ARISTA

Quick Start Guide

720XP Series 1 RU (Gen 3)
Cognitive Campus Switches

Arista Networks

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Chapter 1

Overview

1.1   Scope

This guide is intended for properly trained service personnel and technicians who need to install the following Arista Networks Data Center Switches:

CCS-720XP-48ZC2

Important! Only qualified personnel should install, service, or replace this equipment.

Seul le personnel qualifié doit installer, service, ou remplacer cet équipement.

1.2   Receiving and Inspecting the Equipment

Upon receiving the switch, inspect the shipping boxes and record any external damage. Retain packing materials if you suspect that part of the shipment is damaged; the carrier may need to inspect them.

If the boxes were not damaged in transit, unpack them carefully. Ensure that you do not discard any accessories that may be packaged in the same box as the main unit.

Inspect the packing list and confirm that you received all listed items. Compare the packing list with your purchase order. Appendix B provides a list of components included with the switch.

1.3   Installation Process

The following tasks are required to install and use the switch:

Step 1   Select and prepare the installation site (Section 2.1).

Step 2   Assemble the installation tools listed (Section 2.2).

Step 3   Attach the mounting brackets and install the switch in an equipment rack (Chapter 3).

Step 4   Connect the switch to the power source and network devices (Chapter 4).

Step 5   Configure the switch (Chapter 5).

Important! Class 1 Laser Product: This product has provisions to install Class 1 laser transceivers which provide optical coupling to the communication network. Once a Class 1 laser product is installed, the equipment is a Class 1 Laser Product (Appareil à Laser de Classe 1). The customer is responsible for selecting and installing the Class 1 laser transceiver and for insuring that the Class 1 AEL (Allowable Emission Limit) per EN/IEC 60825, CSA E60825-1, and Code of Federal Regulations 21 CFR 1040 is not exceeded after the laser transceiver have been installed. Do not install laser products whose class rating is greater than 1. Refer to all safety instructions that accompanied the transceiver prior to installation. Only Class 1 laser devices, certified for use in the country of installation by the cognizant agency are to be utilized in this product.

Produit Laser de classe 1: Ce produit a des dispositions pour installer des émetteurs-récepteurs de laser de classe 1 qui offre de couplage au réseau de communication optique.Une fois un produit laser de classe 1 est installé, l'équipement est un produit Laser de classe 1 (Appareil à Laser de Classe 1).Le client est responsable pour sélectionner et installer l'émetteur/récepteur de laser de classe 1 et pour assurer que la classe 1 AEL (limite d'émission admissible) par EN/IEC 6-825, CSA E60825-1, et Code des règlements fédéraux 21 CFR 1040 ne soit pas dépassée après avoir installé l'émetteur/récepteur de laser. Ne pas installer des appareils à laser dont la cote de classe est supérieure à 1.Voir toutes les consignes de sécurité qui ont accompagné l'émetteur-récepteur avant l'installation. Seuls appareils laser de classe 1 certifiés pour une utilisation dans le pays d'installation par l'organisme compétent doivent être utilisées dans ce produit.Ultimate disposal of this product should be in accordance with all applicable laws and regulations.

Important! Ultimate disposal of this product should be handled in accordance with all national laws and regulations.

Aucune pièce réparable par l'utilisateur à l'intérieur. Confiez toute réparation à un technicien qualifié.

1.4   Safety Information

Refer to the Arista Networks document Safety Information and Translated Safety Warnings available at:

https://www.arista.com/en/support/product-documentation

1.5   Obtaining Technical Assistance

Any customer, partner, reseller or distributor holding a valid Arista Service Contract can obtain technical support in any of the following ways:

- **Email:** support@arista.com. This is the easiest way to create a new service request.

  Include a detailed description of the problem and the output of "show tech-support".

- **Web:** https://www.arista.com/en/support.

  A support case may be created through the support portal on our website. You may also download the most current software and documentation, as well as view FAQs, Knowledge Base articles, Security Advisories, and Field Notices.

- **Phone:** +1 866-476-0000 or +1 408-547-5502.

Important! No user serviceable parts inside. Refer all servicing to qualified service personnel.

Aucune pièce réparable par l'utilisateur à l'intérieur. Confiez toute réparation à un technicien qualifié.

1.6   Specifications

Table 1-1   Switch Specifications (Dimensions and Weights)

Switch	Size (W x H x D)	Weight
CCS-720XP-48ZC2	48.3 x 4.4 x 40.6 cm (19 x 1.75 x 16 inches)	7.0 kg (15.6 lbs.)

(1): Depth 50.5 cm (19.9 inches) with PSU and fans.

Table 1-2   Switch Specifications (Operational and Storage)

Switch	Operating Temperature	Storage Temperature	Operating Altitude	Relative Humidity
All	0° to 40°C (32° to 104°F)	-25° to 70°C (-13° to 158°F)	0 to 3,000 meters (0 to 10,000 feet)	5 to 90% (non-condensing)

Table 1-3   Switch Specifications (Power Input)

Power Source	PSU Models	Ratings
Power Input (AC Power)	PWR-1021-AC-RED	100 - 240 VAC, 6.5 to 3.0 A, 50/60 Hz

Note   All PSU models are not supported by all switches. Some switches described in this guide could use power supplies that may no longer be available. Contact your local Arista representative for more information.

Table 1-4   Switch Specifications (Power Draw)

Switch	Power Draw (Typical / Maximum)	Supported Power Supply	PoE Power Budget Single/Dual PSU
CCS-720XP-48ZC2	120 W / 175 W	PWR-1021-AC-RED	875 W / 1925 W

Chapter 2

Preparation

2.1   Site Selection

The following criteria should be considered when selecting a site to install the switch:

- **Temperature and Ventilation:** For proper ventilation, install the switch where there is ample airflow to the front and back of the switch. The ambient temperature should not go below 0° or exceed 40°C.

Important! To prevent the switch from overheating, do not operate it in an area where the ambient temperature exceeds 40°C (104°F).

Pour empêcher l'interrupteur de surchauffe, ne pas utiliser il dans une zone où la température ambiante est supérieure à 40°C (104°F).

- **Airflow Orientation:** CCS-720XP-48ZC2 supports only front-to-back airflow direction. If the airflow direction is not compatible with the installation site, contact your sales representative.
- **Rack Space:** Install the switch in a 19" rack or cabinet. The switch height is 1 RU. The accessory kit provides mounting brackets for two-post and four-post racks.

  When mounting the switch in a partially filled rack, load the rack from bottom to top, with the heaviest equipment at the bottom. Load the switch at the bottom if it is the only item in the rack.

- **Power Requirements:** Power requirements vary by switch and power supply model. Refer to Table 1-3 on page 3 and Table 1-4 on page 3 for information regarding your specific system.

  Two circuits provide redundancy protection. Section 4.1 describes power cable requirements.

Important! The power input plug-socket combination must be accessible at all times; it provides the primary method of disconnecting power from the system.

La combinaison de la puissance-prise d'entrée doit être accessible en tout temps ; Il fournit le principal moyen de coupure d'alimentation du système.

- **Other Requirements:** Select a site where liquids or objects cannot fall onto the equipment and foreign objects are not drawn into the ventilation holes. Verify these guidelines are met:
  - Clearance areas to the front and rear panels allow for unrestricted cabling.
  - All front and rear panel indicators can be easily read.
  - Power cords can reach from the power outlet to the connector on the rear panel.

Important! All power connections must be removed to de-energize the unit.

Toutes les connexions d'alimentation doivent être enlevées pour hors tension l'appareil.

2.2   Tools and Parts Required for Installation

Each switch provides an accessory kit that contains parts that are required to install the switch. In addition to the accessory kit, the following tools and equipment are required to install the switch:

Two-Post Rack

- Screws or rack mounting nuts and bolts.
- Screwdriver

Four-Post Rack (Tool-less)

No additional equipment required.

Four-Post Rack (Conventional)

- Screws or rack mounting nuts and bolts.
- Screwdriver

Accessory kit does not include screws for attaching the switch to the equipment rack. When installing the switch into an equipment rack with unthreaded post holes, nuts are also required to secure the switch to the rack posts.

2.3   Electrostatic Discharge (ESD) Precautions

Observe these guidelines to avoid ESD damage when installing or servicing the switch.

- Assemble or disassemble equipment only in a static-free work area.
- Use a conductive work surface (such as an anti-static mat) to dissipate static charge.
- Wear a conductive wrist strap to dissipate static charge accumulation.
- Minimize handling of assemblies and components.
- Keep replacement parts in their original static-free packaging.
- Remove all plastic, foam, vinyl, paper, and other static-generating materials from the work area.
- Use tools that do not create ESD.

Rack Mounting the Switch

Important! The rack mounting procedure is identical for all switches covered by this guide. Illustrations in this chapter depict the mounting of a DCS-7010T-48 switch.

Les procédure de montage du bâti est identique pour tous les commutateurs visés par ce guide. Illustrations dans ce chapitre montrent le montage d'un interrupteur de DCS-7010T-48.

- Section 3.1 provides instructions for mounting the switch in a two- or four-post rack.

After completing the instructions for your rack type, proceed to Chapter 4.

Note Illustrations use a representative Arista switch. Your device may be different in appearance.

3.1 Two- or Four-Post Rack Mount

The switch can be installed in a two- or four-post rack. The installation process is identical because the switch attaches to only two posts of a rack. To mount the switch in a rack, assemble the mounting brackets to the chassis, then attach the brackets to the rack posts. Rack mount accessory kits include the following parts:

- 2 x mounting brackets
- 6 x M4x5 flat head Phillips screws.

Figure 3-1 displays proper bracket placement for rack mount.

Figure 3-1: Bracket Mount Placement for Rack Mount

3.1.1   Attaching Mounting Brackets to the Chassis

This procedure attaches mounting brackets to the switch chassis (Figure 3-2).

Step 1   Align the mounting brackets with the chassis holes at the front of the switch.

Step 2   Attach the brackets with two M4x5 flat head Philips screws.

Figure 3-2: Bracket Mount Attachment to Switch

Attaching the bracket

3.1.2   Inserting the Switch into the Rack

This procedure attaches the switch to the rack (Figure 3-3).

Step 1   Lift the chassis into the rack. Position the flanges against the rack posts.

Step 2   Select mounting screws that fit your equipment rack.

Step 3   Attach the bracket flanges to the rack posts.

Figure 3-3: Inserting the Switch into the Rack

After completing the rack mount, proceed to Chapter 4.

Chapter 4

Cabling the Switch

4.1 Grounding the Switch

After mounting the switch into the rack, connect the switch to the data center ground. Figure 4-1 displays the location of the grounding pads located on the left of the rear panel.

Important! Grounding wires and grounding lugs (M4 x 0.7) are not supplied. Wire size should meet local and national installation requirements. Commercially available 6 AWG wire is recommended for installations in the U.S

À la terre et de mise à la terre fils cosses (M4 x 0.7) ne sont pas fournis. Calibre des fils doit satisfaire des exigences de l'installation locale et nationale. Disponible dans le commerce 6 fils AWG est recommandé pour les installations aux États-Unis.

Figure 4-1: Earth Grounding Pad Sockets
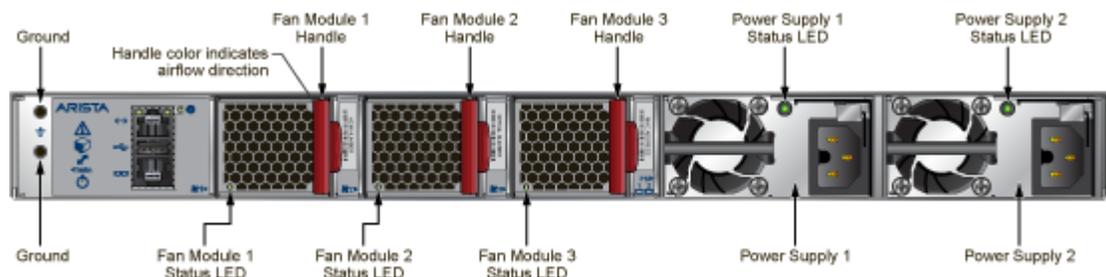
4.2 Connecting Power Cables

Note Power cords are optional and must be ordered separately. You must use an approved power cord compliant with local and national electrical codes or order one from Arista for use with the device.

Important! Installation of this equipment must comply with local and national electrical codes. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.

Installation de cet équipement doit être conformes aux codes électriques locaux et nationaux. Si nécessaire, consulter les organismes de réglementation appropriés et des autorités de contrôle pour assurer la conformité.

The switch operates with two installed power supplies. At least one power supply must connect to a power source. Two circuits provide redundancy protection. Appendix D displays the location of the power supplies on the rear panel of the switch.

Important!   Read all installation instructions before connecting the system to the power source.

Lire toutes les instructions d'installation avant de brancher le système à la source d'alimentation.

- **Non-Redundant Configuration:** Connect power to either of the two power supplies.
- **Redundant Power Supply Configuration:** Connect power to both power supplies.
- **Power down the Switch:** Remove all power cords and wires from the power supplies.

Important!   This equipment must be grounded. Never defeat the ground conductor.

Cet équipement doit être mis à la terre. Ne jamais modifier le conducteur de terre.

Important!   This unit requires overcurrent protection.

Cet appareil requiert une protection contre les surintensités.

4.2.1   AC Power Supplies

The following AC power supplies are supported.

- PWR-1021-AC-RED

Figure 4-2 displays an AC power supply, including the power socket on the right side of the module. The AC power supply connects to a circuit that provides the required power, as specified by Table 1-4 on page 3.

Figure 4-2: AC Power Supply
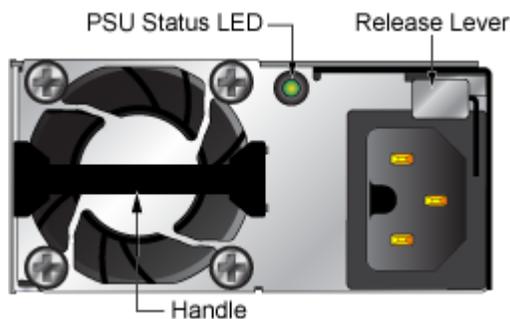
The power supplies require power cables that comply with IEC-320 and have a C16 plug.

4.3   Connecting Serial and Management Cables

The accessory kit includes the following cables:

- RJ-45 to DB-9 serial adapter cable.
- RJ-45 Ethernet cable.

Table 4-1 lists the pin connections of the RJ-45 to DB-9 adapter cable.

Table 4-1 RJ-45 to DB-9 Connections

RJ-45			DB-9	RJ-45			DB-9
RTS	1	8	CTS	GND	5	5	GND
DTR	2	6	DSR	RXD	6	3	TXD
TXD	3	2	RXD	DSR	7	4	DTR
GND	4	5	GND	CTS	8	7	RTS

Note   **RJ-45 to DB-9 connections:** For the console management port on the rear panel, RJ-45 pin 1 (RTS) is connected to RJ-45 pin 8 (CTS); RJ-45 pin 2 (DTR) and RJ-45 pin 7 (DSR) are not electrically connected to any signal.

Figure 4-3 displays management ports on the rear panel of the CCS-720XP-48ZC2 switch. Appendix C and Appendix D display the front and rear panels of all switches covered by this guide.

Figure 4-3: Rear Panel Management Ports
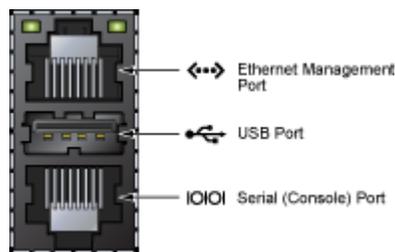
Connect management ports as follows:

* **Console (Serial) Port:** Connect to a PC with the RJ-45 to DB-9 serial adapter cable. The switch uses the following default settings:
  * 9600 baud
  * No flow control
  * 1 stop bit
  * No parity bits
  * 8 data bits
* **Ethernet Management Port:** Connect to 10/100/1000 management network with RJ-45 Ethernet cable.
* **USB Port:** The USB port may be used for software or configuration updates.

Caution   Excessive bending can damage interface cables, especially optical cables.

Flexion excessive peut endommager les câbles d'interface, notamment des câbles optiques.

Configuring the Switch

Arista switches ship from the factory in Zero Touch Provisioning (ZTP) mode. ZTP configures the switch without user intervention by downloading a startup configuration file or a boot script from a location specified by a DHCP server. To manually configure a switch, ZTP is bypassed. The initial configuration provides one username (**admin)** accessible only through the console port because it has no password.

When bypassing ZTP, initial switch access requires logging in as **admin,** with no password, through the console port. Then you can configure an **admin** password and other password protected usernames.

This manual configuration procedure cancels ZTP mode, logs into the switch, assigns a password to **admin**, assigns an IP address to the management port, and defines a default route to a network gateway.

Step 1   Provide power to the switch (Section 4.1).

Step 2   Connect the console port to a PC (Section 4.3).

As the switch boots without a **startup-config** file, it displays the following through the console:

```
The device is in Zero Touch Provisioning mode and is attempting to
download the startup-config from a remote system. The device will not
be fully functional until either a valid startup-config is downloaded
from a remote system or Zero Touch Provisioning is cancelled. To cancel
Zero Touch Provisioning, login as admin and type 'zerotouch cancel'
at the CLI.

localhost login:
```

Step 3   Log into the switch by typing **admin** at the login prompt.

```
localhost login:admin
```

Step 4   Cancel ZTP mode by typing **zerotouch cancel**. *IMPORTANT: This step initiates a switch reboot.*

```
localhost>zerotouch cancel
```

Step 5   After the switch boots, log into the switch again by typing **admin** at the login prompt.

```
Arista EOS
localhost login:admin
Last login: Fri Mar 15 13:17:13 on console
```

Step 6   Enter global configuration mode.

```
localhost>enable
localhost#config
```

Step 7   Assign a password to the *admin* username with the **username secret** command.

```
localhost(config)#username admin secret pxq123
```

Step 8   Configure a default route to the network gateway.

```
localhost(config)#ip route 0.0.0.0/0 192.0.2.1
```

Step 9   Assign an IP address (*192.0.2.8/24* in this example) to an Ethernet management port.

```
localhost(config)#interface management 1
localhost(config-if-Ma1/1)#ip address 192.0.2.8/24
```

Step 10 Save the configuration by typing **write memory** or **copy running-config startup-config**.

```
localhost#copy running-config startup-config
```

When the management port IP address is configured, use this command to access the switch from a host, using the address configured in step 9:

```
ssh admin@192.0.2.8
```

Refer to the **Arista Networks User Manual** for complete switch configuration information.
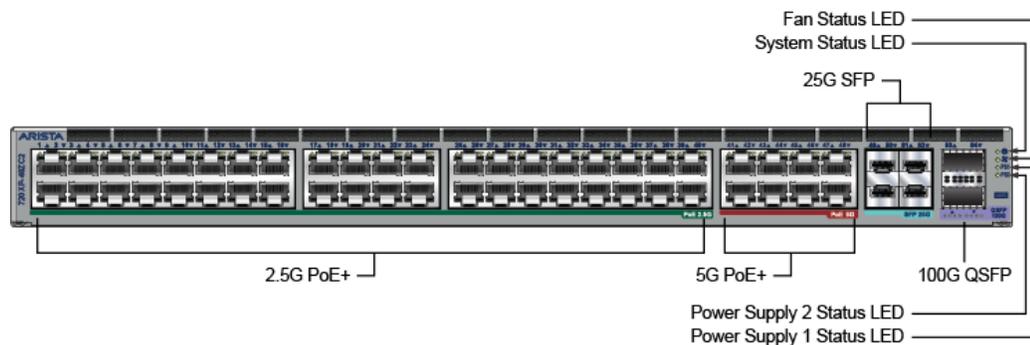
Appendix A

Status Indicators

A.1 Front Indicators

A.1.1 Switch Indicators

Front panel LEDs are located on the right side of the chassis and display system, fan, and power supply status. The front panel LEDs are labeled as in Figure A-1.

Figure A-1: System Status Indicators

|	
Note	The 2.5G ports are PoE+ (30 W max) and the 5G ports are PoE+ (60 W max)

Table A-1 Switch Indicators LED States (Front)

LED Name	LED State	Device Status
System Status LED	Blinking Green	System is powering up.
	Green	Normal operations. Due to power supply and fan redundancy, this LED will remain green if a single fan or power supply is missing or in a failed state.
	Blue	The locater function is active.
	Amber	Two or more fans (any combination of fan modules or PSU fans) are disconnected or malfunctioning. The switch will automatically execute a "graceful shutdown" shortly.
Fan Status LED	Green	All fan and power modules are operating normally.
	Amber	Single fan module is removed or malfunctioning. It is also amber when a PSU is completely removed or has a stuck fan rotor.
	Red	Two or more fans (any combination of fan modules or PSU fans) are disconnected or malfunctioning. The switch will automatically execute a "graceful shutdown" shortly.
PSU [1:2] Status LED	Green	PSU is functioning and fully operational. AC is present, Aux output is ON, and Main output is ON.
	Off	PSU has been removed or is not operating properly due to AC cord being unplugged, its fan rotor being stuck, or an internal fault.

A.1.2   Port Indicators

Port LEDs, located in the vicinity of their corresponding ports, provide link and operational status. Figure A-2 displays the Port LED location on the DCS-7050QX-32S switch.

Figure A-2: Port LEDs
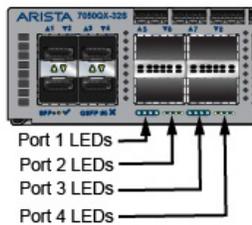
Table A-2 provides status conditions that correspond to port LED states. Port LED behavior for QSFP+ and SFP+ ports is consistent.

Table A-2 Port LED States (Front)

LED State	Status
Off	Port link is down.
Green	Port link is up.

Table A-2 Port LED States (Front) (Continued)

LED State	Status
Yellow	Port is software disabled.
Flashing Yellow	Port failed diagnostics.

A.2   Rear Status Indicators

Fan and power supply modules are accessed from the rear panel. Each fan and power supply module contains an LED that reports the module status.

Fan Status LEDs are on the fan modules, as displayed in Figure A-3.

Figure A-3: Fan Status LED

Table A-3 provides status conditions that correspond to fan status LED states.

Table A-3 Fan Status LED States (Rear)

LED State	Status
Off	The fan module is not detected. If it is inserted, it may not be seated properly.
Green	The fan is operating normally. This LED state is exclusive to its fan module, and independent of the states of its neighboring fans and power supplies.
Red	The fan has failed.

The AC Power Supply Status LEDs are on the power supply modules, as displayed in Figure A-4.

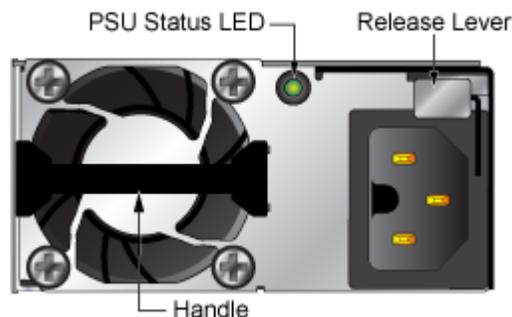**Figure A-4: AC Power Supply Status LED**

Table A-4 provides status conditions that correspond to the AC power supply status LED states.

Table A-4 AC Power Supply Status LED States (Rear)

Power Supply State	PWR-1021-AC-RED
Input power present Normal operation	Green
Input power present Power Supply fault	ON/OFF: ON when PSU output is ON, OFF when PSU Output is OFF
Input power present Power Supply FAN fault	FLASH 800 ms ON / 800 ms OFF
No Input power Supply installed in chassis	OFF
Input power present Supply not installed in chassis	Green

Note   You can narrow down the error condition by logging in to the switch to view the specific device state. Refer to the **Arista User Manual**'s *Switch Environment Control* chapter, under the topic *Viewing Environment Status*, for further information on the `show environment` commands.

Appendix B

Parts List

Each switch provides an accessory kit that contains parts that are required to install the switch. This appendix lists the installation parts contained in the switch accessory kit.

B.1 Rack Mount Parts

B.1.1 Two- or Four-Post Rack Mount Parts

Figure B-1: Two- or Four-Post Rack Mount Parts

Quantity	Description
2	Mounting brackets
6	M4 x 5 Flat head head Phillips Screws

B.2   Cables

Quantity	Description
2	Power cables: IEC-320/C13-C14, 13 A, 250 V
1	RJ-45 Patch Panel Cable
1	RJ-45 to DB9 Adapter Cable

Warning   All provided power cables are for use only with Arista products.

警告
すべての電源コードは提供する製品で使用するためだけを目的としている。

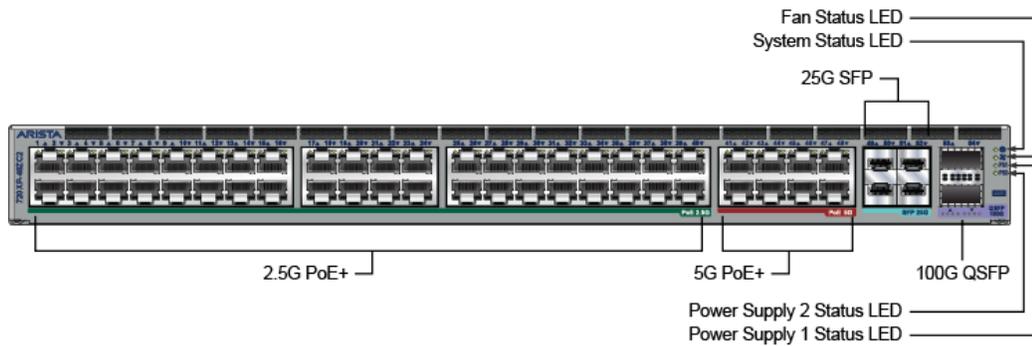電源コードの他の製品での使用の禁止
Aristaが提供するすべての電源コードは、Aristaの製品でのみ使用してください。

Appendix C

Front Panel

This appendix displays the front panel of all switches covered by this guide.

Figure C-1: CCS-720XP-48ZC2

Note   The 2.5G ports are PoE+ (30 W max) and the 5G ports are PoE+ (60 W max)
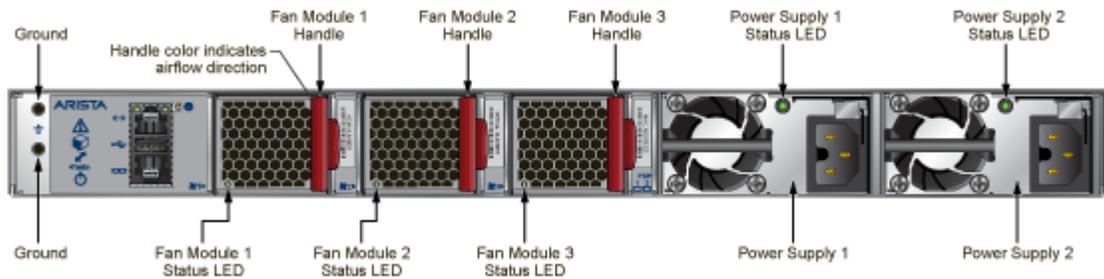
Appendix D

Rear Panel

All switches covered by this guide use one of the rear panels shown below.

Note   Depending on the installed power supply and fan modules, the appearance could be different from those shown.

Figure D-1: Rear Panel for CCS-720XP-48ZC2

Appendix E

Maintenance and Field Replacement

E.1   Considerations

- All fans and power supplies are hot swappable.
- The switch can be running while a power supply is being installed or removed, but the power supply being replaced must not be connected to a power source.
- All slots must be filled or covered with a blank for operation (even though power supply or fans may not be functional).
- Before you begin, refer to the Arista Networks document *Safety Information and Translated Safety Warnings* available at: https://www.arista.com/en/support/product-documentation.

Note   Refer to the front (Appendix C) and rear (Appendix D) panel illustrations of your device to locate the appropriate LED, the release lever or handle, and the handle for the power supply and fan modules.

E.2   Power Supplies

The following steps are required when removing power supplies from a switch.

E.2.1   Removing a Power Supply

Step 1   Ground yourself with an ESD wrist strap.

Step 2   Power down the power supply to be removed by disconnecting the AC power cable.

Step 3   Push the power supply release lever and remove the power supply.

E.2.2   Installing a Power Supply

You must make space for installing the power supply by removing an existing one (Section E.2.1).

Step 1   Remove the replacement power supply from its packaging.

Step 2   Slide the new power supply into the empty slot.

Step 3   Slide the new power supply into the switch until the power supply is fully seated and the release lever snaps into place.

Step 4   Connect the power cord to the power supply.

Step 5   Verify the LED(s) on the power supply.

Note	The Power Supply status LED should be a steady green for normal operation.

> **Step 6** Verify the new power supply operation by issuing the **show environment power** command.
> ```
> switch#show environment power
> ```

The output of the command will list the power supplies in operation and should include the one you replaced.

E.3 Fan Modules

Note	Hot swap fans within 30 seconds to prevent the switch from overheating. Ensure that the module you are replacing matches those already installed in the switch.

E.3.1 Removing a Fan Module

The following steps are required when removing or replacing fans from a switch.

Step 1 Ground yourself with an ESD wrist strap.

Step 2 Push the fan module release lever and slide the fan module out of the switch.

E.3.2 Installing a Fan Module

You must make space for installing the fan module by removing an existing one (Section E.3.1).

Step 1 Remove the replacement fan from its packaging.

Step 2 Slide the new fan module into the switch until the module is fully seated and the release lever snaps into place.

Step 3 Verify that the fan module is working normally.

Note	The fan module status LED should be a steady green for normal operation.

Appendix F

Regulatory Model Numbers

This appendix lists the regulatory model numbers (RMNs), where applicable, for the product models for the switches described in this document.

Table F-1 Regulatory Model Numbers and Product Numbers

Regulatory Model Number (RMN)	Product Number(s)
AN1712	CCS-720XP-48ZC2

Appendix G

Taiwan RoHS Information

This appendix provides Taiwan RoHS information for switches covered by this guide.

For Taiwan BSMI RoHS Table, go to https://www.arista.com/assets/data/pdf/AristaBSMIRoHS.pdf.