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Broadcom® NetXtreme II® BCM95709A0907G Dual-Port Ethernet PCIe™ Adapter Card with TOE and iSCSI HBA

TECHNICAL BRIEF

Broadcom NetXtreme II BCM95709A0907G Dual-Port
Ethernet PCIe Adapter Card with TOE adiSCSI HBA

Highlights

• TCP/IP Offload Engine (TOE) for Microsoft®
Windows®, significantly reduces CPU
utilization.

• Optimizes server efficiency and improves
network performance

• Total Ethernet compatibility: standard TCP/IP
implementation

• Teaming and failover ensure Smart Load
Balancing™ and data availability.

• Host Bus Adapter (HBA) functionality
supporting Accelerated iSCSI

• Auto-negotiation of speed ensures highest
available throughput.

OVERVIEW

The Broadcom® NetXtreme II®
BCM95709A0907G Gigabit Server Adapter is a
new class of Gigabit Ethernet (GbE) adapter able
to simultaneously perform accelerated
networking and storage networking on standard
Ethernet. The NetXtreme II is a family of
Converged Network Interface Controllers (C-
NICs) with superior design. These devices also
support teaming and failover to improve network
application performance and provide server
redundancy.

PERFORMANCE AND RELIABILITY

Broadcom validates its network interface cards
over a variety of operating systems and platforms
ensuring compatibility and interoperability. This
Gigabit Ethernet adapter card takes full
advantage of the PCI Express® bus architecture
to maximize network throughput. Teaming
enables Smart Load Balancing 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
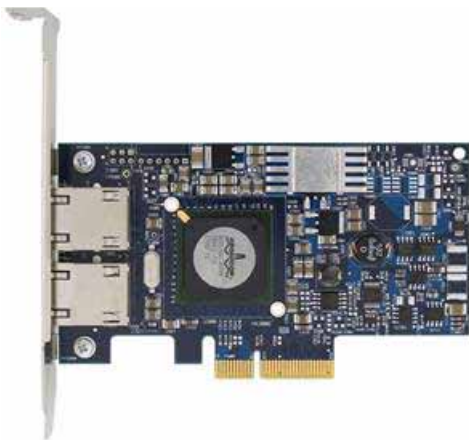with failover.

ISCSI STORAGE SUPPORT

HBA functionality on the NetXtreme II
BCM95709A0907G 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 or for additional training.

ADVANCED TECHNOLOGY

The NetXtreme II BCM95709A0907G Adapter
features TCP/IP Offload Engine (TOE) technology
for Windows, which reduces the server 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.

MANAGING WITH CONFIDENCE

The NetXtreme II BCM95709A0907G Adapter
helps preserve your existing networking
environment: operating systems, network
administration tools, core cabling, personnel
training, and so forth, 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. In addition, 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 and
Failover, Generic Trunking, and more.

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STANDARD FEATURES

Controller	Broadcom BCM5709C
Data Path	Four lanes (x4)
Bus Architecture	PCI Express
Form Factor	Low profile 5.8 x 2.5 in.
Data Rate	Auto-Negotiate 10/100/1000 Mbps
Ethernet Ports	Four
On-Chip Memory	92 KB
Cabling	Category 5
Connector	RJ-45
Maximum Cable Length	100 meters

ADVANCED FEATURES

- TCP/IP Offload Engine (TOE)
- HBA functionality for iSCSI support
- Receive Side Scaling
- TCP, IP, UDP Checksum
- TCP Segmentation
- 802.1q VLAN Tagging
- IPMI management pass-through capability
- Link Aggregation and Load Balancing
- Heterogeneous Teaming
- Jumbo Frames
- IPv4 and IPv6 iSCSI Offload support

OPERATING SYSTEMS MANAGEMENT

Standards Supported	IEEE 802.3z, 802.3x, Dynamic 802.3ad, 802.3p, 802.1Q PCI Express version 1.0a, ACPI version 2.0.
Operating Systems	Microsoft Windows 2003 and 2008 Server, Red Hat Enterprise Linux® 4 and 5 for x86 and x64, and SUSE Linux Enterprise Server 10 for x86 and x64.
Wake-on-LAN	Yes
PXE 2.1 Support	Yes

OPERATING SYSTEMS MANAGEMENT

Protocols	NETBUI, Collision Sense Multiple Access/ Collision Avoidance, IEEE802.2™ NetBios, IPX/SPX, IPX, IP, TCP/IP - IPv4 and IPv6

POWER CONSUMPTION

Operating Voltage	1.4A @3.3 VDC
Temperature Operating	32° to 131°F (0° to 55°C)
Temperature Storage	-40° to 185°F (-40° to 85°C)

For more information on Broadcom:
www.broadcom.com

For more information on Cisco NICs:

http://www.cisco.com/en/US/products/
index.html

Cisco has tested and certified the Broadcom NetXtreme II BCM95709A0907G Dual-Port Ethernet PCIe™ Adapter Card with TOE and iSCSI HBA in the Cisco rack server systems. Cisco 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.