



X-Pedition ER16 Enterprise Backbone Switch Router

- High-capacity backbone switch router delivers 100% availability and wire-speed performance—even when all features are enabled
- Pinpoint application control gives preference to business-critical applications
- Multilayer security features—including traffic filtering, ACLs, IDS, VPN and firewall integration—protect the network from unauthorized access

- **High-performance, scalable LAN/WAN enterprise routing**

- Dual 128 Gbps switch fabrics provide a redundant configuration, supporting a total of 256 Gbps non-blocking switching capacity; 96 Mpps routing throughput
- Up to 120 Gigabit Ethernet ports; up to 480 10/100 ports
- Up to 4,000,000 Layer 4 application flows; 250,000 Layer 3 routes; 1,600,000 MAC addresses; 20,000 security/access filters; 4,096 VLANs

- **Full application support from the desktop to the WAN**

- Deploy application, policy and routing services with no performance degradation
- Wire-speed Layer 4 application flow switching

- **Pinpoint control to prioritize applications, improve operation**

- Wire-speed, application-level QoS
- Application load balancing and content verification
- Allocate bandwidth on a per-port basis; apply user-specific priorities

- **Multilayer security features**

- Can be deployed with VPNs, firewalls, intrusion detection systems
- Enables Access Control Lists to filtering traffic without compromising performance

- **High-Density, Wire-Speed Switch Routing for the Backbone**

Designed to provide the scalability, performance and application control to meet the growing needs of enterprises, X-Pedition ER16 16-slot, chassis-based routing platform offers a rich set of services including transparent web caching and redirection, traffic prioritization and traffic shaping, multilayer security, application load balancing, application content verification and high availability. These services ensure full application delivery—for ecommerce, enterprise resource planning, voice-over-IP, customer relationship management, and more—from the desktop to the WAN.

Dual 128 Gbps switch fabrics provide a redundant configuration, supporting a total of 256 Gbps non-blocking switching capacity and over 4 million Layer 4 application traffic flows, the X-Pedition ER16 provides the high-availability support and high port density needed for the largest environments.

The X-Pedition ER16's modular chassis design allows for a mix of LAN backbone and WAN access technologies, ensuring the protection of existing investments. You choose the connectivity, whether to legacy devices or to high-bandwidth 10/100/1000 Ethernet technologies. The X-Pedition ER16 maintains wire-speed performance even with all services enabled.

Deploy the X-Pedition ER16 in any of these Network Environments:

Enterprise LAN Backbone/Data Center

Position the X-Pedition ER16 in the enterprise LAN backbone to build a wire-speed router mesh with application-level traffic control. In addition, an ER16 allows network managers to control application traffic via QoS and access lists without compromising performance. Enterprise servers can connect directly to the routed backbone, most commonly over 100 Mbps or Gigabit Ethernet links, to provide wire-speed server access across the corporate intranet to client end stations. Clients can then connect to the enterprise backbone via Matrix switching platforms, and/or smaller X-Peditions.

Enterprise WAN or Campus Backbone

Thanks to its support for a variety of long-haul Gigabit Ethernet and WAN interfaces, the ER16 also be positioned as a campus and/or WAN backbone switch router. Use the ER16's QoS capabilities to control application traffic over the WAN. Enterprise servers can connect directly to one of these routers in the enterprise headquarters, either over 100 Mbps or Gigabit Ethernet links, to provide wire-speed server access across the corporate WAN intranet to client end stations.

Intranet/Extranet Data Center Solution

The ER16 is an ideal solution to meet content hosting needs for the intranet as well as for the extranet (partner communications, ecommerce servers, etc. to serve external users). And, thanks to the ER16's security features—which you can deploy in conjunction with VPNs, firewalls, intrusion detection systems, and other such devices—you're protected from internal and external network attacks.

Application-Level QoS

Based on Layer 2, Layer 3 and Layer 4 information, the X-Pedition ER16 allows network managers to deliver application-based QoS and traffic-shaping controls without any loss of performance. Application awareness is an inherent feature—not a software add-on.

The X-Pedition can guarantee bandwidth on an application-by-application basis, thereby accommodating high-priority traffic even during peak periods of usage. QoS policies can be broad enough to encompass all the applications in the network, or relate specifically to a single host-to-host application flow.

By mapping business priorities into network policies, you can assure that in any conflict over limited network resources, business-critical applications will be handled with precedence.

Industry-Leading Capacity

Large networks require large table capacities for storing routes, application flows, QoS rules, VLAN information and security filters. The X-Pedition ER16 provides table capacities that are an order of magnitude greater than most other solutions available today, supporting 250,000 routes, 4,000,000 application flows and 1,600,000 Layer 2 MAC addresses. More than 4,096 VLANs, 20,000 security filters and large per-port buffers provide the capacity to handle peak traffic across even the largest enterprise backbones.

Secure Access

Enterasys solutions leverage extensive traffic filtering and multilayer access control lists, as well as firewall integration, for secure access serving internal and external users. This not only protects the network from unauthorized access, but also reduces the costs associated with external network attacks or internal misuse of server and network resources. Importantly, it allows IT managers to identify devices, protocols, or even applications that should be limited or controlled.

Unlike conventional routers, the X-Pedition's performance does not degrade when security filters are implemented. Wire-speed security, obtained through 20,000 filters, enables network managers to benefit from both performance and security. Filters can be set based on Layer 2, Layer 3 or Layer 4 information, enabling network managers to control access based not only on IP addresses, but also on host-to-host application flows.

Traffic Analysis and Capacity Planning

The X-Pedition paves the way for proactive planning of bandwidth growth and efficient network troubleshooting with capacity planning tools. Real-time intelligence can be gathered using RMON/RMON2 applications and packet and frame statistics, all combining for a robust source of network traffic data analysis.

Superior Fault Tolerance

Built to ensure around-the-clock accessibility, the X-Pedition ER16 offers redundant power, switch fabric and control modules, designed to enhance performance through redundant links and protect the network from failures. Network links may be trunked together for physical link fail-over. Routing protocols provide support for multiple-path fail-over, and VRRP provides network availability in case a single device fails.

Specifications

Physical Specifications

Dimensions

48.26 cm (19") x 48.26 cm (19") x 88.9 cm (35")

Weight

56.25 kg (125 lbs)

Environmental Specifications

Operating Temperature

5° to +40° C (41° to +104° F)

Non-Operating Temperature

-30° to +73° C (-22° to +164° F)

Operating Humidity

15% to 95% (non-condensing)

Power Consumption

100 to 125 VAC Max or 200 to 250 VAC Max, 2400 W -
48 VDC, 2400 W 50 to 60 Hz

Agency And Standards Specifications

Safety

UL 60950, CSA 60950, EN 60950, EN 60825 and IEC 60950

Electromagnetic Compatibility

47 CFR Parts 2 and 15, CSA C108.8, EN 555022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, and VCCI V-3

IP Routing

RIPv1/v2, OSPF, BGP-4

IPX Routing

RIP, SAP

Multicast

IGMP, DVMRP, PIM-DM PIM-SM (future)

QoS

Application level, 802.1p

RFCs/MIBs

IEEE 802.1p
IEEE 802.1Q
IEEE 802.1d Spanning Tree
IEEE 802.3
IEEE 802.3u
IEEE 802.3x
IEEE 802.3z
RFC 1213 – MIB-2
RFC 1493 – Bridge MIB
RFC 2223 – Interfaces MIB
RFC 1643 – Ethernet like Interface MIB
RFC 1163 – A Border Gateway Protocol (BGP)
RFC 1267 – BGP-3
RFC 1771 – BGP-4
RFC 1657 – BGP-4 MIB
RFC 1058 – RIP v1
RFC 1723 – RIP v2
RFC 1724 – RIP v2 MIB
RFC 1583 – OSPF v2
RFC 1850 – OSPF v2 MIB
RFC 1812 – Router Requirements
RFC 2096 – IP Forwarding MIB
RFC 1349 – Type of Service in the IP Suite
RFC 1519 – CIDR
RFC 2338 – VRRP
RFC 1634 – IPXWAN
RFC 1483 – LSNAT
RFC 2618 – Radius-Auth-Client-MIB
RFC 1157 – SNMP
RFC 1757 – RMON 1
RFC 2021 – RMON 2
RFC 1332 – PPP IP Control Protocol (IPCP)
RFC 1548 – The Point-to-Point Protocol (PPP)
RFC 1552 – PPP IPX Control Protocol (IPXCP)
RFC 1570 – PPP LCP Extensions
RFC 1717 – PPP Multilink Protocol
RFC 1662 – PPP in HDLC-like Framing
RFC 1661 – PPP (Point-to-Point Protocol)
RFC 1638 – PPP Bridging Control Protocol
RFC 1293 – Inverse ARP
RFC 1315 – MIB for Frame Relay DTEs
RFC 1490 – Multiprotocol Interconnect over FR

Frame Relay Forum and ITU Standards

FRF.1.1, FRF.3.1, Q.922/ANSI T1.618, Q.933,
I.122/ANSI T1S1 Annex D/ANSI T1.617

Ordering Information

ER16-CS

X-Pedition switch routing platform base chassis with one switch fabric module and a clock card

ER16-SF

X-Pedition switch routing platform switching fabric module

ER16-AC

ERP AC power supply (Minimum 2 required, 3 or 4 required for redundancy)

Control Modules

ER16-CM3-128

X-Pedition switch routing platform control module with 128 MB memory

ER16-CM4-256

X-Pedition switch routing platform control module with 256 MB memory

Warranty

As a customer-centric company, Enterasys is committed to providing the best possible workmanship and design in our product set. In the event that one of our products fails due to a defect in one of these factors, we have developed a comprehensive warranty that protects you and provides a simple way to get your products repaired as soon as possible.

Service and Support

Enterasys understands that superior service and support is a critical component of *Networks that Know*.™ The Enterasys **SupportNet Portfolio**—a suite of innovative and flexible service and support offerings—completes the Enterasys solution. SupportNet offers all the post-implementation support services you need—online, onsite or over the phone—to maintain your network availability and performance.

Additional Information

For additional information on the X-Pedition, visit enterasys.com/products/routing

Contact Information

Contact Enterasys Sales at **877-801-7082** or enterasys.com/corporate/contact/contact-sales.html

Enterasys Networks
Corporate Headquarters
50 Minuteman Road
Andover, MA 01810
U.S.A

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