

Highlights

- Self-routing switching element with dynamic load balancing.
- Single-chassis and multichassis system configurations, scalable to hundreds of Tbps.
- A system can start with a few devices and grow to thousands of interconnected line-card devices.
- Automatic fault detection and recovery using dynamic distribution and routing tables.
- Scheduled device removal and addition without cell loss.
- Fabric multicast (MC) support.
- Backwards compatible with StrataDNX product line devices (BCM88750, BCM88650, and BCM88660).
- Fully supported by Broadcom's common Application Programming Interface (API).

BCM88770

✓	Service Provider
✓	OTN/PTN
✓	Data Centers
✓	Enterprise

BCM88770

Scalable Fabric Element 3.6 Tbps Self-Routing Switching Element

OVERVIEW

The Broadcom® BCM88770 is the fourth generation in the StrataDNX™ product line of Fabric Element (FE) devices and is a self-routing cell-based switching element. This device enables BCM88670 switch-based systems to build flexible networking platforms providing user bandwidth over 720 Tbps.

Together with the BCM88670, the BCM88770 provides a complete solution for switching fabric, traffic management, packet processing, and network interfaces. Switching platforms can scale up to 6,000 100GbE ports.

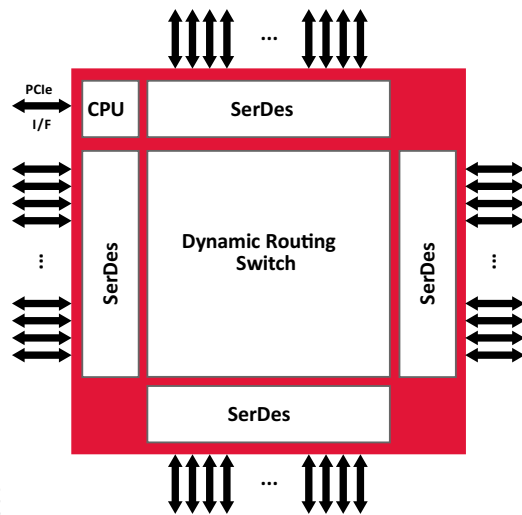
The BCM88770 provides scalability in three dimensions: port rates, port count, and traffic management services, allowing the user to connect mixed-rate line cards, for example 100 Gbps through 3.6 Tbps each, with various traffic management schemes.

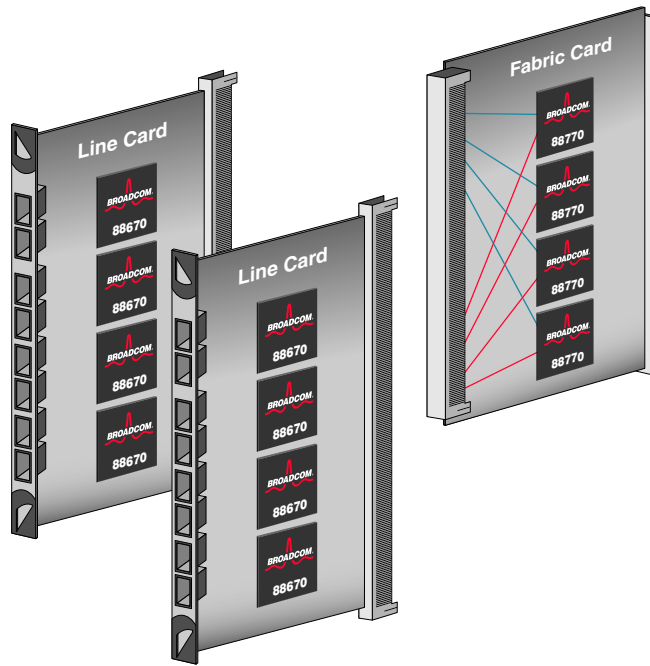
The BCM88770 is used to build a variety of network switch solutions:

- Over 100 Tbps core/edge switches with single-stage fabric for data center, packet transport, or carrier network applications.
- Multiple interconnected chassis of different capacities, using the BCM88770 two-stage fabric to create a scalable core platform that delivers up to 6,000 ports of 100GbE or their 40GbE/10GbE equivalents.

FEATURES

- Self-routing device with dynamic load balancing
- Support for single-stage and three-stage fabric configurations
- Interconnects up to 1K of BCM88670 devices in a system
- Switches destination-routed and source-routed data cells and control cells
- Supports fabric multicast and multicast load balancing
- Support for three pipes with flexible allocation, e.g., TDM/OTN - Unicast Data - Multicast Data
- Configurable SerDes rate
- Automatic fault detection
- Scheduled device removal and device insertion without cell loss
- Parallel local processor interface using two lanes PCIe Gen2 for configuration, monitoring, and statistics
- Option for Broadcom Serial Control (BSC)
- In-band management and configuration
- Built-in SerDes FEC, retransmit (BEC), and PRBS





BCM88770 Modular Solution

FABRIC CONFIGURATIONS

The BCM88770 is used to build a single-stage or a folded, three-stage Clos network with dynamic routing. A fabric plane (Clos middle-stage element) can be realized via a single or partial BCM88770 device (single-stage configuration) or several BCM88770 devices (multistage configuration).

In a single-stage fabric configuration, a BCM88770-based system can support over 100 Tbps of system throughput capacity (with BCM88670 devices).

A three-stage configuration based on the BCM88770 can be extended to over 720 Tbps system throughput capacity.

FAULT TOLERANCE

The BCM88770 supports flexible redundancy schemes enabling fully fault tolerant systems. Other schemes enable graceful degradation. The BCM88770 automatically detects and reroutes around faulty links or elements, resulting in a fault-tolerant self-healing fabric. The system reacts to faults in a device, connection, or configuration.

MULTICAST SUPPORT

The BCM88770 supports fabric multicast. It routes and replicates multicast data according to the Multicast ID and the Multicast routing table.

APPLICATIONS

- Carrier Ethernet core/metro/edge switches and routers
- Data center switch/router
- Packet transport switches
- Mobile backhaul platforms
- Enterprise switches and routers



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