



DELL Technologies S4048-ON Networking OS PowerSwitch User Guide

[Home](#) » [DELL Technologies](#) » DELL Technologies S4048-ON Networking OS PowerSwitch User Guide 

Contents

- 1 [DELL Technologies S4048-ON Networking OS PowerSwitch](#)
- 2 [Product Information](#)
- 3 [Product Usage Instructions](#)
- 4 [Document Revision History](#)
- 5 [Supported Hardware](#)
- 6 [Supported Software](#)
- 7 [New Dell Networking OS Version 9.14\(2.14\) Features](#)
- 8 [Deferred Issues](#)
 - 8.1 [Deferred S4048-ON 9.14\(2.0\) Software Issues](#)
 - 8.2 [Upgrading the CPLD Image](#)
- 9 [Installing Dell Networking OS on the S4048-ON using ONIE](#)
- 10 [Uninstalling Dell Networking OS from the S4048-ON](#)
- 11 [Support Resources](#)
- 12 [Contacting Dell](#)
- 13 [Documents / Resources](#)
 - 13.1 [References](#)



DELL Technologies S4048-ON Networking OS PowerSwitch



Product Information

- Product: Dell Networking S4048-ON
- Release Version: 9.14(2.14)
- Release Date: April 15, 2022

Supported Hardware:

- S4048-ON chassis
- Forty eight SFP+ ports (10 Gbps)
- Six QSFP+ ports (40 Gbps)
- Two AC/DC PSUs
- Three fan subsystems
- One MicroUSB serial console port
- One universal serial bus (USB Type-A) port for additional file storage
- Management Ethernet interface
- RS-232 Serial interface
- Dual core 1.7GHz Rangeley central processing unit (CPU) system

Supported Software:

- Dell Networking OS
- ONIE (Open Network Install Environment)

New Dell Networking OS Version 9.14(2.14) Features: None

Product Usage Instructions

Upgrading Dell Networking OS:

1. Uninstall the older version of the Open Automation (OA) package.
2. Upgrade the Dell Networking OS to version 9.14.2.0 or later.
3. Install the 9.14.2.0 version or later of the following OA packages:
 - SmartScripts
 - Puppet
 - Open management infrastructure (OMI)
 - SNMP MIB

Downgrading Dell Networking OS:

Note: Before downgrading, save the current configuration.

1. Remove the CDB files (confd_cdb.tar.gz.version and confd_cdb.tar.gz) using the following steps:
 - Enter command: `DellEMC#write memory`
 - Enter command: `DellEMC#delete flash://confd_cdb.tar.gz.version`
 - Enter command: `DellEMC#delete flash://confd_cdb.tar.gz`
2. Reload the system by entering command: `DellEMC#reload`

NOTE: This document may contain language that is not consistent with current guidelines of Dell Technologies. There are plans to update this document over subsequent releases to revise the language accordingly.

Incorrect behavior or unexpected caveats are listed as the Problem Report (PR) numbers within the appropriate sections.

For more information on hardware and software features, commands, and capabilities, see the Dell Networking website at: <https://www.dellemc.com/networking>.

Document Revision History

Table 1. Revision History

Date	Description
2022-04	Initial release.

Supported Hardware

The following hardware is supported with this platform: Table 2. Supported Hardware

Hardware
S4048-ON chassis
Forty eight SFP+ ports (10 Gbps)
Six QSFP+ ports (40 Gbps)
Two AC/DC PSUs
Three fan subsystems
One MicroUSB serial console port
One universal serial bus (USB Type-A) port for additional file storage
Management Ethernet interface
RS-232 Serial interface
Dual core 1.7GHz Rangeley central processing unit (CPU) system

NOTE: If all the three fan trays are found to be empty or faulty, the system shuts down after one minute.

Supported Software

The following software is supported with this platform: Table 3. Supported Software

Software	Minimum Release Requirement
Dell Networking OS	9.14(2.14)
ONIE	3.21.1.0-5

NOTE: For information on non-Dell OS versions, refer the Release Notes for the Hardware Platform S4048-ON.

New Dell Networking OS Version 9.14(2.14) Features

The following features are integrated into the Dell Networking 9.14.2 branch through this release: Non

Restrictions

- You can use non-Dell qualified cables, adapters, and optics in a S4048-ON switch, but Dell Networking does not guarantee their performance as the S4048-ON does not support non-Dell qualified transceivers of 25G and above. If you insert a non-Dell qualified transceiver of 25G and above into a SFP28, QSFP+, or QSFP28 port, the switch places the interface in an error-disabled (operationally down) state and generates a syslog message, such as:

```
%S4048LC0640:8 %IFAGT-2-TRANSCEIVER_UNSUPPORTED_ERROR: Transceiver in slot 1 port 49 unrecognized, putting interface in operational-down state.
```

To verify the error-disabled status of an interface, enter any of the following show commands.

```

Dell# show inventory media
Slot   Port   Type       Media           Serial Number   DellQualified
-----
  1     49   UNKNOWN   UNKNOWN         USC1D6J         No**
  1     50   QSFP       40GBASE-LR4     UQ90C7B         No**
  1     51   QSFP       40GBASE-SR4     7503835V009Y   Yes
  1     52   QSFP       40GBASE-CR4     10190002        No
  1     53   QSFP       40GBASE-SR4     FE2429470007    Yes
  1     54               Media not present or accessible
** Interface is down(error disabled) as transceiver is not DellQualified

Dell# show interfaces fortyGigE 1/49
fortyGigE 1/49 is up, line protocol is down(error-disabled[Transceiver Unsupported])
...

```

- Prerequisite steps to upgrade the Dell Networking OS from earlier version to 9.14.2.0 or later:

- Uninstall the older version of the Open Automation (OA) package
- Upgrade the Dell Networking OS to 9.14.2.0 or later version
- Install the 9.14.2.0 version or later of the OA packages :
 - SmartScripts
 - Puppet
 - Open management infrastructure (OMI)
 - SNMP MIB

Prerequisite steps to downgrade the Dell Networking OS from 9.14.2.0 or later to the earlier version:

- Uninstall the 9.14.2.0 or later version of the OA package
- Downgrade the Dell Networking OS to an earlier version
- Install the respective OA package from an earlier version

For more information about installing, uninstalling and upgrading the Dell Networking OS and OA package, refer the respective Dell System Release Notes.

- If you downgrade the Dell Networking OS version from 9.14.2.14 to 9.11.0.0 or any older versions, the system displays the following error message even though there is no functional impact:

```
CDB boot error:      C.cdb file format
```

Before downgrading, save the current configuration and then remove the CDB files (confd_cdb.tar.gz.version and confd_cdb.tar.gz). To remove the files, use the following steps:

```

DellEMC#write memory
DellEMC#delete flash://confd_cdb.tar.gz.version
DellEMC#delete flash://confd_cdb.tar.gz
DellEMC#reload

```

- In a VXLAN scenario, hybrid port is not supported.
- While deploying the system in the normal-reload mode in BMP configuration, use the ip ssh server enable command at the beginning of the startup configuration if the write memory command is used at the end of the configuration.
- REST API does not support AAA authentication.
- The following features are not available in the Dell Networking OS:
 - PIM ECMP
 - Static IGMP join (ip igmp static-group)
 - IGMP querier timeout configuration (ip igmp querier-timeout)
 - IGMP group join limit (ip igmp group join-limit)
- You can use the negotiation auto command to turn auto-negotiation on or off only on fiber interfaces operating

at 1G speed.

- If you use a 1 G SFP, disable autonegotiation on both peer ends. If you do not disable autonegotiation, the link does not come up.
- If you use the interface range command to select multiple interfaces that are added to the management VRF, the ipv6 address command does not display the autoconfig option. You can configure the autoconfig command on individual interfaces.
- If you use the interface range command to select multiple interfaces that are added to the management VRF, the ipv6 nd command displays the following options but they do not take effect if you use them:
 - dns-server
 - hop-limit
 - managed-config-flag
 - max-ra-interval
 - mtu
 - other-config-flag
 - prefix
 - ra-guard
 - ra-lifetime
 - reachable-time
 - retrans-timer
 - suppress-ra
- When FRRP is enabled in a VLT domain, no flavor of Spanning tree should concurrently be enabled on the nodes of that specific VLT domain. In essence FRRP and xSTP should not co-exist in a VLT environment.
- Do not configure the vxlan-instance command on the port, which is configured with the portmode hybrid command. Do not configure the vxlan-instance enabled port as a member of VLAN, which does not have VXLAN-VNI configuration.

Changes to Default Behavior and CLI Syntax

The following behavior and CLI changes are applicable to the S4048-ON switch with Dell Networking OS version 9.14(2.14): None

Documentation Corrections

This section describes the errors identified in the current release of the Dell Networking OS.

The router bgp command allows you to configure only one L3 interface with an IPv4 address. The Configuration guide does not mention this limitation and will be corrected in the next release of the guide.

Deferred Issues

Issues that appear in this section were reported in Dell Networking OS version 9.14(2.0) as open, but have since been deferred. Deferred caveats are those that are found to be invalid, not reproducible, or not scheduled for resolution.

Deferred issues are reported using the following definitions.

- **PR#:** Problem Report number that identifies the issue.
- **Severity**

- S1 — Crash: A software crash occurs in the kernel or a running process that requires a restart of AFM, the router, switch, or process.
- S2 — Critical: An issue that renders the system or a major feature unusable, which can have a pervasive impact on the system or network, and for which there is no work-around acceptable to the customer.
- S3 — Major: An issue that affects the functionality of a major feature or negatively effects the network for which there exists a work-around that is acceptable to the customer.
- S4 — Minor: A cosmetic issue or an issue in a minor feature with little or no network impact for which there might be a work-around.
- **Synopsis:** Synopsis is the title or short description of the issue.
- **Release Notes:** Release Notes description contains more detailed information about the issue.
- **Work around:** Work around describes a mechanism for circumventing, avoiding, or recovering from the issue. It might not be a permanent solution.

Issues listed in the “Closed Caveats” section should not be present, and the work-around is unnecessary, as the version of code for which this release note is documented has resolved the caveat.

Deferred S4048–ON 9.14(2.0) Software Issues

Issues that appear in this section were reported in Dell Networking OS version 9.14(2.0) as open, but have since been deferred. Deferred caveats are those that are found to be invalid, not reproducible, or not scheduled for resolution.

The following issues have been deferred in the Dell Networking OS version 9.14(2.0): None.

Fixed Issues

Fixed issues are reported using the following definitions.

- **PR#:** Problem Report number that identifies the issue.
 - **Severity**
 - S1 — Crash: A software crash occurs in the kernel or a running process that requires a restart of AFM, the router, switch, or process.
 - S2 — Critical: An issue that renders the system or a major feature unusable, which can have a pervasive impact on the system or network, and for which there is no work-around acceptable to the customer.
 - S3 — Major: An issue that affects the functionality of a major feature or negatively effects the network for which there exists a work-around that is acceptable to the customer.
 - S4 — Minor: A cosmetic issue or an issue in a minor feature with little or no network impact for which there might be a work-around.
 - **Synopsis:** Synopsis is the title or short description of the issue.
 - **Release Notes:** Release Notes description contains more detailed information about the issue.
 - **Work around:** Workaround describes a mechanism for circumventing, avoiding, or recovering from the issue. It might not be a permanent solution.
- Issues listed in the “Closed Caveats” section should not be present, and the work-around is unnecessary, as the version of code for which this release note is documented has resolved the caveat.

Fixed S4048–ON 9.14(2.14) Software Issues

NOTE: Dell Networking OS 9.14(2.14) includes fixes for caveats addressed in the previous 9.14 releases. Refer to the respective release notes documentation for the list of caveats fixed in the earlier 9.14 releases.

The following caveats have been fixed in Dell Networking OS version 9.14(2.14):

PR# 170114

- **Severity:** Sev 2
- **Synopsis:** The switch experiences memory leaks when processing certain types of packets.
- **Release Notes:** The switch experiences memory leaks when processing certain types of packets.
- **Workaround:** None

OPR# 17232:

- **Severity:** Sev 2
- **Synopsis:** The switch sends deprecated VRRP traps.
- **Release Notes:** The switch sends deprecated VRRP traps.
- **Workaround:** None

PR# 170301

- **Severity:** Sev 3
- **Synopsis:** The BN_mod_sqrt() function, which computes a modular square root, contains a bug that can cause it to loop forever for non-prime moduli (CVE-2022-0778).
- **Release Notes:** The BN_mod_sqrt() function, which computes a modular square root, contains a bug that can cause it to loop forever for non-prime moduli (CVE-2022-0778).
- **Workaround:** None

Known Issues

Known issues are reported using the following definitions.

- **PR#:** Problem Report number that identifies the issue.
- **Severity**
 - S1 — Crash: A software crash occurs in the kernel or a running process that requires a restart of AFM, the router, switch, or process.
 - S2 — Critical: An issue that renders the system or a major feature unusable, which can have a pervasive impact on the system or network, and for which there is no work-around acceptable to the customer.
 - S3 — Major: An issue that affects the functionality of a major feature or negatively effects the network for which there exists a work-around that is acceptable to the customer.
 - S4 — Minor: A cosmetic issue or an issue in a minor feature with little or no network impact for which there might be a work-around.
- **Synopsis:** Synopsis is the title or short description of the issue.
- **Release Notes:** Release Notes description contains more detailed information about the issue.
- **Work around:** Work around describes a mechanism for circumventing, avoiding, or recovering from the issue. It might not be a permanent solution. Issues listed in the “Closed Caveats” section should not be present, and the work-around is unnecessary, as the version of code for which this release note is documented has resolved the caveat.

Known S4048-ON 9.14(2.14) Software Issues

The following caveats are open in Dell Networking OS version 9.14(2.14): None

Upgrading the sub-components

It is recommended to upgrade the sub-components in the following order and reload the switch where necessary, before proceeding with the next sub-component upgrade.

1. Upgrade the BIOS or Boot-selector – using the upgrade boot bootselector-image stack-unit 1 booted command.
2. Upgrade the GRUB or Bootflash – using the upgrade boot bootflash-image stack-unit 1 booted command.
3. Upgrade the CPLD – using the upgrade fpga-image system cpld stack-unit 1 booted command.

Upgrade the BIOS or Boot Selector

To upgrade the BIOS or Boot Selector from Dell Networking OS, perform the following steps:

1. Upgrade the S4048-ON Boot Selector image.

EXEC Privilege Mode

Dell Networking OS version 9.14(2.14) requires S4048-ON Boot Selector image version 3.21.0.0-6 or higher.

The booted option is used to upgrade the Boot Selector image to the image version packed with the loaded Dell Networking OS image.

The Boot Selector image version packed with the loaded Dell Networking OS can be found using the show os-version command in EXEC Privilege mode.

```
DellEMC#upgrade boot bootselector-image stack-unit 1 booted

Current Boot information in the system:
=====
Card                BootSelector      Current Version    New Version
-----
Unit1              Boot Selector      3.21.0.4          3.21.0.0-6

*****
* Warning - Upgrading boot selectors is inherently risky and should *
* only be attempted when necessary. A failure at this upgrade may   *
* cause a board RMA. Proceed with caution !                          *
*****

Proceed upgrade Boot Selector image for stack-unit 1 [yes/no]: y

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Bootselector image upgrade for stack-unit 1 completed successfully.
DellEMC#
```

2. Reload the unit. EXEC Privilege Mode reload
3. Verify the Boot Selector image. EXEC Privilege Mode show system stack-unit <id>

```
DellEMC#show system stack-unit 1

-- Unit 1 --
Unit Type           : Management Unit
Status              : online
Next Boot           : online
Required Type       : S4048-ON - 54-port TE/FG (SK-ON)
Current Type        : S4048-ON - 54-port TE/FG (SK-ON)
Master priority     : 0
Hardware Rev        : 1.0
Num Ports           : 72
Up Time             : 15 min, 26 sec
Dell EMC Networking OS Version : 9.14(2.14)
Jumbo Capable       : yes
```

```

POE Capable           : no
FIPS Mode             : disabled
Boot Flash           : 3.21.2.9
Boot Selector         : 3.21.0.0-6

Memory Size           : 2127560704 bytes
Temperature           : 36C
Voltage               : ok

```

Upgrade the GRUB or Boot Flash

To upgrade the GRUB or Boot Flash from Dell Networking OS, perform the following steps:

1. Upgrade the S4048-ON Boot Flash image.

EXEC Privilege Mode

upgrade boot bootflash-image stack-unit [<id> | all] [booted | flash: | ftp: | scp: | tftp: | usbflash:]

```

DellEMC#upgrade boot bootflash-image stack-unit 1 booted

Current Boot information in the system:
=====
Card                BootFlash    Current Version    New Version
-----
Unit1               Boot Flash      3.21.2.3          3.21.2.9

*****
* Warning - Upgrading boot flash is inherently risky and should only *
* be attempted when necessary. A failure at this upgrade may cause *
* a board RMA. Proceed with caution !                               *
*****

Proceed upgrade Boot Flash image for stack-unit 1 [yes/no]: y

!!!!
Bootflash image upgrade for stack-unit 1 completed successfully.
DellEMC#

```

Upgrade the CPLD

The S4048-ON system with Dell Networking OS Version 9.14(2.14) requires System CPLD revision 15.2, Master CPLD revision 12, and Slave CPLD revision 5.

NOTE: If your CPLD revisions are higher than the ones shown here, DO NOT make any changes. If you have questions regarding the CPLD revision, contact technical support.

Verify that a CPLD upgrade is required

Use the following command to identify the CPLD version:

```

DellEMC#show revision

-- Stack unit 1 --
S4048-ON SYSTEM CPLD    : 15.2

S4048-ON MASTER CPLD    : 12

S4048-ON SLAVE CPLD     : 5

DellEMC#

```

Use the following command to view CPLD version that is associated with the Dell Networking OS image:

```

DellEMC#show os-version

RELEASE IMAGE INFORMATION :
-----
Platform          Version          Size          ReleaseTime
S-Series:SK-ON    9.14 (2.14)    66927971     Feb 21 2022 00:43:07

TARGET IMAGE INFORMATION :
-----
Type              Version          Target          checksum
runtime          9.14 (2.14)    Control Processor  passed

BOOT IMAGE INFORMATION :
-----
Type              Version          Target          checksum
boot flash       3.21.2.9        Control Processor  passed

BOOTSEL IMAGE INFORMATION :
-----
Type              Version          Target          checksum
boot selector    3.21.0.0-6      Control Processor  passed

FPGA IMAGE INFORMATION :
-----
Card              FPGA Name        Version
stack-unit 1     S4048-ON SYSTEM CPLD  15.2
stack-unit 1     S4048-ON MASTER CPLD   12
stack-unit 1     S4048-ON SLAVE CPLD    5
DellEMC#

```

Upgrading the CPLD Image

NOTE: The upgrade fpga-image stack-unit 1 booted command is hidden when using the FPGA Upgrade feature in the CLI. However, it is a supported command and will be accepted when entered as documented.

NOTE: Ensure that the BIOS version is 3.21.0.0-6 . You can verify this version using show system stack-unit 1 command.

To upgrade the CPLD image on S4048-ON, follow these steps:

1. Upgrade the CPLD image.

EXEC Privilege Mode

```
upgrade fpga-image stack-unit <id> booted
```

```

DellEMC#
DellEMC#upgrade fpga-image stack-unit 1 booted

Current information for the system:
=====
Card                Device Name          Current Version      New Version
-----
Unit1               S4048-ON SYSTEM CPLD          11                   15.2
Unit1               S4048-ON MASTER CPLD          9                     12
Unit1               S4048-ON SLAVE CPLD           4                     5

*****
*   Warning - Upgrading FPGA is inherently risky and should   *
*   only be attempted when necessary.  A failure at this upgrade may   *
*   cause a board RMA.  Proceed with caution !                 *
*****

Upgrade image for stack-unit 1 [yes/no]: yes

FPGA upgrade in progress!!! Please do NOT power off the unit!!!
|||||

```

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

```
Upgrade result :
=====
Unit 1 FPGA upgrade successful. Power cycle the Unit 1 to complete the upgrade.

DellEMC#00:22:35: %S4048-ON:1 %DOWNLOAD-6-FPGA_UPGRADE: stack-unit 1 fpga upgrade
success.

DellEMC#
```

2. Power cycle the system physically. Switch off the system by unplugging the power chords from the REAR PSUs and wait until the PSU FAN-REAR STATUS LED is completely OFF.

NOTE: Do not switch on the system with PSU-REAR LED glowing AMBER.

You can alternatively power cycle the switch using the power-cycle stack-unit <1-6> command as follows:

```
DellEMC#power-cycle stack-unit 1
Proceed with power-cycle? Confirm [yes/no]:yes
```

3. The CPLD version can be verified using show revision command output:

EXEC Privilege Mode show revision

```
DellEMC#show revision

-- Stack unit 1 --
S4048-ON SYSTEM CPLD      : 15.2

S4048-ON MASTER CPLD      : 12

S4048-ON SLAVE CPLD       : 5

DellEMC#
```

NOTE: Do not power off the system while FPGA upgrade is in progress. For any queries, contact technical support.

Upgrading ONIE on the S4048-ON

To upgrade the ONIE package you have installed, use one of the following two processes: zero touch (dynamic) update or manual update.

1. Zero touch (dynamic): Copy the updated ONIE installer and the DIAG installer for your system to the TFTP/HTTP server. Configure the DHCP options using the ONIE specifications shown at the following link: <https://github.com/opencomputeproject/onie/wiki/Design-Spec-SW-Image-Discovery>.
S4048-ON image >>>> onie-updater-x86_64-dell_s4000_c2338-r0.3.21.1.0-5
2. Manual: Copy the image onto the TFTP/HTTP servers and boot ONIE. Update the ONIE using the onie-self-update command, then download and run an ONIE updater image. The supported URL types are: HTTP, FTP, TFTP, and FILE. S4048-ON image >>>> onie-updater-x86_64-dell_s4000_c2338-r0.3.21.1.0-5
3. UPGRADING ONIE ON AN EXISTING S4048-ON SYSTEM.

The following example uses HTTP to upgrade ONIE.

```
ONIE:/ # onie-self-update tftp://10.16.127.35/onie-updater-x86_64-dell_s4000_c2338-
r0.3.21.1.0-5
Stopping: discover... done.
Info: Fetching tftp://10.16.127.35/onie-updater-x86_64-dell_s4000_c2338-r0.3.21.1.0-5
...
onie-updater-x86_64- 100% |*****| 9021k 0:00:00 ETA
ONIE: Executing Installer: tftp://10.16.127.35/onie-updater-x86_64-dell_s4000_c2338-
r0.3.21.1.0-5
Verifying image checksum ... OK.
```

```

Preparing image archive ... OK.
ONIE: Version      : 3.21.1.0-5
ONIE: Architecture : x86_64
ONIE: Machine      : s4000_c2338
ONIE: Machine Rev  : 0
ONIE: Config Version: 1
Installing ONIE on: /dev/sda
Rebooting...
ONIE:/ # umount: can't remount rootfs read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL tosd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart

```

4. Upgrade the DIAG installer package.

```

ONIE:/ #
ONIE:/ # onie-nos-install tftp://10.16.127.143/diag-installer-x86_64-s4000_c2338-
r0.bin
Stopping: discover... done.
Info: Fetching tftp://10.16.127.143/diag-installer-x86_64-s4000_c2338-r0.bin ...
INSTALLER-DND-SK-1.0 100% |*****| 27143k 0:00:00 ETA
ONIE: Executing installer: tftp://10.16.127.143/diag-installer-x86_64-s4000_c2338-
r0.bin
Verifying image checksum ... OK.
Preparing image archive from /installer ... Done.
Mounting /dev/sda3...Done.
Copying Images ...Done.
Installing Menu Entry ...Done
All Done
ONIE:/ # umount: can't remount rootfs read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL tosd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart

```

```

BIOS (Dell EMC) Boot Selector
S4000 3.21.0.0-6
(48-port SFP+ 10G/6-port QSFP 40G)

```

POST Configuration

```

POST Configuration
CPU Signature 406D8
CPU FamilyID=6, Model=4D, SteppingId=8, Processor=0
Microcode Revision 125
Platform ID: 0x10041838
PMG_CST_CFG_CTL: 0x40006
BBL_CR_CTL3: 0x7E2801FF
Misc EN: 0x4000840081
Gen PM Con1: 0x203808
Therm Status: 0x8848000F
POST Control=0xEA000303, Status=0xE6009700

```

BIOS initializations...

CPGC Memtest for Channel 0 PASS

ECC enabled: channel 0 MayCTRL_DUNIT_REG=0x000200F3

POST:

```

  RTC Battery OK at last cold boot
  RTC date  Monday 02/21/2022 23:34:05

```

POST SPD test PASS

```

POST Lower DRAM Memory test
.... Perf cnt (curr,fixed): 0x15A49BCF6,0x164D87D38

POST Lower DRAM Memory test ..... PASS
POST Lower DRAM ECC check ..... PASS
DxE POST
POST PCI test ..... PASS
POST NVRAM check ..... PASS
POST overall test results ..... PASS

NVRAM at POST exit: 00 97 00 E6 03 03 00 EA
Grub 1.99~rc1 (Dell EMC)
Built by root at gbbdev-maa-01 on Mon_Feb_21_14:16:54_UTC_2022
S4000 Boot Flash Label 3.21.2.9 NetBoot Label 3.21.2.9

```

NOTE: For the latest diagnostics version, see the Dell S4048–Open Networking (ON) System Release Notes.

5. Upgrade the BIOS image using the BIOS image and Flashrom utility included with the diagnostic package.

```

ONIE:/ # tftp -g -r S4000-BIOS-x.x.x.x-16MB.bin 10.11.8.12S4000-BIOS-x.x.x.x. 100% |
*****| 8192k 0:00:00 ETA
ONIE:/ #
ONIE:/ #
ONIE:/ # flashrom -E -p internal

Erasing and writing flash chip... Erase/write done.
ONIE:/ # flashrom -w ./ S4000-BIOS-x.x.x.x-16MB.bin -p internal
Erasing and writing flash chip... Erase/write done.
Verifying flash... VERIFIED.
ONIE:/ #

```

Upgrading the S4048-ON Dell Networking OS Image using the Dell Networking OS CLI

NOTE: If you are upgrading from Dell Networking OS version 9.9(0.0P18) or earlier, you cannot directly upgrade to version 9.14(2.14) or above. Upgrade to version 9.10(0.0) or above first and then upgrade to the required version.

Bare Metal Provisioning

NOTE: If you are using Bare Metal Provisioning (BMP), see the Bare Metal Provisioning topic in the Dell Networking OS Configuration Guide or the Open Automation Guide.

Manual Upgrade Procedure

Follow these steps carefully to upgrade your S4048-ON systems:

1. Dell Networking recommends that you back up your startup configuration and any important files and directories to an external media prior to upgrading the system.
2. Upgrade the Dell Networking OS in flash partition A: or B: EXEC Privilege Mode upgrade system [flash: | ftp: stack-unit <1-6> | tftp: | scp: | usbflash:] [A: | B:]

```

DellEMC#upgrade system tftp: a:
Address or name of remote host []: 10.16.127.143
Source file name []: FTOS-SK-9.14.2.14.bin
2d4h38m : Discarded 1 pkts. Expected block num : 51. Received block num: 50
2d4h38m : Discarded 1 pkts. Expected block num : 65. Received block num: 64
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
.....
66927711 bytes successfully copied
System image upgrade completed successfully.
DellEMC#Feb 21 08:47:44: %STKUNIT1-M:CP %DOWNLOAD-6-UPGRADE: Upgrade completed
successfully
DellEMC#

```

3. Verify that the Dell Networking OS has been upgraded correctly in the upgraded flash partition EXEC Privilege Mode

show boot system stack-unit [1-6] | all]

```
Dell#show boot sys stack-unit all

Current system image information in the system:
=====
Type           Boot Type      A                               B
-----
stack-unit 1   FLASH BOOT      9.14(2.14) [boot]              9.14(2.11)
stack-unit 2   is not present.
stack-unit 3   is not present.
stack-unit 4   is not present.
stack-unit 5   is not present.
stack-unit 6   is not present.
Dell#
```

4. Change the Primary Boot Parameter of the S4048-ON to the upgraded partition A: or B: CONFIGURATION
Mode boot system stack-unit 1 primary system: [A: | B: | tftp: | ftp:]
5. Save the configuration so that the configuration will be retained after a reload using write memory command.
EXEC Privilege Mode write memory

```
DellEMC#write memory
!
Feb 21 04:44:35: %STKUNIT1-M:CP %FILEMGR-5-FILESAVED: Copied running-config to
startup-config in flash by default

DellEMC#
```

6. Reload the unit. EXEC Privilege Mode reload

```
Command      : reload
Mode         : EXEC PRIVILEGE
DellEMC#reload

Proceed with reload [confirm yes/no]: y
Feb 21 10:20:04: %STKUNIT1-M:CP %CHMGR-5-RELOAD: User request to reload the chassis
syncing disks... done
```

7. Verify the S4048 ON has been upgraded to the Dell Networking OS version 9.14(2.14).

EXEC Privilege Mode show version

```
DellEMC#show version
Dell EMC Real Time Operating System Software
Dell EMC Operating System Version: 2.0
Dell EMC Application Software Version: 9.14(2.14)
Copyright (c) 1999-2021 by Dell Inc. All Rights Reserved.
Build Time: Mon Feb 21 10:20:04 2022
Build Path: /build/build02/SW/SRC
Dell EMC Networking OS uptime is 2 day(s), 17 hour(s), 45 minute(s)

System image file is "system://A"

System Type: S4048-ON
Control Processor: Intel Rangeley with 3 Gbytes (3201302528 bytes) of memory, core(s)
2.

8G bytes of boot flash memory.

1 54-port TE/FG (SK-ON)
48 Ten GigabitEthernet/IEEE 802.3 interface(s)
6 Forty GigabitEthernet/IEEE 802.3 interface(s)
```

Installing Dell Networking OS on the S4048-ON using ONIE

NOTE: The Dell Networking OS installer package, ONIE-FTOS-SK-9.14.2.14.bin, is required for installing Dell Networking OS on S4048-ON that has only ONIE.

To install the Dell Networking OS version 9.14(2.14) on to the new S4048-ON device, perform the following steps:

1. Boot the system to the ONIE prompt. The following ONIE prompt appears: ONIE:/ #

2. Stop the ONIE discovery process using the following command: `ONIE:/ # onie-discovery-stop`

The following message appears:

```
Stopping: discover... done.
ONIE:/ #
```

3. Configure an interface and assign an IP address to that interface using the following command:

```
ONIE:/ # ifconfig eth0 ip-address/prefix up
```

4. Enter the following command to begin the installation process:

```
ONIE:/ # onie-nos-install tftp://10.16.127.35/ONIE-FTOS-SK-9.14.2.14.bin
```

NOTE: After the Dell Networking OS installation is complete, the system automatically reboots. Following is the installation and boot log of Dell Networking OS:

```
ONIE:/ #
ONIE:/ # onie-nos-install tftp://10.16.127.143/ONIE-FTOS-SK-9.14.2.14.bin
Stopping: discover... done.
Info: Fetching tftp://10.16.127.143/ONIE-FTOS-SK-9.14.2.14.bin ...
ONIE-FTOS-SK-9.14.2.14 100% |*****| 112M 0:00:00 ETA
ONIE: Executing installer: tftp://10.16.127.143/ONIE-FTOS-SK-9.14.2.14.bin
Verifying image checksum ... OK.
Preparing image archive from /installer ... Done.
Verifying Product Platform...
Product Name       : S4048ON
Image Platform     : FTOS-SK
Image File         : FTOS-SK-9.14.2.14.bin
Image Compatibility : Verified
Verifying MAC Address...
MAC Address is Configured
Image Platform     : FTOS-SK
Deleting Extra partitions... Done.
Creating New partitions... Done.
Creating Hybrid MBR... Done.

Mounting /dev/sda4,/dev/sda5 and /dev/sda6... Done.
Installing GRUB on /dev/sda4...Done.
Copying Images... Done.
ONIE:/ # umount: can't remount rootfs read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL tosd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart

BIOS (Dell EMC) Boot Selector
S4000 3.21.0.0-6
(48-port SFP+ 10G/6-port QSFP 40G)

POST Configuration

POST Configuration
CPU Signature 406D8
CPU FamilyID=6, Model=4D, SteppingId=8, Processor=0
Microcode Revision 125
Platform ID: 0x10041838
PMG_CST_CFG_CTL: 0x40006
BBL_CR_CTL3: 0x7E2801FF
Misc EN: 0x4000840081
Gen PM Con1: 0x203808
Therm Status: 0x8848000F
POST Control=0xEA000303, Status=0xE6009700
```



```

BIOS initializations...

CPGC Memtest for Channel 0 ..... PASS

ECC enabled: channel 0 MayCCTRL_DUNIT_REG=0x000200F3

POST:
  RTC Battery OK at last cold boot
  RTC date  Monday 02/21/2022 9:21:08

POST SPD test ..... PASS

POST Lower DRAM Memory test
....  Perf cnt (curr,fixed): 0x15A4A6B39,0x164D9BDB7

POST Lower DRAM Memory test ..... PASS
POST Lower DRAM ECC check ..... PASS
DxE POST
POST PCI test ..... PASS
POST NVRAM check ..... PASS
POST overall test results ..... PASS

NVRAM at POST exit: 00 97 00 E6    03 03 00 EA

Version 2.16.1242. Copyright (C) 2021 American Megatrends, Inc.
BIOS Date: 02/21/2022 16:20:37 Ver: 0ACBZ018
Press <DEL> or <F2> to enter setup.
Grub 1.99~rc1 (Dell EMC)
Built by root at ubuntu on Mon_Feb_21_14:16:54 UTC_2022
S4000 Boot Flash Label 3.21.2.9 NetBoot Label 3.21.2.9

Press Esc to stop autoboot ... 0

Primary Boot  not Configured

```

5. After the installation completes, the system displays the following DELL prompt:DellEMC>

Uninstalling Dell Networking OS from the S4048-ON

To uninstall the Dell Networking OS version 9.14(2.14) from the S4048-ON device, perform the following steps:

1. Reboot the system. During the reboot process, the system displays the following message prompting you to press the Esc key in order to stop the auto-boot process:

```

Version 2.17.1245. Copyright (C) 2021 American Megatrends, Inc.
BIOS Date: 02/21/2022 16:20:37 Ver: 0ACBZ038
Press <DEL> or <F2> to enter setup.
Grub 1.99~rc1 (Dell EMC)
Built by root at ubuntu on Mon_Feb_21_14:16:54 UTC_2022
S4000 Boot Flash Label 3.21.2.9 NetBoot Label 3.21.2.9

Press Esc to stop autoboot ... 4

```

2. At this prompt message, press the ESC key. The following menu appears:

```

+-----+
| Dell EMC Networking OS
| Dell EMC-Boot Line Interface
| DELL-DIAG
| ONIE
+-----+

```

3. From the menu, choose the ONIE option.

NOTE: To choose an option from the menu, highlight one of the options using the up or down arrow key and press Enter.

The following menu appears:

```

+-----+
| ONIE: Install OS
| ONIE: Rescue
| *ONIE: Uninstall OS
| ONIE: Update ONIE
| ONIE: Embed ONIE
| ONIE: Diag ONIE
| DELL-DIAG
+-----+

```

4. From this menu, choose the ONIE : Uninstall OS option.

NOTE: To choose an option from the menu, highlight one of the options using the up or down arrow key and press Enter.

The uninstall process begins. Following is the log generated by the system while Dell Networking OS

9.14(2.14) uninstalls:

```

ONIE: OS Uninstall Mode ...

Version : 3.21.1.0-5
Build Date: 2022-02-21T12:32-0700
Info: Mounting kernel filesystems... done.
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
Info: Using eth0 MAC address: 34:17:eb:f2:04:c4
Info: Using eth1 MAC address: 34:17:eb:f2:04:c5
Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0
DHCPv4 on interface: eth0 failed
ONIE: Using default IPv4 addr: eth0:
192.168.3.10/255.255.255.0
Info: eth1: Checking link... down.
ONIE: eth1: link down. Skipping configuration.
ONIE: Failed to configure eth1 interface
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.

discover: Uninstall mode detected. Running uninstaller.
Erasing internal mass storage device: /dev/sda4 (32MB)
  Percent complete: 100%
Erase complete.
Deleting partition 4 from /dev/sda
Erasing internal mass storage device: /dev/sda5 (300MB)
  Percent complete: 100%
Erase complete.
Deleting partition 5 from /dev/sda
Erasing internal mass storage device: /dev/sda6 (300MB)
  Percent complete: 100%
Erase complete.
Deleting partition 6 from /dev/sda
Erasing internal mass storage device: /dev/sda7 (6578MB)
  Percent complete: 100%
Erase complete.
Deleting partition 7 from /dev/sda
Installing for i386-pc platform.
Installation finished. No error reported.
Uninstall complete. Rebooting...
umount: can't remount rootfs read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
sd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart

```

```

POST Configuration
CPU Signature 406D8
CPU FamilyID=6, Model=4D, SteppingId=8, Processor=0
Microcode Revision 125
POST Control=0xEA000303, Status=0xE6009700
Platform ID: 10041836
PMG_CST_CFG_CTL: 40006
BBL_CR_CTL3: 7E2801FF
Misc EN: 4000840081
Gen PM Con1: 3008
Therm Status: 8841000F

BIOS initializations...

CPGC Memtest for Channel 0 ..... PASS

ECC enabled: channel 0 MayCCTRL_DUNIT_REG=0x000200F3

POST:
  RTC Battery OK at last cold boot
  RTC date  Mon 02/21/2022 17:56:40

POST SPD test ..... PASS

POST Lower DRAM Memory test
  Short memory cell test
  Perf cnt (curr/fixed): 321C074CD/32C553963

POST Lower DRAM Memory test ..... PASS
POST Lower DRAM ECC check ..... PASS
DxE POST
POST PCI test ..... PASS
POST NVRAM check ..... PASS
POST overall test results ..... PASS

NVRAM at POST exit: 00 97 00 E6   03 03 00 EA

```

5. After the installation completes, the system displays the following ONIE prompt: ONIE:/ #

Support Resources

The following support resources are available for the S4048-ON system.

Documentation Resources

This document contains operational information specific to the S4048-ON system.

For information about using the S4048-ON, refer to the following documents at <http://www.dell.com/support>:

- Installing the S4048-ON System
- Quick Start Guide
- Dell Networking Command Line Reference Guide for the S4048-ON System
- Dell Networking Configuration Guide for the S4048-ON System

For more information about hardware features and capabilities, refer to the Dell Networking website at

<https://www.dellemc.com/networking>.

For more information about the open network installation environment (ONIE)-compatible third-party operating system, refer to <http://onie.org>.

Issues

Issues are unexpected or incorrect behavior and are listed in order of Problem Report (PR) number within the appropriate sections.

Finding Documentation

This document contains operational information specific to the S4048-ON system.

- For information about using the S4048-ON, refer to the documents at <http://www.dell.com/support>.
- For more information about hardware features and capabilities, refer to the Dell Networking website at <https://www.dellemc.com/networking>.
- For more information about the open network installation environment (ONIE)-compatible third-party operating system, refer to <http://onie.org>

Contacting Dell

NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.


Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues: Go to www.dell.com/support.

Notes, cautions, and warnings







- NOTE: A NOTE indicates important information that helps you make better use of your product.
- CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
- WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Documents / Resources

	<p>DELL Technologies S4048-ON Networking OS PowerSwitch [pdf] User Guide S4048-ON Networking OS PowerSwitch, S4048-ON, Networking OS PowerSwitch, OS PowerSwitch, PowerSwitch</p>
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References

-  [Computers, Monitors & Technology Solutions | Dell USA](#)
-  [Support | Dell US](#)
-  [Support | Dell US](#)
-  [Dell Networking Solutions | Dell USA](#)
-  [GitHub: Let's build from here · GitHub](#)
-  [Dell Networking Solutions | Dell USA](#)