



Broadcom's New 100G Ethernet Multi-host Controller Accelerates Machine Learning, NFV, and Enterprise & Cloud Storage

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News Highlights:

- *100G Ethernet controller with smart congestion control engine minimizes system latency and enables greater cluster size for GPU-based high performance computing designs*
- *Scalable 10G/25G/50G/100G controller with TruFlow™, the industry's most advanced flow processing engine, increases server performance up to 50%*
- *Flexible multi-host controller with TruManage™ technology efficiently manages multi-host servers and improves network visibility and resource utilization*

SAN JOSE, Calif. and SINGAPORE, April 18, 2017 (GLOBE NEWSWIRE) -- Broadcom Limited (NASDAQ:AVGO), a leading designer, developer and global supplier of a broad range of digital and analog semiconductor connectivity solutions, today announced a new 100G Ethernet multi-host controller product family, the BCM57454 NetXtreme® E-Series, designed for high performance computing, networking and storage applications that include machine learning, network function virtualization (NFV), and enterprise and cloud storage. Expanding upon previous generation 25G/50G Ethernet controllers, the BCM57454 combines a high bandwidth Ethernet controller with a unique set of highly optimized hardware acceleration engines that enhance network performance.

Key Features & Benefits

•100G Controller with Smart Congestion Control Engine for RoCEv2

- Anticipates and dynamically adjusts network flows via hardware to avoid network congestion and packet drops, enabling deterministic workload performance
- Enables scalable deep learning clusters up to hundreds of nodes using NVIDIA GPUDirect technology, providing faster training and response times for GPU-based high performance computing applications, such as advanced analytics, HPC, and deep learning training and inferencing

•TruFlow™ Advanced Flow Processing Engine

- Enables data center operators to offload virtual switch datapath processing from the host CPU to the NetXtreme controller, increasing available CPU cycles for applications thereby improving performance up to 50 percent
- Provides hardware-based QoS that enables enforceable SLAs so operators can guarantee and restrict bandwidth per virtual machine and prioritize traffic among different application types

•TruManage™ Technology with On-Chip Embedded Agent

- Enhances security by isolating network control from the host CPU, enabling "bare metal" service offerings by protecting network resources from untrusted software on the host while preserving the operators point of control
- Allows operators to treat Ethernet NIC as an extension of the network providing increased end-to-end visibility to quickly identify and correct network problems impacting service

"Modern high performance computing, networking and storage applications demand a 100G controller with highly optimized, purpose-built hardware acceleration engines to address network bandwidth demands," said Ed Redmond, senior vice president and general manager of the Compute and Connectivity Division at Broadcom. "Built upon industry-proven Broadcom Ethernet controller technology with the latest enhancements in congestion control, TruFlow advanced flow processing, and on-chip embedded agent, the BCM57454 is an ideal 100G multi-host Ethernet controller that addresses critical application requirements."

"Driven by hyperscale cloud, NFV and deep machine learning, 100G Ethernet adapter and controller shipments are forecast to grow from a nascent 40 thousand ports in 2016 to 5 million ports by 2020," said Seamus Crehan, president of [Crehan Research](#). "With the new NetXtreme E-Series 100G Ethernet controller coupled with its high-density 100G StrataXGS® Tomahawk® Series switch, Broadcom is strongly positioned to capitalize on these opportunities by offering compelling end-to-end solutions that cost-effectively scale network bandwidth capacity to meet the demands of the new applications."

"With the support for NVIDIA's GPUDirect RDMA technology, Broadcom's 100Gb Ethernet controller enables NVIDIA GPU-accelerated clusters to deliver superior performance, scalability and efficiency for HPC, enterprise and deep learning applications," said Paresh Kharya, Tesla Product Management Lead at NVIDIA. "Direct data transfer between Broadcom's Ethernet controller and NVIDIA's Tesla GPU increases bandwidth and minimizes GPU to GPU communication latency across Ethernet fabrics, opening avenues to address new computing challenges."

"We are glad to see that Broadcom is now supporting RoCE with multi-host on the new 100G Networking Interface Cards (NICs)," said Yuval Bachar, principal engineer for Global Infrastructure Architecture and Strategy at LinkedIn. "This technology allows the industry to build high density server

technology in Open19 datacenter infrastructure and many other multi-CPU-socket server solutions in the industry.”

Availability

Broadcom has begun sampling the BCM57454 controller in 100G PCIe NIC with production planned for the second half of 2017. Please contact your local Broadcom sales representative for samples and pricing.

Further information on Broadcom's latest 100G PCIe NIC and OCP Mezzanine products is available online at <https://www.broadcom.com/products/ethernet-connectivity/network-adapters/>

About Broadcom Limited

Broadcom Limited is a leading designer, developer and global supplier of a broad range of digital and analog 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, set-top box, broadband access, telecommunications equipment, smartphones and base stations, data center servers and storage, factory automation, power generation and alternative energy systems, and electronic displays. For more information, go to www.broadcom.com.

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