

DATA SHEET

10/40 GBE DISTRIBUTED CHASSIS SWITCH FOR AGGREGATION/CORE

The Brocade® ICX® 7750 switch delivers industry-leading 10/40 GbE port density, advanced high-availability capabilities, and flexible stacking architecture, making it the most robust Brocade aggregation and core distributed chassis switch offering for enterprise LANs. In addition to rich Layer 3 features, the Brocade ICX 7750 scales to 12-unit distributed-chassis stacking and serves as the Control Bridge (master brain) for Ruckus Campus Fabric technology.

Part of the Brocade ICX family of switches for campus LAN and classic Ethernet data center environments, the Brocade ICX 7750 switch is a 1U high-performance solution that meets the needs of business-sensitive campus deployments and classic data center environments. With a low latency, cut-through, non-blocking architecture, the Brocade ICX 7750 provides a cost-effective, robust solution for the most demanding deployments.

Deployed as a standalone switch, a stack, or a network fabric, organizations reap the benefits of a flexible platform and the assurance that their investments are protected.



Figure 1: The Brocade ICX 7750-48F features 48 1/10 GbE SFP+ ports and 6 40 GbE QSFP+ ports that can each be split into 4x10 GbE SFP+ ports. The front panel also displays the unit stacking ID.



Figure 2: The Brocade ICX 7750-48C features 48 10GBASE-T ports and 6 40 GbE QSFP+ ports that can each be split into 4x10 GbE SFP+ ports.



Figure 3: The Brocade ICX 7750-26Q features 26 40 GbE QSFP+ ports that can be split into as many as 96 10 GbE SFP+ ports.

BROCADE ICX 7750 FEATURE/MODEL COMPARISON

	26 QSFP+ Ports	48 SFP+ Ports	48 10GBASE-T Ports
FEATURE	Brocade ICX 7750-26Q	Brocade ICX 7750-48F	Brocade ICX 7750-48C
Switching capacity (data rate, full duplex)	2.56 Tbps	1.92 Tbps	1.92 Tbps
Forwarding capacity (data rate, full duplex)	1.90 Bpps	1.44 Bpps	1.44 Bpps
Fixed ports: 1/10 Gbps SFP/SFP+		48	
Fixed ports: 100 Mbps, 1/10 Gbps 10GBASE-T RJ45			48
Fixed ports: 40 Gbps QSFP+	26	6	6
Modular slots	1	1	1
Modular ports: 40 Gbps QSFP+ (max.)	6	6	6
Latency	550 ns	550 ns	40 Gbps - 40 Gbps: 550 ns 10 Gbps - 10 Gbps: 2.9 µs
Dynamic packet buffer size	12.2 MB	12.2 MB	12.2 MB
Base IPv4/IPv6 Layer 3 routing entitlement (Static Routing, RIP)	•	•	•
Advanced IPv4/IPv6 Layer 3 routing (OSPF, BGP, PIM, PBR, VRF)	With Certificate of Entitlement	With Certificate of Entitlement	With Certificate of Entitlement
Aggregated stacking bandwidth (data rate, full duplex)	5.76 Tbps	5.76 Tbps	5.76 Tbps
Stacking density (maximum switches in a stack)	12	12	12
Stacking ports (maximum ports usable for stacking)	Up to 12x40 GbE QSFP+ per switch		
Maximum stacking distance (distance between stacked switches)	10 km	10 km	10 km

FEATURE	POWER		
Power inlet (AC)	C14		
Input voltage/frequency	AC: 100 to 240 VAC @ 50 to 60 Hz DC: 40 to 60 VDC		
Maximum power draw	586 W	586 W	586 W
Power supply rated maximum (AC)	2x500 W	2x500 W	2x500 W
Power supply rated maximum (DC)	2x500 W	2x500 W	2x500 W
Switch power utilization ¹ (25°C) Typical Maximum	274 W 350 W	250 W 327 W	511 W 586 W
Switch heat dissipation ¹ (25°C) Typical Maximum	935 BTU/hour 1,194 BTU/hour	853 BTU/hour 1,116 BTU/hour	1,744 BTU/hour 2,000 BTU/hour

¹ Traffic load is based on utilizing all ports.

BROCADE ICX 7750 FEATURE/MODEL COMPARISON

	26 QSFP+ Ports	48 SFP+ Ports	48 10GBASE-T Ports
	Brocade ICX 7750-26Q	Brocade ICX 7750-48F	Brocade ICX 7750-48C
FEATURE	ENVIRONMENT		
Weight (with 2 power supplies, 4 fans, optional 6 ports module, no transceivers)	8.83 kg (19.43 lb)	9.08 kg (19.98 lb)	10.17 kg (22.38 lb)
Dimensions	440 mm (17.323 in.) W 406.4 mm (16 in.) D 43.6 mm (1.730 in.) H; (1U)	440 mm (17.323 in.) W 406.4 mm (16 in.) D 43.6 mm (1.730 in.) H; (1U)	440 mm (17.323 in.) W 431 mm (16.97 in.) D 43.6 mm (1.730 in.) H; (1U)
Acoustics (25°C, ISO 7779)	62 dBA	62 dBA	62 dBA
MTBF (25°C)	364,061 hours	353,967 hours	259,199 hours

BROCADE ICX 7750 SPECIFICATIONS

FEATURES	SPECIFICATIONS
Connector options	<ul style="list-style-type: none"> • 100²/1000 Mbps, 10 Gbps 10GBASE-T ports: RJ-45 • 1/10 Gbps SFP+ ports • 40 Gbps QSFP+ ports • Out-of-band Ethernet management: 10/100/1000 Mbps RJ-45 • Console management: mini-USB serial port (Mini-B plug) RS-232 serial signals • File transfer: USB port, (standard-A plug) • For the latest information about supported optics, please visit www.ruckuswireless.com/optics.
DRAM NVRAM (flash) Packet Buffer Size	<ul style="list-style-type: none"> • 8 GB • 2 GB • 12.2 MB
Maximum MAC addresses	• 96,000 (switch image), 32,000 (router image)
Maximum VLANs Maximum PVLANS	<ul style="list-style-type: none"> • 4,096 • 32
Maximum STP (spanning trees)	• 254
Maximum VEs	• 512
Maximum routes (in hardware)	<ul style="list-style-type: none"> • IPv4 routes: Up to 128K (shared resource) • IPv6 routes: Up to 7K (shared resource) • Next Hop Addresses: Up to 16,000 (shared resource)
Trunking	<ul style="list-style-type: none"> • Maximum ports per trunk: 16 • Maximum trunk groups: 256×8 or 128×16 per stack
Maximum jumbo frame size	• 9,216 bytes
QoS priority queues	• 8 per port
Multicast Groups	<ul style="list-style-type: none"> • 8192 (Layer 2) • 6144 (Layer 3)

² 100 Mbps in full duplex mode only.

BROCADE ICX 7750 SPECIFICATIONS

FEATURES	FEATURE SETS	
Layer 2 feature set	<ul style="list-style-type: none"> • 802.1s Multiple Spanning Tree • 802.1x Authentication with dynamic VLAN and ACLs • Auto MDI/MDIX • BPDU Guard, Root Guard • Dual-Mode VLANs • Dynamic VLAN Assignment • Dynamic Voice VLAN Assignment • Fast Port Span • GVRP: GARP VLAN Registration Protocol • IGMP Snooping (v1/v2/v3) • IGMP Proxy for Static Groups • IGMP v2/v3 Fast Leave • Inter-Packet Gap (IPG) adjustment • Link Fault Signaling (LFS) • MAC Address Filtering • MAC Learning Disable • MLD Snooping (v1/v2) 	<ul style="list-style-type: none"> • 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 • Remote Fault Notification (RFN) • Single-instance Spanning Tree • Trunk Groups (static, LACP) • Uni-Directional Link Detection (UDLD) • Metro-Ring Protocol MRP (v1, v2) • Virtual Switch Redundancy Protocol (VSRP) • Topology Groups • Q-in-Q • MCT (Brocade Multi-Chassis Trunking)
Base Layer 3 IP routing feature set	<ul style="list-style-type: none"> • IPv4 and IPv6 static routes • RIP v1/v2, RIPng (IPv6) • ECMP (up to 32 paths) • Port-based Access Control Lists • Layer 3/Layer 4 ACLs • Host routes 	<ul style="list-style-type: none"> • Virtual Interfaces • Routed Interfaces • Route-only Support • Routing Between Directly Connected Subnets • Virtual Route Redundancy Protocol (VRRP)
Premium Layer 3 IP routing feature set (with Certificate of Entitlement)	<ul style="list-style-type: none"> • IPv4 and IPv6 dynamic routes • OSPF v2, OSPF v3 (IPv6) • PIM-SM, PIM-SSM, PIM-DM, PIM passive (IPv4/IPv6 multicast routing functionality) • PBR • VRRP-E (IPv4, IPv6) 	<ul style="list-style-type: none"> • VRRPv3 (IPv6) • BGP4, BGP4+ (IPv6) • GRE • IPv6 over IPv4 tunnels • VRF (IPv4 and IPv6)
Quality of Service (QoS)	<ul style="list-style-type: none"> • 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 • DiffServ Support 	<ul style="list-style-type: none"> • 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 • Priority Flow Control
Traffic management	<ul style="list-style-type: none"> • ACL-based inbound rate limiting and traffic policies • Broadcast, multicast, and unknown unicast rate limiting 	<ul style="list-style-type: none"> • Inbound rate limiting per port • Outbound rate limiting per port and per queue

BROCADE ICX 7750 SPECIFICATIONS

FEATURES	NETWORK AND DEVICE MANAGEMENT	
Management	<ul style="list-style-type: none"> • DHCP Auto Configuration • Configuration Logging • Digital Optical Monitoring • Display Log Messages on Multiple Terminals • Embedded Web Management (HTTP/HTTPS) • Embedded DHCP Server • Industry-standard Command Line Interface (CLI) • Brocade Network Advisor (sold separately) • Key-based activation of optional software features • Out-of-band Ethernet Management • ERSPAN support for remote troubleshooting and traffic monitoring • TFTP • TELNET Client and Server • Bootp 	<ul style="list-style-type: none"> • 1157 SNMPv1/v2c • DHCP Server and DHCP Relay • SNMPv3 Intro to Framework • Architecture for Describing SNMP Framework • SNMP Message Processing and Dispatching • SNMPv3 Applications • SNMPv3 User-based Security Model • SNMP View-based Access Control Model SNMP • sFlow • NTP Network Time Protocol • Multiple Syslog Servers • Virtual Cable Tester (VCT) • For Management MIB, please consult the "FastIron MIB Reference" document available from support.ruckuswireless.com.

FEATURES	ENVIRONMENT	
	Brocade ICX 7750-26Q and 7750-48F	Brocade ICX 7750-48C
Operating temperature	-5°C to 45°C, 50°C at sea level (0°F to 113°F, 122°F at sea level)	40°C at sea level (0°F to 96°F, 96°F at sea level)
Non-operating temperature	-40°C to 60°C (-40°F to 140°F)	-40°C to 60°C (-40°F to 140°F)
Operating humidity	10% to 90% at 50°C (122°F)	10% to 90% at 40°C (104°F)
Non-operating humidity	10% to 90% at 60°C (140°F)	10% to 90% at 60°C (140°F)
Operating altitude	10,000 ft. (3,000 m) maximum	10,000 ft. (3,000 m) maximum
Non-operating altitude	39,000 ft. (12,000 m) maximum	39,000 ft. (12,000 m) maximum

FEATURES	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 7750 ORDERING INFORMATION

PART NUMBER	BARE SWITCHES AND PORT MODULES
ICX7750-48F	Brocade ICX 7750 with 48x1/10 GbE SFP+ ports, 6x40 GbE QSFP ports and modular interface slot. No power supplies or fan units (must be ordered separately). No optics. Requires ICX7750-L3-COE Certificate of Entitlement to use advanced Layer 3 features.
ICX7750-48F-RMT3	Brocade ICX 7750 with 48x1/10 GbE SFP+ ports, 6x40 GbE QSFP ports and modular interface slot, three years of remote service is included with this bundle. No power supplies or fan units (must be ordered separately). No optics. Requires ICX7750-L3-COE Certificate of Entitlement to use advanced Layer 3 features.
ICX7750-48C	Brocade ICX 7750 with 48x1/10 GbE RJ-45 10GBASE-T ports, 6x40 GbE QSFP ports and modular interface slot. No power supplies or fan units (must be ordered separately). No optics. Requires ICX7750-L3-COE Certificate of Entitlement to use advanced Layer 3 features.
ICX7750-26Q	Brocade ICX 7750 with 26x40 GbE QSFP ports and modular interface slot. No power supplies or fan units (must be ordered separately). No optics. Requires ICX7750-L3-COE Certificate of Entitlement to use advanced Layer 3 features.
ICX7750-6Q	Brocade ICX 7750 6x40 GbE QSFP module for use in Brocade ICX7750-48F, 7750-48C, or 7750-26Q

PART NUMBER	POWER SUPPLIES AND FANS
RPS9+I	500 W AC power supply; power-supply-side intake (port-side exhaust) airflow
RPS9+E	500 W AC power supply; power-supply-side exhaust (port-side intake) airflow
RPS9DC+I	500 W DC power supply; power-supply-side intake (port-side exhaust) airflow
RPS9DC+E	500 W DC power supply; power-supply-side exhaust (port-side intake) airflow
ICX7750-FAN-I	Fan kit of 4; fan-side intake (port-side exhaust) airflow
ICX7750-FAN-E	Fan kit of 4; fan-side exhaust (port-side intake) airflow
ICX7750-FAN-I-SINGLE	Fan single unit; fan-side intake (port-side exhaust) airflow
ICX7750-FAN-E-SINGLE	Fan single unit; fan-side exhaust (port-side intake) airflow

PART NUMBER	FEATURE LICENSES AND ACCESSORIES
ICX7750-L3-COE	Certificate of Entitlement to use routing and advanced functionality. Without the Certificate of Entitlement, customers may use base Layer 3 features: VRRP, RIP, and static routes. Other Layer 3 features are considered advanced and require the ICX7750-L3-COE. The Certificate of Entitlement is serialized paper that is not tied to a particular switch; no activation is required.
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 is required.

PART NUMBER	OPTICS (see Ethernet Optics Family data sheet for most current supported optics list)
E1MG-BXD	1000BASE-BXD SFP optic, SMF, 1,490 nm, LC connector. This optic can be connected only to an E1MG-BXU at the far end.
E1MG-BXU	1000BASE-BXU SFP optic, SMF, 1,310 nm, LC connector. This optic can be connected only to an E1MG-BXD at the far end.
E1MG-LX-A	1000BASE-LX SFP optic SMF, LC connector, optical monitoring-capable. For distances up to 10 km, TAA-compliant
E1MG-LHA-OM-T	1000BASE-LHA SFP optic, MMF, LC connector, optical monitoring-capable (70 km), industrial temperature.
E1MG-LX-OM	1000BASE-LX SFP optic SMF, LC connector, optical monitoring-capable. For distance up to 10 km
E1MG-SX-OM	1000BASE-SX SFP optic, MMF, LC connector, optical monitoring-capable.
E1MG-TX	1000BASE-T SFP copper, RJ-45 connector.
10G-SFPP-USR	10 GbE Ultra-Short Reach (USR), SFP+ optic (LC), target range 100 m over MMF.
10G-SFPP-USR-SA	10 GbE Ultra-Short Reach (USR), SFP+ optic (LC), target range 100 m over MMF, standard temperature, TAA-compliant.

BROCADE ICX 7750 ORDERING INFORMATION

10G-SFPP-SR	10GBASE-SR, SFP+ optic (LC), for up to 300 m over MMF.
10G-SFPP-SR-SA	10GBASE-SR, SFP+ optic (LC), for up to 300 m over MMF, standard temperature, TAA-compliant.
10G-SFPP-SR-S	10GBASE-SR, SFP+ optic (LC), for up to 300 m over MMF, standard temperature.
10G-SFPP-LR	10G-SFPP-LR 10GBASE-LR, SFP+ optic (LC), for up to 10 km over SMF.
10G-SFPP-LR-SA	10GBASE-LR, SFP+ optic (LC), for up to 10 km over SMF, standard temperature, TAA-compliant.
10G-SFPP-LR-S	10GBASE-LR, SFP+ optic (LC), for up to 10 km over SMF, standard temperature.
10G-SFPP-ER	10GBASE-ER, SFP+ optic (LC), for up to 40 km over SMF.
10G-SFPP-ZR	10GBASE-ZR, SFP+ optic (LC), for up to 80 km over SMF.
40G-QSFP-SR4	40GBASE-SR4 QSFP+ optic (MTP 1x8 or 1x12), 100 m over MMF OM3. 150 m over MMF OM4 (not compliant with 10GBASESR4 modules per IEEE 802.ae standard).
40G-QSFP-ESR4	40GBASE-ESR4 QSFP+ optic (MTP 1x8 or 1x12), 300 m over MMF, (10GBASE-SR compatible, breakout).
40G-QSFP-SR4-INT	40GBASE-SR4 QSFP+ optic (MTP 1x8 or 1x12), 100 m over MMF (10GBASE-SR compatible, breakout-capable).
40G-QSFP-LR4	40GBASE-LR4 QSFP+ optic (LC), for up to 10 km over SMF.
40G-QSFP-SR-BIDI	40GE SR QSFP+ optic (LC), bidirectional, 100 m over OM3 MMF.

PART NUMBER	DIRECT ATTACHED CABLES
10G-SFPP-TWX-0101	10 GbE SFP+ direct-attached active copper cable, 1 m, 1-pack.
10G-SFPP-TWX-0301	10 GbE SFP+ direct-attached active copper cable, 3 m, 1-pack.
10G-SFPP-TWX-0501	10 GbE SFP+ direct-attached active copper cable, 5 m, 1-pack.
10G-SFPP-TWX-P-0101	10 GbE SFP+ direct-attached passive copper cable, 1 m, 1-pack.
10G-SFPP-TWX-P-0301	10 GbE SFP+ direct-attached passive copper cable, 3 m, 1-pack.
10G-SFPP-TWX-P-0501	10 GbE SFP+ direct-attached passive copper cable, 5 m, 1-pack.
10GE-SFPP-AOC-0701	10 GbE SFP+ direct-attached active optic cable, 7 m, 1-pack.
10GE-SFPP-AOC-1001	10 GbE SFP+ direct-attached active optic cable, 10 m, 1-pack.
40G-QSFP-4SFP-C-0101	40 GbE direct-attached QSFP+ to four SFP+ active copper breakout cable, 1 m, 1-pack.
40G-QSFP-4SFP-C-0301	40 GbE direct-attached QSFP+ to four SFP+ active copper breakout cable, 3 m, 1-pack.
40G-QSFP-4SFP-C-0501	40 GbE direct-attached QSFP+ to four SFP+ active copper breakout cable, 5 m, 1-pack.
40G-QSFP-QSFP-C-0101	40 GbE direct-attached QSFP+ to QFP+ active copper cable, 1 m, 1-pack.
40G-QSFP-QSFP-C-0301	40 GbE direct-attached QSFP+ to QFP+ active copper cable, 3 m, 1-pack.
40G-QSFP-QSFP-C-0501	40 GbE direct-attached QSFP+ to QFP+ active copper cable, 5 m, 1-pack.
40G-QSFP-QSFP-AOC-1001	40 GbE direct-attached QSFP+ to QSFP+ active optical cable, 10 m, 1-pack.

WARRANTY

Brocade ICX 7750 Switches are covered by the Ruckus Assurance Limited Lifetime Warranty. For details, visit www.ruckuswireless.com/warranty.

BEST-IN-CLASS SUPPORT

Brocade ICX 7750 switches come with 90 days of free technical support from the Ruckus Technical Assistance Center (TAC). For continued access to the TAC past the initial 90 days, customers must purchase a Ruckus Technical Support contract. For details, visit support.ruckuswireless.com/programs.

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