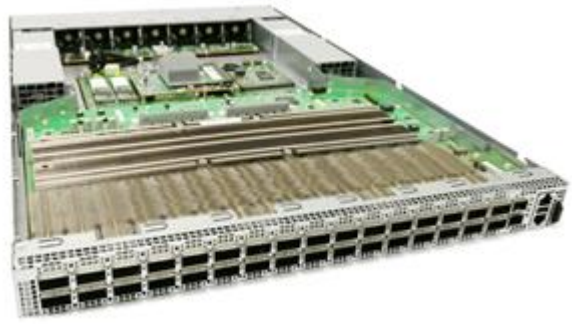
Broadcom Achieves Mass Production on Industry-Leading 12.8 Tbps Tomahawk® 3 Ethernet Switch Family

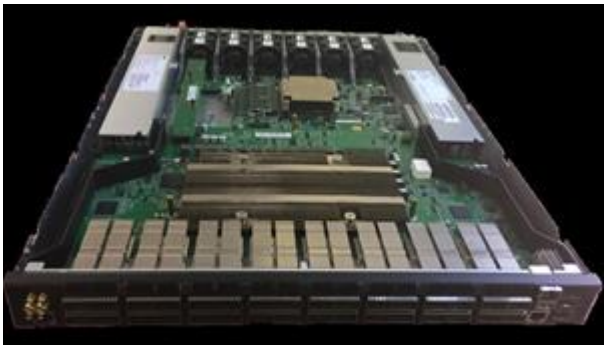
October 24, 2018

World's first 32 x *400GbE* / 128 x *100GbE* integrated switch-on-chip ramping in volume at cloud service providers

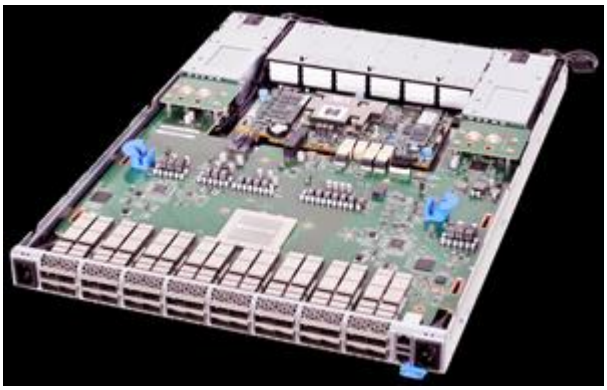


Description: 1RU, 32 x 400GbE QSFP56-DD platform. Switching Chipset: Broadcom Tomahawk 3 12.8Tbps (BCM56980). Availability: Now.

Description: 1RU, 32 x 400GbE QSFP56-DD platform (AGC032); 4RU, 128 x 100GbE QSFP28 platform (AG90C8B). Switching Chipset: Broadcom Tomahawk 3 12.8Tbps (BCM56980). Control Plane Complex: Broadwell-DE CPU. Availability: Now



Description: 1RU, 32 x 400GbE QSFP56-DD platform, OCP contributed design. Switching Chipset: Broadcom Tomahawk 3 12.8Tbps (BCM56980). Control Plane Complex: Broadwell-DE CPU. Availability: Now



Description: 1RU, 32 x 400GbE QSFP56-DD platform. Switching Chipset: Broadcom Tomahawk 3 12.8Tbps (BCM56980). Control Plane Complex: Broadwell-DE CPU, 32GB DRAM, 128GB M.2 Flash. Availability: Now.

SAN JOSE, Calif., Oct. 24, 2018 (GLOBE NEWSWIRE) -- Broadcom, Inc. (NASDAQ: AVGO), today announced that it has fully qualified the StrataXGS® Tomahawk® 3 switch series for production release, enabling high-volume deployment of Ethernet network equipment based on market-leading 12.8 Terabits/sec of switching and routing performance implemented on a single chip. The Tomahawk 3 series is the industry's first fully production-qualified silicon family that supports high-density, line-rate 400GbE, 200GbE, 100GbE, and 50GbE interconnect for massive scale-out of software-defined cloud data centers, reducing cost per port by 75% and power-per-port by 40% compared to existing solutions.

Triggered by an explosion of ultra-high-performance networking applications in cloud infrastructure, including deep learning, massively distributed container networking, and disaggregated flash storage using RoCEv2 and NVME-over-Fabrics, the Tomahawk 3 series has already been designed into the multi-tiered, scale-out data center fabrics of the largest cloud service providers worldwide.

"We are delighted and humbled by the widespread adoption of Tomahawk 3 based switching solutions in cloud infrastructure," said Ram Velaga, senior vice president and general manager, Switch Products at Broadcom. "Our engineering team has executed to the demands of the largest cloud operators globally, including the most rigorous system and network-level qualification requirements – both in our labs and in customer testbeds. Network operators are able to immediately deploy Tomahawk 3 based fabrics, at scale, and with confidence."

"Broadcom once again has established generational product leadership in the data-center switching market, with Tomahawk 3 being the first 12.8 Tbps switch to achieve volume production serving dense 100GbE, 200GbE and 400GbE leaf-spine infrastructure," said Bob Wheeler, principal analyst at The Linley Group. "With a substantial time-to-production-deployment advantage, Tomahawk 3 should secure a commanding presence in the current hyperscale-network upgrade cycle."

The Tomahawk 3 switch series features multiple devices at 12.8Tbps, 8.0 Tbps, and 6.4 Tbps based on the industry's most performant 50G PAM4 / 25G NRZ SerDes technology. All devices in the series have completed extensive functional, performance, and reliability testing and have been qualified for volume production.

Tomahawk 3 based Hardware Platforms from the Networking ODM Community:

Multiple high-performance, efficient-form-factor switching platforms based on the production-qualified Tomahawk 3 series are available now from the Networking Original Design Manufacturing (ODM) vendor community.

StrataXGS Tomahawk 3 Series Product Details

Key product attributes and benefits of the Tomahawk 3 Switch Series can be found at https://www.broadcom.com/products/ethernet-connectivity/switching/strataxgs/bcm56980-series

Industry Quotes

Cloud Network Operators

Zhenyu Hou, Executive Director, System Department, Baidu:
"The rise of AI workloads and RDMA-enabled storage disaggregation is driving cloud server and storage interconnect to much higher speeds, and Tomahawk 3 now provides the industry with its first deployable solution for these applications with high-density 200/400GbE. Baidu is eager to take advantage of the significant performance gains and power/cost efficiencies that Broadcom's new generation of switches can provide."

Yuval Bachar, Principal Engineer, Global Infrastructure Architecture & Strategy, LinkedIn Corporation, a Microsoft Company:
"Now that Tomahawk 3 production availability is here, scale-out networks can multiply the capacity of each switching node to 128 ports of 100GbE, 64 ports of 200GbE, or 32 ports of 400GbE, feeding bandwidth-hungry cloud applications with the end-to-end performance they need. It also allows for disaggregated, efficient switching systems to be deployed in the data center core and aggregation layers. We demonstrated such a concept at the Open 19 Foundation 2018 Summit with a Tomahawk 3 based 100Tbps+ Virtual Switch Chassis based on standard white box building blocks. With a proven 12.8Tbps switch chip in Tomahawk 3, plus 8.0Tbps and 6.4Tbps capacity pin-compatible devices, and a healthy ecosystem of supporting technologies, the next step in data center networking is becoming reality."

Wade Shao, Director, Technology & Engineering Group, Tencent:
"We commend Broadcom for achieving the Tomahawk 3 production milestone, and for their continued generational leadership in cloud switching technology. Having a robust, ready-to-deploy 12.8Tbps switching element is a key building block for our next generation leaf-spine infrastructure. It flattens the network topology and delivers the performance per Watt needed to further scale out our distributed applications."

Hardware Solution Providers and ODMs

Steven Dorwart, Vice President, Connectivity & Cloud Solutions, Celestica Inc.:
"The combination of Broadcom's production-ready Tomahawk 3 switch silicon and Celestica's state-of the-art Silverstone DX400 switch hardware platform provides our customers, including data center operators, an immediate path to building out high-capacity 400GbE networks. These Tomahawk 3-based platforms offer groundbreaking performance, power and cost efficiency, ease of management, and most importantly, are highly customizable and immediately available to the market."

Jeff Chen, CEO, Delta Networks Inc.:
"We at DNI are thrilled to be releasing both the 128 port 100GbE AG90C8B platform and the 32 port 400GbE AGC032 platform, both based on the market-leading, production qualified 12.8Tbps Tomahawk 3 chip from Broadcom. By virtue of our collaboration, DNI and Broadcom are accelerating the availability of megascale-ready 50/100/200/400GbE systems based on advanced 50G-PAM4 SerDes technology, and ushering the next generation of disaggregated networking for cloud service providers worldwide."

George Tchaparian, CEO, Edgecore Networks:
"The production release of Tomahawk 3 is exciting news for the open networking industry and for us at Edgecore Networks. We contributed the design of the Edgecore AS9716-32D 32x400GbE switch, the industry's first 400G open network switch, to the Open Compute Project back in March. After months of comprehensive system testing and qualification with the Tomahawk 3 silicon, the switch is robust and ready for initial shipments. With Broadcom's superior integration and execution in packing 12.8 Terabits per second in a single chip, and Edgecore's engineering ability to deliver scale-out deployable switching systems to market, the pace of innovation in cloud-scale open networking has never been greater."

Mike Yang, Senior Vice-President of Quanta Computer Inc. and President of Quanta Cloud Technology:
"Congratulations to Broadcom for achieving production volume shipment on the Tomahawk 3 switch family, a significant milestone for our industry. QCT has long been working closely with Broadcom to bring cutting-edge networking technology to the market, and it is with great pleasure that we are able to now deliver to customers the Tomahawk 3 based IX9 switch platform featuring 12.8Tbps of line rate throughput in a 1U footprint with all 50G-PAM4 electrical signaling and QSFP-DD 400GbE interfaces. Let the next wave of high-capacity cloud networking begin!"

About Broadcom Inc.
Broadcom Inc. (NASDAQ: AVGO) is a leading designer, developer and global supplier of a broad range of analog and digital semiconductor connectivity solutions. Broadcom Limited's extensive product portfolio serves four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & other. Applications for our products in these end markets include: data center networking, home connectivity, broadband access, telecommunications equipment, smartphones and base stations, data center servers and storage, factory automation, power generation and alternative energy systems, and displays. For more information, go to www.broadcom.com.

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Photos accompanying this announcement are available at

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