



Broadcom Ships Industry's First 5nm Single-Chip 25.6Tb/s Router To Address Growing Bandwidth and Security Demands

October 17, 2023

Qumran3D Accelerates Transition to Merchant Silicon Routers by Significantly Reducing Carrier and Cloud Operator TCO with Unprecedented Scale

SAN JOSE, Calif., Oct. 17, 2023 (GLOBE NEWSWIRE) -- [Broadcom Inc.](#) (NASDAQ: AVGO), today announced the immediate availability of Qumran3D, the next generation of the StrataDNX family of single chip routers. Qumran3D raises the bar for carrier and cloud operator solutions by delivering high-performance, low-power, and security-rich networking.

A leading-edge single chip, Qumran3D offers 25.6 Terabits per second of routing in a fixed form factor, with Ethernet port rates from 100 Gb/s to 800 Gb/s. A routing solution based on a single Qumran3D will save up to 66% more energy and up to 80% more rack space compared to previous generations.

"Qumran3D will accelerate the transition to merchant silicon routers," said Ram Velaga, senior vice president and general manager, Core Switching Group, Broadcom. "With its unique combination of unyielding performance, power efficiency and security, Qumran3D is the ideal solution for the next generation of fixed, standalone routers. It will revolutionize the way that operators build and manage their networks."

The new single chip router comes as service providers are facing growing bandwidth and security demands driven by increased AI, mobile edge and other high data deployments.

"Service providers' networks are in transformation to address massive growth in bandwidth, subscribers and services," said Bob Wheeler, principal analyst at Wheeler's Network. "Qumran3D offers a high-bandwidth, large scale, secure and low-power choice for networks connecting hundreds of thousands of subscribers and is well-positioned to help network operators meet this growth within the power and space constraints of aggregation, peering, and edge facilities."

The high integration level enables best-in-class performance for the most challenging routing environments. It packs three dedicated engines that perform on-chip processing and buffering, large-scale forwarding, and strong security function and native line-rate MACsec encryption on all ports.

Qumran3D's massive embedded forwarding databases are sized to meet the required scale for any routing environment, and provide enough headroom for the expected exponential growth of subscribers and services in the coming decade— while eliminating the need for routing tables' expansion in external devices.

In addition to connecting more subscribers, converging networks and deploying new applications at new network entry points, network operators need to address the growing security threats worldwide. Qumran3D's large-scale on-chip policy tables provide best-in-class privacy and protection to the network and to its subscribers. The flexible policy engines, coupled with IPsec for connection security and MACsec for line-rate encryption, provide protection to millions of private connections across subscribers, without compromising on performance.

Qumran3D's 256 links of the industry's best-performing and longest-reach 100G PAM-4 SerDes enable 25% to 50% reduction in optical transceivers power consumption. It also supports emerging 800ZR+ optics for DCI and IPoDWDM.

This versatility makes Qumran3D suitable for a variety of network applications including Core, Edge, peering and DCI routers, and aggregation system— carrying large amounts of traffic, securely connecting users, and exchanging traffic between networks and data centers.

Key Features

- Up to 25.6Tb/s switching capacity per device
- High-speed, high-density port interfaces up to 800GE leveraging best-in-class 100Gb/s PAM-4 SerDes
- Feature rich processing pipe, addressing any Carrier and Cloud requirement and future-proofing via Elastic Pipe™
- Carrier grade Hierarchical Traffic Manager
- High bandwidth, low power, and in-package HBM packet memory
- Massive on chip forwarding databases, eliminating the need for companion device
- On-chip policy engines, protecting millions of flows
- Integrated IPsec engines and MACsec engines at line rate

Availability

Broadcom is now shipping Qumran3D devices to qualified customers. For more information on the Broadcom Qumran3D click [here](#).

About Broadcom

Broadcom Inc. (NASDAQ: AVGO) is a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Broadcom's category-leading product portfolio serves critical markets including data center, networking, enterprise software, broadband, wireless, storage and industrial. Our solutions include data center networking and storage, enterprise, mainframe, and cybersecurity software focused on automation, monitoring and security, smartphone components, telecoms and factory automation. For more information, go to www.broadcom.com.

Broadcom, the pulse logo and Connecting Everything are among the trademarks of Broadcom. The term "Broadcom" refers to Broadcom Inc., and/or

its subsidiaries. Other trademarks are the property of their respective owners.

Press Contact:

Jon Piazza
Corporate Communications
press.relations@broadcom.com
Telephone: +1 310 498 5254

Industry Quotes:

Michael K T Lee, Senior Vice President of Research and Development Center, Accton Technology

"With the availability of Qumran3D, Accton is able to create market leading solutions for the most challenging carrier-class network requirements. The high 800GE port density and rich carrier-grade feature sets provide an excellent building block for a centralized, merchant silicon router that can compete with existing chassis-based routers."

Dennis Cai, Head of Networking, Alibaba

"Our Large-scale DCI equipment leverages the advantages of merchant silicon. With Qumran3D, we benefit from the no-compromise integration of SRv6 VPN services, deep packet buffer, flexible forwarding tables, and advanced security— which enable multiple use cases in a single platform and further improves our network efficiency."

Elad Nafshi, Executive Vice President, Chief Network Officer, Comcast Cable

"Comcast is at the forefront of implementing network technology that increases capacity delivering faster speeds and better reliability that makes us more sustainable and Qumran3D can help us take the next step in our innovation journey."

Richard Li, Vice President GM of Switching BU, H3C Group

"H3C's customers are asking for higher bandwidth, large-scale SRv6 capacity and advanced features. Broadcom's Qumran3D chip can deliver all that, with the power efficiency of the 5nm process, and will enable H3C to provide its customers a highly competitive, market-leading 25.6Tb/s modular solution."

Ken Kutzler, VP Hardware, IP Products, Nokia

"As the world moves to 800G QSFP-DD, the Qumran3D represents an important evolution in the DNX family. Nokia remains a trusted partner of Broadcom and will continue to evolve our Broadcom product portfolio around access, aggregation and the data center."

Liu Zhongdong, President and CEO, Ruijie Networks Co., Ltd

"Ruijie Networks has successfully deployed multiple switching solutions using Jericho and Qumran devices. Qumran3D's industry-leading bandwidth, port density and security features, brings a cost effective 400GE and 800GE single chip solution at scale and can improve application performance with its unique flexible features."

Vincent Ho, CEO, UfiSpace

"This is a great addition to UfiSpace's carrier-grade disaggregated routers, based on the Broadcom Jericho and Qumran devices. With Qumran3D, we will provide our customers a high-density, flexible 400/800GE router, at significantly lower power than the current solutions."



Source: Broadcom Inc.