BROCADE

Brocade ICX 7250 Switch

HIGHLIGHTS

- Offers enterprise-class stackable switching at an entry-level price, allowing organizations to buy what they need now and easily scale Brocade HyperEdge Architecture as demand grows and new technologies emerge

- Future-proofs campus networks via flexible stacking, software licensing of 1 GbE to 10 GbE ports, Brocade Switch Port Extender, and future upgrades to OpenFlow support* in true hybrid port mode, enabling Software-Defined Networking (SDN) for programmatic network control

- Enables enterprise-class manageability with up to 8×10 GbE ports for stacking or uplinks

- Delivers market-leading stacking scalability with up to 12 switches per stack, 80 Gbps of stacking bandwidth, and long-distance stacking using open standards

- Offers full Power over Ethernet (PoE+) to power wireless access points, video surveillance and video conferencing equipment, VDI terminals, and HD displays directly from the switch

- Includes the Brocade Assurance Limited Lifetime Warranty and three years of technical support

Entry-Level, Enterprise-Class Stackable Switch with Future-Proof Expandability

The Brocade® ICX® 7250 Switch delivers the performance, flexibility, and scalability required for enterprise Gigabit Ethernet (GbE) access deployment. It raises the bar with up to 8×10 GbE ports for uplinks or stacking and market-leading stacking density with up to 12 switches (576×1 GbE) per stack. In addition, the Brocade ICX 7250 combines enterprise-class features, manageability, performance, and reliability with the flexibility, cost-effectiveness, and "pay as you grow" scalability of a stackable solution.

Premium Performance in an Entry-Level Switch

The Brocade ICX 7250 Switch provides enterprise-class stackable LAN switching solutions to meet the growing demands of campus networks. Designed for small to medium-size enterprises, branch offices, and distributed campuses, these intelligent, scalable edge switches deliver enterprise-class functionality at an affordable price—without compromising performance and reliability. The Brocade ICX 7250 delivers wire-speed, non-blocking performance across all ports to support latency-sensitive applications, such as real-time voice/video streaming and Virtual Desktop Infrastructure (VDI). The Brocade ICX 7250 is available in 24- and 48-port 10/100/1000 Mbps models with 1 GbE or 10 GbE dual-purpose uplink/stacking ports (see Figure 1)—with or without PoE and PoE+—to support

enterprise edge networking, wireless mobility, and IP communications without the need for additional power outlets or power injectors.

The new Brocade Switch Port Extender* technology extends the capabilities of the Brocade HyperEdge® Architecture while maximizing the value of Brocade ICX 7250 Switches. It enables the Brocade ICX 7250 to extend ports in combination with Brocade ICX 7450 and 7750 Switches, creating a complete campus network solution with consolidated management across aggregation and core layers, shared network services—adding advanced Layer 3 capabilities to all switches—and scale-out flexibility to expand port density as needed (see Figure 1). The Brocade ICX 7250 with Switch Port Extender provides an ideal network access solution for the campus network.

* Support to be available in a future release.

Scaling Out Ports and Services as Demand Grows

The Brocade ICX 7250 is easy to deploy, manage, and integrate into both new and existing networks. Organizations can buy only what they need today, and easily scale out as demand grows and new technologies emerge.

Brocade stacking technology makes it easy to scale ports by stacking up to 12 Brocade ICX 7250 Switches into a single logical switch. This allows the Brocade ICX 7250 to provide a class-leading 80 Gbps of backplane bandwidth as well as simple and robust expandability for future growth at the network edge (see Figure 2). In addition, this stacked switch has only a single IP address to simplify management and offers transparent forwarding across a pool of up to 576×1 GbE ports and 96×10 GbE ports. When new switches join the stack, they automatically inherit the stack's existing configuration file, enabling true plug-and-play network expansion. Flexible licensing of 1 GbE to 10 GbE ports, for uplink and stacking, allows organizations to optimize network performance based on specific requirements.

Furthermore, Brocade Switch Port Extender* technology enables organizations to add advanced Layer 3 services across the stack by simply adding premium Brocade ICX 7750 Switches to existing Brocade ICX 7250 deployments. This eliminates the need for "rip and replace" upgrades, since low-cost Brocade ICX 7250 ports can live on to inherit new services.

Switch Port Extender Technology: Extending Options and Scalability

Brocade Switch Port Extender technology, offered for Brocade ICX 7250, 7450, and 7750 Switches, extends network options and scalability. It integrates premium Brocade ICX 7750, midrange Brocade ICX 7450, and entry-level Brocade ICX 7250 Switches, collapsing network access,

Brocade ICX 7250 Switches

Except as noted, all Brocade ICX 7250 models offer eight uplink/stacking ports, a single integrated power supply and fan, one RJ-45 network management port, one mini USB serial management port, and one USB storage port on the front panel.

Brocade ICX 7250-24G	24×10/100/1000 Mbps RJ-45 ports
	4×1 GbE uplink ports
	Not upgradable
	Premium Layer 3 licenses not applicable
Brocade ICX 7250-24	24×10/100/1000 Mbps RJ-45 ports
	8×1 GbE uplink/stacking ports
	Upgradable to 10 GbE
Brocade ICX 7250-24P	24×10/100/1000 Mbps RJ-45 PoE+ ports
	370 W PoE budget
	8×1 GbE uplink/stacking ports
	Upgradable to 10 GbE
Brocade ICX 7250-48	48×10/100/1000 Mbps RJ-45 ports
	8×1 GbE uplink/stacking ports
	Upgradable to 10 GbE
Brocade ICX 7250-48P	48×10/100/1000 Mbps RJ-45 PoE+ ports
	740 W PoE budget
	8×1 GbE uplink/stacking ports
	Upgradable to 10 GbE

aggregation, and core layers into a single HyperEdge domain. This domain shares network services while reducing management touch points and network hops through a single-layer design spanning the entire campus network. These powerful deployments deliver equivalent or better functionality than large, rigid modular chassis systems, but with significantly lower costs and smaller carbon footprints.

Brocade ICX switches support Distributed Chassis deployment models that use standards-based optics and cabling interface connections to help ensure maximum distance between campus switches—up to 80 km—and minimum cabling costs—up to 50 percent less than incumbent solutions. This gives organizations the flexibility to deliver ports wherever they are needed on campus
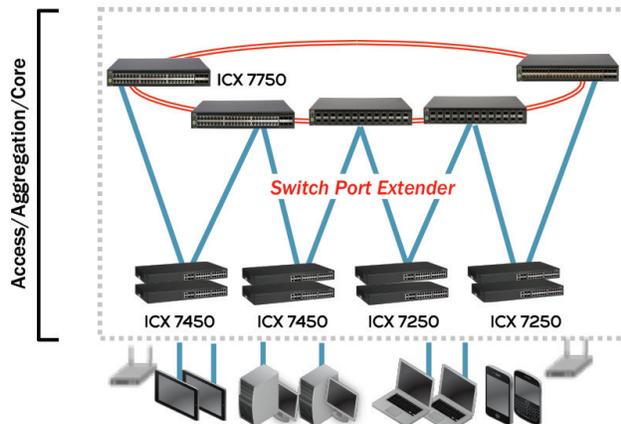

Figure 1: Brocade Switch Port Extender technology.

Figure 2: Up to 12 Brocade ICX 7250 Switches can be stacked together using up to four full-duplex SFP+ 10 Gbps ports for a fully redundant backplane with 80 Gbps of stacking bandwidth.

at a fraction of the cost. The Distributed Chassis design future-proofs campus networks by allowing networks to easily and cost-effectively expand in scale and capabilities.

Full Layer 3 Capabilities

Brocade ICX 7250 Switches offer an upgrade option to bring full Layer 3 capabilities to the network edge, reducing complexity and enhancing the reliability of enterprise networks.

Power to Spare

The Brocade ICX 7250 can deliver both power and data across network connections, supporting Power over Ethernet (PoE/PoE+) standards and providing a single-cable solution for edge devices, such as wireless access points, VoIP phones, video surveillance equipment, and VDI thin terminals. Carrying data and power through a single Ethernet wire reduces the number of power receptacles and power adapters while increasing reliability and wiring flexibility. The Brocade ICX 7250-24P provides 370 watts and can deliver PoE power to all 24 ports, while the Brocade ICX 7250-48P provides 740 watts and can deliver PoE+ power for up to 12 or 24 ports. Both switches can provide PoE and PoE+ (30 watts) power to all ports when an external power supply is deployed.

The optional Brocade ICX-EPS 4000 is an external power supply source that delivers additional power for up to 16 Brocade ICX 7250 Switches (see Figures

3 and 4). It can be used for system power redundancy and an increased PoE/PoE+ power budget to enable additional ports.

EEE Power Savings

The Brocade ICX 7250 Switch supports the IEEE 802.3az standard for Energy Efficient Ethernet (EEE), reducing power consumption during periods of low utilization. Ports are placed into a low power mode when no data is being transmitted.

Enterprise-Class Availability

When every second matters, Brocade ICX 7250 Switches help deliver continuous availability to optimize the user experience. Brocade stacking technology delivers high availability, performing real-time state synchronization across the stack and enabling instantaneous hitless failover to a standby controller in the unlikely event of a failure of the master stack controller. Organizations also can use hot-insertion/removal of stack members to avoid interrupting service when adding a switch to increase the capacity of a stack or replacing a switch that needs servicing.

In addition to stack-level high availability, Brocade ICX 7250 Switches also offer an external power supply for failover resiliency, as well as increased PoE/PoE+ port availability.

Simplified, Open-Standards-Based Management and Monitoring

The Brocade ICX 7250 provides simplified, standards-based management

BROCADE HYPEREDGE ARCHITECTURE

The Brocade HyperEdge Architecture brings campus networks into the modern era to better support mobility, security, and application agility. This evolutionary architecture integrates innovative wired and wireless technologies to streamline application deployment, simplify network management, and reduce operating costs.

The HyperEdge Architecture enables organizations to build networks that deliver:

• **Consolidated management:** Reduces unnecessary network layers to create large HyperEdge management domains that eliminate individual switch touch points, easing maintenance time and costs.

• **Shared network services:** Allows premium and entry-level switches that share a common HyperEdge management domain to also share advanced Layer 2/3 services, achieving lower price-per-port functionality.

• **Scale-out networking:** Integrates high-performance, fixed form-factor switches to create a single logical device that is independent of physical location and allows organizations to scale ports when and where needed across the campus.

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Figure 3: Brocade ICX-EPS 4000 for the Brocade ICX 7250, shown with four AC power supplies.

Figure 4: Rear view of the Brocade ICX-EPS 4000 connectivity.

capabilities that help organizations reduce administrative time and effort while securing their networks.

sFlow-based "Always-On" Network Monitoring

sFlow is a modern, standards-based network export protocol (RFC 3176) that addresses many of the challenges that network managers face today. By embedding sFlow hardware support into the Brocade ICX 7250, Brocade delivers an "always-on" technology that operates with wire-speed performance. sFlow dramatically reduces implementation costs compared to traditional network monitoring solutions that rely on mirrored ports, probes, and line-tap technologies. Moreover, sFlow gives organizations full, enterprise-wide monitoring capability for every port in the network.

Simplified, Automated Deployment with Auto-Configuration

The Brocade ICX 7250 supports auto-configuration, simplifying deployment with a truly plug-and-play experience. Organizations can use this feature to automate IP address and feature configuration of the switches without requiring a highly trained network engineer

onsite. When the switches power up, they automatically receive an IP address and configuration from DHCP and Trivial File Transport Protocol (TFTP) servers. They also can automatically receive a software update to be at the same code revision as currently installed switches.

Open-Standards Management

The Brocade ICX 7250 includes an industry-standard Command Line Interface (CLI) and supports Secure Shell (SSHv2), Secure Copy (SCP), and SNMPv3 to restrict and encrypt management communications to the system. In addition, support for Terminal Access Controller Access Control System (TACACS/TACACS+) and RADIUS authentication helps ensure secure operator access.

SDN-Enabled Programmatic Control of the Network

Software-Defined Networking (SDN) is a powerful new network paradigm designed for the world's most demanding networking environments and promises breakthrough levels of customization, scale, and efficiency. The Brocade ICX 7250 enables SDN by supporting

the OpenFlow 1.3 protocol,[*] which allows communication between an OpenFlow controller and an OpenFlow-enabled switch. Using this approach, organizations can control their networks programmatically, transforming the network into a platform for innovation through new network applications and services.

The Brocade ICX 7250 delivers OpenFlow in true hybrid port mode, which allows organizations to simultaneously deploy traditional Layer 2/3 forwarding with OpenFlow on the same port. This unique capability provides a pragmatic path to SDN by enabling network administrators to progressively integrate OpenFlow into existing networks, giving them the programmatic control offered by SDN for specific flows while the remaining traffic is forwarded as before. Brocade ICX 7250 hardware support for OpenFlow enables organizations to apply these capabilities at line rate.

Plug-and-Play Operations for Powered Devices

Brocade ICX switches support the IEEE 802.1AB Link Layer Discovery Protocol (LLDP) and ANSI TIA 1057 Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED) standards that enable organizations to deploy interoperable multivendor solutions for Unified Communications (UC). Configuring IP endpoints such as VoIP phones can be a complex task, requiring manual and time-consuming configuration. LLDP and LLDP-MED provide a standard, open method for configuring, discovering, and managing network infrastructure.

Unified Wired/Wireless Network Management with Brocade Network Advisor

Managing enterprise campus networks continues to become more complex due to the growth in services that rely on wired and wireless networks. Services such

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as Internet, e-mail, video conferencing, real-time collaboration, and distance learning all have specific configuration and management requirements. At the same time, organizations face increasing demand to provide uninterrupted services for high-quality voice and UC, wireless mobility, and multimedia applications.

To reduce complexity and the time spent managing these environments, the easy-to-use Brocade Network Advisor discovers, manages, and deploys configurations to groups of IP devices. By using Brocade Network Advisor, organizations can configure Virtual LANs (VLANs) within the network, manage wireless access points, and execute commands on specific IP devices or groups of IP devices. sFlow-based proactive monitoring is ideal for performing network-wide troubleshooting, generating traffic reports, and gaining visibility into network activity from the edge to the core. Brocade Network Advisor centralizes management of the entire family of Brocade wired products and Aruba wireless products.

Data Center ToR Server Connectivity

The Brocade ICX 7250 is designed to fit in server racks by consuming only one rack unit. In data center environments where most servers are 1 GbE-capable, the Brocade ICX 7250 provides a compact and cost-effective 1 GbE Top-of-Rack (ToR) switch by simply connecting 1 GbE Network Interface Cards (NICs) in the servers to Brocade ICX 7250 1 GbE ports. This configuration uses 10 GbE links to connect to Brocade ICX data center aggregation switches.

Warranty

Brocade ICX 7250 Switches are covered by the Brocade Assurance® Limited Lifetime Warranty. For details, visit www.brocade.com/warranty.

Best-in-Class Support

The Brocade ICX 7250 Switch is supported by next-business-day advance replacement where available, as well as software defect repairs and maintenance updates. In an effort to further improve service levels and operational efficiency, Brocade includes three years of technical support for Brocade ICX 7250 Switches, providing direct access to the Brocade Technical Assistance Center during normal 8×5 business hours.

Brocade Global Services

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 15 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, network monitoring services, and education, enabling organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

Affordable Acquisition Options

Brocade Capital Solutions helps organizations easily address their IT requirements by offering flexible network acquisition and support alternatives. Organizations can select from purchase, lease, Brocade Network Subscription, and Brocade Subscription Plus options to align network acquisition with their unique capital requirements and risk profiles. To learn more, visit www.Brocade.com/CapitalSolutions.

Maximizing Investments

To help optimize technology investments, Brocade and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Brocade sales partner or visit www.brocade.com.

BROCADE ICX 7250 SWITCH AND CONTROLLER INTEROPERABILITY

The Brocade ICX 7250 Switch operates seamlessly under the Brocade SDN Controller.* This controller is a quality-assured edition of the OpenDaylight controller code supported by an established networking provider and its leaders within the OpenDaylight community.

* Support to be available in a future release.

Brocade ICX 7250 Feature/Model Comparison

	24 RJ-45 Ports	24 or 48 Ports Non-PoE		24 or 48 PoE+ Ports	
	Brocade ICX 7250-24G	Brocade ICX 7250-24	Brocade ICX 7250-48	Brocade ICX 7250-24P	Brocade ICX 7250-48P
Switching capacity (data rate, full duplex)	128 Gbps	208 Gbps	256 Gbps	208 Gbps	256 Gbps
Forwarding capacity (data rate, full duplex)	96 Mpps	154 Mpps	190 Mpps	154 Mpps	190 Mpps
Fixed ports: 10/100/1000 Mbps RJ-45	24	24	48	24	48
Fixed ports: 100/1000 Mbps SFP	4				
Fixed ports: 1/10 Gbps SFP+ (10 GbE SPF+ optional upgrade license)		8	8	8	8
Maximum PoE Class 3 ports (internal AC power supply only)	N/A	N/A	N/A	24	48
Maximum PoE+ ports (internal AC power supply only)	N/A	N/A	N/A	12	24
Maximum PoE+ ports (with external power supply)	N/A	N/A	N/A	24	48
Advanced IPv4/v6 L3 routing (RIP, OSPF)	N/A	with license	with license	with license	with license
Aggregated stacking bandwidth	N/A	480 Gbps	480 Gbps	480 Gbps	480 Gbps
Stacking density (maximum switches in a stack)	N/A	12	12	12	12
Maximum stacking distance (distance between stacked switches)	N/A	10 km	10 km	10 km	10 km

Power

Power inlet (AC)	C14				
Input voltage/frequency	AC: 100 to 240 VAC @ 50 to 60 Hz				
Power supply rated maximum (AC)	135 W	135 W	135 W	525 W	880 W
PoE power budget (AC) (internal AC power supply only)	N/A	N/A	N/A	370 W	740 W
Switch power consumption (25°C) Idle (no PoE load) 10% traffic' (full PoE load) 100% traffic' (full PoE load)	33.6 W 42.6 W 44.4 W	42.6 W 51.6 W 57.6 W	50.64 W 63.55 W 69.51 W	50 W 63 W 73 W	66 W 84 W 96 W
Airflow	front-to-back	side-to-back	side-to-back	side-to-back	side-to-back
Switch heat dissipation (25°C)‡ Idle (no PoE load) 10% traffic' (full PoE load) 100% traffic' (full PoE load)	114.6 BTU/Hr 145.3 BTU/Hr 151.4 BTU/Hr	145.3 BTU/Hr 176.06 BTU/Hr 196.5 BTU/Hr	172.7 BTU/Hr 216.8 BTU/Hr 237.1 BTU/Hr	170.6 BTU/Hr 214.9 BTU/Hr 249.08 BTU/Hr	225.2 BTU/Hr 286.6 BTU/Hr 327.5 BTU/Hr

† Traffic load on all ports connected with maximum possible PoE/PoE+ loads (if equipped). PoE power delivered to powered devices not included.
‡ PoE power not included in switch heat dissipation figures since the heat is not dissipated at the switch.

Brocade ICX 7250 Feature/Model Comparison (continued)

	24 RJ-45 Ports	24 or 48 Ports Non-PoE		24 or 48 PoE+ Ports	
Environment					
Weight (kg)	3.58	3.76	4.84	4.73	5.86
Dimensions	**48 port**: 440 mm (17.323 in.) W×370 mm (14.56 in.) D×43.7 mm (1.720 in.) H — 1U				
	24 port: 440 mm (17.323 in.) W×280 mm (11.02 in.) D×43.7 mm (1.720 in.) H — 1U				
Acoustics (25°C)	40 dB	41.9 dB	44.5 dB	44.7 dB	45.9 dB
MTBF (hours) (25°C)	767,718	676,362	665,319	429,209	411,187

Brocade ICX 7250 Specifications

Specifications	
Connector options	• 10/100/1000 ports: RJ-45 • 1 Gbps SFP ports (Brocade ICX 7250-24G only) • 1/10 Gbps SFP+ ports (not available on Brocade ICX 7250-24G) • Out-of-band Ethernet management: 10/100/1000 Mbps RJ-45 • Console management: Mini-USB serial port (Mini-B plug) • File transfer: USB port (Standard-A plug) For the latest information about supported optics, please visit www.Brocade.com/Optics.
Maximum MAC addresses	16,000
Maximum VLANs	4,095
Maximum STP (spanning trees)	254
Maximum routes (in hardware)	12,000
Trunking	16
Maximum jumbo frame size	9,216 bytes
Average latency	1.5 µs
QoS Priority Queues	8
Layer 2 switching	• 802.1s Multiple Spanning Tree • 802.1x Authentication • Auto MDI/MDIX • BPDU Guard, Root Guard • Dual-Mode VLANs • MAC-based VLANs, Dynamic MAC-based VLAN activation • Dynamic VLAN Assignment • Dynamic Voice VLAN Assignment • Fast Port Span • GARP VLAN Registration Protocol • IGMP Snooping (v1/v2/v3) • IGMP Proxy for Static Groups • IGMP v2/v3 Fast Leave • IGMP Tracking • Inter-Packet Gap (IPG) adjustment • Link Fault Signaling (LFS) • MAC Address Locking; MAC Port Security • MAC-Layer Filtering • MAC Learning Disable • MLD Snooping (v1/v2) • Multi-device Authentication • Per-VLAN Spanning Tree (PVST/PVST+/PVRST) • Mirroring—Port-based, ACL-based, MAC Filter-based, and VLAN-based • PIM-SM v2 Snooping • Port Loop Detection • Private VLAN • Protected Link Groups • Protocol VLAN (802.1v), Subnet VLAN • Remote Fault Notification (RFN) • Single-instance Spanning Tree • Single-link LACP • Trunk Groups • Uni-Directional Link Detection (UDLD)

Brocade ICX 7250 Specifications (continued)

Base Layer 3 IP routing	• IPv4 and IPv6 static routes • ECMP • Port-based Access Control Lists • L3/L4 ACLs • Host routes	• Virtual interfaces • Routed interfaces • Route-only support • Routing between directly connected subnets
Premium Layer 3 IP routing	• IPv4 and IPv6 dynamic routes • RIP v1/v2 • OSPF v2 • Virtual Route Redundancy Protocol (VRRP) • VRRP-E • IPv6 over IPv4 tunnels	• PIM-SM, PIM-SSM, PIM-DM, PIM passive (IPv4/IPv6 multicast routing functionality)* • OSPF v3* • VRRP v3* • RIPng*
SDN features*	• Support for OpenFlow v1.0 and v1.3 (future) • OpenFlow support with true hybrid port mode	• Operates seamlessly under the Brocade SDN Controller
Metro features	• Metro-Ring Protocol MRP (v1, v2) • Virtual Switch Redundancy Protocol (VSRP) • VLAN Stacking (Q-in-Q)	• VRRP • Topology Groups
Quality of Service (QoS)	• ACL Mapping and Marking of ToS/DSCP • ACL Mapping and Marking of 802.1p • ACL Mapping to Priority Queue • ACL Mapping to ToS/DSCP • Classifying and Limiting Flows Based on TCP Flags • DHCP Relay	• DiffServ Support • Honoring DSCP and 802.1p • MAC Address Mapping to Priority Queue • Priority Queue Management using Weighted Round Robin (WRR), Strict Priority (SP), and a combination of WRR and SP
IEEE standards compliance	• 802.1AB LLDP/LLDP-MED • 802.1D-2004 MAC Bridging • 802.1p Mapping to Priority Queue • 802.1s Multiple Spanning Tree • 802.1w Rapid Spanning Tree (RSTP) • 802.1x Port-based Network Access Control • 802.3 10Base-T • 802.3ab 1000Base-T • 802.3ad Link Aggregation (Dynamic and Static)	• 802.3ae 10 Gigabit Ethernet • 802.3af Power over Ethernet • 802.3at Power over Ethernet Plus • 802.3u 100Base-TX • 802.3x Flow Control • 802.3z 1000Base-SX/LX • 802.3 MAU MIB (RFC 2239) • 802.3az-2010 - EEE • 802.1Q VLAN Tagging
RFC standards compliance	For a complete list of RFCs supported by the Brocade FastIron® software platform, please visit www.brocade.com/fastironrfc.	
Traffic management	• ACL-based inbound rate limiting and traffic policies • Broadcast, multicast, and unknown unicast rate limiting	• Inbound rate limiting per port • Outbound rate limiting per port and per queue
High availability	• L3 VRRP protocol redundancy • Real-time state synchronization across the stack • Hitless failover from master to standby stack controller	• Protected link groups • Hot insertion and removal of stacked units

Network and Device Management

Management	• Auto Configuration • Configuration Logging • Digital Optical Monitoring • Display Log Messages on Multiple Terminals • Embedded Web Management • Embedded DHCP Server	• Industry-standard Command Line Interface (CLI) • Key-based activation of optional software features • Integration with HP OpenView for Sun Solaris, HP-UX, IBM AIX, and Windows • Brocade Network Advisor • MIB Support for MRP, Port Security, MAC Authentication, and MAC-based VLANs

* Support to be available in a future release.

Brocade ICX 7250 Specifications (continued)

Management (continued)	• Out-of-band Ethernet Management • RFC 783 TFTP • RFC 854 TELNET Client and Server • RFC 951 Bootp • RFC 1157 SNMPv1/v2c • RFC 1213 MIB-II • RFC 1493 Bridge MIB • RFC 1516 Repeater MIB • RFC 1573 SNMP MIB II • RFC 1643 Ethernet Interface MIB • RFC 1724 RIP v1/v2 MIB • RFC 1757 RMON MIB • RFC 2068 Embedded HTTP • RFC 2131 DHCP Server and DHCP Relay	• RFC 2570 SNMPv3 Intro to Framework • RFC 2571 Architecture for Describing SNMP Framework • RFC 2572 SNMP Message Processing and Dispatching • RFC 2573 SNMPv3 Applications • RFC 2574 SNMPv3 User-based Security Model • RFC 2575 SNMP View-based Access Control Model SNMP • RFC 2818 Embedded HTTPS • RFC 3176 sFlow • SNTP Simple Network Time Protocol • Multiple Syslog Servers
Security	• 802.1X Accounting • MAC Authentication • DHCP snooping • Dynamic ARP inspection • Bi-level Access Mode (Standard and EXEC Level) • EAP pass-through support • IEEE 802.1X username export in sFlow • Protection against Denial of Service (DoS) attacks • Authentication, Authorization, and Accounting (AAA)	• Advanced Encryption Standard (AES) with SSHv2 • RADIUS/TACACS/TACACS+ • Secure Copy (SCP) • Secure Shell (SSHv2) • Username/Password • Web authentication • Change of Authorization (CoA) RFC 5176 • Flexible authentication

Environment

Temperature	• Operating temperature: –5°C to 50°C/23°F to 122°F • Storage temperature: –25°C to 70°C/–13°F to 158°F
Humidity	• Operating relative humidity: 5% to 95% at 50°C, non-condensing • Non-operating relative humidity: 0% to 95% at 70°C, non-condensing
Altitude	• Operating altitude: 10,000 ft (3,000 m) maximum • Storage altitude: 39,000 ft (12,000 m) maximum

Compliance/Certification

Electromagnetic emissions	FCC Class A (Part 15); EN 55022/CISPR-22 Class A; VCCI Class A; ICES-003 Electromagnetic Emission; AS/NZS 55022; EN 61000-3-2 Power Line Harmonics; EN 61000-3-3 Voltage Fluctuation and Flicker; EN 61000-6-3 Emission Standard (supersedes: EN 50081-1)
Safety	CAN/CSA-C22.2 NO. 60950-1-07; UL 60950-1 Second Edition; IEC 60950-1 Second Edition; EN 60950-1:2006 Safety of Information Technology Equipment; EN 60825-1 Safety of Laser Products—Part 1: Equipment Classification, Requirements and User's Guide; EN 60825-2 Safety of Laser Products—Part 2: Safety of Optical Fibre Communication Systems
Immunity	EN 61000-6-1 Generic Immunity and Susceptibility (supersedes EN 50082-1); EN 55024 Immunity Characteristics (supersedes EN 61000-4-2 ESD); EN 61000-4-3 Radiated, Radio Frequency, Electromagnetic Field; EN 61000-4-4 Electrical Fast Transient; EN 61000-4-5 Surge; EN 61000-4-6 Conducted Disturbances Induced by Radio-Frequency Fields; EN 61000-4-8 Power Frequency Magnetic Field; EN 61000-4-11 Voltage Dips and Sags
Environmental regulatory compliance	RoHS-compliant (6 of 6); WEEE-compliant
Vibration	IEC 68-2-36, IEC 68-2-6
Shock and drop	IEC 68-2-27, IEC 68-2-32

Brocade ICX 7250 Ordering Information

Part Number	Description
Brocade ICX 7250 Switches	
ICX7250-24G	Brocade ICX 7250 Switch 24-port, 4×1 GbE (basic, non-upgradable switch) with front-to-back airflow
ICX7250-24	Brocade ICX 7250 Switch 24-port, 8×1/10 GbE, no 10 GbE PoD license preloaded, with side-to-back airflow
ICX7250-24P	Brocade ICX 7250 Switch 24-port PoE, 8×1/10 GbE, no 10 GbE PoD license preloaded, with side-to-back airflow
ICX7250-48	Brocade ICX 7250 Switch 48-port, 8×1/10 GbE, no 10 GbE PoD license preloaded, with side-to-back airflow
ICX7250-48P	Brocade ICX 7250 Switch 48-port PoE, 8×1/10 GbE, no 10 GbE PoD license preloaded, with side-to-back airflow
Switches	**With 2×10 GbE PoD Licenses**
ICX7250-24-2X10G	Brocade ICX 7250 Switch 24-port, 8×1/10 GbE, 2×10 GbE PoD license preloaded
ICX7250-24P-2X10G	Brocade ICX 7250 Switch 24-port PoE, 8×1/10 GbE, 2×10 GbE PoD license preloaded
ICX7250-48-2X10G	Brocade ICX 7250 Switch 48-port, 8×1/10 GbE, 2×10 GbE PoD license preloaded
ICX7250-48P-2X10G	Brocade ICX 7250 Switch 48-port PoE, 8×1/10 GbE, 2×10 GbE PoD license preloaded
Brocade ICX-EPS 4000 External Power Supply Options for the Brocade ICX 7250 Switch	
The Brocade ICX-EPS4000 supports up to four removable power supplies. Each power supply provides 920 W.	
ICX-EPS4000-SHELF	1U EPS
RPS17	EPS power supply, 920 W
ICX-EPS4000-CBL-01	Brocade ICX-EPS4000 power cable 1:1
ICX-EPS4000-CBL-02	Brocade ICX-EPS4000 power cable 1:2
Feature License and Accessories	
ICX7250-PREM-LIC	Brocade ICX 7250 Layer 3 Premium software license (non-node lock)
ICX7250-2X10G-LIC-POD	2×10 GbE PoD license (node lock)—upgrade uplink/stacking ports from 8×1 GbE to 2×1 GbE/10 GbE + 6×1 GbE
ICX7250-8X10G-LIC-POD	Upgrade uplink/stacking ports from 2×1 GbE/10 GbE + 6×1 GbE to 8×1 GbE/10 GbE (node lock)
ICX7000-RMK	FRU, rack mount kit, two-post, Brocade ICX 7750/7450
XBR-R000295	FRU, rack mount kit, four-post, 24 in. to 32 in. depth rack
BR-NTWADV-IP-BASE	Brocade Network Advisor IP management software license for up to 50 devices; required for initial purchase of IP-only management; minimum of one year of support required
Optics	**For Brocade ICX 7250-24G Only**
E1MG-BXD	1000BASE-BXD SFP optic SMF, transmits at 1,490 nm and receives at 1,310 nm, LC connector, single strand SMF fiber. This optic should only be connected to an E1MG-BXU at the far end.
E1MG-BXU	1000BASE-BXU SFP optic SMF, transmits at 1,310 nm and receives at 1,490 nm, LC connector, single strand SMF fiber. This optic should only be connected to an E1MG-BXD at the far end.
E1MG-LHA-OM-T	1000BASE-LHA SFP optic, SMF, LC connector, optical monitoring capable (70 km), industrial temperature
E1MG-LX-OM	1000BASE-LX SFP optic, SMF, LC connector, optical monitoring capable
E1MG-SX-OM	1000BASE-SX SFP optic, MMF, LC connector, optical monitoring capable
E1MG-TX	1000BASE-TX SFP copper, RJ-45 connector

Brocade ICX 7250 Ordering Information (continued)

Optics	For Brocade ICX 7250-24/24P/48/48P
10G-SFPP-ER	10GBASE-ER SFP+ optic (LC), for up to 40 km over SMF
10G-SFPP-LR	10GBASE-LR, SFP+ optic (LC), for up to 10 km over SMF
10G-SFPP-SR	10GBASE-SR, SFP+ optic (LC), target range 300 m over MMF
10G-SFPP-USR	10GE USR SFP+ optic (LC), target range 100 m over MMF, 1-pack
10G-SFPP-ZR	10GBASE-ZR SFP+ optic (LC), for up to 80 km over SMF
E1MG-BXD	1000BASE-BXD SFP optic SMF, transmits at 1,490 nm and receives at 1,310 nm, LC connector, single strand SMF fiber. This optic should only be connected to an E1MG-BXU at the far end.
E1MG-BXU	1000BASE-BXU SFP optic SMF, transmits at 1,310 nm and receives at 1,490 nm, LC connector, single strand SMF fiber. This optic should only be connected to an E1MG-BXD at the far end.
E1MG-LHA-OM-T	1000BASE-LHA SFP optic, SMF, LC connector, optical monitoring capable (70 km), industrial temperature
E1MG-LX-OM	1000BASE-LX SFP optic, SMF, LC connector, optical monitoring capable
E1MG-SX-OM	1000BASE-SX SFP optic, MMF, LC connector, optical monitoring capable
E1MG-TX	1000BASE-TX SFP Copper, RJ-45 connector
Direct-Attached Cables	**For Brocade ICX 7250-24/24P/48/48P**
10G-SFPP-TWX-0101	Direct-attached SFP+ copper cable, 1 m, 1-pack, active
10G-SFPP-TWX-0301	Direct-attached SFP+ copper cable, 3 m, 1-pack, active
10G-SFPP-TWX-0501	Direct-attached SFP+ copper cable, 5 m, 1-pack, active
10GE-SFPP-AOC-0701	10 GbE SFP+ direct-attached active optical cable, 7m, 1-pack
10GE-SFPP-AOC-1001	10 GbE SFP+ direct-attached active optical cable, 10 m, 1-pack
1G-SFP-TWX-0101	Direct-attached 1 GbE SFP copper cable, 1 m
1G-SFP-TWX-0501	Direct-attached 1 GbE SFP copper cable, 5 m

For a list of cables and fiber optics approved for stacking, visit www.brocade.com/fastironstacking.

Ordering Instructions

Customers have two options when ordering a Brocade ICX 7250 Switch. They can order one of the five Brocade ICX 7250 Switch models with 1 GbE uplink/stacking ports, or order a switch preloaded with a PoD license for two 10 GbE uplink/stacking ports.

The Brocade ICX 7250 (-24/-24P/-48/-48P) can be upgraded to 2×10 GbE uplink/stacking ports by purchasing a PoD license (ICX7250-2X10G-LIC-POD).

A Brocade ICX 7250 Switch with 2×10 GbE uplink/stacking ports can be upgraded to 8×10 GbE by purchasing an additional PoD license (ICX7250-8X10G-LIC-POD). Only switches that already have 2×10 GbE can be upgraded to 8×10 GbE.

Note that the Brocade ICX 7250-24G Switch is not upgradable and will support 4×1 GbE uplink ports only.

All Brocade ICX 7250 Switches include a power cord, two-post rack mounting brackets, and a USB serial console cable. Stacking cables must be ordered separately.

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