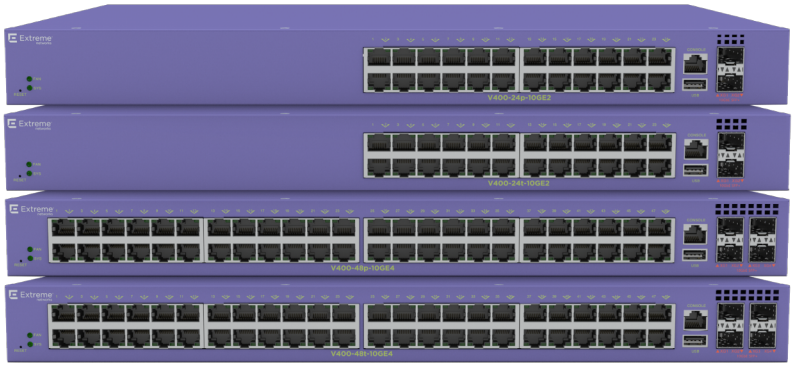
Highlights

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



ExtremeSwitching™ V400 Series

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

Product Overview

The ExtremeSwitching 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).

Plug and Play Installation

V400 Series units can be quickly 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's no need to connect a local console to set-up the V400 unit 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 either as uplink, cascade or ring ports. This gives administrators the option to create redundant links or downstream cascade/ring ports to other V400 units.

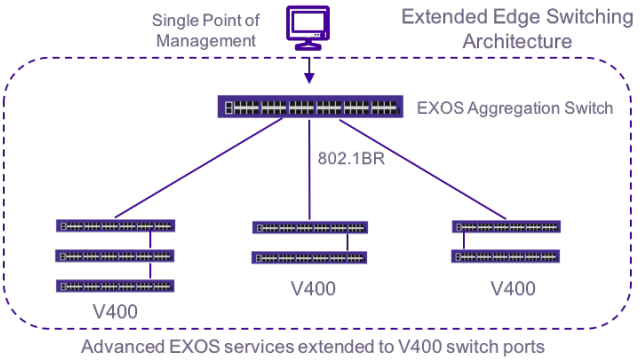


Figure 1: The V400 Series is the edge component of Extreme's Extended Edge Switching solution

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 back-up (or fail-over) power needs.

EXOS Aggregation Switches

The V400 operates in conjunction with ExtremeSwitching 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+ | 1 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+ | 1 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+ | 1 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)	1 RU / 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)	1 RU / 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)	1 RU / 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)	1 RU / 1.70 inches (4.32 cm)	17.34 inches (44.0 cm)	15.25 inches (38.7 cm)
VX-RPS-1000	11.51 lb (5.22 kg)	1 RU / 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)	1 RU / 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[1] Heat Dissipation (BTU/HR)	Minimum[1] Power Consumption (Watts)	Maximum[2] Heat issipation (BTU/HR)	Maximum[2] Power Consumption (Watts)
V400-24t-10GE2	35.8	10.5	82.9	24.3
V400-24p-10GE2	109.9	32.2	1658.3	486
V400-48t-10GE4	67.9	19.9	141.3	41.4
V400-48p-10GE4	186.0	54.5	3077.8	902
VX-RPS-1000	141.3	41.4	3152.8	924

1 Idle no ports linked.
2 Fans high all ports 100% traffic.

PoE Power Budget

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

* 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 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/s2 (3 G), 11 ms, 6 shocks
- Random vibration: 3 to 500 Hz 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/s2 (18 G), 6 ms, 600 shocks
- Packaged Vibration: 5 to 62 Hz at velocity 5 mm/s, 62 to 500 Hz at 0.2 G
- Packaged Random Vibration: 5 to 20 Hz at 1.0 ASD w/–3 dB/oct. from 20 to 200 Hz
- 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 60950-1 2nd Ed.
- EN 62368-1
- EN 60825-1 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, 8kV 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

Part Number	Name	Description
ExtremeSwitching V400 Systems		
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
1G / 10 G Optical Transceivers and Direct Attach Cables		
10051H	1000BASE-SX SFP, Hi	1000BASE-SX SFP, MMF 220 & 550 meters, LC connector, Industrial Temp
10052H	1000BASE-LX SFP, Hi	1000BASE-LX SFP, MMF 220 & 550 meters, SMF 10km, LC connector, Industrial Temp
10056H	1000BASE-BX-D BiDi SFP, Hi	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength, Industrial Temp
10057H	1000BASE-BX-U BiDi SFP, Hi	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength, Industrial Temp
10070H	10/100/1000BASE-T SFP, Hi	10/100/1000BASE-T SFP module, CAT5 cable 100m link, RJ45-connector for Giga Bit Ethernet SFP Port, Industrial Temp
10301	SR SFP+ module	10 Gigabit Ethernet SFP+ module, 850nm, LC, 300m OM3 MMF, 400m OMF MMF
10304	1m SFP+ Cable	10 Gigabit Ethernet SFP+ passive cable assembly, 1m length.
10305	3m SFP+ Cable	10 Gigabit Ethernet SFP+ passive cable assembly, 3m length.
10306	5m SFP+ Cable	10 Gigabit Ethernet SFP+ passive cable assembly, 5m length.
10GB-BX10-D	10 GB, SINGLE FIBER SM, -D 10 KM	10 Gigabit Ethernet, Single Fiber SM, -D 10 KM
10GB-FX10-U	10 GB, SINGLE FIBER SM, -U 10 KM	10 Gigabit Ethernet, Single Fiber SM, -U 10 KM
10GB-F10-SFPP	10 GB, ACTIVE OPTICAL DAC, 10 M	10 Gigabit Ethernet, ACTIVE OPTICAL DAC, 10 M
10GB-F20-SFPP	10 GB, ACTIVE OPTICAL DAC, 20 M	10 Gigabit Ethernet, ACTIVE OPTICAL DAC, 20 M
10338	10Gb SFP+ 10GBASE-T	10 Gigabit Ethernet SFP+, 10GBASE-T RJ45, 30m with Cat6a

Warranty

All V400 Series switches come with Extreme Networks Limited Lifetime Warranty with express Advanced Hardware replacement. For warranty details, please visit: http://www.extremenetworks.com/support/policies.

Power Cords

In support of Extreme Networks Green initiatives, power cords can be ordered separately, but need to specified at time of ordering. Please refer to www.extremenetworks.com/product/powercords for details on power cord availability for this product.

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http://www.extremenetworks.com/contact