X-PEDITION 2100 APPLICATION-AWARE WORKGROUP SWITCH ROUTER

Data Sheet

- **Multilayer solution for workgroup and server farm environments**
  - Full-function IP/IPX routing for unicast and multicast traffic
  - 8 Gbps non-blocking switching fabric; 9.2 Mpps routing throughput
  - 8 1000Base-SX ports operable in full-duplex or half-duplex mode
- **Full application support right to the desktop**
  - Wire-speed Layer 4 application flow switching
  - Maintains wire-speed performance with all other features enabled
  - Ready now for multicast voice and video applications
- **Pinpoint control to prioritize applications, improve e-business operation**
  - Wire-speed, application-level QoS for end-to-end reliability
  - Application load balancing and content verification
  - Supports Weighted Fair Queuing and Rate Limiting(CAR)
- **Superior fault tolerance to ensure 24x7 network availability**
  - Redundant power supplies and CPUs to protect from failures
  - Load sharing to enhance performance through redundant links
- **Advanced security features for greater peace of mind**
  - *Secure Harbour* architecture protects against internal and external abuse
  - Wire-speed Layer 2/3/4 security filters
  - Supports LFAP interface to precisely monitor and measure network usage
- **Standards-based, intuitive management for fast, easy troubleshooting**
  - Full support for RMON and RMON 2
  - Comprehensive Java-based management software

Robust, Multilayer Performance and Functionality in a Standalone Solution

The SSR-2-GSX offers wire-speed throughput and all the application-friendly features in a handy work-group model.

Along with several industry awards to its credit, the X-Pedition has been the #1 selling modular Layer 3 switch for nearly two straight years.*

*Source: Dell'Oro Group

Extending Industry-Leading Performance and Control to the Desktop

Enterasys Networks'™ award-winning X-Pedition family (formerly SmartSwitch Router) represents a new generation of switch routing solutions that delivers true end-to-end performance to today's mission-critical enterprises. Providing a key link from the backbone to the workgroup, the X-Pedition 2100 uniquely combines wire-speed routing at gigabit rates with pinpoint control of application flows to ensure high availability of internal and external networks right from the desktop.

With the SSR-2-GSX's Layer 4 switching capacity, application-level control seamlessly extends to the workgroup, while QoS and load balancing expands to the server farm. In fact, with its 8 Gbps non-blocking switching fabric and 9.2 million pps routing throughput, the X-Pedition 2100 offers one hundred times the performance of traditional routers at a cost comparable to Layer 2 switches.

Full-function IP/IPX routing enables the X-Pedition to satisfy even the most traffic-intensive workgroup environments. More than 4,000 VLANs, 2,000 security filters and large per-port buffers provide the capacity to handle peak traffic to any workgroup. In addition, the X-Pedition 2100 provides table capacities that are greater than many Layer 3 switching solutions available today, supporting up to 50,000 routes, 256,000 application flows and 240,000 Layer 2 MAC addresses. The SSR-2-GSX can also be positioned as a Layer 2, 3 and 4 server load-balancing switch. Up to eight servers can be connected via 1000Base-SX connections, extending application control and providing the ability to load balance application flows across multiple servers.

The SSR-2-GSX is easily configured and managed through comprehensive, Java-based network management software, which includes intuitive wizards and drag-and-drop operation. The X-Pedition router is fully standards-based and completely interoperable with existing networking equipment.

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How the X-Pedition Supports QoS

- Wire-Speed Routing on Every Port—Removes routing as the bottleneck and avoids complicated "switch when you can, route when you must" schemes
- Massive Non-Blocking Backplane—Prevents overloaded output wires from clogging the switching hardware
- Large Buffering Capacity—Avoids packet loss during transient bursts that exceed output wire capacity
- Traffic Classification and Prioritization—Enables policy-based QoS which guarantees throughput and minimizes latency for important traffic
- Layer 4 Flow Switching—Provides application-level manageability, enabling the implementation of true end-to-end QoS (e.g. RSVP)
- Intuitive QoS Management Interface—Allows powerful QoS policies to be implemented and maintained quickly and easily
- Detailed Network Instrumentation—Facilitates network baselining and troubleshooting, delivering insight into the behavior of network traffic

Unmatched Performance with Wire-Speed Routing and Switching

The X-Pedition 2100 minimizes network congestion by switching and routing more than 9.2 million packets per second (pps). The switching fabric in the X-Pedition delivers full-function unicast and multicast IP/IPX routing at gigabit speeds on all ports.

The SSR-2's custom ASICs switch or route traffic based on Layer 2, 3 and 4 information at wire speed. These ASICs also store QoS policies and security filters, providing wire-speed performance even when QoS and security filters are enabled. As a result, network managers no longer need to make compromises when it comes to performance and functionality; the X-Pedition delivers both.

Application-Level QoS and Access Control—at Wire Speed

Based on Layer 2, 3 and 4 information, the X-Pedition switch router allows network managers to identify traffic and set QoS policies, without compromising wire-speed performance.

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. All QoS policies can be easily administered using the CoreWatch Network Management Software.

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

Wire-Speed Multicast to Support Convergence Applications

The X-Pedition's switching fabric is capable of replicating packets in hardware, eliminating performance bottlenecks caused by conventional software-based routers. By providing the necessary infrastructure, the X-Pedition turns the network into an efficient multicast medium capable of delivering multimedia and visual applications without delay. The X-Pedition supports DVMRP, per-port IGMP and in the future, will support PIM-DM and PIM-SM.

Network Address Translation

Network Address Translator (NAT) is one solution to the dilemma of the proliferation of TCP/IP throughout the Internet, a situation that poses the problem of IP address depletion and how to efficiently route existing and future addressing schemes. NAT allows the reuse of routable address classes by translating non-routable intranet address schemes into routable, globally unique address schemes. Users can translate a source or destination address from a private address range (10.x.x.x) to a globally unique address scheme (207.x.x.x).

LSNAT to Support Busy Server Farms

LSNAT enables Network Address Translation in a "Load Share" feature, where network traffic can be distributed across a pool of servers, instead of directing to a single server. Enterprise customers who need to load balance traffic in busy server farms will find load sharing to be extremely valuable in not only improving application delivery but stretching investments in the servers themselves.

Large Capacity in a Small Router

Workgroup environments require sufficient capacity to handle routing, VLAN information and security filters. The X-Pedition 2100 provides table capacities that are greater than most other Layer 3 switching solutions, supporting up to 50,000 routes, 256,000 application flows and 180,000 Layer 2 MAC addresses. Full-function IP/IPX routing enables the X-Pedition 2100 to satisfy even the most traffic-intensive workgroup environments. The base 16 10/100Base-TX X-Pedition SSR-2-GSX can be expanded with Gigabit and 100Base-FX uplinks. More than 4,000 VLANs, 2,000 security filters and large per-port buffers provide the capacity to handle peak traffic any workgroup.

Comprehensive Management for Easy Deployment, Changes and Troubleshooting

VLAN Management —The X-Pedition can be configured to support VLANs based on ports and protocols. Network managers can use Layer 2 VLANs with 802.1p prioritization and 802.1Q tagging, and can configure VLANs using guided wizards within CoreWatch Network Management Software.

Extensive Performance Monitoring —The X-Pedition paves the way for proactive planning of bandwidth growth and efficient network troubleshooting by providing RMON and RMON 2 capabilities per port.

Easy-to-Use, Java-Based Management —The X-Pedition's rich functionality is made easy to use through CoreWatch, a Java-based tool that provides extensive configuration and monitoring. CoreWatch allows network managers to use any Java-enabled client station across the enterprise to remotely manage any X-Pedition. CoreWatch can run on Solaris, Windows NT and Windows 95 environments.

Why the X-Pedition is a Better Workgroup Switch Router

- Best-selling modular Layer 3 switch
- Wire-speed performance with all features enabled
- First to support WAN interfaces
- Part of an integrated end-to-end solution
- Pinpoint application control from the desktop to the WAN
- Multilayer security filters don't sacrifice performance
- Award-winning, time-tested solution
- Highly manageable, easily configurable

Challenge	Solution
Guarantee availability of critical applications such as Enterprise Resource Planning, e-commerce and multicast video	• *Wire-speed Layer 4 application flow switching* • *Application content verification*
Prioritize applications based on business needs (e-commerce traffic supercedes e-mail, which supercedes web surfing, etc.)	• *Application load balancing, rate limiting, prioritization and redirection* • *Wire-speed application level QoS*
Robust throughput to handle heaviest traffic demands	• *8 Gbps non-blocking switching fabric* • *9.2 Mpps routing throughput*
Maintain critical network security, internally and externally	• *Secure Harbour architecture includes wire-speed Layer 2/3/4 security filters*
Ensure interoperability and protect investments moving forward	• *Complete portfolio of standards-based routing protocols supported (RIP, OSPF BGP) and multicast support (IGMP, DVMRP, and PIM-SM/DM futures)* • *Supports 10 Gigabit Ethernet, optical networks and other emerging technologies*
Ensure round-the-clock network availability, reliability	• *Redundant power supplies and CPUs to protect from failures* • *Load sharing to enhance performance through redundant links* • *Standards-based virtual router redundancy protocol (VRRP) and self-healing route paths (OSPF multipath, MLPPP and Smart Trunking)*
Quickly pinpoint and troubleshoot problem areas	• *Full support for RMON and RMON 2* • *Comprehensive Java-based management software*
Measure network usage, plan accordingly for future needs	• *Supports LFAP interface for detailed tracking of network usage*

TECHNICAL SPECIFICATIONS

Performance

Wire-speed IP/IPX unicast and multicast routing
8 Gbps non-blocking switching fabric
9.2 Million packets per second routing and Layer 4 switching throughput

Capacity

8 Gigabit Ethernet ports (1000Base-SX)
Up 256,000 Layer 4 application flows
Up to 180,000 Layer 2 MAC addresses
Up to 50,000 Layer 3 routes
Up to 20,000 security/access control filters
3 MB buffering per Gigabit port
4,096 VLANs

Power System

120VAC, 6A Max
Redundant CPU and power supply
Hot-swappable media modules
CoreWatch Java-Based management software
SNMP manageable, and Command Line Interface (CLI)

PHYSICAL SPECIFICATIONS

Dimensions

7.1cm (2.8") H x 43.2 cm (17") W x 47 cm (18.5") D

Weight

9.98 kg (22 lbs)

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature

5°C to 40°C (41°F to 104°F)

Relative Humidity

15% to 90% noncondensing

PROTOCOLS AND STANDARDS

IP Routing

RIPv1/v2, OSPF, BGP-4

IPX Routing

RIP, SAP

Multicast Support

IGMP, DVMRP, PIM-DM, PIM-SM

QoS

Application level, RSVP

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 1573 - 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 Carrying Additional Information
RFC 1724 - RIP v2 MIB
RFC 1757 - RMON
RFC 1583 - OSPF Version 2
RFC 1253 - OSPF v2 MIB
RFC 2096 - IP Forwarding MIB
RFC 1812 - Router requirements
RFC 1519 - CIDR
RFC 1157 - SNMP
RFC 2021 - RMON2
RFC 2068 - HTTP
RFC 1717 - The PPP Multilink Protocol
RFC 1661 - PPP (Point to Point Protocol)
RFC 1634 - IPXWAN
RFC 1662 - PPP in HDLC Framing
RFC 1490 - Multiprotocol Interconnect over Frame Relay

ORDERING INFORMATION

SSR-2-GSX

Fixed configuration with 8 ports 1000Base-SX. Includes redundant power supplies, X-Pedition Router Services software and CoreWatch device management software.

Lit. #9012145-1 12/00

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