-00-0E-1E-08-D1-D0 SFP not installed
          iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4 Link Down
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:08:D1:D8 Link Up
          WWPN: 21-00-00-0E-1E-08-D1-D1 Online
          iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1DA.5 Link Up

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=====================================================
CNA           : 1
Physical Port : 1
Port Alias    :
CNA SN        : AFE1227F06201
CNA Model     : QLE8362
CNA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : SFP not installed
=====================================================
Port Alias [None]: Port001
Update completed. Changes have been saved to HBA WWPN 21-00-00-0E-1E-08-D1-D0!

        Hit <Enter> to continue:

    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8362 SN: AFE1227F06201
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:08:D1:D0 Link Down
          WWPN: 21-00-00-0E-1E-08-D1-D0 SFP not installed
          iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4 Link Down
```

```
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:08:D1:D8 Link Up
          WWPN: 21-00-00-0E-1E-08-D1-D1 Online
          iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1DA.5 Link Up

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
=======================================================
CNA           : 1
Physical Port : 1
Port Alias    : Port001
CNA SN        : AFE1227F06201
CNA Model     : QLE8362
CNA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : SFP not installed
=======================================================
Port Alias [Port001]:
```

HBA Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 3. HBA Parameters

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **HBA Parameters** option to configure adapter parameters. From the port menu, select a port to open the HBA Parameters Menu with options to display parameters, configure parameters, and restore defaults. For example:

8100, 8200, and 8300 Series Converged Network Adapters:

```
    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

    HBA Parameters Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================

    1:  Display HBA Parameters
```

```
    2:  Configure HBA Parameters
    3:  Restore Defaults
```

Display HBA Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 3. HBA Parameters ▸ 1. Display HBA Parameters

From the HBA Parameters menu, select the **Display HBA Parameters** option to view adapter parameters. For example:

8100 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8142 Port 1 WWPN 21-00-00-C0-DD-10-E8-41 PortID 00-00-00
Link: SFP not installed
-------------------------------------------------------------------------------

Connection Options             : 1 - Point-to-Point Only
Data Rate                      : 10 Gbps
Frame Size                     : 2048
Loop Reset Delay (seconds)     : 5
Enable Host HBA BIOS           : Disabled
Enable FC Tape Support         : Enabled
Operation Mode                 : 0 - Interrupt for every I/O completion
Interrupt Delay Timer (100ms)  : 0
Execution Throttle             : 65535
Login Retry Count              : 8
Port Down Retry Count          : 30
Link Down Timeout (seconds)    : 30
Enable Target Reset            : Enabled
LUNs Per Target                : 128
Out Of Order Frame Assembly    : Disabled
Enable LR                      : Disabled
```

8200 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
Connection Options             : 1 - Point-to-Point Only
Data Rate                      : 10 Gbps
Frame Size                     : 2048
Hard Loop ID                   : 0
Loop Reset Delay (seconds)     : 5
Enable Host HBA BIOS           : Enabled
Enable Hard Loop ID            : Disabled
Enable FC Tape Support         : Enabled
Execution Throttle             : 65535
Login Retry Count              : 8
Port Down Retry Count          : 30
Enable LIP Full Login          : Enabled
Link Down Timeout (seconds)    : 30
Enable Target Reset            : Enabled
LUNs Per Target                : 128
```

```
Out Of Order Frame Assembly    : Disabled
```

NOTE

Execution Throttle does not apply to 2600 nor 8300 Series Adapters and is read-only for 10GbE adapters.

8300 Series Converged Network Adapters:

```
-------------------------------------------------------------------------------
HBA Instance 1: QLE8362 Port 1 WWPN 21-00-00-0E-1E-08-D1-D0 PortID 00-00-00
Link: SFP not installed
-------------------------------------------------------------------------------

Connection Options             : 1 - Point-to-Point Only
Data Rate                      : 10 Gbps
Frame Size                     : 2048
Loop Reset Delay (seconds)     : 5
Enable Host HBA BIOS           : Disabled
Enable FC Tape Support         : Enabled
Operation Mode                 : 6 - Interrupt when Interrupt Delay Timer expires
or no active I/O
Interrupt Delay Timer (100ms)  : 2
Login Retry Count              : 8
Port Down Retry Count          : 30
Link Down Timeout (seconds)    : 30
Enable Target Reset            : Enabled
LUNs Per Target                : 128
Out Of Order Frame Assembly    : Disabled
```

Configure HBA Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 3. HBA Parameters ▸ <port selection> ▸ 2. Configure HBA Parameters

From the HBA Parameters menu, select the **Configure HBA Parameters** option to open the Configure Parameters Menu. Select the parameter option and change the value. Refer to Table 6-10 on page 114 for details about these parameters and their values.

NOTE

The Configure Parameters Menu options differ depending on the hardware and driver installed on the system. You may see more or fewer options than are shown in the following examples.

8100 Series Converged Network Adapters:

```
    Configure Parameters Menu

=======================================================
CNA           : 0 Port: 1
SN            : RFC0926L28501
ENode MacAddr : 00:C0:DD:10:E8:41
```

```
CNA Model     : QLE8142
CNA Desc.     : QLE8142 QLogic PCI Express to 10 GbE Dual Channel CNA
(FCoE)
FW Version    : 5.09.00
WWPN          : 21-00-00-C0-DD-10-E8-41
WWNN          : 20-00-00-C0-DD-10-E8-41
Link          : SFP not installed
=====================================================
    1:  Connection Options
    2:  Data Rate
    3:  Frame Size
    4:  Loop Reset Delay (seconds)
    5:  Enable BIOS
    6:  Enable Fibre Channel Tape Support
    7:  Operation Mode
    8:  Interrupt Delay Timer (100ms)
    9:  Execution Throttle
   10:  Login Retry Count
   11:  Port Down Retry Count
   12:  Link Down Timeout (seconds)
   13:  Enable Target Reset
   14:  LUNs per Target
   15:  Enable Receive Out Of Order Frame
   16:  Enable LR
   17:  Commit Changes
   18:  Abort Changes
```

8200 Series Converged Network Adapters:

```
    Configure Parameters Menu

=====================================================
CNA           : 0 Port: 1
SN            : RFE1314H59779
ENode MacAddr : 00:0E:1E:31:85:9B
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA
(FCoE)
FW Version    : 4.12.10
WWPN          : 21-00-00-0E-1E-31-85-9B
WWNN          : 20-00-00-0E-1E-31-85-9B
Link          : Link Down
=====================================================
```

```
 1:  Connection Options
 2:  Data Rate
 3:  Frame Size
 4:  Hard Loop ID
 5:  Loop Reset Delay (seconds)
 6:  Enable BIOS
 7:  Enable HBA Hard Loop ID
 8:  Enable Fibre Channel Tape Support
 9:  Operation Mode
10:  Interrupt Delay Timer (100ms)
11:  Execution Throttle
12:  Login Retry Count
13:  Port Down Retry Count
14:  Enable LIP Full Login
15:  Link Down Timeout (seconds)
16:  Enable Targe t Reset
17:  LUNs per Target
18:  Enable Receive Out Of Order Frame
19:  Commit Changes
20:  Abort Changes
```

NOTE

Execution Throttle does not apply to 2600 nor 8300 Series Adapters and is read-only for 10GbE adapters.

8300 Series Converged Network Adapters:

```
    Configure Parameters Menu

=======================================================
HBA           : 1 Port: 1
SN            : AFE1227F06201
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
FW Version    : 6.06.03
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : SFP not installed
=======================================================

 1:  Connection Options
 2:  Data Rate
 3:  Frame Size
 4:  Loop Reset Delay (seconds)
 5:  Enable BIOS
 6:  Enable Fibre Channel Tape Support
 7:  Operation Mode
 8:  Interrupt Delay Timer (100ms)
 9:  Login Retry Count
10:  Port Down Retry Count
11:  Link Down Timeout (seconds)
12:  Enable Target Reset
13:  LUNs per Target
14:  Enable Receive Out Of Order Frame
15:  Commit Changes
16:  Abort Changes
```

Restore Defaults

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 3. HBA Parameters ▸ 3. Restore Defaults

CAUTION

- Restoring the adapter parameters can make the adapter inoperable.
- When restoring NVRAM parameters, the current BIOS device settings are also cleared.

From the HBA Parameters menu, select the **Restore Defaults** to restore adapter parameters to their factory default values.

For example:

8100, 8200, and 8300 Series Converged Network Adapters:

```
Warning:

    Please update the HBA parameters with extreme care.
    Incorrectly updating the HBA parameters may render the HBA inoperable.
    If you currently have boot device information set up in the HBA
    parameters, updating the HBA Parameters from a file
    will preserve that information.

    Do you want to proceed with the operation?

    1:  Yes
    2:  No
```

Target Persistent Binding

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 4. Target Persistent Binding

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Target Persistent Binding** option to configure target persistent binding. From the port menu, select a port to open the Target Persistent Binding Menu with options to display the configuration, bind targets, and unbind targets. For example:

```
Converged Network Adapter (CNA) FCoE Configuration

CNA Model QLE8362 SN: AFE1227F06201
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D0 Link Down
      WWPN: 21-00-00-0E-1E-08-D1-D0 SFP not installed
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4 Link Down
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:08:D1:D8 Link Up
      WWPN: 21-00-00-0E-1E-08-D1-D1 Online
      iSCSI Name: iqn.2000-04.com.qlogic:isp8324.000E1E08D1DA.5 Link Up
CNA Model QLE8242 SN: AFE1028C03899
   3. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
```

```
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       4. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    CNA Model QLE8142 SN: RFC0926L28501
       5. Port  1 [Protocol(s): NIC FCoE]
          MAC Address: 00:C0:DD:10:E8:40 Link Down
          WWPN: 21-00-00-C0-DD-10-E8-41 SFP not installed
       6. Port  2 [Protocol(s): NIC FCoE]
          MAC Address: 00:C0:DD:10:E8:42 Link Up
          WWPN: 21-00-00-C0-DD-10-E8-43 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection:

    Target Persistent Binding Menu
```

8100 and 8200 Series Converged Network Adapters:

```
=======================================================
CNA           : 0 Port: 1
SN            : RFC0926L28501
ENode MacAddr : 00:C0:DD:10:E8:41
CNA Model     : QLE8142
CNA Desc.     : QLE8142 QLogic PCI Express to 10 GbE Dual Channel CNA (FCoE)
FW Version    : 5.09.00
WWPN          : 21-00-00-C0-DD-10-E8-41
WWNN          : 20-00-00-C0-DD-10-E8-41
Link          : SFP not installed
=======================================================
```

8300 Series Converged Network Adapters:

```
=======================================================
HBA           : 1 Port: 1
SN            : AFE1227F06201
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 10Gb CNA (FCoE)
FW Version    : 6.06.03
WWPN          : 21-00-00-0E-1E-08-D1-D0
WWNN          : 20-00-00-0E-1E-08-D1-D0
Link          : SFP not installed
=======================================================

    1:  Display Configuration
    2:  Bind Target(s)
    3:  Unbind Target(s)
```

Display Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 4. Target Persistent Binding ▸ 1. Display Configuration

From the Target Persistent Binding Menu, select the **Display Configuration** option to view the target persistent binding configuration. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
Bind Type    Target Info             Port Name               Port ID  Target ID
---- ------- ---------------------- ---------------------- --------
---------
  No   Disk          DGC      RAID 0 50-06-01-60-41-E0-63-25 11-00-EF
 Yes Device                  N/A N/A 20-70-00-C0-FF-D8-32-7F 00-00-00 0
```

Bind Target(s)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 4. Target Persistent Binding ▸ 2. Bind Target(s)

From the Target Persistent Binding Menu, select the **Bind Target(s)** option to bind target devices. For example:

```
    Target Persistent Binding Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================

    1:  Disk
           Vendor                       : DGC
           Product ID                   : RAID 0
           Port Name                    : 50-06-01-60-41-E0-63-25
           Port ID                      : 11-00-EF
           Bind                         : No
           Target ID                    :
    2:  Device
           Vendor                       : N/A
           Product ID                   : N/A
           Port Name                    : 20-70-00-C0-FF-D8-32-7F
           Port ID                      : 00-00-00
```

```
           Bind                          : Yes
           Target ID                     : 0
    3:  All Target(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

Enter Target ID: 1

               Target Persistent Binding - FC Port Configuration

               1:  Select More
               2:  Commit Changes
               3:  Cancel
```

Unbind Target(s)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 4. Target Persistent Binding ▸ 3. Unbind Target(s)

From the Target Persistent Binding Menu, select the **Unbind Target(s)** option to unbind a target device. For example:

```
    Target Persistent Binding Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================

    1:  Disk
           Vendor                        : DGC
           Product ID                    : RAID 0
           Port Name                     : 50-06-01-60-41-E0-63-25
           Port ID                       : 11-00-EF
           Bind                          : Yes
           Target ID                     : 1
    2:  Device
```

```
          Vendor                          : N/A
          Product ID                      : N/A
          Port Name                       : 20-70-00-C0-FF-D8-32-7F
          Port ID                         : 00-00-00
          Bind                            : Yes
          Target ID                       : 0
   3:  All Target(s)

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 1
```

Boot Devices Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 5. Boot Devices Configuration

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Boot Devices Configuration** option to configure boot devices. From the port menu, select a port to open the Boot Device Settings Menu with options to display and configure boot devices. For example:

```
   Converged Network Adapter (CNA) FCoE Configuration

   CNA Model QLE8242 SN: AFE1028C03899
      1. Port  1 [Protocol(s): NIC iSCSI FCoE]
         MAC Address: 00:0E:1E:04:95:E8
         WWPN: 21-00-00-0E-1E-04-95-EB
         Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
      2. Port  2 [Protocol(s): NIC iSCSI FCoE]
         MAC Address: 00:0E:1E:04:95:EC
         WWPN: 21-00-00-0E-1E-04-95-EF
         Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 2

   Boot Device Settings Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
```

```
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================

    1:  Display Boot Device(s)
    2:  Configure Boot Device(s)
```

Display Boot Device(s)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 1. Display Boot Device(s)

From the Boot Device Settings Menu, select the **Display Boot Device(s)** option. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
Boot Device Settings:
--------------------------------------
Selectable Boot: Disabled
--------------------------------------
(Primary    ) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 1) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 2) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 3) Boot Port Name        LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
```

Configure Boot Device(s)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s)

From the Boot Device Settings Menu, select the **Configure Boot Device(s)** option to open the boot device menu with options to configure the primary and alternative boot devices. For example:

```
    Boot Device Settings Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================

    1:  Disk
          (Primary) Boot Port Name: 50-06-01-60-41-E0-63-25
    2:  Device
          (Primary) Boot Port Name: 20-70-00-C0-FF-D8-32-7F
    3:  BIOS boot default
          Selectable Boot:

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Boot Device Settings Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
```

```
Link          : Online
=====================================================

    1:  LUN: 0 (boot)
    2:  LUN: 1
    3:  Cancel

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
HBA Parameters Save Complete. Changes has been saved to HBA 0.
```

Virtual Ports (NPIV)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 6. Virtual Ports (NPIV)

NOTE

A maximum of 31 virtual ports is supported on 8200 Series adapters.

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Virtual Ports (NPIV)** option to configure virtual ports. From the port menu, select a port to open the vPorts Menu with options to view, create, and delete virtual ports. For example:

```
    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    vPorts Menu

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
```

```
CNA Model      : QLE8242
CNA Desc.      : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version     : 4.07.31
WWPN           : 21-00-00-0E-1E-04-95-EB
WWNN           : 20-00-00-0E-1E-04-95-EB
Link           : Online
=====================================================

    1:  View vPorts Info
    2:  Create vPorts
    3:  Delete vPorts
```

View vPorts Info

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 6. Virtual Ports (NPIV) ▸ <port selection> ▸ 1. View vPorts Info

From the vPorts Menu, select the **View vPorts Info** option to select a virtual port and view information. For example:

```
    Display vPorts Menu

    HBA Instance 0 (QLE8242 Port 1) : Online
        WWPN: 21-00-00-0E-1E-04-95-EB
        Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

      1: vPort  0: WWPN: 21-DD-00-0E-1E-04-95-EB Online [ ]
      2: Select All
      3: Proceed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Display vPorts Menu

    HBA Instance 0 (QLE8242 Port 1) : Online
        WWPN: 21-00-00-0E-1E-04-95-EB
        Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

      1: vPort  0: WWPN: 21-DD-00-0E-1E-04-95-EB Online [x]
      2: Deselect All
      3: Proceed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
```

```
        Please Enter Selection: 3
--------------------------------------------------------------------------------
HBA Instance                    : 0
HBA Model                       : QLE8242
HBA Description                 : QLE8242 QLogic Pci Express to 10GbE Dual
Channel CNA (FCoE)
Virtual Port                    : 0
Node Name                       : 20-DD-00-0E-1E-04-95-EB
Port Name                       : 21-DD-00-0E-1E-04-95-EB
Port ID                         : 11-00-20
Serial Number                   : AFE1028C03899
Max Port Speed                  : 10.63 Gbps
Priority QoS                    : Not Supported
QoS Setting Enable State        : Not Supported
QoS Setting Lock State          : Not Supported
```

Create vPorts

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 6. Virtual Ports (NPIV) ▸ <port selection> ▸ 2. Create vPorts

NOTE

A maximum of 31 virtual ports is supported on 8200 Series adapters.

From the vPorts Menu, select the **Create vPorts** option to open the Create vPorts Menu with options to specify vPort options and generate a vPort. For example:

```
    Create vPorts Menu

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=====================================================

    1:  Options
```

```
    2:  Generate
```

Options Select the **Options** option to specify the number of vPorts to create. For example:

```
Number of vPort(s) to generate (1-63) [63]: 3
Updating number of vPort(s) to be generated to 3..., done
```

Generate Select the **Generate** option to modify the WWPNs and WWNNs that were generated for the virtual ports. For example:

```
    Create vPorts Menu

    HBA Instance 0 (QLE8242 Port 1) : Online
        WWPN: 21-00-00-0E-1E-04-95-EB
        Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

      1: 21-7F-00-0E-1E-04-95-EB
      2: 21-82-00-0E-1E-04-95-EB
      3: 21-85-00-0E-1E-04-95-EB
      4: Commit

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter the new WWN (21-[XX]-00-0e-1E-04-95-EB) [7F]:
```

Delete vPorts

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 6. Virtual Ports (NPIV) ▸ <port selection> ▸ 3. Delete vPorts

From the vPorts Menu, select the Delete vPorts option to select and delete virtual ports. For example:

```
    Delete vPorts Menu

    HBA Instance 0 (QLE8242 Port 1) : Online
        WWPN: 21-00-00-0E-1E-04-95-EB
        Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

      1: vPort  0: WWPN: 21-DD-00-0E-1E-04-95-EB Online [ ]
      2: Select All
      3: Proceed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
```

```
    Delete vPorts Menu

    HBA Instance 0 (QLE8242 Port 1) : Online
        WWPN: 21-00-00-0E-1E-04-95-EB
        Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

      1: vPort  0: WWPN: 21-DD-00-0E-1E-04-95-EB Online [x]
      2: Deselect All
      3: Proceed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 3
Configuration changed, 1 vPort(s) of HBA instance 0 - QLE8242 have been
deleted.
```

Target Link Speed (iiDMA)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 7. Target Link Speed (iiDMA)

NOTE

On Linux and Solaris, the target link settings are not preserved after reboot.

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Target Link Speed (iiDMA)** option to set the link rate to a device. From the port menu, select a port to open the iiDMA menu with options for basic configuration and advanced configuration. For example:

```
    QConvergeConsole

    CLI - Version 1.0.2 (Build 15)

Fibre Channel Adapter Configuration

HBA Model QLE8362 SN: AFE1224F05264
  1: Port   1: WWPN: 21-00-00-0E-1E-08-F2-10 Online
  2: Port   2: WWPN: 21-00-00-0E-1E-08-F2-11 SFP Invalid

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

    QConvergeConsole
```

```
        Version 1.0.2 (Build 15)

    iiDMA Menu

=======================================================
HBA           : 0 Port: 1
SN            : AFE1224F05264
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
FW Version    : 6.00.13
WWPN          : 21-00-00-0E-1E-08-F2-10
WWNN          : 20-00-00-0E-1E-08-F2-10
Link          : Online
=======================================================

    1:  Basic Configuration
    2:  Advance Configuration
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        QConvergeConsole

        Version 1.0.2 (Build 15)

    iiDMA Menu (Basic)

=======================================================
HBA           : 0 Port: 1
SN            : AFE1224F05264
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
FW Version    : 6.00.13
WWPN          : 21-00-00-0E-1E-08-F2-10
WWNN          : 20-00-00-0E-1E-08-F2-10
Link          : Online
=======================================================

    1:  1  Gbps
    2:  2  Gbps
    3:  4  Gbps
    4:  8  Gbps
    5:  16 Gbps
```

```
     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection:

            .
            .
            .

    iiDMA Menu

=======================================================
HBA           : 0 Port: 1
SN            : AFE1224F05264
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
FW Version    : 6.00.13
WWPN          : 21-00-00-0E-1E-08-F2-10
WWNN          : 20-00-00-0E-1E-08-F2-10
Link          : Online
=======================================================

    1:  Basic Configuration
    2:  Advance Configuration

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

        QConvergeConsole

        Version 1.0.2 (Build 15)

    iiDMA Menu

=======================================================
HBA           : 0 Port: 1
SN            : AFE1224F05264
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
FW Version    : 6.00.13
WWPN          : 21-00-00-0E-1E-08-F2-10
WWNN          : 20-00-00-0E-1E-08-F2-10
Link          : Online
=======================================================

    1:  Disk
           Vendor                       : SANBlaze
```

```
      Product ID                    : VLUN FC RAMDisk
      Product Rev                   : 3.1
      Serial Number                 : 2fff00062b0eb24400000000
      Port Name                     : 2F-FF-00-06-2B-0E-B2-44
      Port ID                       : 01-06-00
      Intelligent Interleave Factor: 16 Gbps

2:  Disk
      Vendor                        : SANBlaze
      Product ID                    : VLUN FC RAMDisk
      Product Rev                   : 3.1.
      Serial Number                 : 2fff00062b0f569900000001
      Port Name                     : 2F-FF-00-06-2B-0F-56-99
      Port ID                       : 01-07-00
      Intelligent Interleave Factor: 16 Gbps

3:  Device
      Vendor                        : SANBlaze
      Product ID                    : VLUN FC RAMDisk
      Product Rev                   : 3.1.
      Serial Number                 :
      Port Name                     : 2F-DF-00-06-2B-0F-56-99
      Port ID                       : 01-07-01
      Intelligent Interleave Factor: 16 Gbps

4:  Disk
      Vendor                        : SANBlaze
      Product ID                    : VLUN FC RAMDisk
      Product Rev                   : 3.1
      Serial Number                 : 2fff00062b0eb24401000000
      Port Name                     : 2F-DF-00-06-2B-0E-B2-44
      Port ID                       : 01-06-01
      Intelligent Interleave Factor: 16 Gbps

5:  Apply Changes to selected Target(s)


    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    QConvergeConsole
```

```
        Version 1.0.2 (Build 15)

    iiDMA Menu (Advanced)

=======================================================
HBA           : 0 Port: 1
SN            : AFE1224F05264
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
FW Version    : 6.00.13
WWPN          : 21-00-00-0E-1E-08-F2-10
WWNN          : 20-00-00-0E-1E-08-F2-10
Link          : Online
=======================================================

    1:  1  Gbps
    2:  2  Gbps
    3:  4  Gbps
    4:  8  Gbps
    5:  16 Gbps (Current)

(p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection:
```

Driver Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 8. Driver Parameters

NOTE

This option applies to adapters on Windows systems only.

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Driver Parameters** option. From the port menu, select a port to open the Driver Settings Menu with options to configure target display options and target binding options. For example:

```
    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
```

```
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

Driver Settings Menu

----------------------
Target: Display Options
----------------------
1: Present persistently bound target(s) plus
   any new target(s) with driver default (Current)
2: Present persistently bound target(s) Only
----------------------
Target: Binding Options
----------------------
3: Bind by World Wide Port Name (Current)
4: Bind by Port ID
5: Commit Changes
```

Present persistently bound target(s) plus any new target(s) with driver defaults

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 8. Driver Parameters ▸ <port selection> ▸ 1. Present persistently bound targets plus any new targets with driver defaults

From the Drive Settings Menu, select this option to view persistently bound target devices and new target devices with driver defaults. This setting affects the output from the **Display Configuration** option (1. CNA FCoE Configuration ▸ 2. Target Persistent Binding ▸ 1. Display Configuration). You must select the **Commit Changes** option to save changes to this option.

Present persistently bound target(s) only

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 8. Driver Parameters ▸ <port selection> ▸ 2. Present persistently bound target(s) only

From the Drive Settings Menu, select this option to view persistently bound target devices only. This setting affects the output from the **Display Configuration** option (1. CNA FCoE Configuration ▸ 2. Target Persistent Binding ▸ 1. Display Configuration). You must select the **Commit Changes** option to save changes to this option.

Bind by World Wide Port Name

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 8. Driver Parameters ▸ <port selection> ▸ 3. Bind by World Wide Port Name

From the Drive Settings Menu, select the **Bind by World Wide Port Name** option to configure the CLI to bind ports by WWPN. This setting affects the **Bind Target(s)** option (1. CNA FCoE Configuration ▸ 2. Target Persistent Binding ▸ 2. Bind Target(s)). You must select the **Commit Changes** option to save changes to this option.

Bind by Port ID

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 8. Driver Parameters ▸ <port selection> ▸ 4. Bind by Port ID

From the Drive Settings Menu, select the **Bind by Port ID** option to configure the CLI to bind target devices by port ID. This setting affects the **Bind Target(s)** option (1. CNA FCoE Configuration ▸ 2. Target Persistent Binding ▸ 2. Bind Target(s)). You must select the **Commit Changes** option to save changes to this option.

Commit Changes

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 8. Driver Parameters ▸ <port selection> ▸ 5. Commit Changes

From the Drive Settings Menu, select the **Commit Changes** option to save and activate target binding changes. For example:

```
Warning:

    You have requested to commit driver setting changes
    of the adapter. All adapters dependant on the same
    driver will be affected by the change.

    Do you want to proceed with the operation?

1:  Yes
2:  No
```

Selective LUNs

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 9. Selective LUNs

NOTE

This option applies to adapters on Windows systems only.

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Selective LUNs** option to configure selective LUNs. From the port menu, select a port to open the Selective LUNS Menu with options to view the LUN configuration and configure LUNs. For example:

```
CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

Selective LUNs Menu

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=====================================================

    1:  Display LUN Configuration
    2:  Manual Configure LUNs
    3:  Auto Configure LUNs
```

Display LUN Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 9. Selective LUNs ▸ <port selection> ▸ 1. Display LUN Configuration

Select the **Display LUN Configuration** option to view the LUN configuration.

Manual Configure LUNs

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 9. Selective LUNs ▸ <port selection> ▸ 2. Manual Configure LUNs

Select the **Manual Configure LUNs** option to open the Selective LUN Menu with options to select a target device on which to enable or disable LUNs. Select a target device, select the LUNs, and then enable or disable the LUNs. For example:

```
    Selective LUN Menu (Configuration)

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================

    1:  Disk
           Vendor                      : DGC
           Product ID                  : RAID 0
           Port Name                   : 50-06-01-60-41-E0-63-25
           Port ID                     : 11-00-EF
           Bind                        : No
           Target ID                   :
    2:  Device
           Vendor                      : N/A
           Product ID                  : N/A
           Port Name                   : 20-70-00-C0-FF-D8-32-7F
           Port ID                     : 00-00-00
           Bind                        : Yes
           Target ID                   : 0

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Selective LUN Menu (Configuration)
```

```
1:  Disk
       Vendor                       : DGC
       Product ID                   : RAID 0
       Port Name                    : 50-06-01-60-41-E0-63-25
       Port ID                      : 11-00-EF
       Bind                         : No
       Target ID                    :
2:  Device
       Vendor                       : N/A
       Product ID                   : N/A
       Port Name                    : 20-70-00-C0-FF-D8-32-7F
       Port ID                      : 00-00-00
       Bind                         : Yes
       Target ID                    : 0

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Selective LUN Menu (Configuration)

1:  LUN   0
       Vendor                       : DGC
       Product ID                   : RAID 0
       Port Name                    : 50-06-01-60-41-E0-63-25
       Port ID                      : 11-00-EF
2:  LUN   1
       Vendor                       : DGC
       Product ID                   : RAID 0
       Port Name                    : 50-06-01-60-41-E0-63-25
       Port ID                      : 11-00-EF
3:  All LUNs

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Selective LUN Menu (Configuration)

HBA Instance 0 (QLE8242 Port 1) : Online

Target WWPN 50-06-01-60-41-E0-63-25

LUN 0:
```

```
    1:  Enable
    2:  Disable

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Select more LUN(s)?

    1:  Select More
    2:  Commit Changes

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Configuration saved on HBA instance 0 (WWPN 21-00-00-0E-1E-04-95-EB). LUN
persistent data saved successfully.
Please reboot the system for the saved configuration to become effective.
```

Auto Configure LUNs

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 9. Selective LUNs ▸ <port selection> ▸ 3. Auto Configure LUNs

Select the **Auto Configure LUNs** option to automatically enable or disable all LUNs on all targets. For example:

```
    Selective LUN Menu (Configuration)

    HBA Instance 0 (QLE8242 Port 1) : Online

    All Targets

    All LUNs

    1:  Enable
    2:  Disable

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Configuration saved on HBA instance 0 (WWPN 21-00-00-0E-1E-04-95-EB). LUN
persistent data saved successfully.
Please reboot the system for the saved configuration to become effective.
```

QoS (-qos)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 10. QoS

NOTE

- The QoS option is supported on Windows only.
- The QoS option does not apply to 8200 Series Converged Network Adapters.

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **QoS** option to configure Quality of Service on a virtual port. From the port menu, select a port to open the QoS Type menu with options to configure QoS by priority or by bandwidth. For example:

```
    Fibre Channel Adapter Configuration

    HBA Model QLE8362 SN: AFE1224F05264
      1: Port   1: WWPN: 21-00-00-0E-1E-08-F2-10 Online
      2: Port   2: WWPN: 21-00-00-0E-1E-08-F2-11 SFP Invalid

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

        QConvergeConsole

        Version 1.0.2

    QoS Type Menu

=======================================================
HBA           : 0 Port: 1
SN            : AFE1224F05264
HBA Model     : QLE8362
HBA Desc.     : QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA
FW Version    : 6.00.13
WWPN          : 21-00-00-0E-1E-08-F2-10
WWNN          : 20-00-00-0E-1E-08-F2-10
Link          : Online
=======================================================

    1:  QoS Priority
    2:  QoS Bandwidth (Current)
```

```
    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    QConvergeConsole

    Version 1.0.2

QoS Priority Menu

HBA Instance 0 (QLE8362 Port 1) : Online
    WWPN: 21-00-00-0E-1E-08-F2-10
    Desc: QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA

HBA Model QLE8362
  1: vPort  0: WWPN: 21-E4-00-0E-1E-08-F2-10 Online
     [Priority] [Enabled] [Unlocked] [High]

  2: Apply QoS Settings


    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    QConvergeConsole

    Version 1.0.2

QoS Priority Menu

HBA Instance 0 (QLE8362 Virtual Port 0): Online
    WWPN: 21-E4-00-0E-1E-08-F2-10
    Desc: QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA


1:  Enable/Disable QoS Settings
2:  Lock/Unlock QoS Settings
3:  Modify QoS Settings


    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 3

    QConvergeConsole

    Version 1.0.2

QoS Priority Menu

HBA Instance 0 (QLE8362 Virtual Port 0): Online
```

```
        WWPN: 21-E4-00-0E-1E-08-F2-10
        Desc: QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA

    1:  Low
    2:  Medium
    3:  High


        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        QConvergeConsole

        Version 1.0.2

    QoS Priority Menu

    HBA Instance 0 (QLE8362 Port 1) : Online
        WWPN: 21-00-00-0E-1E-08-F2-10
Desc: QLE8362 QLogic 2-port 16Gb FC Adapter or 10Gb CNA

    HBA Model QLE8362
      1: vPort  0: WWPN: 21-E4-00-0E-1E-08-F2-10 Online
        [Priority] [Enabled] [Unlocked] [Low]

      2: Apply QoS Settings


        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Changes in QoS settings have been applied to selected vPort(s)
        Press <Enter> to continue:
```

Export (Save) Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 11. Export (Save) Configuration

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Export (Save) Configuration** option to save adapter parameters. From the port menu, select a port to open the Export (Save) Configuration menu with options to save adapter parameters. For example:

```
    Converged Network Adapter (CNA) FCoE Configuration

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
```

```
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    Export (Save) Configuration

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================

    1:  Save HBA Parameters

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter a file name or Hit <Enter> to abort: filename
Saving current HBA Parameters of HBA 1 to file filename.dat...
HBA Parameters saved successfully (HBA instance 1 - filename.dat).
```

Generate Reports

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 12. Generate Reports

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Generate Reports** option to view comprehensive host and adapter information. From the port menu, select a port for which to generate reports. For example:

```
    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
```

```
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
QLogic FCAPI (x64)
v1.7.3 Build 38
Copyright (C) 2003-2010 QLogic Corp.
All rights reserved.
QLogic FC/FCoE Common Library
Build Type:  Release
Build Date:  12/07/2010 6:43:25 PM
-------------------------------------------------------------------------------
Host Name                      : APPS4055
OS Type                        : Microsoft Windows Server 2008 R2 Datacenter
64-bit x64
OS Version                     : Build 7600
SDM API Version                : 1.28.0.81 QLSDM.DLL
-------------------------------------------------------------------------------
HBA Model QLE8242 (SN AFE1028C03899):
  Port   1 WWPN 21-00-00-0E-1E-04-95-EB (HBA instance  0) Online
  Port   2 WWPN 21-00-00-0E-1E-04-95-EF (HBA instance  1) SFP not installed
-------------------------------------------------------------------------------
Total QLogic HBA(s) : 1

Time and date:                  Tue Mar 08 07:47:34 2011
-------------------------------------------------------------------------------
HBA General Information
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
Host Name                      : APPS4055
HBA Instance                   : 0
HBA Model                      : QLE8242
HBA Description                : QLE8242 QLogic Pci Express to 10GbE Dual
Channel CNA (FCoE)
HBA ID                         : 0-QLE8242
HBA Alias                      :
```

```
HBA Port                        : 1
Port Alias                      :
Node Name                       : 20-00-00-0E-1E-04-95-EB
     .
     .
     .
```

Personality

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 13. Personality

NOTE

The personality feature is supported only on QLogic QLE267*x* and QLE836*x* Adapters. This feature lets you set the adapter's personality to Fibre Channel only or Converged Network Adapter.

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Personality** option to set the adapter personality to Fibre Channel only or Converged Network Adapter. From the adapter menu, select the adapter whose personality is to be changed, and then confirm your selection, as shown in the following examples.

Example of changing Converged Network Adapter (CNA) to Fibre Channel (FC):

```
        QConvergeConsole
        CLI - Version 1.0.3 (Build 37)
        Converged Network Adapter (CNA) FCoE Configuration
      1: CNA Model: QLE8362 SN: AFE1141F01212
          Port   1 [Protocol(s): FCoE]
          Port   2 [Protocol(s): FCoE]
        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Change personality to FC? (y/n): y
Personality type of HBA instance 1 (QLE8362) has been changed
successfully. Please power cycle machine. Make sure to change the
SFP module to a compatible one (FC) before reboot.
        Hit <Enter> to continue:
```

Example of changing Fibre Channel (FC) to Converged Network Adapter (CNA):

```
        QConvergeConsole
        CLI - Version 1.0.3 (Build 37)
    Fibre Channel Adapter Configuration
     1: HBA Model: QLE8362  SN: 0402A00-1231111111
```

```
                Port   1 WWPN: 21-00-00-0E-1E-10-51-70 Online
                Port   2 WWPN: 21-00-00-0E-1E-10-51-71 Link Down

              (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
               Please Enter Selection: 1
      Change personality to CNA? (y/n): y
      Update adapter personality of HBA instance 0 (QLE8362) complete.
      Please reboot machine. Make sure to change the SFP module to a
      compatible one (CNA) before reboot.

              Hit <Enter> to continue:
```

CNA iSCSI Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration

From the Converged Network Adapter (CNA) Protocol Type Selection menu, select the **CNA iSCSI Configuration** option to open the Converged Network Adapter (CNA) iSCSI Configuration menu with options to configure adapter parameters, ports, port IP settings, target devices, and boot devices. An option to export a configuration is also available. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

1:  HBA Level Parameter Configuration
2:  Port Configuration
3:  Port IP Settings
4:  Target Configuration
5:  Boot Devices Configuration
6:  Export (Save) Configuration
```

HBA Level Parameter Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 1. HBA Level Parameter Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **HBA Level Parameter Configuration** option. From the port menu, select a port to open the HBA Level Parameter Configuration menu with options to view adapter parameters, configure adapter parameters, save changes, reset the adapters, and refresh the display. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
```

```
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    HBA Level Parameter Configuration

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=====================================================
    1:  Display HBA Level Parameters
    2:  Configure HBA Level Parameters
    3:  Save changes and reset HBA
    4:  Refresh
```

Display HBA Level Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 1. HBA Level Parameter Configuration ▸ 1. Display HBA Level Parameters

Select the **Display HBA Level Parameters** option to view adapter parameters. For example:

```
-----------------------------------------------------------------
HBA_Alias                          :hba_alias
-----------------------------------------------------------------
```

Configure HBA Level Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 1. HBA Level Parameter Configuration ▸ 2. Configure HBA Level Parameters

Select the **Configure HBA Level Parameters** option to configure the adapter alias. For example:

```
-----------------------------------------------------------------
```

```
HBA_Alias [] :hba_alias
-------------------------------------------------------------------
```

Save changes and reset HBA

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 1. HBA Level Parameter Configuration ▸ 3. Save changes and reset HBA

Select the **Save changes and reset HBA** option to save changes and reset the adapter. For example:

```
There are multiple ports on the HBA you are saving.
You can save all the changes you have made to each port on this
HBA or save changes for this port.  If you save just this port,
the changes for the other port, if any, will be lost.
Do you want to save both ports?[Yes] Yes
```

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 1. HBA Level Parameter Configuration ▸ 4. Refresh

Select the **Refresh** option to refresh the adapter data.

Port Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 2. Port Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Port Configuration** option. From the port menu, select a port to open the Port Link Configuration menu with options to display and configure link configurations, edit configured port settings, restore port factory defaults, manage BIOS and unified extensible firmware interface (UEFI) settings, and refresh the display. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
```

```
        Please Enter Selection: 2

    Port Link Configuration

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=====================================================
    1:  Port Link Settings Menu
    2:  Edit Configured Port Settings Menu
    3:  Port Restore Factory Defaults
    4:  BIOS/UEFI Settings Menu
    5:  Refresh
```

Port Link Settings Menu

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ ▸ 1. Port Link Settings Menu

From the Port Link Configuration menu, select the **Port Link Settings Menu** option to open the Port Link Settings Menu with options to display the active link configuration, display the configured link configuration, and save changes. For example:

```
    Port Link Settings Menu

=====================================================
CNA           : 0 Port: 2
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EE.5
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EE
IPv4 Address  : 192.168.1.45
=====================================================
    1:  Display Active Link Configuration
    2:  Display Configured Link Configuration
    3:  Configure Link Configuration
```

```
    4:  Save changes and reset HBA (if necessary)
```

Display Active Link Configuration Select this option to view the active link configuration. For example:

```
-----------------------------------------------------------------
Connection Type          : Fibre
Portal Duplex            : Full Duplex
Portal Flow Control      : on
Portal Link Speed        : 10 Gbps
-----------------------------------------------------------------
```

Display Configured Link Configuration (-lcd) Select this option to view the configured link configuration. For example:

```
-----------------------------------------------------------------
This operation is not available for this adapter (8242).
-----------------------------------------------------------------
```

Configure Link Configuration Select this option to configure the link. For example:

```
-----------------------------------------------------------------
This operation is not available for this adapter (8242).
-----------------------------------------------------------------
```

Save changes and reset HBA Select this option to save changes and reset the adapter.

Edit Configured Port Settings Menu

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 2. Edit Configured Port Link Settings Menu

From the Port Link Configuration menu, select the **Edit Configured Port Settings Menu** option to open the Port Link Settings Menu with options to view configured port settings, change the port iSCSI alias, configure port firmware settings, restore legacy 4010 default port settings, and save changes. For example:

```
    Port Link Settings Menu

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
```

```
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=====================================================
    1:  Display Configured Port Settings
    2:  Change Port iSCSI Alias Name
    3:  Port Firmware Settings Menu
    4:  Legacy 4010 Restore Default Port Settings
    5:  Save changes and reset HBA (if necessary)
```

Display Configured Port Settings Select this option to view the configured port settings. For example:

```
-------------------------------------------------
*** Displaying ISCSI Settings inst=0 ***
Force_Negotiate_Main_iSCSI_Keys     :  off
iSCSI_Send_Markers                  :  off(*)
iSCSI_Header_Digests                :  on
iSCSI_Data_Digests                  :  on
iSCSI_Immediate_Data                :  on
iSCSI_Initial_R2T                   :  off
iSCSI_Data_Seq_In_Order             :  on(*)
iSCSI_Data_PDU_In_Order             :  on(*)
iSCSI_CHAP_Auth                     :  off(*)
iSCSI_Bidi_CHAP_Auth                :  off(*)
iSCSI_Snack                         :  off
iSCSI_Discovery_Logout              :  on
iSCSI_Strict_Login                  :  off
iSCSI_Error_Recovery_Level          :  0(*)
iSCSI_Alias                         :  chuck_iscsi_alias
*** Displaying Firmware Settings inst=0 ***
FW_Marker                           :  on(*)
FW_Stat_Alarm                       :  off(*)
FW_Accept_AEN                       :  off(*)
FW_Access_Control                   :  off(*)
FW_Session_Mode                     :  on(*)
FW_Initiator_Mode                   :  on(*)
FW_Target_Mode                      :  off(*)
FW_Fast_Posting                     :  off(*)
FW_Sense_Buffer_Desc                :  off(*)
AFW_Device_Timeouts                 :  off
AFW_Delayed_Ack                     :  on
```

```
AFW_AutoConnect                      :  off
*** Displaying Device Settings inst=0 ***
Large_Frames                         :  on
DevType                              :  0(*)
ExeThrottle                          :  0 (see Note)
FirstBurstLen                        :  256
KeepAliveTO                          :  30
DefaultTime2Retain                   :  20(*)
DefaultTime2Wait                     :  2(*)
MaxBurstLen                          :  512
MaxOutstandingR2T                    :  1
MaxRxDataSegmentLen                  :  128(*)
Port                                 :  3260(*)
IPv4TOS                              :  0
IPv4TTL                              :  64
*** Displaying Basic Settings inst=0 ***
iSCSI_Discovery_Logout               :  on
iSCSI_Strict_Login                   :  off
TCP_DHCP                             :  off
TCP_Nagle                            :  off
iSCSI_Alias                          :  chuck_iscsi_alias
IP_Address                           :  192.168.105.19
IP_Subnet_Mask                       :  255.255.255.0
IP_Gateway                           :  192.168.105.19
Secondary_DNS                        :  (*)
Secondary_IP_Address                 :  (*)
Task_Management_Timeout              :  10
ENABLE_IPV4                          :  on
ENABLE_IPV6                          :  on
LOC_LINK_AUTO                        :  on
ROUTABLE_AUTO                        :  on
LDROUTER_AUTO                        :  on
*** Displaying Advanced Settings inst=0 ***
FW_Marker                            :  on(*)
FW_Stat_Alarm                        :  off(*)
FW_Accept_AEN                        :  off(*)
FW_Access_Control                    :  off(*)
FW_Session_Mode                      :  on(*)
FW_Initiator_Mode                    :  on(*)
```

```
FW_Target_Mode                    :  off(*)
FW_Fast_Posting                   :  off(*)
FW_Sense_Buffer_Desc              :  off(*)
AFW_Device_Timeouts               :  off
AFW_Delayed_Ack                   :  on
AFW_AutoConnect                   :  off
DevType                           :  0(*)
ExeThrottle                       :  0 (see Note)
FirstBurstLen                     :  256
IP_Fragmentation                  :  on(*)
IP_ARP_Redirect                   :  off
VLAN_Enable                       :  off
VLAN_User_Priority                :  0
VLAN_ID                           :  0
IPv4_TOS_ENABLE                   :  off
Force_Negotiate_Main_iSCSI_Keys   :  off
iSCSI_Send_Markers                :  off(*)
iSCSI_Header_Digests              :  on
iSCSI_Data_Digests                :  on
iSCSI_Immediate_Data              :  on
iSCSI_Initial_R2T                 :  off
iSCSI_Data_Seq_In_Order           :  on(*)
iSCSI_Data_PDU_In_Order           :  on(*)
iSCSI_CHAP_Auth                   :  off(*)
iSCSI_Bidi_CHAP_Auth              :  off(*)
iSCSI_Error_Recovery_Level        :  0(*)
KeepAliveTO                       :  30
DefaultTime2Retain                :  20(*)
DefaultTime2Wait                  :  2(*)
MaxBurstLen                       :  512
MaxOutstandingR2T                 :  1
MaxRxDataSegmentLen               :  128(*)
Port                              :  3260(*)
TCP_Timer_Scale                   :  3(*)
TCP_Time_Stamp                    :  on
TCP_Window_Scale                  :  0
iSCSI_Name                        :
iqn.2000-04.com.qlogic:isp8214.000e1e053272.4
IPv4TOS                           :  0
IPv4TTL                           :  64
```

```
IPV6_TCP_Timer_Scale                :  3(*)
IPv6_TCP_Time_Stamp                 :  on
IPv6_TCP_Window_Scale               :  0
IPv6_VLAN_ID                        :  0
IPv6_VLAN_User_Priority             :  0
IPv6_VLAN_Enable                    :  off
IPv6_Traffic_Class                  :  0
IPv6_Hop_Limit                      :  64
IPv6_ND_Reachable_Timer             :  30000
IPv6_ND_Retransmit_Timer            :  1000
IPv6_ND_Stale_Timeout               :  600000
IPv6_DAD_Count                      :  1
IPv6_Router_Advertised_MTU          :  0(*)
IPv4_Address_State                  :  Valid(*)
IPv6_Link_Loc_Address_State         :  Valid(*)
IPv6_Address0_State                 :  Acquiring(*)
IPv6_Address1_State                 :  Acquiring(*)
IPv6_Default_Router_State           :  No router(*)
IPv6_MCast_Listnr_Disco_Enable      :  off
ACB_Version                         :  2(*)
P3P_TCP_Max_Window_Size             :  32768
AFW_Serlz_Task_Mngmt                :  off
Large_Frames                        :  on
*** Displaying IPv6 Settings inst=0 ***
ENABLE_IPV6                         :  on
LOC_LINK_AUTO                       :  on
ROUTABLE_AUTO                       :  on
LDROUTER_AUTO                       :  on
IPv6_Addr_Local_link                :  fe80::20e:1eff:fe05:3272
IPv6_Addr_Routable0                 :  ::
IPv6_Addr_Routable1                 :  ::
Default_IPv6_Router                 :  ::
IPv6_Port                           :  3260
IPv6_Gratuitious_Neighbor_Ad_Enable :  off
IPv6_Redirect_Enable                :  off
*** Displaying IPv6 TCP Settings inst=0 ***
IPv6_Nagle                          :  off
IPV6_TCP_Timer_Scale                :  3(*)
IPv6_TCP_Time_Stamp                 :  on
```

```
*** Displaying Remaining parameters inst=0 ***
ACB_Supported                        :  on(*)
Values noted with (*) are read only.
------------------------------------------------
```

NOTE

Execution Throttle does not apply to 2600 and 8300 Series Adapters and is read-only for 10GbE adapters.

Change Port iSCSI Alias Name Select this option to change the port iSCSI alias. For example:

```
Enter the value for iSCSI_Alias :
```

Port Firmware Settings Menu Select this option to open the Port Firmware Settings menu with options to view configured port settings, edit a specific port setting, configure iSCSI settings, configure firmware settings, configure device settings, configure basic settings configure advanced settings, configure IPv6 settings, configure IPv6 TCP settings, save changes, and refresh adapter data. For example:

```
    Port Firmware Settings Menu

================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
================================================
    1:  Display Configured Port Settings
    2:  Edit A Specific Port Setting
    3:  Configure ISCSI Settings
    4:  Configure Firmware Settings
    5:  Configure Device Settings
    6:  Configure Basic Settings
    7:  Configure Advanced Settings
    8:  Configure IPv6 Settings
    9:  Configure IPv6 TCP Settings
   10:  Save changes and reset HBA (if necessary)
```

```
11:  Refresh
```

- **Display Configured Port Settings**—Select this option to view configured port settings. For example:

```
-------------------------------------------
*** Displaying ISCSI Settings inst=1 ***
Force_Negotiate_Main_iSCSI_Keys     :  off
iSCSI_Send_Markers                  :  off(*)
iSCSI_Header_Digests                :  off
iSCSI_Data_Digests                  :  off
iSCSI_Immediate_Data                :  on
iSCSI_Initial_R2T                   :  off
iSCSI_Data_Seq_In_Order             :  on(*)
iSCSI_Data_PDU_In_Order             :  on(*)
iSCSI_CHAP_Auth                     :  off(*)
iSCSI_Bidi_CHAP_Auth                :  off(*)
iSCSI_Snack                         :  off
iSCSI_Discovery_Logout              :  on
iSCSI_Strict_Login                  :  off
iSCSI_Error_Recovery_Level          :  0(*)
iSCSI_Alias                         :
.
.
.
Values noted with (*) are read only.
-------------------------------------------
```

For a complete list of settings, refer to “Display Configured Port Settings” on page 371.

- **Edit A Specific Port Setting**—This option is currently not supported.
- **Configure ISCSI Settings (-n; -nh)**—Select this option to configure iSCSI settings. For more information about these settings, refer to Table 7-3 on page 147. For example:

```
Force_Negotiate_Main_iSCSI_Keys [off] :
iSCSI_Header_Digests [off] :
iSCSI_Data_Digests [off] :
iSCSI_Immediate_Data [on] :
iSCSI_Initial_R2T [off] :
iSCSI_Snack [off] :
iSCSI_Discovery_Logout [on] :
```

```
iSCSI_Strict_Login [off] :
iSCSI_Alias [] :
```

- **Configure Firmware Settings**—Select this option to configure firmware settings. For example:

```
AFW_Device_Timeouts [on] :
AFW_Delayed_Ack [off] :
AFW_AutoConnect [on] :
```

- **Configure Device Settings**—Select this option to configure device settings. For more information about these settings, refer to Table 7-3 on page 147. For example:

```
Large_Frames [off] :
ExeThrottle [0] : (see Note)
FirstBurstLen [256] :
KeepAliveTO [30] :
MaxBurstLen [512] :
MaxOutstandingR2T [1] :
IPv4TOS [0] :
IPv4TTL [64] :
```

NOTE

Execution Throttle does not apply to 2600 and 8300 Series Adapters and is read-only for 10GbE adapters.

- **Configure Basic Settings**—Select this option to configure basic settings. For more information about these settings, refer to Table 7-3 on page 147. For example:

```
iSCSI_Discovery_Logout [on] :
iSCSI_Strict_Login [off] :
TCP_DHCP [off] :
TCP_Nagle [off] :
iSCSI_Alias [] :
IP_Address [192.168.1.45] :
IP_Subnet_Mask [255.255.255.0] :
IP_Gateway [0.0.0.0] :
Task_Management_Timeout [10] :
ENABLE_IPV4 [on] :
ENABLE_IPV6 [off] :
LOC_LINK_AUTO [off] :
```

```
ROUTABLE_AUTO [off] :
LDROUTER_AUTO [off] :
```

- **Configure Advanced Settings**—Select this option to configure advanced settings. For more information about these settings, refer to Table 7-3 on page 147. For example:

```
AFW_Device_Timeouts [on] :
AFW_Delayed_Ack [off] :
AFW_AutoConnect [on] :
ExeThrottle [0] : (see Note)
FirstBurstLen [256] :
IP_ARP_Redirect [off] :
VLAN_Enable [off] :
VLAN_User_Priority [0] :
VLAN_ID [0] :
IPv4_TOS_ENABLE [off] :
Force_Negotiate_Main_iSCSI_Keys [off] :
iSCSI_Header_Digests [off] :
iSCSI_Data_Digests [off] :
iSCSI_Immediate_Data [on] :
iSCSI_Initial_R2T [off] :
KeepAliveTO [30] :
MaxBurstLen [512] :
MaxOutstandingR2T [1] :
TCP_Time_Stamp [on] :
TCP_Window_Scale [0] :
iSCSI_Name [iqn.2000-04.com.qlogic:isp8214.000E1E0495EE.5] :
IPv4TOS [0] :
IPv4TTL [64] :
IPv6_TCP_Time_Stamp [on] :
IPv6_TCP_Window_Scale [0] :
IPv6_VLAN_ID [0] :
IPv6_VLAN_User_Priority [0] :
IPv6_VLAN_Enable [off] :
IPv6_Traffic_Class [0] :
IPv6_Hop_Limit [64] (router may override) :
IPv6_ND_Reachable_Timer [30000] (router may override) :
IPv6_ND_Retransmit_Timer [1000] (router may override) :
IPv6_ND_Stale_Timeout [600000] :
IPv6_DAD_Count [1] :
```

```
IPv6_MCast_Listnr_Disco_Enable [off] :
P3P_TCP_Max_Window_Size [0] :
AFW_Serlz_Task_Mngmt [off] :
Large_Frames [off] :
```

NOTE

Execution Throttle does not apply to 2600 and 8300 Series Adapters and is read-only for 10GbE adapters.

- **Configure IPv6 Settings (-netconf)**—Select this option to configure IPv6 settings. For example:

```
ENABLE_IPV6 [on] :
LOC_LINK_AUTO [on] :
ROUTABLE_AUTO [on] :
LDROUTER_AUTO [on] :
IPv6_Port [3260] :
IPv6_Gratuitious_Neighbor_Ad_Enable [off] :
IPv6_Redirect_Enable [off] :
```

- **Configure IPv6 TCP Settings**—Select this option to configure IPv6 TCP settings. For example:

```
IPv6_Nagle [off] :
IPv6_TCP_Time_Stamp [on] :
```

- **Save changes and reset HBA**—Select this option to save changes and reset the adapter.
- **Refresh**—Select this option to refresh the adapter data.

Legacy 4010 Restore Default Port Settings Select this option to restore QLogic 4010 iSCSI Adapter default port settings. (Note that QConvergeConsole CLI does not currently support the QLogic 4010 Adapter.)

Save changes and reset HBA Select this option to save changes and reset the adapter.

Port Restore Factory Defaults (-rdh)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 3. Port Restore Factory Defaults

From the Port Link Configuration menu, select the **Port Restore Factory Defaults** option to restore port factory defaults. A **`Yes`** response restores factory default for all port parameters; a **`No`** response provides the opportunity to restore defaults for selected parameters.

BIOS/UEFI Settings Menu

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 4. BIOS/UEFI Settings Menu

From the Port Link Configuration menu, select the **BIOS/UEFI Settings Menu** option to open the BIOS/UEFI Settings Menu with options to view BIOS and UEFI information, set the BIOS and UEFI mode, set primary and secondary boot target information, clear primary and secondary boot information, set an alternative client ID, save changes, and reset the adapter. For example:

```
    BIOS/UEFI Settings Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=======================================================
    1:  Display BIOS/UEFI Information
    2:  Set BIOS/UEFI Mode
    3:  Set Primary Boot Target Information
    4:  Set Secondary Boot Target Information
    5:  Clear Primary Boot Target Information
    6:  Clear Secondary Boot Target Information
    7:  Set Alternatve Client ID
    8:  Save changes
    9:  Save changes and reset HBA (if necessary)
```

Display BIOS/UEFI Information Select this option to view the BIOS and UEFI information.

Set BIOS/UEFI Mode Select this option to set the BIOS and UEFI mode.

Set Primary Boot Target Information Select this option to set the primary boot target parameters. For example:

```
        Please Enter Selection: 3
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
```

```
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
Target ID: 6  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
Enter a Target ID:2
Enter a LUN Number[0,(default 0)]:
```

Set Secondary Boot Target Information (-sbootcode) Select this option to set the secondary boot target parameters. For example:

```
        Please Enter Selection: 4
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
Target ID: 6  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
Enter a Target ID:3
Enter a LUN Number[0,(default 0)]:
```

Clear Primary Boot Target Information (-cpbootcode) Select this option to clear the primary boot target information.

Clear Secondary Boot Target Information (-csbootcode) Select this option to clear the secondary boot target information.

Set Alternative Client ID (-sbootcodecid) Select this option to set the alternative client ID.

Save changes Select this option to save changes.

Save changes and reset HBA Select this option to save changes and reset the adapter.

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 5. Refresh

Select the **Refresh** option to refresh the adapter data.

Port IP Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 3. Port IP Settings

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Port IP Settings** option. Select a port from the port menu to open the Port IP Settings menu with options to view and configure IP settings. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

Port IP Settings

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
```

```
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=======================================================
    1:  Display Network Settings
    2:  Configure IP Settings
    3:  Save changes and reset HBA (if necessary)
    4:  Refresh
```

Display Network Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 3. Port IP Settings ▸ <port selection> ▸ 1. Display Network Settings

Select the **Display Network Settings** option to view the IPv4 or IPv6 address, gateway, and subnet mask. For example:

```
-----------------------------------------------------------------
User Defined IP Address.
IPv4 Address             : 192.168.1.45
Gateway                  : 0.0.0.0
Subnet Mask              : 255.255.255.0

IPv6 Protocol is currently disabled.
iSNS                     : Disabled.
-----------------------------------------------------------------
```

Configure IP Settings (-ipdhcp)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 3. Port IP Settings ▸ <port selection> ▸ 2. Configure IP Settings

Select the **Configure IP Settings** option to configure the IPv4 or IPv6 address, gateway, and subnet mask. For example:

```
Enable IPv4 [on] :
DHCP to obtain IPv4 Network Information: [off] :
IP_Address [192.168.1.45] :
IP_Subnet_Mask [255.255.255.0] :
IP_Gateway [0.0.0.0] :
Enable IPv6 [off] :
```

Save changes and reset HBA

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 3. Port IP Settings ▸ <port selection> ▸ 3. Save changes and reset HBA

Select the **Save changes and reset HBA** option to save changes and reset the adapter.

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 3. Port IP Settings ▸ <port selection> ▸ 4. Refresh

Select the **Refresh** option to refresh the adapter data.

Target Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Target Configuration** option. Select a port from the port menu to open the Target Configuration menu with options to manage targets. For example:

```
    Converged Network Adapter (CNA) iSCSI Configuration

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    Target Configuration

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
```

```
IPv4 Address  : 192.168.1.45
=======================================================
    1:  List Targets
    2:  Display Target Information
    3:  Bind Target
    4:  Delete Target
    5:  Configure Target Parameters
    6:  Add A Target
    7:  Disable a Target
    8:  Enable a Target
    9:  Configure Target Authentication Menu
   10:  Target Discovery Menu
   11:  List LUN information
   12:  Save Target/CHAP Changes
   13:  Refresh
```

List Targets (-dtdspa)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 1. List Targets

From the Target Configuration menu, select the **List Targets** option to view a list of target devices. For example:

```
-----------------------------------------------------------------
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT
Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT
Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
-----------------------------------------------------------------
```

Display Target Information (-t)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 2. Display Target Information

Select the **Display Target Information** option to view target device information. For example:

```
Enter a Target ID:3
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
TGT_iSCSI_Name                      :  iqn.1992-04.com.emc:cx.apm00103600607.b2
TGT_Target_ID                       :  3(*)
TGTO_Active                         :  off(*)
TGTO_Access_Granted                 :  off(*)
TGTO_Target_Entry                   :  on(*)
TGTO_Initiator_Entry                :  off(*)
TGT_RetryCount                      :  0(*)
TGT_RetryDelay                      :  0(*)
TGT_DevType                         :  0(*)
TGT_ExeThrottle                     :  0
TGT_FirstBurstLen                   :  128
TGTIPO_Fragmentation                :  on(*)
            .
            .
            .
```

Bind Target (-pb)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 3. Bind Target

Select the **Bind Target** option to bind a target device.

Delete Target

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 4. Delete Target

Select the **Delete Target** option to delete a target device. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT
Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT
Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
```

```
Enter a Target ID or "ALL":
```

Configure Target Parameters (-tc)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 5. Configure Target Parameters

Select the **Configure Target Parameters** option to configure target device parameters.

```
Enter a Target ID: 3
TGT_iSCSI_Name [] : iqn.1992-04.com.emc:cx.apm00103600607.b2
TGT_ExeThrottle [0] :
TGT_FirstBurstLen [256] :
TGTISCSIO_Force_Neg_Main_Keys [off] :
TGTISCSIO_Header_Digests [off] :
TGTISCSIO_Data_Digests [off] :
TGTISCSIO_Immediate_Data [on] :
TGTISCSIO_Initial_R2T [off] :
TGTISCSIO_CHAP_Authentication [off] :
TGTISCSIO_Bidi_CHAP_Authentication [on] :
TGTISCSIO_Snack [off] :
TGTISCSIO_Discovery_Logout [on] :
TGTISCSIO_Strict_Login [off] :
TGT_KeepAliveTimeout [30] :
TGT_DefaultTimeout [2] :
TGT_MaxBurstLen [512] :
TGT_MaxOutstandingR2T [1] :
TGT_Port [3260] :
TGTTCPO_Nagle [off] :
TGTTCPO_Timestamp [on] :
TGT_TaskManagementTimeout [10] :
TGT_InitiatorSessID [0x000e1e0495ea] :
TGT_TargetIPAddress [0.0.0.0] :
TGT_Window_Scale_Enable [on] :
TGT_Rx_Window_Scale [0] :
TGT_Type_of_Service [0] :
TGT_4022_Deleyed_ACK [off] :
```

Add A Target (-pa)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 6. Add A Target

Select the **Add A Target** option to add a target device. For example:

```
IPv6 Target? [off]:
TGT_iSCSI_Name [] :iqn.1992-04.com.emc:cx.apm00103600607.b2
TGT_Port [3260] :
TGT_TargetIPAddress [0.0.0.0] :192.168.1.11
```

Disable a Target (-pdt)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 7. Disable a Target

Select the **Disable A Target** option to disable a target device. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
Enter a Target ID:3
Target disable complete.
```

Enable a Target (-pet)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 8. Enable a Target

Select the **Enable A Target** option to enable a target device. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: No Connection
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
Enter a Target ID:3
```

```
Target enable complete.
```

Configure Target Authentication Menu

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 9. Configure Target Authentication Menu

Select the **Confirm Target Authentication Menu** option to open the Configure Target Authentication Menu with options to display the CHAP table, manage CHAP entries, save changes, and refresh adapter data. For example:

```
    Configure Target Authentication Menu

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=====================================================
    1:  Display CHAP Table
    2:  Display Targets Using CHAP Entries
    3:  Assign a CHAP Entry to a Target
    4:  Add a CHAP entry
    5:  Add a Default BIDI CHAP
    6:  Edit a CHAP entry
    7:  Delete a CHAP entry
    8:  Save changes and reset HBA (if necessary)
    9:  Refresh
```

Display CHAP Table (-dspchap) Select this option to view the CHAP table. For example:

```
-------------------------------------------------------------------
CHAP TABLE
Entry: 1
    Name: chap_target1
    Secret: q1w2e3r4t5y6
Entry: 2
    Name: chap_target2
    Secret: a1s2d3f4g5h6
Entry: 3
```

```
    Name: chap_target3
    Secret: z1x2c3v4b5n6
-----------------------------------------------------------------
```

Display Targets Using CHAP Entries (-chapmap) Select this option to view targets that are configured for CHAP. For example:

```
-----------------------------------------------------------------
Targets configured for CHAP:
Target ID: 3 IP: 192.168.1.11 Port: 3260
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    Name: chap_target3
    Secret: z1x2c3v4b5n6
-----------------------------------------------------------------
```

Assign a CHAP Entry to a Target (-linkchap) Select this option to assign a CHAP entry to a target device. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
Enter a Target ID: 3
CHAP TABLE
Entry: 1
    Name: chap_target1
    Secret: q1w2e3r4t5y6
Entry: 2
    Name: chap_target2
    Secret: a1s2d3f4g5h6
Entry: 3
    Name: chap_target3
    Secret: z1x2c3v4b5n6
CHAP Entry Number (0 for no CHAP) : 3
Do you want to have bidi authentication? [y/n]: y
```

Add a CHAP entry (-addchap) Select this option to add a CHAP entry. For example:

```
CHAPName [] :chap_target1
CHAPSecret [] :q1w2e3r4t5y6
Set CHAP as Bidi entry [off] :
```

Add a Default BIDI CHAP (-defbidi) Select this option to add a bidirectional secret to a CHAP entry. For example:

```
CHAPSecret [] :abcdefghijklmnop
```

Edit a CHAP entry (-edchap) Select this option to edit a CHAP entry.

Delete a CHAP entry (-delchap) Select this option to delete a CHAP entry. For example:

```
CHAP TABLE
Entry: 1
    Name: qlogic
    Secret: qle82xx55
Entry: 2
    Name: abcd
    Secret: 1234567890asdfghjk
    This is a BIDI Chap Entry
CHAP Entry Number : 2
```

Save changes and reset HBA Select this option to save changes and reset the adapter.

Refresh Select this option to refresh the adapter data.

Target Discovery Menu

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 10. Target Discovery Menu

Select the **Target Discovery Menu** option to open the Target Discovery Menu with options to display targets, add a send target, mark a send target for rediscovery, remove targets, log in to a target and make it persistent, duplicate targets, view and configure iSNS settings, save changes, and refresh the adapter data. For example:

```
    Target Discovery Menu

=======================================================
CNA             : 0 Port: 1
SN              : AFE1028C03899
```

```
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=====================================================
    1:  Display Send Targets
    2:  Display Discovered Targets
    3:  Add a Send Target
    4:  Mark Send Target for re-discovery
    5:  Remove a Send Target
    6:  Login and persist a discovered target
    7:  Duplicate a Persistent Target
    8:  Duplicate a Discovered Target
    9:  Remove Discovered Target
   10:  Display iSNS Settings
   11:  Configure iSNS
   12:  Save changes and reset HBA (if necessary)
   13:  Refresh
```

Display Send Targets (-stdsp) Select this option to view the persistent send target list. For example:

```
-----------------------------------------------------------------

Persistent Send Target List
-----------------------------
1. hba_no: 1   IP: 192.168.30.85
-----------------------------------------------------------------
```

Display Discovered Targets (-dtdsp) Select this option to view discovered target devices. For example:

```
-----------------------------------------------------------------
Persistent Target List
--------------------------------
1. Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2     ISID: 000e1e045242
    State: Session Active
2. Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
```

```
    Alias: 0607.a2     ISID: 000e1e045242
    State: Session Active
-----------------------------------------------------------------
```

Add a Send Target (-stadd) Select this option to add a send target. For example:

```
Do you want this new send target to be auto-login and persistent? y
IPv6 Target? [off]:
TGT_TargetIPAddress [0.0.0.0] :192.168.1.100
Does the send target require CHAP? y
CHAP TABLE
Entry: 1
    Name: chap_target1
    Secret: q1w2e3r4t5y6
Entry: 2
    Name: chap_target2
    Secret: a1s2d3f4g5h6
Entry: 3
    Name: chap_target3
    Secret: z1x2c3v4b5n6
CHAP Entry Number (0 for no CHAP) : 2
Do you want to have bidi authentication? [y/n]: y
```

Mark Send Target for re-discovery (-strd) Select this option to mark a send target for rediscovery.

Remove a Send Target (-strem) Select this option to remove a send target. For example:

```
Persistent Send Target List
-----------------------------
1. hba_no: 1   IP: 192.168.1.11
2. hba_no: 1   IP: 192.168.1.100
Enter the instance number or ALL: 2
```

Login and persist a discovered target (-dtli; -dtlia) Select this option to log in and make a discovered target persistent. For example:

```
Enter the instance number or ALL:
```

Duplicate a Persistent Target (-dtdupd) Select this option to duplicate a persistent target.

Duplicate a Discovered Target (-dtdupd) Select this option to duplicate a discovered target. For example:

```
Enter the instance number or ALL:
```

Remove Discovered Target (-dtrem; -dtrema) Select this option to remove a discovered target.

Display iSNS Settings (-isns) Select this option to view iSNS settings. For example:

```
-----------------------------------------------------------------
iSNS                     : Disabled.
-----------------------------------------------------------------
Configure iSNS
Select this option to configure iSNS. For example:
Use iSNS[off]: on
Set IPv4 or IPv6 address:
1. IPv4 Address: 0.0.0.0
2. IPv6 Address: ::
Select 1 or 2 : 1
iSNS IPv4 Address [0.0.0.0]: 10.10.10.10
iSNS Port Number [3205]:
```

Save changes and reset HBA Select this option to save changes and reset the adapter.

Refresh Select this option to refresh the adapter data.

List LUN information (-l)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 11. List LUN information

Select the **List LUN information** option to view LUN information for persistent and dynamic targets. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
No dynamic targets to display.
```

Save Target/CHAP Changes

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 12. Save Target/CHAP Changes

Select the **Save Target/CHAP Changes** option to save target and CHAP changes.

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 13. Refresh

Select the **Refresh** option to refresh the adapter data.

Boot Devices Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Boot Devices Configuration** option. Select a port from the port menu to open the BIOS/UEFI Settings menu with options to display BIOS/UEFI information, set the BIOS/UEFI mode, set primary and secondary boot target information, clear primary and secondary boot target information, set the alternative client ID, save changes, and reset the adapter. For example:

```
    BIOS/UEFI Settings Menu

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=====================================================
    1:  Display BIOS/UEFI Information
    2:  Set BIOS/UEFI Mode
    3:  Set Primary Boot Target Information
    4:  Set Secondary Boot Target Information
    5:  Clear Primary Boot Target Information
    6:  Clear Secondary Boot Target Information
    7:  Set Alternatve Client ID
    8:  Save changes
    9:  Save changes and reset HBA (if necessary)
```

Display BIOS/UEFI Information (-binfo)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 1. Display BIOS/UEFI Information

From the BIOS/UEFI Settings Menu, select the **Display BIOS/UEFI** Information option to view BIOS/UEFI information.

Set BIOS/UEFI Mode (-bootcodemode)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Set BIOS/UEFI Mode

From the BIOS/UEFI Settings Menu, select the **Set BIOS/UEFI Mode** option to set the BIOS and UEFI mode.

Set Primary Boot Target Information (-pbootcode)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 3. Set Primary Boot Target Information

From the BIOS/UEFI Settings Menu, select the **Set Primary Boot Target Information** option to set the primary boot target. For example:

```
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
Target ID: 6  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
Enter a Target ID:2
Enter a LUN Number[0,(default 0)]:
```

Set Secondary Boot Target Information

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 4. Set Secondary Boot Target Information

From the BIOS/UEFI Settings Menu, select the **Set Secondary Boot Target Information** option to set the secondary boot target. For example:

```
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
Target ID: 6  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
Enter a Target ID:3
Enter a LUN Number[0,(default 0)]:
```

Clear Primary Boot Target Information

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 5. Clear Primary Boot Target Information

From the BIOS/UEFI Settings Menu, select the **Clear Primary Boot Target Information** option to clear the primary boot target device.

Clear Secondary Boot Target Information

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 6. Clear Secondary Boot Target Information

From the BIOS/UEFI Settings Menu, select the **Clear Secondary Boot Target Information** option to clear the secondary boot target device.

Set Alternative Client ID

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 7. Set Alternative Client ID

From the BIOS/UEFI Settings Menu, select the **Set Alternative Client ID** option to set an alternative client ID.

Save changes

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 8. Save changes

From the BIOS/UEFI Settings Menu, select the **Save changes** option to save changes.

Save changes and reset HBA (if necessary)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 9. Save changes and reset HBA

From the BIOS/UEFI Settings Menu, select the **Save changes and reset HBA** option to save changes and reset the adapter.

Export (Save) Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 6. Export (Save) Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Export (Save) Configuration** option. From the port menu, select a port to open the Export (Save) Configuration menu with options to save the host configuration, import the adapter configuration, save changes, reset the adapter, and refresh the adapter information. For example:

```
    Converged Network Adapter (CNA) iSCSI Configuration

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    Export (Save) Configuration

=====================================================
```

```
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=======================================================
    1:  Save Host Configuration
    2:  Import HBA Configuration
    3:  Save changes and reset HBA (if necessary)
    4:  Refresh
```

Save Host Configuration (-save)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 6. Export (Save) Configuration ▸ <port selection> ▸ 1. Save Host Configuration

From the Export (Save) Configuration menu, select the **Save Host Configuration** option to save the host configuration. For example:

```
What is the filename you would like to save this Host to?
hostconfig
```

Import HBA Configuration (-import)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 6. Export (Save) Configuration ▸ <port selection> ▸ 2. Import HBA Configuration

From the Export (Save) Configuration menu, select the **Import HBA Configuration** option to import a host configuration. For example:

```
What is the filename you would like to get the HBA configuration
from? hostconfig
```

Save changes and reset HBA (if necessary) (-b)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 6. Export (Save) Configuration ▸ <port selection> ▸ 3. Save changes and reset HBA

From the Export (Save) Configuration menu, select the **Save changes and reset HBA** option to save changes and reset the adapter.

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 6. Export (Save) Configuration ▸ <port selection> ▸ 4. Refresh

From the Export (Save) Configuration menu, select the **Refresh** option to refresh the adapter data.

CNA NIC Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration

From the Converged Network Adapter (CNA) Protocol Type Selection menu, select the **CNA NIC Configuration** option to open the Converged Network Adapter (CNA) NIC Configuration menu with options to configure adapter aliases, port settings, VLANs, and teams. An option to export a configuration is also available. For example:

```
Converged Network Adapter (CNA) NIC Configuration

1:  Adapter Alias
2:  NIC Port Setting Configuration
3:  VLAN Configuration
4:  Team Configuration
5:  Export (Save) Configuration
```

Adapter Alias (-nh)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 1. Adapter Alias

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **Adapter Alias** option. From the port menu, select a port for which to define an adapter alias. For example:

```
    Converged Network Adapter (CNA) NIC Configuration

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
CNA_Alias [None]: Port 2
Successfully saved CNA Alias
```

NIC Port Setting Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **NIC Port Setting Configuration** option. Select a port from the port menu to open the Port Settings Menu with options to display configured port settings, configure port settings, change the port alias, change the MAC alias, and save port configuration. For example:

```
    Port Settings Menu

=======================================================
CNA           : 1 Port 1
SN            : AFE1028C03899
CNA Model     : QLE8242
CNA Desc.     : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
MPI Fw Version: 4.07.31
Physical MAC  : 00-0E-1E-04-95-E8
LAA MAC       : 00-0E-1E-04-95-E8
IPv4 Address  : 192.168.10.55
IPv6 Address  : fe80::8177:b777:e679:daf0
Link          : Up
=======================================================
    1:  Display Configured Port Settings
    2:  Configure Port Settings
    3:  Change Port Alias Name
    4:  Change MAC Alias Name
    5:  Save Port Configuration
```

Display Configured Port Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 1. Display Configured Port Settings

Select the **Display Configured Port Settings** option to view configured port settings. For example:

```
IPv4_Checksum_Offload_Enable        : RxTx
IPv4_TCP_Checksum_Offload_Enable    : RxTx
IPv6_TCP_Checksum_Offload_Enable    : RxTx
IPv4_UDP_Checksum_Offload_Enable    : RxTx
IPv6_UDP_Checksum_Offload_Enable    : RxTx
IPv4_Large_Send_Offload_v1_Enable   : on
IPv4_Large_Send_Offload_v2_Enable   : on
```

```
IPv6_Large_Send_Offload_v2_Enable    : on
Receive_Side_Scaling_Enable          : on
Jumbo_Frames_MTU_9000_Enable         : off
LOCAL_Administered_Address_MAC       : 00:0e:1e:04:95:ec
Port_Alias                           : None
Port_Wake_On_LAN_Option              : Disabled
Port_PXE_Enable                      : off
Chimney_Mode                         : CPU
Large_Receive_Offload                : on
Priority_Tagging                     : Rx Tx Enabled
Flow_Control                         : Rx Tx Enabled
Vlan_Tagging                         : on
Receive_Side_Scaling_Ring            : 2
Health_Monitoring                    : on
Max_Jumbo_Buffers                    : 4096
Receive_Buffer_Count                 : 16384
Transmit_Buffer_Count                : 1024
TCP_Connection_Offload_IPv4          : off
Completion_Queue_Size                : 16384
Interrupt_Moderation                 : off
VLAN_ID                              : 0
```

NOTE

Linux does not support the following options:

- `Receive_Side_Scaling_Enable`
- `Completion_Queue_Size`
- `Interrupt_Moderation`

Configure Port Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 2. Configure Port Settings

Select the **Configure Port Settings** option to configure port settings. For example:

```
IPv4_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
IPv4_TCP_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
IPv6_TCP_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
IPv4_UDP_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
IPv6_UDP_Checksum_Offload_Enable [RxTx]:
```

```
IPv4_Large_Send_Offload_v1_Enable (on, off)[on]:
IPv4_Large_Send_Offload_v2_Enable (on, off)[on]:
IPv6_Large_Send_Offload_v2_Enable (on, off)[on]:
Receive_Side_Scaling_Enable (on, off)[on]:
Jumbo_Frames_MTU_9000_Enable (on, off)[off]:
LOCAL_Administered_Address_MAC [00:0e:1e:04:95:ec]:
WOL available options:
 0 = Disabled,
 1 = Wake on Magic Frame,
Port_Wake_On_LAN_Option [Disabled]:
Port_PXE_Enable (on, off)[off]:
VLAN_ID (1..4094) [0]:
Large_Receive_Offload (on, off)[on]:
Priority_Tagging (off, Rx, Tx, RxTx)[Rx Tx Enabled]:
Flow_Control (off, Rx, Tx, RxTx)[Rx Tx Enabled]:
Vlan_Tagging (on, off)[on]:
Receive_Side_Scaling_Ring (1 .. 4)[2]:
Health_Monitoring (on, off)[on]:
Max_Jumbo_Buffers (1024, 2048, 4096, 8192)[4096]:
Receive_Buffer_Size (1024, 2048, 4096, 8192, 16384, 32768)[16384]:
Transmit_Buffer_Size (1024, 2048, 4096)[1024]:
Completion_Queue_Size (1024, 2048, 4096, 8192, 16384,
32768)[16384]:
Interrupt_Moderation (on, off)[off]:
```

NOTE

Linux does not support the following options:

- Receive_Side_Scaling_Enable
- Completion_Queue_Size
- Interrupt_Moderation

Change Port Alias Name (-n)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 3. Change Port Alias Name

Select the **Change Port Alias Name** option to change the port alias. For example:

```
Port_Alias [None]: Alias2
Successfully saved Port Alias
```

Change MAC Alias Name

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 4. Change MAC Alias Name

Select the **Change MAC Alias Name** option to change the port MAC alias. For example:

```
Physical MAC Address        : 00:0e:1e:04:95:ec
Enter Port_Physical_MAC_Alias [None]: alias_mac
Successfully saved MAC Alias
Active/LAA MAC Address      : 00:0e:1e:04:95:ec
Enter Port_LAA_MAC_Alias [None]: alias_laa
Successfully saved MAC Alias
```

Save Port Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 5. Save Port Configuration

Select the **Save Port Configuration** option to save the port configuration. For example:

```
Only save parameters that were modified? (yes, no) [yes]: y
About to save configured values ... Please wait ...
```

VLAN Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 3. VLAN Configuration

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **VLAN Configuration** option to open the Configure VLAN Menu with options to view the list of VLANs, view VLAN information, add a VLAN to a port or team, configure VLAN parameters, remove a VLAN from a port or team, and refresh adapter data. For example:

```
Configure VLANs Menu

1:  Display VLAN List
2:  Display VLAN Information
3:  Add VLAN to Port or Team
4:  Configure VLAN Parameters
5:  Remove VLAN from Port or Team
```

```
6:  Refresh
```

Display VLAN List (-vlanlist)

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 1. Display VLAN List

From the Configure VLANs Menu, select the **Display VLAN List** option to view the VLAN list. For example:

```
VLAN List:
CNA:  1 CNA Port:  2  VLAN ID:   300 MAC: 00:0e:1e:04:95:ec
Description: [NETSCLI-VLAN-300][VLan Team]:QLogic Teaming Virtual
Adapter #2

CNA:  1 CNA Port:  2  VLAN ID: 0(untag) MAC: 00:0e:1e:04:95:ec
Description: [Default Vlan][VLan Team]:QLogic Teaming Virtual
Adapter
```

Display VLAN Information (-vlaninfo)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 2. Display VLAN Information

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure VLANs Menu, select the **Display VLAN Information** option to view the VLAN information. For example:

```
VLAN(s) Information:
Updating VLANs info ...
Done ...
Available VLAN ID(s):
300, 0
Select VLAN ID: (or ALL) : 0

***** VLAN: 0 ([Default Vlan][VLan Team]:QLogic Teaming Virtual Adapter) *****

Driver Name     : QLogic Teaming Virtual Adapter
Driver Version  : 4.2.15.1125
```

```
Driver Date      : 11-25-2010
VLAN Enabled     : Enabled
VLAN ID          : 0
MAC Address      : 00:0e:1e:04:95:ec
MTU              : 1514
IPv4 Address     : 169.254.96.35
Subnet Mask      :
IPv6 Address     : fe80::7813:c633:a75:6023
Link Status      : Down
Updating parameters ... Plese wait ...

Configurable Properties:
========================
IFP_Jumbo_Packet_Size               : 1514
IFP_LSO_IPv4_V1                     : Enabled
IFP_LSO_IPv4_V2                     : Enabled
IFP_LSO_IPv6_V2                     : Enabled
IFP_Checksum_Offload_IPv4           : RX and TX Enabled
IFP_UDP_Checksum_Offload_IPv4       : RX and TX Enabled
IFP_TCP_Checksum_Offload_IPv4       : RX and TX Enabled
IFP_UDP_Checksum_Offload_IPv6       : RX and TX Enabled
IFP_TCP_Checksum_Offload_IPv6       : RX and TX Enabled
IFP_Large_RECV_Offload              : Enabled
IFP_RSS                             : Enabled
User_Assigned_Name                  :
```

Add VLAN to Port or Team (-vlanadd)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 3. Add VLAN to Port or Team

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Configure VLANs Menu, select the **Add VLAN to Port or Team** option to add a VLAN. For example:

```
VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:0e:1e:04:95:e8
Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
```

```
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:0e:1e:04:95:ec
Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter #2

Select one or more ListIndices from the list (1,2): 1
Enter one or more VLAN ID(s) (1..4094) : 300
About to set VLAN ID(s): for ListIndex: 1
Successfully set VLAN ID(s).
Refreshing CNA data ...

Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Reset to 1. CNA (Physical MAC=00:0e:1e:04:95:ec)
Done.
```

Configure VLAN Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 4. Configure VLAN Parameters

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Configure VLANs Menu, select the **Configure VLAN Parameters** option to configure VLAN parameters. For example:

```
VLAN(s) Information:
Updating VLANs info ...
Done ...
Available VLAN ID(s):
300, 0
Select VLAN ID : 0
Updating parameters ... Plese wait ...
IFP_Jumbo_Packet_Size (590 .. 9614)[1514]:
IFP_LSO_IPv4_V1 (0-Disabled 1-Enabled )[Enabled]:
IFP_LSO_IPv4_V2 (0-Disabled 1-Enabled )[Enabled]:
IFP_LSO_IPv6_V2 (0-Disabled 1-Enabled )[Enabled]:
IFP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and TX
Enabled )[RX and TX Enabled]:
IFP_UDP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
```

```
IFP_TCP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_TCP_Checksum_Offload_IPv6 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_UDP_Checksum_Offload_IPv6 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_Large_RECV_Offload (0-Disabled 1-Enabled )[Enabled]:
IFP_RSS (0-Disabled 1-Enabled )[Enabled]:
User_Assigned_Name []:

Save configured values? (yes, no) [yes]:
```

Remove VLAN from Port or Team (-vlandel)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 5. Remove VLAN from Port or Team

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Configure VLANs Menu, select the **Remove VLAN from Port or Team** option to remove a VLAN. For example:

```
VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  2  VLAN ID: 300,0(untag) MAC:
00:0e:1e:04:95:ec Description: QLogic Dual Port
10 Gigabit Ethernet CNA, PCIe 2.0 Adapter #2

Select ListIndex from the list (1 or ALL):
```

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 6. Refresh

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Configure VLANs Menu, select the **Refresh** option to refresh the adapter information. For example:

```
Refreshing CNA data ...
```

```
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Reset to 1. CNA (Physical MAC=00:0e:1e:04:95:ec)
Done.
```

Team Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **Team Configuration** option to open the Configure Teams Menu with options to view the teams list, view team information, configure a new team, configure team parameters, delete a team, add members to a team, delete members, set and unset the primary team member, save the VLAN and teaming configuration, restore the VLAN and teaming configuration, and refresh the adapter data. For example:

```
Configure Teams Menu

 1:  Display Teams List
 2:  Display Team Information
 3:  Allow 802.3ad Team over CNA
 4:  Configure New Team
 5:  Configure Team Parameters
 6:  Delete Team
 7:  Add Member(s) to Team
 8:  Delete Member(s) from Team
 9:  Set Primary Team Member
10:  Unset Primary Team Member
11:  Save VLAN & Teaming Configuration
12:  Restore VLAN & Teaming Configuration
13:  Refresh
```

Display Teams List (-teamlist)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 1. Display Teams List

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure Teams Menu, select the **Display Teams List** option to view the teams list. For example:

```
Team:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3 VLAN ID: None Team Type: FailOver
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Adapter"
```

Display Team Information (-teaminfo)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 2. Display Team Information

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure Teams Menu, select the **Display Team Information** option to view team information. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtu

Select Team Index (or ALL) : 1

***** Team: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3 ******

Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
Team Type       : Fail Over
Driver Name     : QLogic Teaming Virtual Adapter
Driver Version  : 4.2.15.1125
Driver Date     : 11-25-2010
VLAN Enabled    : Disabled
VLAN ID         : None
MAC Address     : 00:0e:1e:04:95:e8
```

```
MTU             : 1514
IPv4 Address    : 169.254.247.129
Subnet Mask     : 255.255.0.0
IPv6 Address    : fe80::a8af:6f72:3a1e:f781
Link Status     : Up
Primary Member  : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
Updating parameters ... Plese wait ...

Configurable Properties:
========================
IFP_Jumbo_Packet_Size               : 1514
IFP_LSO_IPv4_V1                     : Enabled
IFP_LSO_IPv4_V2                     : Enabled
IFP_LSO_IPv6_V2                     : Enabled
IFP_Checksum_Offload_IPv4           : RX and TX Enabled
IFP_UDP_Checksum_Offload_IPv4       : RX and TX Enabled
IFP_TCP_Checksum_Offload_IPv4       : RX and TX Enabled
IFP_UDP_Checksum_Offload_IPv6       : RX and TX Enabled
IFP_TCP_Checksum_Offload_IPv6       : RX and TX Enabled
IFP_Large_RECV_Offload              : Enabled
IFP_RSS                             : Enabled
User_Assigned_Name                  : Team 2
VT_MODE                             : Fail Over
Failback_Mode                       : Best available
Failback_Delay                      : 3
```

Allow 802.3ad Team over CNA (-team_allowCNAsIn8023adTeam)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 3. Allow 802.3ad Team over CNA

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Configure VLANs Menu, select the **Allow 802.3ad Team over CNA** option to override LACP. For example:

```
// to enable

    Configure Teams Menu
…
```

```
     3:  Allow 802.3ad Team over CNA
…
    13:  Refresh

         (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
         Please Enter Selection: 3
Allow 802.3ad Team over CNA (on,off) [off]: on
Successfully configured the Team Settings...

// to disable

     Configure Teams Menu
…
     3:  Allow 802.3ad Team over CNA
…
    13:  Refresh

         (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
         Please Enter Selection: 3
Allow 802.3ad Team over CNA (on,off) [on]: off
Successfully configured the Team Settings...
```

Configure New Team (-teamnew)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 4. Configure New Team

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Configure Teams Menu, select the **Configure New Team** option to configure a new team. For example:

```
Available Team Types:
    1=Failsafe Team
    2=Switch Independent Load Balancing
    3=802.3ad Static Team
    4=802.3ad Dynamic Team - Active  LACP
    5=802.3ad Dynamic Team - Passive LACP

Select Team Type [1]: 1
 2. CNA: 1 CNA Port: 1 CNA Model: QLE8242
    Mac Phys. Address: 00:0e:1e:04:95:e8 Loc. Mac: 00:0e:1e:04:95:e8
```

```
    Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
    User assigned name:
    CNA Serial Number: AFE1028C03899 Active FW Ver. : 4.07.31 Adapter Alias:
Port 2
    Port Alias: None
    Link Status: Up
    CNA Port: yes
    IPv4   Address: 192.168.10.55
    IPv6 Addresses: fe80::8177:b777:e679:daf0
Select one or more CNA Port Indices (2 or ALL) : 2
Do you want ot set primary? (yes, no) [yes]:
Member selected as Primary: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0
Adapter
Add Non-QLogic Ports as members? (yes, no) [no]:
Updating parameters ... Plese wait ...
User_Assigned_Name []: Team 2
Configure Team Parameters? (yes, no) [no]:

Attempting to create a new team:

Team Description:
Team Type: Fail Over
Selected ports : 2

CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Adapter"
                QLogic D
About to create the team. Please wait ...
Successfully created new team.
Refreshing CNA data ...

Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Reset to 1. CNA (Physical MAC=00:0e:1e:04:95:ec)
Done.
```

Configure Team Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 5. Configure Team Parameters

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure Teams Menu, select the **Configure Team Parameters** option to configure team parameters. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Updating parameters ... Plese wait ...
VT_MODE 1=Fail Over; 2=Load Balanced; 3=Static; 4=Dynamic Team-Active;
5=Dynamic Team-Passive[Fail Over]:
IFP_Jumbo_Packet_Size (590 .. 9614)[1514]:
IFP_LSO_IPv4_V1 (0-Disabled 1-Enabled )[Enabled]:
IFP_LSO_IPv4_V2 (0-Disabled 1-Enabled )[Enabled]:
IFP_LSO_IPv6_V2 (0-Disabled 1-Enabled )[Enabled]:
IFP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and TX
Enabled )[RX and TX Enabled]:
IFP_UDP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_TCP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_TCP_Checksum_Offload_IPv6 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_UDP_Checksum_Offload_IPv6 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_Large_RECV_Offload (0-Disabled 1-Enabled )[Enabled]:
IFP_RSS (0-Disabled 1-Enabled )[Enabled]:
User_Assigned_Name [Team 2]:
Failback_Mode 1=No failover; 2=Failover to preffered port; 3=Best available
[Best available]:
Failback_Delay (in milliseconds)[3]:

Save configured values? (yes, no) [yes]:
Saving modified extended values ... Please wait ... About to save team config.
Please wait ...
Successfully saved extended parameters.
```

```
Successfully saved parameters.
```

Delete Team (-teamdel)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 6. Delete Team

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure Teams Menu, select the **Delete Team** option to delete a team. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index (or ALL) : 1
About to delete Team 1 Team Description: [Default Vlan][Team 2]:QLogic Teaming
Virtual Adapter #3. Please wait
...
Successfully deleted Team: 1, Team Description: [Default Vlan][Team 2]:QLogic
Teaming Virtual Adapter #3.
Refreshing CNA data ...

Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Reset to 1. CNA (Physical MAC=00:0e:1e:04:95:ec)
Done.
```

Add Member(s) to Team

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 7. Add Member(s) to Team

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure Teams Menu, select the **Add Member(s) to Team** option to add members to a team. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Consider Non-QLogic Ports as members? (yes, no) [no]: y
Non-QLogic Ports:
-----------------
 1. Description: Broadcom NetXtreme Gigabit Ethernet #2
    Mac: 00:23:7d:5f:30:2e
    Link Status: Up
 2. Description: Broadcom NetXtreme Gigabit Ethernet
    Mac: 00:23:7d:5f:30:2f
    Link Status: Down
Select additional Port Indices (1,2 or ALL) : all
```

Delete Member(s) from Team

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 8. Delete Member(s) from Team

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Configure Teams Menu, select the **Delete Member(s) from Team** option to delete team members. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Ada
pter"
Non-QLogic Port     MAC: 00:23:7d:5f:30:2f Description: "Broadcom NetXtreme
Gigabit Ethernet"

Team Members:
 1. Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
    Mac: 00:0e:1e:04:95:e8
```

```
    Link Status: Down
 2. Description: Broadcom NetXtreme Gigabit Ethernet
    Mac: 00:23:7d:5f:30:2f
    Link Status: Down
Select Port Indices to be removed from the team (1,2) :
```

Set Primary Team Member

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 9. Set Primary Team Member

NOTE

For detailed information on support for this command, refer to “Command Support for NIC Teaming and VLAN Configuration” on page 38.

From the Configure Teams Menu, select the **Set Primary Team Member** option to set the primary team member. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3

Select Team Index : 1
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Adapter"

Current selection:
Team    : [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
Primary : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter

Team Members valiable for selection:
 2. Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
Member selected as Primary: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0
Adapter
Saving team: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
About to save team config. Please wait ...
Successfully saved extended parameters.
```

Unset Primary Team Member

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 10. Unset Primary Team Member

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure Teams Menu, select the **Unset Primary Team Member** option to unset the primary team member. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Adapter"

Current selection:
Team    : [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
Primary : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter

Clear primary? (yes, no) [yes]: y
Saving team: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
About to save team config. Please wait ...
Successfully saved extended parameters.
```

Save VLAN & Teaming Configuration (-vtsave)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 11. Save VLAN & Teaming Configuration

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure Teams Menu, select the **Save VLAN & Teaming Configuration** option to save the VLAN and teaming configuration. For example:

```
        Please Enter Selection: 10
Enter file name (or ENTER for vtstate-user.xml) :
```

Restore VLAN & Teaming Configuration (-vtrestore)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 12. Restore VLAN & Teaming Configuration

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Configure Teams Menu, select the **Restore VLAN & Teaming Configuration** option to restore the VLAN and teaming configuration. For example:

```
Enter file name (or ENTER for vtstate-user.xml) :
Proceed to restore VLAN/Teaming? (yes, no) [yes]: y
Do you want to remove existing teams before restoring from the file? (yes, no)
[yes]:
About to remove teams(s).
*** No Teams available ***
Successfully removed team(s) or no teams(s) were present.
Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
```

Refresh

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 13. Refresh

From the Configure Teams Menu, select the **Refresh** option to refresh the adapter data.

Export (Save) Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 5. Export (Save) Configuration

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **Export (Save) Configuration** option to open the Save/Restore VLAN/Teams Menu with options to save and restore the VLAN and teaming configuration. For example:

```
Save/Restore VLAN/Teams Menu

1:  Save VLAN & Teaming Configuration
2:  Restore VLAN & Teaming Configuration
```

Save VLAN & Teaming Configuration (-vtsave)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 5. Export (Save) Configuration ▸ 1. Save VLAN & Teaming Configuration

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Save/Restore VLAN/Teams Menu, select the **Save VLAN & Teaming Configuration** option to save the VLAN and teaming configuration. For example:

```
Enter file name (or ENTER for vtstate-user.cfg) :
Attempting to save TEAMs and VLANs Configuration.
Successfully saved TEAMs/VLANs
```

Restore VLAN & Teaming Configuration (-vtrestore)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 5. Export (Save) Configuration ▸ 2. Restore VLAN & Teaming Configuration

NOTE

For detailed information on support for this command, refer to "Command Support for NIC Teaming and VLAN Configuration" on page 38.

From the Save/Restore VLAN/Teams Menu, select the **Restore VLAN & Teaming Configuration** option to restore the VLAN and teaming configuration. For example:

```
Enter file name (or ENTER for vtstate-user.cfg) :
Accessing file: C:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\vtstate-user.cfg

Number of Teams: 0
----------------

Number of Ports: 0
----------------

Number of VLANS: 0
----------------

Proceed to restore VLAN/Teaming? (yes, no) [yes]: y
Attempting to restore TEAMs and VLANs if configured prior to
vtdriver update.
```

```
Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
```

Adapter Updates

3. Adapter Updates ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Update** option, and then select the adapter type (**1: Converged Network Adapter**). The CNA Adapter Update menu presents options updating Flash memory, updating parameters, and updating drivers. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

CNA Adapter Update

1:  Flash Update
2:  Parameters Update
3:  Drivers Update
4:  MPI Config Table Update
5:  FW Preload Table Update
6:  FW Serdes Table Update
7:  FCoE Mini Dump
8:  FW Mini Dump
9:  iSCSI FW Dump Options

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection:
```

Flash Update

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 1. Flash Update

From the CNA Adapter Update menu, select the **Flash Update** option to update Flash memory. From the adapter menu, select the adapter for which to update Flash memory, and then type the name of the file that contains the Flash image. For example:

```
Flash Update

 1: CNA Model: QLE8242 SN: AFE1028C03899
```

```
                    Port   1 [Protocol(s): NIC FCoE iSCSI]
                    Port   2 [Protocol(s): NIC FCoE iSCSI]

                  (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)

                    Please Enter Selection: 1
            Enter file name containing image:image_filename
```

Parameters Update

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 2. Parameters Update

From the CNA Adapter Update menu, select the **Parameters Update** option to update adapter parameters. From the port menu, select a port for which to update parameters, and then type a file name. For example:

```
Parameters Update

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)

    Please Enter Selection: 2
Enter a file name or Hit <RETURN> to abort: parameter_filename
```

Drivers Update (-d)

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 3. Drivers Update

From the CNA Adapter Update menu, select the **Drivers Update** option to update FCoE or iSCSI drivers. From the Driver Update menu, select **1** for FCoE drivers or select **2** for iSCSI drivers. For example:

```
Driver Update

1:  FCoE Driver Update
2:  iSCSI Driver Update

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
```

From the port menu, select a port for which to update drivers, and then type a file name. For example:

```
CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)

        Please Enter Selection: 2
Enter a file name or Hit <RETURN> to abort: driver_file
```

MPI Config Table Update

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 4. MPI Config Table Update

From the CNA Adapter Update menu, select the **MPI Config Table Update** option to update the MPI configuration table. From the MPI Config Table Update menu, select an adapter, and then type the MPI configuration file name. For example:

```
    MPI Config Table Update

     1: CNA Model: QLE8142 SN: RFC0926L28501
          Port   1 [Protocol(s): NIC FCoE]
          Port   2 [Protocol(s): NIC FCoE]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter a file name or Hit <RETURN> to abort:
```

Firmware Preload Table Update (-u)

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 5. FW Preload Table Update

NOTE

This option is only for blades/mezzanine adapters.

From the CNA Adapter Update menu, select the **FW Preload Table Update** option to update the adapter firmware preload table. From the HBA selection menu, select the adapter to be updated and then enter a firmware preload table file name (`.dat`). For example:

```
FW Preload Table Update

     1: CNA Model: QLE8362 SN: AFE1227F06201
          Port   1 [Protocol(s): NIC FCoE]
          Port   2 [Protocol(s): NIC FCoE]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter a file name or Hit <RETURN> to abort: fwpreload.dat
```

Firmware SerDes Table Update (-sp)

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 6. FW SerDes Table Update

NOTE

This option is only for blades/mezzanine adapters.

From the CNA Adapter Update menu, select the **FW SerDes Table Update** option to update the adapter firmware SerDes table. From the HBA selection menu, select the adapter to be updated and then enter a firmware SerDes table file name (`.dat`). For example:

```
    FW Serdes Table Update

     1: CNA Model: QLE8362 SN: AFE1227F06201
          Port   1 [Protocol(s): NIC FCoE]
          Port   2 [Protocol(s): NIC FCoE]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter a file name or Hit <RETURN> to abort: fwserdes.dat
```

FCoE Mini Dump

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 7. FCoE Mini Dump

NOTE

This option is only for 8300 Series adapters.

From the CNA Adapter Update menu, select the **FCoE Mini Dump** option to generate an FCoE mini dump. From the FC Dump menu, select the adapter to generate the dump from and then type the dump file name. For example:

```
    FC Dump

     1: CNA Model: QLE8242 SN: RFE1314H59779
          Port   1 [Protocol(s): NIC FCoE iSCSI]
          Port   2 [Protocol(s): NIC FCoE iSCSI]


        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter File Name to Save: test.bin
Retrieving adapter firmware dump, please wait...
Mini dump of adapter port 1 instance 0 - QLE8242 has been saved to
file test.bin
Mini dump of adapter port 2 instance 1 - QLE8242 has been saved to
file test.bin

        Hit <Enter> to continue:
```

FW Mini Dump

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 8. FW Mini Dump

NOTE

This option is only for 8300 Series adapters.

From the CNA Adapter Update menu, select the **FW Mini Dump** option to generate a firmware mini dump. From the FW Mini Dump menu, select the adapter to generate the dump from and then type a file name for the mini dump. For example:

```
   FW Mini Dump

     1: CNA Model: QLE8362 SN: RFE1305H31938
```

```
            Port   1 [Protocol(s): NIC FCoE iSCSI]
            Port   2 [Protocol(s): NIC FCoE iSCSI]

         (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
         Please Enter Selection: 1
Enter file name for FW Mini Dump: mini.dump
Successfully created FW minidump file: mini.dump.gz

         Hit <Enter> to continue:
```

iSCSI FW Dump Options

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 8. iSCSI FW Dump Options

From the CNA Adapter Update menu, select the **iSCSI FW Dump Options** option to open the iSCSI Adapter Diagnostics menu with options to retrieve the firmware flash and NVRAM record, retrieve the firmware core dump record, or to refresh. For example:

```
    iSCSI FW Dump Options

     1: CNA Model: QLE8362 SN: AFE1227F06201
          Port   1 [Protocol(s): NIC FCoE iSCSI]
          Port   2 [Protocol(s): NIC FCoE iSCSI]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    iSCSI Adapter Diagnostics

=====================================================
CNA                  : 0 Port: 1
SN                   : AFE1227F06201
CNA Model            : QLE8362
iSCSI Name           : iqn.2000-04.com.qlogic:isp8324.000E1E08D1D2.4
FW Version           : 5.02.18
iSCSI MacAddr        : 00:0E:1E:08:D1:D2
IPv4 Address         : 0.0.0.0
IPv6 Addr Routable1  : Not Available
IPv6 Addr Routable2  : Not Available
Ipv6 Addr Local Link : Not Available
=====================================================
    1:  Retrieve FW Flash & NVRAM Record
    2:  Retrieve FW CoreDump Record
    3:  Refresh

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection:
```

Adapter Diagnostics

4. Adapter Diagnostics ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Diagnostics** option, and then select the adapter model (**CNA Model**). The Converged Network Adapter (CNA) Diagnostics menu provides options to run tests on registers, hardware, Flash memory, interrupts, links, ports, read/write buffers, and LEDs; run the transceiver diagnostics monitoring interface (DMI); perform iSCSI adapter and port diagnostics; and view the iSCSI port logs. For example:

```
CNA Adapter Information

1: CNA Model: QLE8242 SN: AFE1028C03899
      Port   1 [Protocol(s): NIC FCoE iSCSI]
      Port   2 [Protocol(s): NIC FCoE iSCSI]

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1

Converged Network Adapter (CNA) Diagnostics

 1:  Register Test
 2:  Hardware Test
 3:  Flash Test
 4:  Interrupt Test
 5:  Link Test
 6:  Loopback Test
 7:  Read Write Buffer Test
 8:  Beacon Test
 9:  Transceiver Diagnostics Monitoring Interface (DMI)
10:  iSCSI Adapter Diagnostics
11:  iSCSI Port Diagnostics
12:  iSCSI Port Logs
```

Register Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 1. Register Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Register Test** option. From the port menu, select a port to test the register. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
```

```
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Register Test Starts ...

Test Status:               Passed  (Passed=1, Failed=0, ErrorCode=0)
Register Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Hardware Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 2. Hardware Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Hardware Test** option. From the port menu, select a port to test the hardware. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Hardware Test Starts ...

Test Status:                          Passed  (Passed=1, Failed=0, ErrorCode=0)
Hardware Test Results:
```

```
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Flash Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 3. Flash Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Flash Test** option. From the port menu, select a port to test the Flash memory. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Flash Test Starts ...
Flash Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Interrupt Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 4. Interrupt Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Interrupt Test** option. From the port menu, select a port to test the interrupts. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
```

```
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Interrupt Test Starts ...

Test Status:                          Passed  (Passed=1, Failed=0, ErrorCode=0)
Interrupt Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Link Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 5. Link Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Link Test** option. From the port menu, select a port to test the links. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Link Test Starts ...

Test Status:                          Failed  (Passed=0, Failed=1, ErrorCode=1)
Link Test Results:
  Status=Failed
  Passed=0,  Failed=1, ErrorCode=1
```

Loopback Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 6. Loopback Test

NOTE

- Currently, QConvergeConsole CLI supports only the FCoE loopback test.
- This test requires that the port has a loopback plug installed.

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Loopback Test** option. From the port menu, select a port to open the Loopback Test menu with options to test NIC, FCoE, and iSCSI functions. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
Loopback Test

1:  NIC
2:  FCoE
3:  iSCSI
```

NIC

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 6. Loopback Test ▸ <port selection> ▸ 1. NIC

This option is currently not supported.

FCoE

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 6. Loopback Test ▸ <port selection> ▸ 2. FCoE

From the Loopback Test menu, select the **FCoE** option to open a loopback test submenu with options to display test parameters, reset test parameters, configure test parameters, and start the test. For example:

```
    Loopback Test

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Start Diagnostics Test
```

Display Test Parameters

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 6. Loopback Test ▸ <port selection> ▸ 2. FCoE ▸ 1. Display Test Parameters

From the Loopback Test menu, select the **Display Test Parameters** option to view the loopback test parameters. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
--------------------
Diagnostics Settings
--------------------
Data Pattern             : Random
Data Size (Bytes)        : 8
Number of tests (1-65535): 10000
Test Increment(1-65535)  : 1
Abort On Error           : Ignore
```

```
Test Continuous          : OFF
Loopback Type            : Special Echo FCoE Loopback (252) in size
-------------------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 6. Loopback Test ▸ <port selection> ▸ 2. FCoE ▸ 2. Reset Test Parameters

From the Loopback Test menu, select the **Reset Test Parameters** option to reset the loopback test parameters to their default values. Table 11-1 lists the default loopback test values.

Table 11-1. Default Loopback Test Parameter Values

Parameter	Default Value
Data Pattern	Random
Data Size (Bytes)	8
Number of tests	10,000
Test Increment	1
Abort On Error	Ignore
Test Continuous	OFF
Loopback Type	Special Echo FCoE Loopback (252) in size

Configure Test Parameters

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 6. Loopback Test ▸ <port selection> ▸ 2. FCoE ▸ 3. Configure Test Parameters

From the Loopback Test menu, select the **Configure Test Parameters** option to open a loopback test submenu with options to configure the data patterns, data size, number of tests, test increments, error handling, and loopback type. For details about these parameters, refer to Table 6-7 on page 108. For example:

```
    Loopback Test

=========================================================
CNA           : 1 Port: 2
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EF
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
```

```
FW Version     :
WWPN           : 21-00-00-0E-1E-04-95-EF
WWNN           : 20-00-00-0E-1E-04-95-EF
Link           : SFP not installed
=====================================================
    1:  Data Patterns
    2:  Data Size
    3:  Number Of Test(s)
    4:  Test Increment(s)
    5:  Abort On Error
    6:  Loopback Type
```

Start Diagnostics Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 6. Loopback Test ▸ <port selection> ▸ 2. FCoE ▸ 4. Start Diagnostics Test

From the Loopback Test menu, select the **Start Diagnostics Test** option to start the loopback test.

iSCSI

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 6. Loopback Test ▸ <port selection> ▸ 3. iSCSI

This option is currently not supported.

Read Write Buffer Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 7. Read Write Buffer Test

NOTE

Currently, only the FCoE read/write buffer test is supported.

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Read Write Buffer Test** option. From the port menu, select a port to open the Read Write Buffer Test menu with options to test FCoE and iSCSI functions. For example:

```
 Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
```

```
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    Read Write Buffer Test

    1:  FCoE
    2:  iSCSI
```

FCoE

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE

From the Read Write Buffer Test menu, select the **FCoE** option to open a Read Write Buffer Test submenu with options to display test parameters, reset test parameters, configure test parameters, and start the test. For example:

```
Read Write Buffer Test

1:  Display Test Parameters
2:  Reset Test Parameters
3:  Configure Test Parameters
4:  Start Diagnostics Test
```

Display Test Parameters

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE ▸ 1. Display Test Parameters

From the Read Write Buffer Test menu, select the **Display Test Parameters** option to view the read/write buffer test parameters. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
--------------------
Diagnostics Settings
--------------------
Data Pattern             : Random
Data Size (Bytes)        : 8
Number of tests (1-10000): 10000
Test Increment(1-10000)  : 1
```

```
Abort On Error           : Ignore
Test Continuous          : OFF
-------------------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE ▸ 2. Reset Test Parameters

From the Read Write Buffer Test menu, select the **Reset Test Parameters** option to reset the read/write buffer test parameters to their default values. Table 11-2 lists the default read/write buffer test values.

Table 11-2. Default Read Write Buffer Test Parameter Values

Parameter	Default Value
Data Pattern	Random
Data Size (Bytes)	8
Number of tests	10,000
Test Increment	1
Abort On Error	Ignore
Test Continuous	OFF

Configure Test Parameters

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE ▸ 3. Configure Test Parameters

From the Read Write Buffer Test menu, select the **Configure Test Parameters** option to open a read/write buffer test submenu with options to configure the data patterns, data size, number of tests, test increments, error handling, and loopback type. For details about these parameters, refer to Table 6-7 on page 108. For example:

```
   Loopback Test
=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
```

```
WWPN           : 21-00-00-0E-1E-04-95-EB
WWNN           : 20-00-00-0E-1E-04-95-EB
Link           : Online
=====================================================
    1:  Data Patterns
    2:  Data Size
    3:  Number Of Test(s)
    4:  Test Increment(s)
    5:  Abort On Error
    6:  Enable/Disable Device(s)
```

Start Diagnostics Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE ▸ 4. Start Diagnostics Test

From the Read Write Buffer Test menu, select the **Start Diagnostics Test** option to start the read write buffer test.

iSCSI (-rwt)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 7. Read Write Buffer Test ▸ <port selection> ▸ 2. iSCSI

This option is currently not supported.

Beacon Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 8. Beacon Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Beacon Test** option. From the port menu, select a port on which to run the test. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
```

```
        Please Enter Selection: 2
LED Test Starts ...

Test Status:                          Passed  (Passed=1, Failed=0, ErrorCode=0)
LED Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Transceiver Diagnostics Monitoring Interface (DMI) (-dmi)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 9. Transceiver Diagnostics Monitoring Interface (DMI)

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Transceiver Diagnostics Monitoring Interface (DMI)** option. From the port menu, select a port to open the Transceiver Diagnostics Monitoring Interface (DMI) menu with options to view general and detailed DMI diagnostic information. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

Transceiver Diagnostics Monitoring Interface (DMI)

1:  General
2:  Details
```

General

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 9. Transceiver Diagnostics Monitoring Interface (DMI) ▸ <port selection> ▸ 1. General

From the Transceiver Diagnostics Monitoring Interface (DMI) menu, select the **General** option to view basic DMI diagnostic information. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
Media Information
-------------------------------------------------------------------------------
              Vendor: FINISAR CORP.
                Type: 10G Base-SR
         Part Number: FTLX8571D3BCL-QL
               Speed: 10 Gbits/Sec
            Revision: A
       Serial Number: AH208K5
QLogic SFP Installed: Yes
-------------------------------------------------------------------------------
                 Temperature   Voltage     Tx Bias    Tx Power    Rx Power
                     (C)         (V)         (mA)       (mW)        (mW)
               -------------   -------     -------    --------    --------
        Value      36.45         3.36        8.31      0.6040      0.6625
       Status     Normal       Normal      Normal      Normal      Normal
   High Alarm      78.00         3.70       11.78      0.8318      1.0000
 High Warning      73.00         3.60       10.80      0.6607      0.7943
  Low Warning      -8.00         3.00        5.00      0.3162      0.0158
    Low Alarm     -13.00         2.90        4.00      0.2512      0.0100
```

Details

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 9. Transceiver Diagnostics Monitoring Interface (DMI) ▸ <port selection> ▸ 2. Details

From the Transceiver Diagnostics Monitoring Interface (DMI) menu, select the **Details** option to view detailed DMI diagnostic information. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
Optical Transceiver Digital Diagnostic Data:
```

```
Address A0
           Identifier: SFP
      Ext. Identifier: GBIC/SFP defined by serial ID only
            Connector: LC
       Ethernet Speed: 10 Gbits/Sec
           Compliance: 0x00 0x00 0x00
       FC Link Length:
  FC Transmitter Tech:
FC Transmission Media:
              FC Speed:
              Encoding: Reserved
          BR, Nominal: 0x67
    Length (9um) - km: 0x00
         Length (9um): 0x00
        Length (50um): 0x08
      Length (62.5um): 0x03
      Length (Copper): 0x00
          Vendor name: FINISAR CORP.
           Vendor OUI: 0x00 0x90 0x65
            Vendor PN: FTLX8571D3BCL-QL
           Vendor Rev: A
          Wave Length: 0x0352
              CC_BASE: 0xb2
            .
            .
            .
```

iSCSI Adapter Diagnostics (-dumpnvram)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 10. iSCSI Adapter Diagnostics

From the Converged Network Adapter (CNA) Diagnostics menu, select the **iSCSI Adapter Diagnostics** option. From the port menu, select a port to open the iSCSI Adapter Diagnostics menu with options to retrieve firmware Flash and NVRAM records to a file. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
```

```
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    iSCSI Adapter Diagnostics

=====================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=====================================================
    1:  Retrieve FW Flash & NVRAM Record

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
What is the filename you would like to save this Host NVRAM to? nvram100
File successfully created.
```

iSCSI Port Diagnostics

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 11. iSCSI Port Diagnostics

From the Converged Network Adapter (CNA) Diagnostics menu, select the **iSCSI Port Diagnostics** option. From the port menu, select a port to open the iSCSI Port Diagnostics menu with options to ping the target device and test the read write buffer. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
```

```
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    iSCSI Port Diagnostics

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=======================================================
    1:  Ping Target
    2:  Perform Read/Write Buffer Test
```

Ping Target (-ping)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 11. iSCSI Port Diagnostics ▸ <port selection> ▸ 1. Ping Target

From the iSCSI Port Diagnostics menu, select **Ping Target** option to ping a target device. Specify the target IP address, the number of ping attempts, and the packet size. For example:

```
Enter an IP Address:192.168.1.11
Enter the number of PING attempts to make:3
Enter the packet size in bytes for the PING [32]:
Ping to 192.168.1.11 successful (1 of 3).
Ping to 192.168.1.11 successful (2 of 3).
Ping to 192.168.1.11 successful (3 of 3).
```

Perform Read/Write Buffer Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 11. iSCSI Port Diagnostics ▸ <port selection> ▸ 2. Perform Read/Write Buffer Test

From the iSCSI Port Diagnostics menu, select the **Perform Read/Write Buffer Test** option to test the read write buffer. Specify the number of tests, the data pattern, and the error handling. For example:

```
The Read/Write Buffer Diagnostics require that the adapter have
```

```
no outstanding I/O operations.  Please make sure there is no active
I/O before starting the diagnostic.
Do you wish to proceed? y
Number of Read/Write tests to perform: 5
(1) 8 byte pattern of 0x55 (0101 0101)
(2) 8 byte pattern of 0x5A (0101 1010)
(3) 16 byte pattern of 0xAA (1010 1010)
(4) 16 byte pattern of 0xFF (1111 1111)
Data Pattern to use: 1
Stop on error[Y]? y
```

iSCSI Port Logs

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs

From the Converged Network Adapter (CNA) Diagnostics menu, select the **iSCSI Port Logs** option. From the port menu, select a port to open the iSCSI Port Logs menu with options to view the address resolution protocol (ARP) table, view the connection error log, export the connection error log, view the neighbor cache, view the default router list, view the local prefix list, and refresh the adapter information. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
iSCSI Port Logs

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
```

```
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=======================================================
    1:  Display ARP Table
    2:  Display Connection Error Log
    3:  Export Connection Error Log
    4:  Display Neighbor Cache (IPv6)
    5:  Display Destination Cache (IPv6)
    6:  Display Default Router List (IPv6)
    7:  Display Local Prefix List (IPv6)
    8:  Refresh
```

Display ARP Table (-arp)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs ▸ <port selection> ▸ 1. Display ARP Table

From the iSCSI Port Logs menu, select the **Display ARP Table** option to view the ARP table. For example:

```
ARP Table Entry number 0
------------------------------
        IPAddress = 192.168.1.11
        MAC Address = 00-60-16-32-3E-7E
```

Display Connection Error Log (-dce)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs ▸ <port selection> ▸ 2. Display Connection Error Log

From the iSCSI Port Logs menu, select the **Display Connection Error Log** option to view the connection error log. For example:

```
inst 0 Number of entries = 0x2 (2)
======================
inst 0 Entry Index: 0
======================
Delta Time (in seconds)  : 0.000
Timestamp (or seconds)   : Thu Feb 03, 2011 04:36:48 AM
Target ID                : 2
Original State           : Connection free (0x21)
Entry Type               : Close cause (0x1)
Error Type               : Unable to connect to target. (0x4)
Detail Code              : Invalid remote IP address. (0xb)
Number Consecutive Errors: 1
```

```
=======================
inst 0 Entry Index: 1
=======================
Delta Time (in seconds)  : 0.582
Timestamp (or seconds)   : Thu Feb 03, 2011 04:36:48 AM
Target ID                : 3
Original State           : Connection free (0x21)
Entry Type               : Close cause (0x1)
Error Type               : Unable to connect to target. (0x4)
Detail Code              : Invalid remote IP address. (0xb)
Number Consecutive Errors: 1
inst 0 Number of displayed entries (for all target IDs) = 0x2 (2)
inst 0 Elapsed 1329701 second(s) since last entry (15 days 9 hours 21 minutes
41 seconds) as of Fri Feb 18, 2011 01:58:29 PM
```

Export Connection Error Log

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs ▸ <port selection> ▸ 3. Export Connection Error Log

From the iSCSI Port Logs menu, select the **Export Connection Error Log** option to export the connection error log to a file. For example:

```
Enter the filename to save the connection error log to:log100
inst 0 Number of entries = 0x2 (2)
inst 0 Number of displayed entries (for all target IDs) = 0x2 (2)
inst 0 Elapsed 1331172 second(s) since last entry (15 days 9 hours
46 minutes 12 seconds) as of Fri Feb 18, 2011 02:04:52 PM
```

Display Neighbor Cache (IPv6) (-nc)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs ▸ <port selection> ▸ 4. Display Neighbor Cache (IPv6)

From the iSCSI Port Logs menu, select the **Display Neighbor Cache (IPV6)** option to view neighbor cache information.

Display Destination Cache (IPv6) (-dc)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs ▸ <port selection> ▸ 5. Display Destination Cache (IPv6)

From the iSCSI Port Logs menu, select the **Display Destination Cache (IPV6)** option to view destination cache information.

Display Default Router List (IPv6) (-dr)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs ▸ <port selection> ▸ 6. Display Default Router List (IPv6)

From the iSCSI Port Logs menu, select the **Display Default Router List (IPV6)** option to view the router list.

Display Local Prefix List (IPv6) (-lp)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs ▸ <port selection> ▸ 7. Display Local Prefix List (IPv6)

From the iSCSI Port Logs menu, select the **Display Local Prefix List (IPV6)** option to view the router list.

Refresh

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ <adapter selection> ▸ 12. iSCSI Port Logs ▸ <port selection> ▸ 8. Refresh

From the iSCSI Port Logs menu, select the **Refresh** option to refresh (reload) the adapters and adapter port indexes.

Adapter Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Statistics** option, and then select the adapter type (**Converged Network Adapter** or **Fibre Channel Adapter**) to open the Converged Network Adapter (CNA) Statistics menu with options for viewing NIC port statistics, FCoE port statistics, FCoE port link status, and iSCSI port statistics. Options are also available to reset NIC and iSCSI statistics. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) Statistics

1:  Display NIC Port Statistics
2:  Reset NIC Statistics
3:  Undo Reset NIC Statistics
4:  Display FCoE Port Statistics
5:  Display FCoE Port Link Status
6:  Display iSCSI HBA Level Statistics
7:  Reset iSCSI HBA Level Statistics
8:  Display iSCSI Port Statistics
9:  Reset iSCSI Port Statistics
```

Display NIC Port Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 1. Display NIC Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display NIC Port Statistics** option. From the port menu, select a port for which to view Ethernet port statistics. For example:

```
CNA Model QLE8242 SN: AFE1028C03899
   1. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
   2. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
```

```
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Ethernet Port Statistics:

txPkts                  : 0
txOctets                : 0
txMulticastPkts         : 0
txBroadcastPkts         : 0
txUnicastPkts           : 0
txControlPkts           : 0
txPausePkts             : 0
txPkts64Octets          : 0
txPkts65to127Octets     : 0
txPkts128to255Octets    : 0
txPkts256to511Octets    : 0
txPkts512to1023Octets   : 0
txPkts1024to1518Octets  : 0
txPkts1519toMaxOctets   : 0
txUndersizePkts         : 0
txOversizePkts          : 0
rxOctets                : 0
rxPkts                  : 0
rxBroadcastPkts         : 0
.
.
.
```

Reset NIC Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 2. Reset NIC Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Reset NIC Statistics** option. From the port menu, select a port for which to reset the Ethernet port statistics counters to zero. For example:

```
    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
```

```
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Ethernet Statistics for the current port are reset
```

Undo Reset NIC Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 3. Undo Reset NIC Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Undo Reset NIC Statistics** option. From the port menu, select a port for which to restore the Ethernet port statistics counters to their previous values. For example:

```
    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2
Statistics for the current port are reset - UNDONE
```

Display FCoE Port Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 4. Display FCoE Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display FCoE Port Statistics** option. From the port menu, select a port to open the HBA Statistics Menu with options to view adapter status logging parameters, to reset logging parameters, to configure status logging parameters, and to view status information. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
```

```
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    HBA Statistics Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Display HBA Statistics
```

Display Test Parameters (-gs)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 4. Display FCoE Port Statistics ▸ <port selection> ▸ 1. Display Test Parameters

From the HBA Statistics menu, select the **Display Test Parameters** option to view status logging parameters. For example:

```
---------------------------------------
HBA Port Statistics Settings
---------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
```

Reset Test Parameters

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 4. Display FCoE Port Statistics ▸ <port selection> ▸ 2. Reset Test Parameters

From the HBA Statistics menu, select the **Reset Test Parameters** option to reset the status logging parameters to their default values.

Configure Test Parameters (-gs)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 4. Display FCoE Port Statistics ▸ <port selection> ▸ 3. Configure Test Parameters

From the HBA Statistics menu, select the **Configure Test Parameters** option to open the Configure Test Parameters Menu with options to specify the polling method, the polling rate, and the name of the log file. For details about these parameters, see Table 6-6. For example:

```
    Configure Test Parameters Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=======================================================
    1:  Auto Poll
    2:  Set Rate
    3:  Set Log File
```

Display HBA Statistics (-gs)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 4. Display FCoE Port Statistics ▸ <port selection> ▸ 4. Display HBA Statistics

From the HBA Statistics menu, select the **Display HBA Statistics** option to view FCoE port statistics and save it to the log file. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 00-00-00
-------------------------------------------------------------------------------
HBA Port Statistics
-------------------------------------
```

```
General keyboard shortcuts:
      R     - Reset all counters
      ENTER - Cancel the current task
----------------------------------------
HBA Port Errors Device Errors Reset I/O Count  IOPS  BPS         Time
--- ----------- ------------- ----- ---------- ----- ---------- -----------
  1           0             0     0          0     0          0 08:13:04 AM
  0           0             0     0          0     0          0 10:34:53 AM
```

NOTE

The `Reset` statistic applies only to Fibre Channel adapters, not to Converged Network Adapters.

Display FCoE Port Link Status

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 5. Display FCoE Port Link Status

From the Converged Network Adapter (CNA) Statistics menu, select the **Display FCoE Port Link Status** option. From the port menu, select a port to open the Link Statistics Menu with options to view link logging parameters, reset link logging parameters, configure link logging parameters, and view link statistics. For example:

```
    Converged Network Adapter (CNA) Diagnostics

    CNA Model QLE8242 SN: AFE1028C03899
       1. Port  1 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:E8
          WWPN: 21-00-00-0E-1E-04-95-EB
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
       2. Port  2 [Protocol(s): NIC iSCSI FCoE]
          MAC Address: 00:0E:1E:04:95:EC
          WWPN: 21-00-00-0E-1E-04-95-EF
          Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    Link Statistics Menu

=======================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
```

```
CNA Model      : QLE8242
CNA Desc.      : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version     :
WWPN           : 21-00-00-0E-1E-04-95-EB
WWNN           : 20-00-00-0E-1E-04-95-EB
Link           : Online
=====================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Display Link Statistics
```

Display Test Parameters

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 5. Display FCoE Port Link Status ▸ <port selection> ▸ 1. Display Test Parameters

From the Link Statistics Menu, select the **Display Test Parameters** option to view link status logging parameters. For example:

```
-------------------------------------
Link Status Settings
-------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
```

Reset Test Parameters

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 5. Display FCoE Port Link Status ▸ <port selection> ▸ 2. Reset Test Parameters

From the Link Statistics Menu, select the **Reset Test Parameters** option to reset the link status logging parameters to their default values.

Configure Test Parameters (-ls)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 5. Display FCoE Port Link Status ▸ <port selection> ▸ 3. Configure Test Parameters

From the Link Statistics Menu, select the **Configure Test Parameters** option to open the Link Statistics submenu with options to specify the polling method, the polling rate, and the name of the log file. For details about these parameters, see Table 6-9 on page 110. For example:

```
    Configure Test Parameters Menu

=====================================================
```

```
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=====================================================
    1:  Auto Poll
    2:  Set Rate
    3:  Set Log File
```

Display Link Statistics (-ls)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 5. Display FCoE Port Link Status ▸ <port selection> ▸ 4. Display Link Statistics

From the Link Statistics Menu, select the **Display Link Statistics** option to view link status information and save it to the log file.

```
--------------------------------------
Link Status Settings
--------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 00-00-00
-------------------------------------------------------------------------------
Link Status
-----------------------------------------
General keyboard shortcuts:
      R     - Reset current
      C     - Refresh current
      T     - Refresh total
      ENTER - Cancel the current task
-----------------------------------------
Port Name                      Link         VirtLink  Symbol      Frame
                               Failure      Failure   Error       Check
------------------------------ ------------ --------- ----------- -----------
```

```
Port(21-00-00-0E-1E-04-95-EB)              0          0            0            0
```

Display iSCSI HBA Level Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 6. Display iSCSI HBA Level Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display iSCSI HBA Level Statistics** option. Then, select an adapter to display its iSCSI HBA level statistics. For example:

```
    Converged Network Adapter (CNA) Statistics

    1:  Display iSCSI HBA Level Statistics
    2:  Reset iSCSI HBA Level Statistics
    3:  Display iSCSI Port Statistics
    4:  Reset iSCSI Port Statistics

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Converged Network Adapter (CNA) Statistics

     1: CNA Model: QLE8242  SN: AS41030C04281
          Port   1 [Protocol(s): iSCSI]
          Port   2 [Protocol(s): iSCSI]

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
ECCErrorCorrectionCount    : 0

        Hit <Enter> to continue:
```

Reset iSCSI HBA Level Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 7. Reset iSCSI HBA Level Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Reset iSCSI HBA Level Statistics** option. From the Converged Network Adapter (CNA) Statistics menu, select the adapter whose statistics counters are to be reset. For example:

```
    Converged Network Adapter (CNA) Statistics

    1:  Display NIC Port Statistics
    2:  Reset NIC Statistics
```

```
                3:  Undo Reset NIC Statistics
                4:  Display FCoE Port Statistics
                5:  Display FCoE Port Link Status
                6:  Display iSCSI HBA Level Statistics
                7:  Reset iSCSI HBA Level Statistics
                8:  Display iSCSI Port Statistics
                9:  Reset iSCSI Port Statistics

                    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
                    Please Enter Selection: 7

                Converged Network Adapter (CNA) Statistics

                 1: CNA Model: QLE8362 SN: AFE1227F06201
                       Port   1 [Protocol(s): NIC FCoE iSCSI]
                       Port   2 [Protocol(s): NIC FCoE iSCSI]

                    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
                    Please Enter Selection: 1
            Reset HBA statistics counters complete.

                    Hit <Enter> to continue:
```

Display iSCSI Port Statistics (-stat)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 8. Display iSCSI Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display iSCSI Port Statistics** option. From the port menu, select a port to open the Link Statistics Menu with options to view link logging parameters, reset link logging parameters, configure link logging parameters, and view link statistics. For example:

```
    Converged Network Adapter (CNA) Statistics

    CNA Model QLE8242  SN: AS41030C04281
       1. Port   1 [Protocol(s): iSCSI]
          iSCSI Port Name: iqn.2000-04.com.qlogic:isp8214.78E7D1F40852.4 Link
Up
       2. Port   2 [Protocol(s): iSCSI]
          iSCSI Port Name: iqn.2000-04.com.qlogic:isp8214.78E7D1F40856.5 Link
Down

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
--------------------------------------------------------------------------------
```

```
MACTxFramesCount           : 5
MACTxBytesCount            : 380
MACTxMulticast             : 3
MACTxBroadcast             : 0
MACTxPauseFrames           : 0
MACTxControlFrames         : 0
MACTxDeferrals             : 0
MACTxExcessDeferrals       : 0
MACTxLateCollisions        : 0
MACTxAborts                : 0
MACTxSingleCollisions      : 0
MACTxMultipleCollisions    : 0
MACTxCollisions            : 0
MACTxFramesDropped         : 0
MACTxJumboFrames           : 0
MACRxFramesCount           : 4
MACRxBytesCount            : 380
MACRxUnknownControlFrames  : 0
MACRxPauseFrames           : 0
MACRxControlFrames         : 0
MACRxDribble               : 0
MACRxFrameLengthError      : 0
MACRxJabber                : 0
MACRxCarrierSenseError     : 0
MACRxFramesDiscarded       : 0
MACRxFramesDropped         : 0
MACRxMulticast             : 0
MACRxBroadcast             : 0
MACCRCErrorCount           : 0
MACEncodingErrorCount      : 0
MACRxLengthErrorCountLarge : 0
MACRxLengthErrorCountSmall : 0
IPTxPacketsCount           : 4
IPTxBytesCount             : 192
IPTxFragmentsCount         : 0
IPRxPacketsCount           : 1
IPRxBytesCount             : 82
IPRxFragmentsCount         : 0
IPDatagramReassemblyCount  : 0
```

```
IPInvalidAddrErrorCount    : 0
IPRxPacketErrorCount       : 0
IPRxFragmentOverlapCount   : 0
IPRxFragmentOutOfOrderCount: 0
IPFragmentReassemblyTimeout: 0
IPv6TxPacketCount          : 0
IPv6TxByteCount            : 0
IPv6TxFragmentCount        : 0
IPv6RxPacketCount          : 0
IPv6RxByteCount            : 0
IPv6RxFragmentCount        : 0
IPv6DatagramReassembly     : 0
IPv6InvalidAddressError    : 0
IPv6ErrorPacketCount       : 0
IPv6FragRxOverlapCount     : 0
IPv6FragRxOutOfOrderCount  : 0
IPv6DatagramReassemblyTO   : 0
TCPTxSegmentsCount         : 4
TCPTxBytesCount            : 48
TCPRxSegmentsCount         : 1
TCPRxBytesCount            : 48
TCPDuplicateACKRetrans     : 0
TCPRetransTimerExpiredCount: 1
TCPRxDuplicateACKCount     : 0
TCPRxPureACKCount          : 0
TCPTxDelayedACKCount       : 1
TCPTxPureACKCount          : 1
TCPRxSegmentErrorCount     : 0
TCPRxSegmentOutOfOrderCount: 0
TCPRxWindowProbeCount      : 0
TCPRxWindowUpdateCount     : 1
TCPTxWindProbePersistCount : 0
iSCSITxPDUCount            : 1
iSCSITxBytesCount          : 0
iSCSIRxPDUCount            : 1
iSCSIRxBytesCount          : 0
iSCSICompleteIOsCount      : 0
iSCSIUnexpectedIORxCount   : 0
iSCSIFormatErrorCount      : 0
```

```
iSCSIHeaderDigestCount     : 0
iSCSIDataDigestErrorCount  : 0
iSCSISeqErrorCount         : 0
-------------------------------------------------------------------------------

        Hit <Enter> to continue:
```

Reset iSCSI Port Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 9. Reset iSCSI Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Reset iSCSI Port Statistics** option. From the port menu, select a port for which to reset the status logging parameters to their default values.

NIC Partitioning (NPAR) Information

6. NIC Partitioning (NPAR) Information

NOTE

- SR-IOV and NPAR cannot be enabled at the same time. If SR-IOV is enabled on the host, all NPAR-related commands are disabled.
- The NIC Partitioning Information option does not apply to HP adapters.
- For non-HP adapters, the NIC Partitioning Information option appears only if NPAR has been enabled using the NIC Partitioning Configuration option.

From the main menu, select the **NIC Partitioning (NPAR) Information** option to open a menu with options to view NPAR adapter information and NPAR port information. For example:

```
Select an NPAR Information Type

1:  NPAR Adapter Information
2:  NPAR Port Information
```

NPAR Adapter Information (-ainfo)

6. NIC Partitioning (NPAR) Information ▸ 1. NPAR Adapter Information

Select the **NPAR Adapter Information** option, and then select the port for which to view NPAR adapter information. Select a function from the NIC Partitioning (NPAR) Information menu. For example:

```
NIC Partitioning (NPAR) Adapter Configuration Selection
```

```
 1: CNA Model: QLE8242 SN: AFE1020C03263
      Port   1
           Function   2 [Protocol: NIC]
           Function   4 [Protocol: iSCSI]
           Function   6 [Protocol: NIC]
      Port   2
           Function   1 [Protocol: NIC]
           Function   5 [Protocol: iSCSI]
           Function   7 [Protocol: FCoE]

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

NIC Partitioning (NPAR) Information

1:  Function: 0 MAC: 00:0E:1E:04:84:F8 Type: NIC
2:  Function: 1 MAC: 00:0E:1E:04:84:FC Type: NIC
3:  Function: 2 MAC: 00:0E:1E:04:84:F9 Type: NIC
4:  Function: 4 MAC: 00:0E:1E:04:84:FA Type: iSCSI
5:  Function: 5 MAC: 00:0E:1E:04:84:FE Type: iSCSI
6:  Function: 6 MAC: 00:0E:1E:04:84:FB Type: NIC
7:  Function: 7 MAC: 00:0E:1E:04:84:FF Type: FCoE
8:  View all PCI Functions Information

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    General information
    -------------------
    Function Id          : 0
    Function Type        : NIC
    Minimum bandwidth (): 1
    Maximum bandwidth (): 100
    Physical Port Number : 1
    MAC Address          : 00:0E:1E:04:84:F8
```

NPAR Port Information (-pinfo)

6. NIC Partitioning (NPAR) Information ▸ 1. NPAR Adapter Information

Select the **NPAR Port Information** option, and then select the port for which to view NPAR port information. Select a function from the NIC Partitioning (NPAR) Information menu. For example:

```
    Select a port to view NPAR port information

    CNA Model QLE8242 SN: AFE1020C03263
      1. Port   1
           Function   2 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:F9]
           Function   4 [Type: iSCSI] [iSCSI Name:
iqn.2000-04.com.qlogic:isp...]
           Function   6 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:FB]
      2. Port   2
           Function   1 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:FC]
           Function   5 [Type: iSCSI] [iSCSI Name:
iqn.2000-04.com.qlogic:isp...]
          Function   7 [Type: FCoE ] [WWPN: 21-00-00-0E-1E-04-84-FF] SFP not...

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

    NIC Partitioning (NPAR) Information

    1:  Function: 0 MAC: 00:0E:1E:04:84:F8 Type: NIC
    2:  Function: 2 MAC: 00:0E:1E:04:84:F9 Type: NIC
    3:  Function: 4 MAC: 00:0E:1E:04:84:FA Type: iSCSI
    4:  Function: 6 MAC: 00:0E:1E:04:84:FB Type: NIC
    5:  View all PCI Functions Information

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

        General information
        -------------------
        Function Id          : 0
        Function Type        : NIC
        Minimum bandwidth () : 1
        Maximum bandwidth () : 100
        Physical Port Number : 1
        MAC Address          : 00:0E:1E:04:84:F8
```

NIC Partitioning (NPAR) Configuration

7. NIC Partitioning (NPAR) Configuration ▸ 1. NPAR Configuration

NOTE

- SR-IOV and NPAR cannot be enabled at the same time. If SR-IOV is enabled on the host, all NPAR-related commands are disabled.
- The NIC Partitioning Configuration option does not apply to HP adapters.
- For non-HP adapters, the NIC Partitioning Configuration option is always displayed in the Main Menu.

From the main menu, select the **NIC Partitioning (NPAR) Configuration** option. Select the configuration type (**NPAR Configuration**) to open the NIC Partitioning (NPAR) Configuration menu with options to configure bandwidth and to change peripheral component interface (PCI) function personality (see the Glossary for a definition of *personality*). For example:

```
NIC Partitioning (NPAR) Configuration Selection

1:  NPAR Configuration
2:  ESwitch Configuration

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

NIC Partitioning (NPAR) Configuration

1:  Bandwidth Configuration
2:  Change PCI Function Personality
```

Bandwidth Configuration

7. NIC Partitioning (NPAR) Configuration ▸ 1. NPAR Configuration ▸ <adapter selection> ▸ 1. Bandwidth Configuration

From the NIC Partitioning (NPAR) Configuration menu, select the **Bandwidth Configuration** option. From the adapter menu, select the adapter on which to configure bandwidth. Select a function to open the NIC Partitioning (NPAR) Bandwidth Type Selection menu with options to specify the minimum and maximum bandwidth. For example:

```
NIC Partitioning (NPAR) Port Configuration Selection

CNA Model QLE8242 SN: AFE1020C03263
  1. Port   1
       Function   2 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:F9]
```

```
        Function   4 [Type: iSCSI] [iSCSI Name: iqn.2000-04.com.qlogic:isp . . .]
         Function   6 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:FB]

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 1

   NIC Partitioning (NPAR) Bandwidth Configuration Selection

   1:  Function: 0 Mac: 00:0E:1E:04:84:F8 Type: NIC
       [Min Bandwidth : 1] [Max Bandwidth : 100]

   2:  Function: 2 Mac: 00:0E:1E:04:84:F9 Type: NIC
       [Min Bandwidth : 1] [Max Bandwidth : 100]

   3:  Function: 6 Mac: 00:0E:1E:04:84:FB Type: NIC
       [Min Bandwidth : 1] [Max Bandwidth : 100]

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection:1

   NIC Partitioning (NPAR) Bandwidth Type Selection

   1:  Modify Minimum Bandwidth
   2:  Modify Maximum Bandwidth
```

Modify Minimum Bandwidth (-setminbw)

7. NIC Partitioning (NPAR) Configuration ▸ 1. NPAR Configuration ▸ <adapter selection> ▸ 1. Bandwidth Configuration ▸ 1. Modify Minimum Bandwidth

From the NIC Partitioning (NPAR) Bandwidth Type Selection menu, select the **Modify Minimum Bandwidth** option to specify the minimum bandwidth. For example:

```
Enter the Minimum Bandwidth value [0-98], press <Enter> to cancel: 10
```

Modify Maximum Bandwidth (-setmaxbw)

7. NIC Partitioning (NPAR) Configuration ▸ 1. NPAR Configuration ▸ <adapter selection> ▸ 1. Bandwidth Configuration ▸ 2. Modify Maximum Bandwidth

From the NIC Partitioning (NPAR) Bandwidth Type Selection menu, select the **Modify Maximum Bandwidth** option to specify the maximum bandwidth. For example:

```
Enter the Maximum Bandwidth value [1-100], press <Enter> to cancel: 90
```

Change PCI Function Personality (-changepersonality)

7. NIC Partitioning (NPAR) Configuration ▸ 1. NPAR Configuration ▸ <adapter selection> ▸ 2. Change PCI Function Personality

From the NIC Partitioning (NPAR) Configuration menu, select the **Change PCI Function Personality** option. From the NIC Partitioning (NPAR) Port Configuration menu, select the port on which to configure PCI function personality (see the Glossary for a definition of *personality*). From the NIC Partitioning (NPAR) PCI Function Configuration Selection menu, select a PCI function, and then select a new personality for the PCI function. For example:

```
NIC Partitioning (NPAR) Port Configuration Selection

CNA Model QLE8242 SN: AFE1020C03263
  1. Port   1
     Function   2 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:F9]
     Function   4 [Type: iSCSI] [iSCSI Name: iqn.2000-04.com.qlogic:isp ...]
     Function   6 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:FB]
  2. Port   2
     Function   1 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:FC]
     Function   5 [Type: iSCSI] [iSCSI Name: iqn.2000-04.com.qlogic:isp...]
     Function   7 [Type: FCoE ] [WWPN: 21-00-00-0E-1E-04-84-FF] SFP not ...

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

NIC Partitioning (NPAR) PCI Function Configuration Selection

1:  Function: 3 MAC: 00:0E:1E:04:84:FD Type: Disabled
2:  Function: 5 MAC: 00:0E:1E:04:84:FE Type: iSCSI
3:  Function: 7 MAC: 00:0E:1E:04:84:FF Type: FCoE

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 3
   Currently PCI function 7 is configured for FCoE personality type.
  Select the personality type you want to change it to (0=Disable; 5=Cancel):
```

ESwitch Configuration

7. NIC Partitioning (NPAR) Configuration ▸ 2. ESwitch ▸ <port selection>

From the NIC Partitioning (NPAR) Configuration menu, select the **ESwitch Configuration** option. From the port selection menu, select the port on which to configure the eSwitch. The eSwitch Configuration menu provides options to configure functions and restore a configured eSwitch. For example:

```
ESwitch Configuration

1:  Function 1 ESwitch Configuration
2:  Function 3 ESwitch Configuration
3:  Restore ESwitch Configuration
```

Function 1 ESwitch Configuration (-feswitchcfg)

7. NIC Partitioning (NPAR) Configuration ▸ 2. ESwitch ▸ 1. Function 1 ESwitch Configuration

Follow the prompts to change eSwitch physical function 1 configuration.

Function 3 ESwitch Configuration (-feswitchcfg)

7. NIC Partitioning (NPAR) Configuration ▸ 2. ESwitch ▸ 2. Function 3 ESwitch Configuration

Follow the prompts to change eSwitch physical function 3 configuration.

Restore ESwitch Configuration (-restoreeswitchcfg)

7. NIC Partitioning (NPAR) Configuration ▸ 2. ESwitch ▸ 3. Restore ESwitch Configuration

Follow the prompts to restore the eSwitch configuration information from the `eswitch.cfg` file in the installation directory.

NIC Partitioning (NPAR) Statistics

8. NIC Partitioning (NPAR) Statistics ▸ 1. ESwitch Statistics

NOTE

- SR-IOV and NPAR cannot be enabled at the same time. If SR-IOV is enabled on the host, all NPAR-related commands are disabled.
- The NIC Partitioning Statistics option does not apply to HP adapters.
- For non-HP adapters, the NIC Partitioning Statistics option is available only if NPAR has been enabled using the NIC Partitioning Configuration option.

From the main menu, select the **NIC Partitioning (NPAR) Statistics** option. Select the statistics type (**ESwitch Statistics**), and then select a port for which to open the ESwitch Statistics menu with options to view general statistics, ESwitch statistics, and function statistics. For example:

```
Select a port to view NPAR ESwitch statistics

CNA Model QLE8242 SN: AFE1020C03263
  1. Port   1
     Function   2 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:F9]
     Function   4 [Type: iSCSI] [iSCSI Name: iqn.2000-04.com.qlogic:isp...]
```

```
      Function   6 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:FB]
   2. Port   2
      Function   1 [Type: NIC  ] [MAC Address: 00:0E:1E:04:84:FC]
      Function   5 [Type: iSCSI] [iSCSI Name: iqn.2000-04.com.qlogic:isp...]
      Function   7 [Type: FCoE ] [WWPN: 21-00-00-0E-1E-04-84-FF] SFP not ...

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

ESwitch Statistics

1:  General ESwitch Statistics
2:  View All ESwitch Statistics
3:  Function 0 ESwitch Statistics
4:  Function 2 ESwitch Statistics
5:  Function 6 ESwitch Statistics
```

General ESwitch Statistics (-eswitchstats)

8. NIC Partitioning (NPAR) Statistics ▸ 1. ESwitch Statistics ▸ <port selection> ▸ 1. General ESwitch Statistics

From the ESwitch Statistics menu, select the **General ESwitch Statistics** option to view general eSwitch statistics. For example:

```
ESwitch Statistics
------------------
ESwitch instance number      : 1
Physical port number         : 1
RX Unicast Frames            : 0
RX Dropped Frames            : 0
RX Errors                    : 0
RX Loopback Frames           : 0
TX Unicast Frames            : 0
TX Dropped Frames            : 0
TX Errors                    : 0
TX Loopback Frames           : 0
```

View All ESwitch Statistics (-eswitchvportstats)

8. NIC Partitioning (NPAR) Statistics ▸ 1. ESwitch Statistics ▸ <port selection> ▸ 2. View All ESwitch Statistics

From the ESwitch Statistics menu, select the **View All ESwitch Statistics** option to view all eSwitch statistics. For example:

```
ESwitch Statistics
```

```
-------------------
ESwitch instance number      : 1
Physical port number         : 1
RX Unicast Frames            : 0
RX Dropped Frames            : 0
RX Errors                    : 0
RX Loopback Frames           : 0
TX Unicast Frames            : 0
TX Dropped Frames            : 0
TX Errors                    : 0
TX Loopback Frames           : 0

Function Id                  : 0
RX Unicast Frames            : 0
RX Dropped Frames            : 0
RX Errors                    : 0
RX Loopback Frames           : 0
TX Unicast Frames            : 0
TX Dropped Frames            : 0
TX Errors                    : 0
TX Loopback Frames           : 0

Function Id                  : 2
RX Unicast Frames            : 0
RX Dropped Frames            : 0
Function Id                  : 2
RX Unicast Frames            : 0
RX Dropped Frames            : 0
RX Errors                    : 0
RX Loopback Frames           : 0
TX Unicast Frames            : 0
TX Dropped Frames            : 0
TX Errors                    : 0
TX Loopback Frames           : 0

Function Id                  : 6
RX Unicast Frames            : 0
RX Dropped Frames            : 0
RX Errors                    : 0
RX Loopback Frames           : 0
TX Unicast Frames            : 0
```

```
TX Dropped Frames            : 0
TX Errors                    : 0
TX Loopback Frames           : 0
```

Function *x* ESwitch Statistics

8. NIC Partitioning (NPAR) Statistics ▸ 1. ESwitch Statistics ▸ <port selection> ▸ 3. Function *x* ESwitch Statistics

From the ESwitch Statistics menu, select the **Function *x* ESwitch Statistics** option to view statistics for a specific eSwitch function. For example:

```
ESwitch Statistics
------------------
Function Id                  : 0
RX Unicast Frames            : 0
RX Dropped Frames            : 0
RX Errors                    : 0
RX Loopback Frames           : 0
TX Unicast Frames            : 0
TX Dropped Frames            : 0
TX Errors                    : 0
TX Loopback Frames           : 0
```

Refresh

6. Refresh

NOTE

The number of the Refresh option in the Main Menu may vary, depending on the types of adapters installed and their configuration.

From the main menu, select the **Refresh** option to refresh (reload) the adapters and adapter port indices. For example:

```
Scanning for QLogic adapters, please wait...
Using config file: C:\Program Files\...\iscli.cfg
Using config file: C:\Program Files\...\netscli.cfg
Loading: 1. CNA ... adapters, please wait...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ......
Scanning for QLogic adapters, please wait...
```

```
Hit <Enter> to continue:
```

When you run QConvergeConsole CLI, the CLI collects all relevant information, including the number of available ports and the state of each one. Between the time you start QConvergeConsole CLI and the time you perform a specific action or request additional information, changes may have occurred to the port state, network state, or firmware parameters. To ensure that you are viewing the most current information, you should perform a **Refresh**. (In some cases, QConvergeConsole CLI automatically refreshes the information before or after specific commands.)

Help (-h)

7. Help

NOTE

The number of the Help option in the Main Menu may vary, depending on the types of adapters installed and their configuration.

From the main menu, select the **Help** option to view the syntax and description for each noninteractive command line option. For more detailed information about each command, see the noninteractive chapter for the specific adapter type.

Exit

8. Exit

NOTE

The number of the Exit option in the Main Menu may vary, depending on the types of adapters installed and their configuration.

From the main menu, select the **Exit** option to close the QConvergeConsole CLI session.

12 Setting Up NPAR Using Interactive Commands

This chapter outlines the steps for setting up NIC partitioning (NPAR) using QConvergeConsole CLI in interactive mode. The displayed commands apply to both Linux and Windows operating systems.

NOTE

SR-IOV and NPAR cannot be enabled at the same time. If SR-IOV is enabled on the host, all NPAR-related commands are disabled.

For an overview of NPAR, refer to Appendix A NIC Partitioning (NPAR) Overview. NPAR is supported by the QLogic 3200 Series Intelligent Ethernet Adapters and 8200 Series Converged Network Adapters.

For information about non-interactive mode NPAR commands, refer to Chapter 8 NIC Partitioning (NPAR) Noninteractive Commands.

Setting Up NIC Partitions

Follow the steps in this procedure to set up NPAR using the interactive command mode of QConvergeConsole CLI.

To set up NIC partitions using QConvergeConsole CLI:

1. Start QConvergeConsole CLI for the NIC protocol, and from the Main Menu, select option **`6: NIC Partitioning (NPAR) Information`**. For example:

```
    QConvergeConsole

    CLI - Version 2.1.0 (Build 1)

Main Menu

1:  Adapter Information
2:  Adapter Configuration
3:  Adapter Updates
```

```
    4:  Adapter Diagnostics
    5:  Monitoring
    6:  NIC Partitioning (NPAR) Information
    7:  NIC Partitioning (NPAR) Configuration
    8:  SR-IOV Capability
    9:  Refresh
   10:  Help
   11:  Exit

        Please Enter Selection: 6
```

2. At the `Select an NPAR Information Type` prompt, select option **`2: NPAR Port Information`**.
3. From the list of available ports and functions, select a port. For example:

```
QConvergeConsole

CLI - Version 2.1.0 (Build 1)

Select a port to view NPAR port information

CNA Model QLE8362 SN: RFE1305H31037
  1. Port   1
     Function   0 [Type: NIC  ] [MAC Address: 00:0E:1E:14:0E:70] Link Down
  2. Port   2
     Function   1 [Type: NIC  ] [MAC Address: 00:0E:1E:14:0E:78] Link Down

  (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
  Please Enter Selection: 2
```

4. From the list of NIC Partitioning (NPAR) Information, select a function to view, or select **`View all PCI Functions Information`**. For example:

```
QConvergeConsole

CLI - Version 2.1.0 (Build 1)

NIC Partitioning (NPAR) Information

1:  Function: 0 MAC: 00:0E:1E:14:0E:70 Type: NIC
2:  Function: 2 MAC: 00:0E:1E:14:0E:71 Type: FCoE
3:  Function: 4 MAC: 00:0E:1E:14:0E:72 Type: iSCSI
4:  View all PCI Functions Information

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 4
```

```
    General information
    -------------------
    Function Id          : 0
    Function Type        : NIC
    Minimum bandwidth (%): 0
    Maximum bandwidth (%): 100
    Physical Port Number : 1
    MAC Address          : 00:0E:1E:14:0E:70

    Function Id          : 2
    Function Type        : FCoE
    Physical Port Number : 1
    MAC Address          : 00:0E:1E:14:0E:71

    Function Id          : 4
    Function Type        : iSCSI
    Physical Port Number : 1
    MAC Address          : 00:0E:1E:14:0E:72

    Hit <Enter> to continue:
```

5. After viewing the NPAR information, return to the main menu and then select option **7: NIC Partitioning (NPAR) Configuration**.

```
QConvergeConsole

        CLI - Version 2.1.0 (Build 1)

    Main Menu

     1:  Adapter Information
     2:  Adapter Configuration
     3:  Adapter Updates
     4:  Adapter Diagnostics
     5:  Monitoring
     6:  NIC Partitioning (NPAR) Information
     7:  NIC Partitioning (NPAR) Configuration
     8:  SR-IOV Capability
     9:  Refresh
    10:  Help
    11:  Exit

         Please Enter Selection: 7
```

6. From the NIC Partitioning (NPAR) Configuration Selection menu, select option **`1: NPAR Configuration`** to display the NPAR Configuration menu, which provides the following options:
7.

```
1: Bandwidth Configuration
2: Change PCI Function Personality
```

8. Configure the bandwidth settings to meet your system requirements. For example, to change the bandwidth of the function 1 NIC partition:
   a. Select option **`1: Bandwidth Configuration`**
   b. Select a port.
   c. Select option **`1: Function:1`**
   d. From the NIC Partitioning Bandwidth Type Selection menu, select option **`1: Modify Minimum Bandwidth`**. For example:

```
NIC Partitioning (NPAR) Bandwidth Type Selection

1:  Modify Minimum Bandwidth
2:  Modify Maximum Bandwidth
```

   e. At the prompt, type the minimum percentage value of bandwidth you want committed to the selected function.
   f. Specify whether you want the minimum bandwidth setting to persist across reboots by typing **`y`** for yes or **`n`** for no.
   g. From the NIC Partitioning Bandwidth Type Selection menu, select option **`2: Modify Maximum Bandwidth`**.
   h. At the prompt, type the maximum percentage value of bandwidth you want committed to the selected function.
   i. Specify whether you want the maximum bandwidth setting to persist across reboots by typing **`y`** for yes or **`n`** for no.
9. Return to the NIC Partitioning (NPAR) Configuration menu.
10. Change each function's protocol to meet your system requirements. For example:
    a. Select option **`2: Change PCI Function Personality`**.
    b. Select the port number, **`1`** or **`2`**.
    c. Select the function number.

    The command line displays a list of options with choices that apply to the selected function number. This mode prevents you from assigning a function type that does not apply to a specific function number.

d. Set the PCI function protocol by selecting the option number that identifies the protocol you require. Depending on the function number and current state, this could be **`Disabled`**, **`NIC`**, **`FCoE`**, or **`iSCSI`**.

NOTE

For a list of NPAR configuration options, see "NPAR Setup" on page 594.

Figure 12-1 shows the CLI commands leading to the option for changing a function type on a Linux system.

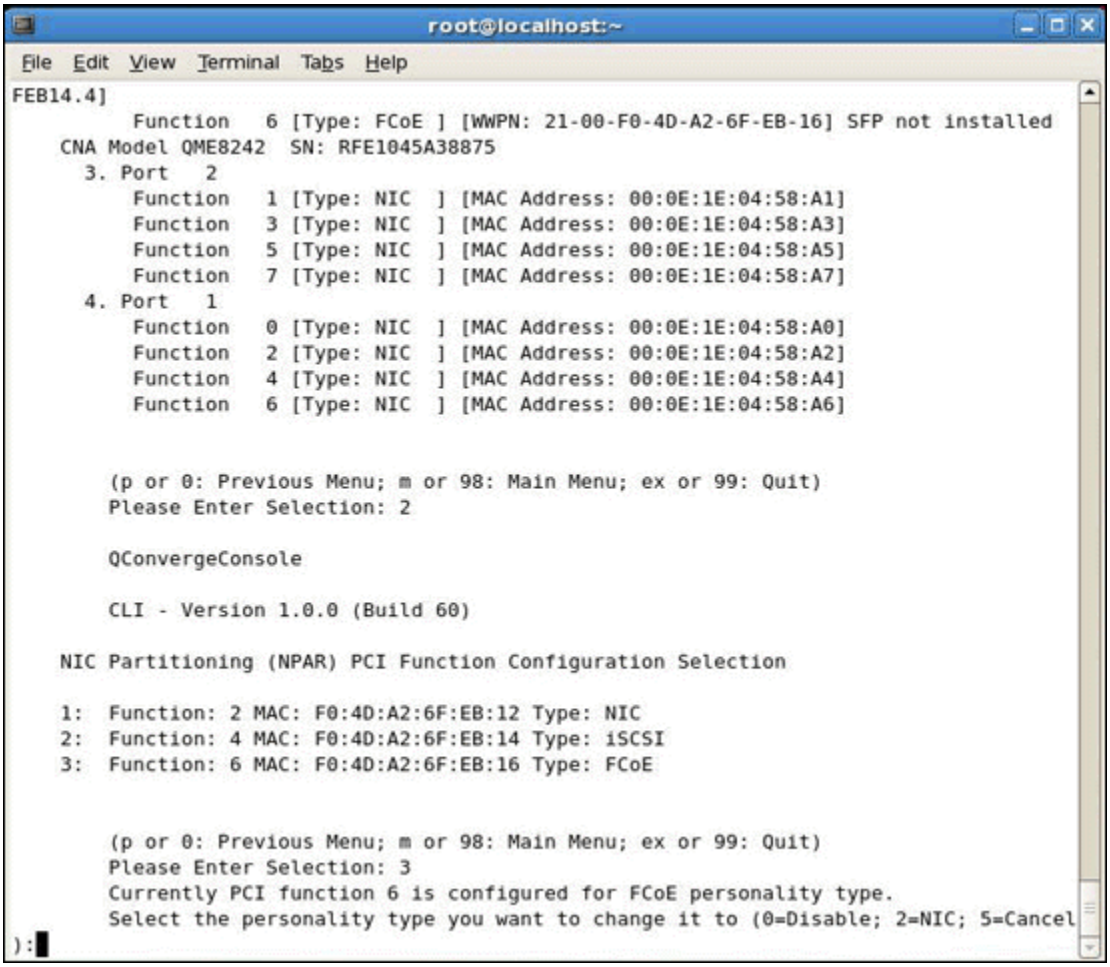


Figure 12-1. Selecting Function Type on Linux System

11. Return to the main menu, and then select option **`8: NIC Partitioning (NPAR) Statistics`** to view the statistics. Navigate through the menu selections to view eSwitch statistics.

12. When finished setting up the NIC partitions, select the **`Exit`** option from the Main Menu.

If you modified PCI function protocol settings or bandwidth settings and also set the persist option, reboot the system to see the new settings take effect.

Part IV

FabricCache Commands

Part IV of this guide provides details about the noninteractive commands for FabricCache Adapters (10000 Series) of the QConvergeConsole CLI's FabricCache CLI in the following chapters:

- Chapter 13 Getting Started with FabricCache CLI
- Chapter 14 General FabricCache CLI Keywords
- Chapter 15 FabricCache CLI Command Reference
- Chapter 16 FabricCache CLI API Error Codes

13 Getting Started with FabricCache CLI

This chapter provides the following general information to help you get started using the QLogic FabricCache CLI tool:

- Installing FabricCache CLI
- Obtaining Help
- Command Line Scripting
- CLI Usage

Installing FabricCache CLI

For installation instructions, see the Read Me document for this tool. To access the Read Me, see “Downloading Updates” on page xxxi.

Obtaining Help

To view a summary of all available commands, issue the `?` command.

The command syntax is `<action> <item>`, and may be followed by one or more keywords.

To view a detailed description of a specific command, enter the command as `<action> <item>` with the `-help` keyword. For example:

```
c:\>quacli -pr fca show adapter -help
```

Command Line Scripting

All commands supported by FabricCache CLI accept all required inputs from the same command line that runs the program. This ability allows you to use any scripting language that can run a command line, including Microsoft® batch files, Linux® shell scripts, and higher-level scripting languages such as Perl or Python™.

To view examples of the QConvergeConsole CLI script files, go to the FabricCache CLI `<install dir>\examples` folder.

This tool enables you to save and execute script files as follows:

- The `Execute Script` command accepts a text file containing a series of FCA CLI commands to be run one after the other.
- The `Save Script` command saves an editable text file containing a series of commands that can configure an adapter that has been reset to factory settings. After you finish setting up a new adapter, QLogic recommends that you save this configuration script.

CLI Usage

The FabricCache CLI enables you to perform a variety of host adapter management tasks. This section describes the following:

- Command Line Syntax
- Abbreviation
- Input Persistence

Command Line Syntax

The following CLI syntax rules apply:

- FabricCache CLI input is not case sensitive. Examples in this guide are generally shown in lowercase; however you can interchangeably use uppercase.
- Run either Linux shell scripts or Windows® batch files to specify command selection and input parameters using an all-text command line syntax.
- Start the command line with an action and include an item on which to perform the action.
- To provide additional context, optionally include keywords after the command.
  - For example, `qaucli -pr fca show adapter -fca=0` provides summary information—including serial number, firmware version, and so on—from the first 10000 Series Adapter on the local host computer.
  - Start keywords with either a hyphen (`-`) or a forward slash (`/`). For example, the preceding command could also be entered as `qaucli -pr fca show adapter /fca=0`.
  - In the syntax for each keyword in this guide, optional keywords are enclosed in brackets (`[ ]`), required keywords are not enclosed in brackets, and user variables are enclosed in angle brackets (`< >`).

- You can use spaces in parameter data if the data is surrounded by double (") or single (') quotation marks. For example `-name="New name"` or `-name='Name with "quotes" in it'`.
- Keyword order on the command line is not important, unless stated otherwise in the keyword description.

Abbreviation

You can abbreviate any keyword to the minimum number of characters needed to avoid ambiguity.

Example 1. The `qaucli -pr fca show adapter` command used as an example in the previous section can be shortened to `qaucli -pr fca sh ad /fca=0`.

Example 2. Because the default item is `qaucli`, you can shorten the `version qaucli -pr fca` command to `ver`.

Input Persistence

Specific input data is saved per-user in the user's `home` directory on Linux or in the `My Documents` folder on Windows. ESXi is very similar to Linux, except most people log in as root. For the root user, the home directory is `/root`.

Most input data is not maintained; the exception is the viewing of log information. For example, you can keep asking for the previous 10 log records.

14 General FabricCache CLI Keywords

This chapter provides the description, syntax, and examples for each of the general keywords that apply to all FabricCache CLI commands. Because these keywords are defined here, they are not repeated for every command in the command reference chapter. The general keywords include the following:

- -agent
- -fca
- -help
- -quiet
- -result
- -textfile

-agent

Include the `-agent` keyword to specify the IP address of a remote host that is running the qlremote_fca agent. You can combine the `-fca` keyword with the `-agent` keyword; however, it acts relative to the remote host.

Syntax for this keyword is as follows:

```
-agent=<IP address of a remote host>
```

Examples:

`-agent=10.0.0.12 -fca=0` (first 10000 Series Adapter device on remote host 10.0.0.12)

```
-agent=10.0.0.12 -fca=C0DD1F7174
```

-fca

Include the `-fca` keyword to specify the 10000 Series Adapter on which the command will act. The 10000 Series Adapter can be specified by either a unit number on the local host (0 being the first device found) or a 10000 Series Adapter ID. If you specify a 10000 Series Adapter ID, it can refer to either an adapter in the local host or one that has been discovered in the SAN and discovered through the Fibre Channel ports on the adapter.

Syntax for this keyword is as follows:

`-fca=<unit number or 10000 Series Adapter ID>`

Examples:

`-fca=0` (where `0` specifies the first adapter, `1` specifies the second adapter, and so on)

`-fca=C0DD1F7174`

-help

Include the `-help` keyword to view a command's syntax and available keywords. This is the same information that appears if you enter incorrect command syntax.

The `-help` keyword is optional. If specified, the command entered has no effect except to display the help text.

Syntax for this keyword is as follows:

`-help[=<filename for help output>]`

Examples:

`c:\>`**`qaucli -pr fca show adapter -help`** (Displays a help summary)

`c:\>`**`qaucli -pr fca show adapter -help >> c:\t.txt`** (Saves a text file containing the help summary)

-quiet

Include the optional `-quiet` keyword to suppress all text output from the command, including both normal text display and error messages. If used in a script, FCA CLI returns only the completion status.

Syntax for this keyword is as follows:

`-quiet`

Example:

`-quiet`

-result

Include the optional `-result` keyword to create (or to replace an existing) file containing binary output data. The default file location is the current working directory; the default filename is `<action>_<item>.dat`. The file content varies depending upon the command with which this keyword is included.

The results file contains the following eight integers:

- The first integer indicates the header size in bytes.
- The next four integers indicate the QLogic 10000 Series Adapter management API version.
- The next two integers indicate the command action and item.
- The last integer indicates the completion status.

Depending on the command with which this keyword is used, additional data is saved in this file. The first integer of each data item is the item's integer size in bytes. (For details of result files, see the command descriptions in Chapter 15 FabricCache CLI Command Reference.) Additional data is generally one or more classes from the 10000 Series Adapter Management API saved in binary form.

Syntax for this keyword is as follows:

```
-result=<full path to file>
```

The following example creates the `show_system.dat` file in the current working directory:

```
c:\>qaucli -pr fca show system /result=c:\temp\show_system_result.dat
```

-textfile

Include the optional `-textfile` keyword to append normal display text and error messages to a specified file. The default file location is the current working directory; the default filename is `<action>_<item>.log`. You can use this keyword with the `-quiet` keyword.

Syntax for this keyword is as follows:

```
-textfile=<full path to file>
```

The following example creates the `show_system.log` file in the current working directory:

```
c:\>qaucli -pr fca show system /textfile=c:\temp\show_system_text.txt
```

15 FabricCache CLI Command Reference

This chapter lists alphabetically the FabricCache CLI commands for QLogic FabricCache Adapters (10000 Series Adapters), and provides a description, syntax, and example for each.

Table 15-1 lists the FabricCache CLI commands by category.

Table 15-1. FabricCache CLI Commands by Category

Category	Commands
Adapters	“Factory Reset Adapter” on page 512 “List Adapter” on page 520 “Restart Adapter” on page 538 “Save Capture File” on page 541 “Set Adapter” on page 548 “Show Adapter” on page 553 “Show Health” on page 560 “Show Memory” on page 568 “Show System Capture” on page 575 “Version Adapter” on page 579
Append	“Set Append” on page 549 “Show Append” on page 554
Beacon	“Disable Beacon” on page 500 “Enable Beacon” on page 505

Table 15-1. FabricCache CLI Commands by Category (Continued)

Category	Commands
Cache	“Clear Statistics” on page 497 “Disable Cache” on page 501 “Dump Cache” on page 504 “Enable Cache” on page 506 “Flush Cache” on page 513 “Invalidate Cache” on page 518 “Modify Cache” on page 530 “Remove Cache Pool” on page 533 “Show Statistics” on page 573
Capture	“Save Capture File” on page 541 “Show System Capture” on page 575
Clusters	“Create Cluster” on page 498 “Destroy Cluster” on page 499 “List Cluster” on page 521 “Show Cluster” on page 555
Devices	“List Device” on page 522 “Show Device” on page 557
Drives	“Add Drive” on page 488 “List Drive” on page 523 “Remove Drive” on page 534 “Show Drive” on page 558
Fibre Channel Ports	“Disable FC Port” on page 503 “Enable FC Port” on page 509 “Set FC” on page 550 “Show FC” on page 559
Firmware	“Update Firmware” on page 578 “Version Adapter” on page 579
Help	“?” on page 487 “Help” on page 515

Table 15-1. FabricCache CLI Commands by Category (Continued)

Category	Commands
General	“Clear Display” on page 491 “Interactive CLI” on page 517 “Return Value FCA CLI” on page 540 “Save Demonstration File” on page 542 “Version” on page 580
Initiators	“List Initiator” on page 524 “Show Initiator” on page 561
Logs	“Clear Log” on page 492 “List Log” on page 525 “Report Log” on page 537 “Save Log” on page 543 “View Log” on page 581
LUNs	“Clear LUN Statistics” on page 493 “Clear Reservation” on page 495 “List LUN” on page 527 “Show LUN” on page 562 “Show LUN Statistics” on page 565 “Show Reservation” on page 570
Members	“Add Member” on page 490 “Remove Member” on page 536
Pools	“Remove Cache Pool” on page 533 “Set Pool” on page 551 “Show Pool” on page 569
Scripts	“Execute Script” on page 510 “Merge CSV” on page 529 “Save Script” on page 544 “Script CSV” on page 545
SFP	“Show SFP” on page 572
Statistics	“Clear LUN Statistics” on page 493 “Clear Statistics” on page 497 “Show LUN Statistics” on page 565 “Show Statistics” on page 573

Table 15-1. FabricCache CLI Commands by Category (Continued)

Category	Commands
System	“Show System Capture” on page 575
Targets	“List Target” on page 528 “Set Target” on page 552 “Show Target” on page 577

?

Displays summary help with a very brief description of the available commands. To view detailed syntax for a specific command, enter the action and item with the `-help` keyword instead; see page 515.

Syntax **qaucli ?** or **qaucli ? hcli**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `fca ?` command:

```
c:\>qaucli -pr fca ?
```

Add Drive

Adds a new drive to a storage pool. This command operates on one drive, which must be specified by a combination of keywords.

Syntax

add drive

[-drive=<WWULN>]
[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]

Keywords

-drive

Specifies the WWULN.

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$`*-xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN and then as the Page 0x80 serial number designator, until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to add a drive.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

NOTE

- If none of the optional keywords are used, detailed information is displayed for all LUNs known to the 10000 Series Adapter.
- If both `-lun_number` and `-fc_target` are used, detailed information is displayed for a single LUN.
- If only one or two keywords are used, detailed information is displayed for all LUNs that match the input.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `add drive` command:

```
c:\>qaucli -pr fca add drive -drive=5006-0261-0C33-E47A
Drive successfully added
```

Add Member

Adds a member adapter to the specified cluster. This command must be directed to the adapter that is currently the primary of the cluster to be added to.

FabricCache CLI defines *cluster* terminology as follows:

- **Cluster:** A group of 10000 Series Adapters that are physically interconnected by means of Fibre Channel data LUNs, and logically connected through firmware that can share access to cache. A cluster comprises one primary 10000 Series Adapter, one secondary 10000 Series Adapter, and zero or more member 10000 Series Adapters. Use the `create cluster` command (see page 498) to define a 10000 Series Adapter cluster.
- **Cluster member:** 10000 Series Adapter that belongs to a defined cluster, including the primary and secondary.
- **Cluster primary:** The 10000 Series Adapter that has overall control of the cached data.
- **Cluster secondary:** A 10000 Series Adapter that can access cached data. If the primary 10000 Series Adapter fails, the secondary takes over as the primary of the cluster.
- **Cluster ID:** A unique, user-specified text string containing a minimum of 8 and a maximum of 16 characters, assigned to each defined cluster.

Syntax

add member
-clusterid=<cluster ID>
-member=<locally connected device instance>

Keywords

-clusterid

Specifies the ID of an existing cluster. Enter the cluster ID as a text string containing a minimum of 8 and a maximum of 16 characters.

-member

Specifies the ID of the 10000 Series Adapter to be added to the cluster.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `add member` command:

```
c:\>qaucli -pr fca add member -fca=0 -clusterid=123EdF456  -member=C0DD1F711C

Fibre Channel Adapter C0DD1F711C successfully added to cluster 0x123EdF456
```

Clear Display

Clears the console display.

Syntax **clear display**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `clear display` command:

```
c:\>qaucli -pr fca clear display
```

Clear Log

Resets the 10000 Series Adapter log and deletes all previously recorded log information.

Syntax **clear log**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `clear log` command:

```
c:\>qaucli -pr fca clear log -fca=0
Log on the Fibre Channel Adapter successfully cleared
```

Clear LUN Statistics

Clears the statistics for a single LUN or for all LUNs known to the 10000 Series Adapter.

Syntax

clear lun_statistics

[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]

Keywords

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$`*-xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN and then as the Page 0x80 serial number designator, until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to clear statistics.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

NOTE

If none of the optional keywords are used, detailed information is displayed for all LUNs known to the 10000 Series Adapter.

If both `-lun_number` and `-fc_target` are used, detailed information is displayed for a single LUN.

If only one or two keywords are used, detailed information is displayed for all LUNs that match the input.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `clear lun_statistics` command:

```
c:\>qaucli -pr fca clear lun_statistics -lun_number=2
-fc_target=5001-4380-025D-A83A -fca=0

    -fc_target=5001-4380-025D-A83A -lun_number=2 -- LUN statistics cleared OK
```

Clear Reservation

Clear a persistent reservation for a LUN.

Syntax

clear reservation
[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]

Keywords

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$-`*xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN and then as the Page 0x80 serial number designator, until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to clear the reservation.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

NOTE

If none of the optional keywords are used, detailed information is displayed for all LUNs known to the 10000 Series Adapter.

If both `-lun_number` and `-fc_target` are used, detailed information is displayed for a single LUN.

If only one or two keywords are used, detailed information is displayed for all LUNs that match the input.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `clear reservation` command:

```
c:\>qaucli -pr fca clear reservation -fca=0
Reservation has been cleared successfully.
```

Clear Statistics

Resets cache statistics to zero.

Syntax **clear statistics**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `clear statistics` command:

```
c:\>qaucli -pr fca clear statistics -fca=0
    Cache statistics have been reset to zero.
```

Create Cluster

Creates a cluster from two unassociated 10000 Series Adapters—one adapter is the primary; the other adapter is a secondary. The adapter to which this command is directed becomes the primary of the new cluster.

Syntax

create cluster

-clusterid=<cluster ID>

-secondary=<locally connected device instance> | <10000 Series Adapter ID>

-host_cluster_type=<none | mscs | vmware | oracle_rac | linux>

Keywords

-clusterid

Specifies the ID to be used for the new cluster. Enter the cluster ID as a text string containing a minimum of 8 and a maximum of 16 characters.

-secondary

Specifies either the instance of the locally connected device or the ID of the 10000 Series Adapter that will be the secondary of the new cluster. If you specify a 10000 Series Adapter ID, it can refer to either an adapter in the local host or one that has been discovered in the SAN and discovered through the Fibre Channel ports on the adapter.

-host_cluster_type

Specifies the type of storage cluster, if any, for which the host is using presented LUNs. If this keyword is not used, the default is `-host_cluster_type=none`.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `create cluster` command:

```
c:\>qaucli -pr fca create cluster -fca=C0DD1F7114
-clusterid=123EdF456 -secondary=C0DD1F711C
Cluster 0x123EdF456 successfully created.
```

Destroy Cluster

Removes all 10000 Series Adapters from the specified cluster. Issue this command for the primary adapter in the cluster.

Syntax **destroy cluster**

-clusterid=<cluster ID>

Keywords **-clusterid**

Specifies the ID of an existing cluster.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `destroy cluster` command:

```
c:\>qaucli -pr fca destroy cluster -fca=0 -clusterid="CLUSTER
514c4743"
"CLUSTER 514c4743" successfully destroyed
```

Disable Beacon

Disables the beacon in the 10000 Series Adapter.

Syntax **disable beacon**

[-port=<port number, (first port is 1)>]

Keywords **-port**

Specifies the Fibre Channel port number for which you want to disable the beacon.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `disable beacon` command:

```
c:\>qaucli -pr fca disable beacon -fca=0 -port=2
[ Device 0 on local host ]

Beacon of FC Port 2 has been disabled successfully.
```

Disable Cache

Disables caching for a specified LUN. This command operates on one LUN which must be specified by a combination of keywords.

Syntax

disable cache

[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]
[-clusterid=<cluster ID>]

Keywords

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$-`*xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN, and then as the Page 0x80 serial number designator until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which to view detailed information.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

-clusterid

Specifies the cluster's primary adapter for which to disable LUN caching. It may be necessary to disable caching if the adapter currently caching the LUN is offline or otherwise not reachable.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `disable cache` command:

```
c:\>qaucli -pr fca disable cache -lun_number=2
-fc_target=2100-0024-FF6A-34C8

Successfully disabled caching for LUN -lun_number=2
-fc_target=2100-0024-FF6A-34C8
```

Disable FC Port

Disables the specified Fibre Channel port.

Syntax **disable fc_port**

[-port=<port number, (first port is 1)>]

Keywords **-port**

Specifies the Fibre Channel port number to disable.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `disable fc_port` command:

```
c:\>qaucli -pr fca disable fc_port -port=1 -fca=0
FC Port 1 successfully disabled
```

Dump Cache

Displays a detailed summary of cache information and saves it to a file with a time-stamped file name.

Syntax **dump cache**

[-folder=<folder to receive dump files>]

[-interval=<time in seconds>]

Keywords **-folder**

Specifies a folder to receive a dump file with a time-stamped file name. If it does not already exist, the folder is created. If this keyword is not specified, the file is created in the user's home directory.

-interval

Specifies the time, in seconds, to wait before repeatedly saving cache information. If not specified, the cache info is saved only once.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `dump cache` command:

```
c:\>qaucli -pr fca dump cache
```

Enable Beacon

Enables the beacon in the 10000 Series Adapter.

Syntax **enable beacon**

[-port=<port number, (first port is 1)>]

Keywords **-port**

Specifies the Fibre Channel port number for which you want to enable the beacon.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `enable beacon` command:

```
c:\>qaucli -pr fca enable beacon -fca=0 -port=2
[ Device 0 on local host ]

Beacon of FC Port 2 has been enabled successfully.
```

Enable Cache

Enables caching for a specified LUN. This command operates on one LUN, which must be specified by a combination of keywords.

Syntax **enable cache**

-mode=read_write_through
[-profile=[default]]
[-max_cache=<size in GB>]
[-min_read=<size in 1024-byte logical blocks>]
[-max_read=<size in 1024-byte logical blocks>]
[-min_write=<size in 1024-byte logical blocks>]
[-max_write=<size in 1024-byte logical blocks>]
[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]

Keywords **-mode**

Enables or disables the addition of cache entries for the specified LUN. The `read_write_through` mode indicates that if data read from or written to the LUN is not in the cache, it is added and immediately written to the LUN.

-profile

Specifies the caching profile for the LUN. If not specified, the default profile is used.

-max_cache

Specifies the maximum amount of the total cache available to use for this LUN, in units of 1KB. The value must be in the range zero to 1024. If not specified, no limit is applied. If all LUNs operate without this limit, they compete as equals for the cache resources.

-min_read

Specifies the minimum read size to be cached, in units of 1KB. The value must be in the range zero to 1024; the default is a fixed value programmed into the firmware.

-max_read

Specifies the maximum read size to be cached, in units of 1KB. The value must be in the range zero to 1024; the default is a fixed value programmed into the firmware.

-min_write

Specifies the minimum write size to be cached, in units of 1KB. The value must be in the range zero to 1024; the default is a fixed value programmed into the firmware.

-max_write

Specifies the maximum write size to be cached, in units of 1KB. The value must be in the range zero to 1024; the default is a fixed value programmed into the firmware.

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$-`*xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN, and then as the Page 0x80 serial number designator, until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which to view detailed information.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `enable cache` command:

```
c:\>qaucli -pr fca enable cache -fca=0 -mode=read_write_through
-lun_number=0 -fc_target=2023-0002-AC00-1B00
[ Device 0 on local host ]
```

```
Successfully enabled read_write_through caching for LUN
-fc_target=2023-0002-AC00-1B00 -lun_number=0
```

Enable FC Port

Enables the specified Fibre Channel port.

Syntax **enable fc_port**

[-port=<port number (first port is 1)>]

Keywords **-port**

Specifies the Fibre Channel port number to enable.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `enable fc_port` command:

```
c:\>qaucli -pr fca enable fc_port -port=1 -fca=0
FC Port 1 successfully enabled
```

Execute Script

Executes a list of FabricCache CLI commands read in from a file.

Syntax

execute script
-file=<script filename>
[-continue_on_error]
[-echo]
[-quiet]
[-show_only_error]
[-text [=<filename>]]

Keywords

-file

Specifies a text file containing FCA CLI commands. If no directory is specified, the default is the current working directory.

-continue_on_error

If used, script execution continues after an error occurs. (Script execution generally stops when it encounters an error.)

-echo

If used, this keyword is appended to each line of the script as it executes. The text output to the console or to a text file includes a copy of the command line.

-quiet

If used, this keyword is appended to each line of the script as it executes. The text output to the console is suppressed.

-show_only_error

If used, this keyword is appended to each line of the script as it executes. Detailed text output is suppressed unless an error occurs.

-text

If a filename is specified, this keyword and the specified name are appended to each line of the script as it executes.

If a filename is not specified, a file is created with the default filename in the same directory as the script that this command is running. The filename is the script filename (minus any extension after a period (`.`), plus a numeric string based on date and time. For example, if the script filename is `c:\t\t.txt`, a default filename of `c:\t\t_20131018_160409.log` is created, indicating the current date is October 18, 2013 and the current time is 16:04:09.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `execute script` command:

```
c:\>qaucli -pr fca execute script -file=config_script.txt
Script "config_script.txt" completed OK

    10 commands attempted, 10 successful

    7 commands attempted, 4 successful, 3 failed
        "show target"
            HAPI_E_NOT_FOUND at lines 21, 22, 23
```

Factory Reset Adapter

Restores the 10000 Series Adapter's factory default configuration. After issuing this command, you must restart the 10000 Series Adapter.

Syntax **factory_reset adapter**

[-accept_risk]

Keywords **-accept_risk**

Prevents display of the prompt to confirm factory adapter reset. Use this keyword in situations where the command is in a script that cannot conveniently accept user input. (See note, below.)

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes The `factory_reset adapter` command can potentially corrupt user data if improperly used. For example, if a LUN is cached on another adapter in the current cluster, it is safe to access the LUN from this adapter only as long as it is in the cluster. After the adapter is removed from the cluster, any data written to the LUN from the adapter is not reflected in the cache on the other adapter. To reduce the possibility of an accidental reset, this command prompts for confirmation. To prevent the confirmation prompt from appearing, include the `-accept risk` keyword.

Examples The following example shows the `factory_reset adapter` command:

```
c:\>qaucli -pr fca factory_reset adapter -fca=0

All drive data and persistent settings will be erased.  Are you
sure you want to reset this adapter to factory initialization
[yes/no]?yes
[ Device 0 on local host ]

Reset successful -- 'restart adapter' is required for changes to
take effect
```

Flush Cache

Clears the write cache for a single LUN or for all LUNs known to the 10000 Series Adapter.

Syntax

flush cache

[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]
[-sync]=<synchronous cache flush>

Keywords

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$-`*xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN, and then as the Page 0x80 serial number designator, until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to view detailed information.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

-sync

Synchronously flushes the 10000 Series Adapter cache. The FabricCache CLI waits until after the dirty cache has been flushed before completing the `flush cache` command.

NOTE

If none of the optional keywords are used, detailed information is displayed for all LUNs known to the 10000 Series Adapter.

If both `-lun_number` and `-fc_target` are used, detailed information is displayed for a single LUN.

If only one keyword is used, detailed information is displayed for all LUNs that match the input. For example, if only `-lun_number=2` is used, detailed information is displayed for all LUNs 2 on any target.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `flush cache` command:

```
c:\>qaucli -pr fca flush cache -lun_number=3
-fc_target=5005-0768-0220-1305 -fca=0
[ Device 0 on local host ]

LUN 3  1st VP Group  on Target: 5005-0768-0220-1305 flushed OK
==============================================
```

Help

Displays summary help with a very brief description of the available FabricCache CLI commands. To view detailed syntax for a specific command, enter the action and item with the `-help` keyword.

Syntax

help

[-constraint]

Keywords

-constraint

If used, usage constraints are displayed for FabricCache CLI commands that do not work on all 10000 Series Adapter hardware and firmware versions.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `help` command:

```
c:\>qaucli -pr fca help
Usage:
    reboot adapter
    factory_reset adapter
    show adapter
    set adapter
        [-name=<new symbolic name>]
    show append
        [-append=<name>]
           .
           .
           .
```

To display detailed help for the `show adapter` command, issue the `help` command as follows:

```
c:\>qaucli -pr fca show adapter -help
Syntax: show adapter
Modifiers:
This command has no specific keywords
Examples:
c:\>qaucli show adapter /fca=0
-fca=0
-fca=24FF6A34C8 -agent=172.17.137.22
    Adapter ID          = 24FF6A34C8, (Device 0 on remote host 172.17.137.22)
    Cluster ID          = 0000000000000000
```

```
(Not part of any cluster)
Product Name         = QLE10242
Symbolic Name        =
Serial Number        = 1230F00159
SW Version           = 4.0.0.0rc1h
u-boot BIOS Version = 2.3.5.1
HW Version           = 0.a
FC port count        = 2
Linux Host
System name:          Linux
Node name:            rainier3.qlogic.com
Release:              2.6.32-131.0.15.el6.x86_64
Version:              #1 SMP Tue May 10 15:42:40 EDT 2011
Machine name:         x86_64
Domain name:          (none)
Driver version:       1.0.0.0rc0v
```

Interactive CLI

Starts an interactive session that presents available options in menu form, building a command line step by step.

Syntax **interactive cli**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `interactive cli` command:

```
c:\>qaucli -pr fca interactive cli
```

Invalidate Cache

Invalidates the cache for a specified range of logical blocks in a specified LUN.

Syntax

invalidate cache

[-lun_start_lba=<source LUN starting block for locking cache for this LUN>]
[-lun_size_lba=<LUN size in logical block address (LBA) blocks for locking cache for this LUN>]
[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]

Keywords

-lun_start_lba

Specifies the starting block for invalidation of the specified LUN cache. If not specified, invalidation starts at the beginning of the LUN.

-lun_size_lba

Specifies the cache range size in LBA blocks (512 bytes) for the specified LUN. If not specified, invalidation starts from the specified starting point to the end of the LUN.

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$`*-xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN, and then as the Page 0x80 serial number designator until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to view detailed information.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

NOTE

This command operates on only one LUN, which must be specified by a combination of keywords.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `invalidate cache` command:

```
c:\>qaucli -pr fca invalidate cache

-fc_target=5001-4380-025D-A83A -lun_number=2 -lun_start_lba=100
-lun_size_lba=20 -fca=0

Successfully invalidated cache for LBA range 100 to 120,
-fc_target=5001-4380-025D-A83A -lun_number=2
```

List Adapter

Displays a list of known 10000 Series Adapters grouped by cluster, if any.

Syntax **list adapter**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes The `-fca` keyword is optional for this command. If `-fca` is used, the information displayed is restricted to the scope of a specific adapter.

Examples The following example shows the `list adapter` command:

```
c:\>qaucli -pr fca list adapter -fca=0 -agent=172.17.137.22
(Adapters that are not a member of any cluster)
    -fca=24FF6A34C8
    -fca=C0DD1F71D4
```

List Cluster

Displays a list of 10000 Series Adapters that are part of each cluster.

Syntax **list cluster**

[-clusterid=<cluster ID>]

Keywords **-clusterid**

Limits the display to the specified cluster. If this keyword is not used, adapters are listed for all clusters.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes The `-fca` keyword is optional for this command. If `-fca` is used, the information displayed is restricted to the scope of a specific adapter. The specified adapter can be either a locally connected adapter or any other adapter in the same Fibre Channel zone with a locally connected adapter.

Examples The following example shows the `list cluster` command:

```
c:\>qaucli -pr fca list cluster -clusterid="JWM_930614" -fca=0

-clusterid="JWM_930614"

    -fca=24FF4F4AD2      [Cluster Secondary]
    -fca=24FF4F4C2C      [Cluster Primary]
```

List Device

Lists the names of all devices known to the 10000 Series Adapter. Any of these devices may be a target, initiator, both a target and an initiator, or an unknown device that is neither a target nor an initiator. To view detailed information for a specific device, issue the `show device` command instead; see page 557.

Syntax **list device**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `list device` command:

```
c:\>qaucli -pr fca list device -fca=0
[ Device 0 on local host ]
Device count = 11
-fc_device=2100-0024-FF6A-34C8
-fc_device=2200-0014-C344-9BCA
-fc_device=2200-0014-C344-9B37
-fc_device=2200-0014-C344-9B23
-fc_device=2200-0014-C344-9B5A
-fc_device=2200-0014-C344-9AF5
-fc_device=2200-0014-C344-9B29
-fc_device=2200-0014-C344-9B39
-fc_device=2200-0014-C33D-D43B
-fc_device=2100-00C0-DD1F-71D5
-fc_device=2100-00C0-DD1F-71D4
```

List Drive

Lists all drives known to the 10000 Series Adapter. To view detailed information for a specific drive, issue the `show drive` command instead; see page 558.

Syntax **list drive**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `list drive` command:

```
c:\>qaucli -pr fca list drive -fca=0
[ Device 0 on local host]

Configured Drive count = 2
    -drive=5001-4EE1-599E-4B62
    -drive=5001-4EE1-0449-1783

Unconfigured Drive count = 0
```

List Initiator

Lists the names of all initiators known to the 10000 Series Adapter. To view detailed information for a specific initiator, issue the `show initiator` command instead; see page 561.

Syntax **list initiator**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `list initiator` command:

```
c:\>qaucli -pr fca list initiator -fca=0
Initiator count = 2

-fc_initiator=2100-00C0-DD1F-71D5
    -wwpn=2100-00C0-DD1F-71D5 -wwnn=2000-00C0-DD1F-71D5

-fc_initiator=2100-00C0-DD1F-71D4
    -wwpn=2100-00C0-DD1F-71D4 -wwnn=2000-00C0-DD1F-71D4
```

List Log

Displays log data from a file or a running system, filtered according to severity and search text. To view a limited set of log data, issue the `view log` command instead; see page 581.

Syntax

list log

[-file=<input file name for saved log>]
[-find=<text to search for from base position>]
[-severity=[error | warning | info | trace | debug | system]]
[-csv_delimiter=<delimiter for text separation in CSV file output>]
[-csv_file=<CSV output file name>]
[-previous=<quantity of records to print>]

Keywords

-file

Specifies a file containing log data. If no directory is specified, the default is the working directory. If `-file` is not specified, log data from the adapter is displayed on the console. If neither `-find` nor `-severity` is specified, all log entries are displayed.

-find

Specifies a text string to search for within the log data list

-severity

Specifies a severity (error, warning, info, trace, debug, or system) by which to filter log data.

-csv_delimiter

Specifies the use of a delimiter other than comma (,) when used with `-csv_file`.

-csv_file

Specifies the name of a file to receive comma separated text.

-previous

Displays a specified number of log records at the end of the log. The default is to display all of the log messages. To display only the most recent 100 messages, for example, specify `-prev=100`.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `list log` command:

```
c:\>qaucli -pr fca list log -file=logdata.dat -severity=info
-fca=0
```

```
   INFO 04/07/2010 01:04:40 UserApp #1027: qapisetisns_1_svc:iSNS
configuration changed
```

List LUN

Lists the names of all LUNs known to the 10000 Series Adapter. The output can be copied and pasted into other commands that use LUNs as input. To view details for a specific LUN, issue the `show lun` command instead; see page 562.

Syntax **list lun**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `list lun` command:

```
c:\>qaucli -pr fca list lun -fca=0
Target "5001-4380-025D-A83A"
        -lun_number=0 -fc_target=5001-4380-025D-A83A
        -lun_number=1 -fc_target=5001-4380-025D-A83A
        -lun_number=2 -fc_target=5001-4380-025D-A83A
        -lun_number=3 -fc_target=5001-4380-025D-A83A
        -lun_number=4 -fc_target=5001-4380-025D-A83A
```

List Target

Lists the names of all targets known to the 10000 Series Adapter. To view details for a specific target, issue the `show target` command instead; see page page 577.

Syntax **list target**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `list target` command:

```
c:\>qaucli -pr fca list target -fca=0
Target count = 4
    -fc_target=5001-4380-025D-A83A
    -fc_target=5001-4380-025D-A83E
    -fc_target=5001-4380-025D-A83F
    -fc_target=5001-4380-025D-A83B
```

Merge CSV

Creates an optional CSV file using output from the `show io_statistics` or `show performance` commands. The `merge csv` command collects input from multiple files and combines them into a summary CSV file, which you can import into a spreadsheet program such as Microsoft Excel®. Use the spreadsheet program to graph usage over time, so that maintenance can be planned for less busy times.

The `show io_statistics` and `show performance` commands can save output to multiple files, one per port or per LUN.

Syntax

merge csv

[-file=<script file name>]

[-csv_folder=<folder containing comma delimited file output>]

Keywords

-file

Specifies the name of the output file for the comma separated text. If not specified, the command displays the output text on the console.

-csv_folder

Specifies the folder containing the comma separated files from which to collect the LUN and port performance data. If not specified, this command collects data from CSV files in the working directory.

This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `merge csv` command:

```
c:\>qaucli -pr fca merge csv -csv_folder=c:\temp -file=summary.csv

CSV output file summary.csv created successfully
```

Modify Cache

Modifies the caching for a LUN that is currently being cached. This command operates on only one LUN, which must be specified by a combination of keywords.

Syntax

modify cache

-mode=read_write_through
[-profile=[default]
[-max_cache=<size in GB>]
[-min_read=<size in 1024-byte logical blocks>]
[-max_read=<size in 1024-byte logical blocks>]
[-min_write=<size in 1024-byte logical blocks>]
[-max_write=<size in 1024-byte logical blocks>]
[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]
[-use_default]

Keywords

-mode

Enables or disables the addition of cache entries for the specified LUN. Cache behavior depends on the option selected. The `read_write_through` mode indicates that if data read from or written to the LUN is not in the cache, it is added and immediately written to the LUN.

-profile

Specifies the caching profile for the LUN. If not specified, the default profile is used.

-max_cache

Specifies the maximum amount of the total cache available to use for this LUN, in units of 1KB. The value must be in the range of zero to 1024. If not specified, no limit is applied. If all LUNs operate without this limit, they compete as equals for the cache resources.

-min_read

Specifies the minimum read size to be cached, in units of 1KB. The value must be in the range of zero to 1024; the default is a fixed value programmed into the firmware.

-max_read

Specifies the maximum read size to be cached, in units of 1KB. The value must be

in the range of zero to 1024; the default is a fixed value programmed into the firmware.

-min_write

Specifies the minimum write size to be cached, in units of 1KB. The value must be in the range zero to 1024; the default is a fixed value programmed into the firmware.

-max_write

Specifies the maximum write size to be cached, in units of 1KB. The value must be in the range zero to 1024; the default is a fixed value programmed into the firmware.

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$`*-xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN, and then as the Page 0x80 serial number designator until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which to modify the cache.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

-use_default

If this keyword is specified, default values are used for the `-min_read`, `-max_read`, `-min_write`, and `-max_write` keywords. If any of the `min` or `max` keywords are used in combination with `-use_default`, the specified `min` and `max` keywords are used instead of the default values.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `modify cache` command.

```
c:\>qaucli -pr fca modify cache -lun_number=0
-fc_target=2200-0014-C33D-D43B -use_default -max_read=64 -fca=0
[ Device 0 on host at 172.17.137.22]
Successfully modified caching for LUN
-fc_target=2200-0014-C33D-D43B -lun_number=0
```

Remove Cache Pool

Deletes the cache pool from the FabricCache adapter. You must remove the cache pool from a LUN to free up the SSD for other use.

Syntax **remove cache_pool**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes Before removing a cache pool, you must disable caching (see Disable Cache) for each cached LUN that uses the cache pool. Otherwise the command fails with the message, `Storage pool is in use, not allow to remove.`

Examples The following example shows the `remove cache_pool` command:

```
C:\>qaucli -pr fca remove cache_pool -fca=0
[ Device 0 on local host ]

Storage cache pool has been removed successfully.
```

Remove Drive

Removes a drive from a storage pool on a 10000 Series Adapter. This command operates on one drive that is specified by a combination of keywords.

Syntax

remove drive

[-drive=<WWULN of a local disk drive>]
[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]

Keywords

-drive

Specifies the WWULN of a local disk drive.

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, `xxx$-xxx`. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (`'`) instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN, and then as the Page 0x80 serial number designator until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to remove a drive.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `remove drive` command:

```
c:\>qaucli -pr fca remove drive -drive=5006-0261-0C33-E47A
Drive successfully removed
```

Remove Member

Removes a member adapter from the specified cluster. This command must be directed to the primary adapter the specified cluster.

Syntax

remove member

-clusterid=<cluster ID>

-member=<locally connected device instance>

[-accept_risk]

Keywords

-clusterid

Specifies the ID of a specific cluster. Enter the cluster ID as a text string containing a minimum of 8 and a maximum of 16 characters.

-member

Specifies the ID of the 10000 Series Adapter that will be removed from the cluster.

-accept_risk

Prevents display of the prompt to confirm member removal. Use this keyword in situations where the command is in a script that cannot conveniently accept user input. (See note, below.)

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes

The `remove member` command can potentially corrupt user data if improperly used. For example, if a LUN is cached on another adapter in the current cluster, it is safe to access the LUN from this adapter only as long as it is in the cluster. After the adapter is removed from the cluster, any data written to the LUN from the adapter is not reflected in the cache on the other adapter. To reduce the possibility of an accidental removal, this command prompts for confirmation. To prevent the confirmation prompt from appearing, include the `-accept_risk` keyword.

Examples

The following example shows the `remove member` command:

```
c:\>qaucli -pr fca remove member -fca=0 -clusterid="CLUSTER
514c4743" -member=C0DD1F711C
Fibre Channel Adapter C0DD1F711C successfully removed from cluster
"CLUSTER 514c4743"
```

Report Log

Retrieves log data from the 10000 Series Adapter and saves a formatted text report to a file.

Syntax **report log**

[-file=<output file name for report text>]

Keywords **-file**

Specifies the name of the file to receive the report text. If you omit this keyword, the report is displayed on the console. If you do not specify a directory, the file is saved in the current working directory.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `report log` command:

```
c:\>qaucli -pr fca report log -file=logdata.txt -fca=0
[ Device 0 on local host ]

Report saved successfully to file: "logdata.txt"
```

Restart Adapter

Restarts the firmware in the 10000 Series Adapter.

Syntax **restart adapter**

[-sync]=<synchronous adapter restart>

Keywords **-sync**

Synchronously restarts the 10000 Series Adapter. The FabricCache CLI waits until after the adapter has restarted and is available before completing the `restart adapter` command.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `restart adapter` command:

```
c:\>qaucli -pr fca restart adapter -fca=0
FCA is restarting...
```

Restore Drive Configuration

Transfers drive ownership to the new adapter when a drive is moved from one adapter to another.

Syntax **restore drive_config**

[-owner=<adapter ID>]

Keywords **-owner**

Specifies the adapter ID to which the drive was previously connected.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `restore drive_config` command:

```
c:\>qaucli -pr fca restore drive_config -owner=24FF49F40C -fca=0
Configuration restored successfully
```

Return Value FCA CLI

Displays a description of the specified return value. In most cases, FabricCache CLI returns zero or a code (for example, `QHBA_S_OK_REBOOT_REQUIRED`) to indicate success.

The return value from this command is one of the following:

`HCLI_OK` indicates success.

`HCLI_INIT_FAIL` indicates initialization failure.

`HCLI_PARSE_FAIL` indicates a grammar or syntax problem.

`HCLI_CMD_FAIL` indicates a general command failure.

`HCLI_RESULT_FAIL` indicates that the command succeeded but there was a problem with the result (for example, if `-text=t.txt` was specified, but the default directory was write protected).

Codes starting with `QHBA_E_…` are error codes. Codes starting with `HCLI…` are command line error codes. See Chapter 16 FabricCache CLI API Error Codes for a list of errors that the API may return when parsing the `retval` command input or producing command output.

Syntax

retval hcli

[-rv=<return value from a previously executed FCA CLI command>]

Keywords

-rv

Specifies a return value from a previously executed FCA CLI command.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `retval hcli` command:

```
c:\>qaucli -pr fca retval hcli -rv=1100
QHBA_E_INVALID_ARG
```

Save Capture File

Collects a file that contains diagnostic information for the 10000 Series Adapter.

Syntax **save capture_file**
-file=<output file name>

Keywords **-file**

Specifies the name of the file to be created. If the specified file name does not end with `.tar.gz`, this command appends `.tar.gz` to the file name. If you do not specify a directory, the file is saved in the current working directory.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following examples show the `save capture_file` command:

```
c:\>qaucli -pr fca save capture_file -file=savecap.tar.gz -fca=0
 Capture file saved successfully

c:\>qaucli -pr fca save capture_file -file=c:\temp\savecap.tar.gz -fca=0
 Capture file saved successfully

c:\>qaucli -pr fca save capture_file -file=/home/admin/savecap.tar.gz -fca=0
 Capture file saved successfully
```

Save Demonstration File

Creates and saves a demonstration file.

Syntax **save demonstration_file**
-file=<output file name>

Keywords **-file**

Specifies the name of the file to be created. If the specified file name does not end with `.tar.gz`, this command appends `.tar.gz` to the file name. If you do not specify a directory, the file is saved in the current working directory.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `save demonstration_file` command:

```
c:\>qaucli -pr fca save demonstration_file -file=savedemonstration.tar.gz
 DEMONSTRATION file saved successfully

c:\>qaucli -pr fca save demonstration_file
-file=c:\temp\savedemonstration.tar.gz
 DEMONSTRATION file saved successfully

c:\>qaucli -pr fca save demonstration_file -file=/home/admin/savedemonstration
.tar.gz
 DEMONSTRATION file saved successfully
```

Save Log

Retrieves log data from the 10000 Series Adapter and saves it to a file.

Syntax

save log

-file=<output file name for saved log>

Keywords

-file

Specifies the name of a file to receive the log data. If no directory is specified, the default is the working directory.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the save log command:

```
c:\>qaucli -pr fca save log -file=logdata.dat -fca=0
Log saved successfully to file: "logdata.dat"
```

Save Script

Saves an editable text file containing the current adapter configuration as a list of FabricCache CLI commands.

Syntax **save script**

-file=<script filename>

Keywords **-file**

Specifies a text file to be created to receive the command script. If `-file` is not specified, the script outputs to the console. If no directory is specified, the default is the current working directory.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `save script` command:

```
c:\>qaucli -pr fca save script -file=config_script.txt
Script file generated successfully.
```

Script CSV

Creates a script with individual commands for items in one or more columns of a CSV input file. Running a script (as opposed to running commands one at a time) enables you to more accurately perform multiple, similar operations.

Keywords **script csv**

-cmd=<FCA CLI command action>

-csv_file=<CSV input filename>

[-file=<output script filename>]

[<any keyword for an FCA CLI command to be included on every line of the script>]

[<any keyword for an FCA CLI command>=[csv_a | csv_b | csv_c | ...csv_z]]

Keywords **-cmd**

Specifies the command action, for example, `-cmd="create lun"`.

-csv_file

Specifies the name of the input file for the comma separated text.

-file

Specifies the name of the output script file. If not specified, the output appears on the console.

<any keyword for a FabricCache CLI command to be included on every line of the script>

Keywords with assigned values suitable for the command specified by `-cmd=...` are included as specified on every line of the script.

<any keyword for a FabricCache CLI command>=[csv_a | csv_b | csv_c | …csv_z]

Keywords with assigned values starting with `csv` are iteratively assigned a value from the specified column of the CSV file.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `script csv` command:

```
c:\>qaucli -pr fca script csv -cmd="enable cache" -csv_file=c:\temp\mydata.csv
-file=summary.txt -mode=csv_e -lun_wwuln=csv_f

Script file for CSV file mydata.csv created successfully
```

Example Scenario

In this example scenario, a company wants to devise a plan for a complex operation and obtain approval for it from multiple managers before the operation proceeds. The plan is laid out in a spreadsheet in which each row represents one operation.

For example, suppose a server has thousands of LUNs for which you want to enable caching, some of which will be enabled for write-through mode. You create a spreadsheet with two columns: one specifies each WWULN and a second specifies caching mode as `read_write_through`. You save the spreadsheet as a CSV file; for example, `c:\temp\TestSpreadsheet.csv`.

You can then issue the `script csv` command to create a script that executes all of the intended actions. For example:

```
script csv /cmd="enable cache" /lun_wwuln=csv_b  /mode=csv_d  /max_read=2014
/csv_file=c:\temp\TestSpreadsheet.csv /file=c:\temp\myRunnableScript.txt
```

NOTE

In the preceding example, the script can contain any quantity of non-CSV generated keywords, such as `-max_read=2048`. All such keywords are included in all lines of the generated script.

You would circulate the spreadsheet and the generated script for review, and obtain approvals, before running the script as follows:

```
execute script -file=c:\temp\myRunnableScript.txt
```

The preceding command produces the resulting CSV file saved from the spreadsheets:

```
LUN:,5006-0160-BEA0-24B3-5006-0160-BEA0-24B4,cache  mode:,read_write_through
LUN:,5006-0160-BEA0-24B3-5006-0160-BEA0-24B5,cache  mode:,read_write_through
LUN:,5006-0160-BEA0-24B3-5006-0160-BEA0-24B6,cache  mode:,read_write_through
```

The generated script file (`c:\temp\myRunnableScript.txt`) contains the following lines:

```
Script for comma separated value file c:\temp\myRunnableScript.csv
# >>> script csv -cmd="enable cache" -lun_wwuln=csv_b -max_read=2014
-mode=csv_d
#
enable cache -lun_wwuln=5006-0160-BEA0-24B3-5006-0160-BEA0-24B4 -max_read=2014
-mode=read_write_through
enable cache -lun_wwuln=5006-0160-BEA0-24B3-5006-0160-BEA0-24B5 -max_read=2014
-mode=read_write_through
```

```
enable cache -lun_wwuln=5006-0160-BEA0-24B3-5006-0160-BEA0-24B6 -max_read=2014
-mode=read_write_through
```

Set Adapter

Sets a symbolic name for the specified 10000 Series Adapter.

Syntax **set adapter**

[-name=<new symbolic name>]

Keywords **-name**

Specifies a symbolic name for the adapter. The name can be blank, or a maximum of 63 alphanumeric characters, spaces, and special symbols.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `set adapter` command:

```
c:\>qaucli -pr fca set adapter -name=myFCA -fca=0
Adapter symbolic name set successfully, but 'restart adapter' is
required for changes to take effect
```

Set Append

Creates, replaces, or deletes a named set of keywords that can be included as a group for any FCA CLI command by using the `/append=<name>` keyword.

Syntax

set append

-append=<name> <…rest of the command line…>

If `<…rest of the command line…>` is *not* blank, this set of keywords is used in place of `/append=<name>` for any other FCA CLI command.

If `<…rest of the command line…>` is blank, the named set of append keywords is deleted.

Keywords

-append

Specifies the name of a keyword set to create, replace, or delete.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `set append` command:

```
c:\>qaucli -pr fca set append -append=modset1 /fca=0

-append=modset1 --> /fca=0
```

Set FC

Configures the specified Fibre Channel port.

Syntax

set fc
[-port=<port number, (first port is 1)>]
[-fc_link_rate=[auto, 2Gb, 4Gb, 8Gb]]
[-exec_throttle=<number in range of 16–65535>]
[-loop_only]
[-p2p_only]
[auto]

Keywords

-port

Specifies the Fibre Channel port for which you want to set the link rate.

-fc_link_rate

Specifies a new link rate in Gbps for the specified Fibre Channel port. Link rate options include Auto, 2Gb, 4Gb, or 8Gb. The default value is as currently set on the 10000 Series Adapter.

-exec_throttle

Specifies the execution throttle value as an integer in the range of 16–65535. The default value is as set on the 10000 Series Adapter.

-loop_only

Specifies loop-only as the programmed connection option.

-p2p_only

Specifies point-to-point only as the programmed connection option.

-auto

Automatically specifies the preferred programmed connection option.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `set fc` command:

```
c:\>qaucli -pr fca set fc -port=1 -fc_link_rate=auto -fca=0
FC Port 0 basic info successfully configured
```

Set Pool

Adjusts the size of the local storage pool to be used as the data cache.

Syntax **set pool**

-cache=<size in GB>

Keywords **-cache**

Specifies the size in GB of the total pool to use as the data cache. The minimum cache size is one percent of the total pool. If you specify a size less than 4GB, a minimum cache pool size of 4GB is used.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `set pool` command:

```
C:\>qaucli -pr fca set pool -cache=20GB -fca=0
[ Device 0 on local host ]

Pool usage successfully changed.
```

Set Target

Sets the individual target-based execution throttle (maximum outstanding I/Os).

Syntax

set target

[-fc_target=<Fibre Channel target name>]
[-max_outstanding_io=<maximum quantity of I/O>]

Keywords

-fc_target

Specifies the name of the Fibre Channel target for which you want to view detailed information.

-max_outstanding_io

Specifies the maximum quantity of outstanding I/Os as an integer in the range of 32–2048.

NOTE

Because storage targets have a maximum queue depth, too many simultaneous I/Os issued to a specific target may return a “Queue Full” or “Busy” status. The status may cause I/O to be retried, which in turn may lower overall performance. The `-max_outstanding_io` parameter allows I/Os to be throttled back, rather than overloading the destination target.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `set target` command:

```
c:\>qaucli -pr fca set target -fca=0 -max_outstanding_io=2048
-fc_target=5005-0768-0230-1305

-max_outstanding_io=2048 for -fc_target=5005-0768-0230-1305 set
successfully.
```

Show Adapter

Displays adapter information, including serial number, firmware version, and more.

Syntax **show adapter**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes The `-fca` keyword is optional for this command. If `-fca` is not used, the detailed information is displayed for all locally connected adapters. If `-fca` is used, the detailed information is displayed for only the specified adapter, which can be either a locally connected adapter or any other adapter in the same Fibre Channel zone with a locally connected adapter.

Examples The following example shows the `show adapter` command:

```
c:\>qaucli -pr fca show adapter -fca=0

    -fca=0
    -fca=24FF4F4C24
        Adapter ID          = 24FF4F4C24, (Local device 0)
        Cluster Key         = CLUSTER 24FF4F4C
        [Cluster Primary]
        Product Name        = QLE10500
        Symbolic Name       =
        Serial Number       = RFD1302H06230
        SW Version          = 4.0.1.0rc2r
        u-boot BIOS Version = 4.0.6.26
        HW Version          = MR0112501-01 00
        BIOS Version        =
        EFI Version         =
        VMware Host
        System name:         VMware ESXi
        Node name:           20000024ff4f4c24
        OS version:          5.1.0
        OS build date:       Releasebuild-1065491
        Machine name:        x86_64
        Domain name:         none
        Driver version:      934.5.22.0-1vmw
```

Show Append

Displays a named set of keywords that can be included as a group for any FCA CLI command by including the `/append=<name>` keyword. If the `-append=<name>` keyword is not included, this command displays all sets.

Syntax

show append
[-append=<name>]

Keywords

-append

Specifies the name of a keyword set to display. (If not used, displays all sets.)

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `show append` command:

```
c:\>qaucli -pr fca show append
-append="testset" --> "-quiet
-text="c:\temp\test_show_system.txt""
```

Show Cluster

Displays cluster information, including a list of 10000 Series Adapters that are part of the cluster.

Syntax **show cluster**

[-clusterid=<cluster ID>]

Keywords **-clusterid**

Limits the display to a specific cluster. If this keyword is not used, adapters are listed for all clusters. Enter the cluster ID as a text string containing a minimum of 8 and a maximum of 16 characters.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes The `-fca` keyword is optional for this command. If `-fca` is not used, detailed information is displayed for all locally connected adapters. If `-fca` is used, detailed information is displayed for only the specified adapter, which can be either a locally connected adapter or any other adapter in the same Fibre Channel zone with a locally connected adapter.

Examples The following example shows the `show cluster` command:

```
c:\>qaucli -pr fca show cluster -clusterid="CLUSTER 24FF4F4C"
-clusterid="CLUSTER 24FF4F4C"
  -fca=24FF4F4C24
        Adapter ID          = 24FF4F4C24, (Local device 0)
        [Cluster Primary]
        Product Name        = QLE10500
        Symbolic Name       =
        Serial Number       = RFD1302H06230
        SW Version          = 4.0.1.0rc2r
        u-boot BIOS Version = 4.0.6.26
        HW Version          = MR0112501-01 00
        BIOS Version        =
        EFI Version         =
        VMware Host
        System name:         VMware ESXi
        Node name:           20000024ff4f4c24
        OS version:          5.1.0
        OS build date:       Releasebuild-1065491
        Machine name:        x86_64
        Domain name:         none
```

```
      Driver version:      934.5.22.0-1vmw

-fca=24FF4F4AB6
      Adapter ID          = 24FF4F4AB6, (SAN access via local device 0)
      [Cluster Secondary]
      Product Name        = QLE10500
      Symbolic Name       =
      Serial Number       = AFD1244F00007
      SW Version          = 4.0.1.0rc2r
      u-boot BIOS Version = 4.0.6.26
      HW Version          = 0000
      BIOS Version        =
      EFI Version         =
      VMware Host
      System name:         VMware ESXi
      Node name:           21000024ff4f4ab6
      OS version:          5.1.0
      OS build date:       Releasebuild-1065491
      Machine name:        x86_64
      Domain name:         none
      Driver version:      934.5.22.0-1vmw
```

Show Device

Displays detailed information for a single device that may be a target, initiator, both a target and an initiator, or an unknown device that is neither a target nor an initiator.

Syntax

show device

[-fc_device=<Fibre Channel initiator or target name>]

Keywords

-fc_device

Specifies the Fibre Channel initiator or target name.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `show device` command:

```
c:\>qaucli -pr fca show device -fc_device=2100-0024-FF49-75FF
-fca=0
[ Device 0 on local host ]

-fc_device=2100-0024-FF49-75FF
    FC initiator
        WWNN:    2000-0024-FF49-75FF
        WWPN:    2100-0024-FF49-75FF
        Port ID: 6F-09-00
        Target State = online, FC2
        Target Portal Mode = FCP
    FC Target
        Port ID = 6F-09-00
        Operational State = Logged In, Target
```

Show Drive

Displays detailed information for one or more local disk drives.

Syntax

show drive

[-drive=<WWULN of a local disk drive>]
[-smart]
[-verbose]

Keywords

-drive

Specifies the WWULN of a local disk drive. If the drive is not specified, detailed information is displayed for all of the locally connected disk drives.

-smart

Displays flash memory self-monitoring, analysis and reporting technology (SMART) data for the specified drive, following the regular drive information.

-verbose

Displays all of the available SMART attributes for the drive. This keyword has no effect unless the `-smart` keyword is also used. If `-smart` is used without `-verbose`, only a subset of the more basic SMART attributes are displayed.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `show drive` command:

```
c:\>qaucli -pr fca show drive -drive=5006-0262-0C37-8286 -fca=0
[ Device 0 on local host ]

-drive=5006-0262-0C37-8286
        Configured
        Owner ID =       24FF49F40C
        State =          Online
        Size =           46.58GB
        Vendor ID =      ATA
        Product ID =     VRFSC2200GFCSST
        Revision =       Q53A
        Serial Number =  20204964486
        ( Internal Drive  PCIE SSD )
        Drive Path:
            -fc_target=5006-0262-0C37-8286   -lun_number=0
```

Show FC

Displays basic information for the selected Fibre Channel port.

Syntax

show fc

[-port=<port number, (first port is 1)>]

Keywords

-port

Specifies the Fibre Channel port number for which you want to view basic information. If not specified, the command displays basic information for all Fibre Channel ports.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `show fc` command:

```
c:\>qaucli -pr fca show fc -fca=0 -port=1
[ Device 0 on local host ]

    Port = FC1
    Port Status = PORT_ENABLED
    Link Status = LINK_UP
    FibreChannel Mode = FCP
    Current Link Rate = 8Gb
    Programmed Link Rate = Auto
    WWNN = 2000-0024-FF4F-4C24
    WWPN = 2100-0024-FF4F-4C24
    Port ID = 0C-77-00
    Firmware Revision = 5.10.00
    Frame Size = 2048
    SFP Type = 8Gb
    Execution Throttle = 512
    Connection Mode = Point-to-Point
    Programmed Connection Option = Auto
```

Show Health

Displays health information for the adapter, including error counts, temperatures, and test results from power-on and built-in self-tests.

Syntax **show health**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `show health` command:

```
c:\>qaucli -pr fca show health -fca=0
[ Device 1 on local host ]

    PCIe port 0
        LINK_UP
        Vendor/Device = 0x1077 / 0xf001 (Mt Rainier)
        GEN 1 (2.5 Gbits/sec)
        4x4
    PCIe port 1
        LINK_UP, (FC ASIC)
        Vendor/Device = 0x1077 / 0x2533 (Mt Rainier)
        GEN 2 (5.0 Gbits/sec)
        4x4
    PCIe port 3
        LINK_UP, (SAS ASIC)
        Vendor/Device = 0x1b4b / 0x9445 (Mt Rainier)
        GEN 2 (5.0 Gbits/sec)
        4x4
    Temperature (Front/Rear/CPU): 41 / 42 / 50 (Centigrade)
    Internal drivers loaded OK:   ADAPTER, LED, ENDPOINT, BRAPP, FC, SCSIMID, MV94XX
    Internal drivers not loaded:  MPTSAS, MPI32XX, MVIDMA, MVXDMA, BBRAM
```

Show Initiator

Displays detailed information for one or more initiators.

Syntax **show initiator**
[-fc_initiator=<Fibre Channel initiator name>]

Keywords **-fc_initiator**
Specifies the Fibre Channel initiator name.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `show initiator` command:

```
c:\>qaucli -pr fca show initiator -fc_initiator=2100-0024-FF49-75FF -fca=0
[ Device 0 on local host ]

-fc_initiator=2100-0024-FF49-75FF
    -wwpn=2100-0024-FF49-75FF -wwnn=2000-0024-FF49-75FF
    FC Initiator
        Port ID = 6F-09-00
        Operational State = Logged In, Target
```

Show LUN

Displays detailed information either for a single LUN or for all LUNs known to the 10000 Series Adapter:

- If none of the optional keywords are used, detailed information is displayed for all LUNs known to the 10000 Series Adapter.
- If no Fibre Channel Adapter is specified, LUNs are listed for all known adapters. Each LUN is listed only once, even if there are multiple paths to it.
- If the LUN is cached, the information displayed is obtained from the adapter that is caching it.

Syntax

show lun

[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]

Keywords

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, `xxx$-xxx`. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (`'`) instead of double quotation marks (`"`).

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN, and then as the Page 0x80 serial number designator until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to view detailed information.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

NOTE

If `-lun_number` and `-fc_target` are both used, detailed information is displayed for a single LUN.

If only one or two keywords are used, detailed information is displayed for all LUNs that match the input. For example, if only `-lun_number` is used, detailed information is displayed for all LUNs with the specified `lun number` on any target.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `show lun` command:

```
C:\>qaucli -pr fca show lun -lun_number=1 -fc_target=5005-0768-0210-0F02
-fca=0
[ Device 0 on local host ]

-lun_number=1 -fc_target=5005-0768-0210-0F02
-lun_wwuln=6005-0768-0281-805E-9000-0000-0000-069C
-lun_serial="0200a06017a4XX00"
    Target     = 5005-0768-0210-0F02
    LUN Number = 1
    LUN State  = 0x200801 ( Online, Mapped, Cache Ready)
    LUN Type   = Direct Access
    Vendor ID      = IBM
    Product ID     = 2145
    Revision Level = 0000
    Serial Number  = 0000000000000000
    Page 0x80 serial number = 0200a06017a4XX00
    WWULN = 6005-0768-0281-805E-9000-0000-0000-069C
    Size  = 10GB, (20971520 blocks)
    LUN Path Info:
       Controller ID: 0
            WWPN = 5005-0768-0210-0F02
            WWNN = 5005-0768-0200-0F02
            Port ID = 02-0A-00
            Status:  Active Current Optimized

    LUN I/O Statistics:
```

```
    I/O Count Read/Write:   [ 36311 / 25443 ]
    I/O Blocks Read/Write:  [ 2323904       / 1628352 ]
    Read/Write I/O:         [ 1.10GB        / 795.9MB ]

LUN Cache Info:
    Mode: Read_Write_Through
    Profile Type: Default
    (Cache usage for this LUN is not limited)
    Reads with size  1 blocks to 128 blocks will be cached
    Writes with size 1 blocks to 128 blocks will be cached

LUN Cache Statistics:
    Cache Capacity Used (Clean) = 1.31GB
    Read Data                   = 4644864TB
    Cache Hits (Read Load))     = 409600TB  (0.0% of read Read Data)
    Cache Hits (Write Load)     = 1343488TB (0.0% of read Read Data)
    Cache Hits (Total)          = 1753088TB (0.0% of read Read Data)
```

Show LUN Statistics

Displays statistics in a tabular format for either a single LUN or for all LUNs known to the 10000 Series Adapter.

Syntax

show lun_statistics

[-interval=<time in seconds>]
[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]
[-csv_folder=<folder to receive comma-delimited file output>]

Keywords

-interval

Specifies the time, in seconds, for a periodic display refresh. If not specified, the statistics table is displayed only once.

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, `xxx$-xxx`. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN, and then as the Page 0x80 serial number designator, until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to view statistics.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

-csv_folder

Specifies the folder into which individual files are created for each LUN. If existing files are already in the specified folder, this command appends the new statistics in those files.

NOTE

If none of the optional keywords are used, detailed information is displayed for all LUNs known to the 10000 Series Adapter.

If `-lun_number` and `-fc_target` are both used, detailed information is displayed for a single LUN.

If only one or two keywords are used, detailed information is displayed for all LUNs that match the input.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes

All cache hits occur during read operations. Separate statistics are shown for cache hits for which the data was loaded into cache during a read or a write operation. For each LUN displayed, the columns specify the following information:

- **Cache Hits From Reads Bytes (%)** indicates the percentage of cache hits from read loads in the cache.
- **Cache Hits From Writes Bytes (%)** indicates the percentage of cache hits from write loads in the cache.
- **Cache Hits Total Bytes (%)** is the percentage total cache hit from read loads and write loads in the cache.
- **Read Data Bytes** indicates the bytes of host-read data.
- **Cache Capacity Used** indicates the amount of cache memory filled with cache data in GB.

Examples

The following example shows the `show lun_statistics` command:

```
c:\>qaucli -pr fca show lun_statistics -fca=0
[ Device 0 on local host ]

      Cache Hits       Cache Hits       Cache Hits       Read      Cache
      From Reads       From Writes      Total            Data      Capacity
LUN   Bytes(%)         Bytes(%)         Bytes(%)         Bytes     Used
2008-0020-C211-C34F
16    778.0MB (46.8%)  42MB (2.5%)      820.0MB (49.4%)  1.62GB    9.81GB
```

```
17    778.0MB (46.8%)  42MB (2.5%)      820.0MB (49.4%)  1.62GB    9.81GB

5006-016B-3EA0-24B3
0                                                        0
```

Show Memory

Displays memory usage in the 10000 Series Adapter.

Syntax **show memory**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `show memory` command:

```
c:\>qaucli -pr fca show memory
[ Device 0 on local host ]

    Physical (free/total)        = 1775 / 3040
    Buffer pool (free/total)     = 24704 / 24704
    Process Blocks (free/total)  = 4096 / 4096
    Request Blocks (free/total)  = 2047 / 2048
    Event Blocks (free/total)    = 1024 / 1024
    Control Blocks (free/total)  = 512 / 512
```

Show Pool

Displays pool usage in the 10000 Series Adapter.

Syntax **show pool**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `show pool` command:

```
C:\>qaucli -pr fca show pool -fca=0
[ Device 0 on local host ]

    Total SSD Storage                     = 372.62GB
    Free SSD Storage                      = 331.62GB
    SSD Storage Configured for Cache Pool = 21GB
    SSD Storage Used for Cache Pool       = 0
```

Show Reservation

Displays persistent reservations either for a single LUN or for all LUNs known to the 10000 Series Adapter. If none of the optional keywords are used, detailed information is displayed for all LUNs known to the 10000 Series Adapter

Syntax

show reservation

[-lun_serial=<LUN Page 0x80 serial number>]
[-lun_wwuln=<WWULN>]
[-lun_any_wwuln=<LUN WWULN, or Page 0x80 serial number designator>]
[-lun_number=<logical unit number>]
[-fc_target=<Fibre Channel target name>]

Keywords

-lun_serial

Specifies the LUN's Page 0x80 serial number. The serial number may contain special characters, for example, *xxx*`$-`*xxx*. Because these characters could be interpreted incorrectly when running in a Linux shell, always enclose the input text for Page 0x80 serial numbers within single quotation marks (') instead of double quotation marks (").

-lun_wwuln

Specifies the LUN's WWULN.

-lun_any_wwuln

Accepts the LUN name in a variety of formats that are interpreted first as WWULN and then as the Page 0x80 serial number designator, until at least one LUN is found.

NOTE

Do not combine the keywords `-lun_serial` and `-lun_wwuln`. To specify any LUN, use the `-lun_any_wwuln` keyword instead.

-lun_number

Specifies the LUN for which you want to view persistent reservation.

-fc_target

Limits the list to the LUNs from the Fibre Channel target.

NOTE

If none of the optional keywords are used, detailed information is displayed for all LUNs known to the 10000 Series Adapter.

If both `-lun_number` and `-fc_target` are used, detailed information is displayed for a single LUN.

If only one or two keywords are used, detailed information is displayed for all LUNs that match the input.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples

The following example shows the `show reservation` command:

```
c:\>qaucli -pr fca show reservation -lun_number=2
-fc_target=5001-4380-025D-A83A -fca=0

-lun_number=0 -fc_target=2034-00A0-B82A-3E10
    Type: Write Exclusive, registrants only
    Key: 0x00000024ff9a5104

-lun_number=1 -fc_target=2034-00A0-B82A-3E10
    Type: Write Exclusive, registrants only
    Key: 0x00000024ff9a5104

-lun_number=2 -fc_target=2034-00A0-B82A-3E10
    Type: No reservation held
```

Show SFP

Displays information for the selected SFP transceiver.

Syntax **show sfp**

[-port=<port number, (first port is 1)>]

Keywords **-port**

Specifies the SFP number for which you want to view information. If not specified, the command displays information for all SFPs.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `show sfp` command:

```
c:\>qaucli -pr fca show sfp -port=1 -fca=0
[ Device 0 on local host ]

    SFP Port = 1
    Vendor Name = FINISAR CORP.
    Serial Number = UDG03GD
    Driver Status = No error

    SFP General Status
                        Temperature(C)  Voltage(V)      Tx Bia(mA)      Tx
Power(mW)     Rx Power(mW)
   Value             43.617188      3.336200       0.395700       0.567400
0.486600
   Status             Normal         Normal         Normal         Normal
Normal
   High Alarm         78.000000      3.700000       0.590000       0.831800
1.000000
   High Warning       73.000000      3.600000       0.540000       0.660700
0.794300
   Low  Warning       -8.003906      3.000000       0.250000       0.316200
0.015800
   Low  Alarm         -13.003906     2.900000       0.200000       0.251200
0.010000
```

Show Statistics

Displays cache and host I/O statistics.

Syntax **show statistics**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Notes All cache hits occur during read operations. Under `[Global Cache Statistics]`, separate statistics are displayed for cache hits for which the data was loaded into cache during a read or a write operation, where:

- **Total Cache Capacity** indicates the amount, in GB, of cache memory filled with cache data.
- **Cache Capacity Used** indicates the amount, in GB per LUN, of cache memory filled with cache data.
- **Read Data** indicates the current value, in MB, of host read data.
- **Cache Hits (Read Load)** indicates the read data hit from data loaded by reads for the adapter cache in MB and percentage of total read data.
- **Cache Hits (Write Load)** indicates the read data hit, in MB, from data loaded by writes for the adapter cache, and the percentage of total read data.
- **Cache Hits (Total)** indicates the total read I/O hit from cache in MB and the percentage of total read I/O.

Examples The following example shows the `show statistics` command:

```
c:\>qaucli -pr fca show statistics -fca=0
[ Device 0 on local host ]

    [Host Statistics]

    Average Read IOs/Sec              = 0
    Min/Max/Average Read IO Size      = 8Bytes / 32KB / 11.27KB
    Average Read Bandwidth            = 559Bytes / sec
    Min/Max/Average Read IO Latency   = 0.034 / 822.537 / 7.465 milliseconds
    Average Write IOs/Sec             = 0
    Min/Max/Average Write IO Size     = 512Bytes / 512KB / 349.78KB
    Average Write Bandwidth           = 6.51KB / sec
    Min/Max/Average Write IO Latency  = 0.671 / 217.522 / 49.149 milliseconds
```

```
[Global Cache Statistics]

Total Cache Capacity             = 184GB
Cache Capacity Used (SSD+RAM)    = 679.0        (0.36% of capacity)
Read Data                        = 1.10GB
Cache Hits (Read Load)           = 328.0MB        (28.92% of Read Data)
Cache Hits (Write Load)          = 100MB        (8.81% of Read Data)
Cache Hits (Total)               = 428.0MB        (37.73% of Read Data)
```

Show System Capture

Displays detailed information for a single adapter. The output combines all of the information that can be obtained by issuing each of the FabricCache CLI `show` commands.

Syntax **show system_capture**

Keywords This command has no specific keywords. For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `show system_capture` command (the output has been truncated due to its length):

```
c:\>qaucli -pr fca show system_capture -fca=0

     System Information
     ------------------
         Adapter ID          = 24FF6A5178, (Local device 0) (Not part of any cluster)
        Product Name         = QLE10500
        Symbolic Name        =
        Serial Number        = 1239F00101
        SW Version           = 4.0.0.0rc3w.DL3
        u-boot BIOS Version = 4.0.6.15
        HW Version           = 0000
        Linux Host
        System name:          Linux
        Node name:            (none)
        Release:              2.6.32-131.0.15.el6.i686
        Version:              #1 SMP Tue May 10 15:42:28 EDT 2011
        Machine name:         i686
        Domain name:          (none)
        Driver version:       8.05.92.01.06.0-k

     FC Port Information
     -------------------
    Port = FC1
    Port Status = PORT_ENABLED
    Link Status = LINK_UP
    FibreChannel Mode = FCP
    Current Link Rate = 4Gb
    Programmed Link Rate = Auto
    WWNN = 2000-0024-FF6A-5178
```

```
WWPN = 2100-0024-FF6A-5178
Port ID = 0B-07-00
Firmware Revision = 5.03.14
Frame Size = 2048
Execution Throttle = 256
Connection Mode = Point-to-Point
Programmed Connection Option = Loop Preferred

Port = FC2
Port Status = PORT_ENABLED
Link Status = LINK_DOWN
FibreChannel Mode = FCP
Current Link Rate = Unknown
Programmed Link Rate = Auto
WWNN = 2000-0024-FF6A-5179
WWPN = 2100-0024-FF6A-5179
Port ID = 00-00-00
Firmware Revision = 5.03.14
Frame Size = 2048
Execution Throttle = 256
Connection Mode = Unknown
Programmed Connection Option = Loop Preferred

        .
        .
        .
```

Show Target

Displays detailed information for one or more targets.

Syntax **show target**

[-fc_target=<Fibre Channel target name>]

Keywords **-fc_target**

Specifies the name of the Fibre Channel target for which you want to view detailed information.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `show target` command:

```
c:\>qaucli -pr fca show target -fc_target=5001-4380-025D-A83F
-fca=0
[ Device 0 on local host ]

-fc_target=5001-4380-025D-A83F
    FC Target
        WWNN:    5001-4380-025D-A830
        WWPN:    5001-4380-025D-A83F
        Port ID: 05-0E-00
        Target State = online, FC1
        Target Portal Mode = FCP
        Max Outstanding IO = 242
```

Update Firmware

Uploads a firmware image to the 10000 Series Adapter. You must restart the 10000 Series Adapter following a firmware update.

Syntax **update firmware**

-file=<firmware filename>

Keywords **-file**

Specifies the binary firmware filename to upload into the 10000 Series Adapter. If no directory is specified, the default is the current working directory.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `update firmware` command:

```
c:\>qaucli -pr fca update firmware
-file=c:\temp\QLE10500-B0-x_x_x_x.bin -fca=0
Firmware update complete --> 'restart adapter' is required for
changes to take effect
```

Version Adapter

Compares the firmware version on the adapter with specified version text, and returns success only if the version matches exactly. Use this command in a script to confirm a firmware update after updating the firmware and restarting the adapter.

Syntax **version adapter**

-compare=<version text>

Keywords **-compare**

Specifies the firmware version to be compared to the current adapter firmware.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `version adapter` command:

```
c:\>qaucli -pr fca version adapter -compare=4.0.0.1 -fca=0
Confirmed:  Adapter firmware version is 4.0.0.1
```

Version

Displays the version information for FabricCache CLI and the API library it is using. The first four segments indicate the API version, the fifth segment indicates the FCA CLI branch release number, and the sixth segment is the FabricCache CLI build number.

Syntax **version**

[-name]

Keywords **-name**

If used, the output is the minimum text (for example, `2.0.4.0.0.0`) that could be used in a script to construct a name.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples The following example shows the `version` command:

```
c:\>qaucli -pr fca version
FabricCache CLI
Version 1.68.0.0.0.0
```

View Log

Displays a specified portion of the log data (unlike the `list log` command that shows all log data). A position context is maintained in persistent data. Use the keywords to navigate to a specific range of the log data and display a specified quantity of records before or after this point.

Syntax

view log

[-file=<input file name for saved log>]
[-basepos=[start | end]]
[-offset=<quantity of log records from base position>]
[-time=<quoted time string "MM/DD/YYYY HH:MM:SS">]
[-find=<text to search for from base position>]
[-severity=[unknown | fatal | error | warning | trace | info | debug | system]]
[-previous=<quantity of records to print after last offset>]
[-next=<quantity of records to print before last offset>]

Keywords

All keywords are optional with default values saved in persistent data.

-file

Specifies a log data file name. If no directory is specified, the default is the working directory.

-basepos

Specifies the starting point in the log from which to display log records.

-offset

Specifies the quantity of log records to display from the starting point (`-basepos`) in the log.

NOTE

If `-basepos` and `-offset` are not specified, the position is updated after each `view` command for use as the future default.

If `-basepos` is used without `-offset`, the offset defaults to zero.

If `-offset` is used, `-basepos` is also required.

-time

Specifies a date and time search function that modifies the position after `-basepos` and `-offset` have been evaluated.

-find

Specifies a text string search function that modifies the position after `-basepos` and `-offset` have been evaluated.

-severity

Specifies a severity search function that modifies the position after `-basepos` and `-offset` have been evaluated.

NOTE

The `-time`, `-find`, and `-severity` keywords are search options that start from the position after `-basepos` and `-offset` are evaluated and look for a match in the *previous* direction. If used in combination, they are evaluated in this order: `-time`, `-find`, `-severity`.

-next

Displays a specified quantity of log records after all positioning keywords have been evaluated. If you omit the quantity, the last specified value is used. The initial default is 20 log records.

-previous

Displays a specified quantity of log records before all positioning keywords have been evaluated. If you omit the quantity, the last specified value is used. The initial default is 20 log records.

NOTE

Setting `-previous`=-1 or `-next`=-1 displays all records before or after the current position in the log after evaluating the `-basepos`, `-offset`, `-time`, `-find`, and `-severity` keywords. The `-previous` and `-next` keywords can be used in combination with some duplicate output: displaying for `-next` first, and then for `-previous`.

For an explanation of the general keywords that apply to all commands, see Chapter 14 General FabricCache CLI Keywords.

Examples To view the last five entries in the current log on the 10000 Series Adapter, issue the following command:

```
c:\>qaucli -pr fca view log -basepos=end -previous=5 -fca=0
   INFO 04/06/2010 20:03:06 UserApp qapisetsnmpparams_1_svc: snmp settings changed
   INFO 04/06/2010 20:03:11 UserApp qapisetsnmpparams_1_svc: snmp settings
changed
   INFO 04/06/2010 20:03:15 UserApp qapisetntpparams_1_svc: NTP configuration
changed
   INFO 04/06/2010 20:03:19 UserApp qapisetmigrfctargets_1_svc: Configuration
Changed for migration target
```

To repeatedly view 20 entries at a time going back through the log, issue the following command:

```
c:\>qaucli -pr fca view log -prev=20
```

To view the last entry that has an error severity in a saved file, and then view all remaining log data from that point to the most recent log entry, issue the following command:

```
c:\>qaucli -pr fca view log -file=savelog.dat -basepos=end -severity=error
-next=-1
```

To find the last log record that has *restart* in the description in a saved file, and then display the 20 previous log records, issue the following command:

```
c:\>qaucli -pr fca view log -file=savelog.dat -basepos=end -find="restart"
-prev=20
```

To search the saved log file for a record with a specified timestamp or older, and then display the previous 20 log records, issue the following command:

```
c:\>qaucli -pr fca view log -file=savelog.dat -basepos=end -time="08/28/2009
12:34:50" -prev=20
```

To locate the 150th log record from the start of the saved file, and then display the next 20 log records, issue the following command:

```
c:\>qaucli -pr fca view log -file=savelog.dat -basepos=start -offset=150
-next=20
```

16 FabricCache CLI API Error Codes

This chapter lists FabricCache CLI API error codes and their meanings in alphabetical order.

QHBA_E_AGENT_NOT_FOUND

Meaning: Cannot communicate with the remote agent.

QHBA_E_AGENT_OK_BUT_FCA_NOT_FOUND

Meaning: Communication with the remote agent was established, but the 10000 Series Adapter device was not found on the remote host.

QHBA_E_CONNECTION_FAILED

Meaning: Initial communication was established using supplied KIsaAdapterPath, but the call returned NULL.

QHBA_E_COPYING_FROM_USER

Meaning: Cannot get user input data.

QHBA_E_COPYING_TO_USER

Meaning: Cannot move data to the user buffer.

QHBA_E_DATA_WAS_MODIFIED

Meaning: Data coherency breach was detected.

QHBA_E_END_OF_LIST

Meaning: End-of-list iteration context passed into a *get Next* function—there is no more data in the list to return.

QHBA_E_ERROR = 1000

Meaning: Generic error.

QHBA_E_FAILED_SECURITY_CHECK

Meaning: Access denied for security reasons.

QHBA_E_FW_UPGRADE_FILE_OPEN_ERROR

Meaning: Unable to open the specified image file.

QHBA_E_FW_UPGRADE_FILE_READ_ERROR

Meaning: Unable to read image data from the specified image file.

QHBA_E_INTERNAL_ERROR = 200

Meaning: Driver internal error.

QHBA_E_INVALID_ADAPTER

Meaning: Cluster functions (create, destroy, add, remove) must be directed to the cluster primary adapter.

QHBA_E_INVALID_ARG

Meaning: Generic error for invalid parameter input.

QHBA_E_INVALID_BUFFER_LENGTH = 300

Meaning: Incorrect buffer length in the IOCTL header.

QHBA_E_INVALID_GATEWAY_ADDRESS

Meaning: Invalid gateway address

QHBA_E_INVALID_IPADDRESS

Meaning: Invalid IP address

QHBA_E_INVALID_ITERATION_CONTEXT

Meaning: Unexpected or illegal iteration context in IOCTL header.

QHBA_E_INVALID_LUN

Meaning: Only SAN data LUNs can be cached. This error is returned if the LUN is a controller LUN, or if it is based on internal adapter storage.

QHBA_E_INVALID_PASSWORD

Meaning: Invalid password.

QHBA_E_INVALID_PASSWORD_LENGTH

Meaning: Invalid password length.

QHBA_E_INVALID_PORT_NUMBER

Meaning: Invalid port number.

QHBA_E_INVALID_SEQUENCE_NUMBER

Meaning: Invalid sequence number.

QHBA_E_INVALID_SUBNET_MASK

Meaning: Invalid IPv4 subnet mask.

QHBA_E_INVALID_TARGET_NODE

Meaning: Specified target does not exist or it is offline.

QHBA_E_FCA_NOT_FOUND_IN_LOCAL_SAN

Meaning: Communication with the 10000 Series Adapter device on the local host is okay, but the locally connected 10000 Series Adapter cannot communicate with 10000 Series Adapter device in the SAN connected to that 10000 Series Adapter device.

QHBA_E_FCA_NOT_FOUND_IN_REMOTE_SAN

Meaning: Communication with the agent and the 10000 Series Adapter device on the remote host was established, but the 10000 Series Adapter connected to the remote host cannot communicate with the 10000 Series Adapter device in the SAN connected to that 10000 Series Adapter device.

QHBA_E_LOCAL_FCA_NOT_FOUND

Meaning: Cannot find the specified 10000 Series Adapter device on the local host.

QHBA_E_LOCAL_FCA_DRIVER_CALL_FAILED

Meaning: Cannot communicate with the specified 10000 Series Adapter device on the local host.

QHBA_E_MEM_ALLOCATION_ERROR

Meaning: Memory allocation error occurred.

QHBA_E_NOT_FOUND

Meaning: The specified target, device, initiator, or drive is not found.

QHBA_E_NOT_IMPLEMENTED

Meaning: API function is not implemented.

QHBA_E_NOT_SUPPORTED

Meaning: API function is not available on this adapter.

QHBA_E_NULL_MEMORY

Meaning: Driver NULL memory error occurred.

QHBA_E_OPERATION_NOT_PERMITTED

Meaning: Operation is not permitted.

QHBA_E_REMOTE_FCA_NOT_FOUND

Meaning: Specified 10000 Series Adapter device is not found on the remote host.

QHBA_E_REMOTE_FCA_DRIVER_CALL_FAILED

Meaning: Cannot communicate with the specified 10000 Series Adapter device on the remote host.

QHBA_E_RESOURCE_BUSY = 400

Meaning: Resource is busy.

QHBA_E_SAVE_FILE_OPEN_ERROR

Meaning: Cannot open the file to be retrieved from the adapter.

QHBA_E_SAVE_FILE_WRITE_ERROR

Meaning: Cannot write data to the specified save file.

QHBA_E_SETPASSWORD_ERROR

Meaning: Error occurred while setting the password.

QHBA_E_UNEXPECTED_TERMINATION

Meaning: An exception occurred in the adapter API library function or something it called. Contact Technical Support.

QHBA_E_UNKNOWN_ERROR

Meaning: Error status received from the 10000 Series Adapter device does not correspond to a QHBA_RETURN value.

QHBA_S_OK = 0

Meaning: Successful completion.

QHBA_S_OK_REBOOT_REQUIRED

Meaning: The command succeeded. Changes take effect after the 10000 Series Adapter is restarted.

A NIC Partitioning (NPAR) Overview

This appendix provides the following information on NIC partitioning (NPAR):

- What Is NPAR?
- “NIC Partitioning Options” on page 590
- “Function Type Changes” on page 591
- “Quality of Service” on page 593
- “eSwitch” on page 594
- “NPAR Setup” on page 594
- “Interoperation of Bandwidth Settings for DCBX and NPAR” on page 597

NOTE

- SR-IOV and NPAR cannot be enabled at the same time. If SR-IOV is enabled on the host, all NPAR-related commands are disabled.
- For information on NPAR noninteractive mode commands, see Chapter 8 NIC Partitioning (NPAR) Noninteractive Commands.
- For information on NPAR interactive mode commands, see Chapter 12 Setting Up NPAR Using Interactive Commands.

What Is NPAR?

NIC partitioning (NPAR) provides the ability to create multiple physical functions on the PCI Express® (PCIe®) bus that share a single physical port. Each physical function is a PCIe endpoint that can have a device driver attached to it.

The NPAR feature in QLogic adapters allows you to partition a single 10GbE NIC port into up to four individual partitions with user-configurable bandwidth and function type (or function protocol). The partitioning options are not limited to NIC, as the name NPAR indicates; it extends to converged fabric partitioning by enabling you to assign iSCSI or FCoE protocols to specific partitions.

NOTE

This document uses the terms *function protocol* and *function type* interchangeably to refer to a PCI function's assigned type or protocol (FCoE, iSCSI, or NIC).

For example, each partition can be either native Ethernet NIC, or configured to support iSCSI or FCoE storage devices with different PCIe endpoint device class code (subject to the restrictions listed in Table A-1 on page 592). Both iSCSI and FCoE operate in full hardware offload mode.

The QLogic NPAR solution is OS-agnostic and switch-agnostic, which means that NPAR does not require a proprietary switch to operate; however, the adapter does require the OS-specific QLogic adapter driver for each supported protocol (NIC, iSCSI, and FCoE). It also means NPAR bandwidth allocation can only regulate transmit (TX) traffic but not receive (RX) traffic.

After you have configured the NIC partitions as needed on the adapter ports, you must reboot the server to make the function type changes take effect.

You can modify the minimum and maximum bandwidth for each NIC partition. The changes take effect immediately without rebooting the server. The minimum and maximum bandwidths are specified as percentages of the link bandwidth, where:

- *Minimum bandwidth* is the minimum bandwidth guaranteed to a partition.
- *Maximum bandwidth* is the maximum value that a partition is allowed to use.

NOTE

When bandwidth settings exist for both NPAR and DCBX, *DCBX takes precedence over NPAR*. DCBX sets the bandwidth for iSCSI and NIC traffic, and then NPAR sets the bandwidth for the NIC partitions by dividing the NIC bandwidth allocated by DCBX. For more information, see "Interoperation of Bandwidth Settings for DCBX and NPAR" on page 597.

QLogic Adapters That Support NPAR

The following adapters support NPAR:

- 3200 Series Intelligent Ethernet Adapters
- 8200 and 8300 Series Converged Network Adapters

NIC Partitioning Options

The NPAR feature in QLogic adapters provides the ability to create multiple PCIe physical functions for each physical 10GbE port on the adapter. Each PCIe function appears as an independent interface to the host operating system or hypervisor.

When the adapter is configured as an Ethernet-only adapter, it contains eight Ethernet functions.

Because NPAR functionality is disabled by default, the adapter starts out with only two Ethernet functions; if you later enable NPAR, you can then enable additional Ethernet or storage functions. (This does not apply to 8300 Series adapters which can be configured with either FC Only or CNA personality.)

The PCI function number assignment for 3200 Series and 8200 Series Adapters is as follows:

- Even function numbers (0, 2, 4, 6) are associated with port 1. Odd function numbers (1, 3, 5, 7) are associated with port 2.
- Functions 0 and 1 are always configured as NIC and cannot be disabled. All other functions can be individually enabled or disabled.
- Functions 2 and 3 are always configured as NIC.
- Functions 4 and 5 can be configured as either iSCSI or NIC.
- Functions 6 and 7 can be configured as either FCoE or NIC.
- Each physical port can have at most one iSCSI function and one FCoE function.

The PCI function number assignment for 8300 Series Adapters is as follows:

- Even function numbers (0, 2, 4, 6) are associated with port 1. Odd function numbers (1, 3, 5, 7) are associated with port 2.
- Functions 0 and 1 are always configured as NIC and cannot be disabled. All other functions can be individually enabled or disabled.
- Functions 2 and 3 can be configured as either iSCSI or NIC.
- Functions 4 and 5 can be configured as either FCoE or NIC.
- Functions 6 and 7 are reserved (not available for use at this time).
- Each physical port can have at most one iSCSI function and one FCoE function.

Virtual machine (VM) to VM Ethernet traffic between VMs on different vSwitches is routed through the eSwitch (on board the adapter) if the communicating VMs are attached to NIC partitions derived from the same physical port. The eSwitch handles VM-to-VM communication by learning MAC addresses of the vNICs of the VMs. This enables the eSwitch to switch packets destined to another VM on the same host.

The adapter supports a maximum of 64 Layer-2 MAC address filters across all partitions. The NIC driver evenly distributes the number of filters across all NIC partitions. For example, if the NIC adapter has four NIC partitions, two NIC partitions per physical port, then each NIC partition gets 16 filters (64/4 = 16).

The available number of MAC address filters per partition determines the number of VMs that can communicate to other VMs through the eSwitch without the eSwitch having to forward the traffic to an external switch

NOTE

For most deployments, this limit of 64 Layer-2 MAC address filters is not reached and is only applicable when a large number of VMs need to communicate with other VMs on the same host through the eSwitch.

The VLAN and teaming solutions on partitioned NIC functions have the following restrictions:

- A fail-safe team cannot be created using NIC functions that belong to the same physical port. For example, you cannot choose PF2 as a backup for PF0 because both functions are partitions of the same physical port.
- 802.3ad link aggregation teams are not allowed on a partitioned NIC.

Function Type Changes

Based on your operating environment, you can use your preferred management tool to change or disable PCI functions on either physical port. Using this feature lets you divide each physical port into up to four partitions, configured to support one of the following PCI function types: NIC, FCoE, or iSCSI.

Table A-1 shows the port identifications and the possible NPAR configurations.

Table A-1. Ports and NPAR Configuration

Function Number	Function Type (Default setting is shown in *italics*)	Physical Port Number	
		User Label[a]	System Number[b]
3200 and 8200 Series Adapters			
0	NIC	1	0
1	NIC	2	1
2	*Disabled* or NIC	1	0
3	*Disabled* or NIC	2	1
4	*iSCSI*, NIC, or Disabled	1	0
5	*iSCSI*, NIC, or Disabled	2	1
6	*FCoE*, NIC, or Disabled	1	0
7	*FCoE*, NIC, or Disabled	2	1
8300 Series Adapters Only			
0	NIC	1	0
1	NIC	2	1
2	*FCoE* or NIC	1	0
3	*FCoE* or NIC	2	1
4	*iSCSI* or NIC	1	0
5	*iSCSI* or NIC	2	1
6	*Disabled* or NIC	1	0
7	*Disabled* or NIC	2	1

[a] The physical port number is displayed as **Port 1** or **Port 2** on the adapter port's label.

[b] The physical port number is displayed as **Phy Port 0** or **Phy Port 1** on the NPAR configuration windows for most of the management tools, except where noted otherwise.

Quality of Service

Quality of service (QoS) refers to the bandwidth allocation assigned to each partition used to send and receive data between the adapter port and the connected devices.

NOTE

When bandwidth settings exist for both NPAR and DCBX, *DCBX takes precedence over NPAR*. DCBX sets the bandwidth for iSCSI and NIC traffic, and then NPAR sets the bandwidth for the NIC partitions by dividing the NIC bandwidth allocated by DCBX. For more information, see “Interoperation of Bandwidth Settings for DCBX and NPAR” on page 597.

Each physical port on a QLogic adapter can simultaneously send and receive data at up to 10Gbps in both directions. When the physical port is partitioned into four partitions, the port bandwidth is divided between each port partition according to traffic demands.

You can set QoS for each port partition by configuring minimum and maximum percentages of the physical port’s bandwidth for each partition. This feature helps guarantee a transmission rate for each partition that requires a specific bandwidth to run critical applications using port partitions. The setting for a specific QoS can resolve bottlenecks that exist when virtual machines (VMs) contend for port bandwidth.

Enhanced transition services (ETS) controls the actual bandwidth allocation at the network port. The bandwidth allocation under ETS is typically 50 percent for FCoE traffic and 50 percent for non-FCoE traffic (NIC and iSCSI). Thus, NPAR QoS allocations among the NIC partitions for a specific port allocate a percentage of the non-FCoE portion of the bandwidth.

NPAR QoS allows NIC and iSCSI partitions to each allocate a minimum guaranteed portion of the available bandwidth. However, the user interface tools do not support setting the bandwidth limits for iSCSI partitions. Therefore, an iSCSI partition may not get the bandwidth you require. For example, if the total minimum allocated bandwidth across the NIC partitions equals 100 percent, then the iSCSI partition is limited to 1 percent of the NIC bandwidth portion in high-utilization conditions.

To ensure that iSCSI has more than one percent of bandwidth available in high-utilization conditions, set the total NPAR QoS minimum bandwidth settings so that they equal less than 100 percent.

For example:

- An NPAR-enabled port has two NIC partitions: one iSCSI partition and one FCoE partition.

- ETS allocates 50 percent of the network bandwidth to FCoE traffic and 50 percent to non-FCoE traffic.
- The NPAR QoS minimum bandwidth setting for each NIC partition is 50 percent. Therefore each NIC partition is guaranteed 50 percent of 50 percent of 10Gb, or 2.5Gb each.
- If at any time the FCoE partition is using 5Gb of bandwidth and each NIC partition is using 2.5Gb, then the iSCSI partition is left with only 50Mb of bandwidth.
- If, however, the NIC partitions are each allocated 45 percent of the non-FCoE traffic, then the total allocated bandwidth is 90 percent. The remaining 10 percent (or 500Mb) is then effectively reserved for the iSCSi partition.

eSwitch

The QLogic adapters provide eSwitch (embedded switch) functionality, which provides a basic Layer-2 switch for Ethernet frames. Each physical port has one instance of an eSwitch, which supports all NIC partitions on that physical port.

The eSwitch operation is transparent and the administrator does not need to perform any specific configuration. The ability to view eSwitch statistics depends on your operating environment and management tool.

The QLogic drivers download the VM MAC addresses to the firmware. This function enables the firmware and hardware to switch the packets destined for VMs on the host.

For traffic to flow from one eSwitch to another, traffic must first pass through an external switch or have been forwarded by a VM that has a path through both eSwitches.

NPAR Setup

This section provides NPAR reference tables that you can use when configuring NIC partitions using QConvergeConsole CLI, including:

- Default Settings
- Configuration Options
- NPAR Configuration Parameters and Setup Tools

Default Settings

Before configuring NIC partitions, the QLogic Adapter appears as a simple dual-port 10GbE adapter with NPAR settings, as shown in Table A-2.

Table A-2. Default NPAR Configuration

Function Number	Function Type	Physical Port Number	Minimum Bandwidth (%)	Maximum Bandwidth (%)	Default Function Type
0	NIC	0	0	100	Enabled as NIC
1	NIC	1	0	100	Enabled as NIC

Configuration Options

Depending on your system requirements and operating environment, you can set up the adapter port partitions to support different function types. Table A-3 lists the available function types and configurable parameters.

Table A-3. NPAR Configuration Options

Function Number	Function Type	Physical Port Number	Minimum Bandwidth[a]	Maximum Bandwidth[b]	Default Function Type
0	NIC	0	0%	100%	NIC
1	NIC	1	0%	100%	NIC
2	Disabled or NIC	0	0%	100%	NIC
3	Disabled or NIC	1	0%	100%	NIC
4	iSCSI, NIC, or Disabled	0	0%	100%	iSCSI
5	iSCSI, NIC, or Disabled	1	0%	100%	iSCSI
6	FCoE, NIC, or Disabled	0	0%	100%	FCoE
7	FCoE, NIC, or Disabled	1	0%	100%	FCoE

[a] Minimum Bandwidth is the minimum guaranteed bandwidth, specified as a percentage of the link speed. The total across all partitions adds up to less than the maximum link bandwidth. The queue's rate can exceed the specified value up to the maximum rate, if excess bandwidth is available on the physical port link.

[b] Maximum Bandwidth is the maximum allowed bandwidth, specified as a percentage of the link speed. The queue's rate cannot exceed the specified value, even if excess bandwidth is available on the physical port link. The total across all partitions cannot be greater than the maximum link bandwidth.

NPAR Configuration Parameters and Setup Tools

Table A-4 identifies parameters that QConvergeConsole CLI can configure.

Table A-4. NPAR Configuration Parameters and Setup Tools

Tool	Configurable NPAR Parameters		
	Function Type[a]	Minimum Bandwidth[b] (0–100%)	Maximum Bandwidth[b] (0–100%)
QLogic QConvergeConsole CLI for supported Windows and Linux operating systems	Yes	Yes[c]	Yes[c]
QLogic QConvergeConsole GUI for supported Windows and Linux operating systems	Yes	Yes[c]	Yes[c]

[a] Requires a system reboot to take effect. Refer to Table A-5 for the available function type options of each partition.

[b] For FCoE, DCBX and ETS negotiated bandwidth will overwrite manually configured bandwidth.

[c] This parameter is configurable only for NIC partitions, not for storage (iSCSI or FCoE) partitions.

Table A-5. NPAR Wake on LAN (WoL) and PXE Boot Support

NPAR Partition	WoL	PXE Boot
Function 0	Yes	Yes
Function 1	Yes	Yes
Function 2	No	No
Function 3	No	No
Function 4	No	No
Function 5	No	No
Function 6	No	No
Function 7	No	No

Interoperation of Bandwidth Settings for DCBX and NPAR

If you want to run iSCSI and NIC traffic together, DCBX can be used to set the bandwidth percentage to be shared among the iSCSI and NIC. If you want to run partitioned NIC traffic, NPAR should be used to set the percentage of bandwidth that will be shared among the multiple NIC partitions. The NIC partition will use the share of NIC bandwidth that was allocated by DCBX; therefore, *DCBX takes precedence over NPAR for NIC traffic*.

If NIC traffic is partitioned, the total bandwidth of any NIC partition is the NIC bandwidth allocated by DCBX multiplied by the bandwidth that NPAR allocates to the NIC partition.

For example, suppose that DCBX allocates 60 percent of the total bandwidth to iSCSI traffic and 40 percent to NIC traffic. That 40 percent is then re-allocated by NPAR between the NIC partitions. If NPAR allocates 75 percent to NIC partition 1 and 25 percent to NIC partition 2, NIC partition 1 is allocated 30 percent of the total bandwidth (40% $\times$ 75%), and NIC partition 2 is allocated 10 percent of the total bandwidth (40% $\times$ 25%).

Using DCBX and NPAR to Set Bandwidth

Depending on the types of traffic that will be run (iSCSI, NIC, or both), you must use DCBX, NPAR, or both to achieve the bandwidth settings you want. When setting the bandwidth, follow these guidelines to ensure that you use the correct tools in the correct order.

If running:

- Both iSCSI and NIC traffic, *with* partitioning of the NIC traffic:
  - Use DCBX to allocate the bandwidth for the iSCSI and NIC traffic;
  - Then, use NPAR to allocate the NIC bandwidth (allocated by DCBX) among the NIC partitions.
- Both iSCSI and NIC traffic, *without* partitioning of the NIC traffic:
  - Use DCBX to split the total bandwidth among iSCSI and NIC traffic. There is no need to use NPAR.
- NIC traffic only (no iSCSI traffic) *with* partitioning of the NIC traffic:
  - Use NPAR to allocate the total bandwidth among the NIC partitions. There is no need to use DCBX
- NIC traffic only (no iSCSI traffic) *without* partitioning of the NIC traffic:
  - Neither NPAR nor DCBX needs to be used.

- iSCSI traffic only (no NIC traffic):
  - Neither NPAR nor DCBX needs to be used.

Table A-6 summarizes these guidelines.

Table A-6. Using DCBX and NPAR for Bandwidth Settings

To run these types of traffic:			Use these tools:	
iSCSI	**Unpartitioned NIC**	**Partitioned NIC**	**DCBX**	**NPAR**
X	—	—	No	No
—	X	—	No	No
—	—	X	No	Yes
X	X	—	Yes	No
X	—	X	Yes	Yes

Glossary

adapter

The board that interfaces between the host system and the target devices. Adapter is synonymous with *host bus adapter (HBA)*, *host adapter*, and a*dapter board*.

adapter port

A port on the adapter board.

address resolution protocol

See ARP.

API

Application programming interface. A set of routines, protocols, and tools for building software applications. API simplifies development by providing the building blocks.

ARP

Address resolution protocol. An Internet protocol used for mapping an IP address to a physical address on an Ethernet LAN.

challenge-handshake authentication protocol

See CHAP.

CHAP

Challenge-handshake authentication protocol. Used for remote logon, usually between a client and server or a Web browser and Web server. A challenge/response is a security mechanism for verifying the identity of a person or process without revealing a secret password that is shared by the two entities. Also referred to as a “three-way handshake.”

CLI

Command line interface. A program interface driven by entering commands and parameters.

comma separated values

See CSV.

command line interface

See CLI.

Converged Network Adapter

QLogic Converged Network Adapters support both data networking (TCP/IP) and storage networking (Fibre Channel) traffic on a single I/O adapter using two new technologies: Enhanced Ethernet and Fibre Channel over Ethernet (FCoE).

CSV

Comma separated values. A data file used for storage of data structured in a table form.Each line in the file corresponds to a row in the table. Within a line, fields are separated by commas, each field belonging to one table column.

data center bridging exchange protocol

See DCBX.

DCBX

Data center bridging exchange protocol. Used by data center bridging (DCB) devices to exchange configuration information with directly connected peers. The protocol may also be used for misconfiguration detection and for configuration of the peer.

device

A target, typically a disk drive. Hardware such as a disk drive, tape drive, printer, or keyboard that is installed in or connected to a system. In Fibre Channel, a *target* device.

DHCP

Dynamic host configuration protocol. Protocol used by networked devices (clients) to obtain various parameters necessary for the clients to operate in an IP network.

driver

The software that interfaces between the file system and a physical data storage device or network media.

dynamic host configuration protocol

See DHCP.

EFI

Extensible firmware interface. A specification that defines a software interface between an operating system and platform firmware. EFI is a replacement for the older BIOS firmware interface present in all IBM PC-compatible personal computers.

Enhanced Ethernet

Also called *Data Center Ethernet* or *Converged Enhanced Ethernet*. Refers to new enhancements to the existing Ethernet standard that eliminate Ethernet's inherently lossy nature and make 10Gb Ethernet a viable storage networking transport.

enhanced transition services

See ETS.

eSwitch

The eSwitch (embedded switch) functionality provides a basic Layer-2 switch for Ethernet frames. Each physical port has one instance of an eSwitch, which supports all NIC partitions on that physical port.

Ethernet

The most widely used LAN technology that transmits information between computers, typically at speeds of 10 and 100 million bits per second (Mbps).

ETS

Enhanced transition services. Controls the actual bandwidth allocation at the network port. The bandwidth allocation under ETS is typically 50 percent for FCoE traffic and 50 percent for non-FCoE traffic (NIC + iSCSI). This means that NPAR QoS allocations among the NIC partitions for a specific port, allocate a percentage of the non-FCoE portion of the bandwidth.

extensible firmware interface

See EFI.

FC

See Fibre Channel.

FCode

A type of boot code designed for use on Sun's SPARC or Macintosh hardware platforms.

FCoE

Fibre Channel over Ethernet. A new technology defined by the T11 standards body that allows traditional Fibre Channel storage networking traffic to travel over an Ethernet link by encapsulating Fibre Channel frames inside Layer 2 Ethernet frames. For more information, visit www.fcoe.com.

Fibre Channel

A high-speed serial interface technology that supports other higher layer protocols such as SCSI and IP.

Fibre Channel over Ethernet

See FCoE.

frame

Data unit consisting of a start-of-frame (SOF) delimiter, header, data payload, CRC, and an end-of-frame (EOF) delimiter.

iiDMA

Intelligent interleaved direct memory access. A QLogic patent-pending feature that ensures maximum link efficiency.

initiator

System component, such as a network interface card, that originates an I/O operation.

input/output control

See IOCTL.

intelligent interleaved direct memory access

See iiDMA.

Internet Protocol

See IP.

Internet simple name service

See iSNS.

Internet small computer system interface

See iSCSI.

IOCTL

Input/output control. A system call in UNIX and Linux systems that allows an application to control or communicate with a device driver outside usual read/write operations.

IP

Internet Protocol. A method by which data are sent from one computer to another over the Internet. IP specifies the format of packets, also called *datagrams*, and the addressing scheme.

IPv4

Internet protocol version 4. A data-oriented protocol used on a packet switched internetwork (Ethernet, for example). It is a best-effort delivery protocol: it does not guarantee delivery, ensure proper sequencing, or avoid duplicate delivery. These aspects are addressed by an upper layer protocol (TCP, and partly by UDP). IPv4 does, however, provide data integrity protection through the use of packet checksums.

iSCSI

Internet small computer system interface. Protocol that encapsulates data into IP packets to send over Ethernet connections.

iSNS

Internet simple name service. Allows automated discovery, management, and configuration of iSCSI and Fibre Channel devices (using iFCP gateways) on a TCP/IP network.

link layer discovery protocol

See LLDP.

LIP

Loop initialization process. The initialization process in an arbitrated loop that occurs when the loop is powered up or a new device is added. One function of a LIP is to assign addresses. All data transmission on the loop is suspended during a LIP.

LLDP

Link layer discovery protocol. A vendor-neutral Layer 2 protocol that allows a network device to advertise its identity and capabilities on the local network. This protocol supersedes proprietary protocols like Cisco Discovery Protocol, Extreme Discovery Protocol, and Nortel Discovery Protocol (also known as SONMP).

Information gathered with LLDP is stored in the device and can be queried using SNMP. The topology of a LLDP-enabled network can be discovered by crawling the hosts and querying this database.

logical unit number

See LUN.

loop initialization process

See LIP.

loopback test

Diagnostic tool that routes transmit data through a loopback connector back to the same adapter.

LUN

Logical unit number, a subdivision of a SCSI target. It is the small integer handle that differentiates an individual disk drive or partition (volume) within a common SCSI target device such as a disk array.

Technically, a LUN can be a single physical disk drive, multiple physical disk drives, or a portion (volume) of a single physical disk drive. However, LUNs are typically not entire disk drives but rather virtual partitions (volumes) of a RAID set.

Using LUNs, the Fibre Channel host can address multiple peripheral devices that may share a common controller.

management workstation

PC workstation used to manage routers remotely by connecting to the routers using QConvergeConsole CLI or CLI commands.

message passing interface

See MPI.

message signaled interrupts

See MSI.

MPI

Message passing interface. A standard used for writing parallel processing high performance computing (HPC) applications using the MPI message-passing API standard. The MPI API is used by many computational applications, and many other commercial and customer-developed applications.

The main advantages of a message-passing standard like MPI are portability and ease-of-use. In a distributed memory communication environment in which the higher level routines are built upon lower level message passing routines, the benefits of a standard are apparent. Additionally, a message passing standard provides vendors with a defined base set of routines that can be implemented efficiently, or in some cases provide hardware support for, thereby enhancing scalability.

MSI

Message signaled interrupts. One of two PCI-defined extensions to support message signaled interrupts (MSI), in PCI 2.2 and later and PCI Express. MSIs are an alternative way of generating an interrupt through special messages that allow emulation of a pin assertion or desertion.

network time protocol

See NTP.

NIC

Network interface card. Computer card installed to enable a dedicated network connection.

NIC partitioning

See NPAR.

non-volatile random access memory

See NVRAM.

NPAR

NIC partitioning. A feature in QLogic adapters that allows you to partition a single 10GbE NIC port into up to four individual partitions with user-configurable bandwidth and function type (or function protocol). The partitioning options are not limited to NIC as the name NPAR indicates; it extends to converged fabric partitioning by enabling you to assign iSCSI or FCoE protocols to specific partitions.

NTP

Network time protocol. NTP is used for distributing the Coordinated Universal Time (UTC) by means of synchronizing the clocks of computer systems over packet-switched, variable-latency data networks.

NVRAM

Non-volatile random access memory. A type of memory that retains data (configuration settings) even when power is removed. You can manually configure NVRAM settings or restore them from a file.

path

A path to a device is a combination of a adapter port instance and a target port as distinct from internal paths in the fabric network. A fabric network appears to the operating system as an opaque network between the adapter (initiator) and the target.

Because a path is a combination of an adapter and a target port, it is distinct from another path if it is accessed through a different adapter or it is accessing a different target port. Consequently, when switching from one path to another, the driver might be selecting a different adapter (initiator), a different target port, or both.

This is important to the driver when selecting the proper method of failover notification. It can make a difference to the target device, which might have to take different actions when receiving retries of the request from another initiator or on a different port.

PCI

Peripheral component interconnect. First released in 1992, PCI has been rapidly evolving into a viable replacement for the ISA bus. It solves many of the problems with older architectures, while at the same time delivering a substantial increase in processing speed. PCI provides a new way of connecting peripherals to both the system memory and CPU, with the goal of alleviating many problems encountered when installing new cards in an ISA-based system (IRQ conflicts, address conflicts, and so on.).

However, unlike MicroChannel, PCI boards may be used in a system that also employs other types of devices. In fact, in many systems, a single slot can accommodate either an ISA or PCI board.

PCIe, PCI Express

A third-generation I/O standard that allows enhanced Ethernet network performance beyond that of the older peripheral component interconnect (PCI) and PCI extended (PCI-X) desktop and server slots.

peripheral component interface

See PCI.

personality

The term personality appears in different contexts:

- Adapter level
- Network partition (NPAR function) level

Adapter Personality
The term personality refers to the entire adapter where supported. When used in this context of an adapter, it includes all the I/O ports and its functions on that adapter. For example, a QLogic adapter can have dual personality—convert from Fibre Channel Adapter to Converged Network Adapter or vice versa. Therefore, all the I/O functions and all the I/O physical ports on the adapter change from Fibre Channel to Converged Network Adapter.

Network Partition Function Personality
The term personality refers to a specific I/O function type on the adapter's physical port where supported, not the entire adapter. When used in the context of a network partition function, the term is associated with an individual I/O function of a physical port. For example, a physical I/O port can be partitioned into multiple I/O functions, and an individual I/O function can be configured with a LAN (NIC) or a SAN (FCoE or iSCSI) personality.

ping

A computer network tool used to test whether a specific host is reachable across an IP network. Ping is also used to self-test the network interface card of the computer, or as a speed test.

point-to-point

Also FC-P2P. Two Fibre Channel nodes directly connected (not in a loop).

port

Access points in a device where a link attaches. There are four types of ports, as follows:

- N_Port—a Fibre Channel port that supports point-to-point topology.
- NL_Port—a Fibre Channel port that supports loop topology.
- F_Port—a port in a fabric where an N_Port can attach.
- FL_Port—a port in a fabric where an NL_Port can attach.

port instance

The number of the port in the system. Each adapter may have one or multiple ports, identified with regard to the adapter as port 0, port 1 and so forth. To avoid confusion when dealing with a system containing numerous ports, each port is assigned a port instance number when the system boots up. So Port 0 on an adapter might have a port instance number of 8, for example, if it is the eighth port discovered by the system.

QoS

Quality of service. Refers to the bandwidth allocation assigned to each partition used to send and receive data between the adapter port and connected devices.

Each physical port on a QLogic adapter can send and receive data at up to 10Gbps in both directions at the same time. When the physical port is partitioned into four partitions, the port bandwidth is divided between each port partition according to traffic demands.

You can set QoS for each port partition by setting minimum and maximum percentages of the physical port's bandwidth for each partition. This feature helps guarantee a transmission rate for each partition that requires a specific bandwidth to run critical applications using port partitions. The setting for a specific QoS can resolve bottlenecks that exist when virtual machines (VMs) contend for port bandwidth.

quality of service

See QoS.

RAID

Redundant array of independent/inexpensive disks. RAID are fault-tolerant disks that look like either single or multiple volumes to the server.

RAM

Random-access memory. The most common computer memory that can be used by programs to perform necessary tasks while the computer is on; an integrated circuit memory chip. RAM allows information to be stored or accessed in any order (randomly), and all storage locations are equally accessible.

random-access memory

See RAM.

redundant array of independent/inexpensive disks

See RAID.

SAN

Storage area network. Multiple storage units (disk drives) and servers connected by networking topology.

SCSI

Small computer system interface. A high-speed interface used to connect devices, such as hard drives, CD drives, printers, and scanners, to a computer. The SCSI can connect many devices using a single controller. Each device is accessed by an individual identification number on the SCSI controller bus.

secure sockets layer

See SSL.

self-monitoring, analysis and reporting technology

See SMART.

SerDes

Serializer/deserializer. A pair of functional blocks commonly used in high-speed communications to compensate for limited input/output. These blocks convert data between serial data and parallel interfaces in each direction.

serializer/deserializer

See SerDes.

SFP

Small form-factor pluggable. A compact, hot-pluggable transceiver used for both telecommunication and data communications applications. It interfaces a network device mother board (for a switch, router, media converter, or similar device) to a fiber optic or copper networking cable. It is a popular industry format supported by many network component vendors. SFP transceivers are designed to support SONET, Gigabit Ethernet, Fibre Channel, and other communications standards.

small computer system interface

See SCSI.

small form-factor pluggable

See SFP.

SMART

Self-monitoring, analysis and reporting technology. A monitoring system for computer hard disk drives to detect and report various indicators of reliability that may indicate an impending disk failure. If SMART anticipates a failure, the user may choose to replace the disk drive to avoid unexpected outage and data loss.

SSL

Secure sockets layer. A cryptographic protocol that provides communications security over the Internet.

storage area network

See SAN.

sysfs

A virtual file system provided by the 2.6 Linux kernel. Sysfs exports information about devices and drivers from the kernel device model to user space, and is also used for configuration.

target

The storage-device endpoint of a SCSI session. Initiators request data from targets. Targets are typically disk-drives, tape-drives, or other media devices. Typically a SCSI peripheral device is the target but an adapter may, in some cases, be a target. A target can contain many LUNs.

A target is a device that responds to a requested by an initiator (the host system). Peripherals are targets, but for some commands (for example, a SCSI COPY command), the peripheral may act as an initiator.

TCP

Transmission control protocol. A set of rules to send data in packets over the Internet protocol.

TLV

Type-length-value. Optional information that may be encoded as an element inside of the protocol. The type and length fields are fixed in size (typically 1–4 bytes), and the value field is of variable size.

These fields are used as follows:

- Type—A numeric code that indicates the kind of field that this part of the message represents.
- Length—The size of the value field (typically in bytes).
- Value—Variable-sized set of bytes that contains data for this part of the message.

type-length-value

See TLV.

UEFI

Unified extensible firmware interface. A specification detailing an interface that helps hand off control of the system for the preboot environment (that is, after the system is powered on, but before the operating system starts) to an operating system, such as Windows or Linux. UEFI provides a clean interface between operating systems and platform firmware at boot time, and supports an architecture-independent mechanism for initializing add-in cards.

unified extensible firmware interface

See UEFI.

virtual LAN

See VLAN.

virtual machine

See VM.

vital product data

See VPD.

VLAN

Virtual LAN. A group of hosts with a common set of requirements that communicate as if they were attached to the same wire, regardless of their physical location. Although a VLAN has the same attributes as a physical LAN, it allows for end stations to be grouped together even if they are not located on the same LAN segment. VLANs enable network reconfiguration through software, instead of physically relocating devices.

VM

Virtual machine. A software implementation of a machine (computer) that executes programs like a real machine.

VPD

Vital product data. Information provided by the manufacturer about the current working adapter. Information varies by manufacturer, or may not be provided at all.

wake on LAN

See WoL.

WoL

Wake on LAN. An Ethernet computer networking standard that allows a computer to be remotely switched on or awakened by a network message sent usually by a simple program executed on another computer on the network.

world wide name

See WWN.

world wide node name

See WWNN.

world wide port name

See WWPN.

world wide unique LUN name

See WWULN.

WWN

World wide name. A unique 64-bit address assigned to a device by the device manufacturer.

WWNN

World wide node name. A unique 64-bit address assigned to a device.

WWPN

World wide port name. A unique 64-bit address assigned to each port on a device. One WWNN may contain multiple WWPN addresses.

WWULN

World wide unique LUN name. Identifiers for SCSI devices are read from page 83 and page 80 of your SCSI block device as based on the SCSI standard.

Index

Symbols

? command 487

A

-a 79
abbreviating commands 479
-acb 135
ACB firmware functions 135
adapter alias
  defining 77, 176, 206
  name, changing 47, 327
  setting and deleting 99
adapter configuration
  exporting 156
  FabricCache options 281
  importing 144, 156
  viewing 39
adapter information
  CNA, viewing 44, 170
  FabricCache single adapter, viewing all 575
  FabricCache, viewing 281, 553
  FCoE, viewing 287
  Fibre Channel host, viewing 75
  Fibre Channel, viewing 100, 130, 199
  iSCSI, viewing 289
  NIC, viewing 286
  NPAR, viewing 163
adapter instance 77, 143
adapter parameters
  FCoE, configuring 114, 335
  FCoE, restoring defaults 338
  Fibre Channel, restoring defaults 211
  iSCSI, configuring 367
  iSCSI, saving 368
adapter parameters (*continued*)
  iSCSI, viewing 367
  saving 362
  updating 124, 210, 246
  viewing 83, 209, 334
adapter port
  alias name, changing 47, 330, 349
  alias name, viewing 143
  configuration, viewing 39
  FEC, enabling 242
  instance 143
  iSCSI name 143
  iSCSI, viewing list of 142
  number 143
  reports, generating for 238
  settings, displaying iSCSI 136
  system instance 143
  viewing detected 43
  definition of 599
adapters
  See Also adapter alias, adapter configuration, adapter information, adapter parameters, adapter port
  definition of 599
  ARP table, viewing 135
  beacon, disabling 500
  beacon, enabling 505
  cluster, creating 498
  cluster, viewing 555
  complete information, showing 75, 76
  configuration, saving to file 544
  counters (view, configure, reset, run) 268
  data, refreshing 196, 283, 468
  default settings, restoring 154
  defaults, restoring 512
  devices known to, viewing 522

adapters (*continued*)
diagnostic information, collecting 541
diagnostics, running 250
drivers for, *See* drivers
drives known to, viewing 523
factory defaults, restoring 154
firmware version, comparing 579
firmware, *See* firmware
flash info, viewing 205
health, viewing 560
initiators, names of 524
initiators, viewing information 561
known, viewing list of 520
level statistics, displaying 158
list of, viewing 521
member, deleting from cluster 536
memory, displaying 568
model 143
NPAR, viewing list of 166
number 143
refreshing 196, 283, 468
reporting (non-interactive mode) 75, 76, 130
resetting 135
serial number 143
statistics, displaying 158
supported versions 4
symbolic name, setting 548
target/LUN number 145
types of, displaying 147
WWPN 77
add drive command 488
add member command 490
-addchap 135
adding
CHAP entry 135
cluster, adapter 498
drive to storage pool 488
member to cluster 490
ports to team 59
send target 157
VLAN to port 63, 64
address
adapter port instance 143
IP 147
IPv6 150
port 143
address control block (ACB) firmware functions 135
address resolution protocol, *See* ARP
adjacent fabric WWN 200
AFW_AutoConnect parameter 147
AFW_Delayed_Ack parameter 147
AFW_Device_Timeout parameter 147
-agent keyword 480
agreements, license xxxi
-ainfo 163
alias
adapter, changing name 47, 327
adapter, defining 77
iSCSI 147
port instance 143
port, changing name 47, 179, 330, 349
alternative client ID, setting 157
API
definition of 599
error codes, listing of 584
library version, viewing 580
return values 540
version of 482
application programming interface, *See* API
ARP
cache, displaying 135
definition of 599
table, displaying 135
-arp 135
audience, intended for guide xxvi
autoconnect 147
automatic polling
FC adapter statistics 98
automatic polling, BB-CR 279
AutoPoll parameter 98

B

-b 80, 135
bandwidth
  NPAR, setting maximum 167
  NPAR, setting minimum 167
  settings, interoperation for DCBX and NPAR 597
BB-CR
  non-interactive commands 82
  statistics, configuring rate and automatic polling 279
  statistics, info 279
  statistics, running 280
  statistics, setting rate 83
  statistics, viewing current 83
-bbcr 82
-beacon 39
beacon
  disabling 39, 186, 258, 437, 500
  enabling 39, 186, 258, 437, 505
  status, toggling 79
  status, viewing 79
  target, starting and stopping 127
binding
  by port ID parameter 96
  by WWPN parameter 96
  information, viewing persistent target 117
  targets, persistent 152
-binfo 136
BIOS
  enabling 115
  information, viewing 136
  restoring default 114
  restoring settings 338
  saving to file 80
  settings 380
  updating 136
  updating from file 80
  viewing information 380
boot device
  alternate 226
  configuration 225
  configuring 344
boot device (*continued*)
  configuring Fibre Channel 223
  disabling 87
  fabric-assigned boot LUN 228
  primary 225
  selectable 87, 227
  selecting 87
  viewing 87, 224, 343
boot image, updating 62
boot target information
  clearing primary 137
  setting primary 152
  setting secondary 156
-bootcode 136
bootcode
  code image, updating 136
  viewing info about 136
bound targets, persistent, displaying 153
breadcrumbs list, explanation of xxx
Brocade switch, firmware required for CT FTR test 94, 265
buffer-to-buffer credit recovery, See BB-CR
build number, FabricCache CLI 580
burst length, maximum 148

C

-c 39, 76, 83, 136
cache
  data, percentage 551
  destination, displaying 137
  disabling 501
  dumping info to file 504
  enabling 506
  invalidating 518
  LUN, modifying 530
  pool size, viewing 569
  pool, removing 533
  statistics, resetting 497
  statistics, viewing 573
canceling a running test 61, 105, 156
capturing
  adapter diagnostic information 541
  all system information for single adapter 575

-ch 39, 136
challenge-handshake authentication protocol, *See* CHAP
-changepersonality 163
changing
  adapter alias name 47, 327
  adapter port alias name 47, 330, 349
  CHAP entry 141
  eSwitch physical function configuration 164
  eSwitch physical ports 166
  LUN cache 530
  NPAR bandwidth, maximum 167
  NPAR bandwidth, minimum 167
  PCI function personality 190
  physical function type (protocol) 163
  port alias name 47, 179, 330, 349
CHAP
  definition of 599
  table, displaying 139
CHAP entry
  adding 135
  assigning to target 146
  deleting 138
  displaying targets 136
  editing 141
-chapmap 136
Citrix XenServer, OS support 3
CJTPAT parameter 108
clear display command 491
clear log command 492
clear lun_statistics command 493
clear reservation command 495
clear statistics command 497
clearing
  cache statistics 497
  console display 491
  log 492
  LUN persistent reservation 495
  LUN statistics 493
  write cache 513
CLI
  definition of 599
  interactive mode, starting session 517
client ID, alternative, setting 157
clusters
  definitions of terms 490
  adapters, removing 499
  creating 498
  information, viewing 555
  member adapter, removing from 536
  member, adding 490
  viewing adapters in 521
-cna 83
CNA, *See* Converged Network Adapter
code, error, list of Fibre Channel 91
collecting adapter diagnostic information 541
combined display, viewing (VLAN/teaming) 72
comma separated values, *See* CSV file
command line
  noninteractive mode format, FabricCache 483
  noninteractive mode format, Fibre Channel 76
  noninteractive mode format, iSCSI 131
  noninteractive mode format, NIC 36
  uninstalling QConvergeConsole CLI from 12
  variables 132
command line interface, *See* CLI
command line scripting 477
command line syntax, FabricCache 478
commands
  ? summary help 487
  noninteractive mode, FabricCache CLI 483
  noninteractive mode, Fibre Channel 74
  noninteractive mode, iSCSI 131
  noninteractive mode, NIC 36
  noninteractive mode, NPAR 162
  -a 79
  abbreviating 479
  -acb 135
  add drive 488
  add member 490
  -addchap 135
  ainfo 163
  -arp 135
  -b 80, 135
  -bbcr 82
  -beacon 39

commands (*continued*)
-binfo 136
-bootcode 136
-c 39, 83, 136
-ch 39, 136
-changepersonality 163
-chapmap 136
clear display 491
clear log 492
clear lun_statistics 493
clear reservation 495
clear statistics 497
-cna 83
-cpbootcode 137
create cluster 498
-csbootcode 137
-ctp 85
-d 40, 87, 137
-dc 137
-dce 137
-defbidi 138
-delchap 138
destroy cluster 499
-df 138
disable beacon 500
disable cache 501
disable fc_port 503
-dm 87
-dp 138
-dr 139
-dspchap 139
-dtdsp 139
-dtdspa 139
-dtli 140
-dtlia 140
-dtrem 140
-dtrema 140
-dtupd 139, 140
dump cache 504
-dumpcore 140
-dumpnvram 141
-dv 141
-e 87
-edchap 141

commands (*continued*)
-ei 40, 91, 141, 164
enable beacon 505
enable cache 506
enable fc_port 509
-eswitchinfo 164
-eswitchstats 164
-eswitchvportstats 164
execute script 510
-extloopback 40
-f 91, 142
factory_reset adapter 512
-fcp 92
-fec 93
-feswitchcfg 164
-fg 95
-finfo 165
-flashsupport 40
flush cache 513
-fs 95
-ftr 94
-fwdump 96
-g 43, 74, 97, 142
-gcr 142
-h 43, 98, 142
-h (NPAR) 165
-ha 99
help 515
-i 43, 100, 142
-ia 166
-icna 44
-idcbx 44, 144
-if 166
-import 144
interactive cli 517
-intloopback 45
invalidate cache 518
-ip 166
-ipdhcp 145
-iset 45
-kl 104
-kr 105, 106
-l 109, 145
-lb 146

commands (*continued*)
-lcd 146
-link 46
-linkchap 146
list adapter 520
list cluster 521
list device 522
list drive 523
list initiator 524
list log 525
list lun 527
list target 528
-lp 146
-ls 110
-m 111
-mbiv 113
merge csv 529
-minidump 46
-model 147
modify cache 530
-n 47, 114, 147
-nc 150
-netconf 150
-netconf6 150
-nh 47, 151
-o 116
-p 117
-pa 119, 152
-pad 152
-pb 152
-pbootcode 152
-pdt 152
-pet 152
-pinfo 47, 152
pinfo 166
-ping 48, 153
-ps 153
-pu 153
-px 153
-q 121
-qos 122
-r 124, 154
-rc 49
-rd 49

commands (*continued*)
-rdf 154
-rdh 154
remove cache_pool 533
remove drive 534
remove member 536
report log 537
restart adapter 538
restore_drive 539
-restoreeswitchcfg 167
retval hcli 540
-rwt 155
-s 125
-save 156
save capture_file 541
save demonstration_file 542
save log 543
save script 544
-sbootcode 156
-sbootcodecid 157
script csv 545
-sdmrc 157
set adapter 548
set append 549
set fc 550
set pool 551
set target 552
-setmaxbw 167
-setminbw 167
show adapter 553
show append 554
show cluster 555
show device 557
show drive 558
show fc 559
show health 560
show initiator 561
show lun 562
show lun_statistics 565
show memory 568
show pool 569
show reservation 570
show sfp 572
show statistics 573

commands (*continued*)
show system_capture 575
show target 577
-sp 120, 125, 127
-sreset 49
-sriov 49
-stadd 157
-stathba 158
-statport 54, 158
-stdsp 158
-strd 159
-strem 159
-strema 159
-sunreset 57
-t 126, 159
-tb 127
-tc 160
-team_allowCNAsIn8023adTeam 57
-teamdel 57
-teaminfo 58
-teamlist 59
-teamnew 59
-teamnew_portspreview 60
-tf 161
-tlvdetails 160
-tlvraw 160
-tp 127, 160
-trans 62
-u 127
update firmware 578
-updimages 62
-v 63, 128
-ver 63, 161
version 580
version adapter 579
view log 581
-vlanadd 63
-vlanadd_preview 64
-vlandel 65
-vlandel_preview 65
-vlaninfo 66
-vlanlist 66
-vp 128
-vpd 67, 161
commands (*continued*)
-vtcfgview 67
-vtrestore 69
-vtsave 71
-x 129
-x2 130
-z 75, 76, 130
-zvt 72
comparing firmware version 579
configuration
adapter, saving to file 544
DAT file, specifying 84
drive, restoring 539
eSwitch physical function configuration, changing 164
eSwitch, restoring 167
exporting 156, 237
importing 144, 156
link, displaying 146
options 595
parameter, NPARs 596
settings, viewing 136
VLAN and team, restoring from file 71
VLAN and team, saving to file 69
configuring
adapter alias name 47
adapter personality 241
adapter, enabling FEC 242
adapters, FabricCache 281
boot device, CNA 344
boot device, Fibre Channel 223
driver settings 95
IPv6 settings 150
manual 150
ping test parameters 272
port test, diagnostic 270
target parameters 160
team, new 59, 60
connection
error logs, viewing DCE 137
host port, records of 135
medium (type) 143
option, adapter 92
options, adapter 114

ConnectionOption parameter 114
console display, clearing 491
Control Panel, uninstalling QCC CLI from (Windows) 12
conventions, documentation xxviii
Converged Network Adapter
  definition of 599
  adapter information, viewing 170
  allowing in 802.3 teams 57, 411
  DCBX port settings, viewing 173, 179
  DCBX TLV port settings, viewing 174
  FCoE vPort, creating 347
  firmware mini dump, updating adapter 183
  flash test 184
  interactive command mode 284
  monitoring 186
copper connection 143
core, dumping 140
counters
  driver statistics, clearing 98
  firmware statistics, clearing 111
counters, Ethernet statistics
  resetting 49
  undoing resetting 57
-cpbootcode 137
crash record, retrieving 142
create cluster command 498
creating
  adapter cluster 498
  CSV file 545
  demonstration file 542
  named set of keywords 549
  vPort, CNA FCoE 347
credits, enabling LR 211
CRPAT parameter 108
-csbootcode 137
CSPAT parameter 108
CSV file
  creating script for commands 545
  creating summary of performance or statistics 529
  definition of 600
  saving link status to 110
CT ping test, running 85
-ctp command 85
customizing stop-test key 61, 105, 156

D

-d 40, 87, 137
DAT file, configuration 84
data
  cache, local storage pool 551
  input persistence 479
  log, retrieving 537
  log, viewing 581
  pool size, viewing 569
  rate, setting for FC 115
data center bridging 301
data center bridging exchange protocol, *See* DCBX
data digests, iSCSI 148
database, knowledge xxxii
DataPattern (DP) parameter 108, 109
DataRate (DR) parameter 115
DataSize (DS) parameter 108
-dc 137
DCBX
  bandwidth settings interoperation 597
  definition of 600
  displaying port information 44
  information, viewing FCoE 301
  port settings, configuring CNA 179
  port settings, viewing CNA 173
  settings, viewing Fibre Channel 84
  viewing TLV data sent/received 84
DCE
  connection logs, viewing 137
  network activity, viewing 84
  statistics parameters 85
  statistics, viewing FCoE 303
-dce 137
default
  NPAR configuration 595
  router list (IPv6), displaying 139

defaults, restoring
adapter port firmware settings 154
adapter port settings 154
Ethernet port 49
Fibre Channel adapter 211
-defbidi 138
defining port alias 119
definitions of terms 599
-delchap 138
deleting
adapter alias, Fibre Channel 99
adapters from clusters 499
boot device for adapter, disabling 90
cache pool 533
CHAP entry 138
log information 492
member adapter from cluster 536
named set of keywords 549
port alias, Fibre Channel 119
teams 57
virtual ports 348
VLAN from port 65
demonstration file, saving 542
destination cache, displaying 137
destroy cluster command 499
devices
See Also boot device
CNA iSCSI, configuring 377
definition of 600
information, viewing 557
known to adapter, viewing names of 522
remote host 480
-df 138
DHCP
definition of 600
iSCSI, setting 145, 150
setting, iSCSI 150
TCP_DHCP firmware parameter 148
diagnostic tests
beacon and LED test 186
CT FTR, running 94
CT ping, running 85
external loopback 250
Fibre Channel, running 250
diagnostic tests (*continued*)
flashing CNA 184
hardware test 184
interrupt test 185
iSCSI loopback 146
link test 185
NIC loopback test 185
parameters for 108
ping parameters 86
ping, running 48, 92
port configuring 270
port running 271
port test options 270
register test 183
stop running 61, 105, 156
diagnostics
FabricCache Adapter 282
information, collecting to file 541
monitoring interface, viewing 87
ping test 271
ping test options 271
transceiver monitoring 256
Digital Diagnostic Monitoring Interface 87, 256, 257
disable beacon command 500
disable cache command 501
disable fc_port command 503
disabling
beacon on adapter 500
boot device 87
Fibre Channel FEC 93
Fibre Channel port 503
IPv4 145, 150
IPv6 145, 150
LUN caching 501
LUNs 111
port beacon 39, 186, 258, 437
target 152
WoL 42, 403
discovered targets
duplicating 139, 140
log in all 140
log in specific 140
non-persistent, viewing 139

discovered targets (*continued*)
persistent, viewing 139
removing 140
removing all 140
discovery
logout, iSCSI 148
target, sending for 157
disk drive, viewing information 558
disk space requirements 2
display, clearing 491
displaying, *See* viewing
-dm 87
documentation
conventions used in guide xxviii
intended audience xxvi
related materials xxviii
what is in this guide xxvi
downloading QConvergeConsole 5
-dp 138
DP parameter 108
-dr 139
driver parameters
bind by port ID 355
bind by WWPN 355
bound targets and new targets 354
bound targets only 354
Fibre Channel, configuring 231
driver restrictions 98
Fibre Channel 96
host topology 127
LUNs 111
persistent target binding 117
drivers
See Also driver parameters and driver restrictions
adapter, installing 137
definition of 600
package, pre-installing 138
required 3
restriction, Solaris 96
settings, configuring 95
settings, viewing 95
version, viewing 141
Windows, updating 87
drives
adding to storage pool 488
configuration, restoring 539
information, viewing 558
known to adapter, viewing 523
removing from storage pool 534
DS parameter 108
-dspchap 139
-dtdsp 139
-dtdspa 139
-dtdupd 139, 140
-dtli 140
-dtlia 140
-dtrem 140
-dtrema 140
dump cache command 504
-dumpcore 140
dumping
cache info to a file 504
firmware core, saving to file 46
firmware, Fibre Channel 96
NVRAM to file 141
RAM memory to file 140
-dumpnvram 141
-dv 141
dynamic host configuration protocol, *See* DHCP

E

-e 76, 87
-edchap 141
editing, *See* changing
EFI
definition of 600
Flash version, viewing 201
updating from Flash 80
-ei 40, 91, 141, 164
enable beacon command 505
enable cache command 506
enable fc_port command 509
EnableBIOS parameter 115
EnableHardLoopID parameter 115

EnableLIPFullLogin parameter 115
EnableLIPReset parameter 115
EnableTargetReset parameter 115
enabling
  beacon in adapter 505
  DHCP 145
  Fibre Channel FEC 93
  Fibre Channel port 509
  LR credits 211
  LUN caching 506
  LUNs 111
  port beacon 39, 186, 258, 437
  target 152
  WoL 403
Enhanced Ethernet, definition of 600
enhanced transition services, *See* ETS
error
  codes, FabricCache API 584
  codes, Fibre Channel 91
  codes, NIC 49
  codes, NPAR 164
  displaying information 40
  viewing for noninteractive mode 141
eSwitch
  definition of 600
  configuration, restoring 167
  NPAR information, viewing 164
  NPAR statistics, viewing 164
  physical function, changing 164
  physical ports, changing configuration 166
  statistics, viewing 164
-eswitchinfo 164
-eswitchstats 164
-eswitchvportstats 164
Ethernet
  definition of 600
  port statistics, viewing 54
  port, restoring defaults to 49
  statistics counters, resetting 49
  statistics counters, undoing resetting 57
ETS
  definition of 600
  NPAR QoS 593
  values, viewing for CNA 302, 303, 313
execute script command 510
execution throttle, setting target based 552
ExecutionThrottle parameter 115
ExeThrottle parameter 147
exit codes, displaying information 40
exporting adapter parameters 237, 362
extensible firmware interface, *See* EFI
external loopback test
  configuring test parameters 40
  running 104
-extloopback 40

F

-f 76, 91, 142
fabric
  WWN, principal and adjacent 200
fabric trace route test, running 94
fabric-assigned boot LUN, enabling and disabling 228
FabricCache
  adapter firmware, updating 282
  adapter information, viewing 281
  adapters, configuring 281
  diagnostics 282
  interactive menu commands 280
  noninteractive commands 476
FabricCache CLI version, viewing 580
factory defaults, restoring 512
factory_reset adapter command 512
failover
  API, Fibre Channel 75
  team type, configuring 59
family firmware version, viewing 205
-fca keyword 481
FCode
  definition of 601
  information, viewing 136
  saving and updating 80
  saving to file 80
  updating 136
  updating from file 80

FCoE
  CNA information, working with 83
  definition of 601
FCoE information
  adapter, viewing 287
  data center bridging 301
  DCE statistics 303
  port 300, 312, 313
  port, viewing 292
  TLV 307
-fcp command 92
FEC
  disabling 242
  enabling 93, 242
  support for 100, 202
-fec command 93
-feswitchcfg 164
-fg 76, 95
Fibre Channel
  See Also Fibre Channel ports
  definition of 601
  dump, for adapter 249
  error codes, viewing 91
  FEC, enabling 93
  firmware dump 96
  interactive commands 198
  noninteractive commands 74
Fibre Channel over Ethernet, *See* FCoE
Fibre Channel ping test, running 92
Fibre Channel ports
  disabling 503
  enabling 509
  information, viewing 559
  link rate, setting 550
files
  adapter configuration, saving to 544
  cache info, saving to 504
  command line syntax 478
  demonstration, creating and saving 542
  HCLI script 478
  help output 481
-finfo 165
firmware
  See Also firmware parameters
  adapter, restarting 538
  area, saving (QLE2562 only) 127
  area, updating (QLE2562 only) 127
  default settings, restoring 154
  dump, Fibre Channel 96
  FabricCache, updating 282
  functions, ACB supported 135
  image, updating 62
  image, uploading 578
  mini dump 46
  MPI version 201
  properties, displaying 138
  required for inner-link switch 94, 265
  SerDes table, updating 249
  settings, configuring 377
  updating FabricCache 578
  updating Fibre Channel 120, 125, 127
  updating iSCSI 142
  version 143
  version, comparing 579
  version, viewing 205, 553
firmware mini dump, updating CNA 183
firmware parameters
  AFW_AutoConnect 147
  AFW_Delayed_Ack 147
  AFW_Device_Timeout 147
  ExeThrottle 147
  FirstBurstLen 147
  Force_Negotiate_Main_iSCSI_Keys 147
  IP_Address 147
  IP_ARP_Redirect 147
  IP_Gateway 147
  IP_Subnet Mask 147
  iSCSI_Alias 147
  iSCSI_Data_Digests 148
  iSCSI_Discovery_Logout 148
  iSCSI_Header_Digests 148
  iSCSI_Immediate Data 148
  iSCSI_Initial_R2T 148
  iSCSI_Snack 148
  iSCSI_Strict_Login 148
  KeepAliveTO 148

firmware parameters (*continued*)
Large_Frames 148
MaxBurstLen 148
MaxOutstandingR2T 148
TCP_Auto_Discovery 148
TCP_DHCP 148
TCP_Nagle 148
TCP_Time_Stamp 148
TCPMaxWindowSize 148
first burst length 147
FirstBurstLen parameter 147
Flash
BIOS, saving and updating 80
command for support 40
retrieving NVRAM 141
saving adapter parameters 238
saving changes 238
update 244, 245
updating boot and firmware 62, 182
flash
FC info, viewing 205
MPI firmware version 201
test, CNA diagnostics 184
-flashsupport 40
flush cache command 513
flushing write cache 513
Force_Negotiate_Main_iSCSI_Keys parameter 147
format, noninteractive commands
FabricCache 478
Fibre Channel 76
iSCSI 131
NIC 36
forward error control, *See* FEC
frames
definition of 601
iSCSI, large 148
size, viewing 559, 576
FrameSize parameter 115
-fs 95
-ftr command 94
full login, enabling for LIP 115
function personality, changing for NPAR 190
-fwdump 96

G

-g 43, 74, 76, 142
-g command 97
gateway, IP 145, 147, 150
-gcr 142
general information
Fibre Channel host and adapter on local system, viewing 97
iSCSI adapter port, viewing 142
system, viewing 43, 142
general keywords 480
-agent 480
-fca 481
-help 481
-quiet 481
-result 482
-textfile 482
generating
reports, CNA FCoE 363, 365
reports, Fibre Channel adapter port 238
vPort, CNA FCoE 347
XML discovery output 40
XML report for CNAs 40
glossary of terms 599
graphics adapter, requirements 2

H

-h 43, 98, 142, 165
-ha 99
hard disk space requirement 2
hard loop ID, enabling 115
HardLoopID parameter 115
hardware requirements 2
HBA statistics 277
header digests, iSCSI 148
health of adapter, viewing 560
help
obtaining 477
summary of 487
help command 515

help file, viewing 43, 98, 142, 165, 197, 282, 283
-help keyword 481
host
  configuration, saving 156
  configuration, viewing 76
  general information, viewing 43
  I/O statistics, viewing 573
  information, viewing 74
  name and version 43
  topology, viewing 127
  type 43

I

-i 43, 76, 100, 142
-ia 166
-icna 44
ID, setting alternative client ID 157
-idcbx 44, 144
-if 166
iiDMA
  definition of 601
  settings 126
  target link speed, configuring 229
image, updating ROM 154
immediate data, iSCSI 148
-import 144
importing adapter configuration 144
initial R2T, iSCSI 148
initiators
  definition of 601
  device, viewing 557
  information, viewing 561
  viewing names of known 524
inner-link switches, firmware required 94, 265
input
  file, CSV 545
  from text file 76
  parameter options from text file 91
  persistence, save location 479
input/output control, *See* IOCTL
installation, FabricCache CLI 477
installation, QConvergeConsole CLI
  on Linux 7
  on Solaris 8
  on Windows 6
instance
  number 77
  port 143
instance (port), definition of 605
intelligent interleaved direct memory access, *See* iiDMA
intended audience xxvi
interactive cli command 517
interactive command line
  installing QCC CLI on Windows 6
  uninstalling QCC CLI from Windows 12
interactive commands
  breadcrumbs line xxx
  Converged Network Adapter 284
  FabricCache 280
  Fibre Channel 198
  NIC 169
  noninteractive equivalents xxx
  NPAR 470
interactive session, exiting 197, 283, 469
Internet protocol version 4, *See* IPv4
Internet Protocol, *See* IP
Internet simple name service, *See* iSNS
Internet small computer system interface, *See* iSCSI
interoperation, bandwidth settings for DCBX and NPAR 597
InterruptDelayTimer parameter 115
-intloopback 45
invalidate cache command 518
invalidating cache for LUN LBAs 518
IOCTL
  definition of 601
  Linux restriction 96
IP
  definition of 601
  adapter port IP address 143
  address 147
  address, setting 145, 150
  ARP redirect 147

IP (*continued*)
disabling IPv4 150
disabling IPv6 150
gateway 147
subnet mask 147
-ip 166
IP_Address parameter 147
IP_ARP_Redirect parameter 147
IP_Gateway parameter 147
IP_Subnet_Mask parameter 147
-ipdhcp 145
IPR, setting 145
IPv4
definition of 601
subnet mask error 586
iSCSI
definition of 602
adapter information, viewing 289
data digests 148
discovery logout 148
header digests 148
immediate data 148
initial R2T 148
initiator ID (ISID) 139
keys 147
loopback test, running 146
name 143
noninteractive commands 131
port information, viewing 294
settings, configuring 147, 151, 376
single port instance, configuring 147
snack 148
strict login 148
iSCSI_Alias parameter 147
iSCSI_Data_Digests parameter 148
iSCSI_Discovery_Logout parameter 148
iSCSI_Header_Digests parameter 148
iSCSI_Immediate_Data parameter 148
iSCSI_Initial_R2T parameter 148
iSCSI_Snack parameter 148
iSCSI_Strict_Login parameter 148
-iset 45
ISID (iSCSI initiator ID) 139
iSNS
definition of 602
information, viewing 526

K

keep alive timeout 148
KeepAliveTO parameter 148
keys, iSCSI 147
keywords, general 480
-kl 104
knowledge database xxxii
-kr 105, 106

L

-l 76, 109, 145
LACP, overriding 57, 411
Large_Frames parameter 148
-lb 146
LBA, invalidating cache for 518
-lcd 146
LED
target beaconing 127
toggling for port 39, 79, 186, 258, 437
library, API 580
license agreements xxxi
-link 46
link
configuration, viewing 146
rate, setting 550
rate, viewing 559
status, FC adapter 268
status, viewing 110
status, viewing physical 46
link layer discovery protocol, *See* LLDP
-linkchap 146
LinkDownTimeOut parameter 115
Linux
driver restriction 96
installing QConvergeConsole CLI on 7
UEK, support for 3
uninstalling QConvergeConsole CLI on 13

LIP
  definition of 602
  full login, enabling 115
  reset, enabling 115
list adapter command 520
list cluster command 521
list device command 522
list drive command 523
list initiator command 524
list log command 525
list lun command 527
list target command 528
listing error codes, Fibre Channel 91
LLDP
  definition of 602
  frames, viewing TLV 84
load balanced team type, configuring 59
local
  disk drive information 558
  link address, setting 145
  prefix list (IPv6), displaying 146
  storage pool, data cache 551
log data
  retrieving 537
  retrieving from adapter 543
  saving to file 543
  viewing all 525
  viewing specific 581
logging
  HBA statistics 278
logical unit number, *See* LUN
login retry count 115
login, iSCSI strict 148
logs
  clearing 492
  file, saving to 543
LogToFile adapter statistics parameter 98
loop initialization process, *See* LIP
loopback test
  definition of 602
  Fibre Channel, running 253
  iSCSI, running 146
  parameters, configuring 40, 45
LoopbackType parameter 108
-lp 146
LR credits, configuring 211
-ls 110
LT parameter 108
LUN configuration
  automatic 359
  manual 357
  viewing 356
LUNs
  See Also LUN configuration 602
  definition of 602
  boot target, clearing 137
  cache pool, removing 533
  cache, modifying 530
  caching, disabling 501
  caching, enabling 506
  enabling and disabling 111
  ID 77
  information, Fibre Channel 203, 204
  information, listing iSCSI 145
  information, viewing 562
  information, viewing Fibre Channel 109
  maximum per target 115
  names of known, viewing 527
  number 145
  persistent reservation, clearing 495
  persistent reservations, viewing 570
  product ID 145
  product revision 145
  selective, configuring 232
  size 145
  statistics, clearing 493
  statistics, displaying 565
  vendor name 145
  viewing 111
  write cache, flushing for 513

M

-m 76, 111
MAC address alias 179
Main Menu, interactive mode 18
management setup tools, NPAR 596

management workstation, definition of 602
managing persistent names 220
manually configuring network 150
materials, related xxviii
MaxBurstLen parameter 148
maximum
  burst length 148
  outstanding R2T 148
  window size, TCP 148
MaximumLUNsPerTarget parameter 115
MaxOutstandingR2T parameter 148
-mbiv 113
medium, connection 143
members
  adding to cluster 490
  removing from cluster 536
memory
  displaying for FabricCache adapter 568
  QConvergeConsole CLI requirement 2
menu-driven CLI mode, starting 517
merge csv command 529
merging output of CSV files 529
message passing interface, *See* MPI
message signaled interrupts, *See* MSI
messages, output to XML Format 1 129
Microsoft Windows Server, support for 3
-minidump 46
mode, silent 125
-model 147
model, adapter 143
modify cache command 530
monitoring
  CNAs 186
  FCA statistics 276
MPI
  definition of 602
  configuration DAT file 84
  configuration table, updating 84
  flash firmware version 201
MSI
  definition of 603
  Windows installer for QCC CLI 6

N

-n 47, 114, 147
Nagle TCP 148
named set of keywords 549, 554
naming adapter 548
-nc 150
neighbor cache, displaying 150
-netconf 150
-netconf6 150
network interface card, *See* NIC
network settings
  IPv6, configuring 150
  IPv6, manually configuring 150
network time protocol, *See* NTP
new team, configuring 59, 60
-nh 47, 151
NIC
  definition of 603
  adapter information, viewing 286
  noninteractive commands 36
  port information, viewing 290
NIC partitioning, *See* NPAR
noninteractive commands
  equivalents to interactive commands xxx
  Ethernet port, restoring defaults 49
  FabricCache 483
  Fibre Channel 74
  iSCSI 131
  NIC 36
  NPAR 162
  return codes 49
noninteractive mode
  command format, Fibre Channel 76
  command format, iSCSI 131
  command format, NIC 36
  displaying error and exit information 40
non-volatile random access memory, *See* NVRAM
Novell SLES, support for 3
NPAR
  definition of 603
  adapter information, viewing 163, 188
  adapters, viewing list of 166

NPAR (*continued*)
bandwidth settings interoperation 597
bandwidth, setting maximum 167
bandwidth, setting minimum 167
commands, noninteractive mode 162
configuration options 595
configuration parameters and setup tools 596
default settings 595
eSwitch information, viewing 164
eSwitch statistics, viewing 164
function type (protocol), changing 163
interactive commands 470
noninteractive commands 162
PCI function personality, changing 190
physical function information, viewing 165
physical function type (protocol), changing 163
physical functions, viewing list of 166
physical ports, viewing list of 166
port information, viewing 166, 189
PXE boot supported functions 596
return codes, viewing 164
WoL supported functions 596
NTP
definition of 603
log information 582
number
adapter 143
adapter serial 143
LUN 145
number of tests parameter 108
NVRAM
definition of 603
dumping to file 141
parameters, restoring 338
restoring factory default values 155
retrieving 141

O

-o 77, 116
OE parameter 108
OnError parameter 108
operating systems requirements 3
operation mode 115
OperationMode parameter 115
optical connection 143
optional parameters xxx
Oracle Linux UEK, support for 3
OSs supported 3
output
in XML 77
messages to file 116
messages to XML Format 1 129
to file 77
overriding LACP 57, 411

P

-p 76, 117
-pa 119, 152
package (driver), pre-installing 138
-pad 152
parameters
adapter, viewing 83
diagnostic test 108
optional xxx
ping diagnostics 86
template update 246
updating 124, 246
passive uninstall 12
path, definition of 603
-pb 152
-pbootcode 152
PCI
definition of 604
function personality, changing 190
PCI Express, definition of 604
PCIe, definition of 604

-pdt 152
peripheral component interface, *See* PCI
persistence per user 479
persistent
  bound targets parameter 96
  bound targets, displaying 153
  LUN names information 219
  names (udev) 215
  names, managing 220
  plus new parameter 96
  reservations, clearing 495
  reservations, displaying 570
  target binding info, displaying 117
  target parameters, viewing 160
personality, configuring adapter 241
-pet 152
physical function
  configuration, changing eSwitch 164
  NPAR information, viewing 165
  NPAR, viewing list of 166
  protocol type, changing 163
physical link status, viewing 46
physical ports
  eSwitch, configuring 166
  NPAR, viewing list of 166
-pinfo 47, 152, 166
-ping 48, 153
ping
  definition of 604
  diagnostic parameters 86
  diagnostic test, running 48
ping tests
  CT, running 85
  Fibre Channel, running 92
  options, FC 271
  parameters, configuring 272
  parameters, resetting 272
  parameters, viewing 271
  running 272
pinging target 153
point-to-point
  definition of 604
  port connection option, specifying 550
PollRate parameter 98
pool
  cache, removing from LUN 533
  local storage percentage 551
  size, viewing 569
  storage, adding drive to 488
  storage, removing drive from 534
port information
  CNA, viewing 171
  DCBX 44
  FCoE, viewing 292
  Fibre Channel, viewing 200
  iSCSI, viewing 152, 294
  NIC, viewing 47, 290
  NPAR, viewing 166
port instance, definition of 605
port tests
  diagnostics, configuring 270
  diagnostics, running 271
PortDownRetryCount parameter 116
ports
  definition of 605
  alias name, changing 47, 179, 207, 330, 349
  alias, creating/editing/deleting 119
  beacon, toggling off 39, 186, 258, 437
  beacon, toggling on 39, 186, 258, 437
  configuration, saving 181
  configuration, viewing 39, 178, 182
  configure settings 178
  DCBX information, displaying 44
  defaults, restoring 179
  detected, viewing list of 43
  Ethernet statistics, viewing 54
  Ethernet, restoring defaults 49
  Fibre Channel, disabling 503
  Fibre Channel, enabling 509
  firmware settings, iSCSI 375
  ID, binding devices by 96
  information, viewing 559
  instance 143
  iSCSI name 143
  LED, Fibre Channel 79
  link configuration, CNA 369
  number, iSCSI 143
  previewing for new team 60

ports (*continued*)
setting, configured iSCSI 370
settings, viewing configured 45
settings, viewing iSCSI 376
speed, viewing 46
targets, viewing all 152
virtual, Fibre Channel 128
VLAN, adding to 63, 64
VLAN, removing from 65
PPC, installing QCC on 7
prefix list, local, displaying 146
pre-installing driver package 138
previewing
before adding VLAN 64
before deleting VLAN 65
ports for new team 60
primary
adapter, adding 498
boot target information, clearing 137
boot target information, setting 152
principal fabric WWN 200
processor requirements 2
product
ID, LUN 145
revision, LUN 145
program version 161
-ps 153
-pu 153
-px 153
PXE boot support, NPAR 596

Q

-q 121
qaucli
starting noninteractive mode, NIC 36
starting noninteractive mode, NPAR 162
QL*xxxx* adapters supported by QCC 4
-qos 122
QoS, *See* quality of service
quality of service
definition of 605
setting and viewing 122
setting on a virtual port 360
-? 43
? 43
-quiet keyword 481

R

-r 124, 154
R2T, maximum outstanding 148
RAID
definition of 605
requirement for SAN environment 3
RAM
definition of 605
memory, dumping to file 140
requirement 2
random-access memory, *See* RAM
-rc 49
-rd 49
-rdf 154
-rdh 154
RDP info, viewing 274
Read Diagnostics Parameters information, viewing 274
Read Me, FabricCache CLI 477
read/write buffer test
parameters, configuring for Fibre Channel 255
parameters, resetting for Fibre Channel 255
parameters, viewing Fibre Channel 254
running, Fibre Channel 105, 106
running, iSCSI 155
starting, Fibre Channel 256
reading in FabricCache CLI commands from file 510
record, retrieving firmware crash 142
Red Hat Linux
support for 3
Red Hat Linux, installing QCC on 7
rediscovering targets 159
redundant array of independent/inexpensive disks, *See* RAID
refreshing adapters 196, 283, 468
related materials xxviii

release number, FabricCache CLI 580
reloading adapter data 196, 283, 468
remove cache_pool command 533
remove drive command 534
remove member command 536
removing
  all discovered targets 140
  cache pool 533
  discovered target 140
  drive from storage pool 534
  member adapter from cluster 536
  QConvergeConsole CLI on Linux 13
  QConvergeConsole CLI on Solaris 13
  send target, specific 159
  send targets, all 159
  team 57
  VLAN from port 65
replacing named set of keywords 549
report log command 537
reports
  adapter port, generating 238
  FCoE configuration, generating 363, 365
  retrieving log data from 10000 Series Adapter 537
requirements
  hardware 2
  operating system 3
  software 3
  system 2
reservations
  clearing persistent for LUN 495
  displaying 570
reset target, enabling 115
resetting
  adapter 135
  cache statistics 497
  driver statistics counters 278
  Ethernet statistics counters 49
  factory defaults 512
  Fibre Channel driver status counters 98
  Fibre Channel firmware status counters 111
  ping test parameters 272
restart adapter command 538
restarting adapter firmware 538
restore drive_config command 539
-restoreeswitchcfg 167
restoring
  adapter defaults, FabricCache 512
  adapter defaults, Fibre Channel 211
  default firmware settings 154
  drive configuration 539
  eSwitch configuration 167
  port factory defaults 154
  teaming configuration from file 71
  VLAN configuration from file 71
restrictions, driver 96, 98
-result keyword 482
retrieving
  adapter log data 543
  firmware crash record 142
  FW Flash record 141
  log data from iSA 537
  NVRAM record 141
return codes
  NIC commands 49
  NPAR, viewing 164
  SDM library 157
return values, viewing description 540
retval hcli command 540
RHEL, support for 3
ROM image, updating 154
routable address, setting 145
router
  address, setting 145
  default list, displaying 139
running
  BB-CR statistics 280
  CT fabric trace route test 94
  CT ping test 85
  Fibre Channel ping test 92
  HBA port statistics 278
  ping test 48
  ping test parameters 272
  port test, diagnostic 271
  read/write buffer test 155
-rwt 155

S

-s 77, 125
SAN
  definition of 605
  environment requirements 2
-save 156
save capture_file command 541
save demonstration_file command 542
save log command 543
save script command 544
saving
  adapter parameters 362
  capture file 541
  commands to file 544
  demonstration file 542
  FCode 80
  firmware area 127
  Flash BIOS 80
  host configuration 156
  log file 543
  teaming configuration to file 69
  VLAN configuration to file 69
-sbootcode 156
-sbootcodecid 157
script csv command 545
scripting, command line 477
scripts
  executing 510
  files, examples of 477
  saving adapter configuration 544
SDM library return code, returning 157
-sdmrc 157
secondary
  adapter, adding 498
  boot target info, clearing 137
  boot target info, setting 156
secure sockets layer, *See* SSL
selectable boot 87, 227
selecting boot device 87
selective LUNs, configuring 232
self-monitoring, analysis and reporting technology, *See* SMART
send RDP info, viewing 274
send targets
  adding 157
  iSCSI, viewing 158
  rediscovering 159
  removing all 159
  removing specific 159
SerDes
  definition of 606
  table, updating 120, 125, 127, 249
serial number, adapter 143, 553
serializer/deserializer, *See* SerDes
set adapter command 548
set append command 549
set fc command 550
set pool command 551
set target command 552
-setmaxbw 167
-setminbw 167
setting port link rate 550
setup tools, NPAR 596
`sfcli.properties` file, customizing stop-test key 61, 105, 156
SFP
  definition of 606
  loopback plug requirement 45
  loopback plug, requirement for 108
  viewing information for 572
show adapter command 553
show append command 554
show cluster command 555
show device command 557
show drive command 558
show fc command 559
show health command 560
show initiator command 561
show lun command 562
show lun_statistics command 565
show memory command 568
show pool command 569
show reservation command 570
show sfp command 572
show statistics command 573
show system_capture command 575
show target command 577

showing, *See* viewing
silent mode 77, 125
silent uninstallation 12
SLES, support for 3
small computer system interface, *See* SCSI
small form-factor pluggable, *See* SFP
SMART
  definition of 606
  drive, displaying for 558
snack, iSCSI 148
software requirements 3
software version, viewing 553
Solaris
  driver restriction 96
  installing QConvergeConsole on 8
  support for 3
  target ID 89
  uninstalling QConvergeConsole CLI on 13
-sp 120, 125, 127
speed, of port 46
-sreset 49
-sriov 49
SSL, definition of 606
-stadd 157
Start menu, uninstalling QCC CLI from (Windows) 12
starting noninteractive mode 36, 162
-stathba 158
statistics
  See Also statistics counters
  adapter level, displaying 158
  adapter, displaying 158
  buffer-to-buffer credit recovery 279
  buffer-to-buffer credit recovery, running 280
  buffer-to-buffer credit recovery, setting rate 279
  cache, resetting 497
  cache, viewing 573
  DCE 303
  eSwitch NPAR statistics, viewing 164
  eSwitch statistics, viewing 164
  Ethernet port, viewing 54, 187
  HBA, monitoring 277
  host I/O, viewing 573
statistics (*continued*)
  LUN, clearing 493
  LUN, viewing 565
  monitoring 276
statistics counters
  resetting Ethernet 49, 187
  undoing resetting Ethernet 57, 188
-statport 54, 158
status
  beacon, viewing 79
  physical link 46
-stdsp 158
stopping a running test 61, 105, 156
storage area network, *See* SAN
storage pool
  cache, removing 533
  drive, adding new 488
  drive, removing 534
  local, setting size 551
-strd 159
-strem 159
-strema 159
subnet mask
  IP 147
  iSCSI, setting 145, 150
summary help, viewing 515
-sunreset 57
supported OSs 3
SUSE Linux, installing on 7
symbolic name, setting for adapter 548
syntax, command line 478
sysfs
  definition of 606
  driver, Linux restriction 96
system
  information, viewing 43, 74, 75, 142
  port instance 143
  requirements 2

T

-t 76, 126, 159
target and LUN information
  FCoE 323
  iSCSI 322
target information
  binding, viewing 117
  boot, clearing primary 137
  boot, clearing secondary 137
  boot, setting primary 152
  Fibre Channel, viewing 126, 203, 204
  iSCSI summary, viewing 161
  iSCSI, viewing 159
  secondary boot, setting 156
target persistent binding
  bind targets 213, 340
  configuration, viewing 213
  parameters, viewing 160
  unbinding targets 214, 341
  viewing configuration 339
target-based execution throttle, setting 552
targets
  See Also target information, target persistent binding, targets discovered, targets send
  definition of 606
  beacon, starting and stopping 127
  binding persistent 152, 213, 340
  bound, displaying 153
  CHAP entry, assigning 146
  device, viewing 557
  disabling 152
  enabling 152
  ID, Fibre Channel 77
  ID, Solaris 89
  information, viewing 577
  link speed, setting and viewing 121, 230, 233
  listing 159
  names of known, viewing 528
  parameters, setting iSCSI 160
  persistent, adding 152
  ping, running 48
  pinging 153
targets (*continued*)
  port ID variable 77
  rediscovering 159
  reset, enabling 115
  setting execution throttle 552
  unbinding 153, 341
  viewing 152
  with CHAP entries, displaying 136
  WWNN 77
  WWPN 77
targets, discovered
  duplicating 139, 140
  log in all 140
  log in specific 140
  removing 140
  removing all 140
  viewing all 139
  viewing non-persistent 139
targets, send
  for discovery, iSCSI 157
  removing 159
  removing all 159
  viewing 158
-tb 127
-tc 160
TC parameter 108
TCP
  definition of 607
  auto discovery 148
  maximum window size 148
  Nagle 148
  TCP_DHCP 148
  time stamp 148
TCP_Auto_Discovery 148
TCP_DHCP 148
TCP_Nagle parameter 148
TCP_Time_Stamp parameter 148
TCPMaxWindowSize parameter 148
-team_allowCNAsIn8023adTeam 57
-teamdel 57
-teaminfo 58
-teamlist 59
-teamnew 59
-teamnew_portspreview 60

teams
  802.3 57
  allowing Converged Network 411
  allowing Converged Network Adapters 57
  configuration, restoring from file 71
  configuration, saving to file 69
  deleting 57
  information, viewing 58
  list, viewing 59
  new, configuring 59
  new, previewing ports 60
  type, failover or load balanced 59
technical support xxxi
template update 246
terms and definitions 599
test parameters
  configure 252
  reset 252
  viewing 251
TestCount parameter 108
TestIncrement parameter 108
tests
  CT ping, running 85
  diagnostic port 270
  external loopback 104, 250, 253
  fabric trace route, running 94
  Fibre Channel ping, running 92
  iSCSI loopback, running 146
  number of tests parameter 108
  pattern 108
  ping diagnostics 271
  ping parameters, configuring 272
  ping parameters, resetting 272
  ping, parameters 271
  ping, running 48, 272
  read/write buffer 105
-textfile keyword 482
TI parameter 108
time stamp, TCP 148
timeout parameter 115
timeouts, AFW_Device_Timeout 147
TLV
  definition of 607
  DCBX port settings, viewing CNA 174
TLV (*continued*)
  DCBX, viewing for port connection 84
  details for a port, listing 160
  FCoE, viewing 307
  raw information for a port, listing 160
-tlvdetails 160
-tlvraw 160
toggle beacon status 79
topology, viewing host 127
-tp 127, 160
trace route, running fabric 94
training offered by QLogic xxxii
-trans 62
transceiver
  diagnostics monitoring interface 256
  DMI data, displaying 62
  viewing information for 572
transmission control protocol, *See* TCP
-ts 161
type-length-value, *See* TLV

U

-u 127
UEFI
  definition of 607
  information, viewing 136
  settings 380
  updating 136
  viewing information 380
unbinding targets 153, 214
Unbreakable Enterprise Kernel, support for 3
undoing resetting Ethernet statistics counters 57
unified extensible firmware interface, *See* UEFI
uninstalling
  QCC CLI from Windows command line 12
  QCC CLI from Windows Control Panel 12
  QCC CLI from Windows Start menu 12
  QCC CLI on Linux 13
  QCC CLI on Solaris 13
update firmware command 578

updating
  adapter information display 196, 283, 468
  adapter parameters 124
  bootcode image 136
  FCode 80
  firmware area 127
  firmware SerDes table 249
  firmware, FabricCache Adapter 282
  firmware, Fibre Channel 120, 125, 127
  firmware, specified 142
  firmware, uploading image 578
  Flash (boot and firmware images) 62
  Flash BIOS 80
  ROM image 154
  Windows driver 87
-updimages 62
user type 43

V

-v 63, 128
vendor name, LUN 145
-ver 63, 161
version
  adapter firmware 579
  FabricCache CLI 580
  firmware 143
  iSCSI drivers 141
version adapter command 579
version command 580
version number
  QCC CLI, viewing (Fibre Channel) 128
  QCC CLI, viewing (iSCSI) 161
  QCC CLI, viewing (NIC) 63
video card, requirements 2
view log command 581
viewing
  adapter configuration 39
  adapter health 560
  adapter information, all for a single adapter 575
  adapter information, FabricCache 553
  adapter information, Fibre Channel 130
viewing (*continued*)
  adapter information, NIC 286
  adapter target information 126
  adapter types in system 147
  adapters, list of 520
  ARP table 135
  beacon status 79
  boot device 87, 343
  bootcode info 136
  CHAP entries, targets 136
  CHAP table 139
  CNA adapter information 170
  CNA information 44
  configured link configuration, iSCSI 146
  configured port settings 45
  configured port settings, iSCSI 136
  DCBX port settings 173, 179
  DCBX TLV port settings 174
  DCE connection logs 137
  default router list (IPv6) 139
  destination cache (IPv6) 137
  device information 557
  diagnostics monitoring info 87
  DMI data, transceiver 62
  drive information 558
  error information 40
  Ethernet port statistics 54
  exit code information 40
  FabricCache Adapter information 281
  FCoE port information 292
  firmware properties 138
  general system information 43
  help file, FabricCache 282
  help file, iSCSI 142
  help file, NIC 43
  host information 74
  host topology 127
  initiator information 561
  iSCSI adapter information 289
  iSCSI port information 294
  link status 110
  local prefix list (IPv6) 146
  log data, specific 581
  LUN information, FabricCache 562

viewing (*continued*)
LUN information, Fibre Channel 109
LUN information, iSCSI 145
LUN list 111
LUN statistics 565
named set of keywords 554
neighbor cache 150
NPAR adapter information 163
NPAR adapters 166
NPAR physical function information 165
NPAR physical functions 166
NPAR physical ports 166
NPAR port information 166
parameter settings 83
persistent names information 219
persistent reservations 570
persistent target binding information 117
pool size 569
port configuration 39
port configuration, iSCSI 136
port DCBX information 144
port information, CNA 47
port information, Fibre Channel 559
port information, iSCSI 152
port information, NIC 290
port targets, iSCSI 152
ports detected 43
quality of service settings 122
return codes, NPAR 164
send targets, iSCSI 158
statistics, FabricCache 573
statistics, host I/O 573
statistics, iSCSI adapter-level 158
status, physical link 46
system information 74, 142
target information, FabricCache 577
target information, iSCSI 159
target link speed 121
target summary information, iSCSI 161
targets using CHAP entries 136
team information 58, 67
teams list 59
transceiver DMI data 62
viewing (*continued*)
version number, QCC CLI (Fibre Channel) 128
version number, QCC CLI (iSCSI) 161
version number, QCC CLI (NIC) 63
VLAN and teaming info 72
VLAN information 66, 67
VLAN list 66
VPD information, FCoE 297
VPD information, Fibre Channel 202
VPD information, iSCSI 161, 298
VPD information, NIC 67, 296
virtual LAN, *See* VLAN
virtual machine, *See* VM
virtual ports
creating 347
deleting 348
information 346
listing 128
NPIV 228
vital product data, *See* VPD
-vlanadd 63
-vlanadd_preview 64, 65
-vlandel 65
-vlaninfo 66
-vlanlist 66
VLANs
definition of 607
adding to port 63, 64
configuration, restoring from file 71
configuration, saving to file 69
deleting from port 65
information, viewing 66
list, viewing 66
removing from port 65
VM
definition of 607
MAC addresses, downloading to firmware 594
QoS for 593
-vp 128
VPD
definition of 607
information, viewing CNA 172
information, viewing FCoE 297

VPD (*continued*)
information, viewing Fibre Channel 202
information, viewing iSCSI 161, 298
information, viewing NIC 67, 296
-vpd 67, 161
-vtcfgview 67
-vtrestore 69
-vtsave 71
`vtstate-user.cfg` file, restoring VLAN and teaming configuration from 71

W

wake on LAN, *See* WoL
what is in this guide xxvi
window size, maximum 148
Windows
Control Panel, uninstalling QCC CLI from 12
driver, updating 87
installing QCC CLI on 6
Server, support for 3
Start menu, uninstalling QCC CLI from 12
WoL
definition of 607
disabling 42, 403
disabling for port 403
enabling 403
enabling for port 403
NPAR supported functions 596
workstation (management), definition of 602
world wide name, *See* WWN
world wide node name, *See* WWNN
world wide port name, *See* WWPN
world wide unique LUN name, *See* WWULN
write cache, flushing for LUNs 513
WWN
definition of 608
fabric-assigned, enabling 115
principal and adjacent 200
WWNN
definition of 608
port, viewing 559, 577
target, Fibre Channel 77
WWPN
adapter, Fibre Channel 77
bind by WWPN parameter 96
definition of 608
port, viewing 559, 577
target, Fibre Channel 77
WWULN
definition of 608
local disk drive 558

X

-x 77, 129
-x2 130
XenServer, OS support 3
XML
Format 1 129
Format 2 130

Z

-z 75, 76, 130
-zvt 72

Corporate Headquarters Cavium, Inc. 2315 N. First Street San Jose, CA 95131 408-943-7100

International Offices UK | Ireland | Germany | France | India | Japan | China | Hong Kong | Singapore | Taiwan | Israel

Copyright © 2010–2017 Cavium, Inc. All rights reserved worldwide. QLogic Corporation is a wholly owned subsidiary of Cavium, Inc. QLogic, FabricCache, FastLinQ, and QConvergeConsole are registered trademarks of Cavium, Inc. All other brand and product names are trademarks or registered trademarks of their respective owners.

This document is provided for informational purposes only and may contain errors. Cavium reserves the right, without notice, to make changes to this document or in product design or specifications. Cavium disclaims any warranty of any kind, expressed or implied, and does not guarantee that any results or performance described in the document will be achieved by you. All statements regarding Cavium's future direction and intent are subject to change or withdrawal without notice and represent goals and objectives only.