

FortiSwitch 148F Series

FS-148F, FS-148F-PoE, FS-148F-FPoE

Product Registration

Thank you for purchasing a Fortinet FortiSwitch. To access:

- Cloud Management
- FortiGuard Updates
- Firmware Upgrades
- Technical Support
- Warranty Coverage

Please register your Fortinet FortiSwitch:

Vous devez enregistrer le produit:

Debe registrar el producto:

登録のお願い:

请马上注册:

<http://support.fortinet.com>



November 17, 2021

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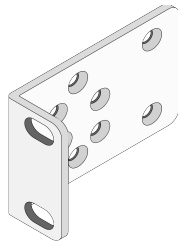
Contents - FS-148F



FortiSwitch 148F



QuickStart Guide



2x Rack-Mount Brackets



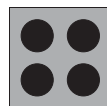
Power Cable



8x Bracket Screws



Console Cable
(DB9 to RJ45)



4x Rubber Feet

Front Panel - FS-148F



1 2

3

4 5

- 1 CONSOLE (RJ45)** client management port, default IP 192.168.1.99
USB (2.0) for future use

- 2 POWER**
 - **Green:** Power is on
 - **Off:** Power is off

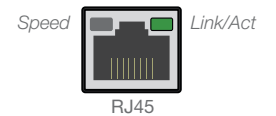
ALARM

- **Amber:** Fault detected
- **Off:** No fault detected

- 3 Ports 1 to 48 (RJ45)** GE network connections

- **Green:** Connected at 1000Mbps
- **Off:** Connected at 10/100Mbps or not in use

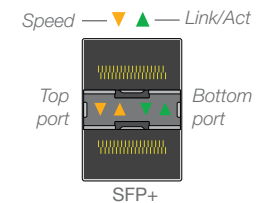
- **Green:** Connected
- **Flashing Green:** Data activity
- **Off:** No link established



- 4 Ports 49 to 52 (SFP+)** 10Gbps SFP connections

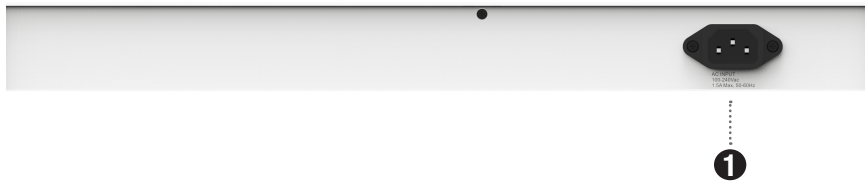
- **Green:** Connected at 10Gbps
- **Amber:** Connected at 1Gbps
- **Off:** No link established

- **Green:** Connected
- **Flashing Green:** Data activity
- **Off:** No link established



- 5 FortiLink Ports 45 to 52 (RJ45 & SFP+)** FortLink interface connections

Rear Panel - FS-148F



- 1** Power Supply 100-240V AC, 1.5A Max, 50/60Hz

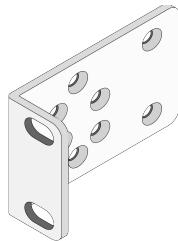
Contents - FS-148F-PoE



FortiSwitch 148F-PoE



QuickStart Guide



2x Rack-Mount Brackets



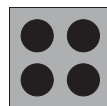
Power Cable



8x Bracket Screws



Console Cable
(DB9 to RJ45)



4x Rubber Feet

Front Panel - FS-148F-PoE



- 1** **CONSOLE (RJ45)** client management port, default IP 192.168.1.99
USB (2.0) for future use

- 2** **POWER**

■ **Green:** Power is on
■ **Off:** Power is off

PoE MAX (up to 370W)

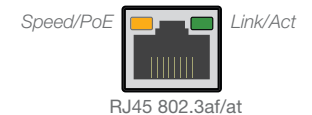
■ **Amber:** Providing Max PoE power
■ **Off:** PoE power available

ALARM

■ **Amber:** Fault detected
■ **Off:** No fault detected

- 3** **PoE Ports 1 to 24 (RJ45)** GE network connections

■ **Green:** Connected at 1000Mbps / PoE on
■ **Amber:** Connected at 100Mbps / PoE error
■ **Off:** Connected at 10Mbps or not in use / PoE off



- 4** **Ports 25 to 48 (RJ45)** GE network connections

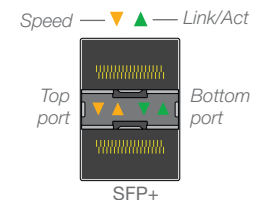
■ **Green:** Connected at 1000Mbps
■ **Amber:** Connected at 100Mbps
■ **Off:** Connected at 10Mbps or not in use

■ **Green:** Connected
■ **Flashing Green:** Data activity
■ **Off:** No link established

- 5** **Ports 49 to 52 (SFP+)** 10Gbps SFP connections

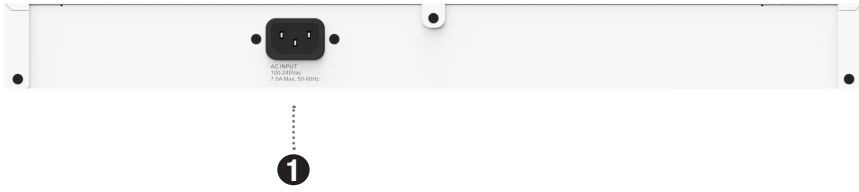
■ **Green:** Connected at 10Gbps
■ **Amber:** Connected at 1Gbps
■ **Off:** No link established

■ **Green:** Connected
■ **Flashing Green:** Data activity
■ **Off:** No link established



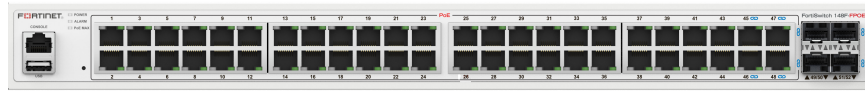
- 6** **FortiLink Ports 45 to 52 (RJ45 & SFP+)** FortiLink interface connections

Rear Panel - FS-148F-PoE



- 1** Power Supply 100-240V AC, 7A Max, 50/60Hz

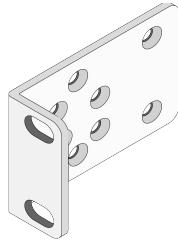
Contents - FS-148F-FPoE



FortiSwitch 148F-FPoE



QuickStart Guide



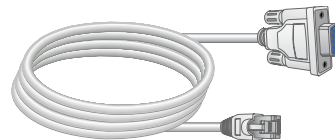
2x Rack-Mount Brackets



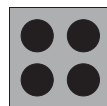
Power Cable



8x Bracket Screws

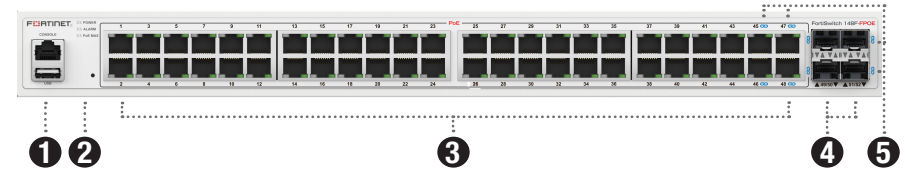


Console Cable
(DB9 to RJ45)



4x Rubber Feet

Front Panel - FS-148F-FPoE



1 **CONSOLE (RJ45)** client management port, default IP 192.168.1.99
USB (2.0) for future use

2 **POWER**

■ **Green:** Power is on
■ **Off:** Power is off

PoE MAX (up to 740W)

■ **Amber:** Providing Max PoE power
■ **Off:** PoE power available

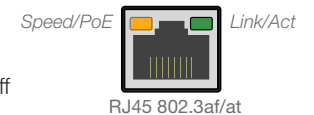
ALARM

■ **Amber:** Fault detected
■ **Off:** No fault detected

3 **Ports 1 to 48 (RJ45)** GE network connections

■ **Green:** Connected at 1000Mbps / PoE on
■ **Amber:** Connected at 100Mbps / PoE error
■ **Off:** Connected at 10Mbps or not in use / PoE off

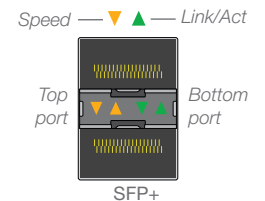
■ **Green:** Connected
■ **Flashing Green:** Data activity
■ **Off:** No link established



4 **Ports 49 to 52 (SFP+)** 10Gbps SFP connections

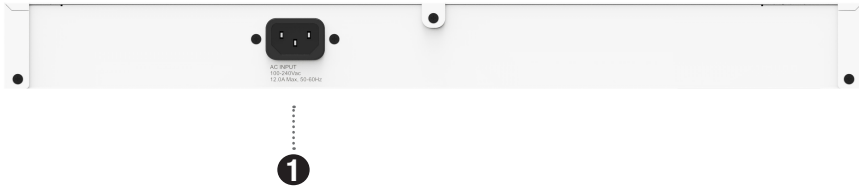
■ **Green:** Connected at 10Gbps
■ **Amber:** Connected at 1Gbps
■ **Off:** No link established

■ **Green:** Connected
■ **Flashing Green:** Data activity
■ **Off:** No link established



5 **FortiLink Ports 45 to 52 (RJ45 & SFP+)** FortiLink interface connections

Rear Panel - FS-148F-FPoE

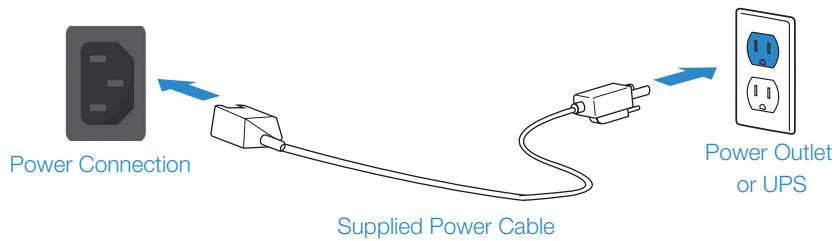


1 Power Supply 100-240V AC, 12A Max, 50/60Hz

Installation Options

Your device includes a rackmount kit. You can also install your device as Desktop. Custom Rack/Rail kits are also available.

Basic Connections



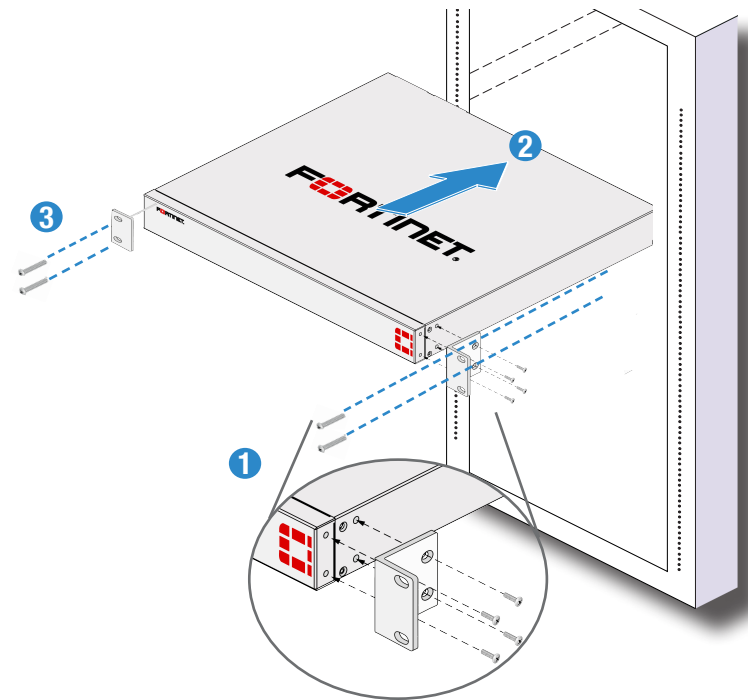
Plug in your device to a power outlet using the provided power cables.

Note: We recommend connecting your FortiSwitch to an [uninterruptible power supply \(UPS\)](#) in case of a power outage

Rack Installation

This device mounts in a standard 19 inch rack.

1. [Attach](#) the provided rack-mount [brackets and screws](#)
2. [Position](#) the device and [slide into the rack](#)
3. [Fasten](#) rack screws to [secure the device](#)

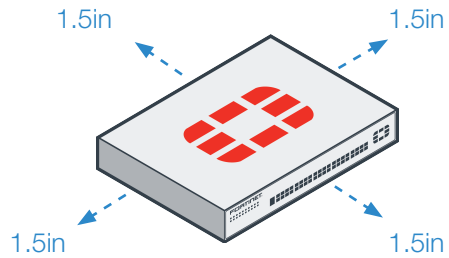


Caution: Ensure there is at least 1.5 inches of space above and below the device

Warning: For safety, it is recommended that two people install the device

Desktop Option

1. Place the unit on a flat, clean and stable surface
2. Ensure there is at least 1.5in of clearance for adequate airflow

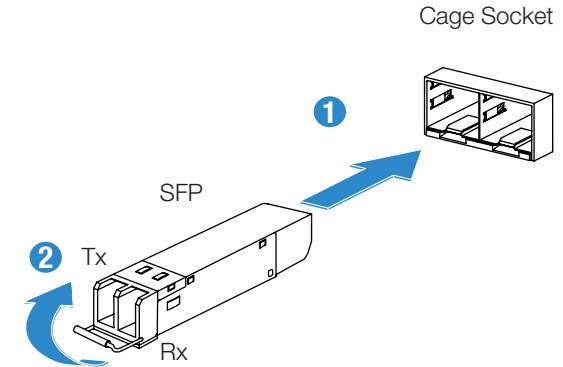


3. Plug the provided power cables into the rear of the unit and then into a grounded electrical outlet or separate power source

SFP Transceivers

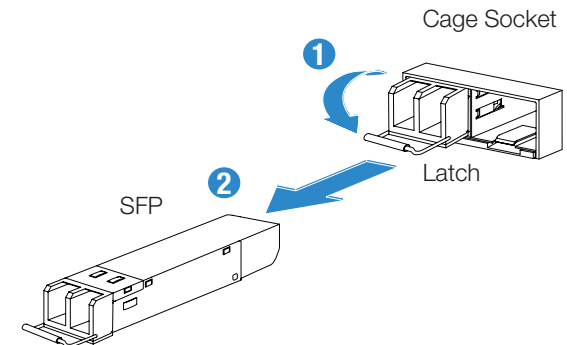
To install the SFP transceivers:

1. Slide the SFP into the cage socket until it clicks into place
2. Lift the latch to lock the SFP



To remove the SFP transceivers:

1. Lower the latch to unlock the SFP
2. Carefully pull the SFP out of the cage socket



Setup Options

Set up your device locally using the GUI or CLI. Choose an option to complete your setup, then configure your device.



Local Setup

A GUI

An [easy-to-use GUI](#), compatible with most web browsers. To minimize scrolling, the screen resolution should be at least 1280 x 1024 pixels.



Local Setup

B Command Line Interface (CLI)

An alternate configuration tool from the web-based manager that uses a [terminal emulation](#) application to [type commands](#) or upload batches of commands from a text file or [configuration script](#).



FortiLink Setup

C FortiLink Management

FortiGate units can [remotely manage](#) FortiSwitch units, known as using a [FortiSwitch in FortiLink mode](#). See the FortiOS Admin guide on docs.fortinet.com for detailed information.

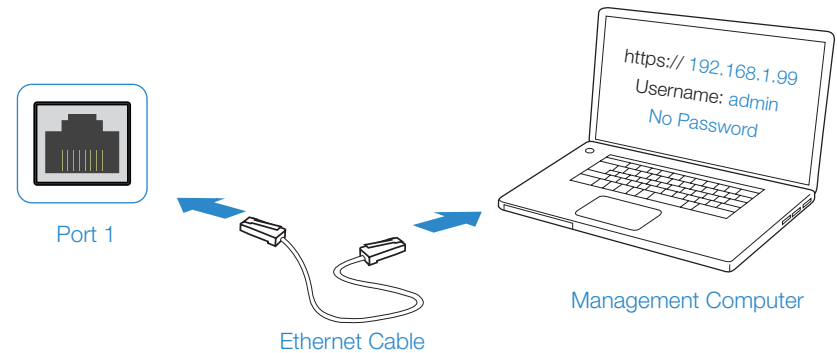


FortiCloud Setup

D FortiCloud Management

FortiSwitch Cloud manages FortiSwitch devices in [standalone mode](#). It allows you to provision, monitor, troubleshoot, and optimize your standalone FortiSwitch deployment through an [easy to understand user interface](#).

A GUI



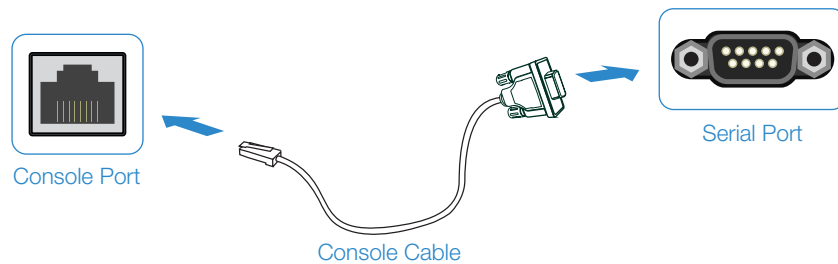
1. Connect [port 1](#) to the [Management Computer](#) using the supplied [Ethernet cable](#)
2. Enable [DHCP](#) or set the Management Computer's [IP](#) and [subnet](#) to:

Static IP Address: [192.168.1.1](#)
Subnet Mask: [255.255.255.0](#)

3. Visit <https://192.168.1.99> in a web browser
4. [Log in](#) with the username [admin](#) and [no password](#)
5. You can now configure your FortiSwitch

Note: After you log in for the first time, you will be prompted to set a new password

B CLI



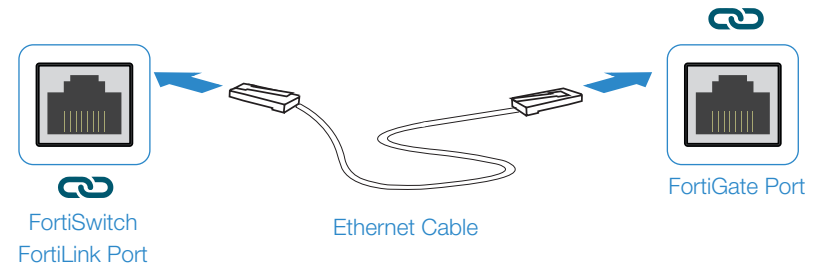
1. Connect the **Console Port** with a **Console Cable** to the **Serial Port** on the **Management Computer**
2. Start a **terminal program** on the **Management Computer** and select an available **COM Port** using the following default settings:

Baud rate: 115200
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None

3. Log in using username **admin** and **no password**
4. You can now configure your FortiSwitch

Note: After you log in for the first time, you will be prompted to set a new password

C FortiLink



1. Connect a **FortiSwitch FortiLink Port** directly using an Ethernet Cable to a **FortiGate FortiLink Port** or any FortiGate Port that is not an HA port
2. Login to the FortiGate and go to the **WiFi & Switch Controller --> FortiLink Interface**
3. **Add a FortiGate Port** in the FortiLink interface and choose **Automatically authorize devices**
4. When the **FortiSwitch is online** in the **WiFi & Switch Controller --> Managed FortiSwitch** section, you can now manage your FortiSwitch

D Cloud Management

(Connect a port to the Internet)

1. Visit support.fortinet.com to register your device and cloud management license
2. Sign in at <https://fortilan.forticloud.com> to manage your Inventory List

Resources

Refer to the following resources to continue your FortiSwitch setup.

Fortinet Customer Service & Support

Create a support account, register and manage your products, download updates, firmware images and release notes, and create technical support tickets.
<https://support.fortinet.com>

Fortinet Document Library

Up-to-date versions of Fortinet publications for the entire family of Fortinet products.
<http://docs.fortinet.com>

Training Services

Course descriptions, availability, schedules, and location of training programs in your area.
<http://www.fortinet.com/support/training.html>

Technical Discussion Forums

Communicate with other customers and Fortinet partners about Fortinet products, services, and configuration issues.
<https://support.fortinet.com/forum>

FortiGuard Threat Research and Response

Up-to-date information on vulnerabilities and threats, includes a virus scanner, IP signature look-up, and web filtering tools.
<http://www.fortiguard.com>

Cautions and Warnings

Environmental specifications

Ambient operating temperature: 0°C to 45°C

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_{ma}) 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_{ma}) 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 tel 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.

Surtension - 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:
There is a danger of explosion if a battery is incorrect replaced. Replace only with the same or equivalent type.
Dispose batteries of according to the manufacturer's instructions.

Disposing a battery into fire, a hot oven, mechanically crushing, or cutting it can result in an explosion.

Leaving a battery in an extremely hot environment can result in leakage of flammable liquid, gas, or an explosion.
If a battery is subjected to extremely low air pressure, it may result in leakage of flammable liquid, gas, or an explosion.

WARNING:
Lithium-Batterie Achtung: Explosionsgefahr bei fehlerhafter Batteriewechsel. Ersetzen Sie nur den gleichen oder gleichwertigen Typ. Batterien gemäß den Anweisungen des Herstellers entsorgen.

Beseitigung einer BATTERIE in Feuer oder einen heißen Ofen oder mechanisches Zerkleinern oder Schneiden einer BATTERIE, die zu einer EXPLOSION führen kann

Verlassen einer BATTERIE in einer extrem hohen Umgebungstemperatur, die zu einer EXPLOSION oder zum Austreten von brennbarer Flüssigkeit oder Gas führen kann

Eine BATTERIE, die einem extrem niedrigen Luftdruck ausgesetzt ist, der zu einer EXPLOSION oder zum Austreten von brennbarer Flüssigkeit oder Gas führen kann.

Caution: This equipment is to be used in a Network Environment 0 per IEC/IEC 62101. This product is connected only to PoE networks without routing to the outside plant.

Attention: Ce matériel doit être utilisé dans un Environnement Réseau 0 par IEC/IEC 62101. Ce produit est uniquement connecté aux réseaux PoE sans installation externe de routage.

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 product 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-003 (A) / NMB-003 (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 ministre 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.



Voluntary Control Council for Interference (VCCI) - Japan

この装置は、クラスA機器です。この装置を住宅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) - Japan

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。

Bureau of Standards Metrology and Inspection (BSMI) - Taiwan

The presence conditions of the restricted substance (BSMI RoHS table) are available at the link below:
限用物質含有情況表 (RoHS Table) 請到以下 網址下載:
<https://www.fortinet.com/bsmi>

此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。

英屬蓋曼群島商防特網股份有限公司 台灣分公司
地址：台北市內湖區行愛路176號2樓
電話：(02) 27961666

China

此為A級產品，在生活環境中，該產品可能會造成無線電干擾。這種情況下，可能需要用戶對其採取切實可行的措施。

Agência Nacional de Telecomunicações (ANATEL) - Brazil

Este produto não é apropriado para uso em ambientes domésticos, pois poderá causar interferências eletromagnéticas que obrigam o usuário a tomar medidas necessárias para minimizar estas interferências.*

Para maiores informações, consulte o site da ANATEL www.anatel.gov.br



For model: FS-148F-POE
Korea Certification (KC) – Korea

A급 기기 (업무용 방송통신기자재)

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기를 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Fortinet Product License Agreement / EULA and Warranty Terms

Product License Agreement

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Fortinet warrants that the hardware portion of the Products ("Hardware") will be free from material defects in workmanship as compared to the functional specifications for the period set forth as follows and applicable to the Product type ("Hardware Warranty Period"): (a) a three hundred sixty-five (365) day limited warranty for the Hardware products; (b) for FortiAP, the warranty herein shall last from the start of the warranty period as discussed above until five (5) years following the product announced end-of-life date Hardware; (c) for FortiSwitch Hardware appliance products other than the FortiSwitch-5000 series, the warranty herein shall last from the start of the warranty period as discussed above until five (5) years following the product announced end-of-life date Hardware. Fortinet's sole obligation shall be to repair or offer replacement Hardware for the defective Hardware at no charge to the original owner. 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TO THE MAXIMUM EXTENT PERMITTED BY LAW AND NOTWITHSTANDING ANYTHING TO THE CONTRARY, FORTINET IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY, INFRINGEMENT OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT OR SERVICE OR ANY DAMAGES OF ANY KIND WHATSOEVER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF PROFIT, LOSS OF OPPORTUNITY, LOSS OR DAMAGE RELATED TO USE OF THE PRODUCT OR SERVICE IN CONNECTION WITH HIGH RISK ACTIVITIES, DE-INSTALLATION AND INSTALLATION FEES AND COSTS, DAMAGE TO PERSONAL OR REAL PROPERTY, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, COMPUTER SECURITY BREACH, COMPUTER VIRUS INFECTION, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT INCLUDING ANY PRODUCT RETURNED TO FORTINET FOR WARRANTY SERVICE RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THE LIMITED WARRANTY IN SECTION 6 ABOVE, EVEN IF FORTINET HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE LIMITED WARRANTY IS, AT FORTINET'S SOLE AND ABSOLUTE DISCRETION: REPAIR, REPLACEMENT, OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT AS SPECIFICALLY STATED IN SECTION 6 ABOVE; PROVIDED, HOWEVER, IN NO EVENT SHALL ANY END-CUSTOMER REMEDIES UNDER THIS EULA AND ANY SUPPORT AGREEMENT EXCEED THE AMOUNT PAID TO FORTINET FOR THE SPECIFIC APPLICABLE DEFECTIVE OR NON-CONFORMING PRODUCT AT ISSUE.

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Except as specifically permitted and required in section 5 ("Transfer") above, you agree not to assign this Agreement or transfer any of the rights or obligations under this Agreement without the prior written consent of Fortinet. This Agreement shall be binding upon, and inure to the benefit of, the successors and permitted assigns of the parties. The United Nations Convention on Contracts for the International Sales of Goods is expressly excluded. This Agreement and other Fortinet agreements may be amended or supplemented only by a writing that refers explicitly to the agreement signed on behalf of both parties, or, for this Agreement, as otherwise expressly provided in the lead-in above Section 1 above, provided, notwithstanding anything to the contrary and except for this Agreement which may be amended or updated as expressly provided in the lead-in above Section 1 above, for any amendment or other agreement to be binding on Fortinet, such amendment or other agreement must be signed by Fortinet's General Counsel. No waiver will be implied from conduct or failure to enforce rights nor effective unless in a writing signed on behalf of the party against whom the waiver is asserted. If any part of this Agreement is found unenforceable, that part will be enforced to the maximum extent permitted and the remainder shall continue in full force and effect. You acknowledge that you have read this Agreement, understand it, and agree to be bound by its terms and conditions. Notwithstanding anything to the contrary, this EULA constitutes the entire agreement between Fortinet and its end-customers and supersedes any and all prior representations or conflicting provisions, such as limitations of liability, warranties, or otherwise in any and all purported end customer agreements, whether entered into now or in the future. In the event of a conflict between this EULA and another agreement, this EULA shall prevail unless the conflicting agreement expressly states that it replaces this EULA, expressly referring to this EULA, and is agreed to in writing by authorized representatives of the parties (which, in the case of Fortinet, is Fortinet's General Counsel).

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