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Brocade ICX 7250 Switch Frequently Asked Questions

Introduction

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.

For more information, visit www.brocade.com/icx7250.

General Questions and Answers

Q. How many models are available in the Brocade ICX 7250 Switch family?

A. Five models are available:

- Brocade ICX 7250-24G with 24 10/100/1000 Mbps RJ-45 fixed ports

- Brocade ICX 7250-24 with 24 10/100/1000 Mbps RJ-45 fixed ports

- Brocade ICX 7250-24P with 24 10/100/1000 Mbps RJ-45 PoE+ fixed ports

- Brocade ICX 7250-48 with 48 10/100/1000 Mbps RJ-45 fixed ports

- Brocade ICX 7250-48P with 48 10/100/1000 Mbps RJ-45 PoE+ fixed ports

The Brocade ICX 7250-24G offers:

- 4×1 GbE uplink ports (non-upgradable)

- No stacking

- No Layer 3 licensing

- Front-to-back airflow

Each of the other four models offers:

- 8×1/10 GbE uplink/stacking ports

- Side-to-back airflow

- The option to order with no 10 GbE Ports on Demand (PoD) license or the 2×10 GbE PoD license pre-loaded

Q. How do the 10 GbE PoD licenses for the uplink/stacking ports work?

A. The Brocade ICX 7250 Switch comes with 8×1 GbE uplink/stacking ports. These ports can be upgraded to 1/10 GbE with Ports on Demand (PoD) licenses. The only combination of 1 GbE and 10 GbE uplink/stacking ports are:

- 8×1 GbE

- 2×10 GbE and 6×1 GbE

- 8×10 GbE

Each of the Brocade ICX 7250 Switches comes with 8×1 GbE uplink/stacking ports. A Brocade ICX 7250 Switch can be upgraded to 2×10 GbE and 6×1 GbE one of two ways:

- Purchase a switch bundle with the 2×10 GbE PoD license pre-loaded, or

- Purchase a switch and then purchase a 2×10 GbE PoD license upgrade

A Brocade ICX 7250 Switch can be upgraded to 8×10 GbE by purchasing the 8×10 GbE PoD license upgrade (SKU: ICX7250-8X10G-LIC-POD). This upgrade can only be applied to a switch that already has 2×10 GbE uplink/stacking ports.

Note: The Brocade ICX 7250-24G has 4×1 GbE ports and is not upgradable.

Q. How many ports can be used for stacking?

A. Up to 4 ports can be used for stacking. Stacking requires 10 GbE ports. Stacking is not supported on 1 GbE ports.

Q. Does the Brocade ICX 7250 have Layer 3 capabilities?

A. All Brocade ICX 7250 models, except the Brocade ICX 7250-24G, have IPv4 and IPv6 Layer 3 capabilities:

- **Base Layer 3 routing:** Available in Brocade ICX 7250* models, with no license required. It includes IPv4 and IPv6 static routes and routing between directly connected subnets.

- **Premium Layer 3 routing:** Adds IPv4/IPv6 static routes and IPv4 dynamic routing protocols, including RIPv1/v2, VRRP/VRRPE, OSPFv2, IPv4 over GRE-IPv4 tunnels, IPv6 over IPv4 tunnels, and RIPv1/v2 announce. It also includes multicast routing protocols, such as PIM, MLS snooping v1/v2, and PIM6-SM v2 snooping.

- **Layer 3 IPv6 and multicast routing:** Will be available, with the Premium Layer 3 routing, in a future software release.
  * Excludes the Brocade ICX 7250-24G Switch.

Q. Can Brocade ICX 7250 Switches be upgraded to support Layer 3 features in the field?

A. Yes. Brocade ICX 7250 Switches can be upgraded to the Premium feature set at any time. Customers can purchase a software upgrade license to upgrade any Brocade ICX 7250* Switch to support Layer 3 capabilities.
* Except the Brocade ICX 7250-24G, which is not upgradable.

Q. What type of license can be installed on the Brocade ICX 7250?

A. The Brocade ICX 7250 supports "non-node-locked" Premium Layer 3 licenses. The non-node-locked license files are not tied to a particular switch serial number and can be transferred between Brocade ICX 7250 Switches. However, a given license file should only be activated on one switch at a time. Using the same license file concurrently on multiple switches is prohibited.

Brocade ICX 7250 Switch 10 GbE PoD licenses, for uplink/stacking ports, are node-locked. These licenses are tied to a specific switch serial number and cannot be transferred to another switch.

Q. **What feature advantages does the Brocade ICX 7250 offer compared to the Brocade ICX 6450 Switch?**

A. The Brocade ICX 7250 Switch includes the following features not found in the Brocade ICX 6450 Switch:

- 8×1/10 GbE uplink/stacking ports (vs. 4×1/10 GbE on the Brocade ICX 6450)

- Stacking up to 12 units (vs. 8 units)

- 802.3az-2010 - EEE

- Additional Layer 3 services: IPv6 and multicast routing

- OpenFlow 1.3 (OpenFlow support for the Brocade ICX 6450 is available only when the switch is in a mixed stack with the Brocade ICX 6610)

- External power supply that can provide redundant power for up to 16 switches (vs. 3 switches)

Q. **How does the Brocade ICX 7250 expand when more than 24 or 48 ports are needed?**

A. All Brocade ICX 7250 Switches, except the Brocade ICX 7250-24G, support stacking to facilitate port expansion while minimizing management overhead. Up to 12 switches can be included in a stack, scaling the logical switch up to 576 1 GbE ports and 48 10 GbE ports. The stacking bandwidth is 80 Gbps.

Q. **Do the switches need to be physically stacked in order to grow the logical switch?**

A. No. When using the 10 Gbps stacking ports, the switches can be situated either on top of each other in a rack in a "daisy-chained ring" configuration, or stacked horizontally in a "braided ring" configuration, in which alternating switches are connected to each other. The latter configuration allows switches in the ring to be situated farther apart from each other.

Q. **What cabling options are available for stacking switches?**

A. Standard SFP+ copper cables are used for short-distance stacking. Cables are not included and will need to be ordered separately. SFP+ optics can also be used for distance stacking. Visit www.brocade.com/fastironstacking for more information about long-distance stacking. Refer to www.brocade.com/optics and download the Brocade Ethernet Optics Family data sheet and support matrix for the latest Brocade ICX 7250 optics and cable support for stacking.

Q. **What is the maximum distance between two Brocade ICX 7250 Switches in a stack?**

A. The maximum distance between two stacked switches depends on the type of SFP link being used to stack the units together. To date, the maximum distance is 10 km. New optics are certified on an ongoing basis. For the latest information about supported optics, visit www.brocade.com/optics.

Q. **Can PoE and non-PoE Brocade ICX 7250 Switches be mixed in a stack?**

A. Yes. Brocade stacking technology provides the flexibility to mix and match PoE and non- PoE Brocade ICX 7250 Switches in a single stack.

Q. **Can Brocade ICX 7250 Switches be stacked with Brocade ICX 7750 or 7450 Switches?**

A. Brocade Campus Fabric technology* enables Brocade ICX 7250 Switches to be "stacked" with Brocade ICX 7450 and 7750 Switches.
*Support on the Brocade ICX 7250 to be available in a future release.

Q. **Can Brocade ICX 7250 Switches be stacked with Brocade ICX 6610 or 6450 Switches?**

A. No. This stacking configuration is not supported.

Q. Is PoE+ backward-compatible with PoE?

A. Yes. 802.3at PoE+ is fully backward-compatible with 802.3af PoE. Leveraging LLDP-MED, the Brocade ICX 7250 auto-negotiates 802.3af Class 1, Class 2, and Class 3 power.

Q. How many PoE and PoE+ ports can the Brocade ICX 7250 deliver?

A. The Brocade ICX 7250 can deliver all 24 or 48 ports with full Class 3 power. The following chart shows how many ports can be driven with PoE power, based on the number of power supplies that are installed.

Brocade ICX 7250 Model	PoE Class 3 Ports	PoE+ Ports
ICX 7250-24P	24	12
ICX 7250-48P	48	24

Q. What is the Brocade ICX 7250 PoE power budget?

A. The total PoE power budget for the Brocade ICX 7250-24P Switch is 360 W, and for the Brocade ICX 7250-48P, 720 W.

Q. Can additional PoE power be provided to drive all PoE+ ports?

A. Yes. The Brocade ICX-EPS4000 external power supply can provide additional PoE power for up to eight Brocade ICX 7250 Switches. With the external power supply, the switch can provide full PoE or PoE+ to all switches.

Brocade ICX 7250 Model	PoE Class 3 Ports	PoE+ Ports
ICX 7250-24P with ICX-EPS4000	24	24
ICX 7250-48P with ICX-EPS4000	48	48

Q. Which optics and cables are qualified for the Brocade ICX 7250-24G?

A. The table below shows the optics qualified for the Brocade ICX 7250-24G.

Part Number	Description
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

Q. Which optics and cables are qualified for the Brocade ICX 7250-24/24P/48/48P?

The following table shows the optics qualified for the Brocade ICX 7250-24/24P/48/48P.

Part Number	Description
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

The table below shows the direct-attached cables qualified for the Brocade ICX 7250-24/24P/48/48P.

Part Number	Description
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

Q. Which cables and fiber optics are approved for stacking?

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

Q. Does the Brocade ICX 7250 offer both AC and DC power supplies?

A. No. The Brocade ICX 7250 comes only with an AC power supply.

Q. Does the Brocade ICX 7250 Switch have removable fan trays?

A. No. The fan unit cannot be replaced in the field. However, the Brocade ICX 7250 Switch models with multiple fans can continue to run for a limited amount of time when one fan fails. The switch should be replaced as soon as possible.

Q. Does the Brocade ICX 7250 have the option for a redundant power supply?

A. Yes. Redundant power can be provided for the Brocade ICX 7250 Switch with the Brocade ICX-EPS4000 external power supply. The Brocade ICX-EPS4000 can provide redundant power for up to 16 Brocade ICX 7250 Switches.

Q. How is the Brocade ICX 7250 managed?

A. The Brocade ICX 7250 supports a wide range of management standards and features an industry-standard CLI and a Web-based interface. Additionally, it can be managed—along with the rest of the Brocade network—by Brocade Network Advisor management software. The Brocade ICX 7250 offers a dedicated out-of-band 10/100/1000 Mbps management port so edge ports are not consumed by management traffic.

Q. What does "hitless failover" mean?

A. Hitless stacking failover is a critical high-availability feature provided by Brocade stacking technology. Hitless failover enables the standby stack controller to instantaneously take over in the event of a failure of the master stack controller, without any interruption of traffic forwarding.

In addition, if a stack controller (one of the switches in the stack) fails, it can be replaced while the stack is operating—without interrupting traffic forwarding—through hot insertion and removal of stacked units. This is another high-availability feature of Brocade stacking technology.

Q. How is the cooling airflow in the Brocade ICX 7250 directed?

A. Airflow in all Brocade ICX 7250 Switches flows from side to back (port side to power supply side), except in the Brocade ICX 7250-24G, which has back-to-front airflow.

Q. Is a lifetime warranty offered for Brocade ICX 7250 Switches?

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

Q. Is technical support included with Brocade ICX 7250 Switches?

A. Yes. Brocade ICX 7250 Switches include three years of technical support. For details, visit www.brocade.com/warranty.

Q. What comes in the box with Brocade ICX 7250 Switches?

A. Brocade ICX 7250 Switches include a power cord, two-post rack mounting brackets with mounting screws and bolts, RJ45-to-DB9 adapter for serial console, rubber feet, power cord clip, and a USB serial console cable. The Brocade ICX 7250-48P comes with a 13 A, 110 V power cable.

Note: Stacking cables must be ordered separately.

Learn More

Q. How do I find more information about the Brocade ICX 7250?

A. Navigate to the Brocade ICX 7250 product page on www.brocade.com for the latest data sheets, white papers, and solutions briefs. Or contact your Brocade sales representative or Brocade APN Partner for more details.

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