ServerIron ADX Series

PRODUCT OVERVIEW

Comprehensive Application Delivery Solution
Based on Brocade's purpose-built architecture, the NEBS compliant ADX Series combines hardware-based multitenancy with high-performance application and infrastructure load balancing, full IPv6 performance and services, an open application scripting engine, advanced management tools, application security features, and self-service provisioning via an automated cloud management framework. The Vector Data ADX Series enables efficient distribution of traffic among application and infrastructure servers using load-balancing methods that monitor server connection load, server resources such as CPU and memory, application response time, and pre-assigned server weights for an optimal application experience.

Web and Application Server Load Balancing
The Vector Data ADX Series provides uninterrupted, high-performance, and low latency delivery of popular applications—including Microsoft Exchange, Microsoft SharePoint, Microsoft Lync, SAP, Oracle, BEA WebLogic, IBM WebSphere, and Siebel—and financial services applications based on the Financial Information eXchange (FIX) protocol. The Vector Data ADX Series also provides high-performance Layer 7 features, including health checking, content switching, content transformation, and application scripting.

Infrastructure Load Balancing
The Vector Data ADX Series increases availability and scalability of infrastructure components that are critical for service delivery, including Domain Name Server (DNS), firewalls, caching devices, authentication services such as RADIUS and LDAP, and secure IPv4 and IPv6 DNS as well as DNS Security Extension (DNSSEC) servers.

High Availability
The Vector Data ADX Series provides multiple high-availability options to suit varying infrastructure and business needs for overall enhanced application resiliency. Real-time synchronization of sessions between two peer Vector Data ADX units operating in high-availability mode provides protection against system outages.

If one device shuts down, then the second device transparently resumes control of client traffic, with no loss to existing sessions or connectivity. Vector Data ADX application delivery switches maximize availability and provide non-stop delivery of business-critcal applications through a range of capabilities.

Product Features:

- A multitenancy architecture solution that combines the flexibility of virtualization and the performance of purpose-built hardware

- Carrier-grade performance today and tomorrow

- A scalable IPv6 Internet transformation

- Service differentiation with an open application scripting engine

- Application availability and optimized application delivery

- Application security and protection from malicious attacks

- Pay-as-you-grow capacity, performance, and advanced features

- Third-party orchestration and automation integration

- On-demand provisioning in heterogeneous virtual environments

- Optimized network infrastructure acquisition through Network Subscription

Hardware-based Multitenancy

When deployed in multitenant mode, the ADX Series offers:

Maximum infrastructure efficiency:
Consolidates multiple ADX instances on a single platform, providing maximum infrastructure efficiency whilereducing costs associated with power and cooling, rack space, license management, system maintenance, and administration.

Tenant flexibility and operational simplicity:
Enables maximum flexibility to mix and match capacity, features, and services according to change in demand. Provides on-demand provisioning, unified management, and monitoring of multiple ADX instances via a common control plane, in support of true cloud service delivery.

Full tenant isolation:
Allows multiple, fully isolated ADX instances to run on a single physical system—each with its own system configuration, network stack, resource, and management—when the ADX Series is deployed as a shared device. This hardware-based virtualization of the ADX system helps ensure security, compliance mandates, and adherence to service SLAs.

Complete high availability:
Ensures that applications and services are always available by providing redundancy at both the device and tenant levels. As a fully isolated tenant on a shared device, each ADX instance can be deployed as a high-availability pair in either an active/standby or active/active configuration. Organizations can enable comprehensive configuration synchronization for increased redundancy of the device and all tenants that are enabled on it.

Capacity on Demand
All Vector Data ADX switches can be quickly upgraded in the field using software license keys. This allows organizations to enable a full suite of hardware and software options when needed without taking the platform offline. Organizations can quickly increase performance and port capacity, as well as add advanced features to the ADX 1000 Series switches, with a simple software license upgrade that supports the "pay-as-you-grow" deployment strategy. The capacity expansion is also available for the modular chassis platforms of the ADX 4000 and 10000 Series, which can leverage interchangeable modules.

Environmental

Temperature	Operating: 0°C to 40°C (32°F to 104°F)
	Non-operating: –25°C to 70°C (–13°F to 158°F)
Humidity	Relative: 5% to 90% at 40°C (104°F), non-condensing
	Non-operating: 95% maximum relative humidity, non-condensing
Altitude	Operating: 10,000 ft (3048 m)
	Non-operating: 15,000 ft (4500 m) maximum

Mounting options

Rack mount	19-inch rack-mount supporting racks compliant with: • ANSI/EIA-310-D • ETS 300 119

Safety compliance

- EN 60950-1:2006+A11:2009/IEC 60950-1:2005
- EN 60825-1
- CAN/CSA C22.2 No. 60950-1-03
- UL 60950-1
- CE Safety Low Voltage Directive 2006/95/EC
- NEBS Compliant for Brocade ADX 1000 and 10000
- RoHS Compliant (RoHS Directive 2002/95/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)

VECTOR DATA™

Software Features	Licenses			Hardware Platform Support		
	Base	**Prem**	**SSL**	**ADX 1000/ 1000F**	**ADX 4000**	**ADX 10000**
Load Balancing Methods						
Least Connections, Weighted Least Connections, Round Robin, Weighted Round Robin, Static Weighted Round Robin, Enhanced Weighted, Dynamic Weighted (SNMP-based), Response Time	•	•	•	•	•	•
Layer 4/Layer 7 Load Balancing Support						
TCP, UDP, HTTP/HTTPS, SSL, FTP, TFTP, SMTP, IMAP4, POP3, LDAP, DNS, WTS, SIP, NNTP, RADIUS, MMS, RTSP	•	•	•	•	•	•
Brocade OpenScript engine; Brocade OpenScript Performance Estimator	•	•	•	•	•	•
Layer 7 Content Inspection						
HTTP URL, cookie, host headers, and data	•	•	•	•	•	•
Application Health Monitoring						
Layer 2 ARP; Layer 3 PING; Layer 4 checks for TCP and UDP ports; Layer 7 checks for applications that include DNS, RADIUS, HTTP, SSL, LDAP, LDAPS, MMS, RTSP, SMTP, TELNET, FTP, NNTP, IMAP4, PNM, POP3, SIP	•	•	•	•	•	•
Application Availability						
High availability (active/active, active/passive), VRRP, and VRRP-E	•	•	•	•	•	•
Global Server Load Balancing (GSLB)		•		•*	•	•
IPv6 Transition Technologies						
NAT64, SLB 446, SLB 664, SLB 666, dual stack (IPv4/IPv6)		•		•	•	•
IPv6 Services Support						
Server Load Balancing Services, OpenScript application scripting engine, CSW (Layer 7 content switching), SSL, GSLB, FWLB, Transparent Cache Switching (TCS), DNS, Layer 3 routing protocols		•		•	•	•
Layer 2/Layer 3 Capabilities and Advanced Layer 3 Routing						
32,000 MAC addresses, 802.1d Spanning Tree Protocol, 802.1w Rapid Spanning Tree Protocol, 802.3ad Link Aggregation Control Protocol (LACP), VLANs and 802.1q VLAN Tagging, static routing, dynamic routing—RIPv2, VRRP, and VRRP-E	•	•	•	•	•	•
OSPFv2, OSPFv3, IS-IS, Multiprotocol BGP		•		•	•	•
Application Security and Protection						
Layer 3/Layer 4 Access Control List (ACL), Network Address Translation (NAT)	•	•	•	•	•	•
DDoS/SYN protection, DNSSEC	•	•	•	•	•	•
SSL proxy, SSL termination, 2048-bit key SSL encryption			•	•	•	•
Management						
SSHv2, Telnet, SNMP v1, 2, and 3, Command Line Interface (CLI), Web-based GUI, Brocade Application Resource Broker, SOAP/XML API, Brocade Network Advisor	•	•	•	•	•	•
Standards Compliance						
NEBS compliant	•	•	•	•	•	•
RoHS compliant	•	•	•	•	•	•

* ADX 1008-1/1008F-1 (entry-level ADX 1000) does not support GSLB

	Fixed-Form Systems				Chassis-based Systems	
	ADX 1008-1/ 1008F-1	ADX 1016-2/ 1016F-2	ADX 1016-4/ 1016F-4	ADX 1216-4/ 1216F-4	ADX 4000	ADX 10000
Connections Per Sec (CPS)	93,750	187,500	375,000		1,500,000	3,000,000
Transactions Per Sec (TPS)	625,000	1,250,000	2,500,000		10,000,000	20,000,000
Application throughput	2 Gbps	4.5 Gbps	9 Gbps		35 Gbps	70 Gbps
DNS queries/sec (stateful)	137,500	275,000	550,000		2,200,000	4,400,000
DNS queries/sec (stateless)	562,500	1,125,000	2,250,000		9,000,000	18,000,000
Maximum SSL CPS	1625	3250	6500		26,000	52,000
Maximum SSL TPS	7250	14,500	29,000		112,000	224,000
SYN flood protection (attacks/sec)	3,750,000	7,500,000	15,000,000		60,000,000	120,000,000
Hardware DDoS protection (packets/sec)	3,750,000	7,500,000	15,000,000		60,000,000	120,000,000
Maximum concurrent connections	4,000,000	8,000,000	16,000,000		64,000,000	128,000,000
Maximum concurrent sessions	8,000,000	16,000,000	32,000,000		128,000,000	256,000,000
Packet-switching latency	20 microseconds	20 microseconds	20 microseconds		20 microseconds	20 microseconds
Maximum number of VIPs	32	1024	1024		Up to 4096	Up to 4096
Maximum real servers	257	4096	4096		Up to 16,384	Up to 16,384
Maximum application ports	2085	8192	8192		Up to 32,768	Up to 32,768
Maximum number of tenants (multitenancy)	1	2	4		16	32
Platform Attributes						
Maximum application cores	1	2	4		16	32
Maximum system memory	2 GB	4 GB	8 GB		32 GB	64 GB
Maximum 1 Gigabit Ethernet (GbE) copper ports	1008: 8 1008F: 8	1016: 16 1016F: 8	1016: 16 1016F: 8	1216: 16 1216F: 8	Up to 24 copper or fiber	Up to 48 copper or fiber
Maximum 1 Gigabit Ethernet (GbE) fiber ports	1008: 0 1008F: 8	1016: 0 1016F: 16	1016: 0 1016F: 16	1216: 16 1216F: 8	Up to 24 copper or fiber	Up to 48 copper or fiber
Maximum 10 GbE ports	0	0	0	2	8	16
Management port	1 10/100/1000 Mbps	1 10/100/1000 Mbps	1 10/100/1000 Mbps		1	2
Maximum power supply (AC/DC)	Up to 2	Up to 2	Up to 2		Up to 8	Up to 16
Platform Characteristics						
Physical dimensions Height Width Depth	4.3 cm (1.7 in.) 44.3 cm (17.4 in.) 45.8 cm (18.1 in.)				17.7 cm (7.0 in.) 44.3 cm (17.4 in.) 44.5 cm (17.5 in.)	44.5 cm (17.5 in.) 44.3 cm (17.4 in.) 44.5 cm (17.5 in.)
Weight	37.5 lb fully loaded (17.0 kg)				54.0 lb fully loaded (24.5 kg)	112.3 lb fully loaded (50.9 kg)
Maximum power requirements	390 watts				952 watts	1920 watts
Power supply AC input rating AC operating voltage range DC input rating DC operating range	100 to 240 V, 50/60 Hz, 6.0 A max. 85 to 264 V, 50/60 Hz −48 V, 15.0 A −40 to −60 VDC				100 to 240 V, 50/60 Hz, 16.0 A max. per power supply 90 to 264 V, 50/60 Hz −48 V, 30.0 A max. per power supply −40 to −60 VDC	
Warranty	1-year hardware, 90-day software, upgrades to higher levels available					

For more information, please contact your Vector Data account manager.