FORTINET FS-448E-POE

Fortinet FortiSwitch FS-448E-POE Layer 2/3 PoE+ Switch User Manual

1. INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of the Fortinet FortiSwitch FS-448E-POE Layer 2/3 PoE+ Switch. Please read this manual thoroughly before using the device to ensure proper setup and functionality.

2. PRODUCT OVERVIEW

The FortiSwitch FS-448E-POE is a high-performance Layer 2/3 Power over Ethernet Plus (PoE+) switch designed for secure access and network aggregation. It offers advanced security, performance, and manageability, integrating seamlessly with the Fortinet Security Fabric via FortiLink for unified management.

Key Features:

- Delivers outstanding security, performance, and manageability.
- Secure, simple, and scalable design suitable for businesses of all sizes.
- Tightly integrated into the Fortinet Security Fabric via FortiLink for direct management from the FortiGate interface.
- Provides complete visibility and control of users and devices on the network.
- Ideal for SD-Branch deployments, supporting applications from desktop to data center aggregation.
- Features Universal Zero Trust Network Access (ZTNA), SASE support, and 128 MB Flash memory.

SPECIFICATIONS

	FORTISWITCH 448E	FORTISWITCH 448E-POE	FORTISWITCH 448E-FPOE
Hardware Specifications			
Total Network Interfaces	48x GE RJ45 and 4× 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	48x GE RJ45 and 4× 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP	48x GE RJ45 and 4× 10GE SFP+ ports Note: SFP+ ports are compatible with 1 GE SFP
Dedicated Management 10/100 Port	1	1	1
RJ-45 Serial Console Port	1	1	1
Form Factor	1 RU Rack Mount	1 RU Rack Mount	1 RU Rack Mount
Power over Ethernet (PoE) Ports	—	48 (802.3af/at)	48 (802.3af/at)
PoE Power Budget	—	421 W	772 W
Mean Time Between Failures	> 10 years	> 10 years	> 10 years
System Specifications			
Switching Capacity (Duplex)	176 Gbps	176 Gbps	176 Gbps
Packets Per Second (Duplex)	262 Mpps	262 Mpps	262 Mpps
MAC Address Storage	32 K	32 K	32 K
Network Latency	<1µs	<1µs	<1µs
VLANs Supported	4 K	4 K	4 K
Link Aggregation Group Size	8	8	8
Total Link Aggregation Groups	Up to number of ports	Up to number of ports	Up to number of ports
Packet Buffers	4 MB	4 MB	4 MB
DRAM	1GB DDR4	1GB DDR4	1GB DDR4
FLASH	256 MB	256 MB	256 MB
ACL	1.5k	1.5k	1.5k
Spanning Tree Instances	16	16	16
Route Entries (IPv4/IPv6)	16k/8k	16k/8k	16k/8k
Host Entries	16k	16k	16k
Dimensions			
Height x Depth x Width (inches)	1.75 × 12.2 × 17.3	1.73 × 16.1 × 17.3	1.73 × 16.1 × 17.3
Height x Depth x Width (mm)	44 × 310 × 440	44 × 410 × 440	44 × 410 × 440
Weight	9.17 lbs (4.16 kg)	13.8 lbs (6.26 kg)	14.04 lbs (6.37 kg)
Environment			
Power Required	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz	100–240V AC, 50/60 Hz
Power Supply	AC built in	AC built in	AC built in
Redundant Power	Redundant AC	Redundant AC	Redundant AC
Power Consumption* (Average / Maximum)	46.5 W / 47.81 W	440.12 W / 442.234 W	921.4 W / 923.6 W
Heat Dissipation	163.032 BTU/h	163.066 BTU/h	163.1 BTU/h
Operating Temperature	32°–122°F (0°–50°C)	32°–122°F (0°–50°C)	32°–122°F (0°–50°C)
Storage Temperature	-4°–158°F (-20°–70°C)	-4°–158°F (-20°–70°C)	-4°–158°F (-20°–70°C)
Humidity	10%–90% non condensing	10%–90% non condensing	10%–90% non condensing
Air-Flow Direction	side-to-back	side-to-back	side-to-back
Noise Level	35.5 dBA	38.3 dBA	50.7 dBA
Certification and Compliance			
		FCC, CE, RCM, VCCI, BSMI, UL, CB, RoHS2	
Warranty			
Fortinet Warranty		Limited lifetime** warranty on all models	

* POE models power consumption is similar to non-POE model if POE is not in use
** Fortinet Warranty Policy: http://www.fortinet.com/doc/legal/EULA.pdf

Image 2.1: FortiSwitch FS-448E-POE highlighting key features such as Universal ZTNA, PoE and PoE+ support, SASE support, and 128 MB Flash.

What's in the Box:

The FortiSwitch FS-448E-POE package includes the following:

- Fortinet FortiSwitch FS-448E-POE Unit

- Accessories (e.g., power cord, rackmount kit)

3. SETUP INSTRUCTIONS

Follow these steps to properly set up your FortiSwitch FS-448E-POE.

3.1 Physical Installation

1. **Unpack the Switch:** Carefully remove the switch and all accessories from the packaging. Inspect for any damage.

2. **Mounting:** The FortiSwitch FS-448E-POE is designed for rack mounting. Use the provided rackmount kit to secure the switch in a standard 19-inch equipment rack. Ensure adequate ventilation around the unit.

3. **Power Connection:** Connect the provided power cord to one of the AC input ports on the rear of the switch and then to a grounded electrical outlet.

Image 3.1: Front and rear views of the FortiSwitch FS-448E-POE, showing the 48 PoE+ ports on the front and AC input, console port, and cooling fans on the rear.
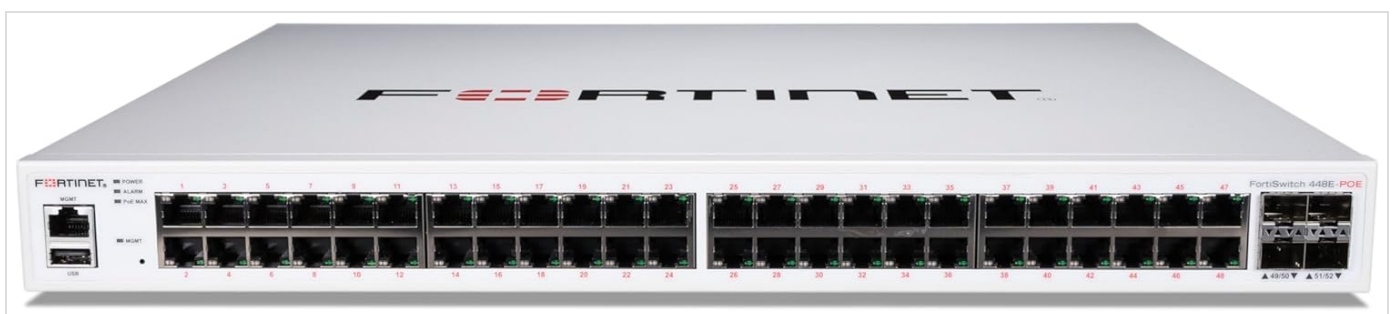

Image 3.2: Detailed rear view of the FortiSwitch FS-448E-POE, highlighting the console port, AC power inputs, and cooling fan exhausts.

3.2 Network Connections

1. **Uplink Connection:** Connect an Ethernet cable from one of the uplink ports (SFP+ or RJ45) on the FortiSwitch to your network's core switch or router.

2. **Device Connections:** Connect your network devices (e.g., IP phones, wireless access points, computers) to the RJ45 ports on the front of the FortiSwitch. The PoE+ ports will automatically provide power to compatible devices.

3. **Console Connection (Optional):** For initial configuration or troubleshooting, connect a console cable from your management workstation to the console port on the rear of the switch.

4. OPERATING INSTRUCTIONS

Once physically installed and connected, the FortiSwitch FS-448E-POE can be managed and operated.

4.1 Powering On

After connecting the power cord, the switch will automatically power on. Observe the LED indicators on the front panel to confirm power status and port activity.

4.2 Management Interface

The FortiSwitch FS-448E-POE is designed for integration with a FortiGate firewall using FortiLink. This allows for centralized management of the switch directly from the FortiGate interface, providing a single pane of glass for network and security control.

- **FortiLink Integration:** Refer to the FortiGate documentation for detailed instructions on configuring FortiLink and managing connected FortiSwitches.
- **Local Management (CLI):** For advanced configuration or in standalone deployments, the switch can be managed via its Command Line Interface (CLI) through the console port or SSH.

4.3 PoE+ Functionality

The switch's PoE+ ports automatically detect and provide power to connected PoE-compatible devices. Ensure that the total power consumption of all connected devices does not exceed the switch's maximum PoE power budget (421 Watts).

5. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your FortiSwitch.

- **Cleaning:** Keep the switch and its ventilation openings clean and free of dust. Use a soft, dry cloth for cleaning. Do not use liquid or aerosol cleaners.
- **Firmware Updates:** Regularly check the Fortinet support website for the latest firmware updates. Keeping the firmware up-to-date ensures access to new features, performance improvements, and security patches.
- **Environmental Conditions:** Ensure the switch operates within its specified environmental conditions (temperature, humidity) to prevent overheating and component failure.

6. TROUBLESHOOTING

This section provides solutions to common issues you might encounter.

6.1 No Power

- **Check Power Cord:** Ensure the power cord is securely connected to both the switch and the electrical outlet.
- **Verify Outlet:** Test the electrical outlet with another device to confirm it is functioning.
- **Power Supply:** If the switch has redundant power supplies, check the status of both.

6.2 No Network Connectivity

- **Check Cables:** Ensure all Ethernet cables are securely connected to the correct ports on both the switch and the connected devices.

- **LED Indicators:** Observe the port status LEDs. A solid green or amber light typically indicates a link, while a blinking light indicates activity. No light suggests no link.
- **Configuration:** Verify the network configuration on the FortiGate (if using FortiLink) or the switch's CLI. Ensure VLANs, IP addresses, and routing are correctly configured.
- **Device Compatibility:** Ensure connected devices are compatible with the switch's port speeds and settings.

6.3 PoE Device Not Receiving Power

- **PoE Compatibility:** Confirm that the connected device is PoE or PoE+ compatible.
- **Cable Quality:** Use high-quality Ethernet cables (Cat5e or higher) for PoE connections.
- **Power Budget:** Check the switch's PoE power budget. If the total power draw exceeds the budget, some devices may not receive power. Disconnect non-essential PoE devices or add an additional PoE power source.
- **Port Status:** Check the PoE status of the port via the management interface.

7. SPECIFICATIONS

Detailed technical specifications for the Fortinet FortiSwitch FS-448E-POE.

FS-448E-POE Specifications

Switching Capacity (Duplex)	176 Gbps
Packets Per Second (Duplex)	262 Mpps
DRAM	1GB DDR4
Flash	256 MB
VLANs Supported	4K
Network Latency	< 1µs

Image 7.1: Comprehensive specifications table for the FortiSwitch FS-448E-POE, including hardware specifications, system specifications, dimensions, environmental conditions, and warranty information.

Image 7.2: Physical dimensions (Height x Depth x Width: 1.73 x 16.1 x 17.3 inches) and weight (13.8 pounds) of the FortiSwitch FS-448E-POE as depicted in this visual reference.

FortiSwitch FS-448E-POE Technical Specifications

Feature	Specification
Item Model Number	FS-448E-POE
Brand	FORTINET

Feature	Specification
Number of Ports	48
Interface Type	PoE+
Data Transfer Rate	1000 Megabits Per Second (1 Gbps)
Maximum Power (PoE Budget)	421 Watts
Product Dimensions	23 x 22 x 6 inches
Item Weight	18.56 pounds (8.44 Kilograms)
UPC	842382178607
Manufacturer	Fortinet
Compatible Devices	Desktop (general network devices)

8. WARRANTY AND SUPPORT

Fortinet products are backed by comprehensive warranty and support services.

- **Warranty Information:** Fortinet provides a limited lifetime warranty on certain models. Please refer to the official Fortinet website or your purchase documentation for specific warranty terms applicable to the FS-448E-POE model.
- **Technical Support:** For technical assistance, documentation, and software downloads, visit the official Fortinet support portal at support.fortinet.com.
- **Contact Information:** For sales or general inquiries, visit the Fortinet website at www.fortinet.com.