QFX3600 SWITCH

The Juniper Networks® QFX3600 Switch is a high-performance, low-latency, feature-rich 40GbE*/10GbE platform that delivers a fabric-ready edge solution for the Juniper Networks QFabric™ System. Featuring standards-based bridging, routing and Fibre Channel over Ethernet (FCoE) capabilities in a compact 1U form factor, the QFX3600 is also a versatile Layer 2 and Layer 3 standalone data center top-of-rack switch.*

*QFX3600 40GbE QFabric edge and QFX3600 standalone switch will be available in 2H 2012.

Product Description

The QFX3600 Switch is the first 40GbE top-of-rack switch in the Juniper Networks switching portfolio, providing a 40GbE*/10GbE QFabric Node edge solution for the QFabric System. In standalone switch mode*, the QFX3600 addresses a wide range of deployment scenarios—including traditional data centers, virtualized data centers, high-performance computing, network-attached storage, converged server I/O and cloud computing.

Featuring 16 QSFP+ ports, the QFX3600 delivers feature-rich Layer 2 and Layer 3 connectivity to networked devices such as rack servers, blade servers, storage systems and other switches in highly demanding, high-performance data center environments. When deployed with other components of the Juniper Networks QFabric family, including the QFX3100 Director and the QFX3600-I QFabric Interconnect (in a QFX3000-M QFabric System) or QFX3008-I QFabric Interconnect (in a QFX3000-G QFabric System), the QFX3600 delivers a fabric-ready QFabric Node edge solution that contributes to a high-performance, low-latency, single-tier data center fabric.

For added configuration flexibility, when operating in standalone switch mode*, all QFX3600 ports can be used as 4x10GbE ports using QSFP+ to SFP+ direct attach copper (DAC) or QSFP+ to SFP+ fiber splitter cables and optics. When operating as a QFabric Node in a QFabric System, the QFX3600 becomes a 10GbE or 40GbE edge device.

For converged server edge access environments, the QFX3600 is also a standards-based FCoE transit switch, protecting investments in existing data center aggregation and Fibre Channel storage area network (SAN) infrastructures.

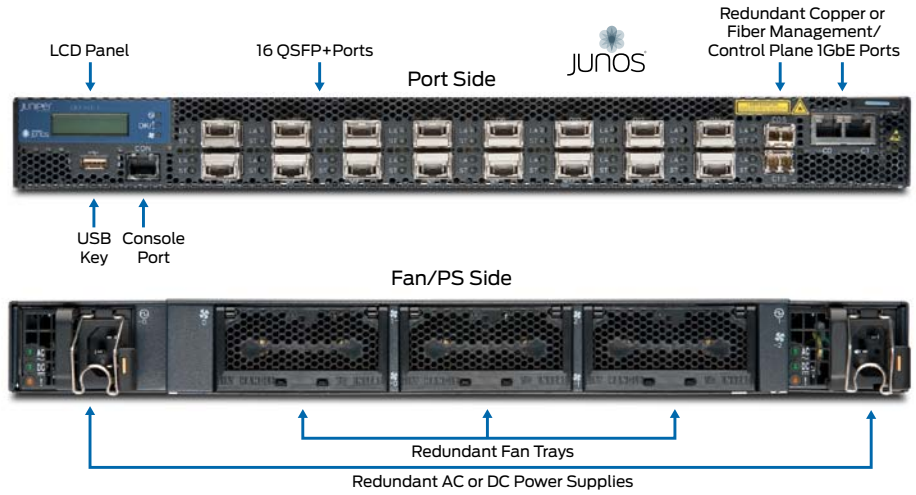

Figure 1: QFX3600 QFabric Node

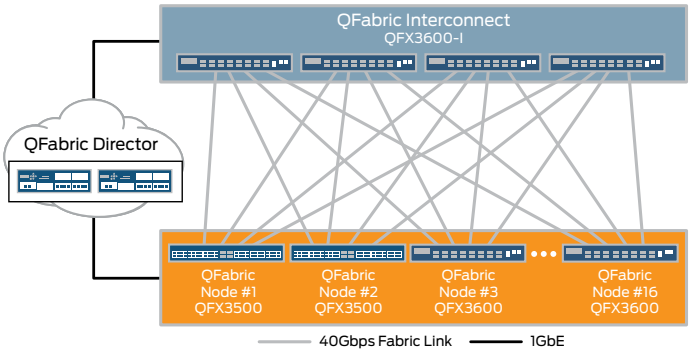

Figure 2: QFX3000-M system with mix of QFX3500 and QFX3600 QFabric Nodes

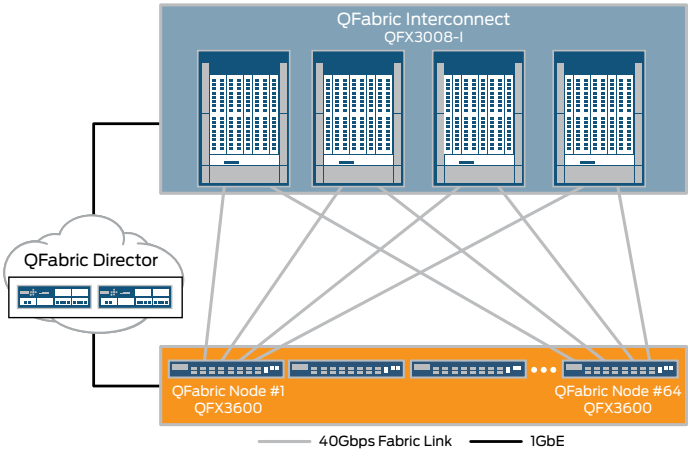

Figure 3: Wire-speed configuration of QFX3000-G system with 64 QFX3600 QFabric Nodes

QFX3600 Node in a QFabric System

When deployed in a QFX3000-M QFabric System, designed for mid-tier, satellite and container data center environments, the QFX3600 supports a number of configurations with different port and uplink densities (Figure 2). In the default configuration, the QFX3600 supports four uplinks and 48 10GbE ports using QFSP+ to 4x10 SFP+ breakout direct attach copper (DAC) cables. When two uplinks are employed, the QFX3600 supports 56 10GbE ports using the same QFSP+ to 4x10 SFP+ breakout DAC cables. When eight uplinks are used, the QFX3600 supports 32 10GbE ports with the 4x10 breakout cables.

When deployed in a QFX3000-G QFabric System—designed for large enterprises, service providers and cloud data center environments—QFX3600 QFabric Nodes can be connected as wire-speed devices (Figure 3). Other configurations with 3:1 and 6:1 oversubscriptions are also supported. Server or network-facing QSFP+ ports can be used as 4x10GbE ports using either DAC breakout cables or multimode fiber breakout cables with QSFP on one end and 4x10GbE SR optics on the other.

QFX3600 Hardware Specifications

Hardware

System

- Switching capacity: 1.28 Tbps and 960 Mpps switching capacity
- Switching mode: cut-through and store-and-forward
- Rear port connections

Interface Options

- 16 QSFP+ ports
- Dual management ports (copper or fiber)
- USB port
- Console port

Supported Transceiver and Direct Attach Cable

- QSFP+ DAC cables: 1/3 m twinax copper
- QSFP+ to 4 X 10 SFP+ breakout DAC cables: 1/3 m twinax copper
- QSFP+ 40GbE SR4 optic

Dimensions (W x H x D)

- 17.0 x 1.74 x 19.4 in (43.2 x 4.4 x 49.3 cm)

Weight

- 30.8 lb (14 kg) fully populated

Airflow

- Front-to-back cooling
- Back-to-front cooling
- Redundant variable-speed fans to reduce power draw

Power Supply and Fan Modules

- Dual-redundant (1+1) and hot-pluggable power supplies
- 100 to 240 V single phase AC power or -40 to -72 V DC power
- Redundant and hot-pluggable fan modules

Ordering Information

Model Number	Description
Base Hardware	
QFX3600-16Q-AFI	QFX3600 – 16 port QSFP+ switch with three fans (FRU side-to-port-side airflow); power supplies (two required) and power cables (two required) not included
QFX3600-16Q-AFO	QFX3600 – 16 port QSFP switch with three fans (port side-to-FRU-side airflow); power supplies (two required) and power cables (two required) not included
Spares	
JPSU-650W-AC-AFI	650 W AC power supply for EX4550, QFX3500 and QFX3600 (PSU-side airflow intake)
JPSU-650W-AC-AFO	650 W AC power supply for EX4550, QFX3500 and QFX3600 (PSU-side airflow exhaust)
JPSU-650W-DC-AFI	650 W DC power supply for EX4550, QFX3500 and QFX3600 (PSU-side airflow intake)
JPSU-650W-DC-AFO	650 W DC power supply for EX4550, QFX3500 and QFX3600 (PSU-side airflow exhaust)
CBL-EX-PWR-C13-AR	AC power cable, Argentina (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-AU	AC power cable, Australia (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-BR	AC power cable, Brazil (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-C14	AC power cable, patch cord (10 A/250 V, 2.5 m) for EU only
CBL-EX-PWR-C13-CH	AC power cable, China (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-EU	AC power cable, Europe (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-IL	AC power cable, Israel (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-IN	AC power cable, India (6 A/250 V, 2.5 m)
CBL-EX-PWR-C13-IT	AC power cable, Italy (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-JP	AC power cable, Japan (12 A/125 V, 2.5 m)
CBL-EX-PWR-C13-KR	AC power cable, Korea (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-SA	AC power cable, South Africa (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-SZ	AC power cable, Switzerland (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-TW	AC power cable, Taiwan (10 A/125 V, 2.5 m)
CBL-EX-PWR-C13-UK	AC power cable, UK (10 A/250 V, 2.5 m)
CBL-EX-PWR-C13-US	AC power cable, US (13 A/125 V, 2.5 m)

Model Number	Description
Optics and Transceivers	
QFX-QSFP-40G-SR4	QSFP+ 40GBASE-SR4 40 gigabit optics, 850 nm for up to 150 m transmission on multimode fiber-optic (MMF)
QFX-QSFP-DAC-1M	QSFP+ to QSFP+ Ethernet Direct Attach Copper (twinax copper cable) 1 m passive
QFX-QSFP-DAC-3M	QSFP+ to QSFP+ Ethernet Direct Attach Copper (twinax copper cable) 3 m passive
QFX-QSFP-DACBO-1M	QSFP+ to SFP+ 10-Gigabit Ethernet Direct Attach Breakout Copper (twinax copper cable) 1 m
QFX-QSFP-DACBO-3M	QSFP+ to SFP+ 10-Gigabit Ethernet Direct Attach Breakout Copper (twinax copper cable) 3 m

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at **www.juniper.net**.

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