

Release Notes - Rev. A

OmniSwitch 6570M

Release 8.9R2

These release notes accompany release 8.9R2. These release notes provide important information on individual software features and hardware modules. Since much of the information in these release notes is not included in the hardware and software user manuals, it is important that you read all sections of this document before installing new hardware or loading new software.

Note - The OmniSwitch 6570M is currently the only platform supported in AOS Release 8.9R2. Other OmniSwitch platforms are referenced in the 8.9R2 user guides and support will be added in a subsequent 8.9R2 release.

Contents

Contents 2

Related Documentation 3

System Requirements 4

[IMPORTANT] *MUST READ*: AOS Release 8.9R2 Prerequisites and Deployment Information 5

Licensed Features 7

ALE Secure Diversified Code 7

New Hardware Support and Guidelines 8

New Software Features and Enhancements 10

Open Problem Reports and Feature Exceptions 12

Technical Support 14

Appendix A: Feature Matrix 16

Related Documentation

These release notes should be used in conjunction with OmniSwitch AOS Release 8 User Guides. The following are the titles of the user guides that apply to this release.

- OmniSwitch 6570M Hardware User Guide
- OmniSwitch AOS Release 8 CLI Reference Guide
- OmniSwitch AOS Release 8 Network Configuration Guide
- OmniSwitch AOS Release 8 Switch Management Guide
- OmniSwitch AOS Release 8 Specifications Guide
- OmniSwitch AOS Release 8 Transceivers Guide

System Requirements

Memory Requirements

The following are the standard shipped memory configurations. Configuration files and the compressed software images—including web management software (WebView) images—are stored in the flash memory.

Platform	SDRAM	Flash
OS6570M	2GB	8GB

U-Boot and FPGA Requirements

The software versions listed below are the MINIMUM required, except where otherwise noted. Switches running the minimum versions, as listed below, do not require any U-Boot or FPGA upgrades.

OmniSwitch 6570M - AOS Release 8.9.63.R02 (GA)

Hardware	Minimum U-Boot	Current U-Boot	Minimum FPGA	Current FPGA
OS6570M-12	8.9.25.R02	8.9.25.R02	0.11	0.11
OS6570M-12D	8.9.25.R02	8.9.25.R02	0.11	0.11
OS6570-U28	8.9.25.R02	8.9.25.R02	0.11	0.11

[IMPORTANT] *MUST READ*: AOS Release 8.9R2 Prerequisites and Deployment Information

General Information

- Early availability features are available in AOS and can be configured. However, they have not gone through the complete AOS validation cycle and are therefore not officially supported.
- Please refer to the Feature Matrix in [Appendix A](#) for detailed information on supported features for each platform.
- Some switches that ship from the factory will default to VC mode (requiring a vcboot.cfg configuration file) and attempt to run the automatic VC, automatic remote configuration, and automatic fabric protocols. Please note that since the switches default to VC mode, automatic remote configuration does not support the downloading of a 'boot.cfg' file, only the 'vcboot.cfg' file is supported.
- Some switches may ship from the factory with a diag.img file. This file is for internal switch diagnostic purposes only and can be safely removed.
- Switches that ship from the factory will have the *Running Configuration* set to the **/flash/working** directory upon the first boot up. By default, the automatic VC feature will run and the vcboot.cfg and vcsetup.cfg files will be created in the **/flash/working** directory but not in the **/flash/certified** directory which results in the *Running Configuration* not being certified. This will result in the *Running Configuration* being set to the **/flash/certified** directory on the next reboot. Additionally, on the next reboot the switch will no longer be in the factory default mode and will have a chassis-id of 1 which could cause a duplicate chassis-id issue if the switch is part of a VC. To set the switch back to the factory defaults on the next reboot perform the following:

```
-> rm /flash/working/vcboot.cfg
-> rm /flash/working/vcsetup.cfg
-> rm /flash/certified/vcboot.cfg
-> rm /flash/certified/vcsetup.cfg
```

- Improved Convergence Performance
Faster convergence times can be achieved on the models with SFP, SFP+, QSFP+, and QSFP28 ports with fiber transceivers.

Exceptions:

- Copper ports or ports with copper transceivers do not support faster convergence.
 - OS6570M-12/12D ports 9 and 10 do not support fast convergence.
 - Splitter ports (i.e. 4X10G or 4X25G) do not support faster convergence.
- SHA-1 Algorithm - Chosen-prefix attacks against the SHA-1 algorithm are becoming easier for an attacker¹. For this reason, we have disabled the "ssh-rsa" public key signature algorithm by default. The better alternatives include:
 - The RFC8332 RSA SHA-2 signature algorithms rsa-sha2-256/512. These algorithms have the advantage of using the same key type as "ssh-rsa" but use the safer SHA-2 hash algorithms. RSA SHA-2 is enabled in AOS.
 - The RFC5656 ECDSA algorithms: ecdsa-sha2-nistp256/384/521. These algorithms are supported in AOS by default.

To check whether a server is using the weak ssh-rsa public key algorithm, for host authentication, try to connect to it after disabling the ssh-rsa algorithm from ssh(1)'s allowed list using the command below:

```
-> ssh strong-hmacs enable
```

If the host key verification fails and no other supported host key types are available, the server software on that host should be upgraded.

1. "SHA-1 is a Shambles: First Chosen-Prefix Collision on SHA-1 and Application to the PGP Web of Trust" Leurent, G and Peyrin, T (2020) <https://eprint.iacr.org/2020/014.pdf>

- With the continuous goal of preserving the environment in addition to the AOS software being preloaded on the switch and available on the Business Portal, we have begun removing the software access card previously included in the switch ship kit. For additional information or if in need of special assistance, please contact Service & Support.
- Beginning in August 2022 ALE will begin placing QR codes on physical products as well as the corrugated shipping boxes, the QR codes allow for additional information such as MAC addresses to be included. To allow time for customers and partners to adjust to the new barcodes there will be a 6 to 12 month transition period that will include both the QR code and the linear style barcodes. After the transition period ends only the QR codes will be included.

Licensed Features

The table below lists the licensed features in this release for the OmniSwitch 6570M platforms.

	Performance License Required
	OmniSwitch 6570M-U28
Licensed Features	
10G support (OS6570-SW-PERF4)	Yes (OS6570M-U28 ports 25-28 operate at 1G only without this license)

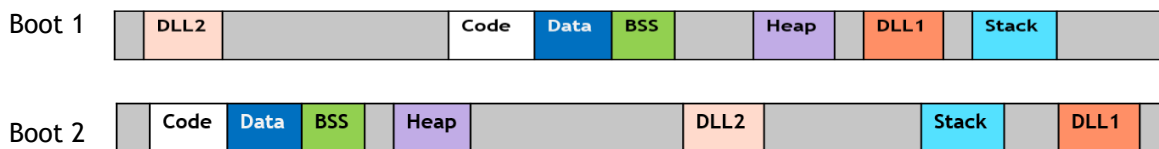
ALE Secure Diversified Code

Alcatel-Lucent Enterprise provides network equipment that is hardened in conjunction with an independent 3rd party organization. ALE secure diversified code promotes security and assurance at the network device level using independent verification and validation of source code and software diversification to prevent exploitation. OmniSwitch products can also be delivered that are TAA Country of Origin USA compliant with AOS software loaded from US based servers onto the OmniSwitch in a US factory. This is the default operation of AOS, there is no charge or additional licensing required.

ALE secure diversified code employs multiple techniques to identify vulnerabilities such as software architecture reviews, source code analysis (using both manual techniques and automated tools), vulnerability scanning tools and techniques, as well as analysis of known vulnerabilities in third party code.

Software Diversification

Software diversification rearranges the memory map of the executable program so that various instances of the same software, while functionally identical, are arranged differently in memory. In AOS 8.6.R01, ALE has adopted address system layout randomization(ASLR) as a standard feature. ASLR results in a unique memory layout of the running software each time the OmniSwitch reboots to impede or prevent software exploitation. ASLR is depicted below showing that two different system boots results in two different memory layouts for code segments, data segments, dynamic libraries, etc.



Please contact customer support for additional information.

New Hardware Support and Guidelines

The following new hardware is being introduced in this release.

OmniSwitch 6570M-12

Fixed configuration chassis in a 1U form factor with:

- 8 - RJ45 10/100/1000Base-T ports
- 2 - 100/1000Base-X SFP ports
- 2 - Uplink/Stacking SFP+ Ports (1G/10G)
- 1 - Internal AC Power Supply
- 1 - External Power Connector

OmniSwitch 6570M-12D

Fixed configuration chassis in a 1U form factor with:

- 8 - RJ45 10/100/1000Base-T ports
- 2 - 100/1000Base-X SFP ports
- 2 - Uplink/Stacking SFP+ Ports (1G/10G)
- 1 - Internal DC Power Supply
- 1 - External Power Connector

OmniSwitch 6570M-U28

Fixed configuration chassis in a 1U form factor with:

- 20 - 100/1000Base-X SFP ports
- 4 - SFP/RJ45 1G/10G combo ports (license required for 10G)
- 6 - Uplink/Stacking SFP+ Ports (1G/10G)
- 2 - Power Supply Bays

OS6570-12-BP - 60W external AC power supply for the OS6570M-12.

OS6570M-12-BP-D - 30W external DC power supply for the OS6570M-12D.

PS-150W-AC - 150W modular AC power supply for the OS6570M-U28.

PS-150W-DC - 150W modular AC power supply for the OS6570M-U28.

Transceivers

The following transceivers are supported in this release. Please refer to the Transceivers and Hardware guides for additional information.

10 Gigabit	Gigabit	Dual Speed	100 Megabit
SFP-10G-ER	SFP-GIG-SX	SFP-DUAL-MM-N	SFP-100-BXLC-D
SFP-10G-ZR	SFP-GIG-LX	SFP-DUAL-BX-D	SFP-100-BXLC-U
SFP-10G-T	SFP-GIG-LH40	SFP-DUAL-BX-U	SFP-100-LC-MM
SFP-10G-C60CM/C1M/C3M/C7M	SFP-GIG-LH70		SFP-100-LC-SM15
SFP-10G-24DWD80	SFP-GIG-EZX		SFP-100-LC-SM40
SFP-10G-GIG-SR	SFP-GIG-T		
SFP-10G-GIG-LR	SFP-1G-T		
SFP-10G-BX-D	SFP-GIG-EXTND		
SFP-10G-BX-U	SFP-GIG-BX-D		
SFP-10G-CWDM	SFP-GIG-BX-U		
	SFP-GIG-BX-D20		
	SFP-GIG-BX-U20		
	SFP-GIG-BX-D40		
	SFP-GIG-BX-U40		
Notes:			
<ul style="list-style-type: none"> • The SFP-GIG-T is not supported on OS6570M-U28 combo ports. 			

- The SFP-10G-T does not support 1G speed.
- 25G/40G/100G Transceivers Not Supported

New Software Features and Enhancements

The following software features are being introduced in this release, subject to the feature exceptions and problem reports described later in these release notes.

Note: Existing AOS features from previous releases are not described in this section. Please refer to the Feature Matrix in [Appendix A](#) for a list of existing features being supported on the OS6570M models.

8.9R2 New Feature/Enhancements Summary

Feature	Platform
Supported Features	
CLI Auto-Complete With Spacebar	OS6570M
10G License Upgrade	OS6570M-U28

Management Features

CLI Auto-Complete With Spacebar

The space key can be used for auto-completion of the CLI command similar to the TAB key. If the space key is pressed, auto-completion will complete the keyword. By default, the CLI auto-complete using space key is disabled.

The following CLI commands are associated with this feature:

- **session cli-auto-complete-space [enable | disable]**

10-Gigabit License

Allows ports 25-28 on the OS6570M-U28 to operate at 10G speed. 1G only is supported without this license.

The following CLI commands are associated with this feature:

- **license apply**

Open Problem Reports and Feature Exceptions

The problems listed here include problems known at the time of the product's release.

System / General / Display

CR	Description	Workaround
CRAOS8X-35800	With pause flow control enabled on an interface, pause frames are not being generated during congestion on OS6570M devices.	There is no known workaround at this time
CRAOS8X-36033	When a learned MAC is marked as quarantined by the system the ping traffic from quarantined MACs on the switch should not be honored. The OS6570M platform the ping traffic is not getting dropped for quarantined MACs.	There is no known workaround at this time.
CRAOS8X-36040	When a MAC is learned on a non-unp port and is marked as quarantined by the system the traffic from the quarantined MAC on the switch should be restricted. On 6560/6570 platforms. For quarantined MACs on non-unp ports the traffic restrictions are not working as expected.	There is no known workaround at this time.
CRAOS8X-36039	When a MAC is learned on a unp port and is marked as quarantined by the system, if the same MAC is received on a non-unp port the expected MAC move from unp port to non-unp port does not happen.	There is no known workaround at this time.
CRAOS8X-36041	If a learned MAC is moved to quarantined state, any http traffic from this MAC address should be redirected to quarantined MAC http page. Currently the user traffic is not being correctly redirected.	There is no known workaround at this time.
CRAOS8X-36726	On intermittent reload or powercycles, ports 1-20 may display a small burst of CRC errors at time of port bring up. These CRC errors are not continuous and non-incrementing.	There is no known workaround at this time.
CRAOS8X-36752	Activity LEDs on ports 25-30 may be less noticeable or appear to be solid if the traffic rate on the port is less than wire rate. (10G if 10G SFP, 1G if 1G SFP). Issue is more evident as traffic rate lowers on the port.	There is no known workaround at this time.

Transceivers

CR	Description	Workaround
CRAOS8X-36363	DAC cables will display "unknown" SFP type in 'show interfaces' command when connected to 1G ports. 10G ports will display proper SFP type.	This has no impact on functionality.
CRAOS8X-36381	It is possible with the SFP-GIG-T when speed is configured to 10M, multiple admin disable/enable toggles can cause port instability (including false	This has no impact on functionality.

	local linkup and no traffic through port). Issue is only seen with repeated consecutive local admin disable/enable toggles. Issue is not seen with 1G and 100M speed configurations.	
CRAOS8X-36436	On 100M/1G DUAL speed transceivers when local and peer have mismatched speeds (100M<>1G), 100M side will link up while 1G side will not. It is possible with a speed mismatch, a linkup can be seen when 100M side is disabled.	Match speed configuration on both sides of link.
CRAOS8X-36440	On the OS6570-U28 port 25 with SFP-10G-T may see a local only linkup or a LED up with link down when peer side is admin-toggled repeatedly.	There is no known workaround at this time.
CRAOS8X-36589	SFP-100-BX-U/D may have a linkup without cable on some random ports. Port number and number of ports displaying issue appear to vary by switch (ranging from none up to two ports). Normal operation is expected when cable is inserted.	There is no known workaround at this time.

Technical Support

ALE technical support is committed to resolving our customer's technical issues in a timely manner. Customers with inquiries should contact us at:

Country	Supported Language	Toll Free Number
France, Belgium, Luxembourg	French	+800-00200100
Germany, Austria, Switzerland	German	
United Kingdom, Italy, Australia, Denmark, Ireland, Netherlands, South Africa, Norway, Poland, Sweden, Czech Republic, Estonia, Finland, Greece, Slovakia, Portugal	English	
Spain	Spanish	
India	English	+1 800 102 3277
Singapore	English	+65 6812 1700
Hong-Kong	English	+852 2104 8999
South Korea	English	+822 519 9170
Australia	English	+61 2 83 06 51 51
USA	English	+1 800 995 2696
Your questions answered in English, French, German or Spanish.	English French German Spanish	+1 650 385 2193 +1 650 385 2196 +1 650 385 2197 +1 650 385 2198
Fax: +33(0)3 69 20 85 85 Email: ale.welcomecenter@al-enterprise.com Web : myportal.al-enterprise.com		

Internet: Customers with service agreements may open cases 24 hours a day via the support web page. Upon opening a case, customers will receive a case number and may review, update, or escalate support cases on-line. Please specify the severity level of the issue per the definitions below. For fastest resolution, please have hardware configuration, module types and version by slot, software version, and configuration file available for each switch.

Severity 1 - Production network is down resulting in critical impact on business—no workaround available.

Severity 2 - Segment or Ring is down or intermittent loss of connectivity across network.

Severity 3 - Network performance is slow or impaired—no loss of connectivity or data.

Severity 4 - Information or assistance on product feature, functionality, configuration, or installation.

Third Party Licenses and Notices

Legal Notices applicable to any software distributed alone or in connection with the product to which this document pertains, are contained in files within the software itself located at: **/flash/foss**.

The following is in addition to the information found in the **/flash/foss/Legal_Notice.txt** file.

FOSS Name : FOSS Version : Name of Applicable License : Pointer to file containing License Text

```
libatomic          : 1.0.0      : GPLv3+ & GPLv3+      : /flash/foss/gpl-3.0.txt +
                   :                   : with exceptions &    : /flash/foss/gpl-2.0.txt +
                   :                   : GPLv2+ with exceptions /flash/foss/lgpl-2.1.txt +
                   :                   : & LGPLv2+ & BSD      : /flash/foss/bsd1.txt
openvswitch        : 2.12.0   : Apache License 2.0   : /flash/foss/Apache-License-2.0.txt
```

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Appendix A: Feature Matrix

The following is a feature matrix for AOS Release 8.9R2 GA and the OS6570M.

Feature	OS6570M
Management Features	
AOS Micro Services (AMS)	8.9R2
Automatic Remote Configuration Download (RCL)	8.9R2
Automatic/Intelligent Fabric	8.9R2
Automatic VC	8.9R2
Bluetooth - USB Adapter with Bluetooth Technology	8.9R2
CLI Auto-Complete With Spacebar	8.9R2
Console Disable	8.9R2
Dying Gasp	N
Dying Gasp (EFM OAM / Link OAM)	N
EEE support	8.9R2
Embedded Python Scripting / Event Manager	8.9R2
IP Managed Services	N
Hitless Security Patch Upgrade	8.9R2
In-Band Management over SPB	N
ISSU	8.9R2
NaaS	8.9R2
NAPALM Support	8.9R2
NTP - Version 4.2.8.p11.	8.9R2
NTP - IPv6	8.9R2
OpenFlow	N
OV Cirrus - Zero touch provisioning	8.9R2
OV Cirrus - Configurable NAS Address	8.9R2
OV Cirrus - Default Admin Password Change	8.9R2
OV Cirrus - Managed	8.9R2
OVSDB	N
Package Manager	8.9R2
Readable Event Log	8.9R2
Remote Chassis Detection (RCD)	N
SAA	8.9R2
SAA SPB	N
SAA UNP	N
SNMP v1/v2/v3	8.9R2
Thin Client	8.9R2
Uboot Enable/Disable/Authenticate	8.9R2
UDLD	8.9R2

Feature	OS6570M
USB Disaster Recovery	8.9R2
USB Flash (AOS)	8.9R2
Virtual Chassis (VC)	8.9R2
Virtual Chassis Split Protection (VCSP)	8.9R2
VRF	N
VRF - IPv6	N
VRF - DHCP Client	N
Web Services & CLI Scripting	8.9R2
Layer 3 Feature Support	
ARP	8.9R2
BFD	N
BGP	N
DHCP Client / Server	8.9R2
DHCP Relay	8.9R2
DHCPv6 Server	N
DHCPv6 Relay	8.9R2
DHCP Snooping / IP Source Filtering	8.9R2
ECMP	8.9R2
IGMP v1/v2/v3	8.9R2
GRE	N
IP-IP tunneling	N
IPv6	8.9R2
IPv6 - DHCPv6 Snooping	8.9R2
IPv6 - Source filtering	8.9R2
IPv6 - DHCP Guard	8.9R2
IPv6 - DHCP Client Guard	8.9R2
IPv6 - RA Guard (RA filter)	8.9R2
IPv6 - DHCP relay and Neighbor discovery proxy	N
IP Multinetting	8.9R2
IPSec (IPv6)	N
ISIS IPv4/IPv6	N
M-ISIS	N
OSPFv2	N
OSPFv3	N
RIP v1/v2	8.9R2
RIPng	8.9R2
UDP Relay (IPv4)	8.9R2
UDP Relay (IPv6)	8.9R2
VRRP v2	8.9R2

Feature	OS6570M
VRRP v3	8.9R2
Server Load Balancing (SLB)	N
Static routing	8.9R2
Multicast Features	
DVMRP	N
IPv4 Multicast Switching	8.9R2
Multicast *,G	8.9R2
IPv6 Multicast Switching	8.9R2
PIM-DM	N
PIM-SM	N
PIM-SSM	N
PIM-SSM Static Map	N
PIM-BiDir	N
PIM Message Packing	N
PIM - Anycast RP	N
Monitoring/Troubleshooting Features	
Ping and traceroute	8.9R2
Policy based mirroring	N
Port mirroring	8.9R2
Port monitoring	8.9R2
Port mirroring - remote	8.9R2
Port mirroring - remote over linkagg	N
RMON	8.9R2
SFlow	8.9R2
Switch logging / Syslog	8.9R2
TDR	N
Layer 2 Feature Support	
802.1q	8.9R2
DHL	8.9R2
ERP v2	8.9R2
HAVLAN	N
Link Aggregation (static and LACP)	8.9R2
LLDP (802.1ab)	8.9R2
Loopback detection - Edge (Bridge)	8.9R2
Loopback detection - SAP (Access)	N
MAC Forced Forwarding / Dynamic Proxy ARP (DPA)	8.9R2
MRP	N
Port mapping	8.9R2

Feature	OS6570M
Private VLANs (PVLAN)	N
SIP Snooping	N
Spanning Tree (1X1, RSTP, MSTP)	8.9R2
Spanning Tree (PVST+, Loop Guard)	8.9R2
MVRP	8.9R2
SPB ²	N
SPB - Over Shared Ethernet	N
SPB - HW-based LSP flooding	N
QoS Feature Support	
802.1p / DSCP priority mapping	8.9R2
IPv4	8.9R2
IPv6	8.9R2
Auto-Qos prioritization of NMS/IP Phone Traffic	8.9R2
Auto-Qos - New MAC range	8.9R2
Groups - Port	8.9R2
Groups - MAC	8.9R2
Groups - Network	8.9R2
Groups - Service	8.9R2
Groups - Map	8.9R2
Groups - Switch	8.9R2
Ingress/Egress bandwidth limit	8.9R2
Per port rate limiting	N
Policy Lists	8.9R2
Policy Lists - Egress	N
Policy based routing	N
Tri-color marking	N
QSP Profiles 1	8.9R2
QSP Profiles 2/3/4	QSP-2 Only
QSP Profiles 5	N
RoCEv2	N
Custom QSP Profiles	8.9R2
GOOSE Messaging Prioritization	N
Metro Ethernet Features	
CPE Test Head	8.9R2
Ethernet Loopback Test	8.9R2
Ethernet Services (VLAN Stacking)	8.9R2
Ethernet OAM (ITU Y1731 and 802.1ag)	8.9R2
EFM OAM / Link OAM (802.3ah)	8.9R2
PPPoE Intermediate Agent	8.9R2
1588v2 End-to-End Transparent Clock	N
1588v2 Peer-to-Peer Transparent Clock	N

Feature	OS6570M
1588v2 Across VC	N
Access Guardian / Security Features	
802.1x Authentication	8.9R2
Access Guardian - Bridge	8.9R2
Access Guardian - Access	N
Application Fingerprinting	N
Application Monitoring and Enforcement (Appmon)	N
ARP Poisoning Protection	8.9R2
BYOD - COA Extension support for RADIUS	8.9R2
BYOD - mDNS Snooping/Relay	8.9R2
BYOD - UPNP/DLNA Relay	8.9R2
BYOD - Switch Port location information pass-through in RADIUS requests	8.9R2
Captive Portal	8.9R2
IoT Device Profiling	8.9R2
IoT Device Profiling (IPv6)	8.9R2
Directed Broadcasts - Control	8.9R2
Interface Violation Recovery	8.9R2
Kerberos Snooping (services)	N
L2 GRE Tunnel Access (Edge) (bridge ports)	N
L2 GRE Tunnel Access (Edge) (access ports)	N
L2 GRE Tunnel Aggregation	N
Learned Port Security (LPS)	8.9R2
MACsec	N
MACsec MKA Support	N
Quarantine Manager	8.9R2
RADIUS - RFC-2868 Support	8.9R2
Role-based Authentication for Routed Domains	N
Storm Control (flood-limit)	8.9R2
Storm Control (Unknown unicast with action trap/shutdown)	N
TACACS+ Client	8.9R2
TACACS+ command based authorization	8.9R2
TACACS+ - IPv6	8.9R2
PoE Features	
802.3af and 802.3at	N
802.3bt	N
Auto Negotiation of PoE Class-power upper limit	N
Display of detected power class	N
LLDP/802.3at power management TLV	N

Feature	OS6570M
HPOE support	N
Time Of Day Support	N
Perpetual PoE	N
Fast PoE	N
Data Center Features (License Required)	
CEE DCBX Version 1.01	N
Data Center Bridging (DCBX/ETS/PFC)	N
EVB	N
FCoE / FC Gateway	N
VXLAN	N
VM/VXLAN Snooping	N
FIP Snooping	N