



Broadcom® NetXtreme II® BCM57711 Dual-Port Direct Attach 10 GbE PCI Express® Network Interface Card with TOE and iSCSI Offload

TECHNICAL BRIEF

OVERVIEW

The Broadcom® NetXtreme II® BCM57711 dual-port direct attach 10 Gigabit Ethernet (GbE) PCI Express® Network Interface Card (NIC) with TCP/IP Offload Engine (TOE) and iSCSI offload is the fourth-generation of Convergence Network Interface Cards (C-NIC). The BCM57711 is the next-generation in C-NIC, combining offload technology with standard Ethernet functionality. Together, these features provide the necessary performance and bandwidth critical to I/O intensive applications such as virtualization and High Performance Computing (HPC).

PERFORMANCE AND RELIABILITY

Broadcom validates its network interface cards over a variety of operating systems and platforms, ensuring compatibility and interoperability. This 10 GbE server adapter takes full advantage of the PCI Express bus architecture to maximize network throughput. Teaming enables Smart Load Balancing™ (SLB) to help increase throughput and fault tolerance when multiple adapters are configured to work together as a team to share traffic and provide data reliability with failover.

ISCSI SUPPORT

Host Bus Adapter (HBA) functionality on the NetXtreme II BCM57711 adapter supports accelerated iSCSI. This converges block storage and network processing over standard TCP infrastructure, eliminating the need for a separate storage adapter and cabling while providing Fibre Channel comparable performance and reliability at a fraction of the cost. There is no need to maintain a separate storage infrastructure and no need for additional

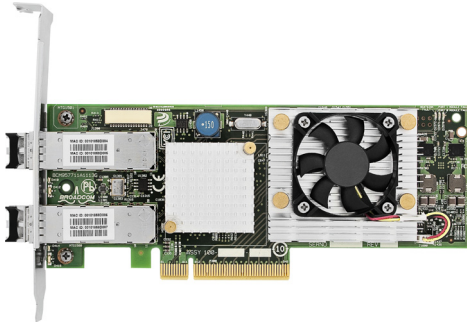
training. The NetXtreme II BCM57711 NIC also provides the iSCSI HBA functionality by offloading the iSCSI block level storage processing onto the NIC and running iSCSI through the existing Ethernet infrastructure. This eliminates the cost burden to acquire HBAs and additional fiber cabling. The iSCSI Boot also provides the ability for a diskless server to boot from a designated Storage Area Network (SAN) to ensure a secure booting environment while eliminating the cost and maintenance of a local hard drive.

ADVANCED TECHNOLOGY

The NetXtreme II BCM57711 adapter features TOE technology for Windows®, which reduces the server Central Processing Unit (CPU) utilization and improves application performance. TOE offloads the TCP protocol processing from the server CPU onto the server adapter. This preserves valuable CPU cycles for applications processing and improves overall server performance and network efficiency. Receive Side Scaling (RSS) also enables packet receive processing to scale with the number of available processors.

STANDARD FEATURES

Controller	Broadcom BCM57711
Data Path	Eight lanes (x8)
Data Bus	PCI Express
Form Factor	Low profile 6.6 x 2.0 in
Data Rate	10000 Mbps
Ethernet Ports	Two
Onboard Memory	148 KB



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Highlights

- *TOE for Windows, significantly reduces CPU utilization*
- *HBA functionality supporting accelerated iSCSI*
- *iSCSI remote boot support*
- *Optimizes server efficiency and improves network performance*
- *Total Ethernet compatibility: standard TCP/IP implementation*
- *Teaming and failover ensure Smart Load Balancing and data availability*
- *RSS to balance network traffic across multiple CPUs*

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SUPERIOR SUPPORT AND DESIGN

The NetXtreme II BCM57711 adapter helps preserve your existing networking environment: operating systems, network administration tools, core cabling, personnel training, etc., while improving server efficiency and networking application performance. Major operating systems are supported, including Microsoft® Windows and Linux®, and the TOE and RSS functionality is fully integrated in the Microsoft Server 2003® Scalable Networking Pack, based on Dell® server adapter designs. The BCM57711 card delivers two ports for redundancy and offers a SFP+ version, which is the next-generation form factor that is roughly 30% smaller, burns less power, requires fewer components, and is less expensive than the XFP form factor.

ADVANCED FEATURES

- TOE for increased bi-directional throughput and performance
- HBA functionality for iSCSI support
- iSCSI Boot for diskless booting from SAN
- RSS
- TCP, IPv4, IPv6 Checksum
- TCP Segmentation
- 802.1q VLAN Tagging
- Link Aggregation and Load Balancing
- Jumbo Frame

POWERFUL CONTROL SOFTWARE

The Broadcom Advanced Control Suite 3 (BACS3) provides an unprecedented level of governance across your entire network, enabling detailed tests, analyses, and diagnostics to be performed for each network adapter installed in your system. In addition, BACS3 includes utilities to help you configure VLANs and set up teams for link aggregation, Smart Load Balancing, failover, and more.

OPERATING SYSTEMS MANAGEMENT

Standards Supported	ACPI version 2.0
Operating Systems	Microsoft Windows 2003 and 2008 Server (all editions), Red Hat Enterprise Linux 4 and 5 for AMD64/EM64T, SUSE Linux Enterprise Server 9, 10, and 11 for x86 and AMD64/Intel® EM64T, NDIS 2 for DOS, Novell® NetWare® 6.5, Sun Solaris® 10
PXE 2.1 Support	Yes
Protocols	NETBUI, Collision Sense Multiple Access/ Collision Avoidance, 802.2 NetBios, IPX/SPX, TCP - IPv4 and IPv6

POWER CONSUMPTION

Operating Voltage	+3.3V ±5% Maximum 1250 mA @ +3.3V
Operating Temperature	32° to 131°F (0° to 55°C)
Storage Temperature	-22° to 140°F (-40° to 65°C)

SUPPORT

Servers Supported	PowerEdge 1950/ 2900/2950/2970/ R805/R900/R905/ 6950/NX1950
Limited Warranty	1-year Limited Warranty

For more information on Broadcom:

www.broadcom.com

For more information on Dell NICs by Broadcom:

www.dell.com/networking



Dell has tested and certified the Broadcom NetXtreme II BCM57711 Dual-Port Direct Attach 10 GbE PCI Express Network Interface Card with TOE and iSCSI Offload for use with specific Dell Poweredge servers. Dell specifically disclaims knowledge of the accuracy, completeness or substantiation for all statements and claims made in this document regarding the properties, capabilities, speeds, or qualifications of the adapter.

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