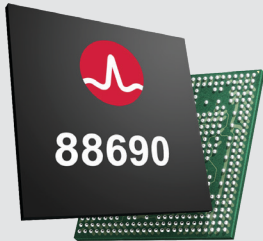


# BCM88690

## StrataDNX™ 10 Tb/s Scalable Switching Device



### Key Features

- Highly integrated DNX scalable switching and routing device.
- Highly scalable, field-proven StrataDNX traffic manager, with deep packet buffers.
- Advanced and programmable packet processor, with built-in support for data center and carrier applications.
- Hardware support for IEEE 1588v2 and SyncE implementations with nanosecond-scale time stamping.
- Large on-chip tables with off-chip expandability.
- 10GbE, 25GbE, 40GbE, 50GbE, 100GbE, and 400GbE interfaces.
- Scaling to hundreds of terabits-per-second switching solutions together with the BCM88790.
- Broadcom's common Application Programming Interface (API).

### Supported Applications

- Carrier Ethernet core, metro/edge switches, and routers.
- Data center leaf, spine, core, and DCI switches.
- Data center high-capacity, deep-buffered, ToR switches.

### Overview

The Broadcom® BCM88690 scalable series is the industry's densest switching solution, enabling switching platforms of up to 6000 400GbE ports.

The BCM88690 is the seventh generation of the StrataDNX scalable switching product line and processes up to 10 Tb/s of line card traffic, supporting up to 12 400GbE ports, 48 100GbE ports, or a mix of front panel ports from 10GbE to 400GbE, operating at Layer 2 through Layer 4.

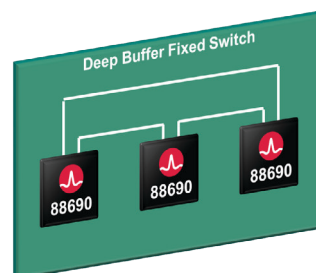
The BCM88690 series, together with the BCM88790 fabric element (FE) device, enables system vendors to build a scalable product line based on a unified architecture that addresses any density or application, such as:

- Multi-terabit core and edge routers for data center, packet transport, or carrier network applications
- Large-scale spine and leaf switches for data centers with integrated deep buffering and hierarchical quality-of-service (HQoS)
- Multiple interconnected modular systems to create a scalable core platform for switching and routing capacity multiplication
- High-capacity, fixed configuration switch for mission-critical applications

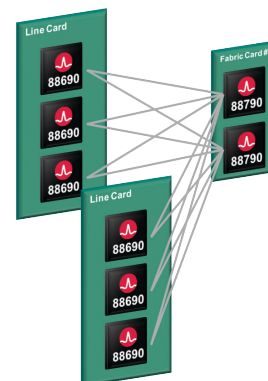
The BCM88690 Elastic Pipe™ packet processor is C++ programmable, with built-in support for data center and carrier networking applications. The large on-chip, centralized, and fungible databases can be extended using an external knowledge-based processor (KBP) from Broadcom.

The BCM88690 traffic manager integrates deep packet buffers with a distributed scheduling scheme that allows state-of-the-art hierarchical quality-of-service (QoS), transmission scheduling per-customer, per-service, as well as tunneling and overlay networks. Flexible flow control mechanisms support Priority-based Flow Control (PFC), Enhanced Transmission Selection (ETS), and Explicit Congestion Notification (ECN).

**Figure 1: Flexible combination of 10/25/40/50/100/400GbE ports**



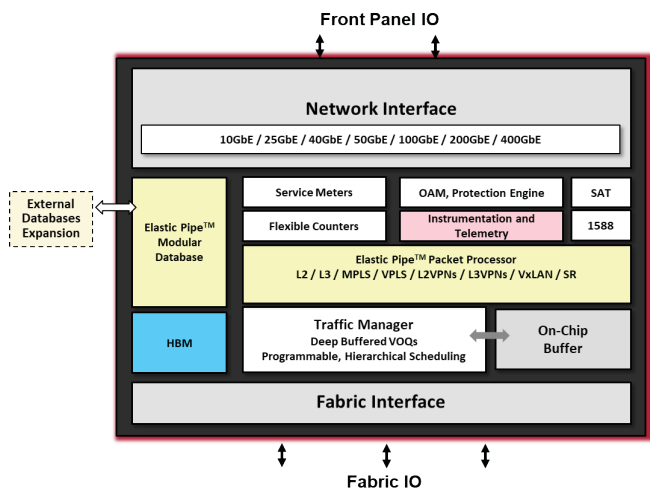
**Figure 2: Modular configuration, scaling to hundreds of ports**



## Features

- Seventh-generation StrataDNX scalable FAP product line
- High-performance 4.8 Tb/s full-duplex switching
- Fabric interface:
  - SerDes interface to the Broadcom BCM88790 fabric element
  - Fabric-less (without the fabric element) configurations of up to three devices
- Flexible network interface:
  - 10GbE, 25GbE, 40GbE, 50GbE, 100GbE, and 400GbE interfaces
- Traffic manager:
  - 8GB in-package, HBM (High-Bandwidth Memory) deep buffering
  - Carrier-grade hierarchical traffic management
  - Compliant with scheduling and shaping standards, including MEF and DSL-Forum
- Elastic Pipe™:
  - Extending BCM88690 pipe via a pool of additional general purpose stages
    - Future-proof and programmable pipe with elastic extension
    - Software-defined, C++ programmable
    - Flexible binding of a centralized database to any stage of the pipe
  - Bridging, routing, MPLS, VPLS, L2VPNs, L3VPNs, segment routing, and OAM
  - Data center tunneling encapsulations including VxLAN, NV-GRE, and GENEVE
  - Built-in support for data center, carrier and Metro Ethernet, and packet transport applications
  - Large on-chip tables with off-chip expandability
  - OAM accelerator engine
- Instrumentation and telemetry:
  - On-chip, large-scale hardware acceleration
  - Monitoring of large numbers of sessions, with advanced reporting capabilities

Figure 3: BCM88690 Block Diagram



To meet customer-specific requirements, the BCM88690 can be used with complementary Broadcom devices for interface expansion, scaling, and adding traffic management capabilities to existing systems for investment protection.