

# Broadcom BCM56330 Switching Technology

Connecting everything®



## 76 GBPS INTEGRATED MULTILAYER ETHERNET SWITCH AND TRAFFIC MANAGER

### Overview

The Broadcom® BCM56330 is based on the industry-leading and market-proven StrataXGS® IV product line. Each BCM56330 family device is a highly integrated 24-port multilayer GbE switch with four ports of 10-GbE XAUI™ uplinks or four ports of 1 GbE/2.5 GbE uplinks. The GbE ports support SGMII as well as integrated SerDes for direct fiber (1000BX and 100FX) connectivity.

The BCM56330 family are purpose-built for next-generation Enterprise and Metro Ethernet access applications. This product family offers an 8-port or 24-port GbE configuration with uplinks. Two BCM56330 devices can be connected together by two ports of 13G XAUI-over-HiGig stacking protocol to create a nonblocking 48-port switch.

The BCM56330 family supports nonblocking L2 switching and L3 routing, which are key features for Carrier Ethernet and enterprise networking applications.

### Features

- Fully integrated packet buffer
  - Intelligent memory management unit (MMU) optimized for handling bursty data traffic
- Advanced multistage TCAM-based Content Aware™ engine
  - L2, IPv4/IPv6 L3 packet classification
  - Flow-based classification, metering, and marking of frames
  - Flexible Access Control List (ACL)
  - Parallel lookup engines
- Key Carrier Ethernet features
  - IEEE 802.1ad provider bridging
  - Flexible VLAN translation
  - MPLS/VPLS, pseudowire
  - PBB/PBT
  - IEEE 802.1ag and Y.1731 Ethernet OAM
  - IEEE 1588 and Synchronous Ethernet

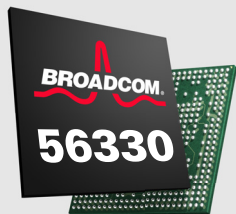
### Summary of Benefits

- Single-chip switch System-on-a-Chip (SoC) optimized for Carrier Ethernet access market.
- Seamless connection to StrataXGS fabric via HiGig2 protocol.
- Provider-edge features at access economics.
- Dynamic memory technology delivers optimum usage of packet-buffer resources.
- Eight flexible Class of Service (CoS) queues per port assure lowest latency to high-priority traffic. This supports a wide variety of delay-sensitive video and audio multicast applications.
- IPv6 support provides future-proofing.
- MPLS tunneling enables L2/L3 VPN services.
- Hardware-based OAM provides carrier-grade performance management.
- Flow-based classification, policing, marking, and queuing deliver carrier-class SLA.
- Synchronous Ethernet provides timing accuracy for delay-sensitive applications such as voice and video.
- Leverages Broadcom unified API for software reuse and quick time-to-market.

### Metro Ethernet Applications

The BCM56330 family delivers key Metro Ethernet features

- Standardized Services
  - Q-in-Q, IEEE 802.1ad provider bridging, MPLS/VPLS, VPWS, pseudowire, PBB/PBT support
  - L2 and L3 VPNs
  - STP for control protocol
- Scalability
  - Supports GbE platforms from 8 to 48 ports
  - 10 GbE ports for aggregation

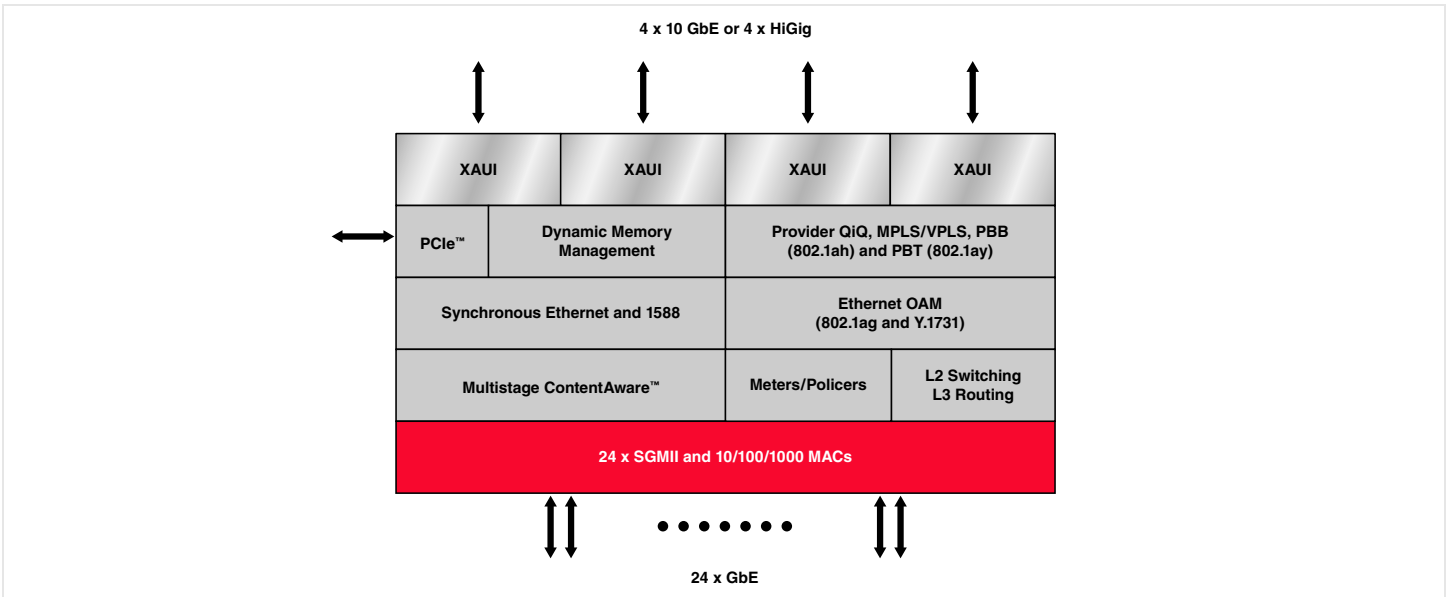


### Highlights

- Highly integrated 24-port 10/100/1000 Mbps Ethernet switch
- Up to four ports of 1, 2.5, or 10 Gigabit Ethernet (GbE) uplink/stacking
- HiGig2™ stacking over 2.5 GbE (HiGig-Lite™) or 13 GbE (HiGig™[13])
- Nonblocking architecture and line rate for all packet sizes
- Full IPv4 and IPv6 L3 routing support
- Support for IEEE 802.1qbb (PFC) on 10 GbE ports and SAFC on HiGig ports

	BCM56330
Service Provider	●
Data Centers	●
Enterprise	●

● Supported ● Best Choice



BCM56330 Block Diagram

## Metro Ethernet Applications (cont.)

- Reliability
  - Hardware support for STP, MSTP, and RSTP
  - IEEE 802.1ag and ITU Y.1731 Ethernet OAM for link failure detection
- Quality of Service (QoS)
  - Per-flow metering capability with multistage ContentAware engine
  - VLAN shaping ensures provider-class SLA
  - Highly optimized packet buffer architecture for burst absorption and multicast traffic
- Service Management
  - IEEE 802.1ag Ethernet OAM message support
  - Multistage ContentAware engine enables class-based classification
  - VRF

Devices in the BCM56330 family can be managed by a host CPU via PCIe or BSC.

## Ordering Information

Part Number	Application
BCM56331	24 GbE + 4 x 1 GbE / 2.5 GbE
BCM56333	16 GbE
BCM56334	24 GbE + 4 x 1 GbE / 2.5 GbE / 10 GbE / HiGig[13]
BCM56638	8 GbE + 2 x 1 GbE / 2.5 GbE / 10 GbE / HiGig[13]

## About Broadcom

Broadcom Corporation is a major technology innovator and global leader in semiconductors for wired and wireless communications. Broadcom® products enable the delivery of voice, video, data and multimedia to and throughout the home, the office and the mobile environment. We provide the industry's broadest portfolio of state-of-the-art system-on-a-chip and software solutions to manufacturers of computing and networking equipment, digital entertainment and broadband access products, and mobile devices.

These solutions support our core mission: Connecting everything®.

Broadcom, one of the world's largest fabless communications semiconductor companies, with 2010 revenue of \$6.82 billion, holds more than 4,800 U.S. and 2,000 foreign patents, and has more than 7,800 additional pending patent applications, and one of the broadest intellectual property portfolios addressing both wired and wireless transmission of voice, video, data and multimedia.

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