SUMMIT 400-48t: Driving 10 Gigabit Ethernet to the Wiring Closet

Extreme Networks® has once again set the standard for intelligent edge switching with the introduction of the Summit® 400-48t, the first in a series of Summit 400 switches. Delivering the highest Gigabit Ethernet density in the industry and the greatest throughput performance, the Summit 400-48t enables deployment of new intelligent services faster and more efficiently than ever before. Even the most demanding customer can now have it all: investment protection for years to come through advanced upgradable technology; intelligence to support new services and simplify the network; and high availability features that will keep users connected and productive.

TARGET APPLICATIONS

- **High bandwidth connectivity to support applications such as Engineering design**
- **High throughput server aggregation utilizing 10 gigabit uplinks**
- **Technology refresh to future proof network by adding tri-speed 10/100/1000BASE-T connectivity which supports legacy as well as high speed devices.**

TECHNOLOGY THAT PRESERVES YOUR INVESTMENT

- Industry Leading 10/100/1000 Scalability
- 10 Gigabit Ethernet at the Edge—When You Need It
- Voice-Video-Data Convergence

INTELLIGENCE TO SUPPORT NEW SERVICES AND SIMPLIFY THE NETWORK

- Intelligence to Protect the Network at the Edge
- Intelligence to Adapt to Network Priorities
- Common Management Intelligence

HIGH AVAILABILITY TO KEEP USERS CONNECTED AND PRODUCTIVE

- High Availability Uplinks
- EAPS–Sub-Second Layer 2 Resiliency with Every Switch
- Software Enhanced Availability

extreme networks

TECHNOLOGY THAT PRESERVES YOUR INVESTMENT

The Summit 400-48t implements state-of-the-art technology to address critical requirements at the edge of the network. Requirements such as the need for more density to support more users, but with the performance to ensure users get the bandwidth they require; the need to deploy services faster while lowering the cost of delivering these services and the need to secure the network but remain open to new opportunities. The Summit 400-48t delivers the industry's best investment protection by implementing advanced hardware and software technology to meet and exceed these and other emerging edge switch requirements.

Industry Leading 10/100/1000 Scalability

The Summit 400-48t delivers industry-leading 10/100/1000 density, scalability, and port flexibility which allows customers to easily expand their network and make the most efficient use of available rack space. In just 1.75" (1 rack unit), the Summit 400-48t supports:

- 48 copper Gigabit Ethernet ports (10/100/1000BASE-T)
- 4 ports of SFP MiniGBICs (logically shared with the 1000BASE-T ports)
- 2 ports of 10 gigabit uplinks (optional)
- 10/100/1000 port for out-of-band management
- 1 serial port

10 Gigabit Ethernet at the Edge–When You Need It

The Summit 400-48t delivers the industry's first fixed configuration edge switch with multiple 10 gigabit uplinks so the edge switch uplink capacity can grow as the end user's bandwidth demands grow. Based on a modular design, an optional 10 gigabit "daughter card" can be added to the Summit 400-48t delivering immediate support for two 10 gigabit XENPAK I/O modules. This advanced design enables the user to easily upgrade the Summit 400-48t to multiple 10 gigabit uplinks when added uplink capacity is required.

160 Gbps Switch Fabric

The Summit 400-48t delivers industry-leading switch fabric and throughput performance giving users the bandwidth their applications require. The Summit 400-48t switch fabric has a 160 gigabits per second (Gbps) capacity supporting 101 million packets per second, making it the industry's highest performance fixed configuration edge switch. This industry-leading performance ensures that the Summit 40048t will have the capacity to support ever-growing end user bandwidth requirements. The Summit 400-48t two 10 gigabit uplinks, its high-performance switch fabric and 101 Mpps throughput ensure that the Summit 400-48t will continue to be a critical edge solution in the customer's network for years to come.

Small, Medium, Large Networks Supported

The Summit 400-48t supports up to 16,000 MAC addresses, 4,000 Layer 3 forwarding database in hardware, or 64,000 routing table entries making this an ideal switch for both wiring closet implementations and enterprise branch offices. Even as the customer's network grows, the large table sizes supported in the Summit 400-48t make this an excellent long-term solution more than capable of supporting growth in the network.

Voice-Video-Data Convergence

Many customers are starting to reduce their overall networking expenditures by converging their voice-video-data networks into a single network, and the Summit 400-48t is an ideal solution for this convergence. The Summit 400-48t supports up to 8 queues on every port to classify and prioritize traffic to ensure that high priority traffic, such as voice and video traffic, get the required bandwidth when it is needed.

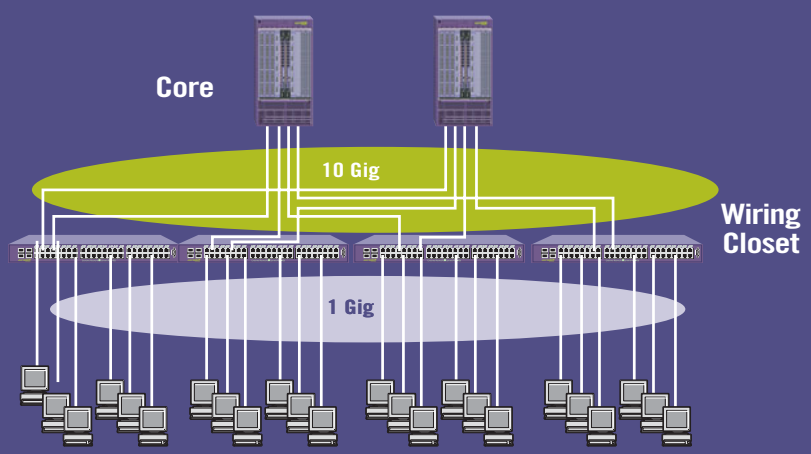
Wire-Speed Access Control Lists (ACLs)

ACLs are powerful security tools and the use of ACLs in networks is likely to increase as a way to combat security threats. However, the value of ACLs is diminished if, by applying them, traffic slows down, creating a congestion point. The Summit 400-48t delivers wire speed ACLs on every port for maximum security while maintaining maximum throughput. With the Summit 400-48t an IT manager can turn on ACLs whenever they are needed without worrying about disrupting business applications or reducing productivity.

Jumbo Frame Support

Jumbo frame support of up to 9,216 bytes is supported–making the Summit 400-48t an ideal switch for new applications requiring large frames such as storage and graphic/video applications. Studies have indicated that jumbo frames are particularly important in high performance cluster applications where their use can reduce server CPU loads by as much as 50%.

GIGABIT TO THE CORE



INTELLIGENCE TO SUPPORT NEW SERVICES AND SIMPLIFY THE NETWORK

The Summit 400-48t delivers the ability to quickly and efficiently provision new services in important areas like security, bandwidth tracking and traffic prioritization. And because these services are provisioned at the edge of the network, the Summit 400-48t simplifies the network while making it significantly less expensive to quickly roll out new services at individual sites or consistently throughout the network. The Summit 400-48t edge switch with Layer 3 intelligence and the performance and throughput capacity helps ensure that new services can be easily and quickly deployed widely in the network.

INTELLIGENCE TO PROTECT THE NETWORK AT THE EDGE

Network Login and 802.1x

The Network Login feature on the Summit 400-48t is the comprehensive user authentication tool available today. Every user on every port can be authenticated so the network is protected at the most common point of attack, the edge. The Summit 400-48t can immediately reject users not authorized to enter the switch or network. Unauthorized users can't cause problems in the network because they can't enter the network and they can't enter the network unless authorized by Summit 400-48t web-based or 802.1x based Network Login security features.

Security with Multiple Users on a Single Port

Another advantage of the Summit 400-48t security solution is the Multiple Supplicant feature for shared port configurations. Normally, when the switched port is shared, a single user authentication opens that port for all other users, authorized or not. The Summit 400-48t solves this problem through the Multiple Supplicant feature of ExtremeWare® 802.1x Network Login. This feature associates the user with the device accessing the network. For example, a user may access the network from their PC by submitting an authorized password. If a second user wants LAN access from a different device through the same port via a shared access device (such as a hub or wireless access point), the second user can only enter the LAN with the correct password.

Secure Shell 2 (SSH2)

The Summit 400-48t supports SSH2 to securely transfer switch configurations and ExtremeWare images into and out of the switch. To fix the known limitations in SSH, it is critical that customers use the latest SSH2 as supported in the Summit 400-48t.

Wire Speed Access Control Lists (ACLs)

ACLs are one of the most powerful tools to control network resource utilization and to secure and protect the network. The Summit 400-48t supports 5,520 ACLs (115 rules per port) based on Layer 2, 3 or 4 header information such as the MAC address, IP source/destination address, or TCP/UDP port number and delivers the most comprehensive control of how end users consume bandwidth.

INTELLIGENCE TO ADAPT TO NETWORK PRIORITIES

Quality of Service (QoS)

The Summit 400-48t uses advanced QoS DiffServ and 802.1p (Class of Service) protocols to classify, prioritize, and mark LAN traffic as a way to efficiently use existing bandwidth and offer reliable connectivity for mission-critical applications and converged networks that are susceptible to bandwidth availability, system latency and jitter.

Policy-Based Rate Limiting

The Summit 400-48t supports 3,000 central flow rate limiters (63 rate limiters per port) to automatically control bandwidth use and increase overall network efficiency. For Policy-Based Mapping, rate limiters can be applied to Layer 1-4 and can re-write DiffServ code points and 802.1p Class of Service.

The central flow control rate limiting feature in the Summit 400-48t adds a valuable tool for bandwidth management on ingress traffic. Similar to an Access Control List, the rate limiting feature inspects incoming packets headers to allocate a predefined amount of bandwidth for that traffic flow. If the flow exceeds the assigned bandwidth, excess packets are either dropped or modified by resetting their DiffServ code point. Rate limits can be configured from 1 Mbps in 1 Mbps increments up to full line rate. Rate limiting is an excellent method of managing and prioritizing the total traffic coming into a switch and it also enables control of the amount of bandwidth any port, user, or application is allowed to consume.

COMMON MANAGEMENT INTELLIGENCE

Compatible Command Line Interface Across All Platforms

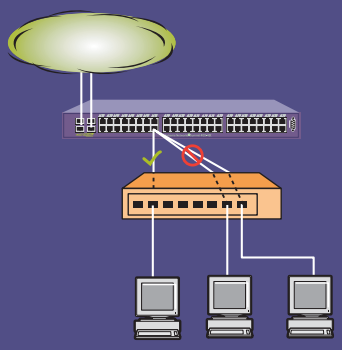
The Summit 400-48t uses the same ExtremeWare management commands and has the same "look and feel" as all other Extreme Networks switches resulting in a common end-to-end management solution that reduces training expenses and increases the sharing of management expertise throughout the network. The Summit 400-48t supports extensive management interfaces through standard management tools like SNMP, RMON and the command line interface (CLI). The Summit 400-48t supports web-based (HTML) management for an advanced "manage-anywhere" capability.

Secure Management

The use of protocols like SSH2, SCP and SNMPv3 supported by Summit 400-48t prevents the interception of management communications and man-in-the middle attacks.

SECURITY WITH MULTIPLE USERS ON A SINGLE PORT

Multiple Supplicant feature enables security for multiple users on a single port



HIGH AVAILABILITY TO KEEP USERS CONNECTED AND PRODUCTIVE

High availability is an important feature of the Summit 400-48t because Extreme Networks understands that availability is critical to end user productivity. Advanced availability features normally found only on more expensive core switches are now standard on the Summit 400-48t. Features such as hardware redundancy that keep the switch up and running are combined with advanced ExtremeWare availability software to dynamically route around problems in the network ensuring that the end user is not only connected, but remains productive.

High Availability Uplinks

The Summit 400-48t supports redundant copper and/or fiber Gigabit Ethernet uplinks and redundant 10 Gigabit Ethernet uplinks for not only the highest uplink capacity at the edge, but also the greatest redundancy. If any single uplink port is not available, the Summit 400-48t can automatically failover to the redundant port for maximum resiliency and connectivity. The result is true high availability-the user stays connected to the network and remains productive.

External Power System

Extreme Networks has long been a leader in providing redundant power at the edge, but the Summit 400-48t takes this feature to a new level. Extreme Networks offers an External Power System that supports multiple Summit 400-48t switches, all with full power simultaneously. This power system provides 1-for-1 power for every Summit 400-48t connected. No more worrying about inadequate power if more than a single switch fails; the External Power System provides full redundant power for every Summit 400-48t switch. The External Power System automatically senses when the internal power supply has failed and immediately provides redundant power to the switch, preventing any loss of data.

EAPS–Sub-Second Layer 2 Resiliency with Every Switch

With ExtremeWare 7.3e and beyond, the standard Edge license that ships with Summit 400-48t provides EAPS-Edge (RFC 3619) to deliver sub-second (usually less than 50 msec recovery) protection switching to Layer 2 switches interconnected in an Ethernet ring topology. EAPS is similar to the Spanning Tree Protocol (STP), but offers the advantage of converging in significantly less time than STP or even Rapid Spanning Tree (802.1w) when a link breaks in the ring. Fifty msec convergence times are invisible to routing protocols so the routing protocols don't need to re-converge. Voice-over-IP (VoIP) calls don't drop and video feeds don't flicker because EAPS enables the users to stay connected even when there are link failures in the upstream network.

Software Redundant Port

In addition to EAPS, the Summit 400-48t provides a software redundant port, another unique option to Spanning Tree for redundant link management. Operating at Layer 1, this resiliency option provides simple, efficient link failovers based on physical port status, without the need to run a bridge topology protocol such as STP. This feature works equally well with single ports or load-shared port aggregations, and provides easy-to-configure physical link redundancy.

Rapid Spanning Tree (802.1w)

The Summit 400-48t includes both standard Spanning Tree Protocol (STP) and Rapid Spanning Tree Protocol (RSTP), which provide standards-based Layer 2 resiliency. RSTP delivers significantly faster convergence than STP, though never in the sub-second interval that EAPS can provide. The Summit 400-48t also provides compatibility with Per-VLAN Spanning Tree (PVST+) and Extreme Multiple Instance Spanning Tree (EMISTP). These protocols run in compatibility mode, single domain per port, to support resilient connectivity with aggregation switches running EMISTP and PVST+.

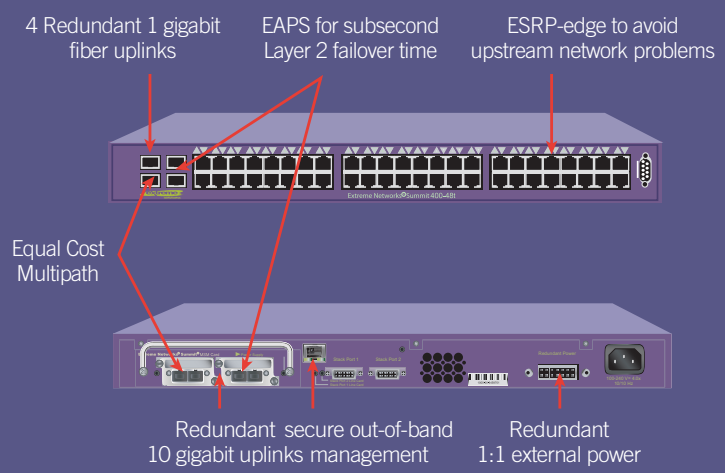
Software Enhanced Availability

The Summit 400-48t uses advanced Layer 3 availability intelligence to route around problems in the upstream network so that even if part of the network infrastructure is down, users remain connected to the network and productive. Using advanced Layer 3 protocols like OSPF and ESRP, the Summit 400-48t is continuously aware of the status of uplink connections, and dynamically routes around any problem. Network administrators can now create non-stop routing topologies that combine with switch hardware redundancy to deliver the highest level of availability.

Equal Cost Multi-Path

The Summit 400-48t supports the Equal Cost Multi-Path feature that not only improves switch availability, but also improves performance and saves the customer money. Equal Cost Multi-Path enables dual uplinks to be load balanced for performance and cost savings while also supporting redundant failover. If one uplink fails, traffic is automatically routed to the remaining uplink and connectivity is maintained.

SUMMIT 400-48t HIGH AVAILABILITY FEATURES



PHYSICAL

Dimensions

Height Inches/Cm: 1.75 Inches / 4.4 Cm
Width Inches/Cm: 17.4 Inches / 44 Cm
Depth Inches/Cm: 16.4 Inches / 41.6 Cm
Weight Lbs/Kg: 11 lbs/5 Kg

EPS Dimensions

EPS-T
Height Inches/Cm: 1.75 Inches / 4.4 Cm
Width Inches/Cm: 17.4 Inches / 44 Cm
Depth Inches/Cm: 7.6 Inches / 19.3 Cm
EPS-160
Height Inches/Cm: 1.7 Inches / 4.3 Cm
Width Inches/Cm: 7.4 Inches / 18.8 Cm
Cable Length 1 Meter

Indicators

- Per port status LED
- System Status LEDs: management, fan and power

Ports

- 48 ports 10/100/1000BASE-T
- 4 ports SFP (miniGBIC, shared with 1000BASE-T)
- Option module, 2 ports for 10 Gigabit XENPAK
- 1 port 10/100/1000 BASE-T (management)
- 1 port Serial (control point)
- 2 ports 10 Gigabit stacking (stacking SW feature planned)

Forwarding Tables:

- Layer 2/MAC Addresses: 16K
- Layer 3 forwarding database in hardware: 4K
- Layer 3 routing table size: 64K

Temperature

- Operating Temperature Range, Degrees Celsius/ Fahrenheit: 0 to 40 °C (32 to 104 °F)
- Storage Temperature Range, Degrees/Degrees Celsius: -40 to +70 °C (-40 to 158 °F)
- Humidity Range: 10-95% (RH) non-condensing

Acoustic

- 45dBA @ 25 degrees C

Power

- Auto-ranging 100-240VAC, 50-60 Hz
- Min Voltage/Associated Current: 100VAC / 4A
- Line Frequency: 50-60 Hz
- Max Voltage/Associated Current: 240VAC / 2A
- Heat Dissipation, Watts/BTU: 160W / 546BTU/hr
- External Power System connector
- External Power System EPS-160 module
  - Heat Dissipation, Watts/BTU: 160W / 546BTU/hr
  - 100-240VAC, 4A-2A

PERFORMANCE

- 160 Gbps switch fabric bandwidth
- 101 Mpps frame forwarding rate:
- 9216 Byte maximum packet size (Jumbo Frame)
- 8 link load sharing trunk, 8 members per trunk
- 8 QoS queues/port
- 4096 VLANs (Port, IEEE 802.1Q, MAC-based)
- 5520 total number of ACL Rules/lines
  - 115 rules per port
  - ACL rules can be applied to ingress
  - Additional ACL rules on optional 10 Gigabit Plug-In module

Rate Limiting

- Central flow based bandwidth policing/rate limiting : packets are classified after Ingress into flows with Access Control Lists and a rate limiter is assigned to a given flow

Ingress Rate Limiting Granularity: 1Mb/s

- Available Rate Limiters: 3024 (63 per port)

RELIABILITY

- Calculated MTBF: 77,934 hours, without EPS-160 External Power System
- Calculated MTBF with EPS-160: 79,164 hours
- Calculated MTBF for EPS-160: 1,230,089 hours
- Calculated MTBF for XEN 10-Gigabit Card: 1,230,089 hours
- Method: Bellcore TR-332 Operating @ 40 °C

SOFTWARE

- ExtremeWare 7.3e Supported Protocols:

General Routing and Switching

- RFC 1812 Requirements for IP Version 4 Routers
- RFC 1519 CIDR
- RFC 1256 IPv4 ICMP Router Discovery (IRDP)
- RFC 1122 Host Requirements
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 894 IP over Ethernet
- RFC 1027 Proxy ARP
- RFC 2338 VRRP
- RFC 3619 Ethernet Automatic Protection Switching (EAPS)
- IEEE 802.1D - 1998 Spanning Tree Protocol (STP)
- IEEE 802.1w – 2001 Rapid Reconfiguration for STP, RSTP
- IEEE 802.1Q - 1998 Virtual Bridged Local Area Networks
- EMISTP, Extreme Multiple Instances of Spanning Tree Protocol compatibility mode (one domain per port)
- PVST+, Per VLAN STP (802.1Q interoperable) compatibility mode (one domain / VLAN per port)
- Extreme Standby Router Protocol (ESRP)
- Static Unicast Routes
- Software Redundant Ports

VLANs

- IEEE 802.1Q VLAN Tagging
- IEEE 802.3ad Static configuration and dynamic (LACP) for server attached
- IEEE 802.1v: VLAN classification by Protocol and Port
- Port-based VLANs
- MAC-based VLANs
- Protocol-based VLANs

Quality of Service and Policies

- IEEE 802.1D -1998 (802.1p) Packet Priority
- RFC 2474 DiffServ Precedence, including 8 queues/port
- RFC 2598 DiffServ Expedited Forwarding (EF)
- RFC 2597 DiffServ Assured Forwarding (AF)
- RFC 2475 DiffServ Core and Edge Router Functions
- Ingress Rate Limiting
- Layer 1-4, Layer 7 (user name) Policy-Based Mapping
- Policy-Based Mapping/Overwriting of DiffServ code points, .1p priority
- Network Login/802.1x and DLCS (Dynamic Link Context System, WINS snooping) based integration with EPICenter Policy Manager for dynamic user/device based policies

RIP

- RFC 1058 RIP v1
- RFC 2453 RIP v2

OSPF

- RFC 2328 OSPF v2 (including MD5 authentication)
- RFC 1587 OSPF NSSA Option
- RFC 1765 OSPF Database Overflow
- RFC 2370 OSPF Opaque LSA Option

IP Multicast

- RFC 2362 PIM-SM Edge (2 active interfaces as a first hop router, no RP / BSR role)
- RFC 1112 IGMP v1
- RFC 2236 IGMP v2
- IGMP Snooping with Configurable Router Registration Forwarding
- IGMP Filters
- Static IGMP Membership
- Static Multicast Routes
- Mtrace, draft-ietf-idmr-traceroute-ipm-07
- Mrinfo

Management - SNMP & MIBs

- RFC 2030 SNTP, Simple Network Time Protocol v4
- RFC 1866 HTML – web-based device management and Network Login
- RFC 2068 HTTP server
- RFC 854 Telnet client and server
- RFC 783 TFTP Protocol (revision 2)
- RFC 951, 1542 BootP
- RFC 2131 BOOTP/DHCP relay agent and DHCP server
- RFC 1591 DNS (client operation)
- RFC 1155 Structure of Mgmt Information (SMIv1)
- RFC 1157 SNMPv1
- RFC 1212, RFC 1213, RFC 1215 MIB-II, Ethernet-Like MIB & TRAPs
- RFC 1573 Evolution of Interface
- RFC 1650 Ethernet-Like MIB (update of RFC 1213 for SNMPv2)
- RFC 1901 – 1908 SNMP Version 2c, SMIv2 and Revised MIB-II
- RFC 2570 – 2575 SNMPv3, user based security, encryption and authentication
- RFC 2576 Coexistence between SNMP Version 1, Version 2 and Version 3
- RFC 2665 Ethernet-Like-MIB
- RFC 1757 RMON 4 groups: Stats, History, Alarms and Events
- RFC 2021 RMON2 (probe configuration)
- RFC 2668 802.3 MAU MIB

- RFC 1643 Ethernet MIB
- RFC 1493 Bridge MIB
- RFC 2737 Entity MIB, Version 2
- RFC 2674 802.1p / 802.1Q MIBs
- RFC 1354 IPv4 Forwarding Table MIB
- RFC 2737 Entity MIB v2
- RFC 2233 Interface MIB
- RFC 1354 IP Forwarding Table MIB
- RFC 1724 RIPv2 MIB
- RFC 1850 OSPFv2 MIB
- RFC 2787 VRRP MIB
- RFC 2925 Ping / Traceroute / NSLOOKUP MIB
- Draft-ietf-bridge-rstpmib-03.txt – Definitions of Managed Objects for Bridges with Rapid Spanning Tree Protocoldraft-ietf-bridge-8021x-01.txt (IEEE8021-PAE-MIB)
- IEEE 802.1x – 2001 MIB
- Extreme extensions to 802.1x-MIB
- Secure Shell (SSHv2) clients and servers
- Secure Copy (SCPv2) client and server
- Secure FTP (SFTP) server
- Configuration logging
- Multiple Images, Multiple Configs
- BSD System Logging Protocol (SYSLOG), with Multiple Syslog Servers
- Local Messages (criticals stored across reboots)

ExtremeWare vendor MIBs (includes ACL, MAC FDB, IP FDB, MAC Address Security, Software Redundant Port, DoS-Protect MIB, QoS policy, Cable Diagnostics, VLAN config. http://www.extremenetworks.com/services/documentation

Security

- Routing protocol MD5 authentication
- Secure Shell (SSHv2), Secure Copy (SCPv2) and SFTP with encryption/authentication
- SNMPv3 user based security, with encryption/authentication (see above)
- RFC 1492 TACACS+
- RFC 2138 RADIUS Authentication
- RFC 2139 RADIUS Accounting
- RADIUS Per-command Authentication
- Access Profiles on All Routing Protocols
- Access Profiles on All Management Methods
- Network Login (web-based DHCP / HTTP/ RADIUS mechanism)
- RFC 2246 TLS 1.0 + SSL v2/v3 encryption for web based - Network Login
- IEEE 802.1x – 2001 Port-Based Network Access Control for Network Login
- Multiple supplicants for Network Login (web-based and 802.1x modes)
- MAC Address Security - Lockdown and Limit
- IP Address Security with DHCP Option 82, DHCP Enforce / - Duplicate IP Protection via ARP Learning Disable
- Network Address Translation (NAT)
- Layer 2/3/4/7 Access Control Lists (ACLs)

REGULATORY

Safety

North America

- cULus Listed device - UL 60950 3rd Edition (US Safety) - CAN/CSA-C22.2 No. 60950-00 (Canadian Safety)

Europe

- Low Voltage Directive (LVD)
- TUV-R GS Mark by German Notified Body- EN60950:2000 (European Safety)

International

- CB Scheme - IEC60950: 2000 with all country deviations (International Safety)

Country Specific

- Mexico NOM/NYCE (Product Safety & EMC Approval)
- Australia/New Zealand AS/NZS 3260 (ACA DoC, Safety of ITE)
- Argentina S-Mark
- GOST (Russia)

Laser Safety

North America

- FCC 21 CFR subpart (J) (Safety of Laser Products)
- CDRH Letter of Approval (US FDA Approval)

Europe

- EN60825-2 (European Safety of Lasers)

EMI/EMC

North America

- FCC 47 CFR Part 15 Class A (US Emissions)
- ICES-003 Class A (Canada Emissions)

Europe

89/336/EEC EMC Directive

- ETSI/EN 300 386:2001 (EUTelecommunication Emissions & Immunity)
- EN55022:1998 Class A (Europe Emissions)
- EN55024:1998 includes IEC/EN 61000-2,3,4,5,6,11 (Europe Immunity)
- EN 61000-3-2, -3 (Europe Harmonics and Flicker)

International

- IEC/CISPR 22:1997 Class A (International Emissions)
- IEC/CISPR 24:1998 (International Immunity)
- IEC/EN 61000-4-2 Electrostatic Discharge
- IEC/EN 61000-4-3 Radiated Immunity
- IEC/EN 61000-4-4 Transient Bursts
- IEC/EN 61000-4-5 Surge
- IEC/EN 61000-4-6 Conducted Immunity
- IEC/EN 61000-4-11 Power Dips & Interruptions

Country Specific

- Japan Class A (VCCI Registration, Emissions)
- Australia/New Zealand AS/NZS 3548 (ACA DoC, Emissions)
- Korean MIC Mark (MIC Approval, Emissions & Immunity)
- Mexico NOM/NYCE (Product Safety & EMC Approval)
- GOST (Russia)
- Taiwan CNS 13438:1997 Class A (BSMI Approval, Emissions)

Environmental

Standard

- EN 300 019-2-1 (2000-09)--Storage Class 1.2-packaged
- EN 300 019-2-2 (1999-09)--Transportation Class 2.3 (Packaged
- EN 300 019-2-2 (1999-09)--Stationalry Use at Weather protected Locations, Class 3.1e - Operational
- EN 300 753 (1997-10)--Acoustic Noise - Operational
- ASTM D5276 * -- Drop - Package
- ASTM D3332 * -- Shock - Unpackaged
- ASTM D3580 * -- Random Vibration - Unpackaged
- ASTM D6179 * -- Tilt - Packaged

*Additional testing requested by Extreme Networks

WARRANTY

- Limited Lifetime Hardware Warranty
- 90-day Warranty on Software

ORDERING INFORMATION

Part Number	Part Name	Description
16101	Summit 400-48t	Summit 400-48t, 48 10/100/1000BASE-T, 4 mini-GBIC, ExtremeWare Edge software license
16102	Summit 400-48t Advanced Edge Voucher	Summit 400-48t ExtremeWare Advanced Edge Upgrade Voucher
16103	Summit XEN	Summit 400-48t 2-port 10 Gigabit Uplink Module (XENPAK I/O modules not included)
16106	Stacking cable, 0.5M	Summit UniStack stacking cable, 0.5M
16107	Stacking cable, 1.5M	Summit UniStack stacking cable, 1.5M
16108	Stacking cable, 3.0M	Summit UniStack stacking cable, 3.0M
10906	EPS-T	External Power System tray, accepts up to 2 EPS power modules
10907	EPS-160	External Power System module, 160 watts, for use with EPS-T
10051	SX mini-GBIC	1-port, Mini-GBIC, SFP, 1000BASE-SX, LC connector
10052	LX mini-GBIC	1-port, Mini-GBIC, SFP 1000BASE-LX, LC connector
10053	ZX mini-GBIC	1-port, Mini-GBIC, SFP, Extra long distance SMF 70 Km/21 dB budget, LC connector
10110	SR XENPAK	10 Gigabit Ethernet XENPAK Transceiver, 850 nm, MMF, 300 m range
10111	LR XENPAK	10 Gigabit Ethernet XENPAK Transceiver, 1310 nm, SMF, 10 Km range
10112	ER XENPAK	10 Gigabit Ethernet XENPAK Transceiver, 1550 nm, SMF, 40 Km range

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Specifications are subject to change without notice. L-DS-SUMMIT400-503