

# V400 Series

## Highlights

### Key Features

- Scalable family of edge switches centrally powered by ExtremeXOS software
- Edge component of Extreme's Extended Edge Switching solution
- Seamlessly runs advanced services residing on ExtremeXOS aggregation switch
- Centralized, single point of control reduces complexity and operational costs
- Plug and play edge installation - just connect and power-up

### Hardware Summary

- 24 or 48-port Gigabit Ethernet (non-PoE) models
- 24 or 48-port 802.3at PoE models
- 2 or 4-port 10Gbase-X SFP+ uplink ports
- Redundant Power Supply (RPS) option



## Simplified edge switch operation leveraging the power of ExtremeXOS® aggregation switches

The V400 Series is a scalable cost-effective family of edge switches powered by Extreme Networks ExtremeXOS (EXOS) software, a highly resilient OS providing continuous uptime, advanced services and operational efficiency.

As the edge component of Extreme's Extended Edge Switching solution, the V400 provides access switch capabilities, while being controlled by a remote EXOS aggregation switch. This allows the V400 to seamlessly extend all the feature-rich services of the EXOS aggregation switch, including Layer 3 routing and policy, to the network edge.

## Centralized Management and Control

All V400 models support standards-based control and data plane technology based on the IEEE 802.1BR specification, allowing for centralized management and intelligent service delivery from a central EXOS aggregation switch. The EXOS aggregation switch also acts as a single point of V400 configuration and control for reduced complexity and operational costs (see Figure 1).

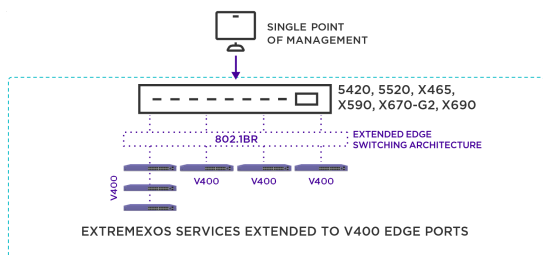


Figure 1: The V400 is the edge component of Extreme's Extended Edge Switching solution

## Plug and Play Installation

V400 Series units can quickly be installed in a plug and play manner. Once the unit is physically connected and powered up, the V400 automatically finds the central EXOS aggregation switch and downloads its configuration. There is no need to connect a local console for setup of the V400 device or its ports.

## Diverse Models with 10Gb Uplinks

The V400 family consists of both 24 and 48-port Gigabit Ethernet and 24 and 48-port Gigabit PoE+ models. All models include either 2 or 4 SFP+ ports on the faceplate of each base unit, which can be provisioned as upstream and/or cascade ports. This gives administrators the option to create redundant upstream links or downstream cascade/ring ports to other V400 units (see Figure 1).

## Ring Support for Edge Resiliency

Cascaded V400 devices can also be configured in a ring design for additional resiliency. In a ring, the first and last V400 devices in a cascade can be connected to the EXOS aggregation switch. If any V400 device in the ring should fail, traffic can be re-routed in the other direction across the ring back to the EXOS aggregation switch.

## Power over Ethernet Support

V400 Series switches support both IEEE 802.3at PoE+ and IEEE 802.3af PoE to enable connection of standards compliant PoE devices today. The V400 offers up to 740W PoE budget on 48-port models and 380W on 24-port models.

## Redundant Power Supply

V400 PoE models also support an optional external redundant power supply (RPS) with up to 1000W for backup (or failover) power needs.

## EXOS Aggregation Switches

The V400 operates in conjunction with 5420, 5520, X465, X590, X670-G2, and X690 Series switches which act as the "controlling" aggregation switch within the Extended Edge Switching architecture.

## Technical Specifications

### Performance and Scale

Switch Model	Maximum 10/100/1000 Base-T Ports	Maximum Active 1Gb SFP Ports	Maximum Active 10Gb SFP+ Ports	Aggregated Switch Bandwidth	Frame Forwarding Rate
V400-24t-10GE2	24	2	2	40 Gbps	59 Mpps
V400-24p-10GE2	24	2	2	40 Gbps	59 Mpps
V400-48t-10GE4	48	4	4	80 Gbps	119 Mpps
V400-48p-10GE4	48	4	4	80 Gbps	119 Mpps

### CPU/Memory

- 64-bit ARM Processor, 800 MHz clock, dual core
- 256MB ECC DDR3 DRAM
- 128MB Flash
- 1.5MB packet buffer on 24-port switches, 3MB packet buffer on 48-port switches

### LED Indicators

- Per port status LED including power status
- System Status LEDs: fan and system

### External Ports

Switch Hardware	Ports
V400-24t-10GE2	24 x 10/100/1000BASE-T (RJ-45) Half, Full, Auto Duplex   2 x 10GBASE-X SFP+   11 x Serial (console port RJ-45)   USB
V400-24p-10GE2	24 x 10/100/1000BASE-T (RJ-45) PoE-Plus Half, Full, Auto Duplex   2 x 10GBASE-X SFP+   11 x Serial (console port RJ-45)   USB   RPS port
V400-48t-10GE4	48 x 10/100/1000BASE-T (RJ-45) Half, Full, Auto Duplex   4 x 10GBASE-X SFP+   11 x Serial (console port RJ-45) with RTS/CTS modem control   USB
V400-48p-10GE4	48 x 10/100/1000BASE-T (RJ-45) PoE-Plus Half, Full, Auto Duplex   4 x 10GBASE-X SFP+   1 x Serial (console port RJ-45) with RTS/CTS modem control   USB   RPS port

### Physical

Switch Model	Weight	Height	Width	Depth
V400-24t-10GE2	6.62 lb (3.00 kg)	1RU / 1.70 inches (4.32 cm)	17.34 inches (44.0 cm)	9.97 inches (25.3 cm)
V400-24p-10GE2	9.08 lb (4.12 kg)	1RU / 1.70 inches (4.32 cm)	17.34 inches (44.0 cm)	9.97 inches (25.3 cm)
V400-48t-10GE4	7.18 lb (3.26 kg)	1RU / 1.70 inches (4.32 cm)	17.34 inches (44.0 cm)	9.97 inches (25.3 cm)
V400-48p-10GE4	14.06 lb (6.38 kg)	1RU / 1.70 inches (4.32 cm)	17.34 inches (44.0 cm)	15.25 inches (38.7 cm)

Switch Model	Weight	Height	Width	Depth
VX-RPS-1000	11.51 lb (5.22 kg)	1RU / 1.64 inches (4.17 cm)	5.27 inches (13.38 cm)	15.21 inches (38.6 cm)
VX-RPS-CH3	9.26 lb (4.20 kg)	1RU / 1.64 inches (4.17 cm)	17.34 inches (44.0 cm)	15.25 inches (38.7 cm)

## Min/Max Power Consumption and Heat Dissipation

Switch Model	Minimum <sup>1</sup> Power Consumption (W)	Minimum <sup>1</sup> Heat Dissipation (Watts)	Maximum <sup>2</sup> Power Consumption (W)	Maximum <sup>2</sup> Heat Dissipation (BTU/HR) <sup>3</sup>
V400-24t-10GE2	10.6	36.1	22.1	75.2
V400-24p-10GE2	32.2	109.8	478.7	336.8
V400-48t-10GE4	19.3	66.0	39.5	134.8
V400-48p-10GE4	49.5	168.9	910.9	583.2

<sup>1</sup> Idle, no ports linked

<sup>2</sup> Fans high, all ports 100% traffic

<sup>3</sup> Does not include PoE heat load dissipated through external PoE electronic load

## PoE Power Budget

Switch Model	Internal Power Supply	External RPS
V400-24p-10GE2	380W	*380W
V400-48p-10GE4	740W	*740W

\* Redundant power only.

## Fan and Acoustic Noise

Switch Model	Acoustic Information Bystander Sound Pressure	Declared Sound Power (LWAd)
V400-24t-10GE2	41.6 (Duty 30%) / 59.4 (max.)	4.4 (Duty 30%) / 6.2 (max.)
V400-24p-10GE2	47.5 (Duty 30%) / 64.0 (max.)	5.0 (Duty 30%) / 6.7 (max.)
V400-48t-10GE4	43.4 (Duty 30%) / 61.1 (max.)	4.6 (Duty 30%) / 6.4 (max.)
V400-48p-10GE4	48.5 (Duty 30%) / 65.5 (max.)	5.1 (Duty 30%) / 6.8 (max.)

## Environmental

### Environmental Compliance

- EU RoHS – 2011/65/EU
- EU WEEE – 2012/19/EU
- China RoHS – SJ/T 11363-2006
- Taiwan RoHS CNS 15663(2013.7)

### Operating Conditions

- Temp: 0°C to 50°C (32°F to 122°F) – all models
- Humidity: 10% to 95% relative humidity, non-condensing
- Altitude: 0 to 3,000 meters (9,842 feet) – all models Shock (half sine): 30 m/s<sup>2</sup> (3 G), 11 ms, 6 shocks
- Random vibration: 3Hz to 500Hz at 1.5 G rms

## Packaging and Storing Specifications

- Temp: -40°C to 70°C (-40°F to 158°F)
- Humidity: 10% to 95% relative humidity, non-condensing
- Packaged Shock (half sine): 180 m/s<sup>2</sup> (18 G), 6 ms, 600 shocks
- Packaged Vibration: 5Hz to 62Hz at velocity 5 mm/s, 62Hz to 500Hz at 0.2 G
- Packaged Random Vibration: 5Hz to 20Hz at 1.0 ASD w/-3 dB/oct. from 20Hz to 200Hz
- Packaged Drop Height: 14 drops minimum on sides and corners at 42 inches (<15 kg box)

## Regulatory and Safety

### North American ITE

- UL 60950-1 2nd edition Listed Device (U.S.)
- CSA 22.2 No. 60950-1 2nd edition 2014(Canada)
- Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
- CDRH Letter of Approval (US FDA Approval)

### European ITE

- EN 60950 2nd Ed
- EN 62368-1
- EN 60825 Class 1 (Lasers Safety)
- 2014/35/ EU Low Voltage Directive

### International ITE

- CB Report & Certificate per IEC 60950-1 + National Differences
- IEC 62368-1
- AS/NZS 60950-1 (Australia /New Zealand)

## EMI/EMC Standards

### North American EMC Certifications

- FCC CFR 47 part 15 Class A (USA)

- ICES-003 Class A (Canada)

### European EMC Certifications

- EN 55032: Class A
- EN 55024
- EN 55011
- EN 61000-3-2 (Harmonics)
- EN 61000-3-3 (Flicker)
- EN 300 386 v1.6.1 (EMC Telecommunications)
- 2014/30/EU EMC Directive

### International EMC Certifications

- CISPR 32: Class A (International Emissions)
- AS/NZS CISPR32
- CISPR 24: Class A (International Immunity)
- IEC 61000-4-2/EN 61000-4-2: Electrostatic Discharge, 6kV Contact, 8 kV Air, Criteria B
- IEC 61000-4-3/EN 61000-4-3 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4/EN 61000-4-4 Transient Burst, 1 kV, Criteria A
- IEC 61000-4-5/EN 61000-4-5 Surge, 1 kV L-L, 2 kV L-G, Level 3, Criteria B
- IEC 61000-4-6/EN 61000-4-6 Conducted Immunity, 0.15-80 MHz, 10Vrms, 80%AM (1kHz) Criteria A
- IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C

### Country Specific Certifications

- VCCI Class A (Japan Emissions)
- ACMA RCM (Australia Emissions)
- CCC Mark
- KCC Mark, EMC Approval (Korea)
- BSMI (Taiwan)
- Anatel (Brazil)

## Ordering Information

### V400 Systems

Part Number	Name	Description
18101	V400-24t-10GE2	V400 Series 24 x 10/100/1000BASE-T, 2 x 1000/10GBaseX unpopulated SFP+ ports, fixed power supply and fans
18102	V400-24p-10GE2	V400 Series 24 x 10/100/1000BASE-T PoE+, 2 x 1000/10GBaseX unpopulated SFP+ ports, fixed power supply and fans
18103	V400-48t-10GE4	V400 Series 48 x 10/100/1000BASE-T, 4 x 1000/10GBaseX unpopulated SFP+ ports, fixed power supply and fans
18104	V400-48p-10GE4	V400 Series 48 x 10/100/1000BASE-T PoE+, 4 x 1000/10GBaseX unpopulated SFP+ ports, fixed power supply and fans
18201	VX-RPS-CH3	V400 RPS 3-Slot Modular Shelf
18202	VX-RPS-1000	VX-RPS-1000 redundant power supply for use with V400 RPS 3-Slot Modular shelf

## Warranty

All V400 Series switches are covered under Extreme's Universal LLW policy. For warranty details, visit: <http://www.extremenetworks.com/support/policies>.

## Power Cords

In support of Extreme Networks Green initiatives, power cords are not included with the V400 but can be ordered separately. They should be specified at time of ordering.

## Optics/Transceivers

For a list of the optics/transceivers supported on the V400 Series hardware, refer to our Extreme Optics Compatibility Tool at <https://optics.extremenetworks.com>.

## Maintenance Services

Extreme's maintenance and support services with 100% in-sourced engineering experts and over 90% first-person resolution ensure efficient operation of your business-essential network. 24x7x365 phone support, advanced parts replacement, and on-site support augment your staff with experienced resources that help you mitigate critical network issues fast. Visit [Extreme Maintenance Services](#) for more information.



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