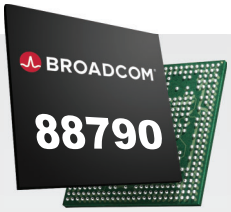
BCM88790

Scalable Fabric Element
9.6 Tbps Self-Routing Switching Element



- Self-routing switching element with dynamic load balancing.
- Single-chassis and multichassis system configurations, scalable to thousands 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 (BCM88770, BCM88670, and BCM88680).
- Fully supported by Broadcom's common Application Programming Interface (API).

BCM88790	
✓	Service Provider
✓	OTN/PTN
✓	Data Centers
✓	Enterprise

OVERVIEW

The Broadcom® BCM88790 is the fifth generation in the StrataDNX™ product line of Fabric Element (FE) devices, and is a self-routing cell-based switching element. This device enables BCM88690 switch-based systems to build flexible networking platforms providing user bandwidth over 2400 Tbps.

Together with the BCM88690, the BCM88790 provides a complete solution for switching fabric, traffic management, packet processing, and network interfaces. Switching platforms can scale up to 24,000 100GbE ports or 6,000 400GbE ports.

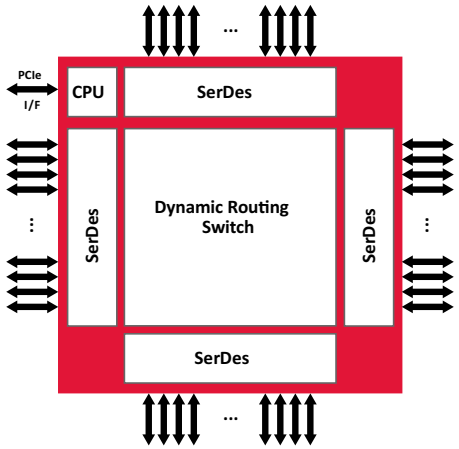
The BCM88790 provides scalability in three dimensions: port rates, port count, and traffic management services, allowing the user to connect mixed-rate line cards, for example 100 Gbps through 9.6 Tbps each, with various traffic management schemes.

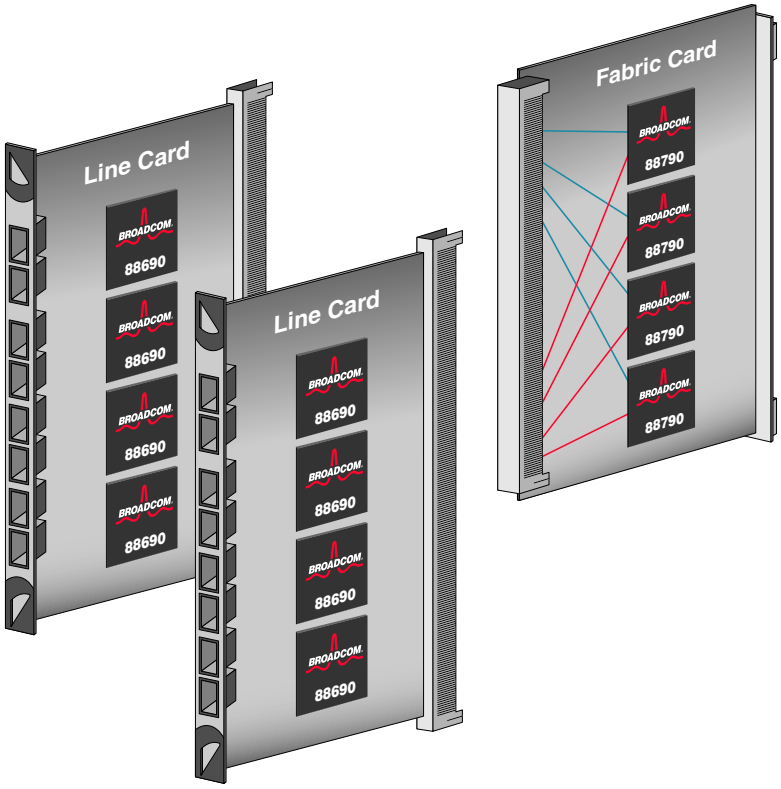
The BCM88790 is used to build a variety of network switch solutions:

- Over 460 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 BCM88790 two-stage fabric to create a scalable core platform that delivers up to 6,000 ports of 400GbE or their 100GbE/50GbE equivalents.

FEATURES

- Self-routing device with dynamic load balancing
- Support for single-stage and three-stage fabric configurations
- Interconnects up to 1K of BCM88690 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 Gen3 for configuration, monitoring, and statistics
- Option for Broadcom Serial Control (BSC)
- In-band management and configuration
- Built-in SerDes FEC and PRBS





BCM88790 Modular Solution

FABRIC CONFIGURATIONS

The BCM88790 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 BCM88790 device (single-stage configuration) or several BCM88790 devices (multistage configuration).

In a single-stage fabric configuration, a BCM88790-based system can support over 460 Tbps of system throughput capacity (with BCM88690 devices).

A three-stage configuration based on the BCM88790 can be extended to over 2400 Tbps system throughput capacity.

FAULT TOLERANCE

The BCM88790 supports flexible redundancy schemes, enabling fully fault tolerant systems. Other schemes enable graceful degradation. The BCM88790 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 BCM88790 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

ABOUT **BROADCOM**

Broadcom (NASDAQ: AVGO) is a diversified global semiconductor leader built on 50 years of innovation, collaboration and engineering excellence. Broadcom's extensive product portfolio serves multiple applications within four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & others. Broadcom is changing the world by Connecting everything®. For more information, go to www.broadcom.com.

88790-PB00-R • March 14, 2016