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BCM5650 PRODUCT Brief



STRATAXGS™ BCM5650 INTEGRATED MULTI-LAYER SWITCH

FEATURES

- **24 x 10/100 Mbits, 4 x 10/100/1000 Mbps Ethernet ports**
- **9.5 Mpps (line rate) aggregate L2/L3 switching capacity**
- **Integrated L2 table with auto learning/aging**
- **Integrated L3 table with longest prefix match**
- **Double 802.1Q (Q in Q) VLAN stacking**
- **MPLS Tunnel/VC packet labeling for L2 VPN**
- **Scalable to hundreds Fast/Gigabit Ethernet in a system**
- **8 Classes of Service (COS) with WRED and WRR, DSCP/ 802.1p priority**
- **Spanning trees (802.1s and 802.1w)**
- **32 link aggregation trunk groups; ECMP/WCMP; mirroring**
- **IPMC groups and hardware packet replication**
- **Flow control (802.3x) and HOL blocking prevention**
- **64 data bit DDR SDRAM with up to 32 MB of buffer memory**
- **ContentAware™ network processing per port**
  - Line-rate, multi-field packet classification
  - Support for 802.1p, TOS/DiffServ, rate limiting, policing, and priority/VLAN (single or double) tagging and remapping

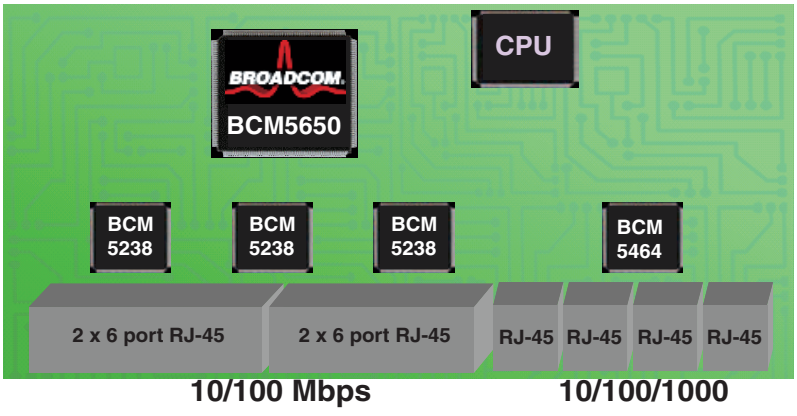
SUMMARY OF BENEFITS

- **High-density 10/100/1000 Mbps L2/L3 Ethernet switches**
- **9.5-Mpps, full-duplex, line-rate performance across all interfaces**
- **New service offerings for ISPs**
  - Metro Ethernet-L2 VLAN (Q-in-Q) and MPLS VPN
  - Voice over IP-guaranteed low latency prioritization
- **Advanced traffic management-metering, shaping, and scheduling (SP, RR, WRR, WFQ), down to 64-kbps flows**
- **ContentAware classification, tagging, and remapping provides maximum security and flexibility**
- **Broadcom switch API compatibility enables software reuse and faster time-to-market**

APPLICATIONS

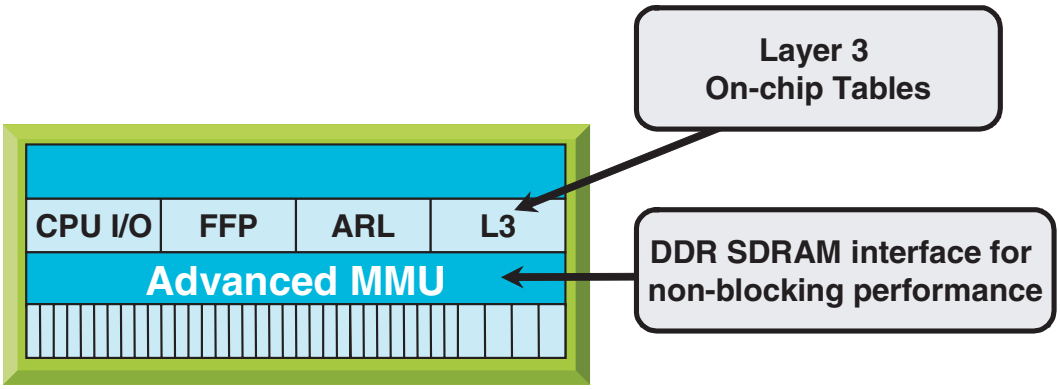
- **High-density multi-layer scalable enterprise 10/100/1000 Mbps L2/L3 Ethernet switches**
- **Multi-tenant unit (MTU) Metro Ethernet VPN multi-layer switches**
- **Service Provider Metro Ethernet VPN Edge Switches**

BCM5650 Application Diagram



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OVERVIEW



BCM5650 Block Diagram

The BCM5650 network switch is the most advanced multi-layer, single chip solution for high density 24 x 10/100 Mbps ports and 4 x 10/100/1000 Mbps Ethernet uplinks.

With an aggregate line rate of 9.5 Mpps, the BCM5650 offers hardware switching on both L2 and L3 traffic. Filtering, policing, priority tagging can be performed in real time with no impact on forwarding performance.

Supporting the latest Metro Ethernet L2 VPN applications, the BCM5650 offers double 802.1Q VLAN stacking, also known as Q-in-Q. This allows enterprise and service provider networks to breakthrough the 4K VLAN tag limitation. Further, BCM5650 also provides MPLS Tunnel/VC packet labeling for standards-based IETF L2 VPN via MPLS.

With 8 Class of Service (CoS) queues via SP, RR, WFQ and WRR distribution, the BCM5650 enables full range of service applications such as low latency VoIP and real-time video, as well as mission critical data.

Optimized for the most demanding network switching requirements, the BCM5650 integrates auto-learning/aging MAC and IP LPM tables. Advanced Ethernet features such as multiple and rapid spanning tree (802.1s and 802.1w), flow control (802.3x), prioritization (802.1p) and 9K jumbo frame are fully integrated. All L2/L3 traffic is switched at line rate. For load balancing as well as redundancy purposes, ECMP and WCMP are incorporated. Up to 32 trunk groups (eight links per group) can be assigned for link aggregation (802.3ad).

Providing line-rate packet filtering and classification, the advanced Fast Filter Processor (FFP) offers ContentAware™ network processing per port. It supports TOS/DiffServ, rate limiting, policing, shaping, metering, scheduling, priority tagging, and remapping down to flows as small as 64 kbps, making it ideal for committed bandwidth usage and firewall applications.

Designed for increasing multicast applications, the BCM5650 switches all L2/L3 multicast packet sizes at line rate. IPMC packets are hardware replicated up to 8 and 32 VLANs across the Fast and Gigabit Ethernet ports, respectively. Multicast traffic can also be managed by three port filtering modes to control the distribution behavior.

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