



# FortiWLC 1000D



August 14, 2017

2nd Edition

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# Box Includes



FortiWLC 1000D



QuickStart Guide



2 Power Cables



Ethernet Cable



Console Cable



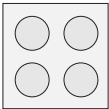
4 Bracket Screws



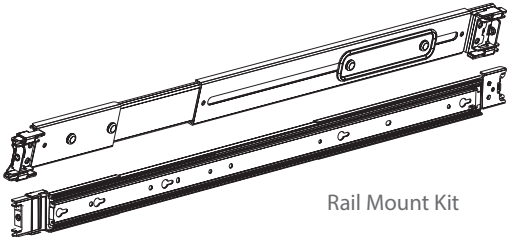
26 Rail Mount  
Screws



2 HDD tray keys

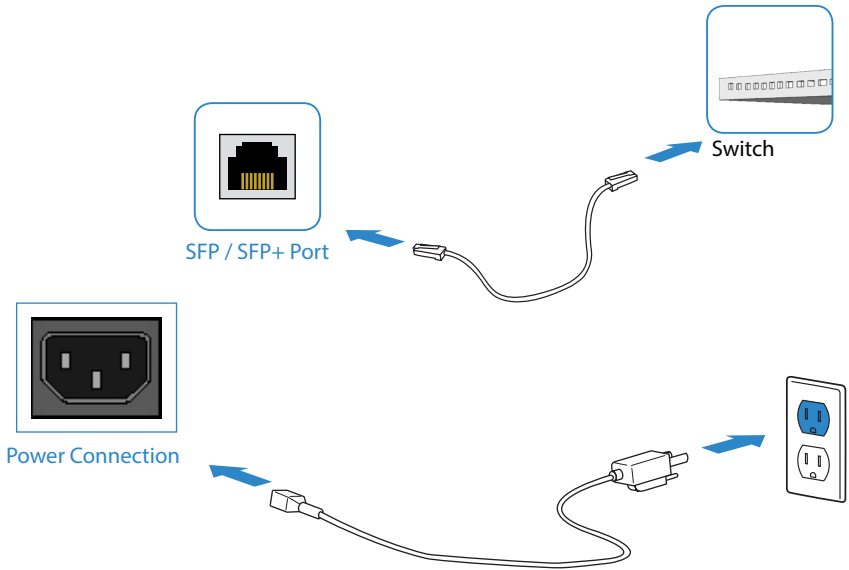


4 Rubber Feet



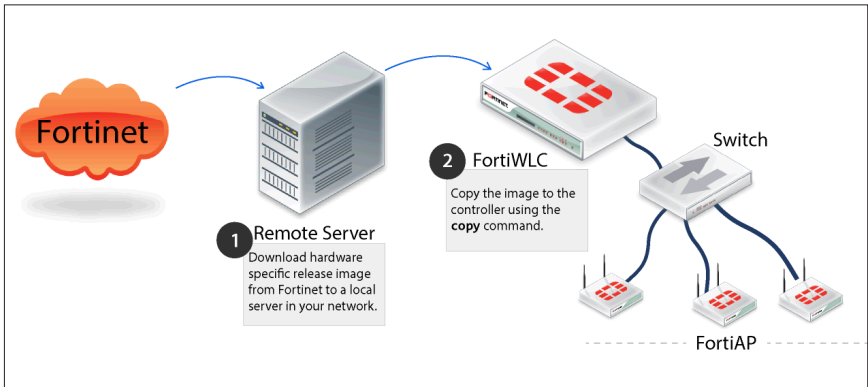
Rail Mount Kit

# 1 Basic Connections



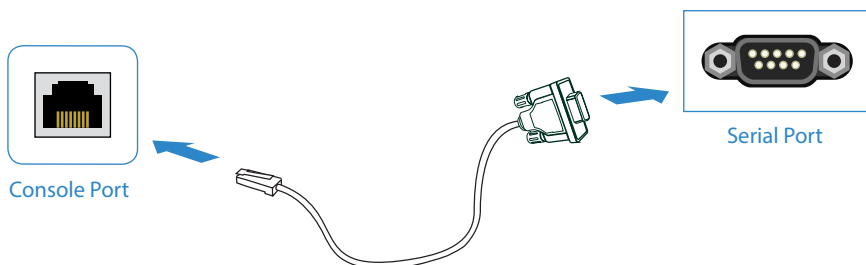
Connect your device to a **power outlet** and to **switch** with an SFP/ SFP+ Port (**ports 1-4**).

## Typical Deployment Setup



## B

# Terminal Emulation with Console Cable



## To Connect to the CLI

1. Connect the **FortiWLC** unit **console port** to the management computer using the provided **console cable**.
2. Start a **terminal emulation program** on the management computer. Select the **COM port** and use the following settings:

**Baud Rate:** 115200  
**Data bits:** 8  
**Parity:** None  
**Stop bits:** 1  
**Flow Control:** None

3. Press **Enter** on your keyboard to **connect to the CLI**.
4. Login using username "**admin**" and password "**admin**". You can now proceed with configuring your **FortiWLC** unit.

Get started by typing "**?**" for a list of available commands.

Begin typing a command and type "**?**" for a list of available ways to complete. For example "**config ?**" shows the lowest level of configuration options.

For a detailed guide, visit <http://docs.fortinet.com/wireless-infrastructure/reference>.

## 3 General Installation

## Installation

### Hardware

The FortiWLC unit can be mounted in any standard [19 inch rack](#) unit with the provided rail mount kit.

Please read the “Cautions and Warnings” on page 20 prior to installing your device.

### To install the FortiWLC unit into a rack:

1. Ensure that the FortiWLC unit is placed on a stable surface prior to [rack-mount](#) installation.
2. Assemble the [rails](#) and install the system in the rack following the [safety instructions](#) and the rack installation instructions in [Rail Installation](#) (p. 8).
3. Verify that the [spacing](#) around the FortiWLC unit conforms to requirements and that the unit is level.
4. Connect the provided [power cables](#) to the system.
5. Plug the other end of the power cables into separate power sources, such as [uninterruptible power supplies](#) (UPS) or [power distribution units](#) (PDU).
6. Insert one end of the provided [Ethernet cable](#) into one of the Ethernet ports on the FortiWLC unit. Insert the other end to a [router or switch](#) that is connected to the [Internet](#).
7. Press the [power button](#) on the system to turn on the device.  
Do not place heavy objects on the unit.

## 3 General Installation

### Software

**IMPORTANT:** FortiWLC-1000D is supported from FortiWLC-SD 8.3 and above. This controller requires fresh installation and cannot be upgraded from older FortiWLC-SD releases.

To install release 8.3 in the new controllers, use the following instructions:

**NOTE:** The new controllers have two logical partitions, and the default image is available in both the partitions.

#### Upgrading via CLI

Use the **show images** command to view the available images in the controller. By default, the new controller boots from the primary partition with the running image.

```
default(15)# sh images
```

```
Running image: Primary <-- denotes the current partition
```

```
-----  
Running image details.
```

```
    System version: 0.0.7  
    System hash: e9efe2c7ab0d10da660cad019d333f8d7772d6f1  
    System branch: master  
    System built: 20161115072723  
    System memory: 114M/463M <-- Shows the available/total memory  
    Apps version: 8.3-48  
    Apps size: 303M/850M
```

```
-----  
Other image details.
```

```
    System version: 0.0.7  
    System hash: e9efe2c7ab0d10da660cad019d333f8d7772d6f1  
    System branch: master  
    System built: 20161115072723  
    System memory: 150M/473M  
    Apps version: False  
    Apps size: 662M/849M
```

# Installation

To install the latest release, download the release image using the **upgrade-image** command (mandatory keywords are marked in red color):

```
upgrade-image scp://<username>@<remote-server-ip>:<path-to-image>/<image-name>-rpm.tar both reboot
```

**image-name** for FortiWLC: forti-{release-version}-{hardware-model}-rpm.tar.

Eg.: forti-8.3-0-FWC1KD-rpm.tar

The above command will upgrade the secondary partition and the controller will reboot to secondary partition.

```
default(15)# sh images
```

```
Running image: Secondary <-- Current partition after the upgrade.
```

```
-----  
Running image details.
```

```
System version: 0.0.7  
System hash: e9efe2c7ab0d10da660cad019d333f8d7772d6f1  
System branch: master  
System built: 20161115072723  
System memory: 150M/473M  
Apps version: 8.3-0build-47  
Apps size: 230M/849M  
-----
```

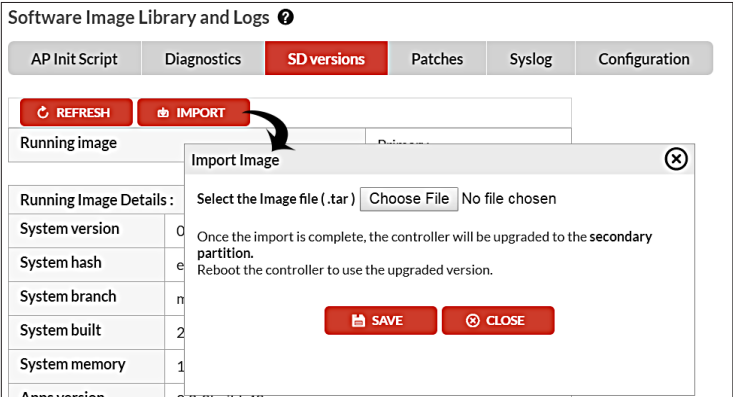
```
Other image details.
```

```
System version: 0.0.7  
System hash: e9efe2c7ab0d10da660cad019d333f8d7772d6f1  
System branch: master  
System built: 20161115072723  
System memory: 116M/463M  
Apps version: 8.3-0build-46  
Apps size: 298M/850M
```

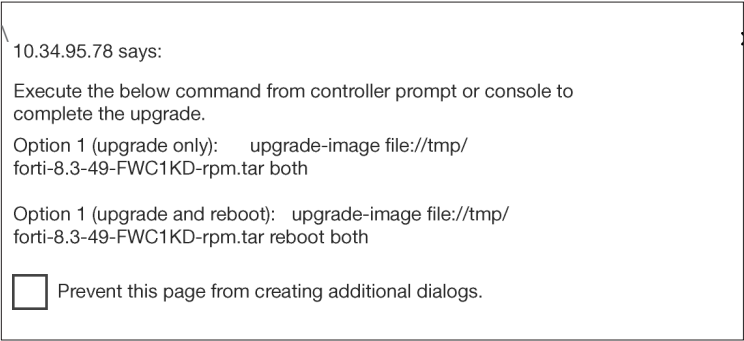
**NOTE:** After an upgrade the current partition becomes the second partition. For example, if you started upgrade in primary partition, post upgrade the default partition becomes secondary partition and vice-versa.

Upgrading via WebUI

In the FortiWLC-SD WebUI, navigate to Maintenance > File Management > SD Version. Click the Import button to choose the image file.



After the import is complete, the following message is displayed.



Now, from the CLI run the upgrade commands to complete the upgrade process.

Switching Partitions

To switch partitions, select the partition during the bootup process.

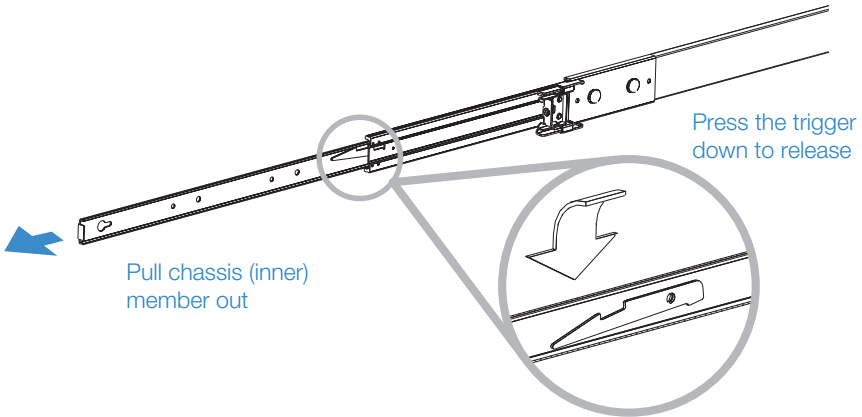


## 4

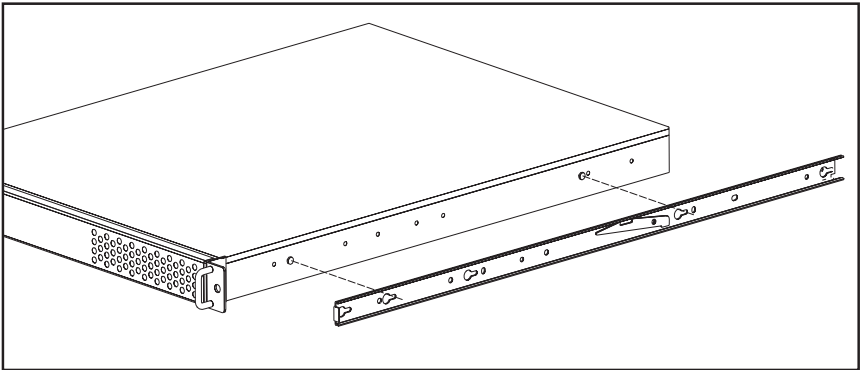
# Rail Installation

To install the FortiWLC unit using the rail mount kit:

1. To remove the chassis (inner) member, pull the slide open, and then press the trigger down as shown on the drawing, and pull the chassis (inner) member out.

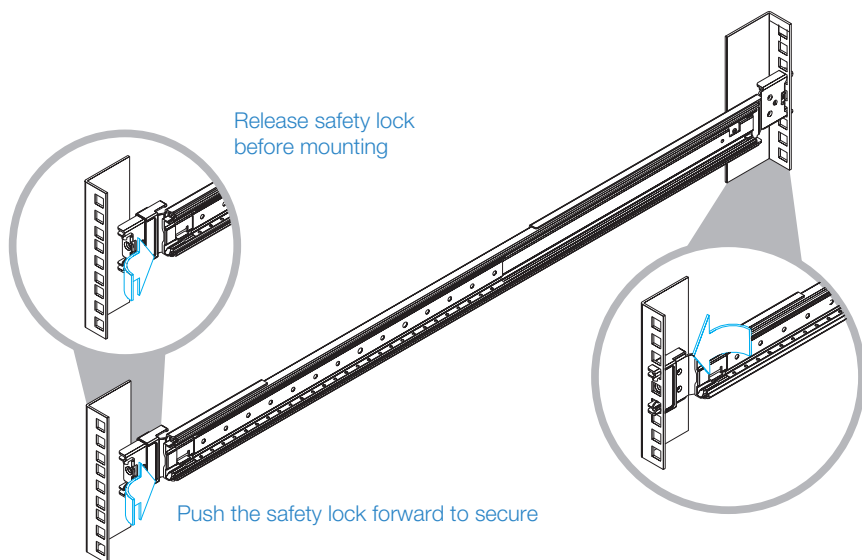


2. Use the standoffs to mount the chassis (inner) member to the chassis.

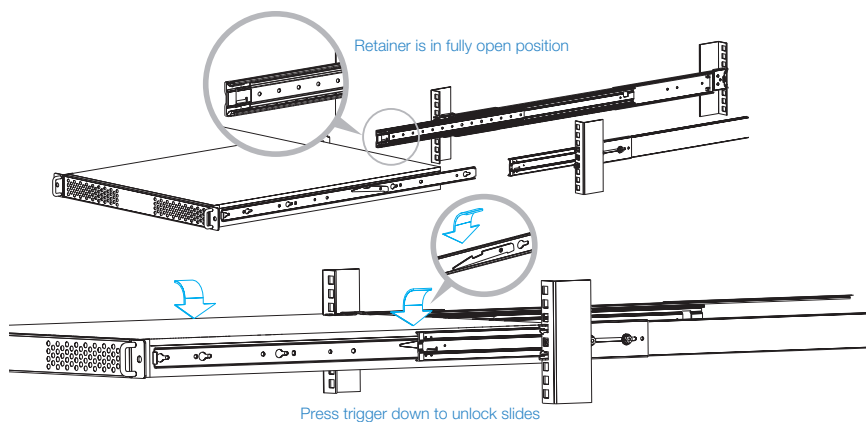


3. To attach the cabinet (outer) member to the rail, first ensure that the safety lock is in the unlocked position. Then, insert the stag into the upper and lower square holes on the EIA rail from the back of the rail.

Finally, push the safety lock forward to secure the bracket.



4. To mount the chassis into the cabinet, first ensure that the ball retainer is in the fully open position. Then, insert the chassis (inner) member into the cabinet member. When you push the chassis back into the cabinet, press the trigger down to release the slide from the locked position.

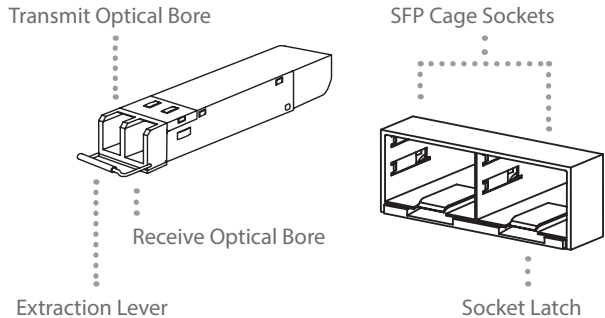


# SFP Transceivers

Caution: SFP transceivers are static sensitive devices. Use an ESD wrist strap or similar grounding device when handling transceivers.

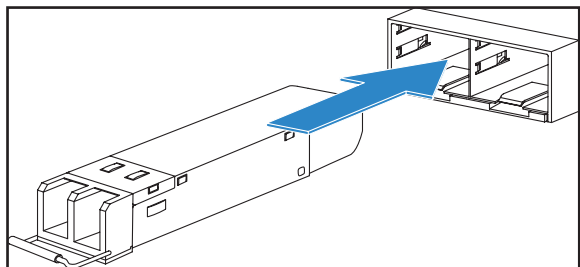
Do not install or remove SFP transceivers while fiber-optic cables are still attached. This can cause damage to the cables, cable connectors, and the optical interfaces. It may also prevent the transceiver from latching correctly into the socket connector.

Note: Installing and removing SFP transceivers can shorten their useful life. Do not install or remove transceivers more than is necessary.



## To install the SFP transceivers

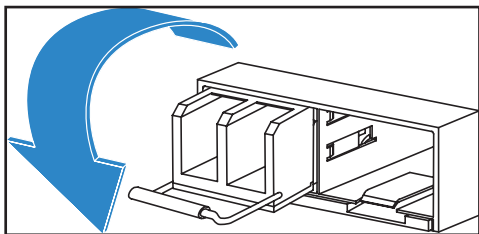
1. Ensure that you are properly grounded.
2. Remove the caps from the SFP cage sockets on the front panel of the unit.
3. Position the SFP transceiver in front of the cage socket opening and ensure that the transceiver is correctly oriented. When the transceiver is correctly oriented, the extraction lever will be level with the socket latch.  
Note: SFP cage socket orientation may vary. Ensure that the SFP transceiver module is correctly oriented each time that you are inserting a transceiver.
4. Hold the sides of the SFP transceiver and slide it into the cage socket until it clicks into place.



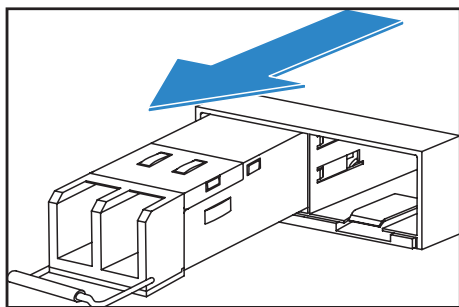
5. Press the **transceiver** firmly into the **cage socket** with your thumb.
6. Verify that the **transceiver** is latched correctly by grasping the sides of the **transceiver** and trying to pull it out without lowering the **extraction lever**.  
If the **transceiver** cannot be removed, it is installed and latched correctly.  
If the **transceiver** can be removed, reinsert it and press harder with your thumb.  
If necessary, repeat this process until the **transceiver** is securely latched into the **cage socket**.

## To remove the SFP transceivers

1. Ensure that you are properly grounded.
2. If applicable, disconnect the **fiber-optic cable** from the **transceiver connector** and install a clean **dust plug** in the **transceiver's optical bores**.
3. Pull the **extraction lever** out and down to eject the **transceiver**. If you are unable to use your finger to open the **lever**, use a **small flat-head screwdriver** or other similar tool to open the **lever**.



4. Hold the sides of the **transceiver** and carefully pull it away from the **cage socket**.



5. Replace the **cap** on the **SFP cage socket** and place the removed **SFP transceiver** into an **antistatic bag**.


Caution: Do not force the SFP transceivers into the cage slots. If the transceiver does not easily slide in and click into place, it may not be aligned correctly or may be upside down. If this happens, remove the SFP transceiver, realign it or rotate it and slide it in again.

Note: Follow proper fiber-optic handling procedures when installing and removing SFP transceivers to ensure the devices remain clean and are not damaged.

# Supported SFP Transceivers

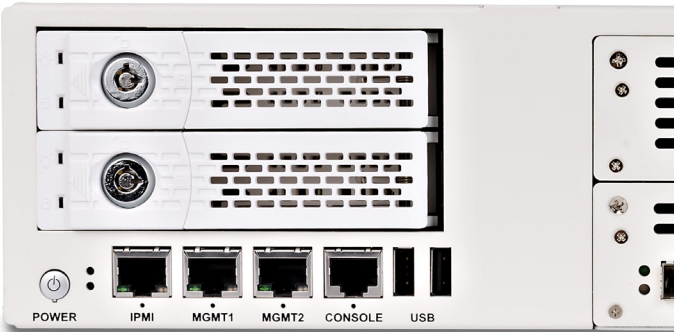
These are the supported transceivers for FWLC-1000D.

Supplier	Type	Part Numbers
Intel	DUAL RATE 1G/10G SFP+ SR (bailed)	FTLX8571D3BCV-IT
Finisar	SFP+ SR bailed, 10g single rate	FTLX8571D3BCL
Avago	10GBASE-SR/SW, SFP+	AFBR-709ASMZ
Finisar	DUAL RATE 1G/10G SFP+	FTLX8571D3BCV
HP	1000BASE-SX SFP	SFP SX J4858C
Finisar	SFP+ SR, 10g single rate	FTLX 8574D3BCL
Axcen	SFP, 1000SX	AXGE-5854-0511
Axcen	SFP, 1000SX	AX16020001566
Dlink	1GB Copper	DGS712
AVAGO	1GB Fiber	AFBR-5710PZ
Fiberxon 1	1GB Fiber	FTM-8012C-SL
Fiberxon 2	1GB Fiber	FTM-8012-SLG
Agilent	1GB Fiber	HFBR 5710L
Picolight	1GB Fiber	PL-XPL-VC-S13-11
JDSU	10GB Fiber	PLRXPL-SC-S43-22-N



Supplier	Type	Part Numbers
AXCEN	10GB Fiber	AXXE-5886-05B1
Finisar	1GB Copper	FCLF-8521-3
Finisar	1GB Copper	FCLF-8521P2BTL

IPMI, MGMT1, & MGMT2  
Not used.

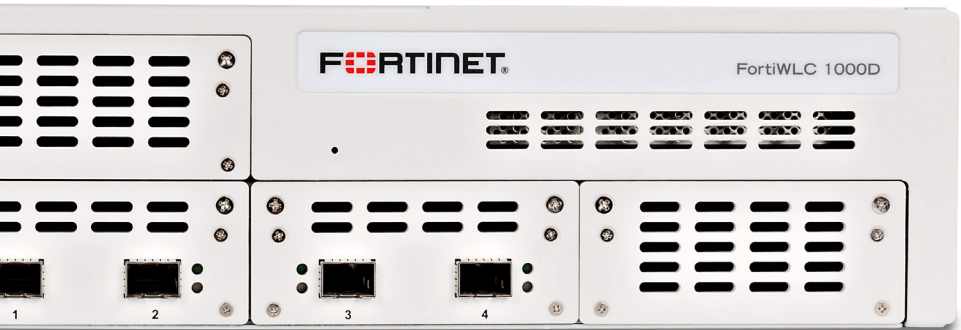


Console  
Optional connection  
to the management  
computer. Provides  
access to the CLI

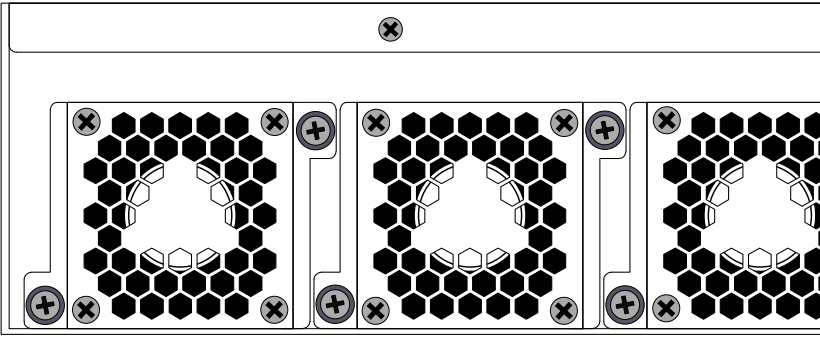


USB Ports (USB A)  
Reserved for future use

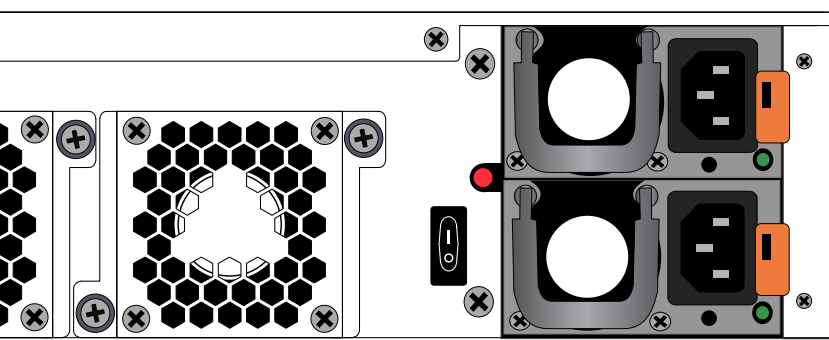
# Device Guide



SFP / SFP+ Ports 1 - 4  
1G/10G ports for connection to your  
network









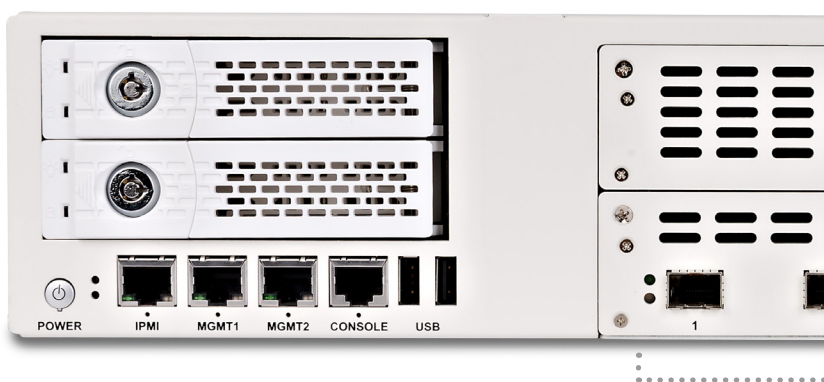
# Device Guide



Power Switch

Power Connections  
100-240V AC, 6.9-2.8A, 50-60Hz  
redundant power supplies

- HDD Power
    -  Blue: HDD power on
    -  Off: HDD power off
  - HDD Activity
    -  Flashing Green: HDD read/write
    -  Off: HDD power off
  - Power
    -  Blue: System power on
    -  Off: The unit is off
- ...



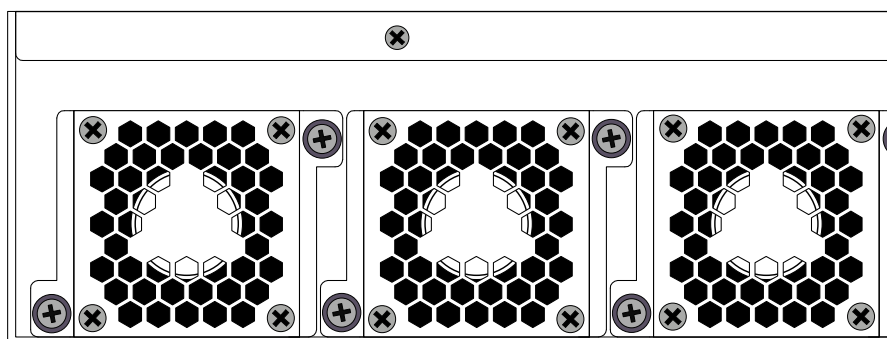


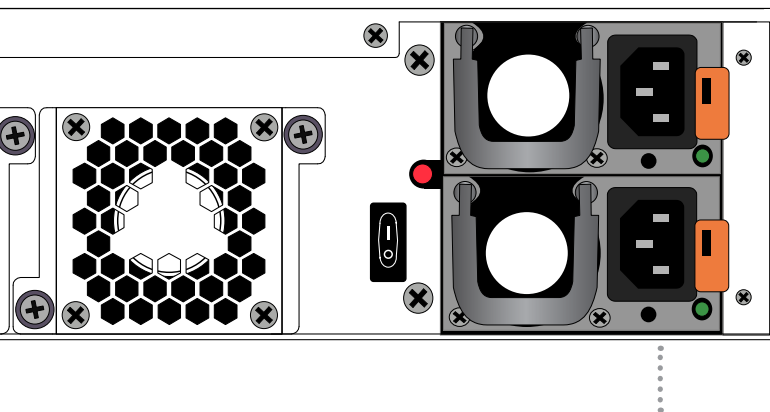
## SFP / SFP+ Ports Link/Activity (Top)

- Green: Connected
- ⚡ Flashing Green: Transmitting & receiving data
- Off: No link established

## SFP / SFP+ Ports Speed (Bottom)

- Blue: Connected at 10Gbps
- Yellow: Connected at 1Gbps





## Power Connections

- **Green:** Power supply operating normally, power on
- **Flashing Green:** Power supply operating normally, system standby
- **Flashing Yellow:** Power supply malfunction
- **Off:** Power not connected

# Cautions and Warnings

## Environmental specifications

Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions:

Instructions de montage en rack - Les instructions de montage en rack suivantes ou similaires sont incluses avec les instructions d'installation:

Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer.

Température ambiante élevée - S'il est installé dans un rack fermé ou à unités multiples, la température ambiante de fonctionnement de l'environnement du rack peut être supérieure à la température ambiante de la pièce. Par conséquent, il est important d'installer le matériel dans un environnement respectant la température ambiante maximale (T<sub>ma</sub>) stipulée par le fabricant.

Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Ventilation réduite - Installation de l'équipement dans un rack doit être telle que la quantité de flux d'air nécessaire au bon fonctionnement de l'équipement n'est pas compromise.

Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Chargement Mécanique - Montage de l'équipement dans le rack doit être telle qu'une situation dangereuse n'est pas liée à un chargement mécanique inégal.

Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Surtenstion - Il convient de prendre l'ensemble des précautions nécessaires lors du branchement de l'équipement au circuit d'alimentation et être particulièrement attentif aux effets de la suralimentation sur le dispositif assurant une protection contre les courts-circuits et le câblage. Ainsi, il est recommandé de tenir compte du numéro d'identification de l'équipement.

Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Fiabilité de la mise à la terre - Fiabilité de la mise à la terre de l'équipement monté en rack doit être maintenue. Une attention particulière devrait être accordée aux connexions d'alimentation autres que les connexions directes au circuit de dérivation (par exemple de l'utilisation de bandes de puissance).

Refer to specific Product Model Data Sheet for Environmental Specifications (Operating Temperature, Storage Temperature, Humidity, and Altitude)  
Référez à la Fiche Technique de ce produit pour les caractéristiques environnementales (Température de fonctionnement, température de stockage, humidité et l'altitude).

## Safety

Battery - Risk of explosion if the battery is replaced by an incorrect type. Do not dispose of batteries in a fire. They may explode. Dispose of used batteries according to your local regulations. IMPORTANT: Switzerland: Annex 4.10 of SR814.013 applies to batteries.

Batterie - Risque d'explosion si la batterie est remplacée par un type incorrect. Ne jetez pas les batteries au feu. Ils peuvent exploser. Jetez les piles usagées conformément aux réglementations locales. IMPORTANT: Suisse: l'annexe 4.10 de SR814.013 s'appliquent aux batteries.

警告

本電池如果更換不正確會有爆炸的危險

請依製造商說明書處理用過之電池

Caution: Disconnect power supply cords before servicing

Attention: Débranchez les cordons de la source d'alimentation avant tout entretien.

Caution: Slide/rail mounted equipment is not to be used as a shelf or a work space.

Attention: Un équipement monté sur bâti ne doit pas être utilisé sur une étagère ou dans un espace de travail.

## Regulatory Notices

### Federal Communication Commission (FCC) – USA

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received; including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

WARNING: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

### Industry Canada Equipment Standard for Digital Equipment (ICES) – Canada

CAN ICES-3 (A) / NMB-3 (A)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

### European Conformity (CE) - EU

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



### Japan

#### Voluntary Control Council for Interference (VCCI)

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。V C C I - A

### Product Safety Electrical Appliance & Material (PSE)

日本では電気用品安全法(PSE)の規定により、同梱している電源コードは本製品の専用電源コードとして利用し、他の製品に使用しないでください。

### Taiwan

#### Bureau of Standards Metrology and Inspection (BSMI)

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

### China

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。这种情况下，可能需要用户对其采取切实可行的措施。

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