

# BROCADE SERVERIRON ADX SERIES 1000, 4000, AND 8000 SWITCHES



## APPLICATION SERVICES DELIVERY

## Application Delivery Controllers for Next-Generation Data Centers

### HIGHLIGHTS

- Ideal for demanding content delivery and streaming media applications, providing up to 70 Gbps of Layer 4-7 application throughput
- Industry-leading performance with up to 14 million DNS queries per second, 1.6 million Layer 4 connections per second, 16 million Layer 4 transactions per second, and hardware-based DoS attack protection at up to 120 million SYN/sec
- Intelligent content analysis engine that accelerates the performance of Microsoft, SAP, Oracle, IBM, FIX, and SIP applications
- Advanced functions such as global server load balancing, transparent cache switching, and firewall load balancing
- Investment protection with a future-ready chassis featuring interchangeable modules with up to 16 10 Gbps fiber ports and the industry's highest core density at up to 32 dedicated application processor cores
- Industry's only 1U ADC with upgradable application processors and 10 GbE support
- Industry-leading price/performance value per rack unit and per watt of power

Brocade® ServerIron® intelligent application delivery and traffic management solutions have led the industry for over a decade, helping to mitigate costs and prevent losses by optimizing business-critical enterprise and service provider applications with high availability, security, multisite redundancy, acceleration, and scalability—in more than 3000 of the world's most demanding organizations.

Now, Brocade introduces a new generation of Application Delivery Controllers (ADCs) designed to meet growing demand for application connectivity, virtualization, and operating efficiency. These new solutions include:

- ServerIron ADX 1000 Switches
- ServerIron ADX 4000 Switches
- ServerIron ADX 8000 Switches

ServerIron ADX switches provide industry-leading Layer 2 through 7 switching performance, enabling highly secure and scalable application service infrastructures. The switches efficiently distribute unified application services by measuring server utilization and connection load in real time, providing visibility and manageability of application performance, security, and service delivery.

As a result, applications run more efficiently and with higher availability—streamlining operations, increasing business agility, and significantly reducing costs.



# BROCADE

## HIGHEST-PERFORMANCE LAYER 4-7 SWITCHING

ServerIron ADX switches use detailed application message information beyond the traditional Layer 2 and 3 packet headers, directing client requests to the most available servers.

These intelligent Layer 4-7 application switches transparently support any TCP- or UDP-based application by providing specialized acceleration, content caching, firewall load balancing, network optimization, and host offload features for Web services. ServerIron ADX switches also provide a reliable line of defense by securing servers and applications against many types of intrusion and attack without sacrificing performance.

All ServerIron ADX switches forward traffic flows based on Layer 4-7 definitions, and provide industry-leading performance for higher-layer application switching functions. Superior content switching capabilities include customizable rules based on URL, HOST, and other HTTP headers, as well as cookies, XML, and application content.

## REDUCED OWNERSHIP COSTS

ServerIron ADX switches simplify server farm management and application upgrades by enabling organizations to easily remove resources and insert them into the pool—helping to minimize Total Cost of Ownership (TCO). The switches uniquely provide a single platform that can reduce network load and extend server farm network design and scalability. They accomplish this by combining a high-

performance Layer 4-7 packet processing architecture with the highest available throughput via 1 Gigabit Ethernet and 10 Gigabit Ethernet (GbE) connectivity.

In addition, ServerIron ADX switches provide hardware-assisted, standards-based network monitoring for all application traffic flows, improving manageability and security for network and server resources. To enable real-time problem detection, extensive and customizable service health check capabilities monitor Layer 2, 3, 4, and 7 connectivity along with service availability and server response. If a problem arises, client requests are automatically redistributed to other servers capable of delivering optimum service. This approach helps keep applications up and running smoothly.

To optimize application availability, ServerIron ADX switches support many high-availability options, with real-time session synchronization between two ServerIron ADX switches available to protect against session loss during outages. As one device shuts down, the second device transparently resumes control of client traffic with no loss to existing sessions or connectivity. Organizations can use advanced synchronization capabilities to simplify the management of two ServerIron ADX switches deployed in high-availability mode, minimizing network downtime caused by configuration errors.

ServerIron ADX switches are simple to configure and manage using the Brocade Command Line Interface (CLI) or browser-based Graphical User Interface (GUI). The

CLI uses well-known industry-standard syntax for fast, error-free configuration. The switches support Simple Network Management Protocol (SNMP) to allow device management through applications such as HP OpenView. Moreover, organizations can use Brocade IronView® Network Manager (INM) to monitor traffic, chart traffic, and perform comprehensive configuration management.

## ADVANCED ARCHITECTURE

Compared to the leading competitive offering, ServerIron ADX switches provide twice the throughput based on an advanced design that features complete physical and logical separation of the application, data, and management planes. In fact, the multichip, multicore, high-density application processing plane is designed for the industry's highest core density and performance upgradability.

This design utilizes modular hardware to accelerate application processing and to optimize the distribution and flow of internal traffic to a large number of processor cores. The high-speed switching fabric uniquely supports application processing, I/O, and management modules to maximize flexibility. The data plane provides high-density 10 Gbps support with hardware assist for linear session distribution across multiple application cores. In addition, the management modules feature field-upgradable mezzanine cards for Secure Sockets Layer (SSL), compression, and planned functions in the future.

## CONFIGURATION FLEXIBILITY

The ServerIron ADX 1000 provides a high-density fixed 1U form factor with optional expansion licensing for three configurations:

- Sixteen 1 GbE ports with two application cores
- Sixteen 1 GbE ports with four application cores
- Sixteen 1 GbE ports with four application cores and two 10 GbE ports

When reconfiguration, scaling, or expansion is required, the unique chassis design of the ServerIron ADX 4000 and 8000 switches provides a dedicated backplane to support application, data, and management functionality through specialized modules. The following model-interchangeable Field Replaceable Units (FRUs) are available (see sidebar).

## SERVERIRON ADX PLATFORM BENEFITS

ServerIron ADX switches are based on a unique architecture that supports scalability and expansion to meet growing application traffic switching requirements:

- **High-performance, modular design:** A choice of models starting with the compact 1U ServerIron ADX 1000 to the highly scalable ServerIron ADX 4000 and 8000 with 320 Gbps of switching bandwidth
- **Redundant power supplies:** Support for redundant, hot-swappable power supplies on all models—front-serviceable on the ServerIron ADX 4000 and 8000
- **Hot-swappable modules:** Expansion slots for management, application switching, switch fabric, line interface, and fan modules to increase performance and port density

- **Active/active and active/standby management modules:** Optionally redundant modules for higher availability and performance
- **Upgradable to hardware-assisted SSL acceleration and compression:** Optional mezzanine service modules to add integrated and scalable hardware SSL acceleration and data compression (available in a planned upgrade)
- **Reliability:** A resilient switching and routing foundation with advanced support for RIP 2, OSPF 2 and 3 (IPv6), VRRP, and VRRP-E
- **Flexible connectivity options:** Expansion from 12 to 48 GbE ports in mixed copper/fiber combinations, or up to 16 10 GbE XFP ports

## SERVERIRON ADX MODULES

### Management Module

ServerIron ADX management modules have a dual-core processor, one console port, and one USB port, along with space for an optional mezzanine daughter card.



### Application Switch Module

Each ServerIron ADX Application Switch Module (ASM8) has four dual-core processors dedicated to processing application traffic. Up to four ASM8 modules can reside in the ServerIron ADX 8000 for a total of 32 available cores.



### Switch Fabric Module

ServerIron ADX switch fabric modules provide up to 320 Gbps of switching capacity, providing scalability as I/O modules require more bandwidth.



### Interface Modules

Three configurations of ServerIron ADX line cards are available:



12×1 Gbps  
copper (RJ45)



12×1 Gbps  
fiber (SFP)



4×10 Gbps  
fiber (XFP)

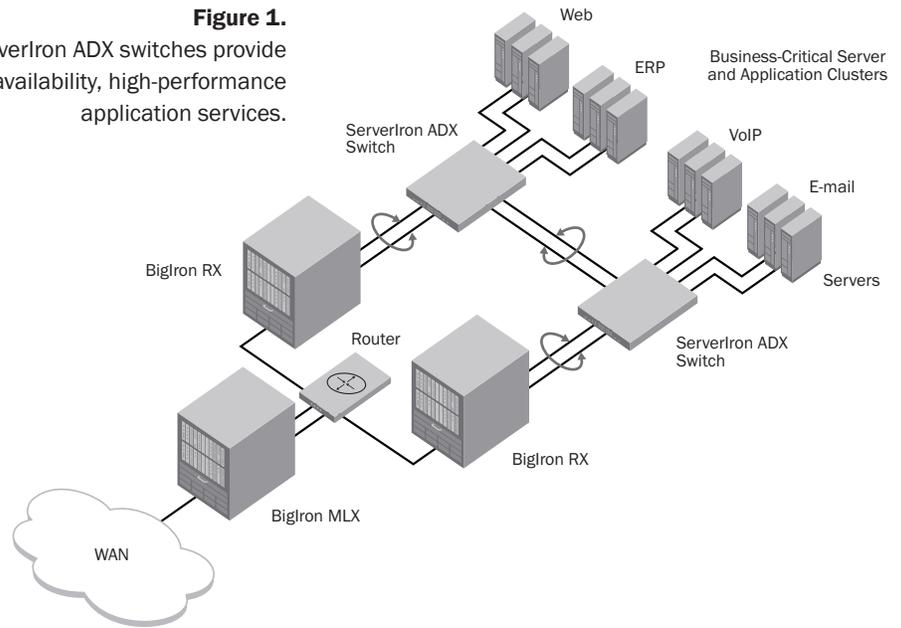
All line card packet processors support Layer 2-3 virtualization, and the ServerIron ADX chassis can scale to support even higher I/O in the future as modular 40 Gbps and 100 Gbps line card interfaces become available.

## APPLICATION TRAFFIC MANAGEMENT

ServerIron ADX switches support a wide range of IP and Web traffic management applications (see Figure 1) by providing the following capabilities:

- **Efficient Server Load Balancing (SLB):** Distributes IP-based application flows and transparently balances traffic among multiple servers while continuously monitoring server, application, and content health to increase reliability and availability.
- **Intelligent application content inspection and switching:** Avoids replicating application content and functions on all servers, while scaling and optimizing performance. It also helps defeat application-level attacks by using deep Layer 7 content inspection and filtering of application messages.
- **Disaster recovery and Global Server Load Balancing (GSLB):** Distributes services transparently across multiple sites and server farm locations, balancing traffic on a global basis while monitoring site, server, and application health. By directing clients to the best site for the fastest content delivery, ServerIron ADX switches increase application availability and reduce bandwidth costs. Moreover, site-level redundancy and fast transparent failover facilitate disaster recovery.
- **Robust application security:** Shields server farms and applications from wire-speed multi-Gigabit-rate Denial of Service (DoS), Distributed DoS (DDoS), virus, and worm attacks while serving legitimate application traffic at peak performance.
- **Enterprise applications:** Supports enterprise environments running IP- and Web-based applications, including popular applications such as Oracle, BEA Web Logic, IBM WebSphere, PeopleSoft, SAP, Microsoft SharePoint, and Siebel. ServerIron ADX switches enable load balancing and persistence to improve availability, security, and performance.
- **SYN-Guard:** Protects server farms against multiple forms of DoS attacks, such as TCPSYN and ACK attacks, by monitoring and tracking session flows. Only valid connection requests are sent to the server. ServerIron ADX switches are capable of defeating DoS attacks at the industry's highest rate (up to 120 million SYN/sec).

**Figure 1.**  
ServerIron ADX switches provide high-availability, high-performance application services.



- **High-availability application switching:** Utilizes active-standby mode, whereby the standby ServerIron ADX switch assumes control and preserves the state of existing sessions in the event the primary load-balancing device fails. In active-active mode, both ServerIron ADX switches work simultaneously and provide a backup for each other while supporting stateful failover.
- **HTTP multiplexing (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, ServerIron ADX switches stream a large number of client connections to very few server connections. Connection offload enables the servers to dedicate resources for high-performance application content delivery.
- **Application rate limiting:** Protects server farms by controlling the rate of TCP and UDP connections on an application-port basis, thereby guarding against malicious attacks from high-bandwidth users.
- **High-performance access control:** Uses extended Access Control Lists (ACLs) to restrict access to specific applications from a given address or subnet.
- **Application redirection:** Uses HTTP redirect to send traffic to remote servers if the requested service or content is not available on the local server farm.
- **Hardware SSL acceleration and compression (planned upgrade):** Utilizes mezzanine daughter-card service module upgrades to accelerate SSL and compression for ServerIron ADX 4000 and 8000 management modules.
- **Advanced firewall and security device load balancing:** Increases firewall and perimeter security performance by distributing Internet traffic loads across multiple firewall and other perimeter security appliances. This approach overcomes scalability limitations, increases throughput, and improves resiliency by eliminating perimeter security devices—such as firewalls, anti-virus gateways, VPN devices, and intrusion appliances—as single points of failure.
- **Transparent Cache Switching (TCS):** Balances Web traffic across multiple caches, eliminating the need to configure each client browser, improving Internet response time, decreasing WAN access costs, and increasing overall Web caching solution resiliency. ServerIron ADX switches improve service availability by implementing cache health checking, redirecting client requests to the next available cache server or directly to the origin server in the event of a cache or server farm failure.

## SERVER HEALTH MONITORING

The unique ServerIron ADX architecture includes a dedicated processor for health monitoring and device management. This design significantly increases server reliability and efficiency to improve overall service availability. ServerIron ADX switches provide customizable application-specific health monitoring to help organizations determine any degradation or failure of Session Initiation Protocol (SIP) servers and application functions—and to redirect clients to alternative resources.

The health monitoring messages are user-configurable per server and per application port. The switches send health monitoring messages at a user-configurable periodic interval.

## SITE REDUNDANCY AND SCALABILITY

ServerIron ADX switches can redirect client traffic geographically among multiple sites based on availability, load, and response time. These switches also measure client/server proximity as defined by round-trip delay and geographic location. All these features can work in conjunction with the network's existing Domain Name System (DNS) servers, minimizing network disruption when implementing GSLB.

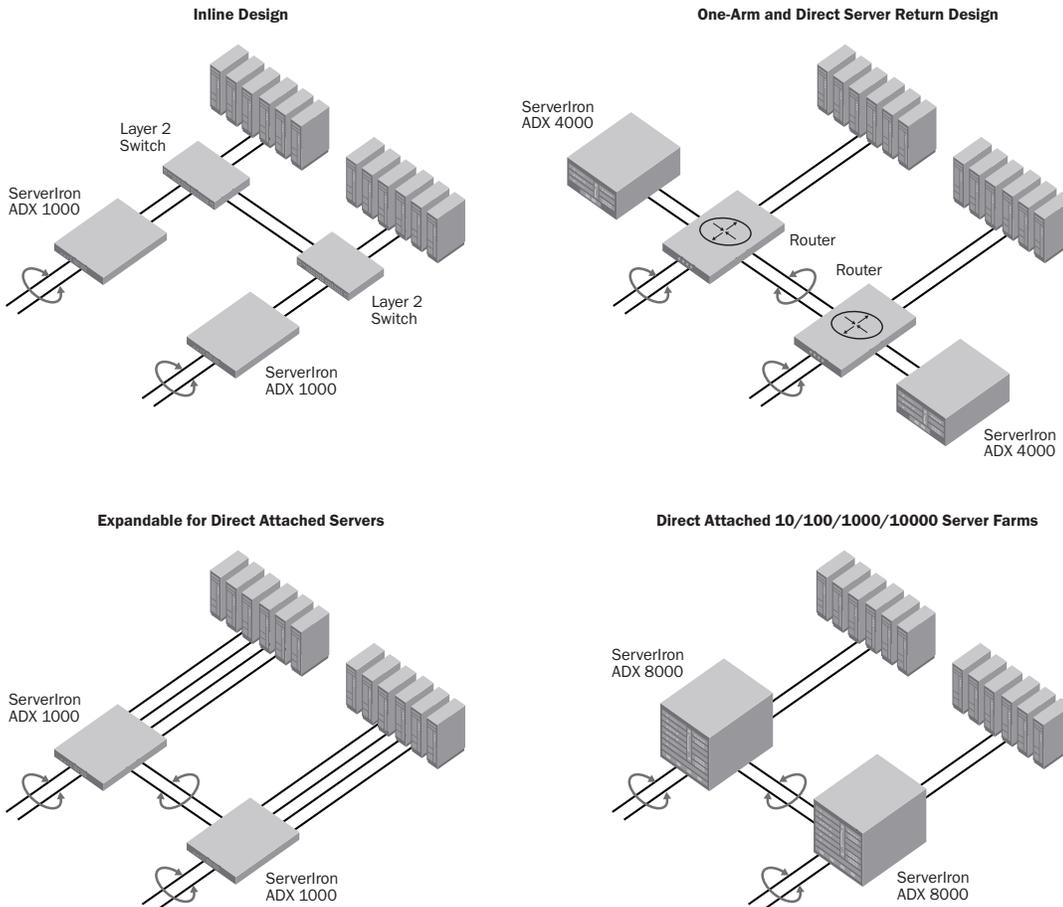
The switches continually monitor multiple sites to detect any changes in servers or services due to varying health and traffic conditions. Configurable site load thresholds enable organizations to align health checking parameters with each site's server and service capabilities.

In addition, ServerIron ADX switches use geographic site selection to keep requests within continental domains. Continuous application traffic monitoring helps create a dynamic knowledge base that enables more intelligent GSLB methodologies and site selection criteria.

The ServerIron ADX GSLB provides the following key functions:

- Acts as a DNS proxy to transparently intercept and modify the DNS responses, thereby directing users to the best site
- Leverages existing DNS servers and minimizes disruption to the existing DNS environment
- Provides continuous site monitoring to detect changes in site health conditions
- Provides configurable settings to fine-tune individual site load thresholds
- Monitors and selects sites by measuring site, server, and application responsiveness
- Adds an evolutionary knowledge base that enables more intelligent site selection as more clients access the site

In addition, ServerIron ADX switches provide a unique multisite redundancy solution with Virtual IP (VIP) Route Health Injection. This capability matches VIP and server health with intelligent route propagation to the Internet through standards-based routing protocols. This approach provides business continuity to IP applications that do not rely on DNS for service name resolution.



**Figure 2.** ServerIron ADX switches support a wide range of deployment scenarios.

## **SIMPLIFIED MANAGEMENT AND CONFIGURATION**

Organizations can manage and configure ServerIron ADX switches by using TrafficWorks, which provides two methods for configuration. The first is a flexible, powerful, and industry-standard Command Line Interface (CLI). This is particularly useful for organizations that understand and are comfortable using a CLI. Alternatively, organizations can use the browser-based enhanced Graphical User Interface (GUI) for device configuration in the following areas:

- Real server creation
- Virtual server creation
- Real-to-virtual server binding management
- Virtual/real server and port management
- Layer 4 and Layer 7 (CSW) switching support
- SSL acceleration support
- VLAN management and port assignment
- IP address configuration
- Standard ACL support
- ServerIron dashboard and front panel view
- ServerIron statistics
- High-availability configuration
- Server health monitoring

## **HIGHER INFRASTRUCTURE ROI**

With their intelligent application-aware load balancing and content switching capabilities, ServerIron ADX switches significantly improve application and server farm performance while increasing availability, security, scalability, and resource utilization. Key benefits include:

- **Improved infrastructure utilization:** ServerIron ADX switches perform highly customizable real-time health checks, dynamically monitoring the ability of servers to optimize performance and transparently reacting to server farm congestion by distributing client traffic loads to the most available servers. Intelligent content switching maximizes server utilization and performance by eliminating the need to replicate content and application functions on every server.
- **Increased server availability:** ServerIron ADX switches can be deployed in multiple high-availability modes with hitless and stateful session synchronization and failover to extend availability even through switch failures.
- **Robust security:** With built-in intelligence, ServerIron ADX switches detect and discard viruses and worms that spread through application-level messages. The switches load-balance legitimate application traffic while preventing and defeating attacks. Through specialized embedded logic, the switches reliably protect against many forms of DoS and DDoS attacks at industry-leading data rates of up to 120 million attack packets per second.

- **Massive scalability:** ServerIron ADX switches provide virtually unlimited scalability to IP-based applications and server farms in a cost-effective manner. They allow the use of multiple servers with load balancing and failover, eliminating forklift upgrades to server farms and disruption to applications.
- **Faster ROI:** ServerIron ADX switches provide high ROI for application and server infrastructure in a short timeframe, supporting significantly higher application traffic and user loads on existing infrastructure by maximizing server resource utilization. With support for server connection offload, the switches reduce connection management overhead, freeing up resources for application processing and improving overall server farm performance and capacity. On-demand and unlimited virtual server farm scalability eliminates the need for forklift upgrades and dramatically improves server infrastructure ROI.

## **BROCADE GLOBAL SERVICES**

Brocade offers a broad portfolio of professional and customer support services to help organizations deploy and maintain highly efficient and resilient IP network infrastructures. These services cover the lifecycle of assessment, design, and implementation to help organizations develop the best architecture to meet their unique requirements.

## **MAXIMIZING INVESTMENTS**

To help optimize technology investments, Brocade and its partners offer complete solutions that include education, support, and services. For more information, contact a Brocade sales partner or visit [www.brocade.com](http://www.brocade.com).

## BROCADE SERVERIRON ADX SERIES SPECIFICATIONS

Platform	ServerIron ADX 1000	ServerIron ADX 4000	ServerIron ADX 8000
Maximum number of application cores	4	16	32
Maximum system memory	8 GB	32 GB	64 GB
DNS queries/sec (fast stateless)	1,750,000	7,000,000	14,000,000
Layer 4 connections/sec (HTTP 1.0)	200,000	800,000	1,600,000
Layer 4 transactions/sec (HTTP 1.1)	2,000,000	8,000,000	16,000,000
Layer 7 connections/sec (HTTP 1.0)	90,000	360,000	720,000
Layer 7 transactions/sec (HTTP 1.1)	150,000	600,000	1,200,000
Layer 4 aggregate throughput (Gbps)	9	35	70
Layer 7 aggregate throughput (Gbps)	9	35	70
Hardware-based DDoS protection (packets/sec)	15,000,000	60,000,000	120,000,000
Hardware-based SYN-flood protection (SYN/sec)	15,000,000	60,000,000	120,000,000
Maximum number of concurrent connections	16,000,000	64,000,000	128,000,000
Maximum number of concurrent sessions	32,000,000	128,000,000	256,000,000
Maximum number of VIPs	1024	4096	4096
Maximum number of real servers	4096	16,384	16,384
Maximum number of real server ports	8192	32,768	32,768
Layer 3 switching capabilities	OSPF, RIPv2, VRRP, VRRP-E	OSPF, RIPv2, VRRP, VRRP-E	OSPF, RIPv2, VRRP, VRRP-E
Physical dimensions	1.7" h x 17.5" w x 18.1" d 4.3 cm x 44.3 cm x 45.8 cm	7.0" h x 17.5" w x 17.5" d 17.7 cm x 44.3 cm x 44.5 cm	14.0" h x 17.5" w x 17.5" d 35.5 cm x 44.3 cm x 44.5 cm
Weight	37.5 lbs fully loaded (17.0 kg)	54.0 lbs fully loaded (24.5 kg)	92.5 lbs fully loaded (42.0 kg)
Maximum power requirements	390 watts	952 watts	1920 watts
Warranty	1-year hardware, 90-day software, upgrades to higher levels available		

### Load Balancing Methods

Least Connections, Round Robin, Weighted, Enhanced Weighted, Weighted Round Robin, Dynamic Weighted (SNMP-based)

### Server Health Checks

Layer 2-4 health checks for TCP and UDP ports; Layer 7 health checks for many well-known ports, port profiles, port policies, Element Health Checks, Boolean Health Checks, and REGISTER and OPTIONS health checks for SIP protocol

### Layer 2/Layer 3 Capabilities

32,000 MAC addresses, 802.1d Spanning Tree Protocol, 802.1w Rapid Spanning Tree Protocol, IPv4/IPv6: RIP, OSPF, static routing, Trunk (LACP, trunk server/switch), VLANs, VRRP, VRRP-E

### Protocol Support

TCP, UDP, HTTP, SSL, Telnet, SSHv2, FTP, TFTP, SNMPv1 and v2, SMTP, IMAP4, POP3, LDAP, DNS, WTS, SIP, NNTP, RADIUS, MMS, RTSP, VRRP/e

### Standards Compliance

802.3, 10 BaseT, 802.3z 1000 BaseSX, 802.1q VLAN Tagging, 802.3u 100 BaseT, 100 BaseFX, 802.3z 1000 BaseLX, 802.1d Bridging, 802.1w RSTP, 802.1ad Link Aggregation

### Network Management

SSHv2, Telnet, SNMPv1 and v2, integrated CLI, Web-based GUI, IronView Network Manager (INM)

### Safety Compliance

- EN 60950-1:2001/IEC 60950-1:2001
- EN 60825-1:1994
- CAN/CSA C22.2 No. 60950-1-03
- UL 60950-1
- CE Safety Low Voltage Directive 2006/95/EC

### EMI Compliance

- FCC Part 15, Subpart B (Class A)
- EN 55022 (CE mark) (Class A)
- EN 61000-3-2
- EN 61000-3-3
- EN 61000-6-1
- EN55024 (CE mark) (Immunity) Information Technology Equipment
- ICES-003 (Canada) (Class A)
- AS/NZ 55022 (Australia) (Class A)
- VCCI (Japan) (Class A)

### Environmental

Temperature	Operating: 0°C /32°F to 40°C/104°F (dry bulb) Storage: -25°C/ -9°F to 70°C /158°F (dry bulb)
Humidity	Operating: 5% to 90% (relative, non-condensing) Storage: 5% to 95% (relative, non-condensing)
Altitude	Operating: 0 to 6600 ft. (0 to 2012 m) maximum Storage: 15,000 ft. (4500 m) maximum

### Mounting Options

19-inch universal EIA (Telco) rack	Tabletop
------------------------------------	----------

**BROCADE SERVERIRON ADX 1000, 4000, AND 8000 ORDERING INFORMATION**

<b>ServerIron ADX 1000 Fixed Platform</b>		<b>ServerIron ADX 4000 and 8000 System Module Options</b>	
<b>Part Number</b>	<b>Description</b>	<b>Part Number</b>	<b>Description</b>
SI-1016-2	1U fixed-configuration ServerIron with 16-port 10/100/1000 Base-T (RJ45), dual-core management processor (1 GB memory per core), two application processors (2 GB memory per core), one AXP Application Acceleration Processor, one PAX Process Acceleration Engine, and one AC power supply	SI-MM	Management module for ServerIron chassis series with dual-core processor with 2 GB memory per core
SI-1016-4	1U fixed-configuration ServerIron with 16-port 10/100/1000 Base-T (RJ45), dual-core management processor (1 GB memory per core), four application processors (2 GB memory per core), one AXP Application Acceleration Processor, one PAX Process Acceleration Engine, and one AC power supply	SI-SFM	Switch fabric for ServerIron chassis series
SI-1216-4	1U fixed-configuration ServerIron with 16-port 10/100/1000 Base-T (RJ45), dual 10 GbE XFP ports, dual-core management processor (1 GB memory per core), four application processors (2 GB memory per core), and one AC power supply	SI-ASM8	Application Switch Module (ASM8) for ServerIron chassis with eight application processors with 2 GB memory per core (16 GB total), dual AXP application acceleration processors, and one PAX processor acceleration engine
RPS9	500-watt AC power supply for ServerIron ADX 1000 (1U) fixed-configuration Layer 4/Layer 7 Application Delivery Controller	SI-4XG	4-port 10 GbE XFP ServerIron chassis line card module
RPS9-DC	500-watt -48V DC power supply for ServerIron ADX 1000 (1U) fixed-configuration Layer 4/Layer 7 Application Delivery Controller	SI-12GC	12-port 10/100/1000 Base-T, RJ45 ServerIron chassis line card module
<b>ServerIron ADX 4000 and 8000 Chassis Platform</b>		SI-12GF	12-port 1 GbE SFP ServerIron chassis line card module
SI-8000	ServerIron (8U) chassis with two 1200-watt AC power supplies, two switch fabric modules, and one SI-8-FAN	SI-ACPWR	ServerIron chassis 1200-watt AC power supply
SI-4000	ServerIron (4U) chassis with one 1200-watt AC power supply, one switch fabric module, and one SI-4-FAN	SI-DCPWR	ServerIron chassis 1200-watt (-48 V) DC power supply
SI-8000-DC	ServerIron (8U) chassis with two 1200-watt DC power supplies, two switch fabric modules, and one SI-8-FAN	SI-4000-S	Spare ServerIron 4U chassis with fan assembly (SI-4-FAN), no power supply, and no switch fabric
SI-4000-DC	ServerIron (4U) chassis with one 1200-watt DC power supply, one switch fabric module, and one SI-4-FAN	SI-8000-S	Spare ServerIron 8U chassis with fan assembly (SI-8-FAN), no power supply, and no switch fabric
		SI-4-FAN	ServerIron 4000 chassis fan assembly
		SI-8-FAN	ServerIron 8000 chassis fan assembly
		<b>ServerIron ADX 1000, 4000, and 8000 Connectivity Options</b>	
		E1MG-LX-OM	1000 BASE-LX SFP optic, LC connector, 10 km on SMF, optical monitoring-capable
		E1MG-SX-OM	1000 BASE-SX SFP optic, LC connector, 550 m on MMF, optical monitoring-capable
		E1MG-TX	1000 BASE-TX Mini-GBIC copper, RJ-45 connector, 100 m
		10G-XFP-LR	1310 nm serial XFP optic, LC connector, 10 km on SMF
		10G-XFP-SR	850 nm serial XFP optic, LC connector, 300 m on MMF
		<b>ServerIron ADX 1000, 4000, and 8000 Options</b>	
		All ServerIron ADX 1000 fixed-configuration products and ServerIron ADX 4000 or 8000 chassis-based products support optional DC power supplies and premium software (Routing, GSLB). See the Brocade price list for details.	

**Corporate Headquarters**

San Jose, CA USA  
T: +1-408-333-8000  
info@brocade.com

**European Headquarters**

Geneva, Switzerland  
T: +41-22-799-56-40  
emea-info@brocade.com

**Asia Pacific Headquarters**

Singapore  
T: +65-6538-4700  
apac-info@brocade.com

© 2009 Brocade Communications Systems, Inc. All Rights Reserved. 08/09 GA-DS-1349-03

Brocade, the B-wing symbol, BigIron, DCX, Fabric OS, FastIron, IronPoint, IronShield, IronView, IronWare, JetCore, NetIron, SecureIron, ServerIron, StorageX, and Turbolron are registered trademarks, and DCFM, Extraordinary Networks, and SAN Health are trademarks of Brocade Communications Systems, Inc., in the United States and/or in other countries. All other brands, products, or service names are or may be trademarks or service marks of, and are used to identify, products or services of their respective owners.

Notice: This document is for informational purposes only and does not set forth any warranty, expressed or implied, concerning any equipment, equipment feature, or service offered or to be offered by Brocade. Brocade reserves the right to make changes to this document at any time, without notice, and assumes no responsibility for its use. This informational document describes features that may not be currently available. Contact a Brocade sales office for information on feature and product availability. Export of technical data contained in this document may require an export license from the United States government.



**BROCADE**