Broadcom Delivers Industry's First High-Density 25/100 Gigabit Ethernet Switch for Cloud-Scale Networks

Now Sampling to Customers, New StrataXGS® Tomahawk™ Series Delivers 3.2 Tbps Bandwidth with Comprehensive SDN Control and Visibility Features

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News Highlights:

- First to deliver 32 ports of 100GE, 64 ports of 40GE/50GE or 128 ports of 25GE on a single chip
- Significantly improves efficiency of cloud-scale networks using high-density 25/50GE data center link protocols[1]
- In-field configurable flow processing and instrumentation engines enrich network control and visibility
- Leverages broad ecosystem of network software, hardware, OEM, operator and application partners

Broadcom Corporation (NASDAQ: BRCM), a global innovation leader in semiconductor solutions for wired and wireless communications, today announced the immediate availability of a new line of switches optimized for cloud-scale data centers. Building on its widely deployed StrataXGS® Trident and StrataDNX™ products, the new StrataXGS®Tomahawk™ Switch Series is the industry's highest performance Ethernet switch, delivering 3.2 Terabits per second (Tbps) switching capacity, unparalleled port density and SDN-optimized engines in a single chip. For more news, visitBroadcom's Newsroom.

With more than 7 Billion integrated transistors, the StrataXGS Tomahawk Series enables the transformation of next-generation cloud fabrics to all-25Gbps per-lane interconnect, increasing link performance by 2.5X[2]. With dense 100GE connectivity and authoritative support for new 25GE and 50GE protocol standards, the StrataXGS Tomahawk Series significantly bolsters the bandwidth capacity, scalability, and cost efficiency of today's mega data centers and high performance computing (HPC) environments.

"Our StrataXGS Tomahawk Series will usher in the next wave of data centers running 25G and 100G Ethernet, while delivering the network visibility required to operate large-scale cloud computing, storage and HPC fabrics," said Rajiv Ramaswami, Broadcom Executive Vice President, Infrastructure & Networking Group. "This is the culmination of a multi-year cooperative effort with our partners and customers to prepare for this transition. We are pleased to see significant industry investment in the Tomahawk 32x100GE form factor as well as the 25G/50G Ethernet specification, whichBroadcom defined and co-founded as an industry standard."

Transforming Leaf-Spine Networks to 25/100GE for Maximum Efficiency and Scale-Out

By deploying StrataXGS Tomahawk based switches, data center networks currently running 10GE at the top-of-rack (leaf) level and 40GE at the end-of-row (spine) level can upgrade to 25GE and 100GE interconnect, respectively, to accommodate growth in distributed server/storage workloads without increasing network equipment footprint or cabling complexity. A three-tier data center fabric of StrataXGS Tomahawk switches, using standard, compact, CAPEX-efficient form factors, can deliver over 15X higher network bandwidth capacity[3].

In lieu of upgrading server-to-switch connections to 40GE, a StrataXGS Tomahawk based network driving 25GE to the server reduces cabling elements within the rack by as much as 75 percent, while quadrupling the number of server and storage nodes that can be interconnected in a leaf-spine topology[4]. This dual-pronged improvement in bandwidth efficiency and port density compared to existing 40GE solutions gives modern data centers unprecedented ability to scale out their networks and achieve significant return on investment.

Comprehensive Visibility and Control for Software-Defined Data Centers

Optimized for Software Defined Network (SDN) application ecosystems, Broadcom's new BroadView™ instrumentation feature set enables data center operators to have full visibility of network and switch-level analytics. With extensive application flow and debug statistics, link health and utilization monitors, streaming network congestion detection and packet tracing capabilities, the StrataXGS Tomahawk Series provides operators the

telemetry to troubleshoot large-scale networks, apply controls for optimal performance, respond to potential problems before they happen and drive downOPEX.

Featuring new FleXGS™ packet processing engines, the StrataXGS Tomahawk Series enables operators to adapt to changing workloads and control their networks, with an extensive suite of user configurable functions for flow processing, security, network virtualization, measurement/monitoring, congestion management and traffic engineering. Among other benefits, FleXGS engines provide in-field configurable forwarding and classification database profiles, more than 12X greater application policy scale compared to previous generation switches, increased flexibility of packet lookups and key generation, and rich load balancing and traffic redirection controls. All these configurable capabilities are accessible to the network control plane via industry-proven software APIs and come without sacrificing network data plane throughput or latency.

StrataXGS Tomahawk Key Features
- 3.2 Tbps multilayer Ethernet switching
- Integrated low-power 25Ghz SERDES
- Authoritative support for 25G and 50G Ethernet Consortium specification
- Configurable pipeline latency enabling sub 400ns port-to-port operation
- Supports high performance storage/RDMA protocols including RoCE and RoCEv2
- BroadView instrumentation: provides switch- and network-level telemetry
- High-density FleXGS flow processing for configurable forwarding/match/action capabilities
- OpenFlow 1.3+ support using Broadcom OF-DPA™
- Comprehensive overlay and tunneling support including VXLAN, NVGRE, MPLS, SPB
- Flexible policy enforcement for existing and new virtualization protocols
- Enhanced Smart-Hash™ load balancing modes for leaf-spine congestion avoidance
- Integrated Smart-Buffer™ technology with 5X greater performance versus static buffering
- Single-chip and multi-chip HiGig™ solutions for top-of-rack and scalable chassis applications

Availability
The Broadcom StrataXGS BCM56960 Tomahawk Switch Series is now sampling.