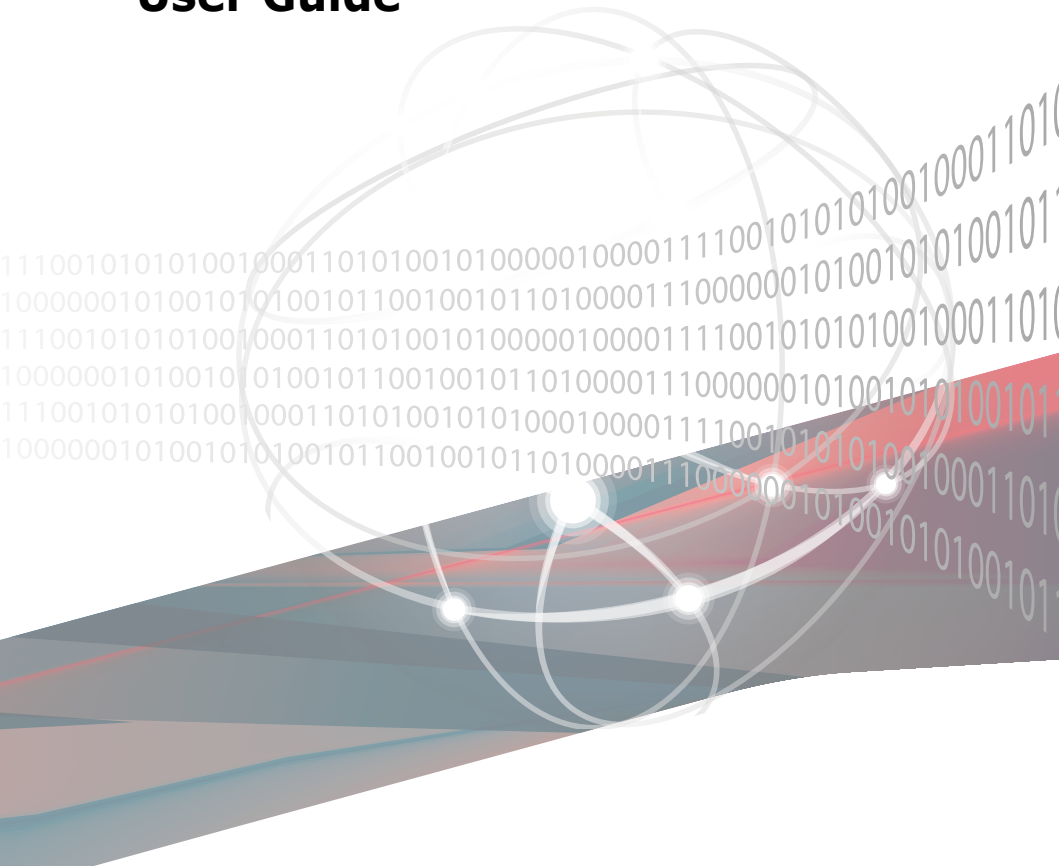
PEB-10G/57840-2T

10 Gigabit/s Ethernet 10GBASE-T Dual Port

User Guide



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About this guide

This user guide contains the information you need when installing and configuring the server management board.

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product introduction**

  This chapter discuss the PEB-10G/57840-2T Ethernet card features and the new technologies it supports.

- **Chapter 2: Boot Agent configuration**

  This chapter provides instructions on setting the Broadcom NetXtreme Ethernet Boot Agent.

- **Chapter 3: Driver installation**

  This chapter provides instructions for installing the Ethernet card drivers on different operating systems.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**

   The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. Example: <Enter> means that you must press the Enter or Return key.
<Key1>+<Key2>+<Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: <Ctrl>+<Alt>+<Del>
`Command`	Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets. Example: At the DOS prompt, type the command line: `format a:`

PEB-10G/57840-2T specifications summary

	PEB-10G/57840-2T
Speed & Ports	10 Gigabit/s Ethernet 10GBASE-T Dual Port
Ethernet Controller PHY	BCM 57840S BCM 84833
Connector	RJ45 Copper
Host Interface	PCI-E Gen3 x8
Form factor	4.72 in. x 1.77 in. (lower than standard low profile)
Support Cable Type	Category 6 (Max. length 55 meters) Category 6a (Max. length 100 meters) Category 7 (Max. length 100 meters)
Features	PXE boot iSCSI boot

Specifications are subject to change without notice.

Product introduction

1

This chapter discuss the PEB-10G/57840-2T Ethernet card features and the new technologies it supports.

1.1 Welcome!

Thank you for buying an ASUS® PEB-10G/57840-2T Ethernet 10GBASE-T Dual Port card!

Before you start installing the Ethernet card, check the items in your package with the list below.

1.2 Package contents

Check your package for the following items.

	Standard Gift Box Pack	Standard Bulk Pack
Support DVD	1	1 (per carton)
Low-profile Bracket	1	1
Small Bracket for Node*	1	1
Screws	4	4
Packing Quantity	1 pc per carton	5 pcs per carton

If any of the above items is damaged or missing, contact your retailer.

* The bundled small bracket for node is a proprietray bracket that supports ASUS Z10PH-D16 series, ESC4000 G3 series, and RS720Q-E8 series models, etc. The supported list of models are subject to change without prior notice.

1.3 System requirements

Before you install the PEB-10G/57840-2T Ethernet card, check if the system meets the following requirements:

- Thermal requirement:

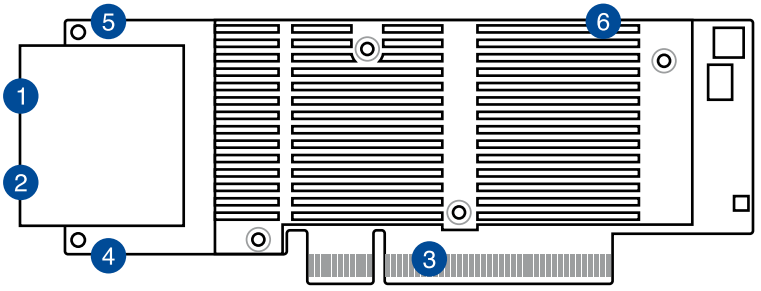
  With inlet temperature of 50°C, the airflow through the heatsink requires 3 CFM or above.

- Server or workstation motherboard with a PCI Express x8 or x16 card slot.
- Supported operating system:

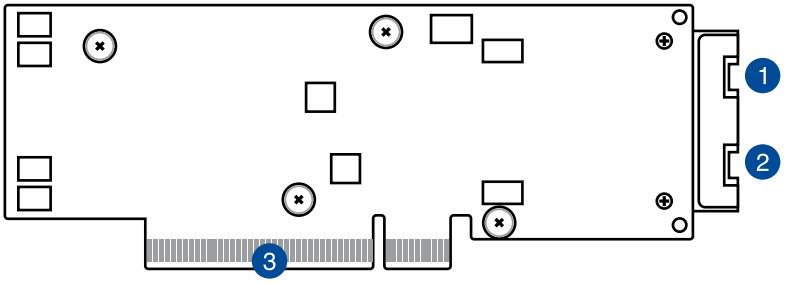
  Windows and Linux operating systems (refer to the specification table or the ASUS website for the latest updates).

1.4 Card layout

Top view



Bottom view



1. RJ45 Copper Port 1
2. RJ45 Copper Port 2
3. PCI Express Gen3 x8 Interface
4. LAN2 LED
5. LAN1 LED
6. PCIE Link LED (hidden)

LED indications

	Speed/Link	
	Status	Description
LAN1 LED / LAN2 LED	Green	10 Gbps link
	Amber	1 Gbps link
	Blinking	Data Activity
PCIE Link LED	Green	PCIE link

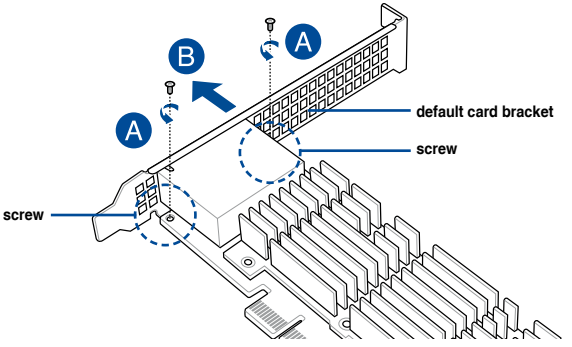
1.5 Replacing the card bracket

The PEB-10G/57840-2T Ethernet card is bundled with a full-length bracket, a low-profile bracket, and an ASUS proprietary bracket. By default, the card is pre-installed with a full-length bracket.

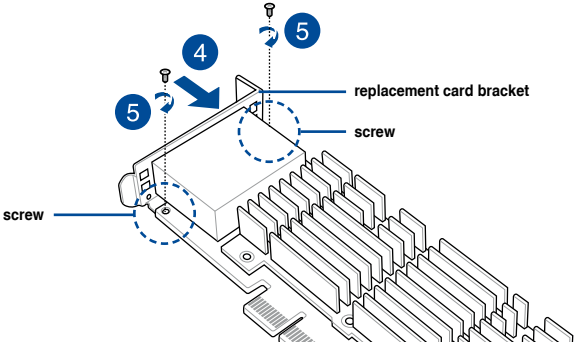
The proprietray bracket supports ASUS Z10PH-D16 series, ESC4000 G3 series, and RS720Q-E8 series models, etc. The supported list of models are subject to change without prior notice.

To replace the card bracket:

1. Get the PEB-10G/57840-2T Ethernet card and place it on a stable and flat surface. Ensure that the printed circuit board (PCB) is facing down.
2. Remove the two screws that secures the PEB-10G/57840-2T Ethernet card to the card bracket (A) then remove the card bracket (B).



3. Get the replacement card bracket.
4. Align and insert the PEB-10G/57840-2T Ethernet card into the mounting hole of the card bracket. Ensure that the screw holes on the PEB-10G/57840-2T Ethernet card matches the screw holes of the card bracket.
5. Secure the card with the screws that you removed earlier in step 2.



Boot Agent Configuration

2

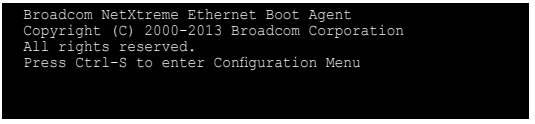
This chapter provides instructions on setting the Broadcom NetXtreme Ethernet Boot Agent.

2.1 Broadcom NetXtreme Ethernet Boot Agent

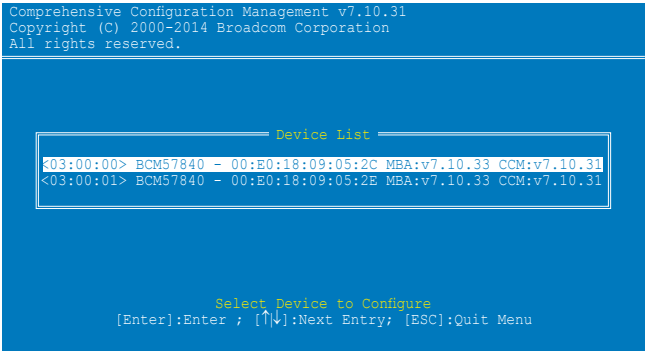
The Broadcom NetXtreme Ethernet Boot Agent provides hardware-based Ethernet card configurations.

To start the Broadcom NetXtreme Ethernet Boot Agent and access the main screen:

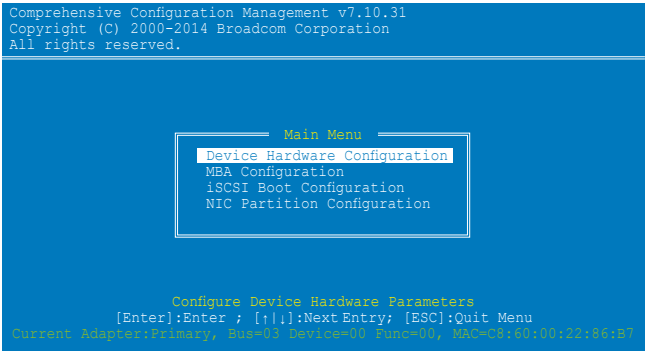
1. Turn on the system.
2. During POST, press <Ctrl>+<S> when the following screen appears.



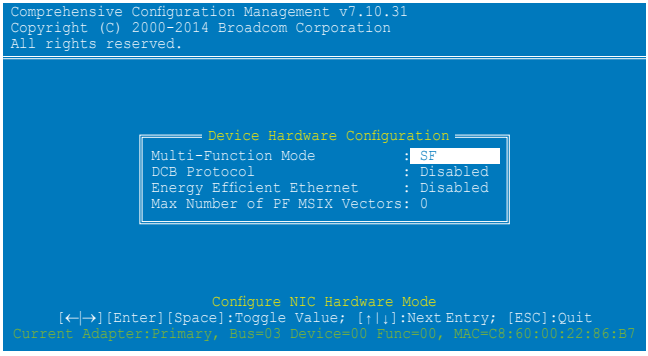
3. From the **Device List** screen, use the up/down arrow key to select an Ethernet device to configure then press <Enter>.



4. From the **Main Menu,** use the up/down arrow key to select an item and press <Enter>



2.1.1 Device Hardware Configuration Menu



Multi-Function Mode [SF]

Configuration options: [SF] [NPAR]

DCB Protocol [Disabled]

Configuration options: [Disabled] [Enabled]

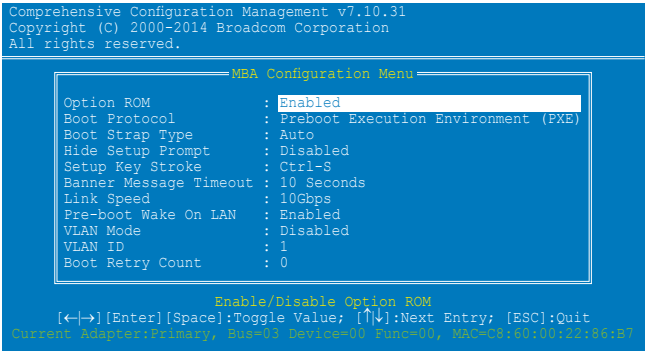
Energy Efficient Ethernet [Disabled]

Configuration options: [Disabled] [Optimal Power and Performance] [Maximum Power] [Maximum Performance]

Max Number of PF MSIX Vectors [0]

Configuration options: [0] – [64]

2.1.2 MBA Configuration Menu



Option ROM [Enabled]

Configuration options: [Enabled] [Disabled]

Boot Protocol [Preboot Execution Environment (PXE)]

Configuration options: [Preboot Execution Environment (PXE)] [iSCSI] [None]

Boot Strap Type [Auto]

Configuration options: [Auto] [BBS] [Int18h] [Int19h]

Hide Setup Prompt [Disabled]

Configuration options: [Disabled] [Enabled]

Setup Key Stroke [Ctrl-S]

Configuration options: [Ctrl-S] [Ctrl-B]

Banner Message Timeout [5 Seconds]

Configuration options: [None] [1 Second] – [14 Seconds]

Link Speed [AutoNeg]

Configuration options: [AutoNeg]

Pre-boot Wake On LAN [Enabled]

Configuration options: [Enabled] [Disabled]

VLAN Mode [Disabled]

Configuration options: [Disabled] [Enabled]

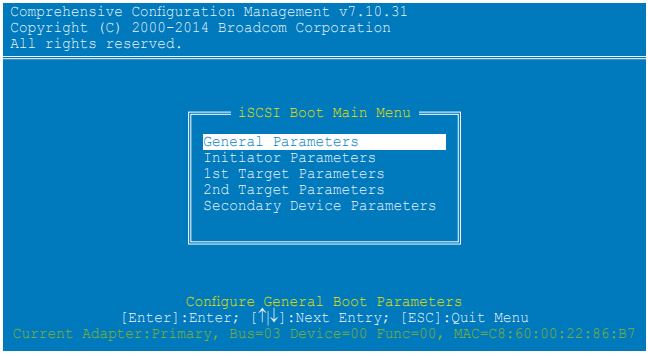
VLAN ID [1]

Configuration options: [0] – [4094]

Boot Retry Count [0]

Configuration options: [0] – [7]

2.1.3 iSCSI Boot Configuration



General Parameters

TCP/IP Parameters via DHCP [Enabled]

This option applies to IPv4.

[Enabled] The iSCSI boot host software acquires the IP address from the DHCP server.

[Disabled] The iSCSI boot host software acquires the static IP address.

iSCSI Parameters via DHCP [Enabled]

[Enabled] The iSCSI boot host software acquires its iSCSI target parameters from the DHCP server.

[Disabled] The iSCSI boot host software acquires its iSCSI target parameters via the static IP address, which is entered through the iSCSI Initiator Parameters Configuration screen.

CHAP Authentication [Disabled]

[Enabled] Allows the iSCSI boot host software to use CHAP authentication when connecting to the iSCSI target. Enter the CHAP ID and CHAP Secret in the Initiator Parameters configuration screen.

[Disabled] Does not allow the iSCSI boot host software to use CHAP authentication when connecting to the iSCSI target.

Boot to iSCSI Target [Enabled]

[Enabled] The iSCSI boot host software immediately attempts to boot from the iSCSI target after successfully connecting to it.

[Disabled] The iSCSI boot host software does not attempt to boot from the iSCSI target after successfully connecting to it. The control will then return to the system BIOS so that the next boot device may be used.

[One Time Disabled] On the first system boot, the iSCSI boot host software does not attempt to boot from the iSCSI target. On subsequent system reboots, the iSCSI boot host software will attempt to boot from the iSCSI target. This option is useful when doing a remote install of the OS to an iSCSI target.

- When using iSCSI boot, set Boot to iSCSI Target to [Disabled] or [One Time Disabled].
- When using iSCSI boot to install Windows Server 2008 OS, refer to http://support.microsoft.com/kb/974072/EN-US to complete the process.

DHCP Vendor ID [BRCM ISAN]

Controls how the iSCSI boot host software interprets the Vendor Class ID field used in the DHCP server. If DHCP is disabled, this value does not need to be specified. Enter a new value in 0 to 32 characters.

Link Up Delay Time [0]

Decides how many seconds the iSCSI boot host software waits after an Ethernet link is established before sending any data over the network. The valid values are 0 to 255.

Use TCP Timestamp [Disabled]

Enables or disables the TCP Timestamp option.
Configuration options: [Disabled] [Enabled]

Target as First HDD [Disabled]

When enabled, the iSCSI target drive appears as the first hard drive in the system.
Configuration options: [Disabled] [Enabled]

LUN Busy Retry Count [0]

Specifies the number of connection retries the iSCSI Boot initiator will attempt if the iSCSI target LUN is busy. Configuration options: [0] – [60]

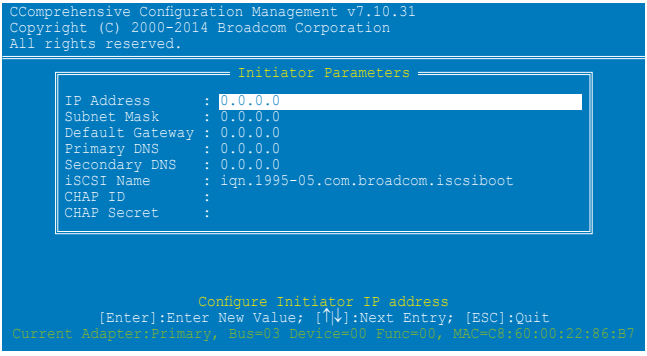
IP Version [IPv4]

Switches between the IPv4 or IPv6 protocol.
Configuration options: [IPv4] [IPv6]

Modifying this parameter erases all IP-related values.

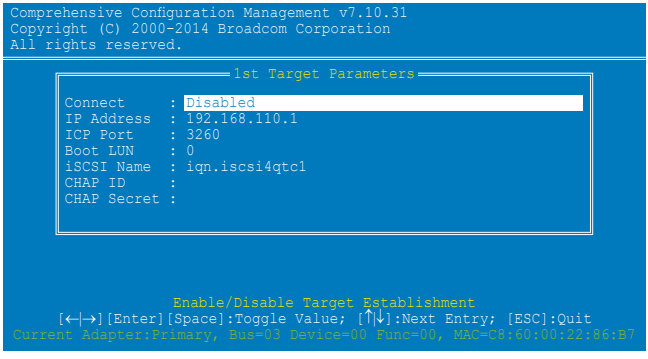
Initiator Parameters

Key in the necessary parameters.



1st / 2nd Target Parameters

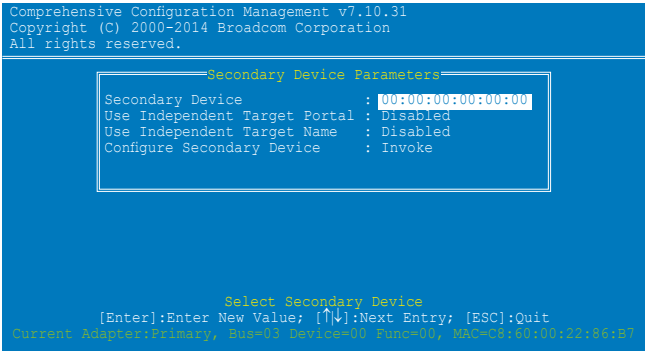
Key in the necessary parameters.



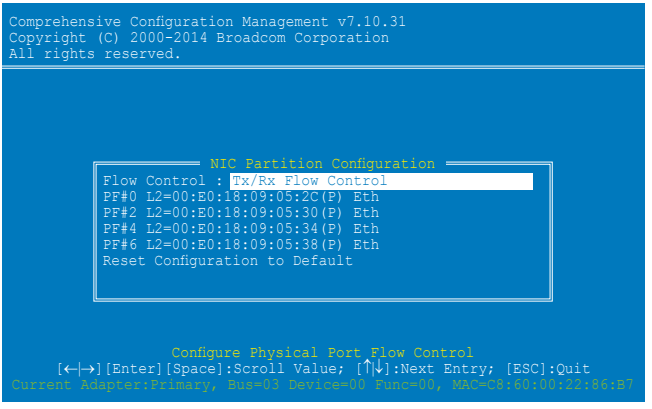
The iSCSI Name varies depending on the iSCSI target in use.

Secondary Device Parameters

Key in the necessary parameters.



2.1.4 NIC Partition Configuration Menu



Flow Control [Tx/Rx Flow Control]

Configuration options: [Tx/Rx Flow Control] [Disabled] [Auto] [Tx: Send Pause on Rx Overflow] [Rx: Throttle Tx on Pause Received]

PF#0/2/4/6

Press an item to configure its NIC Partition parameters.

Reset Configuration to Default

Select this item and press <Enter> to reset NIC Partition of all ports on this card to the factory default settings.

Driver installation

3

This chapter provides instructions for installing the Ethernet card drivers on different operating systems.

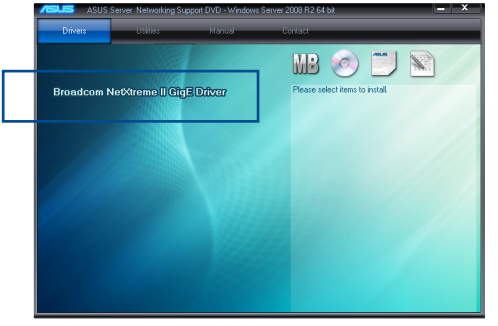
3.1 Windows® Server OS Driver Installation

To update the Ethernet card driver for Windows® Server OS:

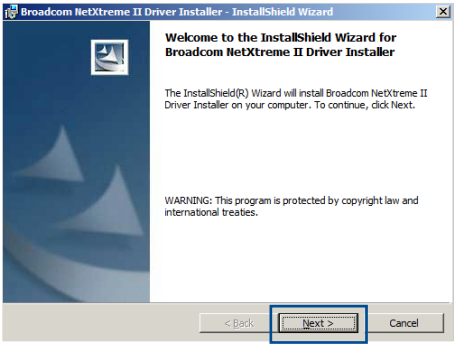
1. Restart the computer, and then log on with **Administrator** privileges.
2. Insert the Support CD to the optical drive. The Support CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.

- If Windows® automatically detects the LAN controllers and displays a New Hardware Found window, click **Cancel** to close this window.
- If Autorun is NOT enabled in your computer, browse the contents of the Support CD to locate the file **Setup.exe**. Double-click **Setup.exe** to run the CD.

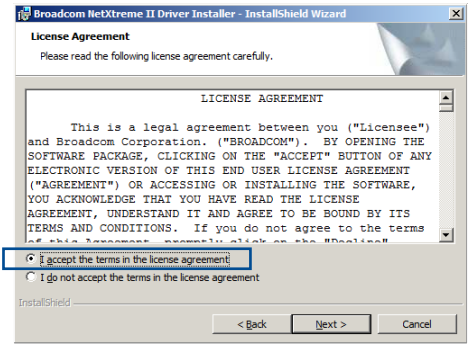
3. Click **Broadcom NetXreme II GigE Driver**.



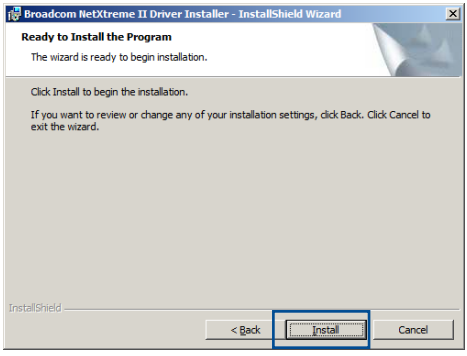
4. Click **Next** when the **Broadcom NetXreme II Driver Installer–InstallShield Wizard** window appears.



5. Toggle **I accept the terms in the license agreement** and click **Next** to continue.

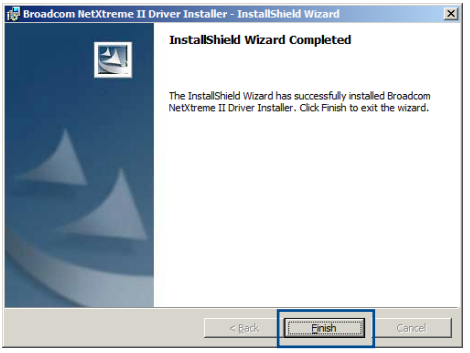


6. Follow the screen instructions to complete the installation.



7. If the **Windows Security** window appears during the driver installation, click **Install this driver software anyway** to continue.

8. Click **Finish** to exit the installation wizard.



9. Restart the system.

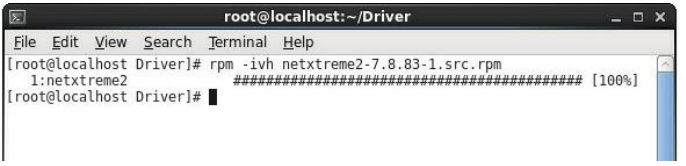
3.2 Linux OS Driver Installation

To install the Ethernet card driver for Linux OS:

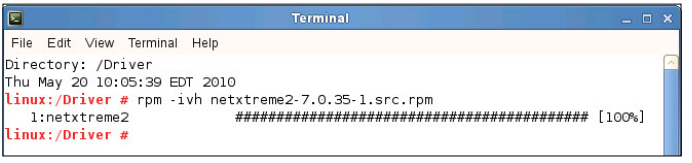
1. Within the Linux Terminal, install the source RPM package:

   rpm -ivh netxtreme2-<version>.src.rpm

   For Red Hat Linux:



   For SuSE Linux:

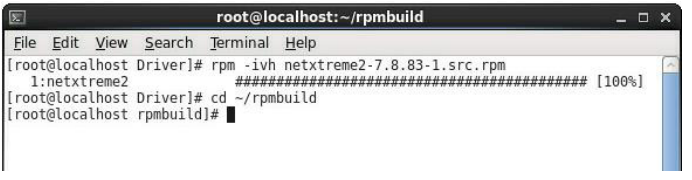


2. CD to the RPM path and build the binary driver for your kernel:

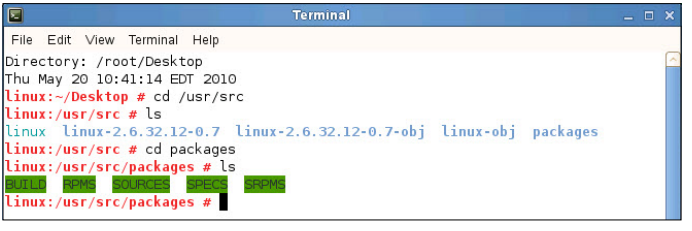
   cd /usr/src/{redhat,OpenLinux,turbo,packages,rpm ..}

   (For RHEL 6.0 and above, **cd ~/rpmbuild**)

   For Red Hat Linux:



   For SuSE Linux:



```
rpm -bb SPECS/netxtreme2.spec
```

or

(For RPM version 4.x.x)

```
rpmbuild -bb SPECS/netxtreme2.spec
```

Note that the RPM path is different for different Linux distributions.

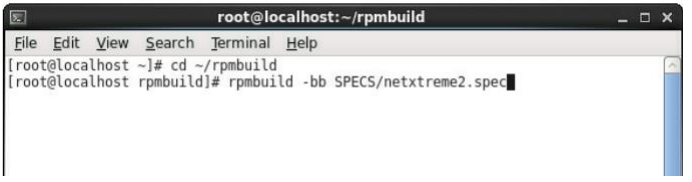
The driver will be compiled for the running kernel by default. To build the driver for a kernel different than the running one, specify the kernel by defining it in KVER:

```
rpmbuild -bb SPECS/netxtreme2.spec --define "KVER <kernel version>"
```

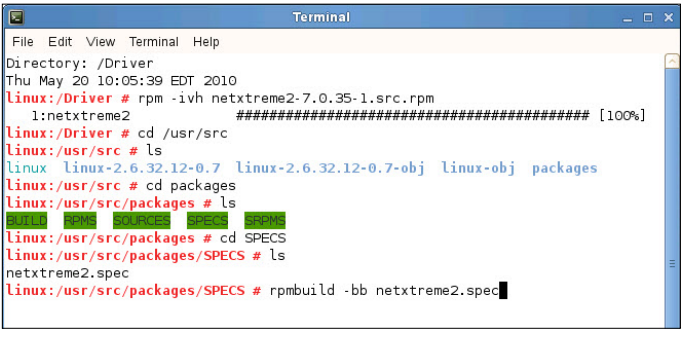
<kernel version> in the form of **2.x.y-z** is the version of another kernel that is installed on the system.

3. Install the newly built package (driver and main page):

For Red Hat Linux:



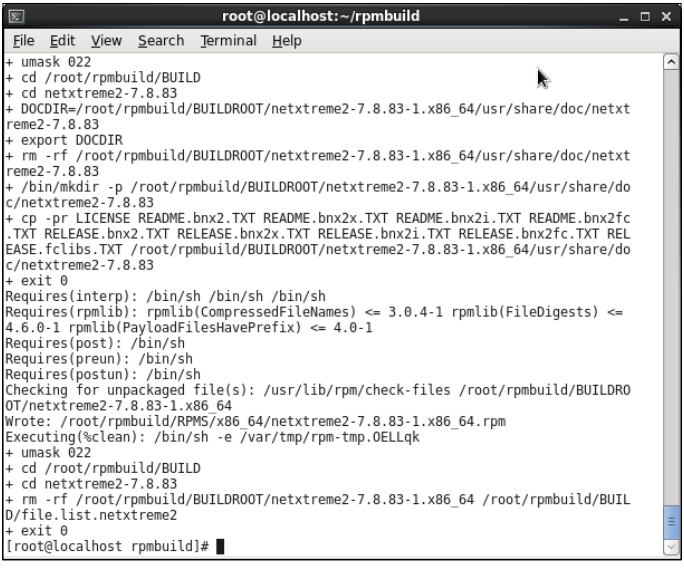
For SuSE Linux:

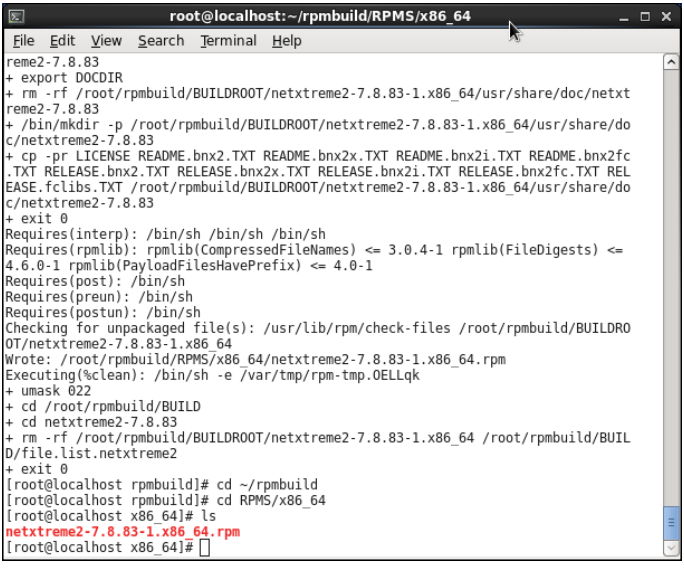


rpm -ivh RPMS/<arch>/netxtreme2-<version>.<arch>.rpm

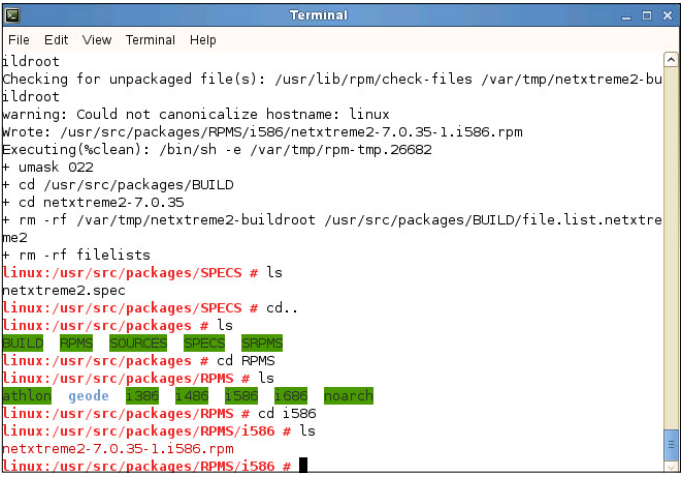
where <arch> is the machine architecture such as i386:

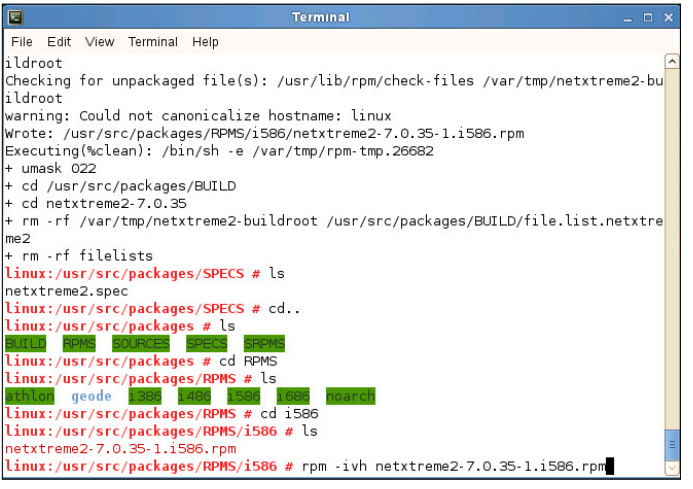
For Red Hat Linux:

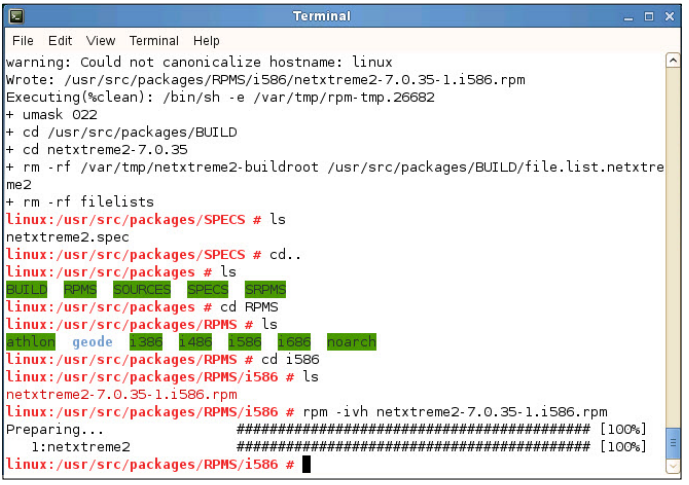




For SuSE Linux:







rpm -ivh RPMS/i386/netxtreme2-<version>.i386.rpm

Note that the --force option may be needed on some Linux distributions if conflicts are reported.

The drivers will be installed in the following path:

2.4.x kernels:

/lib/modules/<kernel_version>/kernel/drivers/net/bnx2.o

/lib/modules/<kernel_version>/kernel/drivers/net/bnx2x.o

2.6.0 kernels:

/lib/modules/<kernel_version>/kernel/drivers/net/bnx2.ko

/lib/modules/<kernel_version>/kernel/drivers/net/bnx2x.ko

2.6.16 and newer kernels:

/lib/modules/<kernel_version>/kernel/drivers/net/bnx2.ko

/lib/modules/<kernel_version>/kernel/drivers/net/bnx2x.ko

/lib/modules/<kernel_version>/kernel/drivers/net/cnic.ko

Newer RHEL and SLES distros:

/lib/modules/<kernel_version>/updates/bnx2.ko

/lib/modules/<kernel_version>/updates/cnic.ko

/lib/modules/<kernel_version>/updates/bnx2x.ko

/lib/modules/<kernel_version>/updates/bnx2i.ko

/lib/modules/<kernel_version>/updates/bnx2fc.ko

4. Unload existing driver if necessary:

   rmmod bnx2

   rmmod bnx2x

   If the cnic driver is loaded, it should also be unloaded along with dependent drivers:

   rmmod bnx2fc

   rmmod bnx2i

   rmmod cnic

5. Load the bnx2 driver for the BCM5706/BCM5708/5709/5716 devices:

   insmod bnx2.o

   or

   insmod bnx2.ko (on 2.6.x kernels)

   or

   modprobe bnx2

   To load the bnx2x driver for the BCM57710/BCM57711/BCM57711E/BCM57712 devices:

   insmod bnx2x.o

   or

   insmod bnx2x.ko (on 2.6.x kernels)

   or

   modprobe bnx2x

   To load the cnic driver:

   insmod cnic.ko

   or

   modprobe cnic

   To load the bnx2i driver:

   insmod bnx2i.ko

   or

   modprobe bnx2i

   To load the bnx2fc driver for BCM57712 device:

insmod bnx2fc.ko

or

modprobe bnx2fc

service bnx2fcd start

Note that the inbox kernel may have an older version of bnx2, bnx2x and cnic driver. It is important for FCoE offload user to unload these inbox versions before attempting to load bnx2fc driver. You can do either of these two options:

a) Reboot the server.

b) If already loaded, unload inbox bnx2, bnx2x, cnic drivers, and load the newly installed version from netxtreme2-foce package using '**modprobe <DRV-NAME>**'

- Driver upgrade (**rpm -Uvh**) is not supported.
- On SLES 11, change "allow_unsupported_modules" parameter value of **/etc/modprobe.d/unsupport-modules'** from 0 to 1, until bnx2fc driver is inbox. Failing to do so will not load bnx2fc.

6. To configure the network protocol and address, refer to various Linux documentations.

ASUS contact information

ASUSTeK COMPUTER INC.

Address	15 Li-Te Road, Peitou, Taipei, Taiwan 11259
Telephone	+886-2-2894-3447
Fax	+886-2-2890-7798
E-mail	info@asus.com.tw
Web site	http://www.asus.com

Technical Support

Telephone	+86-21-38429911
Fax	+86-21-58668722 ext: 9101
Online Support	http://support.asus.com/techserv/techserv.aspx

ASUSTeK COMPUTER INC. (Taiwan)

Address	15 Li-Te Road, Peitou, Taipei, Taiwan 11259
Telephone	+886-2-2894-3447
Fax	+886-2-2890-7798
E-mail	info@asus.com.tw
Web site	http://www.asus.com.tw

Technical Support

Telephone	+886-2-2894-3447 (0800-093-456)
Online Support	http://support.asus.com/techserv/techserv.aspx

ASUSTeK COMPUTER INC. (China)

Address	No.508, Chundong Road, Xinzhuang Industrial Zone, Minhang District, Shanghai, China.
Telephone	+86-21-5442-1616
Fax	+86-21-5442-0099
Web site	http://www.asus.com.cn

Technical Support

Telephone	400-620-6655
Online Support	http://support.asus.com/techserv/techserv.aspx

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)

Responsible Party Name: **Asus Computer International**

Address: **800 Corporate Way, Fremont, CA 94539.**

Phone/Fax No: **(510)739-3777/(510)608-4555**

hereby declares that the product

Product Name : 10G LAN CARD

Model Number : PEB-10G/57840-2T

Conforms to the following specifications:

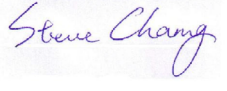
☒ FCC Part 15, Subpart B, Unintentional Radiators

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Representative Person's Name : **Steve Chang / President**

Signature :



Date : **Nov. 21, 2014**

Ver. 140331

EC Declaration of Conformity

ASUS IN SEARCH OF INCREDIBLE

We, the undersigned,

Manufacturer:	ASUSTeK COMPUTER INC.
Address:	4F, No. 150, LI-TE Rd., PEITOU, TAIPEI 112, TAIWAN
Authorized representative in Europe:	ASUS COMPUTER GmbH
Address, City:	HARKORT STR. 21-23, 40880 RATINGEN
Country:	GERMANY

declare the following apparatus:

Product name :	**10G LAN CARD**
Model name :	**PEB-10G/57840-2T**

conform with the essential requirements of the following directives:

☒**2004/108/EC-EMC Directive**

☒ EN 55022:2010+AC:2011	☒ EN 55024:2010
☒ EN 61000-3-2:2006+A2:2009	☒ EN 61000-3-3:2008
☐ EN 55013:2001+A1:2003+A2:2006	☐ EN 55020:2007+A11:2011

☐**1999/5/EC-R&TTE Directive**

☐ EN 300 328 V1.7.1(2006-10)	☐ EN 301 489-1 V1.9.2(2011-09)
☐ EN 300 440-1 V1.6.1(2010-08)	☐ EN 301 489-3 V1.4.1(2002-08)
☐ EN 300 440-2 V1.4.1(2010-08)	☐ EN 301 489-4 V1.4.1(2009-05)
☐ EN 301 511 V9.0.2(2003-03)	☐ EN 301 489-7 V1.3.1(2005-11)
☐ EN 301 908-1 V5.2.1(2011-05)	☐ EN 301 489-9 V1.4.1(2007-11)
☐ EN 301 908-2 V5.2.1(2011-07)	☐ EN 301 489-17 V2.2.1(2012-09)
☐ EN 301 893 V1.6.1(2011-11)	☐ EN 301 489-24 V1.5.1(2010-09)
☐ EN 302 544-2 V1.1.1(2009-01)	☐ EN 302 326-2 V1.2.2(2007-06)
☐ EN 302 623 V1.1.1(2009-01)	☐ EN 302 326-3 V1.3.1(2007-09)
☐ EN 50360:2001	☐ EN 301 357-2 V1.4.1(2008-11)
☐ EN 62479:2010	☐ EN 302 291-1 V1.1.1(2005-07)
☐ EN 50385:2002	☐ EN 302 291-2 V1.1.1(2005-07)
☐ EN 62311:2008	

☒**2006/95/EC-LVD Directive**

☒ EN 60950-1 / A12:2011	☐ EN 60065:2002 / A12:2011

☐**2009/125/EC-ErP Directive**

☐ Regulation (EC) No. 1275/2008	☐ Regulation (EC) No. 278/2009
☐ Regulation (EC) No. 642/2009	☐ Regulation (EC) No. 617/2013

☒**2011/65/EU-RoHS Directive** Ver. 140331

☒**CE marking**

CE (EC conformity marking)

Position : **CEO**

Name : **Jerry Shen**

Declaration Date: 21/11/2014

Year to begin affixing CE marking: 2014

Signature : _____