

  
**QN-SW225-24P**  
**Network**  
**Switch**



# QUANTUM NETWORKS QN-SW225-24P Network Switch User Guide

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## QUANTUM NETWORKS QN-SW225-24P Network Switch



## Specifications:

- **Brand:** QNTMNET
- **Product:** Network Switch

- **Supported Protocols:** TFTP, SCP
- **Maximum Defined DHCP Servers:** 8

## Product Usage Instructions

### DHCP Relay Commands

ip dhcp relay enable (Global)

**Syntax:** ip dhcp relay enable | no ip dhcp relay enable

**Default Configuration:** DHCP relay feature is disabled.

**Command Mode:** Global configuration mode.

**Usage:** Use the `ip dhcp relay enable` Global Configuration mode command to enable the DHCP relay feature on the device. Use the `no` form of this command to disable the DHCP relay feature.

**Example:** switchxxxxxx(config)# ip dhcp relay enable

ip dhcp relay enable(Interface)

**Syntax:** ip dhcp relay enable | no ip dhcp relay enable

**Default Configuration:** Disabled.

**Command Mode:** Interface Configuration mode.

**Usage:** Use the `ip dhcp relay enable` Interface Configuration mode command to enable the DHCP relay feature on an interface. Use the `no` form of this command to disable the DHCP relay agent feature on an interface.

**Example:** switchxxxxxx(config)# interface vlan 21 switchxxxxxx(config-if)# ip dhcp relay enable

ip dhcp relay address (Global)

**Syntax:** ip dhcp relay address ip-address | no ip dhcp relay address [ip-address]

**Default Configuration:** No server is defined.

**Command Mode:** Global Configuration mode.

**Usage:** Use the `ip dhcp relay address` Global Configuration mode command to define the DHCP servers available for the DHCP relay. Use the `no` form of this command to remove the server from the list.

**Example:** switchxxxxxx(config)# ip dhcp relay address 176.16.1.1

ip dhcp relay address(Interface)

**Syntax:** ip dhcp relay address ip-address | no ip dhcp relay address [ip-address]

**Default Configuration:** No server is defined.

**Command Mode:** Interface Configuration mode.

**Usage:** Use the `ip dhcp relay address` Interface Configuration (VLAN, Ethernet,Port-channel) command to define the DHCP servers available by the DHCP relay for DHCP clients connected to the interface. Use the `no` form of this command to remove the server from the list.

**PRODUCT OVERVIEW**

- QN-SW-225 Switch Series provides robust Layer 2 switching and Layer 3 routing features to meet the diverse needs of enterprise/campus networks.
- On-device management ports include a dedicated console port, an Out of Band management port, and a USB flash drive port for storage.
- Centralized device management options -Cloud hosted Quantum Rudder Network and Services Controller (NSC), on premises Rudder NSC, Device GUI/CLI, SNMP.
- PoE budget options to power advanced devices with the option of PoE / PoE+ / PoE++ (60W/90W) per port.
- This switch provides a flexible range of downlink ports, from 8 to 48, to accommodate your network needs. It also offers 2 or 4 SFP+ uplink ports for high-speed connections.
- Three-year limited liability manufacturer’s warranty from day one.

**HIGHLIGHTS**

- Simplified network management.  
Unified management stacks (Rudder, Network and Service Controller) to deploy, monitor, and troubleshoot wired as well as wireless networks.
- Centralized network observability.  
Dashboards and reporting logs for various network events.
- Reliable performance.  
Delivers Stability, Scalability, and Effortless handling of diverse workloads.
  - The switch supports a non-blocking architecture that provides from 56 Gbps to 176 Gbps of wire-speed switching capacity and from 42 to 131 Mpps of forwarding capacity, allowing it to handle a wide range of workloads.
  - For better network security, the switch supports multiple authentication methods, including 802.1x and MAC authentication. The switch provides identity-driven security and controls via granular Access Control Lists (ACLs).

**KEY SPECIFICATION**

QN-SW-225-Series

Communication Ports	Specifications
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Models	10/100/1000 Mbps RJ45 Downlinks	1G Fiber Downlinks	10G Fiber Uplinks	1G Fiber Uplinks*1	PoE Budget*2 (Watt)	Max PoE (802.3af)	Max PoE+ (802.3at)	Max PoE++ (802.3bt)
<b>48 Ports</b>								
QN-SW-225-48P	48	—	4		740	48	24	—
QN-SW-225-48	48	—	4		—	—	—	—
<b>24 Ports</b>								
QN-SW-225-24FP	24	—	4		740	24	24	—
QN-SW-225-24P	24	—	4		400	24	12	—
QN-SW-225-24	24	—	4		—	—	—	—
<b>16 Ports</b>								
QN-SW-225-16P-2SFPP	16	—	2		240	16	8	—
QN-SW-225-16	16	—	4		—	—	—	—
<b>12 Ports</b>								
QN-SW-225-12P-2SFPP	12	—	2		188	12	6	—
QN-SW-225-12	12	—	2		—	—	—	—
<b>8 Ports</b>								
QN-SW-225-8FPU	8	—	2		240	8	8	2
QN-SW-225-8FP	8	—	2		240	8	8	—
QN-SW-225-8P	8	—	2		120	8	4	—
QN-SW-225-8F	—	8	2		—	—	—	—
QN-SW-225-8	8	—	2		—	—	—	—
QN-SW-225-8-4SFP	8	—	—	4	—	—	—	—
<b>Management Ports</b>	48 Ports	24 Ports	16 Ports	12 Ports	8 Ports			
Console (RJ45)	1	1	1	1	1			
Management (OOB)	1	1	1	1	1			
Storage (USB Type A)	1	1	1	1	1			

Capacity	48 Ports	24 Ports	16 Ports	12 Ports	8 Ports
Switching capacity	176 Gbps	128 Gbps	112 Gbps	64 Gbps	56 Gbps
Forwarding rate	131 Mpps	95 Mpps	84 Mpps	48 Mpps	42 Mpps
MAC address table	Max 16K	Max 16K	Max 16K	Max 16K	Max 16k
Active VLANs support	4096	4096	4096	4096	4096
Active VLANs support	4096	4096	4096	4096	4096
IPv4 Route	480	480	480	480	480
IPv6 Route	120	120	120	120	120

1. The switch model with a 1G SFP uplink port does not support the stacking feature.
2. The PoE power budget will be -30 or +30 watts, depending on the current power budget.

Quality of Service	
DiffServ (Differentiated services)	Strict priority support
Priority queue	Traffic shaping/policing
ACL mapping to priority queue	WRR support
Flow mirror, 802.1p Support	SP+WRR
Flow redirection	Rate limiting (Based on per port and per queue)
Single Rate Three Color Marker (srTCM)	Class map defines traffic flow with ACLs or support for network traffic management
Two Rate Three Color Marker (trTCM)	Policy map & route MAP to define the action for a set of classified inbound traffic
QoS based on classification (Based on IP, MAC and VLAN)	
Security	
RADIUS, TACACS+	Downloadable ACL
Port security	Dynamic ACL
DHCP Snooping	Role based access control

AAA (Authentication, Authorization, and Accounting)	802.1x authentication (Port Based, MAC Based, Web Based)
ACL (Based On IP, Port, Protocol, MAC, Time Based)	Management ACL
IP source guard	DoS prevention
Protected port	Secure copy (SCP)
ARP inspection (DAI & SAI)	Kerberos
SSL	
<b>Multicast</b>	
Internet Group Management Protocol -IGMP v1/v2/v3	Multicast Listener Discovery- MLD v1/V2
IGMP snooping	MLD snooping
PIM-SM/SSM	Multicast TV VLAN
PIM-SMv6	MVR (Multicast VLAN registration)
<b>Layer 3</b>	
IPv4 and IPv6 dual stack	IPv6 prefix list
Intra-Site Automatic Tunnel Addressing Protocol (ISATAP)	IP source guard
Policy Based Routing (PBR)	DHCP server
ARP, Gratuitous ARP	DHCP relay
DHCP Client	IPv6 NDRA (Neighbor Discovery Router Advertisement)
ICMP redirect & ICMP unreachable	Duplicate Address Detection (DAD)
IPv6 SLAAC (Stateless Address Auto configuration)	IPv6 ND
ARP-Proxy	DHCP Option 82, 66, 67
<b>Layer 3 Routing</b>	
Static routing (IPv4, IPv6)	Inter-VLAN routing
Routing Information Protocol, version 2 (RIPv2)	OSPFv2/v3 (Open Shortest Path First)

<b>Layer 2</b>	
Port Tagging/untagged	BPDU guard
MAC based VLANs	GVRP
Private VLAN	LLDP/LLDP MED
Subnet based VLAN	RADIUS assigned VLAN
Auto MDI/MDIX	Link aggregation (Ether Channel)

Loopback detection	Link Aggregation Control Protocol (LACP)
Port isolation	Port mirroring (Port, ACL, VLAN Based)
Root guard	Default VLAN
Guest VLAN	Auto voice VLAN
Energy Efficient Ethernet (EEE)	Green Ethernet
Link flapping detection	Flow control
STP/RSTP/MSTP	Native VLAN
QinQ (802.1Q)	Loop guard
<b>High Availability</b>	
Stacking (Up-to 8 members)	Ring Redundancy Protocol (RRP)
Equal-Cost Multi Path (ECMP)	Virtual Router Redundancy Protocol (VRRP)
Storm control (Broadcast, Multicast, Unicast)	
<b>Management</b>	
Local GUI	Management: RUDDER (Controller)/Standalone
Industrial standard CLI	SPAN/RSPAN
Telnet support	SSHv1/v2
Storage & File management with USB	Firmware auto install support
TFTP support	Syslog server
SNMP v1/v2c/v3	RMON (All 4 Groups 1,2,3,9)
<b>Standard Compliance</b>	
<b>IEEE Standards Compliance</b>	
802.1AB LLDP/ LLDP-MED	802.3ae 10 gigabit Ethernet
802.1D MAC bridging	802.3at power over Ethernet Plus
802.1p Mapping to priority queue	802.3u 100Base-TX
802.1s Multiple Spanning Tree (MST)	802.3x flow control
802.1w Rapid Reconfiguration of Spanning Tree (RSTP)	802.3z 1000Base-SX/LX
802.1x Port-based Network Access Control (PNAC)	802.3 MAU MIB (RFC 2239)
802.3 Carrier Sense Multiple Access/Collision Detection (CSMA/CD)	802.1Q VLAN tagging
802.3ab 1000Base-T	802.3az Energy Efficient Ethernet
802.3 10Base-T	802.3af Power over Ethernet
802.3ad link aggregation (Dynamic and Static)	

Monitoring and Troubleshooting				
Errdisable detection and recovery		CPU Utilization		
Device temp/PSU/FAN/status display & alarm		User operation logs		
Virtual cable test		Management logs, alarms		
ICMPv4/v6		DDM (Digital Diagnostic Monitoring)		
Traceroute		UDLD (Unidirectional Link Detection)		
Physical				
Model	Net Weight	Dimensions (H x W x D)	Fan	MTBF
QN-SW-225-48P	4.46 KG	44 x 440 x 300mm	Yes	1,00,000 hrs
QN-SW-225-48	3.52 KG	44 x 440 x 300mm	Yes	1,00,000 hrs
QN-SW-225-24FP	3.72 KG	44 x 440 x 350mm	Yes	1,00,000 hrs
QN-SW-225-24P	3.56 KG	44 x 440 x 350mm	Yes	1,00,000 hrs
QN-SW-225-24	2.81 KG	44 x 440 x 245mm	No	1,00,000 hrs
QN-SW-225-16P-2SFPP	3.42 KG	44 x 440 x 250mm	Yes	1,00,000 hrs
QN-SW-225-16	2.62 KG	44 x 440 x 245mm	No	1,00,000 hrs
QN-SW-225-8FPU	1.48 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8FP	1.48 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8P	1.38 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8F	1.38 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8	1.09 KG	44x 210 x 210 mm	No	1,00,000 hrs
QN-SW-225-8-4SF P	1.38 KG	44x 210 x 210 mm	No	1,00,000 hrs
Environment				
Operating temperature		-5°C (23°F) to 65°C (149°F)		
Humidity		5% ~ 95% non-condensing		
RoHS		Compliant		
Voltage input		100-240V. Frequency: 50/60Hz		
Power consumption		Internal PSU ≤40W, External PSU ≤100W		
Packaging Content				
Switch with type D power cord with rack mounting kit				

## CERTIFICATION & COMPLIANCES\*3



Regulatory	FCC
	BIS
	TEC
Environmental	RoHS
	CE

For more information, visit [www.qntmnet.com/certification](http://www.qntmnet.com/certification) or email us at [sales@qntmnet.com](mailto:sales@qntmnet.com).

## ORDERING INFORMATION

Part Number	Description
QN-SW-225-48P	Networking Switch, 48×10/100/1000 Base-T ports with 4x10G Fiber uplinks, 740 Watts PoE Budget, Includes 3-year online activation warranty.
QN-SW-225-48	Networking Switch, 48×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3-year online activation warranty.
QN-SW-225-24FP	Networking Switch, 24×10/100/1000 Base-T ports with 4x10G Fiber uplinks, 740 Watts PoE Budget Includes 3-year online activation warranty.
QN-SW-225-24P	Networking Switch, 24×10/100/1000 Base-T ports with 4x10G Fiber uplinks, 400 Watts PoE Budget Includes 3-year online activation warranty.
QN-SW-225-24	Networking Switch, 24×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3-year online activation warranty.
QN-SW-225-16P-2SFPP	Networking Switch, 16×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 240 Watts PoE Budget, Includes 3-year online activation warranty.
QN-SW-225-16	Networking Switch, 16×10/100/1000 Base-T ports with 4x10G Fiber uplinks, Includes 3-year online activation warranty.
QN-SW-225-12P	Networking Switch, 12×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 188 Watts PoE Budget, Includes 3-year online activation warranty.

QN-SW-225-12	Networking Switch, 12×10/100/1000 Base-T ports with 2x10G Fiber uplinks, Includes 3-year online activation warranty.
QN-SW-225-8FPU	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 1-2 Port S support PoE++ (60W) Support, 240 Watts PoE Budget. Includes 3-year online activation warranty.
QN-SW-225-8FP	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 240 Watts PoE Budget, Includes 3-year online activation warranty.
QN-SW-225-8P	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, 120 Watts PoE Budget, Includes 3-year online activation warranty.
QN-SW-225-8F	Networking Switch, 8×10/100/1000 1G SFP ports with 2x10G Fiber uplinks, Includes 3-year online activation warranty.
QN-SW-225-8	Networking Switch, 8×10/100/1000 Base-T ports with 2x10G Fiber uplinks, Includes 3-year online activation warranty.
QN-SW-225-8-4SFP	Networking Switch, 8×10/100/1000 Base-T ports with 4x1G Fiber uplinks, Includes 3-year online activation warranty.

For more information, visit [system upgrade reference details](#).

[www.qntmnet.com](http://www.qntmnet.com)

## Frequently Asked Questions

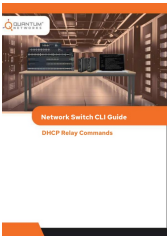
### Q: How many DHCP servers can be defined globally?

A: Up to 8 DHCP servers can be defined globally using the `ip dhcp relay address` command in Global Configuration mode.

### Q: What is the default configuration for the DHCP relay feature?

A: The default configuration is that the DHCP relay feature is disabled.

## Documents / Resources

	<p><a href="#">QUANTUM NETWORKS QN-SW225-24P Network Switch</a> [pdf] User Guide QN-SW225-24P Network Switch, QN-SW225-24P, Network Switch, Switch</p>
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## References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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