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NETGEAR XSM4216F

NETGEAR AV Line M4250-16XF 16-Port L3 Managed Switch User Manual

Model: XSM4216F

Introduction Safety Information Package Contents Product Overview Setup Operation Maintenance Troubleshooting Specifications Warranty & Support

1. Introduction

This manual provides instructions for the installation, operation, and maintenance of the NETGEAR AV Line M4250-16XF 16-Port L3 Managed Switch (Model XSM4216F). This high-performance switch is designed for professional audio/video installations and other demanding network environments, offering 16x10G SFP+ ports and advanced Layer 3 management capabilities.

2. Safety Information

Please read all safety instructions before operating this device. Failure to follow these instructions may result in electric shock, fire, or damage to the product.

- Ensure the power supply voltage matches the rating label on the device.
- Do not expose the device to water or excessive humidity.
- Do not open the device casing. Refer all servicing to qualified personnel.
- Install the device in a well-ventilated area to prevent overheating.
- Use only the power cord and accessories provided or specified by the manufacturer.

3. Package Contents

Verify that all items are present in your package:

- NETGEAR AV Line M4250-16XF Switch (XSM4216F)
- Power Cord
- Rack-mounting Kit (brackets and screws)
- Console Cable

- USB-C to USB-A Cable
- Installation Guide (this document)

4. Product Overview

The NETGEAR M4250-16XF is a high-performance network switch designed for robust and reliable network connectivity. Below are descriptions of its front and rear panels.

4.1 Front Panel



Figure 1: Front Panel of the M4250-16XF Switch. This image displays the front of the NETGEAR M4250-16XF switch, highlighting the 16 SFP+ ports, two 1G Ethernet ports, a console port, and USB ports. LED indicators for power, link/activity are also visible.

- **10G SFP+ Ports (1-16):** These ports support 10 Gigabit fiber connections for high-speed uplinks or device connections.
- **1G Ethernet Ports (2):** Standard Gigabit Ethernet ports for general network connectivity.
- **Console Port:** RJ-45 port for command-line interface (CLI) access.
- **USB Ports:** USB-A and USB-C ports for management and configuration.
- **LED Indicators:** Provide status for power, fan, and port link/activity.

4.2 Rear Panel



Figure 2: Rear Panel of the M4250-16XF Switch. This image shows the rear of the NETGEAR M4250-16XF switch, featuring the AC power input connector and a grounding screw.

- **AC Power Input:** Connector for the power cord.
- **Grounding Screw:** For connecting an earth ground cable (optional, but recommended for safety).

5. Setup

5.1 Rack Mounting

The M4250-16XF switch is designed for rack installation. Use the provided rack-mounting brackets and screws to secure the switch in a standard 19-inch equipment rack.

1. Attach the mounting brackets to the sides of the switch using the included screws.
2. Align the brackets with the rack posts and secure the switch using appropriate rack screws (not always included with switch).
3. Ensure adequate airflow around the switch for proper cooling.

5.2 Connecting Power

1. Connect the provided power cord to the AC power input on the rear panel of the switch.
2. Plug the other end of the power cord into a grounded electrical outlet.
3. The Power LED on the front panel will illuminate when the switch receives power.

5.3 Connecting Network Devices

- **SFP+ Ports:** Insert compatible 10G SFP+ transceivers into the SFP+ slots. Connect fiber optic cables from the transceivers to your 10G network devices or other switches.
- **Ethernet Ports:** Connect standard Ethernet cables from your network devices (e.g., computers, servers, other switches) to the 1G Ethernet ports.
- Verify port link/activity LEDs illuminate to confirm a successful connection.

5.4 Initial Configuration

For initial configuration and advanced management, you can use the console port or a web-based interface.

- **Console Access:** Connect a computer to the switch's console port using the provided console cable. Use a terminal emulation program (e.g., PuTTY) with settings: 115200 baud, 8 data bits, no parity, 1 stop bit, no flow control.
- **Web Interface:** The switch typically obtains an IP address via DHCP by default. Refer to the documentation for default IP address or use a network scanner to discover it. Access the web interface via a web browser.

6. Operation

6.1 Basic Operation

- **Power On:** Connect the power cord. The switch will perform a self-test and boot up.
- **Power Off:** Disconnect the power cord from the electrical outlet.

6.2 Management Interfaces

The M4250-16XF offers various management options:

- **Command Line Interface (CLI):** Accessible via the console port or SSH/Telnet. Provides full control over switch functions.
- **Web-Based Graphical User Interface (GUI):** Accessible via HTTPS. Offers an intuitive interface for configuration and monitoring.
- **SNMP:** Supports SNMP v1, v2c, and v3 for network management systems.
- **RMON:** Supports RMON 1, 2, 9 for network monitoring and analysis.
- **TACACS+/RADIUS:** For centralized authentication, authorization, and accounting.

6.3 Key Features

- **Layer 3 Management:** Supports advanced routing protocols including RIP, IGMP, and PIM.

- **VLAN Support:** Up to 4093 VLANs for network segmentation and traffic isolation.
- **Quality of Service (QoS):** Prioritize critical network traffic.
- **DHCP Snooping:** Enhances network security by preventing unauthorized DHCP servers.
- **DoS Attack Prevention:** Built-in mechanisms to protect against Denial of Service attacks.
- **Link Aggregation (LACP):** IEEE 802.3ad for increased bandwidth and redundancy.
- **Time Synchronization:** IEEE 802.1as for precise timing in AV-over-IP applications.
- **Link Layer Discovery Protocol (LLDP):** IEEE 802.1ab for network topology discovery.

7. Maintenance

7.1 Firmware Updates

Regularly check the NETGEAR support website for the latest firmware updates. Firmware updates can provide new features, performance improvements, and security patches. Follow the instructions provided with the firmware package for a safe update process.

7.2 Cleaning

Keep the switch clean and free of dust. Use a soft, dry cloth to wipe the exterior. Do not use liquid or aerosol cleaners. Ensure ventilation openings are clear of obstructions.

7.3 Environmental Considerations

Operate the switch within its specified temperature and humidity ranges. Avoid installing it near heat sources or in areas with high moisture.

8. Troubleshooting

This section addresses common issues you might encounter with the M4250-16XF switch.

Problem	Possible Cause	Solution
No Power LED	Power cord disconnected; Power outlet failure.	Check power cord connection; Try a different power outlet.
No Link/Activity LED	Cable disconnected or faulty; Device not powered on; Incorrect port configuration.	Verify cable connections; Ensure connected device is powered on; Check port settings in the switch configuration.
Cannot access Web GUI	Incorrect IP address; Network connectivity issue; Firewall blocking access.	Verify the switch's IP address; Check network cable; Temporarily disable client firewall; Try console access.
Slow network performance	Network congestion; Duplex mismatch; Faulty cable; High CPU utilization on switch.	Check network traffic; Verify duplex settings; Replace cables; Monitor switch resources.

If the problem persists, contact technical support for assistance.

9. Specifications

Feature	Detail
Model	XSM4216F
Ports	16x 10G SFP+ ports
Switching Capacity	320 Gbps
Latency (1 Gbps)	Less than 1.30 µs
Latency (10 Gbps)	Less than 0.86 µs
VLANs Supported	4093
ARP Entries	4000
Packet Buffer Memory	16 MB
Management	RMON 1, 2, 9, SNMP, Telnet, HTTPS, SSH, CLI, TACACS+, RADIUS
Routing Protocols	RIP, IGMP, PIM
Power Consumption	47.84 Watts (Operational)
Certifications	FCC CFR47 Part 15 B Class A, EN 60950-1
Dimensions (Approx.)	Rack-mountable 1U

10. Warranty and Support

This NETGEAR product comes with a limited lifetime warranty. Additionally, it includes Cloud Care's 3 Year Warranty SupportPlus, providing extended support and peace of mind.

- For detailed warranty terms and conditions, please refer to the official NETGEAR warranty statement.
- For technical support, visit the NETGEAR support website or contact Cloud Care support as per your SupportPlus agreement.
- Keep your purchase receipt for warranty claims.

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