Features

- Purpose-built high-availability and high-performance application switches
- Business critical platform with redundant and hot swappable power supplies, and management and line modules
- Range of products to meet diverse and demanding needs of Enterprises and Service Providers
- Industry’s first dedicated 10 Gigabit application switch
- Investment protection with port expandability and performance upgradeability
- Most advanced security, Layer 7 content switching and load balancing for mission-critical applications
- Most scalable and transparent Global Server Load Balancing (GSLB) for disaster recovery, datacenter redundancy and geographic scalability

- Industry’s #1 in security with wire-speed Denial of Service (DoS) attack protection up to 3.6 million SYN/sec
- High-availability server load balancing with stateful fail-over in many advanced modes
- Industry’s most powerful content switching, including URL, Cookie, XML, HTTP Header, and SSL ID
- Integrated wire-speed Layer 2/3 switching and routing combined with high-performance Layer 4-7 switching
- Always-on network monitoring with standards-based hardware-assisted sFlow
Foundry Networks’ innovative ServerIronGT E-Series switches provide high performance application switching, and enable highly secure and always-on server and application infrastructure. These switches deliver the convenience of an appliance without sacrificing high availability, port expandability and performance upgradeability to accommodate growth. The highly intelligent ServerIron application switches use information that resides beyond the traditional Layer 2 and 3 packet headers, deep in the application messages, to direct client transactions to appropriate servers. ServerIronGT E-Series switches maximize application availability and provide robust security by defeating many forms of Denial of Service (DoS), Virus and Worm attacks. These switches act as a reliable last line of defense for mission-critical server farms and applications. Superior performance delivered by Foundry’s unique 3rd generation network processor technology helps defeat attacks without sacrificing application performance. By providing maximum availability, security and scalability to the network and application infrastructure, the ServerIron switches maximize the Return on Investment (ROI) on the servers and applications. The switches also simplify server farm management, which reduces operational costs and keeps the total cost of ownership (TCO) to a minimum.

The ServerIronGT E-Series family features three switches, designed to meet a full range of price/performance needs for Enterprises and Service Providers, including the industry’s first dedicated 10 Gigabit application switch.

- **ServerIronGT EGx2**—Two Gigabit port switch with an application switch management module featuring one dedicated high-performance processor for application traffic management and one dedicated processor for reliable device management and control. This switch delivers up to 50,000 Layer-4 connections per second including data transfer, or DoS protection against up to 1.2 million TCP SYN attack packets per second.

- **ServerIronGT E2404CF**—Twenty-four 10/100 Mbps Ethernet ports and four Gigabit copper and fiber combination ports application switch featuring one dedicated high-performance processor for application traffic management and one dedicated processor for reliable device management and control. This switch delivers up to 50,000 Layer-4 connections per second including data transfer, or DoS protection against up to 1.2 million TCP SYN attack packets per second.

- **ServerIronGT EGC16**—Sixteen-port 100/1000 Mbps Copper switch with an application switch management module featuring one dedicated high-performance processor for application traffic management and one dedicated processor for reliable device management and control. This switch delivers up to 50,000 Layer-4 connections per second including data transfer, or DoS protection against up to 1.2 million TCP SYN attack packets per second.

- **ServerIronGT EGx4P**—Four Gigabit port switch with an application switch management module featuring two dedicated high-performance processors for application traffic management and one dedicated processor for reliable device management and control. This switch delivers up to 100,000 Layer-4 connections per second including data transfer, or DoS protection against up to 2 million TCP SYN attack packets per second.

- **ServerIronGT E10Gx2**—Two 10 Gigabit port switch with an application switch management module featuring three dedicated high-performance processors for application traffic management and one dedicated processor for reliable device management and control. This switch delivers up to 150,000 Layer-4 connections per second including data transfer, or DoS protection against up to 3.6 million TCP SYN attack packets per second (2.5 times wire-speed Gigabit rate).

The ServerIronGT E-Series switches are built on Foundry’s most innovative and field-proven switching architecture, and run the highly reliable TrafficWorks operating system featuring the most advanced application intelligence, superior performance and robust application security. ServerIronGT E-Series switches help improve availability, scalability and security of business-critical application infrastructure. They provide support for a comprehensive set of load balancing methods, and highly intelligent content inspection and switching for many content types, including URL, HTTP header, XML, cookie and SSL ID. With advanced protection against Denial of Service (DoS) attacks, viruses and worms, these switches act as the last line of defense for the most important infrastructure. Support for sophisticated policy-based load balancing helps mitigate the threat of SPAM in Enterprise and Service Provider networks.
Innovative JetCore™ ASIC technology supports hardware-assisted standards-based sFlow network monitoring for all application traffic flows, which increases manageability and security of network and server resources. Furthermore, ServerIronGT E-Series switches provide the foundation for high service availability, disaster recovery, and location and server transparency for consistent user experience.

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 and deliver peak performance. The health check mechanisms ensure detection of service problems in real time and rapidly re-direct client requests to other available servers. To provide 100 percent application availability, ServerIron switches support many advanced modes of high availability options with real-time session synchronization between the devices to protect against session loss during switch failures. In the event that one device fails, the other one takes over traffic flows without losing existing sessions or connectivity.

The ServerIronGT E-Series switches offer immense deployment flexibility with support for In-Line, Direct Server Return (DSR), One-Arm, and Direct Attached Server designs. In One-Arm and DSR modes, a ServerIronGT switch is connected to a core switch/router, and configured to provide load balancing, content switch and application security. In In-line and Direct Attached Server designs, the switches additionally provide core switch and routing functions using the industry’s most advanced L2/3 foundation implementation. These switches can be expanded for high gigabit port density to enable direct attached server designs for gigabit server farms.

**ServerIronGT E-Series Platform Benefits**

- **Redundant Power Supplies**—Support for redundant, hot swappable and front serviceable power supplies
- **Hot Swappable Modules**—Hot swappable modules, and two empty slots for hot pluggable management and line modules to provide increased performance and port density
- **Dual-Management Modules**—Optional second management module for redundancy and performance upgradeability
Design Flexibility—Supports many different topology designs including one-arm, in-line, DSR, and direct attached servers

Security—Wire-speed ACL and sFlow network monitoring combined with highly secure embedded real-time OS with secure management access

Reliability—Resilient switching and routing foundation with highly reliable embedded real-time OS

Scalability—Dedicated 10 Gigabit application switch with performance scalability and gigabit port density

Flexible Connectivity—Copper and fiber gigabit media options, and support for optional high-density Gigabit over Copper (GoC)

Investment Protection—A unique platform to meet existing and future needs for features, performance and scalability

ServerIron GT E-Series switches support the following traffic management applications:

Efficient Server Load Balancing (SLB)—Distribute IP-based services and transparently balance traffic among multiple servers while continuously monitoring server, application and content health, which enhances overall reliability and availability of application services

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 deep content inspection and filtering of application messages.

Disaster Recovery and 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, ServerIron enhances overall application availability and reduces bandwidth costs. Site level redundancy and rapid transparent failover are supported for disaster recovery.

Robust Application Security—Shield server farms and applications from wire-speed multi-Gigabit rate DoS, DDoS, virus and worm attacks while serving legitimate application traffic

Enterprise Application Support—ServerIron can be deployed in many Enterprise environments where IP-based applications are used, including the popular applications like Oracle, BEA WebLogic, IBM WebSphere, PeopleSoft and Siebel. ServerIron supports custom features for load balancing and persistence for many such applications

Server Connection Offload—Increases server performance, availability, response time and security by offloading connection management from the servers. Using persistent HTTP 1.0 and 1.1 connections to the server, the ServerIron streams large number of client connections to few server connections. Connection offload allows the servers to focus on mission-critical high-performance application service delivery.

Application Rate Limiting—Protects server farms by controlling the rate of TCP and UDP connections on an application port basis. Protects servers against malicious attacks from high-bandwidth users by rate limiting individual user connections.

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

Redundancy and Disaster Recovery—If no local servers or applications are available, ServerIron sends client requests to remote servers, which may be managed by another ServerIron device, or be directly serving client traffic. Site level redundancy, disaster recovery and multi-site scalability are also supported using Foundry’s most innovative and scalable Global Server Load Balancing.

Application Redirection—ServerIron can also use HTTP redirect to send traffic to remote servers if the requested application is not available on the local server farm. Clients are transparent to unavailable local resources.

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

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

**Improved Application Performance**

ServerIron 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.

**Maximum Application Availability**

ServerIron 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. ServerIron switches can be deployed in multiple high-availability modes with stateful session synchronization and failover to extend high availability of applications even through switch failures.

**Robust Application and Server Farm Security**

With the application and content intelligence built in, ServerIron 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. Industry leading ServerIron switches reliably protect against many forms of DoS and Distributed DoS (DDoS) attacks up to 2.3 million attack packets per second.

**Massive Application and Server Farm Scalability**

Scaling applications and server farms is essential to accommodate growth, and is cost-effectively met by the ServerIron application switches. These switches provide virtually unlimited 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)**

ServerIron application switches 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. With support for “Server Connection Offload” feature, the ServerIron solution reduces connection management overhead on the servers and dedicate the server resources to application processing, which improves overall performance and capacity of the server farms. On-demand and unlimited virtual server farm scalability eliminates the need for forklift upgrades, and dramatically improves the ROI of the server infrastructure.
# Technical and Physical Specifications

## Load Balancing Methods
- Least connections
- Response time
- Response time + least connections
- Round robin
- Weighted distribution
- Bandwidth and Weighted Bandwidth

## Layer 2 Switching Capabilities
- 32,000 MAC addresses
- 802.1d Spanning Tree Protocol
- 802.1p prioritization
- Policy-based VLANs
- Port-based VLANs
- Layer 3 protocol VLANs
- Layer 3 protocol and subnet VLANs
- 802.1q VLAN tagging

## Protocol Support
- TCP
- UDP
- SSL
- FTP
- Telnet
- SMTP
- HTTP (1.0 and 1.1)
- IMAP4

## Standards Compliance
- 802.3, 10BaseT
- 802.3u 100BaseTX, 100BaseFX
- 802.3z 1000BaseSX
- 802.3z 1000BaseLX
- 802.3 Flow Control
- 802.1q VLAN Tagging
- 802.1d Bridging
- 802.1w RSTP
- 802.1ad Link Aggregation
- 802.3 Ethernet Like MIB
- Telnet
- 802.1p priority MIB
- VLAN Interface MIB
- 802.1q VLAN Tagging
- 802.1d Bridge MIB
- 802.1w RSTP MIB
- 802.1ad Link Aggregation MIB

## Network Management
- Integrated Command Line
- Interface
- SSH
- Web-based GUI
- Telnet
- SNMP
- RMON
- IronView Network Manager (INM)
- HP OpenView

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

## Mounting Options
- 19" Universal EIA (Telco) Rack
- Tabletop

## Physical Dimensions
- 8.75" h x 17.5" w x 15" d (22.2 cm x 44.5 cm x 38.1 cm)
- Weight: 60 lbs fully loaded (29.9 kg)

## Power Requirements

## Platform Specifications

<table>
<thead>
<tr>
<th>Platform</th>
<th>ServerIron GT EGx2</th>
<th>ServerIron GT E2404CF</th>
<th>ServerIron GT EGx16</th>
<th>ServerIron GT EGx4P</th>
<th>ServerIron GT E10Gx2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concurrent sessions</td>
<td>5,000,000</td>
<td>5,000,000</td>
<td>5,000,000</td>
<td>10,000,000</td>
<td>15,000,000</td>
</tr>
<tr>
<td>L4 Connections/Sec</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td>100,000</td>
<td>150,000</td>
</tr>
<tr>
<td>DoS Protection (SYN/Sec)</td>
<td>1,200,000</td>
<td>1,200,000</td>
<td>1,200,000</td>
<td>2,000,000</td>
<td>3,600,000</td>
</tr>
<tr>
<td>Application Throughput</td>
<td>2 Gbps</td>
<td>2 Gbps</td>
<td>2 Gbps</td>
<td>4 Gbps</td>
<td>12 Gbps</td>
</tr>
<tr>
<td>Switching Capacity</td>
<td>56 Gbps</td>
<td>56 Gbps</td>
<td>56 Gbps</td>
<td>56 Gbps</td>
<td>56 Gbps</td>
</tr>
<tr>
<td>Pre-Equipped Ports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/100 Ethernet</td>
<td>24</td>
<td></td>
<td></td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Gigabit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Gigabit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Ports (Expandability)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/100</td>
<td>48</td>
<td>24</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Gigabit</td>
<td>20</td>
<td>48</td>
<td>36</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>10 Gigabit</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>64</td>
<td>52</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Layer 3 switching capabilities</td>
<td>OSPEIRPv2VRRP, VRRP-E, Supports servers on different subnets from that of Virtual IP address</td>
<td>OSPEIRPv2VRRP, VRRP-E, Supports servers on different subnets from that of Virtual IP address</td>
<td>OSPEIRPv2VRRP, VRRP-E, Supports servers on different subnets from that of Virtual IP address</td>
<td>OSPEIRPv2VRRP, VRRP-E, Supports servers on different subnets from that of Virtual IP address</td>
<td>OSPEIRPv2VRRP, VRRP-E, Supports servers on different subnets from that of Virtual IP address</td>
</tr>
<tr>
<td>Physical dimensions</td>
<td>8.75&quot; h x 17.5&quot; w x 15&quot; d (22.2 cm x 44.5 cm x 38.1 cm)</td>
<td>8.75&quot; h x 17.5&quot; w x 15&quot; d (22.2 cm x 44.5 cm x 38.1 cm)</td>
<td>8.75&quot; h x 17.5&quot; w x 15&quot; d (22.2 cm x 44.5 cm x 38.1 cm)</td>
<td>8.75&quot; h x 17.5&quot; w x 15&quot; d (22.2 cm x 44.5 cm x 38.1 cm)</td>
<td>8.75&quot; h x 17.5&quot; w x 15&quot; d (22.2 cm x 44.5 cm x 38.1 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>60 lbs fully loaded (29.9 kg)</td>
<td>60 lbs fully loaded (29.9 kg)</td>
<td>60 lbs fully loaded (29.9 kg)</td>
<td>60 lbs fully loaded (29.9 kg)</td>
<td>60 lbs fully loaded (29.9 kg)</td>
</tr>
</tbody>
</table>

## Standards Compliance
- L3Switching-capabilities
- 32,000 MAC addresses
- 802.1d Spanning Tree Protocol
- 802.1p prioritization
- Policy-based VLANs
- Port-based VLANs
- Layer 3 protocol VLANs
- Layer 3 protocol and subnet VLANs
- 802.1q VLAN tagging

## Protocol Support
- TCP
- UDP
- SSL
- FTP
- Telnet
- SMTP
- HTTP (1.0 and 1.1)
- IMAP4

## Standards Compliance
- 802.3, 10BaseT
- 802.3u 100BaseTX, 100BaseFX
- 802.3z 1000BaseSX
- 802.3z 1000BaseLX
- 802.3 Flow Control
- 802.1q VLAN Tagging
- 802.1d Bridging
- 802.1w RSTP
- 802.1ad Link Aggregation
- 802.3 Ethernet Like MIB
- Telnet
- 802.1p prioritization MIB
- VLAN Interface MIB
- 802.1q VLAN Tagging
- 802.1d Bridge MIB
- 802.1w RSTP MIB
- 802.1ad Link Aggregation MIB

## Network Management
- Integrated Command Line
- Interface
- SSH
- Web-based GUI
- Telnet
- SNMP
- RMON
- IronView Network Manager (INM)
- HP OpenView

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

## Mounting Options
- 19" Universal EIA (Telco) Rack
- Tabletop

## Physical Dimensions
- 8.75" h x 17.5" w x 15" d (22.2 cm x 44.5 cm x 38.1 cm)
- Weight: 60 lbs fully loaded (29.9 kg)

## Power Requirements
### ServerIronGT E-Series Base Platforms

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI-GT-EGx2</td>
<td>4-slot chassis equipped with WSM6-1 (Web Switching Management Module), one AC Power Supply and 2-Port Gigabit JetCore Line Module</td>
</tr>
<tr>
<td>SI-GT-E2404CF</td>
<td>4-slot chassis equipped with WSM6-1 (Web Switching Management Module), one AC Power Supply, and 24-port 10/100 and 4-port Gigabit (copper and fiber combo) JetCore Line Module</td>
</tr>
<tr>
<td>SI-GT-EGC16</td>
<td>4-slot chassis equipped with WSM6-1 (Web Switching Management Module), one AC Power Supply and 16-port 100/1000 Copper JetCore Line Module</td>
</tr>
<tr>
<td>SI-GT-EGx4P</td>
<td>4-slot chassis equipped with WSM6-2 (Web Switching Management Module), one AC Power Supply and 4-Port Gigabit JetCore Line Module</td>
</tr>
<tr>
<td>SI-GT-E10Gx2</td>
<td>4-slot chassis equipped with WSM6 (Web Switching Management Module), one AC Power Supply and 2-Port 10 Gigabit Line Module (Optics Required)</td>
</tr>
</tbody>
</table>

DC Power Options Also Available

### ServerIronGT E-Series Line Module Expansion Options

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B10Gx1</td>
<td>1-port 10 Gigabit Ethernet Base Module (optics required)</td>
</tr>
<tr>
<td>B10Gx2</td>
<td>2-port 10 Gigabit Ethernet Base Module (optics required)</td>
</tr>
<tr>
<td>J-B24FX</td>
<td>24-port 100Base-FX JetCore line Module</td>
</tr>
<tr>
<td>J-B2404CF</td>
<td>24-port 10/100Base-TX (RJ-45) and 4-port Gigabit (copper and fiber combo) double-wide JetCore line Module</td>
</tr>
<tr>
<td>J-B48E</td>
<td>48-port 10/100Base-TX (RJ45) double-wide JetCore line Module</td>
</tr>
<tr>
<td>J-BxG</td>
<td>8-port 1000Base-X (mini-GBIC) JetCore line Module</td>
</tr>
<tr>
<td>J-B16GC</td>
<td>16-port 1000/1000Base-T (RJ45) JetCore line Module</td>
</tr>
<tr>
<td>J-B2Gx</td>
<td>2-port 1000Base-X (mini-GBIC) JetCore line Module</td>
</tr>
<tr>
<td>J-B4Gx</td>
<td>4-port 1000Base-X (mini-GBIC) JetCore line Module</td>
</tr>
<tr>
<td>J-B16Gx</td>
<td>16-port 1000Base-X (mini-GBIC) JetCore line Module</td>
</tr>
</tbody>
</table>

### ServerIronGT E-Series System Options

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WSM6-1</td>
<td>Web Switch Management Module (WSMM) II with one application traffic processor and one management processor. Use this to order replacement or for inventory of a backup.</td>
</tr>
<tr>
<td>WSM6-2</td>
<td>Web Switch Management Module (WSMM) II with two application traffic processors and one management processor. Use this to order replacement or for inventory of a backup.</td>
</tr>
<tr>
<td>WSM6</td>
<td>Web Switch Management Module (WSMM) II with three application traffic processors and one management processor. Use this to order replacement or for inventory of a backup.</td>
</tr>
</tbody>
</table>

### ServerIronGT E-Series Mini GBIC Options

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1MG-SX</td>
<td>1000Base-SX mini-GBIC optic, MMF, LC connector</td>
</tr>
<tr>
<td>E1MTG-SX</td>
<td>1000Base-SX mini-GBIC optic, MMF, MTRJ connector</td>
</tr>
<tr>
<td>E1MG-LX</td>
<td>1000Base-LX mini-GBIC optic, SMF, LC connector</td>
</tr>
<tr>
<td>E1MG-LHA</td>
<td>1000Base-LHA mini-GBIC optic, SMF, LC connector</td>
</tr>
<tr>
<td>E1MG-LHB</td>
<td>1000Base-LHB mini-GBIC optic, SMF, LC connector, 150km Maximum reach</td>
</tr>
<tr>
<td>E1MG-TX</td>
<td>1000BASE-TX Mini-GBIC Copper, RJ-45 Connector</td>
</tr>
</tbody>
</table>

### ServerIronGT E-Series 10 Gigabit Optics

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10G-XNPK-SR</td>
<td>850nm serial XENPAK plug-in transceiver (SC), target range of 300m over MMF</td>
</tr>
<tr>
<td>10G-XNPK-LR</td>
<td>1310nm serial pluggable XENPAK optic only (SC) for up to 10km over SMF</td>
</tr>
<tr>
<td>10G-XNPK-ER</td>
<td>1550nm serial pluggable XENPAK optic only (SC) for up to 40km over SMF</td>
</tr>
</tbody>
</table>

### ServerIronGT E-Series Premium Software Upgrade

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI-GT-TW-PREM</td>
<td>ServerIronGT Premium TrafficWorks GSLB and Layer-3 Upgrade</td>
</tr>
</tbody>
</table>