



# EX2500 ETHERNET SWITCHES

## Product Overview

The Juniper Networks EX2500 line of Ethernet switches delivers a compact, powerful solution for high-density data center top-of-rack access switch deployments where high performance, low latency, high availability (HA), and energy efficiency are key requirements.

## Product Description

Featuring 24 wire-speed 10-Gigabit Ethernet SFP+ ports in a one rack-unit (RU) platform, Juniper Networks® EX2500 line of Ethernet switches delivers the performance and functionality needed to accelerate the deployment of latency-sensitive, business-enabling applications and services across the network.

By targeting high-density 10-Gigabit Ethernet top-of-rack deployments in the data center, the EX2500 provides the perfect complement to the rest of the Juniper Networks EX Series Ethernet Switches: the EX3200 line of Ethernet switches, designed for low-density Gigabit Ethernet access deployments; the Juniper Networks EX4200 line of Ethernet switches, designed for high-density data center and campus Gigabit Ethernet access and aggregation deployments; and the EX8200 line of Ethernet switches, designed for data center and campus 10-Gigabit Ethernet core and aggregation environments.

## Architecture and Key Components

Two versions of the EX2500 line of Ethernet switches are available: the EX2500-24F-FB, which offers front-to-back airflow; and the EX2500-24F-BF, which offers back-to-front airflow. Unlike most switches, which offer only front-to-back cooling, the EX2500 switches can be mounted with ports facing either the hot or cold aisle, depending on which is closer to the server network ports, keeping cable lengths short and more easily managed.

The EX2500 supports 10 Gbps SFP+ SR and LR optics, as well as direct-attach cables, which can be used to directly attach servers to the switch without optical transceivers or fiber-optic patch cables. The EX2500 can be managed via SNMP v1/v2/v3 or an embedded Web UI.

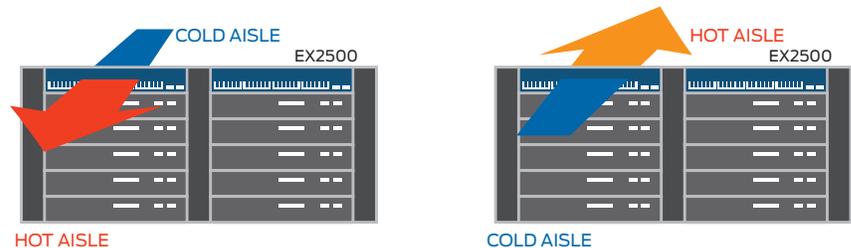


Figure 1: The EX2500-24F-BF (left) offers back-to-front airflow for network ports facing the hot aisle while the EX2500-24F-FB (right) offers front-to-back airflow for network ports facing the cold aisle.

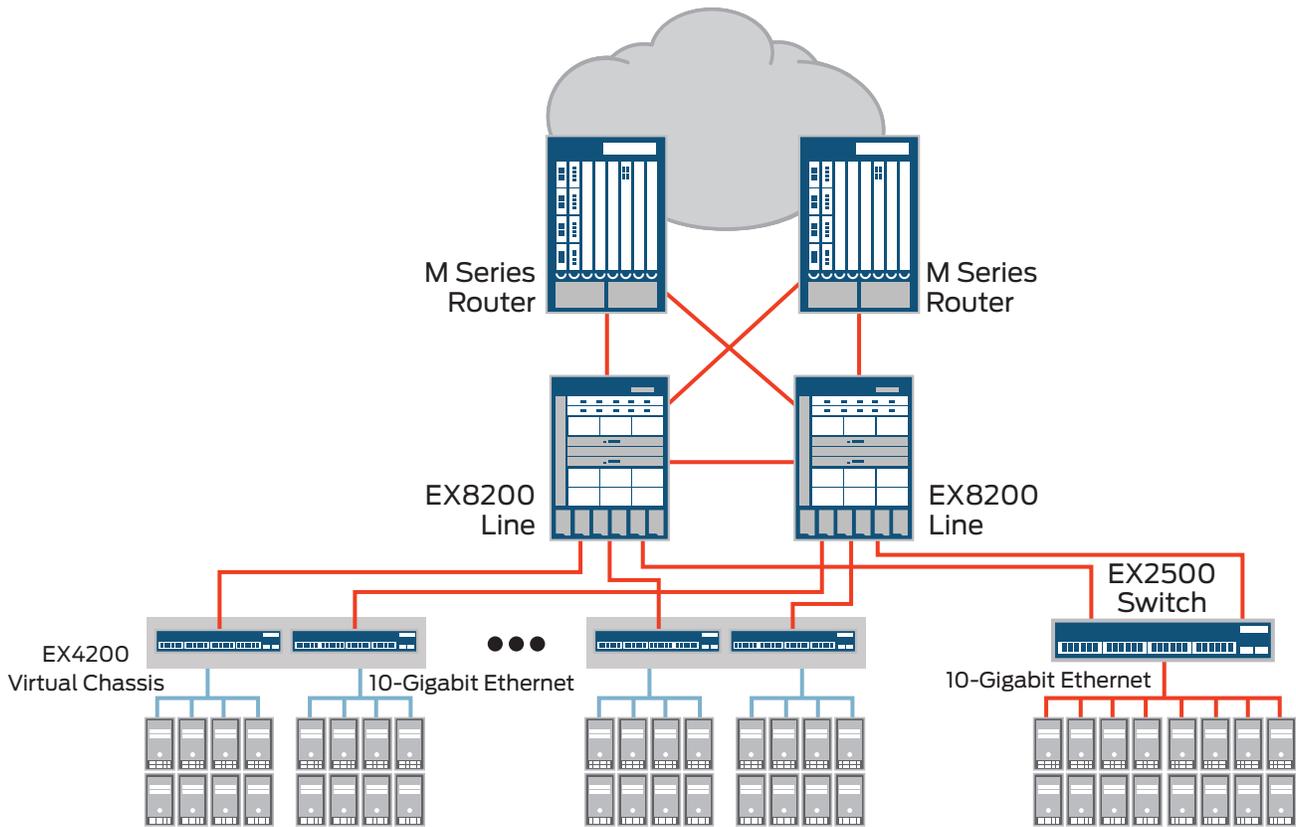


Figure 2: The 10-Gigabit Ethernet EX2500 line delivers a high-performance, low-latency top-of-rack solution for data center server access.

## Features and Benefits

### Wire-Rate, Low-Latency Performance

The EX2500 delivers 480 Gbps throughput (full duplex) for any size packets. All ports are non-blocking with deterministic latency in the order of 700 nanoseconds.

### Deployment Flexibility

The EX2500 supports both back-to-front and front-to-back cooling, which provides deployment flexibility and consistency with server designs for hot- and cold-aisle deployments. Front- and rear-facing configuration options ensure closer proximity of network access ports to server Ethernet ports, optimizing performance and keeping cable lengths short and manageable.

### High Availability (HA)

The EX2500 offers dual internal, load-sharing AC power supplies and redundant, variable-speed fans as standard features, protecting the switch from a single power supply or fan failure.

### Energy Efficiency

The EX2500 improves cooling efficiency via redundant variable-speed fans that automatically adjust their speed based on existing conditions to reduce power consumption.

## Deployment Scenarios

The EX2500 switches are designed for high-density 10-Gigabit Ethernet data center top-of-rack applications where high performance, low latency, HA, and energy efficiency are critical.

Line-rate, high-bandwidth, cut-through switching, filtering and traffic-queuing features enable the EX2500 to keep traffic moving, while redundant power and fans ensure the switch is always available for business-sensitive operations. The low latency offered by the EX2500—approximately 700 nanoseconds—makes it ideal for delay-sensitive applications such as high-performance server clusters and financial applications.



EX2500

## Specifications

### Physical Specifications

#### Dimensions (W x H x D)

- 17.3 x 1.7 x 15 in (43.9 x 4.3 x 38.1 cm)
- Height: 1 rack unit (RU)

#### Weight

- 14.9 lb (6.8 kg)

#### Environmental Ranges

- Operating temperature: 14° to 104° F (-10° to 40° C)
- Temperature (fan failure or power supply failure), operating: 14° to 99° F (-10° to 35° C)
- Storage temperature: -20° to 158° F (-20° to 70° C)
- Operating altitude: up to 10,000 ft (3,048 m)
- Non-operating altitude: up to 15,000 ft (4,573 m)
- Relative humidity operating: 10 to 90 percent (noncondensing)
- Relative humidity non-operating: 10 to 95 percent (noncondensing)
- Acoustic noise: less than 65 dBA

### Hardware

#### Interface Options

- 24 Gigabit Ethernet/10-Gigabit Ethernet SFP+ fiber connectors: dual-mode operation (1000BASE-X/10GBASE-X)
- Two 10/100/1000 Ethernet RJ-45 ports for out-of-band management
- RS-232 DB9 console port for management
- Server-like port orientations enable short and easily managed cabling

#### Supported Optics

##### 10-Gigabit Ethernet SFP+ LC Connector:

- SR (multimode)
- LR (single-mode)
- DAC (direct-attach copper) twinax cables (one-meter and three-meter options)

#### Power

- Average power consumption: 192 W (at full line rate)
- Dual load-sharing internal autosensing AC power supplies (110/220 VAC, 60/50 Hz)

#### Rack Installation Kit

- Standard two-post mounting option for server rack or data communications rack
- Versatile four-post mounting options for server rack or data communications rack

#### LEDs

- Fan and power status LEDs

#### Airflow

- Front-to-back or back-to-front cooling options
- Redundant variable-speed fans

## Software Specifications

### Services and Manageability

- RADIUS
- TACACS+
- Wire-speed filtering: allow and deny
- Out-of-band management: Serial, 10/100/1000BASE-T Ethernet
- HTTPS Secure Web Device Manager
- SSHv2
- SNMP: v1, v2c, v3
- RMON
- NTP
- Temperature sensor

### Layer 2 Switching

- Number of VLANs: 1024 (VLAN ID range: 4096)
- IEEE 802.1Q: VLAN tagging
- Port-based VLANs
- Private VLAN Edge
- IEEE 802.3ad: Link Aggregation Control Protocol
- Static Trunks
- Configurable Trunk Hash algorithm
- IEEE 802.1D: Spanning Tree Protocol
- IEEE 802.1s: Multiple Spanning Tree Protocol
- IEEE 802.1w: Rapid Spanning Tree Protocol
- PVRST+
- Fast Uplink Convergence
- BPDU guard

### Quality of Service

- Eight queues per port
- IEEE 802.1p (priority queues)
- DSCP-based per-hop behavior (PHB)

### HA

- Uplink Failure Detection

### Multicast

- IGMP v1, v2, and v3 snooping

### Monitoring

- Port Mirroring

## Safety and Compliance

### EMC

- FCC Part 15 Class A (2007) USA Radiated Emissions
- EN 55022 Class A (2006) European Radiated Emissions
- VCCI Class A (2007) Japanese Radiated Emissions
- ICES-003 Class A
- AS/NZS CISPR 22 Class A
- CISPR 22 Class A

### Telco

- Common Language Equipment Identifier (CLEI) code

## Juniper Networks Services and Support

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## Ordering Information

MODEL NUMBER	DESCRIPTION
<b>Switches</b>	
EX2500-2F-FB	24-port Gigabit Ethernet/10-Gigabit Ethernet SFP+ front-to-back airflow
EX2500-24F-BF	24-port Gigabit Ethernet/10-Gigabit Ethernet SFP+ back-to-front airflow
EX2500-RMK-4POST	Generic four-post rack mount kit
<b>Pluggable Optics</b>	
EX-SFP-10GE-LR	SFP+ 10GBASE LR; LC connector; 1310 nm; 10 km reach on single-mode fiber
EX-SFP-10GE-SR	SFP+ 10GBASE SR; LC connector; 850 nm; 300 m reach on 50 microns multimode fiber; 33 m on 62.5 microns multimode fiber
EX-SFP-10GE-DAC-1M	SFP+ 10-Gigabit Ethernet Direct Attach Copper (twinax copper cable) 1 m
EX-SFP-10GE-DAC-3M	SFP+ 10-Gigabit Ethernet Direct Attach Copper (twinax copper cable) 3 m
EX-SFP-10GE-DAC-5M	SFP+ 10-Gigabit Ethernet Direct Attach Copper (twinax copper cable) 5 m
EX-SFP-10GE-DAC-7M	SFP+ 10-Gigabit Ethernet Direct Attach Copper (twinax copper cable) 7 m

## About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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