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BCM5665

PRODUCT Brief

STRATAXGS™ BCM5665 INTEGRATED MULTI-LAYER SWITCH

FEATURES

- **48 10/100-Mbit ports, four 10/100/1000-Mbps Ethernet ports, and one HiGig (10-Gbps) port**
- **28-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**
- **Eight 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**
- **128-bit DDR SDRAM interface with up to 64 MB of buffer memory**
- **ContentAware™ network processing per port**
  - Line rate multi-field packet classification
  - Support for 802.1p, TOS/DiffServ, rate limiting, policing, priority/VLAN (single or double) tagging and remapping

SUMMARY OF BENEFITS

- **Ultra-scalable high-density 10/100/1000 Mbps L2/L3 Ethernet Switches-standalone, modular or stackable**
- **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 provide maximum security and flexibility**
- **Broadcom switch API compatability enables software reuse and faster time to market**
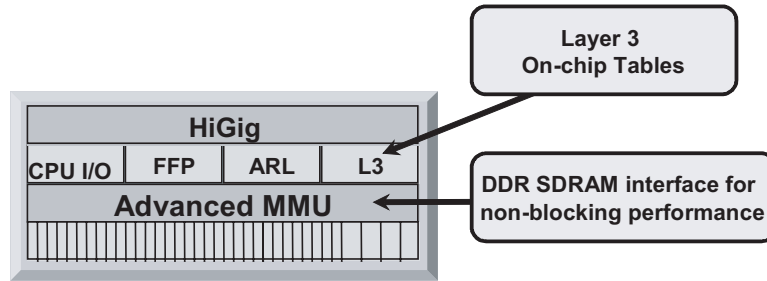- **High-density multi-layer scalable enterprise**

APPLICATIONS

- **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**

BCM5665 High Density Scalable 48 x 10/100 Mbps and 4 x 10/100/1000 Mbps Multi-Layer Switch Application

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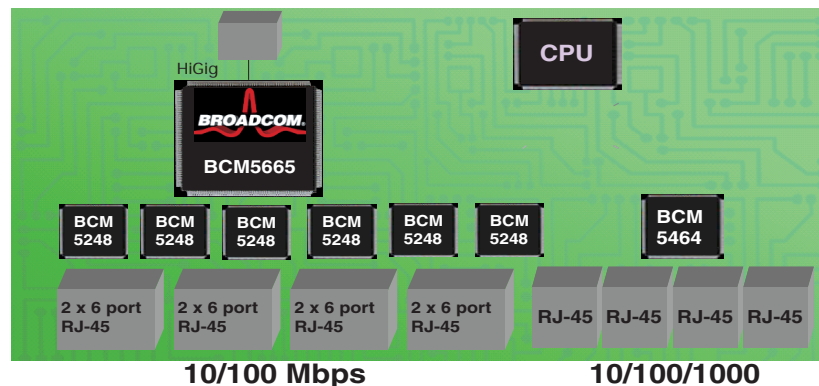
BCM5665 Block Diagram

High-Density and Line Rate Performance

The BCM5665 network switch is the most advanced multi-layer scalable, single-chip solution for high density 48 x 10/100 Mbps ports and 4 x 10/100/1000 Mbps Ethernet uplinks at aggregate line rate of 28 Mpps performance.

Ultra-Scalability

An integrated 10 Gbps XAUI HiGig port allows the BCM5665 to scale with other StrataXGS family switches. Multiple units can be networked for stackable or modular switch configuration in a system providing up to providing up to hundreds of Fast Ethernet, Gigabit Ethernet and 10 Gigabit Ethernet ports. The 10 Gbps HiGig Expansion port supports all key switch features, such as explicit priority, port trunking, mirroring and VC label swap functions, transparently across switch elements.

Metro Ethernet L2 VPN Support

Supporting the latest Metro Ethernet L2 VPN applications, the BCM5665 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, the BCM5665 also provides MPLS Tunnel/VC packet labeling for standards-based IETF L2 VPN via MPLS.

Advanced QoS

With eight Class of Service (CoS) queues via SP, RR, WFQ, and WRR distribution, the BCM5665 enables full range of service applications such as low latency VoIP and real time video, as well as mission-critical data.

L2/L3 Switching

Optimized for the most demanding network switching requirement, the BCM5665 integrates both 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 frames, 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 (8 links per group) can be assigned for link aggregation (802.3ad).

Hardware-Based Traffic Management

Providing line rate packet filtering and classification, the advanced Fast Filter Processor (FFP) offers ContentAwareTM 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.

Layer 2 and IP Multicast

Designed for increasing multicast applications, the BCM5665 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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