

# Brocade ICX 7750 Switch Frequently Asked Questions

## Introduction

Specifically designed for enterprise campus and data center networks, the Brocade® ICX® 7750 Switch is a 1U-fixed, high-performance, high-availability, and high-density 10 Gigabit Ethernet (GbE) and 40 GbE solution that meets mission-critical network requirements for campus aggregation and core layers, as well as Top-of-Rack (ToR) deployments in data centers. With a low-latency, cut-through, non-blocking architecture, the Brocade ICX 7750 provides a cost-effective, high-performance solution for campuses and data centers.

For more information, visit: [www.brocade.com/icx7750](http://www.brocade.com/icx7750).

## General Questions and Answers

### **Q. What environment is the Brocade ICX 7750 Switch primarily designed for?**

**A.** The Brocade ICX 7750 is primarily designed for enterprise campus aggregation and core layers, as well as ToR and aggregation deployments in data centers. It provides cost-effective 10 GbE high-speed campus access and server connectivity and aggregation in demanding data center environments, including High-Performance Computing (HPC) environments. Available with front-to-back or back-to-front airflow and redundant, hot-swappable power supplies and fan units—all in a 1U form factor—the Brocade ICX 7750 is built for enterprise campus and high-performance data center environments.

### **Q. The Brocade ICX 7750 has a cut-through architecture. What is the difference between a cut-through architecture and a store-and-forward architecture?**

**A.** With a cut-through architecture, the switch has to examine only the first 128 bytes of the packet header to determine where the packet needs to be sent. The packet can then be forwarded to the destination before the switch receives the entire packet. This architecture results in very low latency, which is required for HPC and High-Frequency Trading (HFT) environments. With a store-and-forward architecture, the switch receives the entire packet, analyzes it, and then determines where it should go. As a result, store and-forward architectures require larger buffers to receive data and usually have higher latency.

**Q. The Brocade ICX 7750 has high-density 10 GbE and 40 GbE uplinks. Can it be used as an aggregation or core layer switch?**

**A.** The Brocade ICX 7750 is designed for the high-density 10 GbE interconnection commonly required in the enterprise campus for access aggregation, or the data center for server access or aggregation. High-availability deployment is also supported using a pair of Brocade ICX 7750 Switches with Multi-Chassis Trunking (MCT) in conjunction with VRRPe. The Brocade ICX 7750 is part of the Brocade HyperEdge® Architecture in the campus LAN aggregation layer and can even be deployed as a core layer device. Please consult with your Brocade representative to determine how the Brocade ICX 7750 can best meet your topology requirements.

**Q. Does the Brocade ICX 7750 support both copper and optical server connections?**

**A.** Yes, it offers both. The Brocade ICX 7750 comes in three different flavors:

- **Brocade ICX 7750-48C:** Offers 48 10GBASE-T copper ports and up to 12 QSFP+ 40 GbE ports.
- **Brocade ICX 7750-48F:** Offers 48 SFP+ 10 GbE ports and up to 12 QSFP+ 40 GbE ports.
- **Brocade ICX 7750-26Q:** Offers up to 32 QSFP+ 40 GbE ports.

For more details about the type of supported optics, refer to the Brocade Ethernet Optics Family data sheet at [www.brocade.com/optics](http://www.brocade.com/optics).

**Q. If access switches or servers have high-speed 10 GbE connections to the Brocade ICX 7750, will the uplink connections to the aggregation or core layer be a bottleneck?**

**A.** No. The Brocade ICX 7750 offers up to 12 40 GbE links to the aggregation or core layer. When designing high-performance networks, it is critical to account for the amount of traffic that will be traversing the switch at any instant. A 4:1 subscription ratio for uplink traffic might be sufficient, but a 2:1 ratio might be necessary in very demanding environments. The Brocade ICX 7750 can even support an uplink port for every server port (1:1 subscription), but that is not necessary in most environments.

**Q. Does the Brocade ICX 7750 offer one or two power supplies?**

**A.** The Brocade ICX 7750 offers up to two internal, field-replaceable, redundant power supplies. The high-efficiency 500 W AC or DC power supplies are hot-swappable and load-sharing with auto-sensing and auto-switching capabilities, which are critical for power redundancy and deployment flexibility.

**Q. If one power supply fails, is a single power supply sufficient to power all ports on the switch?**

**A.** Yes. If one power supply fails, a single power supply is fully capable of driving all available ports. However, the failed power supply should be replaced as soon as possible to maintain high availability.

**Q. Does the Brocade ICX 7750 offer AC and DC power?**

**A.** Yes.

**Q. The Brocade ICX 7750 has three removable fan units. Can the fan units be replaced while the unit is running?**

**A.** Yes. The fan units are hot-swappable, which means that they can be replaced while the unit is running. However, only one fan unit should be taken out at a time, and the fan should be replaced immediately after it is removed.

**Q. How is the Brocade ICX 7750 managed?**

**A.** The Brocade ICX 7750 supports a wide range of management standards, has an industry-standard Command Line Interface (CLI), and can be managed by Brocade Network Advisor—similar to other Brocade IP/Ethernet products.

**Q. Does the Brocade ICX 7750 have Layer 3 capabilities?**

**A.** Yes. The Brocade ICX 7750 has advanced Layer 3 routing capabilities, including OSPF, BGP, PIM, and IPv6 unicast routing, making it suitable for a wide range of applications in data centers, campus, metro, and federal government networks.

**Q. Does the Brocade ICX 7750 support stacking?**

**A.** Yes. Starting with Brocade FastIron® software release 8.0.20, up to 12 Brocade ICX 7750 Switches can be stacked together to form a single logical switch. The six 40 GbE ports located at the rear of the units and the six 40 GbE ports located at the front of the units can be used for stacking, providing a total aggregated stacking bandwidth of 5.76 Tbps.

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

**A.** Standard QSFP+ copper cables are used for short-distance stacking. QSFP+ optics can also be used for long-distance stacking. Visit [www.brocade.com/fastironstacking](http://www.brocade.com/fastironstacking) for details.

**Q. Can splitter cables be used to split the Brocade ICX 7750 40 GbE ports into four 10 GbE ports?**

**A.** Yes. The Brocade ICX 7750 supports the use of QSFP+ to 4x SFP+ splitter cables, but only when switches are running in a standalone switch configuration. Splitter cables cannot be used when Brocade ICX 7750 Switches are part of a stack (that is, running in a “stack member” configuration). Also, there are some restrictions concerning which QSFP ports can be split using these cables. Refer to the Brocade ICX 7750 product documentation for further details.

**Q. What is the maximum distance between two Brocade ICX 7750 Switches in a stack?**

**A.** The maximum distance between two stacked switches depends on the type of QSFP link 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](http://www.brocade.com/optics).

**Q. What does “hitless stacking 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. Can Brocade ICX 7750 Switches be stacked with Brocade ICX 6610 or 6450 Switches?**

**A.** No. This stacking configuration is not supported.

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

**A.** No. This stacking configuration is not supported; however, the Brocade ICX 7750 and 7450 can operate together as a single logical switch in "campus fabric" mode. See the Brocade FastIron software product documentation for more information about Brocade Campus Fabric technology.

**Q. How is the cooling airflow in the Brocade ICX 7750 directed?**

**A.** Airflow in all Brocade ICX 7750 Switches flows from either port side to power supply side, or power supply side to port side. Airflow can be specified at the time of order and can be reversed in the field by swapping the power supplies and fan assembly.

**Q. Can I use the Brocade ICX 7750 as a border gateway for a branch office?**

**A.** Yes. The Brocade ICX 7750 provides extensive BGP support, making it suitable as a border gateway for a branch office.

**Q. Do I need a separate license for Layer 3 features?**

**A.** A Certificate of Entitlement (ICX7750-L3-COE) should be purchased to use advanced routing 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. In addition, the Brocade Technical Assistance Center (TAC) will not require the Certificate of Entitlement for support.

**Q. Is a lifetime warranty offered for Brocade ICX 7750 Switches?**

**A.** Yes. Brocade ICX 7750 Switches are covered by the Brocade Assurance® Limited Lifetime Warranty. For details, visit [www.brocade.com/warranty](http://www.brocade.com/warranty).

**Learn More**

**Q. How do I find out more about the Brocade ICX 7750 Switch?**

**A.** Visit the Brocade ICX 7750 product page at [www.brocade.com/icx7750](http://www.brocade.com/icx7750) for the latest information. Or contact your Brocade sales representative or OEM partner for more details.

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