HPE Aruba Networking

CX 10040-32C6D Switch Series

Installation and Getting Started Guide

Hewlett Packard Enterprise

Contents

This document is intended for network administrators and support personnel.

> **NOTE**
> - The display and command line illustrated in this document are examples and might not exactly match your particular switch or environment.
> - The switch and accessory drawings in this document are for illustration only, and may not exactly match your particular switch and accessory products.

Applicable Products

Model	Description
S4R54A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4xFan 2xPSU AC Bdl
S4R55A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4xFan 2xPSU AC Bdl
S4R56A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4xFan 2xPSU AC TAA Bdl
S4R57A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4xFan 2xPSU AC TAA Bdl
S4R58A	HPE Aruba Networking CX 10040 Field Replacement Unit Switch
S4R59A	HPE Aruba Networking CX 10040 TAA Field Replacement Unit Switch
S4R52A	HPE Aruba Networking CX 10040 3000W Front-to-Back C20 AC Power Supply Unit
S4R53A	HPE Aruba Networking CX 10040 3000W Back-to-Front C20 AC Power Supply Unit
S4R50A	HPE Aruba Networking CX 10040 Front-to-Back Fan
S4R51A	HPE Aruba Networking CX 10040 Back-to-Front Fan

Related Publications

- Start Here: Installation, Safety, and Regulatory Information for the HPE Aruba Networking CX 10040-32C6D Switches
- HPE Aruba Networking CX 10000 Switch Series Datasheet
- ArubaOS-Switch ArubaOS-CX Transceiver Guide
- ArubaOS-CX software manuals
- Fundamentals Guide for more information about installing, configuring, and managing your switch.

To view and download these publications, visit the HPE Networking Support Portal.

This chapter covers the following information: Management ports, Console ports, Out-of-band Management port, USB-A Aux port, Network ports, Chassis and port LEDs, Switch Product Label, Chassis grounding location, Power supplies, fan trays, LED Behavior and Switch Features.

Overview

The HPE Aruba Networking CX 10040 Switch Series is a family of premium networking switches, ideal for enterprise, data centers, network aggregation and core. They provide the foundation for high-performance networks supporting IoT, mobile, and cloud applications.

These switches are intended for indoor use only. They are for use in commercial applications. A typical installation is in an environmentally controlled data center. The end use environment may or may not be a restricted access location.

HPE Aruba Networking CX 10040-32C6D
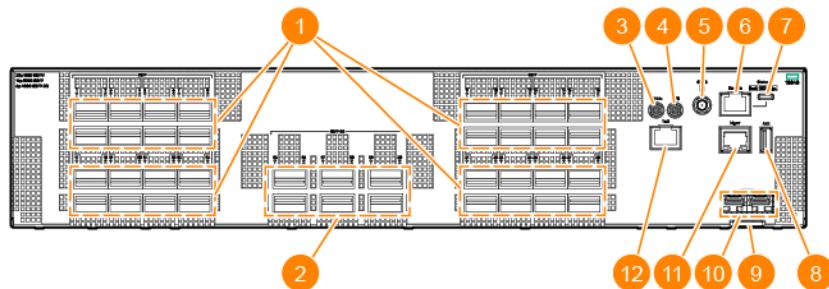
The HPE Aruba Networking CX 10040-32C6D is a high-performance, fixed-form-factor switch purpose-built for modern data center networks, combining the scale and flexibility of a leaf-spine architecture with the intelligence of a Distributed Services Switch (DSS). Designed to operate as a Top-of-Rack (ToR) Leaf and as a collapsed core in enterprise campus networks—the CX 10040 delivers high-density 100G/400G connectivity with advanced service insertion. Integrated into the DSS fabric, it enables up to 1.6 Tbps stateful traffic inspection, micro and macro segmentation, and network security policy enforcement for east-west traffic— reducing reliance on external service appliances in environments where full Layer 7 firewalling is not required. Ideal for cloud-scale and enterprise data center deployments, hybrid cloud interconnects in colocation PoDs, and multi-tenant edge environments, the CX 10040 is also future-ready with planned support for Precision Time Protocol (PTP)—enabling adoption in time-sensitive domains such as financial services, industrial automation, and edge computing.

Switch Features

For detailed switch features, see the HPE Aruba Networking CX 10000 Switch Series Datasheet.

Front of the Switches

Figure 1 *Example of a CX 10040-32C6D switch*

Label	Description
1	200G/100G QSFP56 ports (Compatible to use 40G and with a QSA28 adapter: 10G, 25G - except DACs)**
2	400G/200G/100G QSFPDD ports
3	(Left) 10Mhz SMB (Input/Output) connector*
4	(Right) 1PPS SMB (Input/Output) connector*
5	GNSS SMA (Input) connector*
6	RJ45 console port
7	USB-C console port
8	USB Type-A auxiliary port
9	Switch product label pull tab
10	SFP+ ports (supports 1G and 10G products)
11	Out-of-band-Management (OOBM) RJ45 port
12	ToD+1PPS (Input/Output) port*

* Hardware Capable, not currently supported on AOS-CX.

** To enable 200G or port splitting mode, refer to the [Fundamentals Guide](#) for the "system interface-group <n> speed ?" selection.

Network Ports

Insert QSFP port plugs on any open ports to ensure compliance with FCC part B radiated emission standards.

Switch	Model name	QSFP-DD ports	QSFP28 ports	QSFP56 ports	SFP+ ports
S4R58A	HPE Aruba 10040 32p QSFP28 100G 6p QSFP-DD 400G Switch	6 Ports: 25-30	32 Ports: 1-24 and 31-38	16 Even ports only: 2-24, 32-38	Ports: 39-40

NOTE
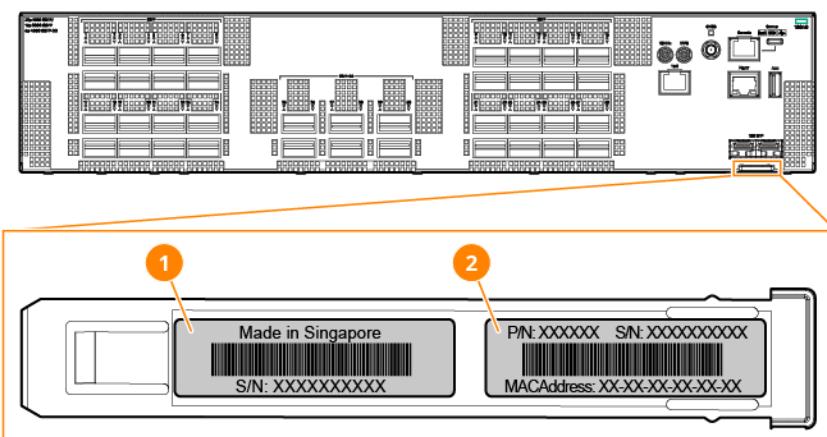
For supported transceivers, see the latest version of the ArubaOS-Switch and ArubaOS-CX Transceiver Guide.

Switch Product Label

The switch product label is located on the orange pull tab on the bottom right side of the switch front panel. Pull the tab out to view the product label information.

Figure 1 *HPE Aruba Networking CX 10040-32C6D switch product label (pull tab)*

Label	Description
1	Country of origin and Serial number
2	Part number, Serial number and MAC address

Management ports

The following section provides information about the Console Port, Out-of-band Management (OOBM) Port, and the USB-A Aux port.

Console port

HPE Aruba Networking CX 10040-32C6D switches includes an RJ45 serial console port on the front of the switch. This port is used to connect a console to the switch by using an RJ45 serial cable (not supplied). The following cables can be ordered separately from HPE:

- JL448A HPE Aruba Networking X2C2 RJ45 to DB9 Console Cable
- R9G48A HPE Aruba Networking USB-A to RJ45 PC-to-Switch Cable
- R9J32A HPE Aruba Networking USB-A to USB-C PC-to-Switch Cable
- R9J33A HPE Aruba Networking USB-C to USB-C PC-to-Switch Cable.

NOTE

HPE Aruba Networking cables are purchased separately.

The 10040-32C6D switch also includes a USB-C port on the front of the switch. This port can be used to connect a console to the switch by using a standard USB-C cable (not supplied). The USB-C has precedence for input over RJ45 console port. If both cables are plugged in, the console output is echoed to both the RJ45 and the USB-C port, but the input is only accepted from the USB-C port.

For more information on the console connection, see Setup for Initial Configuration on page 42. The console can be a PC or workstation running a VT-100 terminal emulator, or a VT-100 terminal.

Out-of-band Management (OOBM) port

This RJ45 port is used to connect a dedicated management network to the switch. To use it, connect an RJ45 network cable to the management port to manage the switch through Telnet from a remote PC or a UNIX workstation.

To use this port, the switch must have an IP address. IP settings can be configured through a console port connection or automatically from a DHCP/Boot server.

A networked out-of-band connection through the management port allows you to manage data network switches from a physically and logically separate management network.

For more information, see the Fundamentals Guide for your switch.

USB-A Aux port

The USB-A port is used for file management, downloading switch software or use of HPE Aruba Networking accessories.

The HPE CX Provisioning app and the HPE Aruba Networking USB-A Bluetooth adapter, S1H23A (ordered separately) enable you to configure your switch from your mobile device. For information about using the Aruba CX mobile app to configure the switch, see the Fundamentals Guide for your switch and software release.

Timing Interfaces

This section provides information about the timing interface cables and electrical specifications for ToD, SMB 1PPS, SMB 10Mhz, and GNSS.

Figure 1 *Timing Interface*
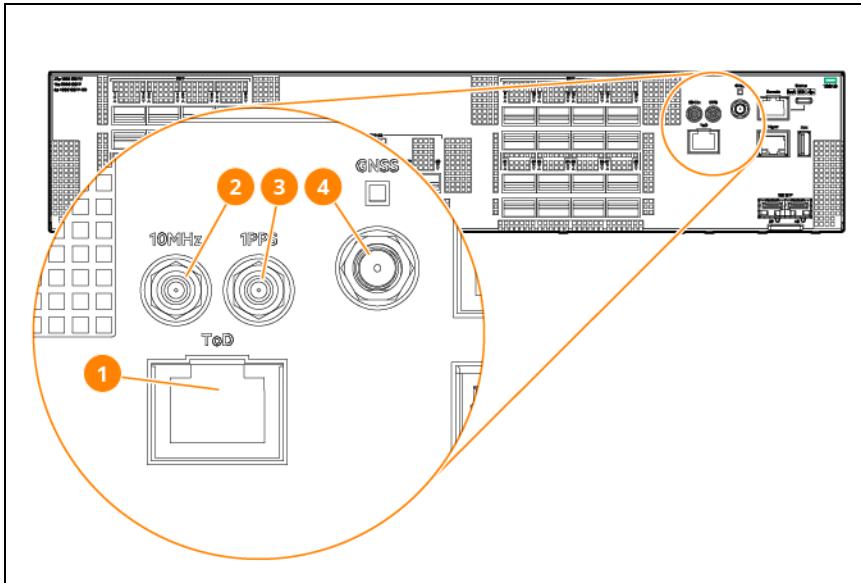
Table 1: *Timing Interface**

Label	Description
1	ToD+1PPS (Input/Output) port
2	10Mhz SMB (Input/Output) connector
3	1PPS SMB (Input/Output) connector
4	GNSS SMA (Input) connector
* Hardware Capable, not currently supported on AOS-CX.	

Table 2: *Timing Interface Cables*

Timing Interface	Connector Type	Input	Termination	Output	Equipment Verified in Topology
10Mhz	SMB	Yes	50Ω	Yes	**Max Length:** 3m **Validated Cable:** RG-316
1PPS	SMB	Yes	50Ω	Yes	**Other suitable cables:** RG-58
ToD+1PPS	RJ45	Yes	50Ω	Yes	3m CAT5 "MDI to MDIX" or "straight through"
GNSS	SMA	Yes*	50Ω	No	**Outdoor Cable Runs** **Validated Cable:** LMR-400 **Other Suitable Cables:** RG-217 and LMR-600

Timing Interface	Connector Type	Input	Termination	Output	Equipment Verified in Topology
					Indoor Cable Runs **Validated Cable:** LMR-240

* *[Required Antenna Topology](#)* and Earth Grounding must be installed by a qualified professional to use this interface as input.

Table 3: *Timing Interface Electrical Specifications*

Timing Interface	Connector Type	Input Specification (Max and Min Input)		Output Specification	
10Mhz	SMB	V_{In-Max}	5V	$V_{Out-High-Min}$	1.5V
		V_{In-Min}	-0.5V	$V_{Out-Low-Max}$	-1.5V
		$V_{In-Peak-to-peak-Max}$	5.5V	$V_{In-Peak-to-peak-Max}$	3.15Vpp
		$V_{In-H-Low}$	1.4V	f_{Output}	10Mhz+/-250ppb
		$V_{In-L-high}$	0.6V	-	-
		$f_{In-Acceptance}$	10Mhz +/-9.2ppm	-	-
		$f_{In-Rejection}$	10Mhz +/-12ppm	-	-
1PPS	SMB	V_{In-Max}	5.5V	$V_{Out-High-Min}$	2.2V
		V_{In-Min}	-0.5V	$V_{Out-Low-Max}$	0V
		$V_{In-Peak-to-peak-Max}$	6V	$V_{In-Peak-to-peak-Max}$	2.5V
		$V_{In-H-Low}$	0.7V	f_{Output}	1hz+/-1ppb
		$V_{In-L-High}$	0.5V	-	-
		$f_{In-acceptance}$	1hz+/-9.2ppm	-	-
		$f_{In-rejection}$	1hz+/-12ppm	-	-
		Pulse width	500ms	-	-
ToD+1PPS	RJ45	V_{In-Max}	5.5V	$V_{Out-High-Min}$	2.4V
		V_{In-Min}	-0.5V	$V_{Out-Low-Max}$	0.4V
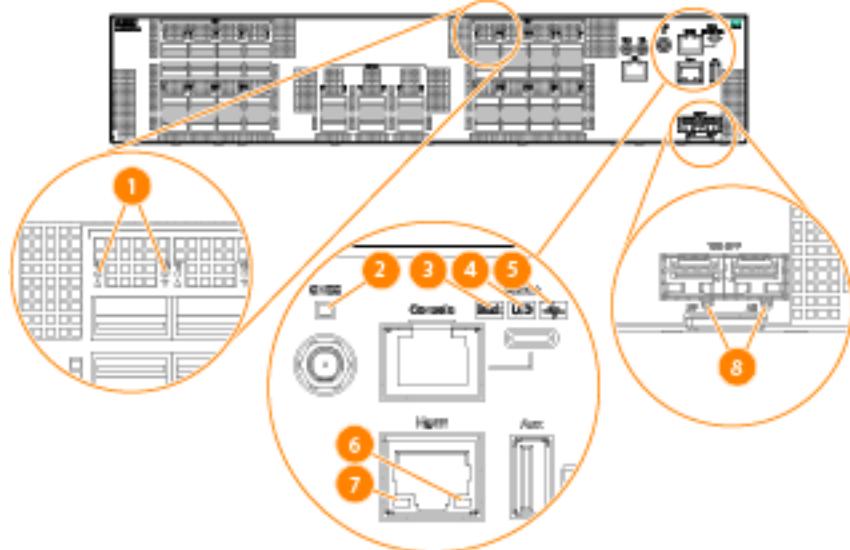
Timing Interface	Connector Type	Input Specification (Max and Min Input)		Output Specification	
		$V_{In\text{-Peak-to-peak-Max}}$	5V	$V_{In\text{-Peak-to-peak-Max}}$	3V
		$V_{In\text{-H-Low}}$	2V	f_{Output}	1hz+/-1ppb
		$V_{In\text{-L-High}}$	0.8V	-	-
		$f_{In\text{-acceptance}}$	1hz+/-9.2ppm	-	-
		$f_{In\text{-rejection}}$	1hz+/-12ppm	-	-
		Pulse Width	500ms	-	-
GNSS	SMA	$V_{In\text{-Max}}$	3.6V	-	-
		$V_{In\text{-Min}}$	-0.5V		
		$V_{In\text{-Peak-to-peak-Max}}$	3.6V		
		$V_{In\text{-H-Low}}$	2.7V		
		$V_{In\text{-L-High}}$	0.4V		
		Constellations supported	**GPS/QZSS:** - L1C/A (1575.420 MHz) - L5 (1176.450 MHz) **GLONASS** - L1OF (1602 MHz + k*562.5 kHz, k = –7,..,6) **GALILEO** - E1-B/C (1575.420 MHz) - E5a (1176.450 MHz) **BEIDOU** - B1I (1561.098 MHz) - B1C (1575.42MHz)[10] - B2a (1176.450 MHz)		

Timing Interface	Connector Type	Input Specification (Max and Min Input)	Output Specification	
		NAVIC ▪ SPS-L5 (1176.450MHz)		
For more information on GNSS installation and Earth Grounding, see _Required Antenna Topology_.				

Chassis and Port LEDs on the front of the switch

Figure 1 *Chassis and Port LEDs for the HPE Aruba Networking CX 10040-32C6D switch*
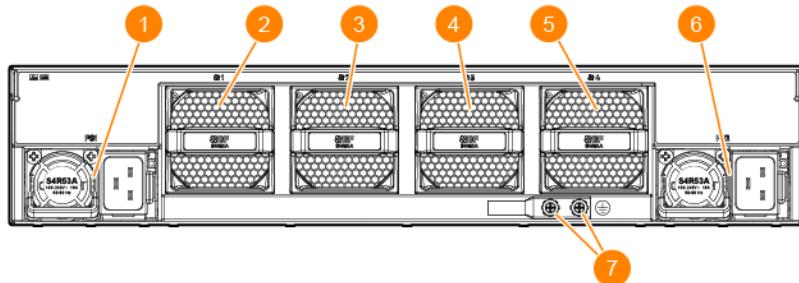
Label	Description
1	QSFP top port indicator LED (left), QSFP bottom port indicator LED (right)
2	GNSS status and configuration LED*
3	Rear module status LED
4	Unit Identification / Locator LED
5	Global status LED
6	Out-of-band-Management Link/Activity LED
7	Reserved for future use.
8	SFP+ port indicator LEDs

* Hardware Capable, not currently supported on AOS-CX.

Back of the Switches
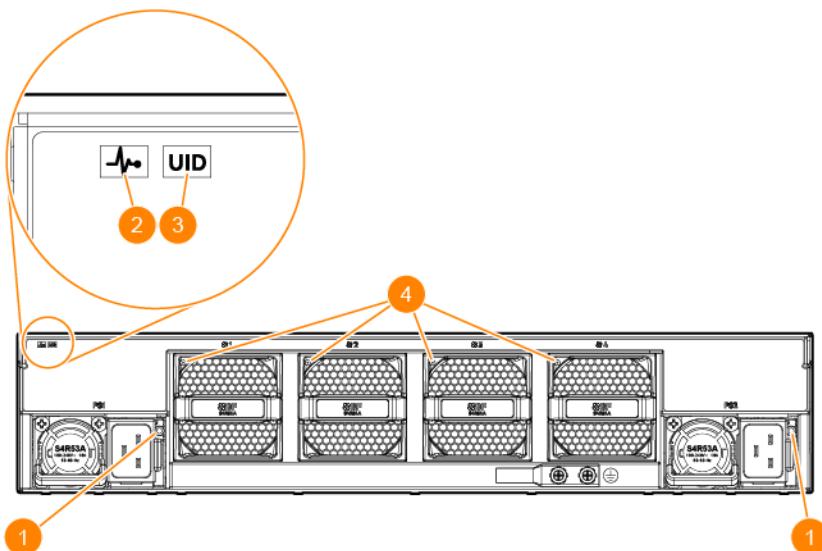
The back of 10040-32C6D switches include two power supply units and four fan trays.

Figure 1 *Fans and power supplies on the back of the 10040-32C6D switch*

Label	Description
1	Power Supply Unit 1
2	Fan Tray slot 1
3	Fan Tray slot 2
4	Fan Tray slot 3
5	Fan Tray slot 4
6	Power Supply Unit 2
7	Optional Ground Lug mounting location M5x0.80, T25 Torx recess, 10mm long Ground Screw W/Lock Washer

Figure 2 *LEDs and components on the back of the 10040-32C6D switch*

Label	Description
1	Power Supply status LED
2	Global status LED
3	Unit Identification / Locator LED
4	Fan Tray status LED

Power Supplies

The HPE Aruba Networking CX 10040-32C6D switch is powered on when at least one installed power supply is connected to an active power source. The AC power supplies automatically adjust to any voltage between 100-127 and 200-240 volts and either 50 or 60 Hz. There are no voltage range settings required.

- The S4R52A and S4R53A PSU, when operating at high line (200-240 VAC), is rated at 3000W of power. When operating at low line (110-127 VAC), is rated at 1500W of power.
- The HPE Aruba Networking CX 10040 switch series power supplies adapt electrical power for use with the switch. The chassis has two slots that can hold individual power supplies to support load sharing, redundancy, and fault tolerance.
- The 10040-32C6D switch is capable of operating with high-line (200-240VAC) or low-line (100-127VAC) power sources. The 10040-32C6D switch using low-line (100-127VAC) power sources cannot enable high-power transceivers that requires more than 5 Watts with the default configuration of N+N redundancy mode. The switch must be configured to non-redundant power mode to use high-power transceivers (>5W) with low-line input. Transceivers requiring 5 Watts or less are not affected by the power source voltage.

- Never insert or remove a power supply while the power cord is connected. Verify that cord has been disconnected from the power supply before installation or removal.
- For indoor use only. The switch, power cord and all connected cables are not designed for outdoor use.
- During installation, ensure that the power cord is NOT connected to the power supply being installed.
- Shock hazard. To completely remove power from the switch, disconnect all power cords.

- For proper thermal and power operation all power supply and fan airflow direction must match, noted by the latch and handle color (all blue or all red).

- The HPE Aruba Networking CX 10040 switch series does not support the use of DC Voltage power supplies.

- System airflow direction is configured automatically at system initialization and cannot be reconfigured by the user. System airflow direction is determined by the power supply type installed in PS1 at initialization time (or PS2 if PS1 is non-operational). Any fan tray or power supply of conflicting airflow type will be disabled by the system. Ensure only matching fan trays and power supplies are used at any given runtime.

- HPE Aruba Networking CX 10040 switch series power supplies are not interchangeable. Only use the proper power supply for your switch model.

NOTE

For important safety, environmental, and regulatory information, see Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts.

Figure 1 *(S4R52A) HPE Aruba Networking 3000W Front-to-Back AC Power Supply*
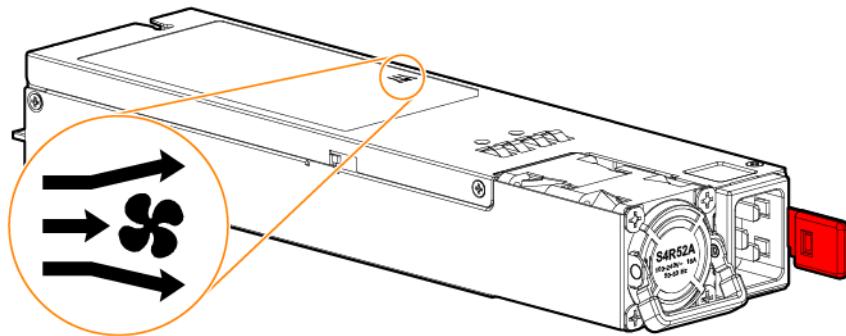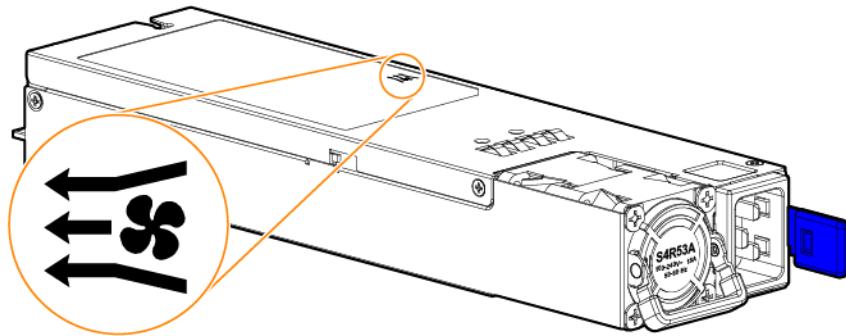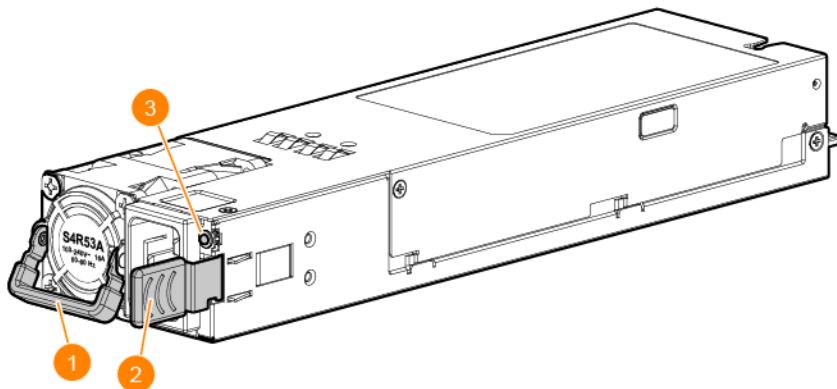
Figure 2 *(S4R53A) HPE Aruba Networking 3000W Back-to-Front AC Power Supply*

Switch	Power Supply
HPE Aruba 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4 Fans 2 AC PSU Bundle (S4R54A)	HPE Aruba Networking 3000W Front-to-Back C20 AC Power Supply (Red Latch) (S4R52A)
HPE Aruba 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4 Fans 2 AC PSU Bundle (S4R55A)	HPE Aruba Networking 3000W Back-to-Front C20 AC Power Supply (Blue Latch) (S4R53A)

Power Supply Components

Figure 3 *HPE Aruba Networking CX 10040-32C6D switch AC power supplies*

Label	Description
1	Handle
2	Release Latch
3	Power Supply Status LED

Load Sharing

Load sharing occurs when two power supplies are installed in the switch and turned on. Load sharing divides the total power load of the switch between both power supplies.

Redundancy

> **NOTE**
>
> Full operation, with power supply redundancy enabled, is only supported at high-line. If operating at low-line, and power supply redundancy is enabled, no ports with a transceiver requiring >5W will be enabled.

With power redundancy, the HPE Aruba Networking CX 10040 switch series can continue normal operation even when one power supply fails or is powered off. When two power supplies are installed, if one becomes unavailable (failed, powered off, or removed) the remaining power supply provides full power for the device*.

While the switch can continue normal operation, the Global Status LED, Rear Module status LED will flash in Amber to notify user that a PSU is unavailable. Redundancy is on by default.

Even though the switch will run with one power supply removed, for thermal integrity reasons it is highly recommended not to remove a failed power supply, until the replacement can be installed.

Only when Redundancy is not turned off.

Hot Swapping

Hot swapping allows you to replace one failed power supply while the other provides full power*. This makes it unnecessary to shut down the switch during the replacement procedure.

⚠️ **CAUTION**	Never insert or remove a power supply while the power cord is connected. Verify that the cord has been disconnected from the power supply before installation or removal.

Only when Redundancy is not turned off.

Fan Trays

The switch is equipped with 4 field-replaceable, hot-swappable fan trays. Each fan tray features individual fans that pull air through the chassis from front-to-back or back-to-front.

📝 **NOTE**	In the event of a misconfigured airflow direction on a single fan tray or a single faulted fan, the switch will maintain adequate cooling by increasing the fan speeds and/or disabling the misconfigured device.

⚠️ **CAUTION**	- Fan trays and power supplies installed in a 10040-32C6D switch must have the same cooling air flow direction. Air flow direction is not controlled by software. To change airflow direction, power off the switch and replace the power supplies and fan trays for the desired airflow direction. - If the system detects an overheating condition, the 10040-32C6D switch will power off for five minutes before rebooting and assessing the cooling capabilities. - If one fan tray is missing for more than two minutes or if two or more fan trays are missing, faulted and/or misconfigured, the switch will power off for five minutes before rebooting and assessing the cooling capabilities. See Replacing a Fan Tray for more information. - System airflow direction is configured automatically at system initialization and cannot be reconfigured by the user. System airflow direction is determined by the power supply type installed in PS1 at initialization time (or PS2 if PS1 is non-operational). Any Fan tray or Power supply of conflicting airflow type will be disabled by the system. Ensure only matching Fan trays and Power supplies are used at any given runtime.

Figure 1 *10040-32C6D switch Front-to-Back fan tray*
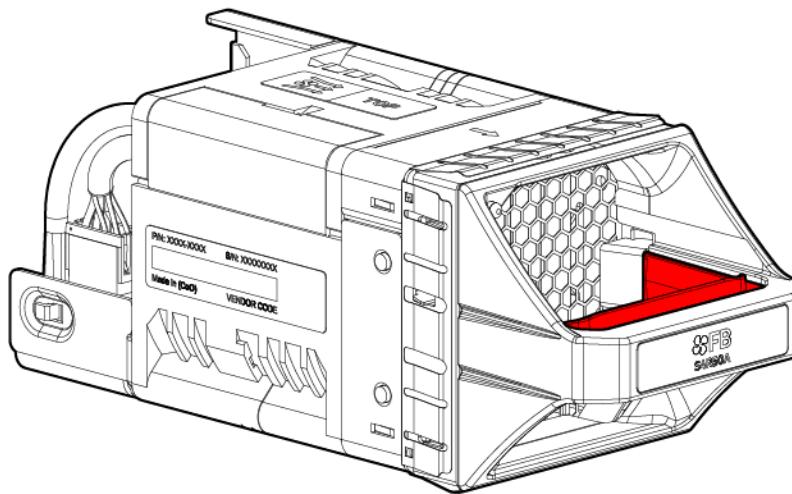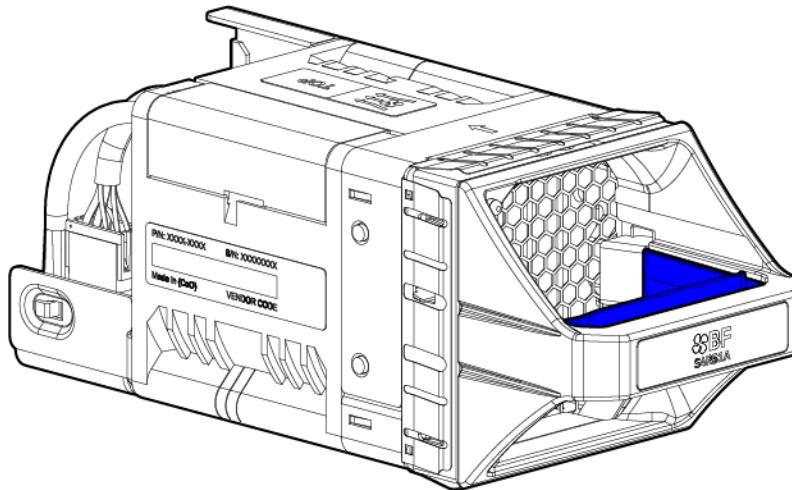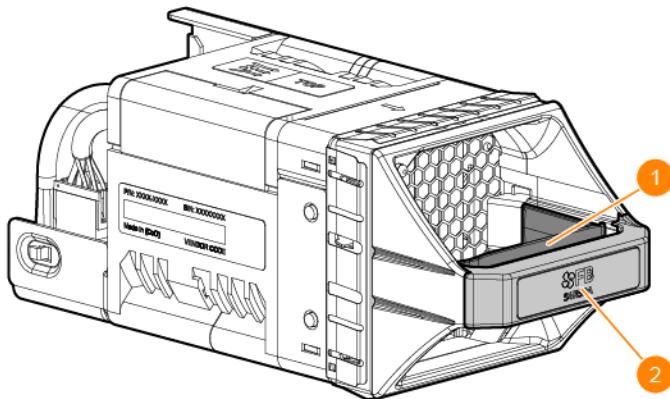
Figure 2 *10040-32C6D switch Back-to-Front fan tray*

Switch	Fan Module
HPE Aruba 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4 Fans 2 AC PSU Bundle (S4R54A)	HPE Aruba Networking Front-to-Back Fan Module (Red release latch) (S4R50A)
HPE Aruba 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4 Fans 2 AC PSU Bundle (S4R55A)	HPE Aruba Networking Back-to-Front Fan Module (Blue release latch) (S4R51A)

Fan Tray Components

Figure 3 *HPE Aruba Networking CX 10040-32C6D switch Fan Tray*

Label	Description
1	Release latch
2	Handle

Redundancy

The switch can tolerate the failure of a single fan tray while maintaining a safe operating temperature. The switch may continue to operate with one failed fan tray. For best operation, the failed fan tray should be replaced as soon as possible.

If one fan tray has failed, the Global status LED, and Rear module status LED (10040-32C6D) on the front of the switch and the rear Global status LED and faulted Fan tray LED will Flash Amber.

If two or more fan trays have failed, the 10040-32C6D switch will power off for five minutes before rebooting and assessing the cooling capabilities.

> ⚠️ **CAUTION**
>
> The HPE Aruba Networking CX 10040-32C6D switch is not compatible with fan trays from other HPE Aruba Networking CX hardware platforms.

LED Behavior

For 10040-32C6D switches:

Front Chassis LEDs	Function	Switch Behavior	LED State	Meaning
QSFP-DD, QSFP and SFP+ port indicator	Displays Link information for the port.	Startup	On Green	AOS-CX: Default SVOS: Default
		Normal	Off - No Fault	No valid link.
			On Green	Valid link indication.
		Fault	Flashing Amber blinks with Global Status LED.	Fault*
QSFP-DD and QSFP port indicator in split mode	Displays Link information for the lanes.	Startup	On Green	AOS-CX: Default SVOS: Default
		Normal	Off - No Fault	No valid link on all lanes.
			On Green	Valid link indication on one or more lanes.
		Fault	Flashing Amber blinks with Global Status LED.	Fault on one or more lanes.*
Out-Of-Band-Management (OOBM) indicator	Displays Link and Activity information for the OOBM port.	Startup	Off - No Fault	AOS-CX: Default SVOS: Default
		Normal	Off - No Fault	OOBM port is not connected, no link established.
			On Green	Valid link indication.
			Activity Flicker Green	Indicator of traffic activity.
		Fault	Not Implemented	No fault defined.
Global status indicator	Displays overall health status for the unit.	Startup	Flashing Green	SVOS: Preparing to boot AOS-CX.
		Normal	On Green	AOS-CX: Self test PASS, Fans and PSUs OK.
		Fault	Flashing Amber	AOS-CX: Fault*

Front Chassis LEDs	Function	Switch Behavior	LED State	Meaning
				SVOS: System failed to boot.
Unit Identification / Locator indicator	Customer selectable through UI to help ID/Locate unit.	Startup	On Blue	AOS-CX: Default SVOS: Default
		Normal	Off - No Fault	Normal operation.
			On/Flashing Blue	User defined.
Rear modules status indicator	Indicates status of devices on the back of the switch.	Startup	Flashing Green	Initialization in progress.
		Normal	On Green	Normal operation.
		Fault	Flashing amber with Global Status LED	Fan tray or PSU faulted, missing or misconfiguration.*
GNSS indicator	GNSS configuration and status	Startup	Off	GNSS is not configured or system is in boot-up sequence.**
		Normal		
		Fault		

Rear Chassis LEDs	Function	Switch Behavior	LED State	Meaning
Global status indicator	Displays overall health status for the unit.	Startup	Flashing Green	SVOS: Preparing to boot AOS-CX.
		Normal	On Green	AOS-CX: Self test PASS, Fans and PSUs OK.
		Fault	Flashing Amber	AOS-CX: Fault* SVOS: System failed to boot.
Unit Identification / Locator indicator	Customer selectable through UI to help ID/Locate unit.	Startup	On Blue	AOS-CX: Default SVOS: Default
		Normal	Off - No Fault	Normal operation.
			On/Flashing Blue	User defined.

Rear Chassis LEDs	Function	Switch Behavior	LED State	Meaning
Fan tray indicator	Indicates status of the fan tray.	Startup	Flashing Green	Fan initialization.
		Normal	On Green	Default
		Fault	Flashing Amber	Fan tray faulted or airflow misconfiguration.*
PSU module indicator	Indicates status of PSU module.	Normal	On Green	Default
			Flashing Green	PSU FW upgrade in progress
		Fault	Off	No input power to PSU or system disabled the PSU due to ID, or input type

* *Refer to system logs for details.*

** *Hardware Capable, not currently supported on AOS-CX.*

The following sections cover the switch installation procedures.

Included Parts

The switch is shipped with the following components:

- Documentation kit
- JL602A - HPE Aruba Networking X412 1U Universal 2-post RM Kit (Qty. 2)
- Two power cords are included with each switch bundle for your specific region.
- 5400-5620 QSFP/QSFP-DD Plug Kit (Qty. 38)
    - Individual plugs: 1254-2463
- The following (part number or J-number/SKU) are orderable through HPE Aruba Networking purchasing if replacements are needed.

N O T E

The S4R52A and S4R53A PSU, when operating at high line (200-240 VAC), is rated at 3000W of power. When operating at low line (110-127 VAC), is rated at 1500W of power.

Table 1: C19 Power Cord Types for the HPE Aruba Networking 10040 3000W S4R52A and S4R53A Power Supply,

Country or Region	Part Number	Option	SKU	Description
Argentina	8121- 0925	#ARM	JL339A	HPE 2.5m C19 to IRAM 2073 20Amp 250V Power Cord
Brazil	8121-1101	#AC4	JL343A	HPE 2.5m C19 to BR3 20Amp 250V Power Cord
Chile	8121-0923	#A1X	JL338A	HPE 2.5m C19 to CEI 23-50 16Amp 250V Power Cord
China	8121-1551	#AKM	JL347A	HPE 2.5m C19 to PRC/3 16Amp 250V Power Cord
Continental Europe	8121-1554	#ABB	JL350A	HPE 2.5m C19 to CEE 7-VIIGK 250V Power Cord
India	8121-1074	#ACJ	JL341A	HPE 2.5m C19 to ZA/3 16Amp 250V Power Cord
Israel	8121-1010	#AKJ	JL340A	HPE 2.5m C19 to SI 32 90 Degree 250V Power Cord
Japan	8121-1737	#ACF	JL353A	HPE 2.5m C19 to 6/15AJ 200V 15Amp JP Non-locking Power Cord
North America	8121-1553	#ABA	JL349A	HPE 2.5m C19 to NEMA 5-20P 125V Power Cord
South Africa	8121-1552	#ACQ	JL348A	HPE 2.5m C19 to ZA/3 16Amp 250V CN Power Cord
South Korea	8121-1554	#AC6	JL350A	HPE 2.5m C19 to CEE 7-VIIGK 250V Power Cord

Country or Region	Part Number	Option	SKU	Description
Switzerland	8121-0916	#ACD	JL337A	HPE 2.5m C19 to SEV 6534-2 Type 12G 250V Power Cord
Taiwan	8120-6362	#ARB, Locking Hi-Voltage	JL335A	HPE 2.5m C19 to NEMA L6-20P 250V Locking Power Cord
Thailand	8121-1725	#AKL	JL764B	HPE 2.5m C19 to TH3/A 16A TH Thailand Power Cord
UK, Malaysia, Australia/New Zealand, Denmark	8121-1287	#ACC, #ARE, #ABG, #ACE	JL344A	HPE 2.5m C19 to PCE013-6 250V Power Cord
PDU Cable NA, JP, TW, and RoW **except** India	8121-1090	#B2B, B2C	JL342A	HPE 2.5m C19 to C20 250V PDU Power Cord
PDU cable, India	P09372-001	PDU for India	JL673A	HPE 2.5m C19 to C20 PDU India Power Cord
220V NA (North America)	8121-1555	#B2E	JL351A	HPE 2.5m C19 to NEMA 6-20P 250V 20Amp Non-locking Power Cord

Japan Power Cord Warning

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

Installation Precautions and Guidelines

To help avoid personal injury or product damage when installing your switch, read the following installation precautions and guidelines.

WARNING

- Do not mount the switch on a wall, under a table, or under any other horizontal surface.
- Mount devices as low as possible in a rack or cabinet. Put the heaviest devices at the bottom and progressively lighter devices positioned higher.
- The switch is heavy. Avoid personal injury due to the weight of the switch. If your installation process includes manually lifting or carrying the switch instead of using a mechanical lift, use a minimum of two people to manually move a switch weighing more than 50 lbs.
- To prevent the rack or cabinet from becoming unstable and/or falling over, ensure that it is adequately secured.
- The switch may use more than one power supply cable. To fully power down the switch, you must disconnect all power supply cables from the switch.

CAUTION

- Ensure the power source circuits are properly grounded, then connect the switch to the power source by using the power cords supplied with the switch. For more information on power cords, see Power Cords on page 57
- When installing the switch, the power outlet should be near the switch and be easily accessible in case the switch must be powered off.
- Do not use the handle of a fan tray or a power supply unit to lift or move the switch. Any attempt to move the switch with these parts may cause equipment damage and/or bodily injury.
- Ensure that the power cords and network cables at the switch mounting location do not create a tripping hazard.
- Do not install the switch in an environment where the operating ambient temperature exceeds its specification. See the environmental operating temperature information in the Environmental Specifications on page 60.
- Ensure that the switch does not overload the power circuits, wiring, and over-current protection. To determine the possibility of overloading the supply circuits, add the ampere ratings of all devices installed on the same circuit as the switch, then compare the total with the rating limit for the circuit. The maximum ampere ratings for a device are usually printed near the device power connectors.
- Do not block any ventilation openings on the front or rear of the switch.
- Leave a minimum of 6 inches (15.24 cm) for cooling at the front and back of the switch. For the air flow direction, see the Fan Trays on page 19.
- If a power supply or fan tray must be removed and reinstalled, wait at least 5 seconds before reinstallation. Otherwise, damage to the switch may occur. The power supply needs this time to discharge any retained power.
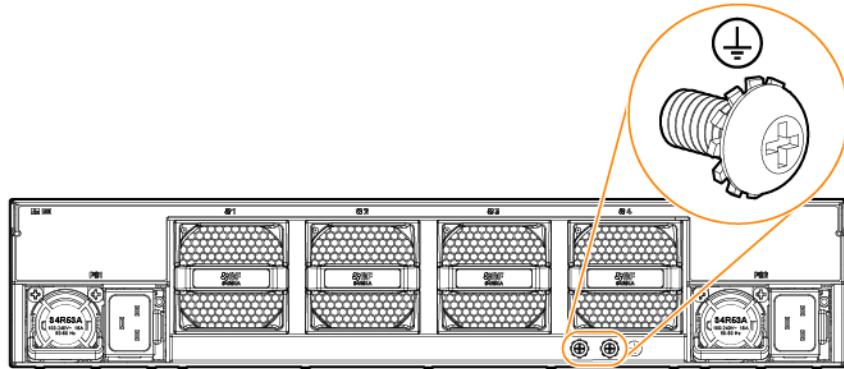
Grounding

For all installations which require an antenna connection to the switch for GNSS, proper earth-grounding must be installed by a qualified professional.
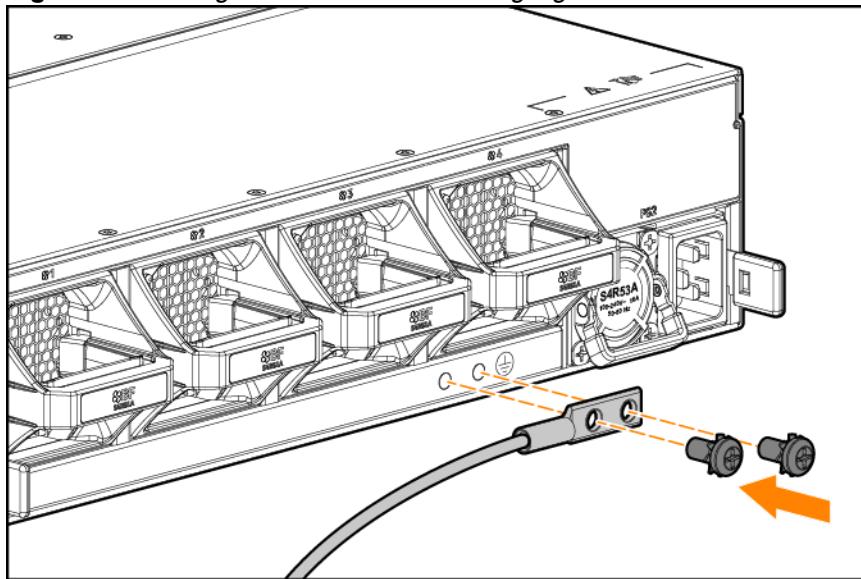
> **⚠ CAUTION**
>
> Reliably ground the switch to protect it from hazards such as lightning shocks, interferences, and ESD discharges. The switch is grounded through the safety wire in the power cords. HPE Aruba Networking recommends an independent grounding connection for the chassis if there is any doubt about the reliability of the grounding through the power mains. The grounding lug is located on the rear of the switch, at the bottom edge. This figure shows the grounding lug on the HPE Aruba Networking 10040 switch.

Figure 1 *Rear Chassis Grounding lugs*

Make sure the resistance between the chassis and the ground is less than 1 ohm.

Figure 2 *Installing Rear Chassis Grounding lugs*

Required Antenna Topology

This section describes the validated topology for use of GNSS antenna with this switch product. Installations, including outdoor antenna or cable sections, must include adequate grounding and surge protection. The installation must be performed by qualified professionals. Customer deployments that do not adhere to these

strict guidelines may experience surge-related electrical damage to their switch product when GNSS Antenna is connected.

Antenna connection deployments must adhere to the topology described in the image below.

Figure 1 *Antenna Topology*
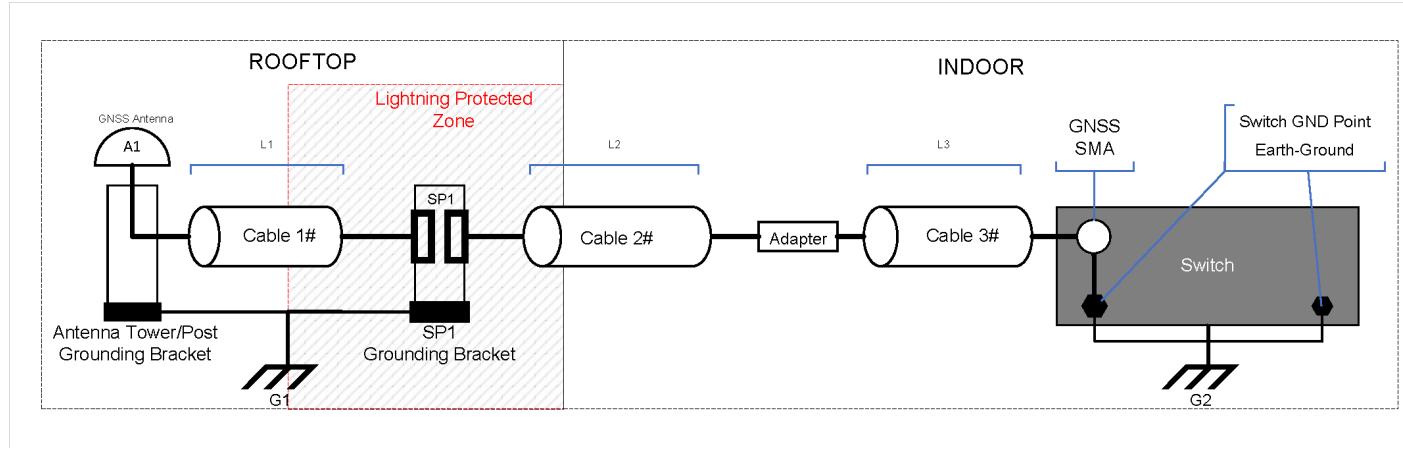
Figure 2 *Antenna Topology*
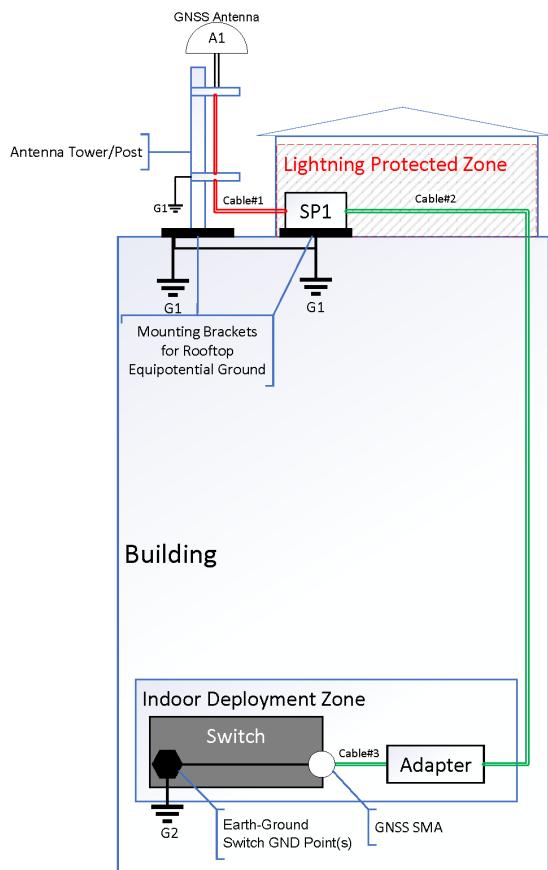
Table 1: *Equipment Validation Information*

Label	Description	HPE Validation
L1	Cable length from rooftop antenna to primary surge protection SP1	**Validated Length:** 10m
L2	Cable length from SP1 to adapter	**Validated Length:** 85m
L3	Cable length from adapter to 8325P SMA connector	**Validated Length:** 2m
Cable 1	Rooftop weatherproof cable	**Validated Cable:** LMR-400 **Other suitable cables:** RG-217 and LMR-600
Cable 2	Rooftop-to-indoor weatherproof cable	
Cable 3	Indoor Cable	**Validated Cable:** LMR-240 **Other Suitable Cables:** RG-58
SP1	Surge protector primary	**Validated Surge Protectors:** ■ Furuno TVA-03C [GDT] ■ DGXZ+15TFTF-A [GDT+SASD+MOV]

Installation Procedures

Prepare the Installation Site

Cabling Infrastructure: Ensure the cabling infrastructure meets the necessary network specifications.

Installation Location: Before installing the switch, plan its location and orientation relative to other devices and equipment:

- In the front and rear of the switch, leave a minimum of 6 inches (15.24cm) of space for the ethernet, fiber-optic cabling and cooling.

Airflow direction in HPE Aruba Networking CX 10040 switch is front-to-back or back-to-front, depending on configuration. All fan trays and power supplies installed in a CX 10040 switch must have the same air flow direction. See Fan Trays for further detail.

> **NOTE**
>
> To avoid personal injury or product damage, review Installation Precautions and Guidelines on page 27 before starting installation.

Install Power Supplies

Skip this step if two power supplies are already installed in the switch.
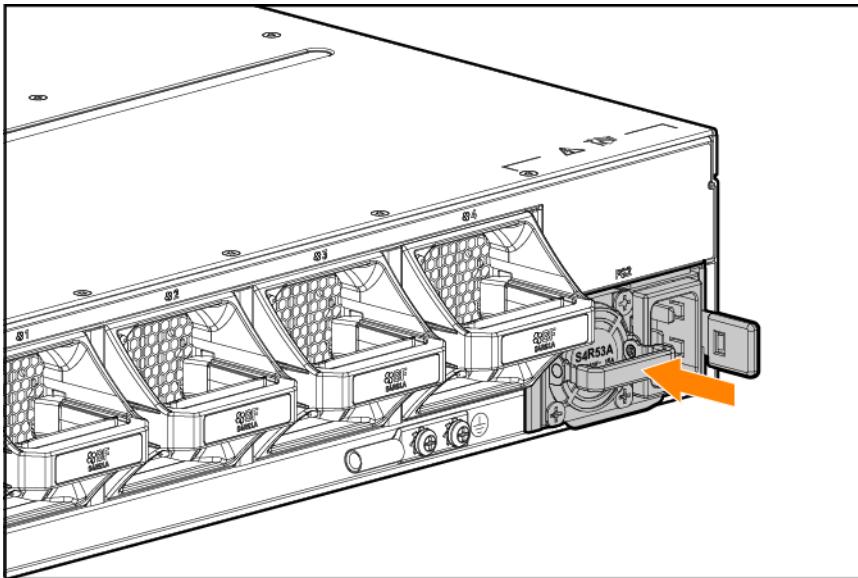
If two power supplies are not already installed in the switch, use the following steps to install power supplies in empty slots before proceeding.

> **NOTE**
>
> Air flow direction for all power supplies and fans must match

1. Remove the new power supply from its packaging.
2. Insert the power supply into the empty power supply slot until the latch clicks into place.

Figure 1 *Installing a power supply*

Install Fan Trays

Skip this step if all four fan tray slots are already populated with fan trays.

Use the following steps to install a fan tray in any empty fan tray slot.
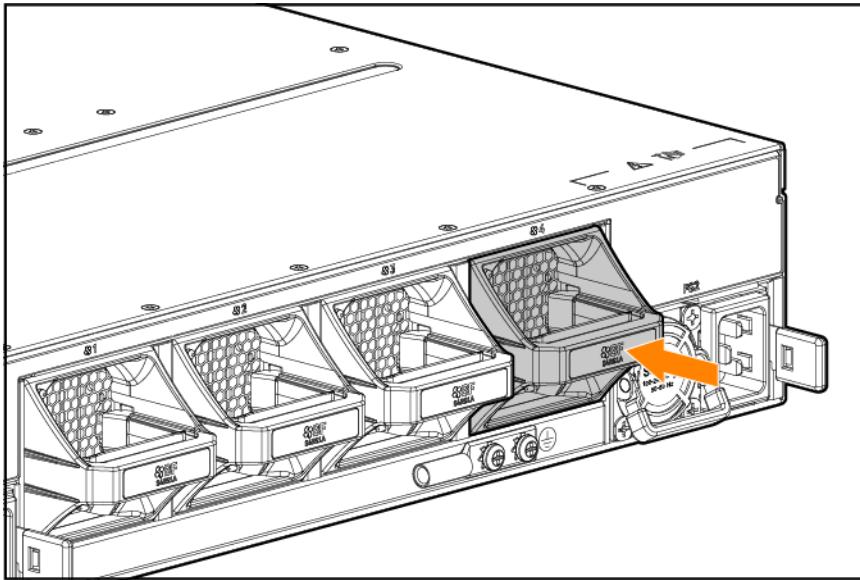
> **CAUTION**
>
> Be careful to not touch any of the circuitry on the board.

> **NOTE**
>
> Ensure that a replacement fan has the same airflow direction as other fan trays and power supplies installed in the switch.

1. Remove the new fan tray from its packaging.
2. Insert the new fan tray fully into the slot so that its face plate is flush with the back face of the switch and the latch clicks.

Figure 1 *Installing a fan tray*

Mount the Switch

The supported mounting options for the HPE Aruba Networking CX 10040-32C6D switch include:

HPE Aruba Networking X412 1U Universal 2-Post RM Kit (JL602A; Qty 2 included)

HPE Aruba Networking X414 1U Universal 4-Post Rack Mount Kit (J9583B, sold separately)

- For safe operation, please review the mounting precautions in Installation Precautions and Guidelines before mounting a switch.
- To reduce the risk of personal injury or equipment damage, be sure that the rack is adequately stabilized before installing the switch.
- The switch is heavy. Avoid personal injury due to the weight of the switch. If your installation process includes manually lifting or carrying the switch instead of using a mechanical lift, use a minimum of two people to manually move a switch weighing more than 50 lbs.
- Do not use the handle of a fan tray or a power supply unit to lift or move the switch. Any attempt to move the switch with these parts may cause equipment damage and/or bodily injury.
- For safe reliable installation, only use the screws provided in the accessory kit to attach the mounting brackets to the switch.

Airflow and air temperature within an equipment rack can be variable and are dependent on the overall rack configuration. In some configurations, there may be insufficient or recirculating airflow that causes the switch to operate at elevated temperature. Position and orientation should be considered when configuring the switch within the rack to minimize these effects and maintain compliance with the switch's temperature limits.

Two-post Rack Mount Option
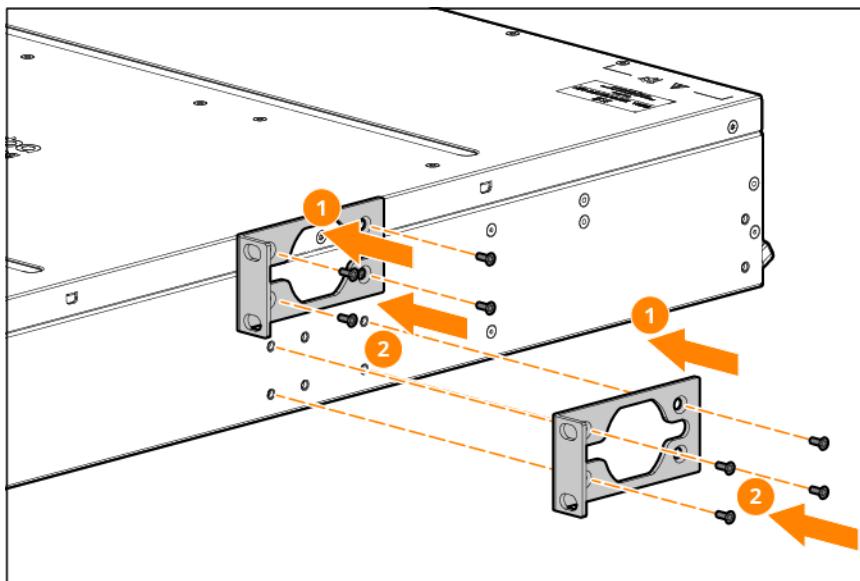
The switch is designed to be mounted in any EIA-standard 2-post rack or communication equipment cabinet using the HPE Aruba Networking X412 1U Universal 2-post RM Kit (JL602A).
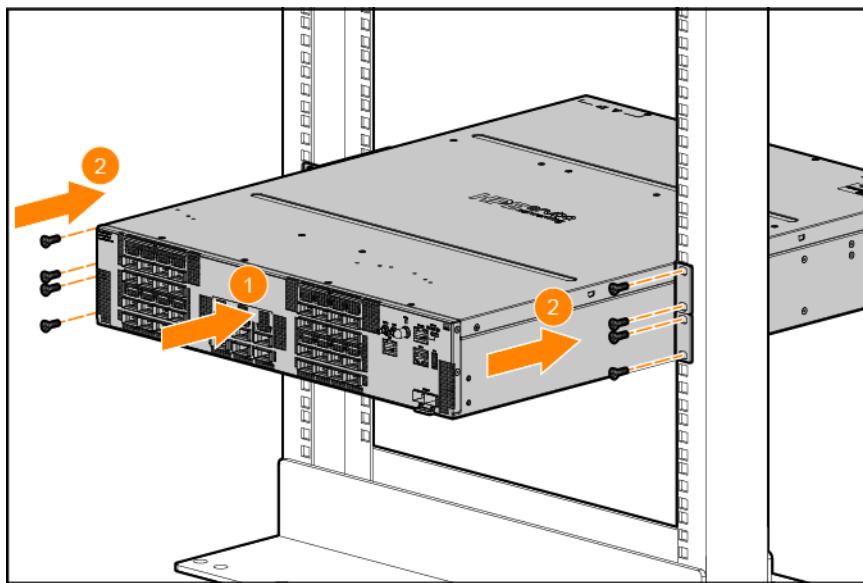
CAUTION

- Middle mounted position is the only supported position in 2-post racks as shown in the figure below.

- The mounting brackets can be installed in two different orientations on the switch. The recommended orientation is shown in the figure below.

- The 12-24 screws supplied with the two-post rack mount kit are the correct threading for standard EIA/TIA open 19-inch threaded racks.

1. Pre-determine an appropriate position in the rack for mounting the switch.
2. Use a T20 drive screwdriver and attach the mounting brackets to both sides of the switch with 16 of the supplied 6mm long M4 screws.

3. Hold the switch with the attached mounting brackets up against the rack and align the bracket and rack mounting holes. Use a Phillps #3 screwdriver to secure the mounting brackets to the rack using eight of the supplied 12-24 screws.

Four-Post Rack Mount Option

The HPE Aruba Networking CX 10040-32C6D switch can be mounted in four-post racks and cabinets by using the Aruba X414 1U Universal 4-Post Rack Mount Kit (J9583B).

- The rack rails are intended for ease of switch installation only, do not use rails to support the switch in any extended position. The switch must be immediately secured with screws after installation.
- Be sure to keep the product parallel to the floor when installing the switch. Tilting the product up or down could result in damage to the slides.
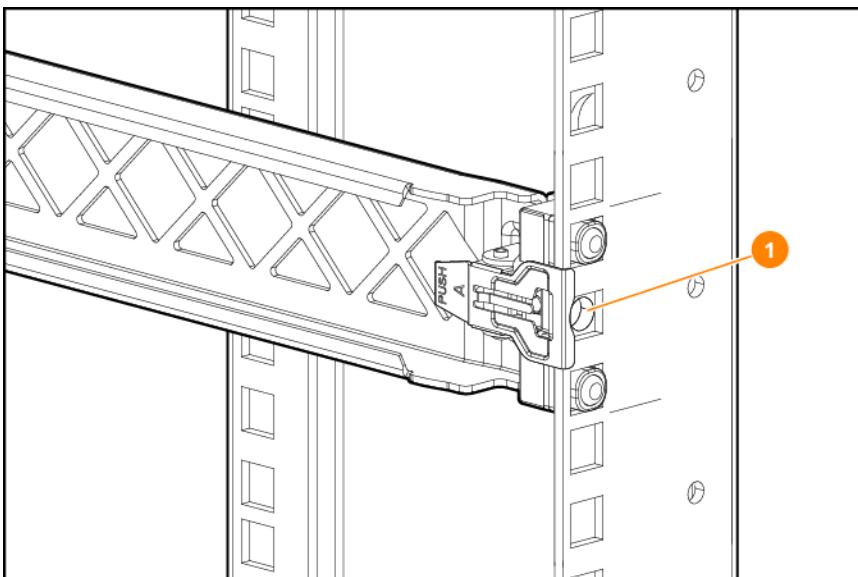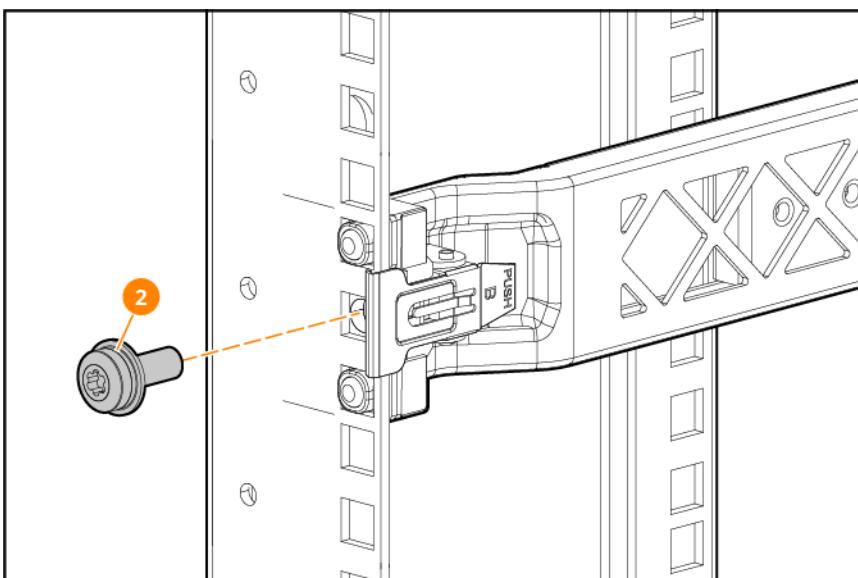
Front-to-Back configuration

1. Pre-determine an appropriate rack position to mount the switch, then secure the rails to the rack's front and rear posts as appropriate. Ensure the rails are at the same level on each rack post, front and rear. Use a T25 screwdriver to install the rear 10-32 mounting screw.

Front rack view
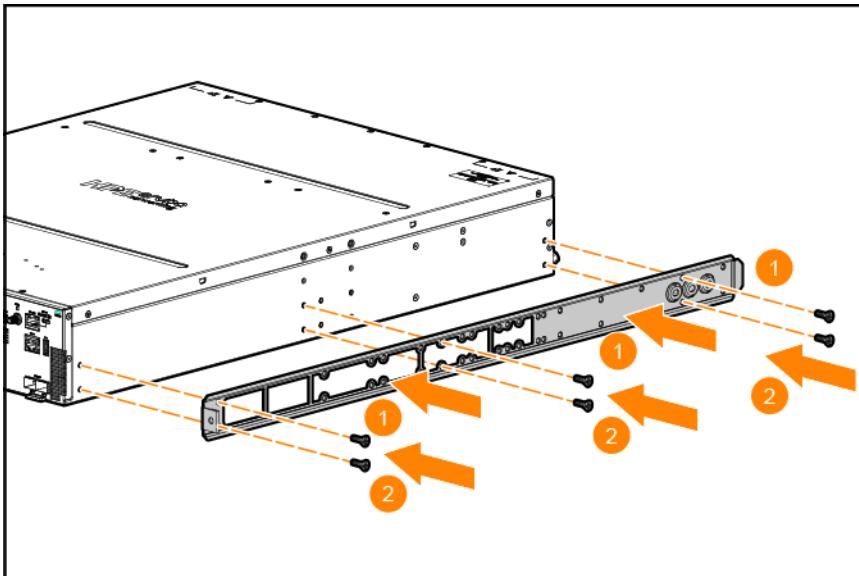
Rear rack view
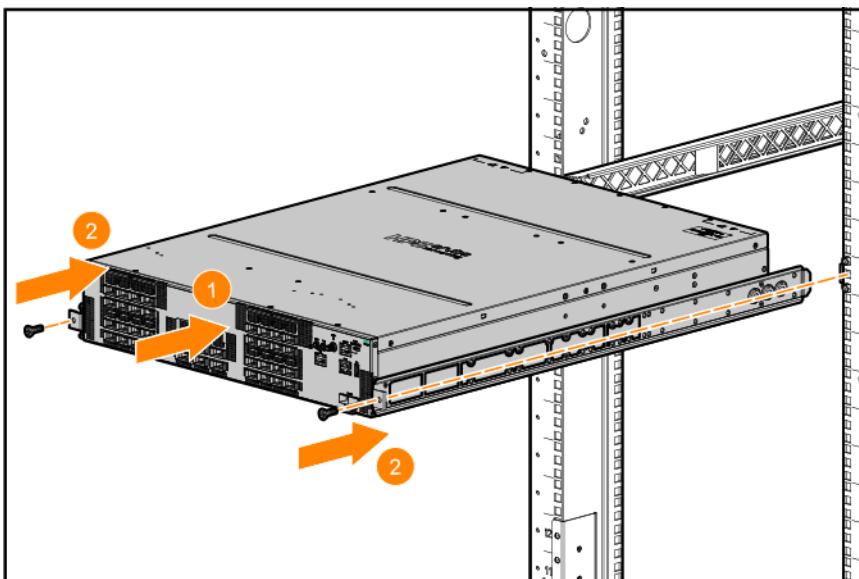
1	Integrated Retaining Clip
2	10-32 screw

2. Use a T20 screwdriver to attach the two sliders to both sides of the switch using twelve of the supplied 8mm long M4 screws.
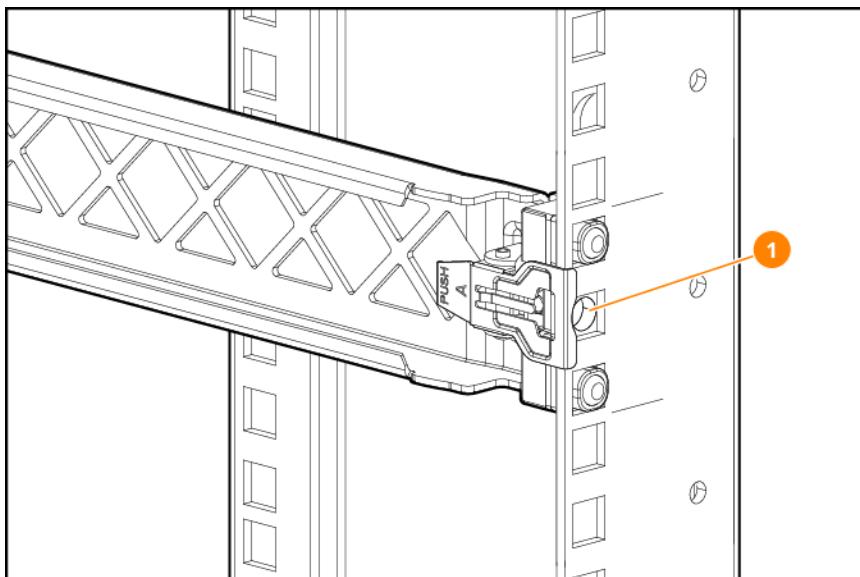
3. Align the sliders with the rails and slide the switch into the rails. At the front of switch, secure the sliders and switch assembly to the rack columns using the supplied 10-32 screws, one on each side. Use a T25 screwdriver to install and tighten the screws.
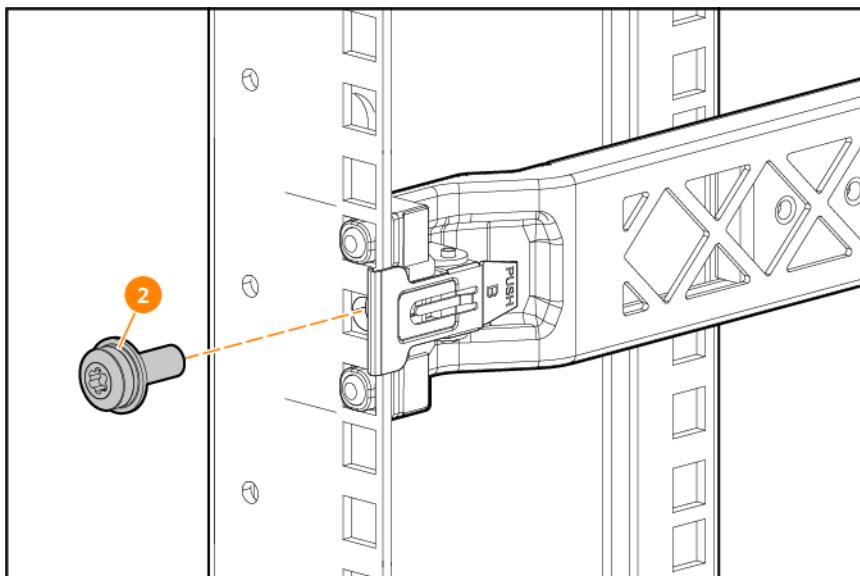
Back-to-Front configuration

1. Pre-determine an appropriate rack position to mount the switch, then secure the rails to the rack's front and rear posts as appropriate. Ensure the rails are at the same level on each rack post, front and rear. Use a T25 screwdriver to install the rear 10-32 mounting screw.

Front rack view
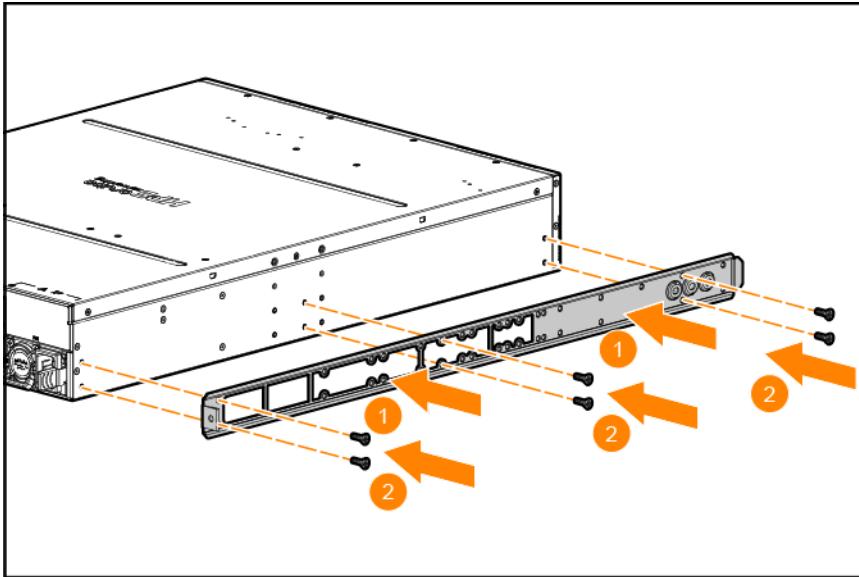
Rear rack view
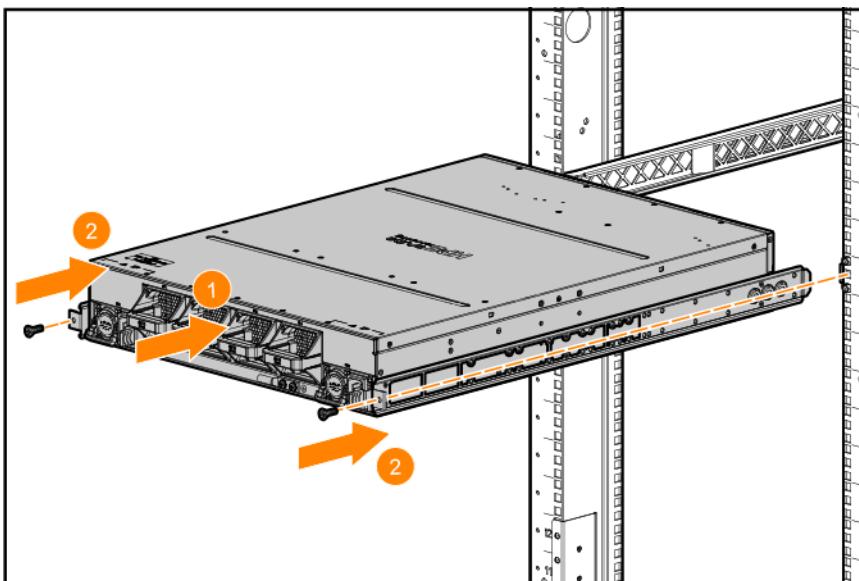
1	Integrated Retaining Clip
2	10-32 screw

2. Use a T20 screwdriver to attach the two sliders to both sides of the switch using twelve of the supplied 8mm long M4 screws.

3. Align the sliders with the rails and slide the switch into the rails. At the rear of switch, secure the sliders and switch assembly to the rack columns using the supplied 10-32 screws, one on each side. Use a T25 screwdriver to install and tighten the screws.

Install Transceivers

Hold the transceiver by its sides and gently insert it into the switch until it clicks into place. When a transceiver is inserted, the switch will authenticate it. This will typically take 1-3 seconds, with the worst case being 5 seconds.

CAUTION	The HPE Aruba Networking transceivers are Class 1 laser devices. Avoid direct eye exposure to the beam coming from the transmit port.
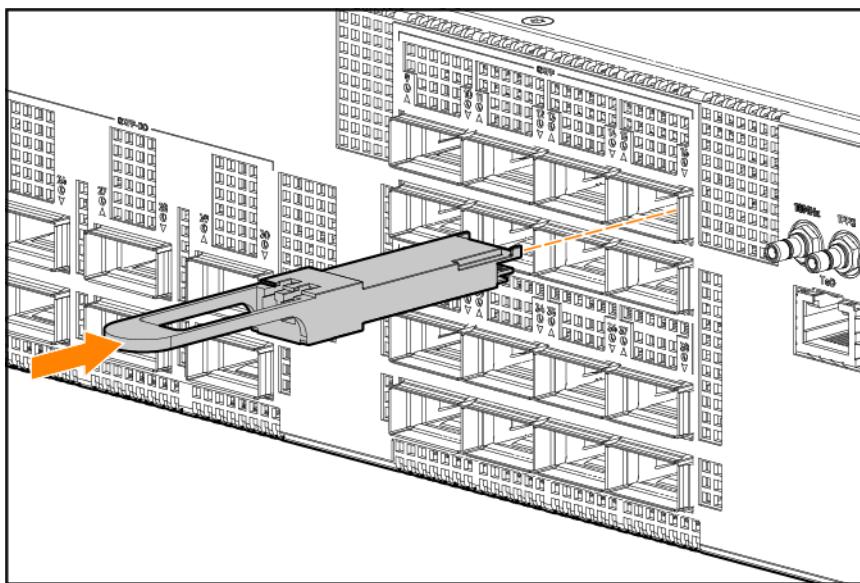
NOTE	■ The transceivers operate only at full duplex. Half duplex operation is not supported. ■ The transceiver slots support 10G SFP+*, QSFP+, QSFP28, QSFP56 and QSFP-DD transceivers. ■ Use of supported genuine HPE Aruba Networking transceivers is always recommended. Non-HPE Aruba Networking SFP/SFP+/QSFP+/QSFP28/QSFP56/QSFP-DD transceivers can be used in unsupported transceiver mode, but no support or warranty will be provided. Should you require additional transceivers, contact your HPE Aruba Networking sales representative or an authorized reseller. ■ Always disconnect the network cable from a transceiver before installing it in the switch. ■ You can install or remove a transceiver from a slot without having to power off the switch. ■ For more transceiver support information for your switch model, see the latest AOS-S and AOS-CX Transceiver Guide for Transceiver/AOC operating temperature limits. *Supported through a QSA28 adapter.*

**Figure 1** *Installing a transceiver*

Refer to the latest AOS-S and AOS-CX Transceiver Guide for Transceiver/AOC operating temperature limits.

Split mode for QSFP56 and QSFP-DD ports

■ See the *Fundamentals Guide* for the Interface Speed command details.

■ See the *Transceiver Guide* for details regarding specific transceivers.

Some QSFP56 and QSFP-DD ports on the HPE Aruba Networking CX 10040 switch series are capable of operating in 'split port' mode using the CLI command:

```
split [<count>] [<speed>] [confirm]
```

The `<count>` indicates how many split ends are to be configured, and what `<speed>` those ends will be running.

<count> of Split 'ends'	<speed> of the 'ends'	Example product (see datasheet for more) "*" are the solution on the far end of the link
2	200G	R9B53A HPE Aruba Networking 400G QDD to 2xQSFP56 200G 7m AOC * connect to HPE Server Adapters that are 200G QSFP56
2	100G	R9B58A 200G QDD to 2xQSFP28 100G 7m AOC
4	100G	R9B48A HPE Aruba Networking 400G QDD to 4xQSFP56 100G 7m AOC R9B42A HPE Aruba Networking 400G QDD MPO12 eDR4 2km SMF XCVR * R9B63A HPE Aruba Networking 100G QSFP28 LC FR1 2KM SMF XCVR
4	25G	(845420-B21)HPE QSFP28 to 4x25G SFP28 7m AOC (HPE Server product) JL309A HPE Aruba Networking 100G QSFP28 MPO SR4 MMF XCVR * JL309A HPE Aruba Networking100G QSFP28 MPO SR4 100m MMF XCVR
4	10G	(721064-B21) - HPE 40G QSFP+ to 4x10G SFP+ 3m DAC Splitter JH233A HPE X142 40G QSFP+ MPO eSR4 300M XCVR * J9150D Aruba 10G SFP+ LC SR 300m MMF XCVR

Connect the Switch to a Power Source

The switch does not contain a power on/off switch. It is turned on by connecting the power cord to the switch and a power source.

1. If two power supplies are not already installed in the switch, see Install Power Supplies on page 32.
2. Plug the included power cord into the power supply's power connector and into a nearby power source.
3. Check the PSU LEDs to confirm normal operation. See Chassis and Port LEDs on the front of the switch on page 14.

NOTE

- 10040-32C6D switches using low-line (100-127VAC) power sources cannot enable high-power transceivers that requires more than 5 Watts with the default configuration of N+N redundancy mode. Switch must be configured to non-redundant power mode to use high-power transceivers (>5W) with low-line input. Transceivers requiring 5 Watts or less are not affected by the power source voltage.
- One power supply with high line power provides power to operate the switch. Installing a second power supply can provide power to the switch in case the initial power supply fails. If the power supplies are plugged into different power sources, redundant power can be supplied in case of loss of one of the AC power sources.

Power off the switch

To power off a switch, remove both power cords from the switch and / or from the power source.

Setup for Initial Configuration

You can perform the initial configuration of the switch using one of these methods:

- **Using Zero Touch Provisioning (ZTP):** Use ZTP to configure a switch automatically from a remote server. The switch must be in the factory default configuration. If ZTP is to be used, your network administrator or installation site coordinator must provide an RJ45 cable connected to the appropriate network. Connect the switch to the network using the RJ45 out-of-band management port and power on the switch (or power off, then power on the switch). The ZTP operation is attempted for the first 10 minutes after the switch is powered on. For more information about ZTP, see the Fundamentals Guide for your switch and software release.
- **Using the HPE Aruba Networking CX mobile app:** The HPE Aruba Networking CX mobile app and the HPE Aruba Networking USB Bluetooth adapter (separately orderable SKU# S1H23A) enable you to configure your switch from your mobile device. For information about using the HPE Aruba Networking CX mobile app to configure the switch, see the *Fundamentals Guide* for your switch and software release.
- **Using an out-of-band serial console:** Use a workstation configured with suitable VT-100 terminal emulation software and connect the workstation to the switch's RJ45 Console Port. A DB9-to-RJ45 console cable can be ordered from HPE: JL448A, HPE Aruba Networking X2C2 RJ45 to DB9 Console Cable. For more information about this method see Initial Configuration with an Out-of-Band Serial Connection.
- **Using connections to the out-of-band dedicated management network:** Use a workstation configured with suitable VT-100 terminal emulation software and SSH software. Connect the workstation and the switch to the same management network. Connect the switch to the network using the RJ45 out-of-band management port. For more information about using this method, see the Fundamentals Guide for your switch and software release. The switch can simultaneously support one console session through the console port and multiple network SSH sessions through the management port.

Connect Network Cables

See Prepare the Installation Site for cabling and spacing requirements.
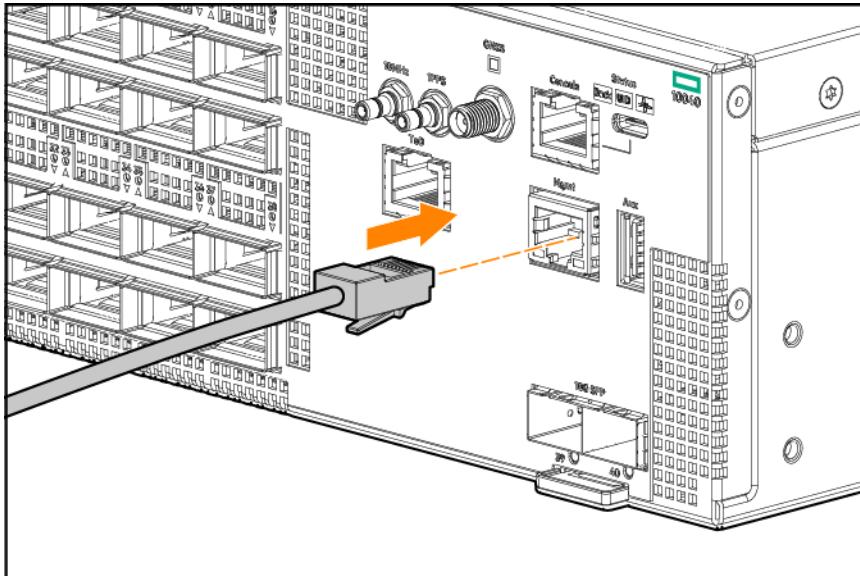
Using RJ45 Out-of-band Management (OOBM) port

If you plan to manage the switch from a dedicated management network, connect an RJ45 network cable from the management network to the Mgmt port. The Mgmt port supports 10, 100, and 1000 Mbps connections.

To connect:

Push the RJ45 plug into the RJ45 port until the tab on the plug clicks into place. When the switch and the connected device are powered, the OOBM port LED lights up to confirm a link has been established to the connected device.

If the LED does not turn on when the network cable is connected to the port, see Diagnosing with the LEDs in the Troubleshooting chapter.

To disconnect:

Press the small tab on the plug and pull the plug out of the port.
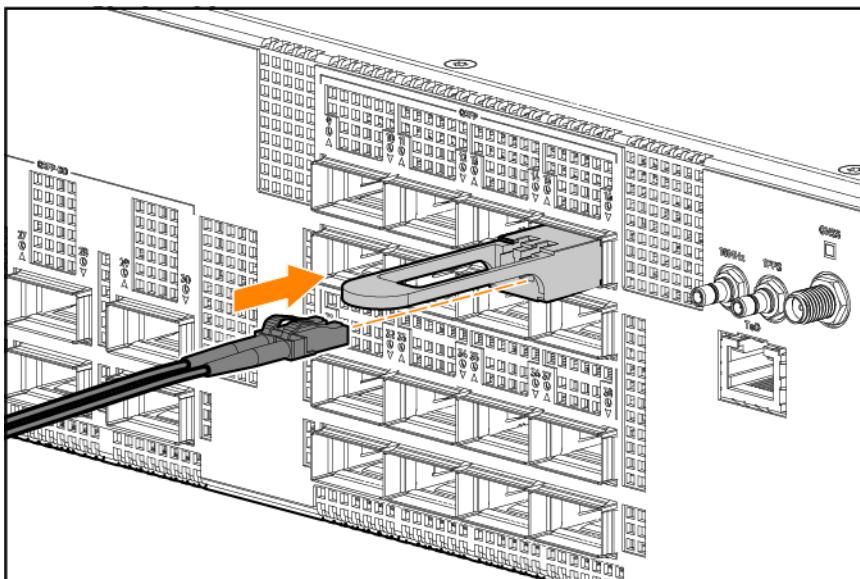
Connecting Cables to Transceivers

If you have any transceivers installed in the switch, the type of network cables you will need to use depends on the type of transceivers installed.

For transceiver ports, and in general for all the switch ports, a network cable from an active network device is connected to the port. If the port LED does not come on when the network cable is connected to the port, see Diagnosing with the LEDs in the Troubleshooting chapter.

NOTE

Ports are disabled by default.

Terminal Configuration

To connect a console to the switch, configure the PC terminal emulator as a DEC VT-100 (ANSI) terminal or use a VT-100 terminal, and configure either one to operate with these settings:
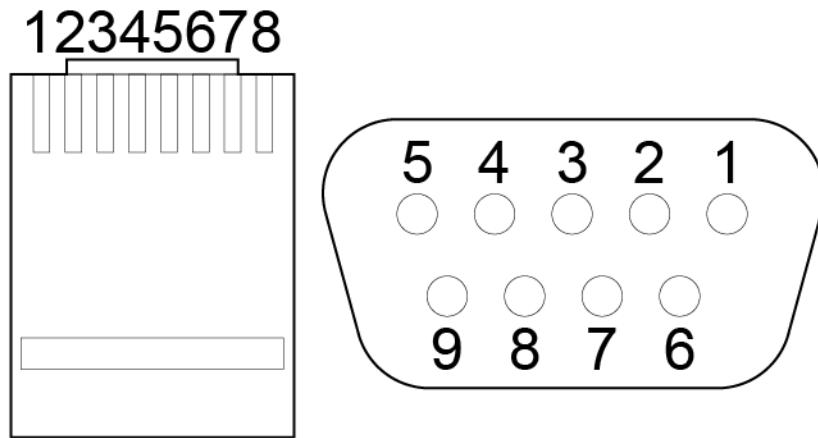
- A baud rate of 115200.
- 8 data bits, 1 stop bit, no parity, and flow control set to off.
- For the Windows Terminal program, also disable (uncheck) the "Use Function, Arrow, and Ctrl Keys for Windows" option.
- For the Hilgraeve HyperTerminal program, select the "Terminal keys" option for the "Function, arrow, and ctrl keys act as" parameter.

If you want to operate the console using a different configuration, make sure you change the settings on both the terminal and on the switch so they are compatible. Change the switch settings first, then change the terminal settings, then reboot the switch and reestablish the console session.

Console Cable Pinout

The HPE Aruba Networking X2C2 RJ45 to DB9 Console Cable (JL448A) has an RJ45 plug on one end and a DB-9 female connector on the other end.

RJ45 to DB-9 pinouts
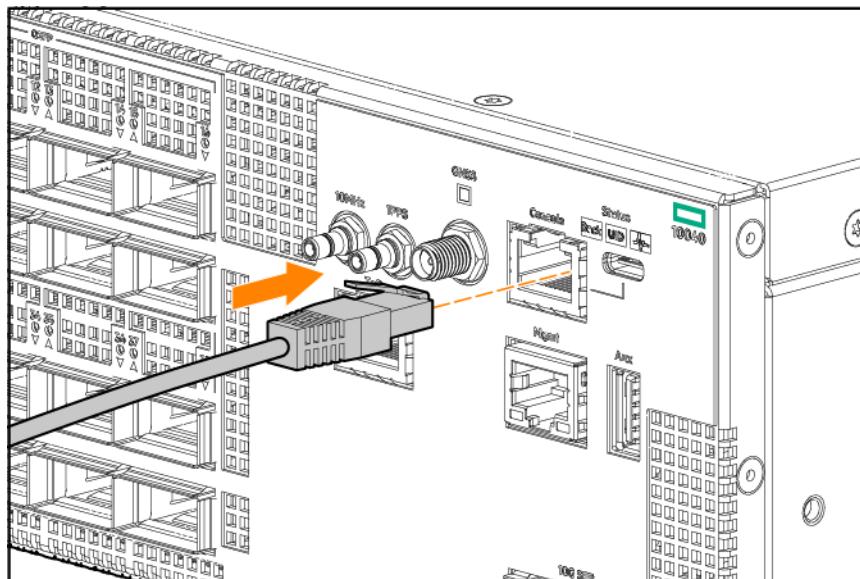
RJ45 Signals (Signal reference from chassis)	RJ45 Pin	DB9 Pin	DB-9 Signals (Signal reference from PC
Reserved	1	8	CTS
Reserved	2	6	DSR
TXD	3	2	RXD
Reserved	4	1	DCD
GND	5	5	GND
RXD	6	3	TXD
Reserved	7	4	DTR
Reserved	8	7	RTS
No connection	-	9	RI

Connect to a Console Port

To connect a console to the switch, follow these steps:

Connect the PC or terminal to the switch's Console Port using a console cable (JL448A; sold separately).

2. Turn on the terminal or PC's power and, if using a PC, start the PC terminal program.
3. Press **[Enter]** two or three times. When prompted to log in specify **admin**. When prompted for the password, press **[Enter]**. (by default, no password is defined).

You are placed into the manager command context, which is identified by the prompt: `switch#`. For example:

```
login as: admin
Password:
```

```
switch#
```

If you want to continue with console management of the switch at this time, see the Fundamentals Guide for initial configuration steps. For more detailed information, refer to the switch software manuals for your switch and software version.

This chapter describes how to remove and install the following components:

▪ Power supply
▪ Fan tray

The power supplies* and fan trays are hot swappable. You do not need to power off the switch before installing or replacing a power supply or fan tray.

CAUTION

▪ The switch and its components are sensitive to static discharge. Use an antistatic wrist strap and observe all static precautions when replacing components.

▪ If a power supply must be removed and then reinstalled, wait at least 5 seconds before reinstallation. Otherwise, damage to the switch may occur. The power supply needs this time to discharge any retained power.

Only when Redundancy is not turned off.

Replacing a Power Supply

WARNING

Never insert or remove a power supply while the power cord is connected. Verify that cord has been disconnected from the power supply before installation or removal.

CAUTION

Air flow direction must be the same for both the power supplies and the fan trays installed in the switch.

If the switch is configured with a redundant power supply, the switch will not suffer any loss of traffic or performance if a power supply fails on a high line AC source. To maintain system redundancy, a failed power supply should be replaced as soon as possible. The LED on PSU1 or PSU2 will be OFF if faulted.
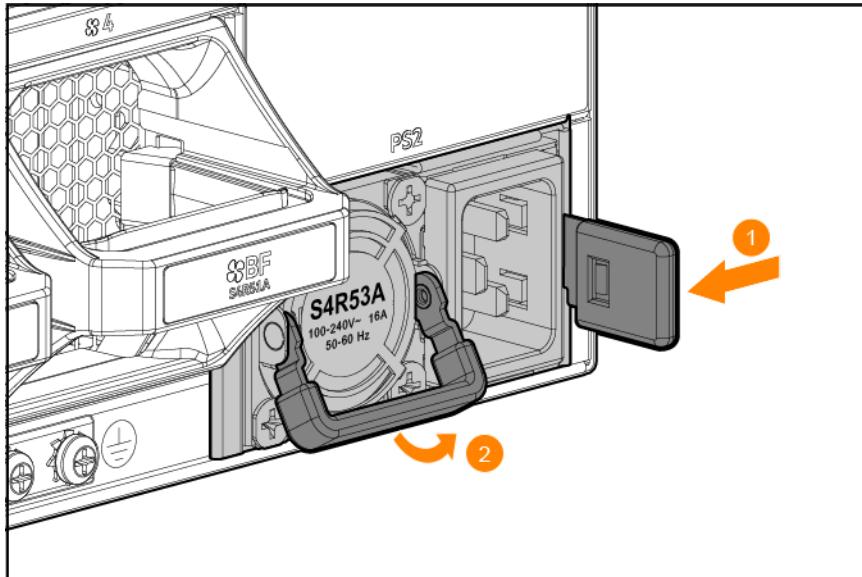
Two power supplies are available for use with the 10040-32C6D switch:

▪ (S4R52A) HPE Aruba Networking 3000W Front-to-Back AC Power Supply
▪ (S4R53A) HPE Aruba Networking 3000W Back-to-Front AC Power Supply

To remove an AC power supply:
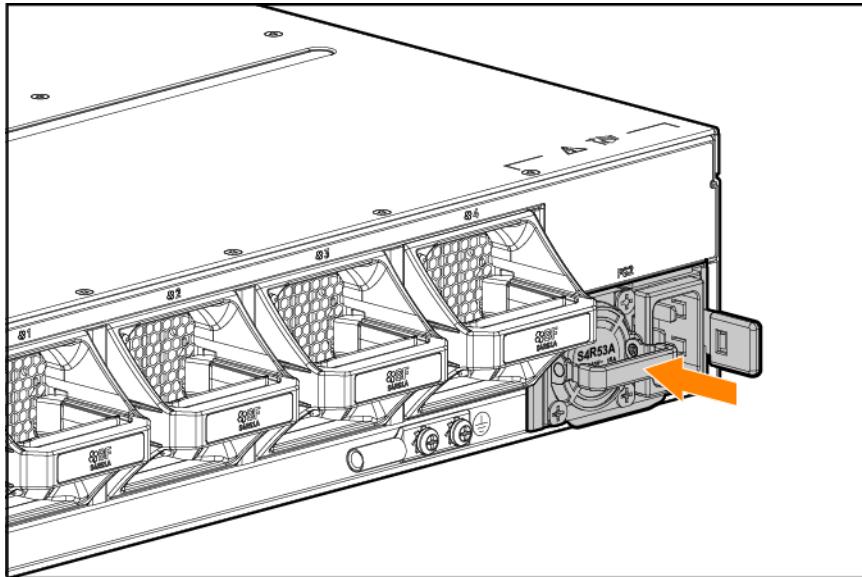
1. Remove the AC power cable from the power supply's connector.
2. Grasping the handle of the failed power supply, use the Release Lever to release the locking mechanism and slide the power supply out of the switch.

Figure 1 *Replacing a failed power supply*

3. Insert the new power supply. Slide it all the way in until the locking mechanism clicks into place.

Figure 2 *Inserting a power supply into the bay*

4. Connect the AC power cable to the new power supply's connector.

Replacing a Fan Tray

The switch is equipped with four field-replaceable, hot-swappable fan trays. The switch can tolerate the failure of a single fan tray while maintaining a safe operating temperature. To maintain system redundancy, a failed fan tray should be replaced as soon as possible. If a fan tray has failed, the Global status LED, rear module status LED, and fan tray LED will flash amber.

CAUTION
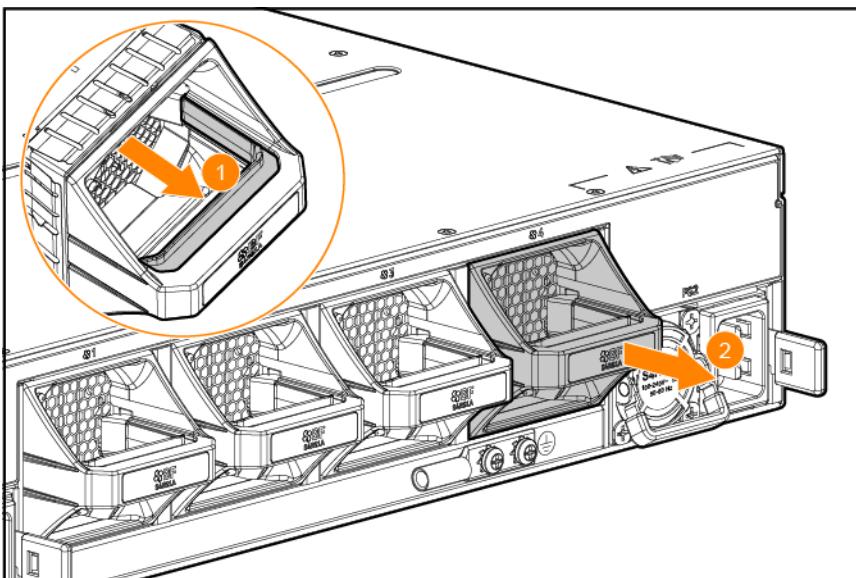
- The switch is not compatible with fan trays from other HPE Aruba Networking hardware platforms.
- After removing a fan tray, wait at least five seconds before inserting a replacement fan tray in the same slot.
- Ensure that a replacement fan tray has the same airflow direction as other fan trays installed in the switch.
- Replace only one fan tray at a time. Removing more than one fan tray at a time compromises system cooling, risks damage to the hardware, and will cause the switch to reboot.
- If there are less than four fan trays installed a count down timer is triggered. The user has up to 2 minutes to replace the fan in typical conditions. The count down timer may be as little as 30 seconds depending on operating conditions. If four fan trays are not present before the countdown expires, the switch will power off for five minutes before rebooting and assessing the cooling capabilities. For this reason, it is not recommended to remove a failed fan tray until you have the replacement fan tray prepared.

To replace a fan tray:
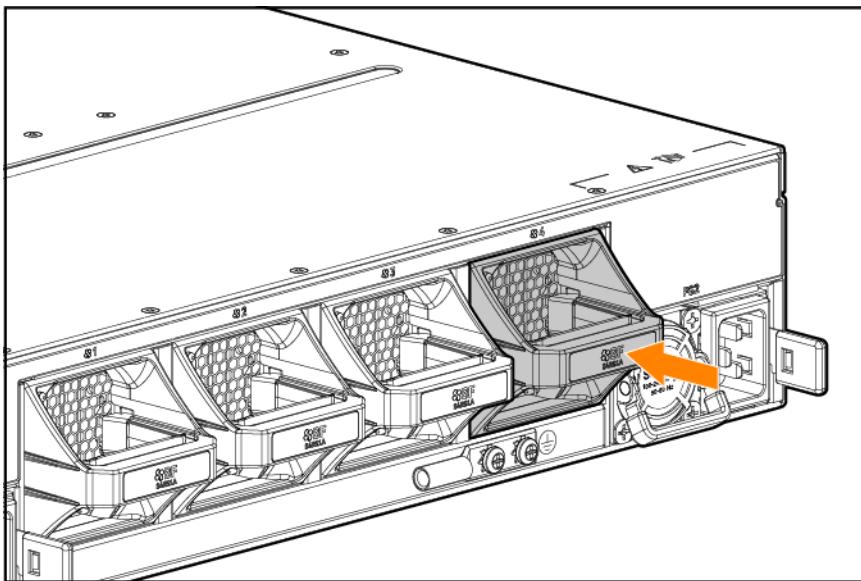
1. Identify the fan tray by its status LED. The failed fan tray LED will be Flashing Amber.
2. Remove the new fan tray from its packaging. The user should prepare to install the replacement fan immediately after removing the existing fan.
3. Grasping the handle of the failed fan tray, use the Release Latch to release the locking mechanism and pull the fan tray straight out to remove it from its slot.

Figure 1 *Removing a fan tray*

4. Insert the new fan tray fully into the slot so that the latch clicks. If the switch is connected to a power source, the fan tray should immediately start running. The remaining system fans may temporarily reduce speed immediately after inserting a replacement fan before resuming.

Figure 2 *Installing a fan tray*

5. Ensure the replaced fan tray LED changes status from flashing Amber to green.

This chapter provides troubleshooting procedures for your switch, with an emphasis on hardware. For advanced troubleshooting, use the available software tools, including the console interface, web browser interface, Aruba Central, and Aruba AirWave.

This chapter describes the following:

- Basic Troubleshooting Tips on page 51
- Diagnosing with the LEDs on page 52
- Hardware Diagnostic Tests on page 55
- Accessing Updates on page 64
- Accessing HPE Aruba Networking Support on page 63

Basic Troubleshooting Tips

Most problems are caused by the following situations. Check for these items first when starting your troubleshooting:

- **Faulty or loose cables.** Look for loose or obviously faulty connections. If the cables appear to be OK, make sure the connections are secure. If that does not correct the problem, try a different cable.
- **Non-standard cables.** Non-standard and miswired cables may cause network collisions and other network problems, and can seriously impair network performance. Use a new correctly-wired cable.
- **Improper network topologies.** It is important to make sure you have a valid network topology. Common topology faults include excessive cable length and excessive repeater delays between end nodes. If you have network problems after recent changes to the network, change back to the previous topology. If you no longer experience the problems, the new topology is most likely at fault.

In addition, you should make sure that your network topology contains **no data path loops**. Between any two end nodes, there should be only one active cabling path at any time. Data path loops can cause broadcast storms that will severely impact your network performance.

For your switch, if you want to build redundant paths between important nodes in your network to provide some fault tolerance, you should enable **Spanning Tree Protocol** support on the switch. This ensures that only one of the redundant paths is active at any time, thus avoiding data path loops. Spanning Tree can be enabled through the switch console or the web browser interface. For more information on Spanning Tree, see the Layer 2 Bridging Guide for your switch.

	By default, ports do not run selftest at boot. To enable port selftest on boot, save the **no fastboot** configuration to the switch. See AOS-CX software documentation for further detail.
NOTE	

Diagnosing with the LEDs

If possible, check switch Logs and status information to find more detailed information for LED error indications.

LED Patterns for General Switch Troubleshooting

1. Check in the table for the LED pattern you see on your switch.
2. Refer to the corresponding diagnostic tip on the next few pages.

Global Status LEDs	Rear Module Status LED	Port LED	Power Supply Unit Status LED	Fan Tray Status LED	Diagnostic tip
-	Off	-	Both PSU1 and PSU2 LEDs are Off with power cords plugged in.	-	1
Flashing amber	Flashing amber	-	Ether PSU1 or PSU2 LED is off but not both.	-	2, 3, or 4
Flashing amber	Flashing amber	-	-	Flashing amber	5
Flashing amber	-	Flashing Amber	-	-	6
On Green	-	Off with transceiver cable connected	-	-	7
On Green	-	On Green but no port communication	-	-	8

Diagnostic Tips

Tip	Problem	Solution
1	Both switch power supplies are not plugged into an active power source.	Verify the power source works by plugging another device into the outlet, try plugging the power supplies into different outlets, or try different power cords. If the problem is still not resolved, both power supplies or the switch may be faulty.
2	The PSU with the LED Off is not receiving power.	Provide power to the PSU. Verify the power cord is plugged into an active power source and to the power supply. Make sure these connections are snug. If the LED is still not On Green, verify the power source works by plugging another device into the outlet. Try plugging the switch into a different outlet or try a different power cord.
3	The PSU with the LED Off is not allowed to deliver power to the switch.	Fix a hardware mismatch. Verify that the PSU SKU is compatible with the switch.
4	The PSU with the LED Off is not able to deliver power.	Try power cycling the PSU or removing and re-inserting the PSU. See Replacing a Power Supply. If the condition persists, the switch power supply has failed. Call your HPE Aruba Networking authorized network reseller, or use the electronic support services from HPE Aruba Networking to get assistance.
5	Fan tray with the flashing amber LED may have failed or uses incorrect airflow direction.	Check the airflow direction and replace with the correct fan tray if needed. Check that the fan tray SKU is compatible with this switch and replace with the correct fan tray if it is not. Otherwise, try removing the fan tray and re-inserting it. See Replacing a Fan Tray. If the condition persists, the fan tray has failed.
6	The network port for which the LED is flashing has experienced a self test, initialization failure, or unsupported transceiver.	Check the switch Event Log and `show interface` command output for indication of the fault condition. If a port failed during its selftest, contact HPE Aruba Networking support. If the port has a transceiver installed, verify the transceiver is either a supported HPE Aruba Networking transceiver, or if using an unsupported transceiver, confirm that Unsupported Transceiver mode is enabled. For a list of supported transceivers, see the ArubaOS-Switch and ArubaOS-CX Transceiver Guide . The transceivers are also tested when they are "hot-swapped"—installed or changed while the switch is powered on. To verify the transceiver has failed, remove and reinstall the transceiver without powering off the switch. If the port fault indication reoccurs, you will have to replace the transceiver. Check the event log to see why the transceiver failed. A possibility may be that the transceiver has been disabled due to lack of available power, or thermal issues or limitations.

Tip	Problem	Solution
		To get assistance, call your HPE Aruba Networking authorized network reseller, or use the electronic support services from HPE Aruba Networking.
7	The port is not able to establish link.	Try the following procedures:
		For the indicated port, verify that both ends of the cabling, at the switch and the connected device, are connected properly.
		Verify the connected device and switch are both powered on and operating correctly.
		Verify you have used the correct cable type for the connection:
		For fiber-optic connections, verify the transmit port on the switch is connected to the receive port on the connected device, and the switch receive port is connected to the transmit port on the connected device.
		The cable verification process must include all patch cables from any end devices, including the switch, to any patch panels in the cabling path.
		Verify the port has not been disabled through a switch configuration change. You can use the console interface, or, if you have configured an IP address on the switch, use the Web browser interface to determine the state of the port and re-enable the port if necessary.
		Verify the switch port configuration matches the configuration of the attached device. For example, if the switch port is configured as "Full-duplex", the port on the attached device also MUST be configured as "Full-duplex". If the configurations don't match, the results could be a very unreliable connection, or no link at all.
		Run an internal selftest on the port.
		If the command reports a failure, contact HPE Support. There may be a hardware fault.
		If the other procedures don't resolve the problem, try using a different port or a different cable.
8	The port gets link but does not forward traffic.	Use the switch console to see if the port is part of a dynamic trunk (through the LACP feature) or to see if Spanning Tree is enabled on the switch, and to see if the port may have been put into a "blocking" state by those features. The **show lacp interfaces** command displays the port status for the LACP feature; the **show spanning-tree** command displays the port status for Spanning Tree.
		Other switch features that may affect the port operation include VLANs, IGMP, and VSX. Use the switch console to see how the port is configured for these features.
		Also ensure, that the device at the other end of the connection is indicating a good link to the switch. If it is not, the problem may be with the cabling between the devices or the connectors on the cable.

Hardware Diagnostic Tests

Checking the Switch LEDs

See Diagnosing with the LEDs on page 52 for information on interpreting the LED patterns.

Testing the switch by resetting it

If you believe the switch is not operating correctly, you can reset the switch to test its circuitry and operating code. To reset a switch, either:

- Unplug and plug in the power cord (power cycling). Wait a minimum of five seconds after unplugging, before plugging the power cord back in.
- Reboot the switch through the CLI with the **boot system** command.

> **NOTE**
>
> Power cycling the switch causes the switch to reset. The reset process also causes any network traffic counters and the System Up Time timer to reset to zero.

Checking Console Messages

Useful diagnostic messages may be displayed on the console screen when the switch is reset. Connect a PC running a VT-100 terminal emulator program to the switch's Console Port and configure it to run at 115200 baud, and with the other terminal communication settings shown in Terminal Configuration on page 44. Then, when you reset the switch, note the messages that are displayed. Additionally, you can check the switch event log, which can be accessed from the console using the `show events` command.

Testing Switch-to-Device Network Communications

You can perform the following communication tests to verify the network is operating correctly between the switch and any connected device that can respond correctly to the communication test.

- **Link Test:** a physical layer test that sends IEEE 802.2 test packets to any device identified by its MAC address.
- **Ping Test:** a network layer test used on IP networks that sends test packets to any device identified by its IP address.

These tests can be performed through the switch console interface from a terminal connected to the switch, through a Telnet connection, or from the switch's web browser interface.

Testing End-to-End Networking Communications

Both the switch and the cabling can be tested by running an end-to-end communications test—a test that sends known data from one network device to another through the switch. For example, if you have two PCs on the network that have LAN adapters between which you can run a link-level test or Ping test through the switch, you can use this test to verify that the entire communication path between the two PCs is functioning correctly. See your LAN adapter documentation for more information on running a link test or Ping test.

Physical

Item	Description	Dimensions (W x D x H)	Weight
S4R54A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4xFan 2xPSU AC Bundle	17.4in x 24.0in x 3.48in (442.5mm x 609.6mm x 88.4mm)	50.6lb (23.0kg)
S4R55A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4xFan 2xPSU AC Bdl	17.4in x 24.0in x 3.48in (442.5mm x 609.6mm x 88.4mm)	50.6lb (23.0kg)
S4R56A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4xFan 2xPSU AC TAA Bdl	17.4in x 24.0in x 3.48in (442.5mm x 609.6mm x 88.4mm)	50.6lb (23.0kg)
S4R57A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4xFan 2xPSU AC TAA Bdl	17.4in x 24.0in x 3.48in (442.5mm x 609.6mm x 88.4mm)	50.6lb (23.0kg)
S4R58A	HPE Aruba Networking CX 10040 Field Replacement Unit Switch	17.4in x 24.0in x 3.48in (442.5mm x 609.6mm x 88.4mm)	40.9lb (18.6kg)
S4R59A	HPE Aruba Networking CX 10040 TAA Field Replacement Unit Switch	17.4in x 24.0in x 3.48in (442.5mm x 609.6mm x 88.4mm)	40.9lb (18.6kg)
S4R50A	HPE Aruba Networking CX 10040 Front-to-Back Fan	6.41in x 2.36in x 2.36in (162.8mm x 60.0mm x 60.0mm)	0.9lb (0.4kg)
S4R51A	HPE Aruba Networking CX 10040 Back-to-Front Fan	6.41in x 2.36in x 2.36in (162.8mm x 60.0mm x 60.0mm)	0.9lb (0.4kg)
S4R52A	HPE Aruba Networking CX 10040 3000W Front-to-Back C20 AC Power Supply Unit	12.03in x 2.89in x 1.57in (305.5mm x 73.5mm x 40.0mm)	3.1lb (1.4kg)
S4R53A	HPE Aruba Networking CX 10040 3000W Back-to-Front C20 AC Power Supply Unit	12.03in x 2.89in x 1.57in (305.5mm x 73.5mm x 40.0mm)	3.1lb (1.4kg)

Electrical

Item	Description	Maximum current	Nominal Voltage	Frequency range
S4R54A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4xFan 2xPSU AC Bdl	16A	100-127 / 200-240 VAC*	50Hz-60Hz
S4R55A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4xFan 2xPSU AC Bdl	16A	100-127 / 200-240 VAC*	50Hz-60Hz
S4R56A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4xFan 2xPSU AC TAA Bdl	16A	100-127 / 200-240 VAC*	50Hz-60Hz
S4R57A	HPE Aruba Networking CX 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4xFan 2xPSU AC TAA Bdl	16A	100-127 / 200-240 VAC*	50Hz-60Hz

AC Power supplies automatically adjust to any voltage between 100-127 & 200-240 VAC and either 50 or 60 Hz.

Power Cords

HPE Aruba Networking includes the power cord intended for use with your HPE Aruba Networking switch and power supply. Different countries/regions may require different power cords. For a list of the power cords that apply to your switch, see Included Parts.

CAUTION

- Only HPE Aruba Networking approved power cords may be used with HPE Aruba Networking devices. To access power cord information for your switch, see Included Parts. Lost or damaged power cords must be replaced only with HPE Aruba Networking approved power cords. If your installation requires a different power cord than the one supplied with the switch and/or power supply, be sure that the cord is adequately sized for the current requirements of the switch. In addition, be sure to use a power cord displaying the mark of the safety agency that defines the regulations for power cords in your country/region. The mark is your assurance that the power cord can be used safely with the switch and power supply.
- Remove the power cord from the switch before mounting or unmounting the switch.
- Do not use a damaged or non-recommended power cord with your switch. Using such power cords voids the switch and power supply warranty. It can also cause serious electrical problems, including injury or death to personnel, and damage to the switch and other property. If you cannot verify that you have a power cord approved for use with your switch model, contact your authorized HPE Aruba Networking dealer or sales representative for assistance.

Power Consumption

10040-32C6D Switch	Power consumption*
HPE Aruba Networking 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4 Fan 2 AC PSU Bundle (S4R54A)	Max: 1580 W Typical: 775 W Idle: 650 W
HPE Aruba Networking 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4 Fan 2 AC PSU Bundle (S4R55A)	Max: 1580 W Typical: 775 W Idle: 650 W

* Maximum power measured with 100% IMIX traffic rates, transceivers and fans at maximum operating temperature. Typical defined as 50% traffic, 230VAC, 25C, with DAC cables. *Idle power measured with no transceivers or cables installed at room temperature.*

Battery statements

- Where a battery incorporated by HPE is too small to bear the CE marking, it conforms with applicable requirements.

- These switches use a lithium battery. Do not attempt to replace the battery. Return the switch to Hewlett Packard Enterprise for battery replacement.

- The only indicator of battery failure is the failure of the switch internal clock to keep the correct time across a reboot or power cycle. If a battery failure occurs, contact your authorized Hewlett Packard Enterprise representative for assistance. Batteries are not customer-serviceable and battery failures should be referred only to service personnel authorized by Hewlett Packard Enterprise.

- For important safety, environmental, and regulatory information, see *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts.

ATTENTION	Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

ATTENTION	The battery supplied with this product may contain perchlorate material. Special handling may apply in California and certain other states. See http://www.dtsc.ca.gov/hazardouswaste/perchlorate Web site for more information.

A risk of explosion exists if a battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Environmental Specifications

Table 2: Environmental Specifications for all HPE Aruba Networking CX 10040 Switches

Operating temperature*	Front-to-Back airflow: 32°F to 113°F (0°C to 45°C) at sea level Derate 1°C for every 1,000 ft to 10,000 ft (300 m to 3.0 km) Back-to-Front airflow: 32°F to 104°F (0°C to 40°C) at sea level Derate 1°C for every 1,000 ft to 10,000 ft (300 m to 3.0 km)
Non-operating temperature	-40°F to 158°F up to 15,000 ft (-40°C to 70°C up to 4.6 km)
Operating relative humidity	Front-to-Back airflow 5% to 95% @ 113°F (45°C) non-condensing Back-to-Front airflow 5% to 95% @ 104°F (40°C) non-condensing
Non-operating storage relative humidity	5% to 95% @ 149°F (65°C) non-condensing
Max operating altitude	10,000 ft (3.0 km) Max
Max non-operating altitude	15,000 ft (4.6 km) Max

Refer to the latest AOS-S and AOS-CX Transceiver Guide for Transceiver/AOC operating temperature limits.

Acoustics

HPE Aruba Networking 10040 Switch Series	Acoustics
HPE Aruba Networking 10040 32p QSFP28 100G 6p QSFP-DD 400G Front-to-Back 4 Fan 2 AC PSU Bundle (S4R54A)	LWAd = 7.3 Bel LpAm (Bystander) = 54.2 dB
HPE Aruba Networking 10040 32p QSFP28 100G 6p QSFP-DD 400G Back-to-Front 4 Fan 2 AC PSU Bundle (S4R55A)	LWAd = 7.1 Bel LpAm (Bystander) = 52.4 dB

NOTE

Acoustics measured in 23± 2°C semi-anechoic chamber with a loading of 50% traffic on all ports. Ports populated with 100/400G DAC: 2x R8M45A, 1x R8M46A, 8x JL307A, 24x R0Z25A. Measured in accordance with ECMA-74:2019. Values presented are the declared A-weighted Sound Power Level (LWAd) and mean bystander A-weighted Sound Pressure Level (LpAm).

RoHS

EN IEC 63000:2018

Safety and Regulatory Information

NOTE

For important safety, environmental, and regulatory information, see Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts.

Safety-EU	EN 62368-1:2014 +A11:2017 EN 62368-1:2018+A11:2020
Safety-Worldwide	IEC 62368-1:2014 (Second Edition) IEC 62368-1:2018 (Third Edition)
North American	UL 62368-1, 3rd Ed. CAN/CSA C22.2 No. 62368-1:19, 3rd Ed
EMC	**Emission** EN 55032:2015 +AC:2016+A11:2020, CISPR 32: 2015, Class A CFR 47 Part 15B ,ANSI C63.4 2014,& C63.4a:2017 ICES-003: 2020 Issue 7:2020 VCCI -CISPR 32:2016 CNS 15936:2016 KS C 9832:2019 QCVN 118:2018/BTTTT

	Immunity
	EN 55035:2017 +A11:2020, CISPR 35 : 2016 Ed 1.0
	KS C 9835:2019
	EN/IEC 61000-4-4:2012 Ed 3.0
	EN/IEC 61000-4-11:2020
	KS C 9610-4-11:2020
	EN 61000-3-2:2019,IEC 61000-3-2:2018
	EN 61000-3-3:2013+A1:2019,IEC 61000-3-3:2017
	EN 61000-4-2:2009, IEC 61000-4-2:2008 Ed 2.0
	EN 61000-4-3:2020, IEC 61000-4-3:2010 Ed 3.2
	EN 61000-4-8:2010, IEC 61000-4-8:2009 Ed 2.0
	EN 61000-4-5:2014, IEC 61000-4-5:2014 Ed 3.0
	EN 61000-4-6:2014,IEC 61000-4-6:2020 Ed 4.0
RoHS	EN IEC 63000:2018

Use only an approved Laser Class 1 SFP transceiver.

Brazil Statement	Este equipamento deve ser conectado obrigatoriamente em tomada de rede de energia elétrica que possua aterramento (três pinos), conforme a Norma NBR ABNT 5410, visando a segurança dos usuários contra choques elétricos.

Japan Power Cord Warning	製品には、同梱された電源コードをお使い下さい。同梱された電源コードは、他の製品では使用出来ません。

Connectivity Standards

See the latest *Transceiver Guide* for your HPE Aruba Networking 10040 series switch at the HPE Support Portal.

Accessing HPE Aruba Networking Support

HPE Aruba Networking Support Services	https://www.arubanetworks.com/support-services/
HPE Support Portal	https://networkingsupport.hpe.com/home
North America telephone	1-800-943-4526 (US & Canada Toll-Free Number) +1-408-754-1200 (Primary - Toll Number) +1-650-385-6582 (Backup - Toll Number - Use only when all other numbers are not working)
International telephone	https://www.arubanetworks.com/support-services/contact-support/

Be sure to collect the following information before contacting Support:

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Other websites that can be used to find information:

Airheads social forums and Knowledge Base	https://community.arubanetworks.com/
Software licensing	https://lms.arubanetworks.com/
End-of-Life information	https://www.arubanetworks.com/support-services/end-of-life/
HPE Aruba Networking software and documentation	https://asp.arubanetworks.com/downloads

Accessing Updates

HPE Networking Support Portal

https://networkingsupport.hpe.com/home

If you are unable to find your product in the HPE Support Portal, you may need to search My Networking, where older networking products can be found.

My Networking

https://www.hpe.com/networking/support

To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center More Information on Access to Support Materials page:

https://support.hpe.com/portal/site/hpsc/aae/home/

NOTE	Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HP Passport set up with relevant entitlements.

Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.

To subscribe to eNewsletters and alerts:

https://asp.arubanetworks.com/notifications/subscriptions (requires an active HPE Support Portal account to manage subscriptions). Security notices are viewable without an account.

Warranty Information

To view warranty information for your product, go to https://www.arubanetworks.com/support-services/product-warranties/.

Regulatory Information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at https://www.hpe.com/support/Safety-Compliance-EnterpriseProducts

HPE Aruba Networking is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements, environmental data (company programs, product recycling, energy efficiency), and safety information and compliance data (RoHS and WEEE). For more information, see https://www.arubanetworks.com/company/about-us/environmental-citizenship/.

Documentation Feedback

HPE Aruba Networking is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (docsfeedback-switching@hpe.com). When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.