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Broadcom releases dual-port 10GBASE-T adapters with full offload capabilities

SANTA CLARA, Calif. -- At the recent Ethernet Technology Summit, **Broadcom** unveiled a dual-port 10GBASE-T adapter with full offload capabilities (BCM957712-T), packaged in a low-profile PCI Express form factor. The solution supports both networking and storage traffic over a single 10 Gigabit Ethernet (GbE) connection.

Using RJ-45 connections for distances up to 100 meters, the adapter is designed to enable cost and power savings for enterprise server farms and cloud data centers, says Broadcom, providing a transition path from legacy 1GbE devices to 10GbE.

Based on Broadcom's proven BCM57712 MAC and BCM84823 PHY components, the new 10GBASET adapter is billed as the first technology to bring full offload capabilities to 10GbE and the first to integrate TCP/IP and iSCSI offload on a 10GBASE-T medium. Tight integration between the MAC and PHY layers and end-to-end interaction between the server and switch provides optimized performance and flexibility.

The turnkey adapter operates at 100 meters over CAT6a unshielded twisted pair (UTP) cables. The adapter's 10GBASE-T PHY uses a highly advanced digital signal processor (DSP) based architecture that allows robust operation over UTP wiring. UTP enables the use of structured cabling, a key advantage in delivering the lowest total cost solution within the data center.

10GBASE-T paves the way for mitigating 10GbE deployment costs, and will replace more expensive fiber cables and optical transceivers required by SFP+ solutions. Operating at Gigabit speeds for backward compatibility is a key advantage of 10GBASE-T, delivering a common physical interface that provides full spec compliance and interoperability at 10GbE, while providing a seamless interface to existing infrastructure.

According to a January 2011 LightCounting report on 10GBASE-T, total 10GBASE-T ports are expected to increase dramatically between 2011 and 2014, with a compound annual growth rate (CAGR) of 233 percent.

"As more and more virtual machines are run on a given physical server, the aggregate bandwidth for that server grows – driving a clear market need for 10GbE solutions. To date, these solutions have been expensive to deploy due to costly optical cabling architectures, and because dual port 10GBASE T technology has not been viable in a server," says Kimball Brown, VP Datacom Analyst, LightCounting, LLC. "However, in 2011, dual-port 10GBASE-T adapters such as Broadcom's can now provide support to a much larger market segment due to the inherent flexibility and cost-effectiveness of the RJ-45 connections."

 Other highlights of the new adapter, according to Broadcom, include:

 Bi-directional line rate throughput across both ports, and over 1Million iSCSI IOPS.

Offload architecture minimizes CPU overhead eliminating competition for host resources while freeing valuable CPU cycles for processing user applications.

iSCSI operation is offloaded and accelerated for block storage resulting in high input/output instructions per second, as well as higher bandwidth.

The adapter uses a remote switching system (RSS) to avoid bottlenecks by distributing network processing across multiple CPUs.

The BCM957712-T adapter is based on Broadcom's 10GbE Ethernet controllers featuring the company's ldual-port MAC and dual-port 10GBASE-T PHY. It utilizes field proven drivers for mainstream operating systems and a comprehensive unified NIC management system using the Broadcom Advanced Control Suite (BACS) management application, providing a single platform for network and storage I/O management.

The BCM957712-T 10GBASE-T adapter is now sampling to early access customers with production volume expected in calendar Q2 2011.

"With the unrelenting demand for instant access to data and applications, data center managers continue to turn to 10GbE technology to address increased bandwidth requirements. Broadcom's 10GBASE-T adapter packages all the essential elements needed to support the transformation of the data center, by helping customers and end users to significantly cut costs and improve efficiency," concludes Vinod Lakhani, general manager, high speed controllers, Broadcom Corporation

For more information, visit +1.949.926.5000 or www.broadcom.com.

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