

Internet IronWare Feature Set Includes SwitchBack, Symmetric Server Load Balancing, Global Server Load Balancing, and Firewall Load Balancing

High Performance Layer 4-7 Application Enabled Switching

Concurrent Layer 2 Switching, Server Load Balancing, Firewall Load Balancing, and Transparent Cache Switching

Supports up to 1,000,000 Concurrent Connections, 80,000 Connections per Second and Scales from 2 Gbps to 64 Gbps throughput

Server, Session, Switch and Link Level Redundancy

Enhanced NAT Capabilities

# SERVERIRON

## INTERNET TRAFFIC MANAGEMENT

Foundry Networks' ServerIron™ Family of Internet traffic management switches provide high performance Layer 4 through 7 switching, enabling network managers to control and manage today's exploding web transaction, web application and eCommerce traffic flows. Internet IronWare, Foundry Networks' unique software suite of Internet traffic management capabilities, powers ServerIronXL, ServerIronXL/G, and BigServerIron (a simple software upgrade to the BigIron chassis) to direct requests to the right server and application, based on the information that resides beyond the traditional Layer 2 and 3 packet headers. ServerIron, available on all three product platforms noted above, eases escalating Internet traffic overload, reduces the burden of server farm management, and allows the entire web facility to scale to its fullest potential.

Built on Foundry Networks' IronCore ASIC designs and switch-based platforms, ServerIron enables Internet traffic management switching, based on Layer 2 through Layer 7 definitions. ServerIron delivers industry-leading performance for Internet traffic management functions, including local and global server load balancing, firewall load balancing, transparent cache switching, application redirection, packet filtering, and prioritization. ServerIron supports content-intelligent switching such as cookie, URL, and SSL Session ID-based

redirection and load balancing. Furthermore, ServerIron provides the foundation for high service availability, disaster recovery, location and server transparency, backbone cost control, and a consistent user experience.

**ServerIron supports four major Internet traffic management applications:**

### **Reliable Server Load Balancing (SLB)**

Distribute IP-based services and transparently balance web traffic across multiple servers while continuously monitoring server and application health (i.e., TCP, UDP, SSL, FTP, Telnet, SMTP, HTTP, POP3, iMAP, LDAP, NNTP, DNS, BootP, and TFTP). This enhances overall reliability and availability of the services while simultaneously ensuring server farm accessibility.

### **Global Server Load Balancing (GSLB)**

Distribute services transparently across multiple web sites and server farm locations and balance the traffic across those sites/servers on a global basis while monitoring web site/server and application health. By directing the client to the best site for the fastest content delivery, ServerIron enhances a user's overall web experience and reduces bandwidth costs.

## Firewall Load Balancing (FWLB)

Increase the network's overall firewall performance by adding the ability to load balance Internet traffic through 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".

## Transparent Cache Switching (TCS)

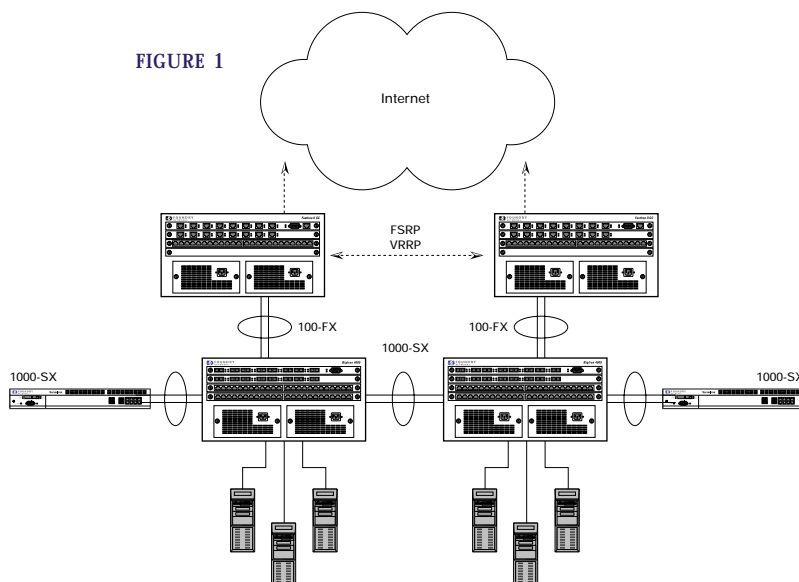
Eliminate the need to configure each client browser, improve Internet response time, decrease WAN access costs, and increase overall web caching solution resiliency by balancing web traffic across multiple caches. ServerIron improves service availability by implementing cache health checking and redirecting client requests to the next available cache server or directly to the origin server in the event of a cache or cache server farm failure.

## Key Benefits

### Server and Application Availability

Internet IronWare ensures service availability by offering switch, server, link, and session-level redundancy.

In the event of a server or application outage, ServerIron provides detection and sub-second fail-over to the next server in a logical group that supports a like service. ServerIron detects application error conditions such as "404 – Object not found" before the client sees them and transparently redirects the requests to other servers without any manual intervention.



To provide 100 percent availability, ServerIron includes an Active/Standby or Active/Active redundancy capability that protects against session loss. When enabled, this feature allows network administrators to establish primary and secondary load balancing switches to support identical configuration parameters. In an Active/Standby configuration, one unit operates while the other unit sits as a backup. In an Active/Active configuration, both units symmetrically operate. In either configuration, each switch continuously monitors the health of the other. In the event that one device fails, the other switch takes over without losing sessions or connectivity. ServerIron also supports link level redundancy, which ensures server connectivity by automatically switching sessions from a failed link to a redundant link.

ServerIron's extensive service health check capability monitors Layer 2, Layer 3, Layer 4, and Layer 7 connectivity and services and determines the servers' ability to respond to user requests. This ensures fast detection of service problems and eliminates service outage.

### Maximum Scalability for Ultimate Flexibility

Internet IronWare running on ServerIron simplifies network design by enabling network managers to represent a server farm with a single IP address known as a Virtual IP (VIP) address. ServerIron appears as a virtual server with a VIP address that controls, monitors, and directs client requests to the most appropriate real server in a server farm. By supporting a wide selection of intelligent load balancing methods, network administrators can transparently and easily scale server capacity, regardless of the server platform. ServerIron delivers these benefits without using expensive hardware add-ons or server-side agents. [SEE FIGURE 1]

ServerIron allows ISPs and Enterprises to deploy GSLB to transparently expand server capacity on a worldwide basis by redirecting web service requests across multiple data centers located around the world and scale Internet capabilities to global proportions.

For deploying security and increased throughput, ServerIron's FWLB capabilities eliminate firewall bottlenecks and scale firewall implementations by balancing up to 32 firewalls in groupings of up to eight firewalls each – with each allocated to handle specific application traffic types. With load balancing support for synchronous, asynchronous, Network Address Translation (NAT), Layer 2, and Layer 3 firewalls, network administrators can deploy firewalls

in the most flexible and reliable manner. ServerIron supports Active/Standby as well as Active/Active FWLB configurations. ServerIron's FWLB is compatible in environments built on static or dynamic routing protocols including RIP, IGRP, OSPF, and BGP4. [SEE FIGURE 2]

ServerIron aids in the widespread deployment of Internet caching, used to improve web-service response times and user experiences. Network administrators can now use multiple caches to increase redundancy because ServerIron supports the creation of up to four caching server groups per device for added cache reliability. ServerIron distributes traffic load across multiple caching servers for scalability and sends traffic directly to the Internet origin servers if all the caches fail.

### Easy to Set Up and Manage

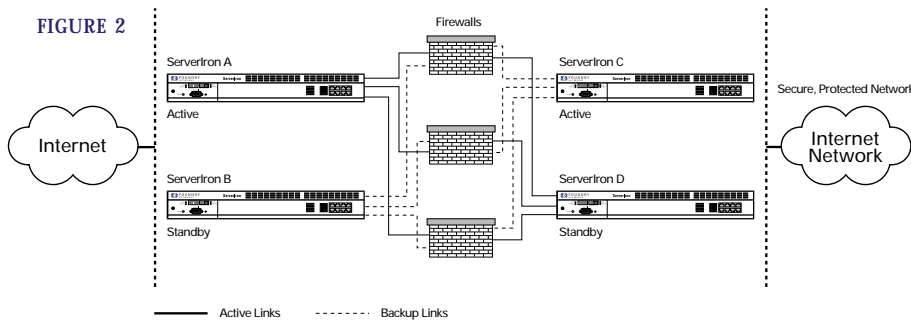
Based upon Foundry's powerful hardware switching platforms, ServerIron is simple to configure and manage using the Foundry Command Line Interface (CLI) or built-in web browser-based interface. In addition, Simple Network Management Protocol (SNMP) device management and configuration applications are available on major server platforms, including HP OpenView for Sun Solaris, Windows NT, and stand-alone Windows NT. Remote Monitoring (RMON) and port mirroring provide network monitoring and troubleshooting capabilities.

Extensive accounting and statistics allow network managers to easily collect and display detailed information about network traffic destined to server farms. Network administrators can also gauge the amount of traffic between servers and clients, as well as which application is dominating network traffic. In addition, ServerIron tracks the number of active and open sessions per server. These statistics can also be used to track traffic loads on servers that support multiple applications.

### Ironclad Web Performance

Capable of 100 percent wire-speed throughput, ServerIron delivers unmatched Layer 4 through Layer 7 switching performance. All ServerIron platforms utilize a unique centralized switching fabric and powerful centralized processors to deliver load-balancing capacity of over 80,000 connections per second with no session loss. As well, ServerIron scales to maintain 1,000,000 concurrent sessions. This ensures website availability during peak Internet traffic load.

FIGURE 2



## Key Features

### Exceptional Performance and Capability

- > **One Million Concurrent Connections:** ServerIron effectively handles over a 1,000,000 concurrent connections to accommodate more client traffic as the web site experiences growing traffic demands.
- > **SwitchBack™:** Also known as direct server return, SwitchBack takes advantage of the inherently asymmetrical nature of web traffic. The client-to-server traffic flows through the load balancing device, but the return (server to client) traffic, which typically consumes more bandwidth because it contains the information that the client has asked for, switches directly to the client on the return path. By avoiding the load-balancing device, SwitchBack provides wire-speed throughput for the clients.
- > **Throughput:** The various load-balancing platforms provide differentiated system performance and throughput levels from 2 Gbps with ServerIronXL, up to 64 Gbps with BigServerIron.
- > **Session Processing:** Foundry Networks leads the industry with a real-world session processing capability of up to 80,000 connections per second.
- > **Symmetric Load Balancing:** Deploy multiple switches to increase load-balancing capabilities in parallel and multiply the total connection capacity and overall performance. Also known as the Active/Active configuration, Internet IronWare's symmetric load balancing provides cross-platform fault tolerance, picking up the full load where the failed switch left off without losing stateful information.
- > **Switching Capacity:** Built on Foundry's custom ASIC designs, ServerIronXL, ServerIronXL/G, and BigServerIron respectively deliver 4.2 Gbps, 32 Gbps, and 256 Gbps of total switching capacity.
- > **Trunking for Performance:** Configure trunk groups between ServerIron devices or between the

load balancing device and the server to increase overall server farm bandwidth, throughput, performance, and redundancy. ServerIron supports up to five trunk groups containing from two to four 10/100Base-TX ports, and BigServerIron supports up to 22 trunk groups.

- > IP Filters: Network managers can define up to 1,024 IP filters to selectively control SLB and TCS traffic. These dynamic filters, which take effect immediately without requiring a reboot, match on source and destination IP address, network mask, and TCP/UDP port information.

- > Overflow Protection: In the event that the local servers exceed their maximum capacity, Foundry's Internet traffic management systems can load balance the subsequent requests to remote server farms.

- > Massive Server Farms: ServerIronXL supports up to 24 10/100 ports and 2 Gigabit ports, ServerIronXL/G supports up to 8 Gigabit Ethernet fiber ports, and BigServerIron supports up to 168 10/100Base-TX ports or 64 Gigabit Ethernet ports. Internet IronWare supports unlimited virtual server addresses, up to 64,000 Virtual IP (VIP) addresses and 1,024 real servers.

- > High Performance Web Hosting: ServerIron's many-to-one load-balancing features enable network managers to define multiple VIPs and track service usage by VIP. With this capability, a single server and port number can load balance multiple web sites across a shared set of real servers.

#### Server and Application Health Checks

- > Layer 3: Upon configuration, ServerIron immediately and automatically health checks the server via ARP and IP to determine whether the server is ready for operation. If problems arise, ServerIron can automatically take corrective action.

- > Layer 4: When the network manager binds an application (TCP/UDP port) on a real server to an application on a virtual server, ServerIron performs a Layer 4 health check, which the server must pass. This guarantees that clients do not hit "dead" servers.

- > Layer 7: With health checking enabled for a service (TCP/UDP port), ServerIron can perform a Layer 7 application specific health check immediately after successful completion of the Layer 4 health check. These can include the following: HTTP, DNS, SMTP, POP3, LDAPv3, NNTP, iMAP4, FTP, Telnet and RADIUS.

#### Load Balancing Functionality

- > Round Robin: Assigns connections sequentially among servers in a logical community. Round robin treats all servers as equal regardless of the number of connections or response time.

- > Least Connections: Assigns a connection to the server with the least number of open connections. This option works well in web sites in which there is a group of servers with dissimilar performance capabilities. Least connection ensures adequate distribution and avoids server overload.

- > Weighted Percentage: This option allows managers to assign a performance weight to each server. Use weighted percentage to ensure that those servers capable of processing connections faster receive the largest number of connections.

- > Slow Start: To protect the server from a surging flow of traffic at startup, ServerIron implements a unique slow start service that allows the server to gradually accept connections for the real server. This is especially useful for SLB implementations using least-connections as the load balancing methodology. Since most servers today cannot handle more than 2,000 new connections per second, this feature helps ensure stability when bringing new servers online.

- > Maximum Connections: Used to protect servers from bogging down due to high amounts of Internet traffic, this feature allows administrators to limit the number of concurrent connections handled by a particular server and ensure that the traffic does not outpace the performance of the server.

- > Cookie Switching: This feature directs HTTP requests to a server group based on information embedded in a cookie in the HTTP header. Using cookies, the next time the client requests information from the server, the cookie specifies which server group should handle the request. Cookie switching ensures that a particular server group always handles requests from a particular client even across sessions, thereby guaranteeing client persistence and a more satisfying end-user experience.

- > URL Switching: ServerIron directs HTTP requests to a server or group of servers, using information contained inside the text of a URL string using defined policies. URL switching grants the network administrator greater control over the website deployment to place different web content on different servers, thereby eliminating the constraint of duplicating all content across all load-balanced real servers.

- > URL Hashing: Using this feature enables ServerIron to examine information in the HTTP request (either the Cookie header or the URL string) and internally map this information to one

of the real servers bound to the virtual server. This HTTP request and all future HTTP requests that contain this information then always go to the same real server.

- > URL Parsing: Selects a real server or a group of servers by looking at the prefix or a suffix of the URL or by applying a pattern matching expression to the entire URL. ServerIron supports up to 256 URL rules and imposes no limit on the URL length examined.

- > SSL Session ID Switching: SSL (Secure Sockets Layer) is a protocol for secure World Wide Web connections used to protect confidential information with server authentication, data encryption, and message integrity. In order for SSL to work, all the SSL connections between a client and server must reach the same host. ServerIron ensures that all the traffic for a SSL transaction with a given SSL session ID always goes to the same server. It is a “must have” feature for e-commerce, financial, and shopping cart based web sites.

#### Ironclad Security

- > Network Address Translation (NAT): Supporting bi-directional NAT allows network administrators to assign real servers internal non-routable private addresses to enhance security and conserve address space. ServerIron also supports NAT functionality for environments where the real servers reside in different sub-nets. This translates to complete network design flexibility when laying out web server farms.

- > Enhanced NAT: Unique to Foundry Networks, ServerIron now supports NAT for generic UDP, TCP, and ICMP applications as well as active and passive mode FTP, Streamwork™, VDOLive™, CUSeeMe™, and TRSP protocols.

- > TCP SYN attack protection: ServerIron protects real servers against malicious TCP SYN attacks by allowing administrators to configure a threshold for the rate of incoming TCP SYN packets. ServerIron automatically stops binding new sessions for a user definable timeframe upon exceeding this threshold.

- > Guard against Denial Of Service (DoS) Attacks: Web connections require a three-way handshake between the client and server, composed of a SYN, SYN-ACK, and ACK message exchange. ServerIron guards server farms against massive numbers of uncompleted handshakes, also known as TCP SYN attacks, by monitoring and tracking unfinished connections (those missing the ACK portion of the handshake). This capability, combined with the ability to support over 1,000,000 concurrent connections protects against the high-jacking of web server resources by malicious users

and ensures connectivity for genuine clients.

- > High Performance Access Control Lists (ACLs) and Extended ACLs: By using ACLs, network administrators can restrict access to specific applications from a given address or sub-net. Filters can be easily set to deny access to servers by any particular port or VIP address. For example, a network administrator can deny FTP traffic to a particular address. Conversely, filters can be set to allow access by a subset of users or sub-nets.

- > Cisco-syntax ACLs: ServerIron supports Cisco-syntax ACLs, which enables network administrators to cut/copy/paste ACLs from their existing Cisco products and drop them right into the ServerIron configuration for the ultimate in portability and security.

#### Session Persistence for E-Commerce Transactions

Internet IronWare maintains up to seven different methods of persistence to ensure that shopping cart type applications and long running web transactions proceed accurately. When combined with the ability to handle over 1,000,000 concurrent sessions, ServerIron provides the industry's best persistence methods to build high-performance networks for e-commerce.

- > Port Tracking: Some web applications define a lead port and follower ports. ServerIron ensures that all connections to the follower ports arrive at the same server as the lead port connection. For example, if SSL traffic follows HTTP traffic, the network administrator often defines the SSL port as the follower port to the HTTP port. This ensures that both types of traffic arrive at the same server for a given customer.

- > Sticky Ports: ServerIron supports a wide variety of “sticky” connections, including those where web applications require that a client request for additional TCP/UDP ports always go to the same real server, to the server using arbitrary port numbers, or to the server using sequential TCP/UDP ports.

- > Additional Persistence Methodologies: ServerIron supports many other types of persistence based on a large range of user programmable options, including Source IP/VIP/Port, Source IP/VIP, and SSL Session ID.

- > Mega Proxy Server Persistence: Network managers can configure ServerIron to treat a range of source IP addresses as a single source to solve the persistence problem caused by certain mega proxy sites in the Internet.

- > Comprehensive Session Persistence: ServerIron expands upon simple cookie-based

switching by including support for Source IP based persistence. When configured for cookie-based persistence, ServerIron uses Source IP-based session persistence if there is no cookie present. This provides a superior level of session persistence over other vendor implementations.

### High Availability Services

- > Remote Backup Servers: If no local servers or applications are available, ServerIron sends client requests to remote servers. A remote server can be another server farm managed by another ServerIron or just another group of real servers. If multiple remote servers are defined, ServerIron will load balance the traffic among them using the selected load balancing method.

- > HTTP Re-direct: ServerIron can also use HTTP re-direct to send traffic to remote servers if the requested application is not available on the local server farm.

- > Active/Standby: When deployed in Active/Standby mode, the standby load-balancing device will assume control and preserve the state of existing sessions in the event the primary load-balancing device fails.

- > Active/Active: When deployed in Active/Active mode, both load-balancing devices work simultaneously and provide a backup for each other while supporting stateful fail-over.

- > Quality of Service: Network administrators can prioritize traffic based on ports, MAC, VLAN, and 802.1p attributes, as well as by service port and application type; for example, ServerIron can grant priority to HTTP traffic over FTP.

- > Redundant Power Supplies: ServerIron

supports an optional built-in redundant power supply, and BigServerIron supports multiple (up to three additional) hot-swappable power supply options.

### Eases Web Site Management

- > Mix and Match Servers: ServerIron increases network design flexibility and investment protection for existing resources by allowing for application distribution on different servers based on performance requirements, with dynamic adjustment and without interruption of service.

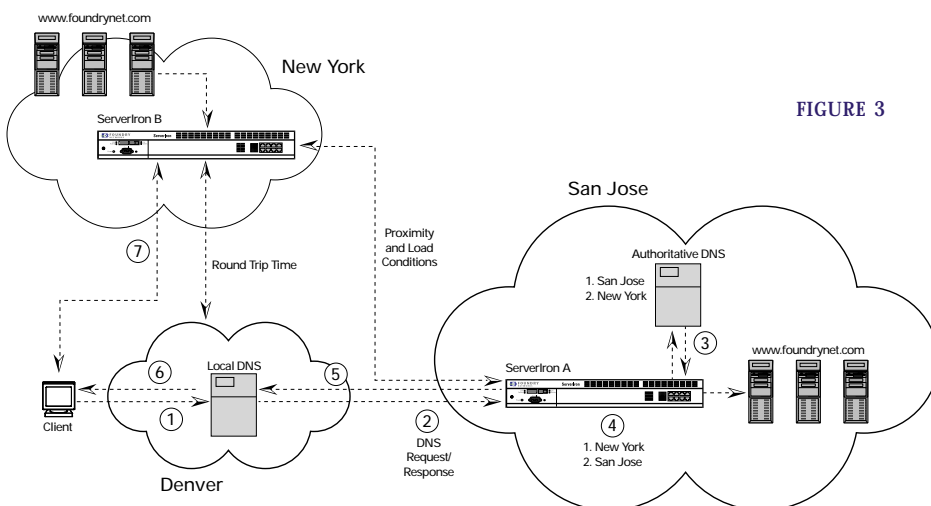
- > Graceful Shutdown: ServerIron allows you to gracefully remove the server from the load balancing rotation without disrupting any existing session. This increases web site stability when upgrading or repairing servers.

- > SNMP Reporting: ServerIron reports SNMP traps and events to the specified trap receiver and can send those management messages to up to six different SyslogD servers.

### Global Web Services

ServerIron redirects client traffic globally by site availability, site load, and site response time. ServerIron also measures client/server proximity as defined by round trip delay, geographic location, and router hop metrics. All these features can work in conjunction with the network's existing DNS servers and can result in minimized network disruption when implementing GSLB. ServerIron continually monitors the sites to detect any changes in servers or services due to varying health and traffic conditions. Configurable site load thresholds enable network administrators to fine tune the health checking parameters to best suit the site's web server and service capabilities. [SEE FIGURE 3]

FIGURE 3



FlashBack™, a unique Foundry Internet traffic management feature, measures response time between the authoritative DNS site and each data center. ServerIron actually computes proximity based on the roundtrip time using natural traffic flows between customers and each data center. By using an evolutionary proximity knowledge data base, ServerIron directs customers to the optimal data center for the fastest response time. In addition, ServerIron understands geography-based site selection to keep the requests within continental domains. ServerIron constantly monitors web traffic to create a knowledge base that enables a more intelligent GSLB

methodology, powering smarter site selection criteria. ServerIron handles server farm outages or overloads even after the DNS lookup by automatically triggering HTTP redirection or implementing remote server load balancing. ServerIron GSLB provides the following benefits:

- > Acts as a DNS Proxy to transparently intercept and modify the DNS responses, thereby directing customers to the best site.
- > Handles server farm outages or overloads after the DNS lookup by HTTP re-direct or remote server load balancing
- > Leverages the existing DNS server and minimizes disruption to the existing DNS environment.
- > Provides continuous site monitoring to detect changes in site health conditions.
- > Allows the network administrator to tune individual site load thresholds through configurable settings.
- > Monitors and selects sites based on FlashBack speed, which measures performance using site, server, and application responsiveness.
- > Adds an evolutionary knowledge base in the global server load balancer that enables smarter site selection as more clients access the site.
- > Grants the network administrator the ability to tune ServerIron settings and ensure that minimal differences in various site metrics do not affect site selection.

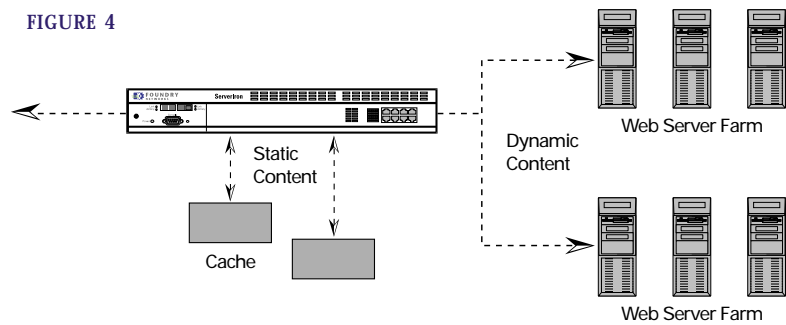
Foundry offers another unique Internet traffic management feature called “Global IP”. Working alongside Foundry routers (BigIron and NetIron) and powered by unique VIP health checking algorithms, Foundry routers inject routes to client web services based on regional data center server farm health, and provide GSLB capability without relying on the DNS protocol. This enables ISPs and Enterprises to instantaneously build networking infrastructures on a global basis and offer ready-to-go differentiated services to customers for multi-site deployments.

#### Transparent Cache Switching

ServerIron switches improve Internet response time and decrease WAN access costs by redirecting web traffic destined for remote Internet hosts to local cache servers. Foundry’s TCS can be used with any cache server that supports transparent redirection, including those from leading vendors such as CacheFlow, Cobalt, Inktomi, Network Appliance, Compaq, Novell, and Dell.

Foundry’s TCS offers network managers a resilient web caching solution that significantly simplifies administration. Unlike proxy server solutions that require manual configuration of each

FIGURE 4



client’s browser, ServerIron transparently intercepts and switches HTTP client requests to an available cache server without reconfiguring the client’s browser. Network administrators can configure the device to switch traffic based on source and destination IP address. [SEE FIGURE 4]

Cache Route Optimization (CRO) adds intelligence and further reduces response time by forwarding cache return packets to the most appropriate router. Inefficiently routed packets can cause significant performance degradation at the Internet router and result in poor service response time to clients. CRO leverages ServerIron’s ability to process packets at wire-speed. By examining each packet’s Layer 3 and Layer 4 headers and being aware of the application, ServerIron correctly switches the packets generated by the cache servers to clients without intervention by the default Internet router. CRO reduces traffic load at the Internet router and significantly improves response time.

#### Product Platforms

As an 8-, 16-, or 24-port 10/100Base-TX auto-sensing switch, ServerIronXL naturally supports a wide variety of networking topologies. An expansion port allows the easy addition of one or two Gigabit Ethernet (1000Base-T, 1000Base-SX, 1000Base-LX, or up to 150 Km 1000Base-Long Haul) ports for additional device connectivity. A built-in redundant power supply option increases fault tolerance. Packaged together in a rack-optimized form factor, ServerIron delivers a compact web solution for high performance, web traffic management with extensive reliability and flexibility.

ServerIron is also available in other port configurations: ServerIronXL/G, an 8-port all Gigabit Ethernet fiber switch, and BigServerIron, a chassis based Internet Traffic Management switch that supports up to 168 10/100Base-TX or 64 Gigabit Ethernet ports. ServerIronXL, ServerIronXL/G, and BigServerIron all deliver Foundry’s extensive load balancing and caching capabilities on a single platform.

## Technical Specifications

### Performance

Up to 2 Gbps, 8 Gbps, and 64 Gbps on  
ServerIron XL, ServerIron XL/G, and Big ServerIron

### Load Balancing Metrics

Round robin  
Weighted percentage  
Least connection

### Scalability

1,000,000 sessions  
Unlimited virtual server addresses  
1,024 real servers

### Service Health Checks

HTTP  
DNS  
Radius  
SMTP

### Layer 2 Switching Capabilities

32,000 MAC addresses  
802.1d spanning tree protocol  
802.1p prioritization  
VLAN Options:  
Policy-based VLANs  
Port based VLANs  
Layer 3 protocol VLANs  
Layer 3 protocol and sub-net VLANs  
802.1q VLAN tagging

### Protocol Support

TCP  
UDP  
SSL  
FTP  
Telnet  
SMTP  
HTTP  
IMAP4  
LDAP  
NNTP  
POP3  
DNS  
BootPC  
TFTP  
SNMP-Trap  
RIP or TCP/UDP Port

### 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  
Telnet  
SNMP  
RMON

HP OpenView for Sun Solaris, Windows NT  
Standalone Windows NT  
Web

### ServerIron Physical Dimensions

2.75"h x 17.5"w x 16.75"d  
(66.7mm x 444.5mm x 421.6mm)  
18-22 lbs (8-10 kg)

### Power Requirements

110v/220v auto-sensing

### Environmental

Operating Temperature: 32 to 104° F (0-40° C)  
Relative Humidity: 5 to 90%, non-condensing  
Storage Temperature: -25° to 70° C (-13° to 158° F)  
Storage Humidity: 95% maximum relative humidity,  
non-condensing  
Storage Altitude: 10,000 ft (3,000 m) maximum

### Safety Agency Approvals

UL 1950  
CSA-C22.2 No. 950  
CISPR Safety, Paragraph 9  
TUV EN 60950, EN 60825-1, EN60825-2

### Electromagnetic Emissions Certifications

EN55022 Class A  
FCC Part 15 Class A  
VCCI Class A  
EN50082-1

### Warranty

1 year hardware  
90 days software  
Upgrades to higher levels available

### Mounting Options

19" Universal EIA (telco) Rack  
Tabletop

### Configuration Options

#### ServerIron Base Unit

8 10BaseT/100BaseTX ports with RJ-45 connectors  
16 10BaseT/100BaseTX ports with RJ-45 connectors  
24 10BaseT/100BaseTX ports with RJ-45 connectors

#### ServerIron Expansion Modules

2 100BaseTX ports with RJ45 connectors  
2 100BaseFX multi-mode ports with SC connectors  
1 1000BaseSX multi-mode ports with SC connectors  
2 1000BaseSX multi-mode ports with SC connectors  
1 1000BaseLX single-mode or multi-mode port  
with SC connectors  
2 1000BaseLX single-mode or multi-mode ports  
with SC connectors

#### TurboIron/8 with Internet IronWare

8 1000BaseSX multi-mode ports with SC connectors  
8 1000BaseLX single-mode ports with SC connectors  
6 1000BaseSX multi-mode ports and 2 1000BaseLX  
single-mode ports with SC connectors  
4 1000BaseSX multi-mode ports and 4 1000BaseLX  
single-mode ports with SC connectors

#### BigIron with Internet IronWare

Management II module required. Please see your sales  
representative for configuration options.



**FOUNDRY**  
NETWORKS

2100 Gold Street  
P.O. Box 649100  
San Jose, CA 95164-9100  
Tel 408.586.1700  
Fax 408.586.1900  
www.foundrynetworks.com