SERVERIRONXL™

LAYER 4-7 APPLICATION SWITCHES

Intelligent Layer 4-7 Application Switches

Features

- *Purpose-built high-availability application switches for business critical needs*
- *Comprehensive load balancing, content switching and application traffic management*
- *High-availability server load balancing with stateful fail-over in hot-standby and symmetric modes*
- *Best price/performance in its class delivering up to 19,000 Layer 4 connections per second*
- *Unsurpassed application throughput in excess of 800 Mbps in its class*
- *Broad content switching, including URL, Cookie, HTTP and SSL ID*
- *Efficient ISP link load balancing to increase bandwidth utilization and reduce Enterprise cost*
- *Full support for load balancing Servers, Caches, VPN/Firewall, Data Centers and ISP links*
- *Scalable Global Server Load Balancing (GSLB) with DNS Proxy and client proximity*
- *Ease of use and manageability with IronView Network Manager (INM)*
- *Transparent application support for Web and other TCP and UDP applications*
- *Complementary to Foundry's family of modular Gigabit and 10 Gigabit application switches*

ServerIronXL Application Switching and Traffic Management

Foundry Networks®' ServerIronXL family of application switches delivers the most comprehensive application and traffic management functions for business-critical application infrastructure. ServerIronXL delivers local and global server load balancing, ISP link load balancing, firewall load balancing, and transparent application re-direction and cache switching. Furthermore, ServerIronXL provides the foundation for high service availability, disaster recovery, location and server transparency, backbone cost control, and a consistent user experience.

With support for high density 10/100 Ethernet server farm connectivity and optional Gigabit uplinks to connect to the network core, the ServerIronXL series of switches deliver the best balance in performance, port density and price. Foundry's unique software suite of application traffic management capabilities powers the ServerIronXL switches to direct requests to the right server and application based on server load, application state, and application message content. ServerIronXL eases escalating application traffic overload, dramatically increases service availability, maximizes server utilization, reduces the burden of server farm management, and allows the entire server facility to scale with business growth.

FOUNDRY® NETWORKS

ServerIronXL supports the following major traffic management applications:

1. **Efficient Server Load Balancing (SLB)**—Distribute IP-based services and transparently balance traffic across multiple servers while continuously monitoring server, application and content health. This enhances overall reliability and availability of the services while simultaneously ensuring server farm accessibility.

2. **Intelligent Application Content Inspection and Switching**— Avoid replicating application content and functions on all servers, and scale and optimize performance for targeted application needs. Defeat application level attacks by using content inspection and filtering of application messages.

3. **Robust Application Security**—Shield server farms and applications from DoS, virus and worm attacks while serving legitimate application traffic.

4. **Access Control**—Using Access Control Lists (ACLs) and Extended ACLs, network administrators can restrict access to specific applications from a given address or subnet.

5. **Redundancy and Disaster Recovery**—If no local servers or applications are available, ServerIronXL sends client requests to remote servers, which may be managed by another ServerIronXL device, or be directly serving client traffic.

6. **High Availability Application Switching**—When deployed in active-standby mode, the standby ServerIronXL will assume control and preserve the state of existing sessions in the event the primary load-balancing device fails. In the symmetric mode, both ServerIronXL switches work simultaneously and provide a backup for each other while supporting stateful fail-over.

7. **Global Server Load Balancing (GSLB)**—Distribute services transparently across multiple sites and server farm locations and balance the traffic across those sites/servers on a global basis while monitoring site/server and application health. By directing the client to the best site for the fastest content delivery, ServerIronXL enhances overall application availability and reduces bandwidth costs.

8. **Firewall Load Balancing (FWLB)**—Increase the network's overall firewall performance by distributing Internet traffic load across multiple firewalls. Overcome firewall scalability limitations, increase firewall throughput and performance, and improve firewall resiliency by eliminating the firewall as a "single point of failure".

9. **Transparent Application Re-Direction**—Transparently re-direct traffic to servers or appliance devices offering specialized services like SSL acceleration, caching, virus scanning and authentication.

10. **ISP Link Load Balancing (LLB)***—Significantly increase Enterprise Internet link utilization and reduce the cost of ISP service without the complexities and limitations of BGP routing. Improve bandwidth scalability with optimal capacity utilization based on intelligent traffic switching using key metrics like service response time and bandwidth price. Achieve load balancing, redundancy and resiliency on business-critical Internet links with a single application.

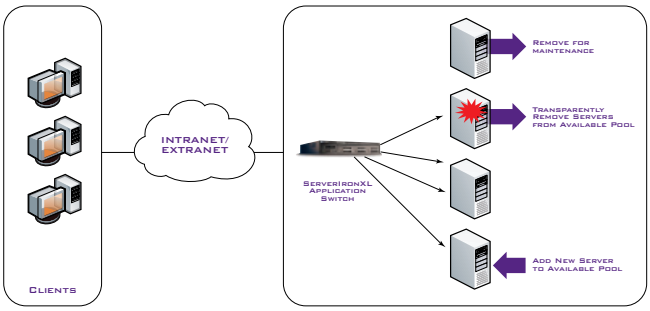
* Inbound and outbound LLB supported standalone applications

Key ServerIronXL Benefits

Maximizing Performance, Availability, Security, Scalability and ROI of Application Infrastructure

Improved Application Performance

ServerIronXL switches, with their intelligent application-aware load balancing and content switching, significantly improve application performance by optimally utilizing all available server resources. Foundry switches perform highly flexible real-time health checks to the servers, and distribute load efficiently to the best servers. Intelligent content switching maximizes utilization and performance by eliminating the need to replicate content and application functions on all the servers.



► *Figure 1: Virtual Server Farm with Easy Management and Automatic Failover*

Maximum Application Availability

ServerIronXL switches provide maximum availability to applications by intelligently distributing traffic among available servers, and dynamically monitoring the ability of servers to deliver optimal performance. Using customizable health checks, the switches transparently react in real time to server farm problems by redistributing client traffic. ServerIronXL switches can be deployed in multiple high-availability modes with stateful session synchronization and failover.

Application and Server Farm Security

With the application and content intelligence built in, ServerIronXL switches detect and discard viruses and worms that spread through application level messages. Legitimate application traffic is load balanced at high performance while preventing and defeating attacks. ServerIronXL switches also mitigate DoS attacks against server farms.

Application and Server Farm Scalability

Scaling applications and server farms is essential to accommodate growth, and is cost-effectively met by the ServerIronXL application switches. These switches provide high scalability to IP-based applications by allowing the use of multiple servers with load balancing and failover. There is no need for forklift upgrades to the server farms and disruption to applications.

High Return on Investment (ROI)

ServerIronXL load balancers provide quick ROI, and also improve the ROI of application and server infrastructure. They support significantly higher application traffic and users on existing infrastructure by maximizing the utilization of installed server resources. On-demand server farm scalability eliminates the need for forklift upgrades, and dramatically improves the ROI on the server infrastructure.

Ease of Use and Manageability

ServerIronXL is simple to configure and manage using the Foundry Command Line Interface (CLI). The CLI uses well known Cisco-like commands allowing network administrative staff to easily configure all Foundry products. In addition, ServerIronXL's support for Simple Network Management Protocol (SNMP) allows device management using applications such as HP OpenView, available on major server platforms including Sun Solaris, HP-UX, and Windows NT.

ServerIronXL supports advanced configuration synchronization features to minimize configuration errors, and consequently the network downtime. Using the command-by-command and block-by-block synchronization modes, administrators have the flexibility to replicate configuration on the peer ServerIronXL in high availability designs without manual repetition. Additionally, ServerIronXL products are integrated with IronView Network Manager (INM) to provide comprehensive centralized configuration management. The INM supports configuration creation, archival, comparison and tracking of configuration files for all the ServerIrons deployed in a network.

Technical and Physical Specifications

Load Balancing Methods

- Round Robin
- Least Connections
- Weighted Round Robin
- Service Response Time
- Link Cost
- Link Bandwidth
- Link Utilization
- Link Usage Limits
- Host Proximity
- Application Type

Layer 2 Switching Capabilities

- 32,000 MAC addresses
- 802.1d Spanning Tree Protocol
- Policy-based VLANs
- Port-based VLANs
- 802.1q VLAN tagging

Protocol Support

- TCP
- UDP
- SSL
- FTP
- Telnet
- SMTP
- HTTP
- SOAP
- IMAP4
- LDAP
- NNTP
- POP3
- DNS
- BootP
- TFTP
- SNMP
- IPSec
- RADIUS

Standards Compliance

- 802.3, 10BaseT
- 802.3u 100BaseTX, 100BaseFX
- 802.3z 1000BaseSX
- 802.3z 1000BaseLX
- 802.3x Flow Control
- 802.1q VLAN Tagging
- 802.1d Bridging
- 802.3 Ethernet Like MIB
- Repeater MIB
- Ethernet Interface MIB
- SNMPV1
- SNMP MIB II

Network Management

- Integrated Command Line Interface
- SSH
- Telnet
- SNMP
- RMON
- IronView Network Manager
- HP OpenView

Warranty

- 1 year hardware
- 90 days software
- Upgrades to higher levels available

Mounting Options

- 19" Universal EIA (telco) Rack
- Tabletop

Platform	ServerIronXL
Concurrent sessions	1,000,000
Layer 4 Connections per Second	19,000
Number of Real Servers	512
Number ofVirtual IP addresses	512
Layer 3 switching capabilities	Supports links on different subnets
Physical dimensions	2.75" h x 17.5" w x 16.75" d (6.7 cm x 44.5 cm x 42.2 cm)
Weight	18–22 lbs (8–10 kg)
Power requirements	Dual 110v/220v auto-sensing
Redundant Power	Optional

ServerIronXL	FCSLB16	FCSLB24
Switching capacity	3.6 Gbps	4.4 Gbps
Number of 10/100 Ethernet (RJ45)ports	16	24
Maximum Gigabit ports (Optional)	2	2
100 Mbps Fiber Ports (Optional)	2	2
Total number of ports	18	26

Ordering Information

Part Number	Description
	ServerIronXL Base Platforms
FCSLB16	16-port 10/100Base-TX (RJ45) ServerIronXL with one expansion slot
FCSLB24	24-port 10/100Base-TX (RJ45) ServerIronXL with one expansion slot
FCSLB16DC	16-port 10/100Base-TX (RJ45) ServerIronXL with one expansion slot and –48VDC power supply
FCSLB24AC	24-port 10/100Base-TX (RJ45) ServerIronXL with one expansion slot and –48VDC power supply
FCSLB16-U2GC	16-port 10/100Base-TX (RJ45) ServerIronXL with 2 Gigabit copper uplink ports in expansion slot
FCSLB16-F2GE	16-port 10/100Base-TX (RJ45) ServerIronXL with 2 Gigabit 1000Base-SX (SC) for 50 or 62.5 um MMF uplink ports in expansion slot
	ServerIronXL System Options
U1GC	1-port 1000Base-T (RJ45) copper Gigabit uplink
U2GC	2-port 1000Base-T (RJ45) copper Gigabit uplink
RPS	Redundant auto-switching 90-240v AC power supply for ServerIronXL 16/24 port only
RPS-I	(International Orders Only) Redundant auto-switching 90-240v AC power supply for ServerIronXL 16/24 port only
RPSDC-FC	-48VDC power supply for ServerIronXL 16/24 only and is a factory configuration only
F2100F	2-port 100Base-FX MMF (SC) uplink
F1GE	1-port 1000Base-SX (SC) Gigabit uplink for 50 or 62.5 um MMF
F2GE	2-port 1000Base-SX (SC) Gigabit uplink for 50 or 62.5 um MMF
FLX1GE	1-port 1000Base-LX (SC) Gigabit uplink for 9 or 10 um SMF
FLX2GE	2-port 1000Base-LX (SC) Gigabit uplink for 9 or 10 um SMF
FLXSXGE	2-port Gigabit uplink with 1-port 1000Base-SX (SC) and 1-port 1000Base-LX (SC) for 50 or 62.5 um MMF and 9 or 10 um SMF
FLHA1G	1-port 1000Base-LogHaul (SC) series A Gigabit uplink for 70 km maximum reach with 9 or 10 um SMF and minimum 10 db attenuation
FLHA2G	2-port 1000Base-LogHaul (SC) series A Gigabit uplink for 70 km maximum reach with 9 or 10 um SMF and minimum 10dB attenuation
FLHB1G	1-port 1000Base-LongHaul (SC) series B Gigabit uplink for 150 km maximum reach with 9 or 10 um SMF and minimum 10dB attenuation
FLHB2G	2-port 1000Base-LongHaul (SC) series B Gigabit uplink for 150 km maximum reach with 9 or 10 um SMF and minimum 10 dB attenuation
	ServerIronXL GBIC Options
LHA	1-port 1000Base-LongHaul (SC) series A Gigabit uplink for 70 km maximum reach with 9 or 10 um SMF and minimum 10dB attenuation—specify SX or LHx upgrade quantities
LHB	1-port 1000Base-LongHaul (SC) series B Gigabit uplink for 150 km maximum reach with 9 or 10 um SMF and minimum 10dB attenuation— specify SX or LHx upgrade quantities

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