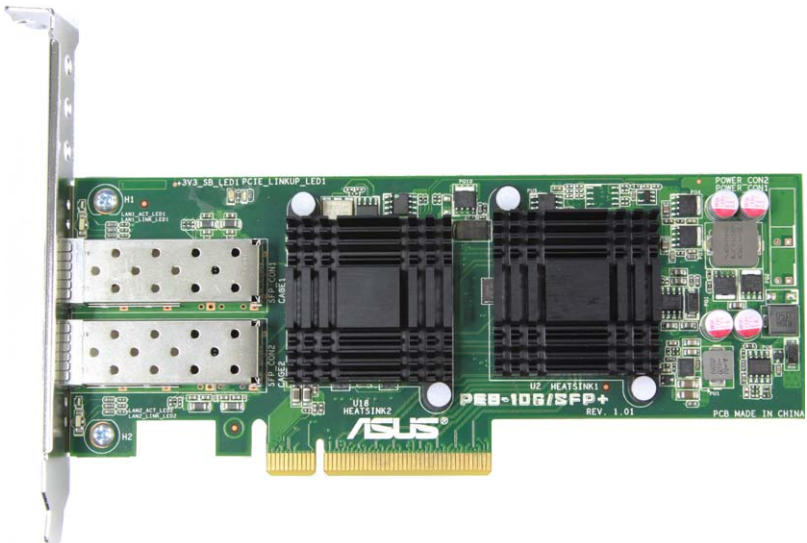


ASUS[®]

PEB-10G/SFP+ Series

10 Gigabit/s Ethernet card

User Guide



E7131

First Edition V1

May 2012

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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 offers the PEB-10G/SFP+ 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/SFP+ Series specifications summary

Product	<ul style="list-style-type: none"> • PEB-10G/SPF+/Single • PEB-10G/SPF+/Dual
Speeds & Ports	<ul style="list-style-type: none"> • 10 Gigabit/s Ethernet • Fiber; Single & Dual Port
Ethernet Controller PHY	<ul style="list-style-type: none"> • BCM 57712 • BCM 8727
Interface	PCI-E Gen2 x8
Form Factor	Low Profile (6.6"x 2.6")
Support Cable Type	<ul style="list-style-type: none"> • MMF 62.5/50um up to 300m (SR) • SMF up to 10km (LR) • Passive Twin-AX up to 15m (SFP+ Direct Attach)
Connector	<ul style="list-style-type: none"> • LC Fiber Optic • Supports SFP+ SR Optical module, SFP+ LR Optical module, Direct Attached Copper*
Features	<ul style="list-style-type: none"> • PXE boot • iSCSI boot
OS support*	Windows® Server 2008 R2 SP1 Windows® Server 2008 SP2 Red Hat Enterprise AS 5.7/5.8 Red Hat Enterprise AS 6.1/6.2 SuSE Linux Enterprise Server 11.1/11.2

* Please refer to ASUS website for Approved Vendor List (AVL).

** The exact OS support would base on the OS support list of the motherboard.

*** Specifications are subject to change without notice.

This chapter offers the PEB-10G/SFP+ Series Ethernet card features and the new technologies it supports.

1 Product introduction

1.1 Welcome!

Thank you for buying an ASUS® PEB-10G/SFP+ Series 10 Gigabit/s Ethernet 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
ASUS PEB-10G/SFP+ Series Ethernet card	1	1
Support CD	1	1
Low profile card bracket	1	1
User Guide	1	1
Packing Quantity	1 pcs per carton	10 pcs per carton



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

1.3 System requirements

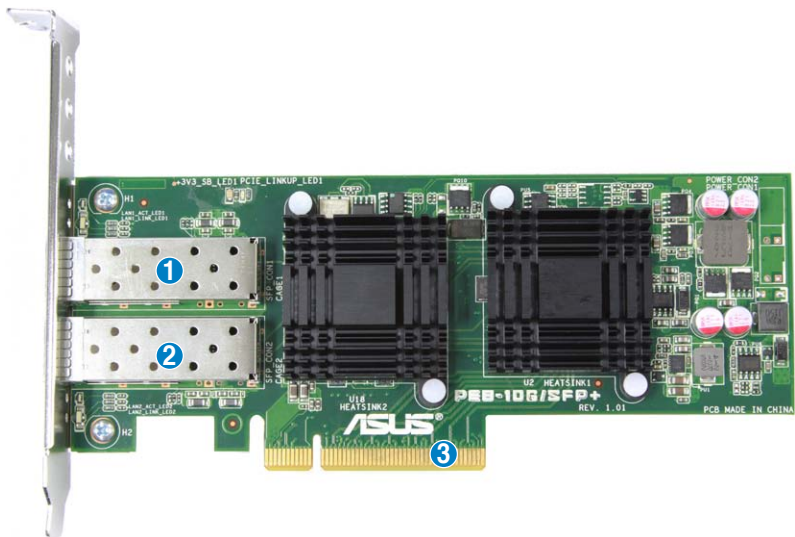
Before you install the PEB-10G/SFP+ Series Ethernet card, check if the system meets the following requirements:

- **Server or workstation motherboard with a PCI Express 2.0 x8 or x16 card slot**
- **Supporting operating system:**

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

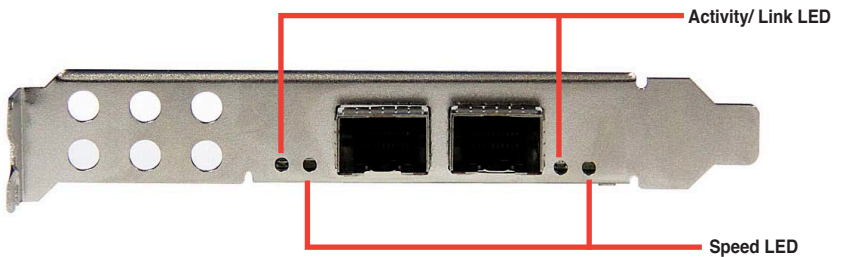
1.4 Card layout

Top view



- 1. LC Fiber Optic Connector 1
- 2. LC Fiber Optic Connector 2
- 3. PCI Express Gen2 x8 interface

LAN port LED indications



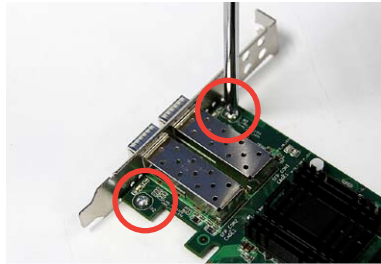
Activity/ Link LED		Speed link	
Status	Description	Status	Description
OFF	No link	Green	10Gbps link
Green	Linked		
Blinking	Data activity		

1.5 Replacing card bracket

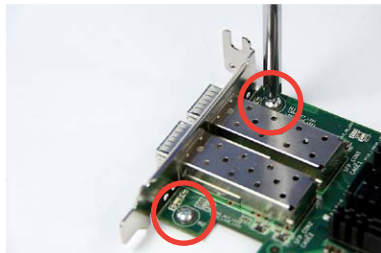
1. Take out the low profile bracket from the Ethernet card package.



2. Remove the two screws that secure the high profile bracket on the rear end of the Ethernet card.



3. Secure the low profile bracket using the two screws you removed earlier to the rear end of the Ethernet card.



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

Boot Agent Configuration



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. During POST, press <Ctrl+S> when the following screen appears.

```
Broadcom NetXtreme Ethernet Boot Agent
Copyright (C) 2000-2012 Broadcom Corporation
All rights reserved.
Press Ctrl-S to enter Configuration Menu
```

2. The **Device List** screen appears. Use the up/down arrow key to select an Ethernet device to configure and press <Enter>.

```
Comprehensive Configuration Management v7.2.14
Copyright (C) 2000-2012 Broadcom Corporation
All rights reserved.

Device List

<03:00:00> BCM57712 - C8:60:00:22:86:B7 MBA:v7.2.29 CCM:v7.2.14
<03:00:01> BCM57712 - C8:60:00:22:86:B9 MBA:v7.2.29 CCM:v7.2.14

Select Device to Configure
[Enter]:Enter Next Menu; [↑|↓]:Next Entry; [ESC]:Quit Menu
```

3. The **Main Menu** screen appears. Use the up/down arrow key to select an item and press <Enter>.

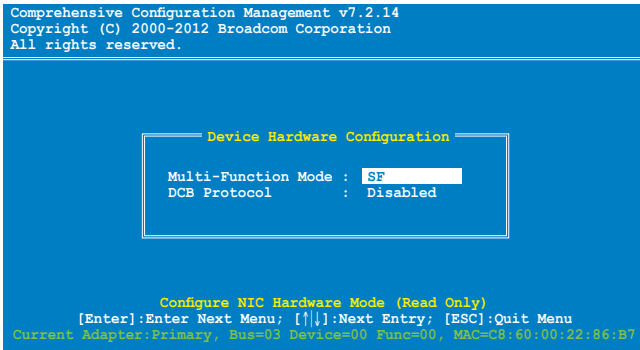
```
Comprehensive Configuration Management v7.2.14
Copyright (C) 2000-2012 Broadcom Corporation
All rights reserved.

Main Menu

Device Hardware Configuration
MBA Configuration
iSCSI Boot Configuration

Configure MBA Parameters
[Enter]:Enter Next Menu; [↑|↓]:Next Entry; [ESC]:Quit Menu
Current Adapter:Primary, Bus=03 Device=00 Func=00, MAC=C8:60:00:22:86:B7
```

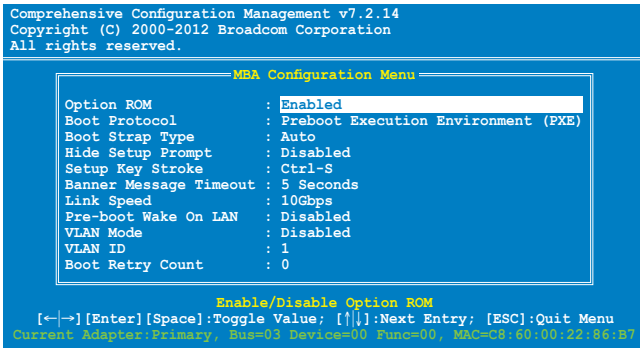
2.1.1 Device Hardware Configuration Menu



DCB Protocol [Disabled]

Configuration options: [Disabled] [Enabled]

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)]
[Bootstrap Protocol (BOOTP)] [iSCSI] [FCoE] [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: [1 Second] – [14 Seconds]

Link Speed [10Gbps]

Configuration options: [10Gbps] [1Gbps]

Pre-boot Wake On LAN [Enabled]

Configuration options: [Enabled] [Disabled]

VLAN Mode [Disabled]

Configuration options: [Disabled] [Enabled]

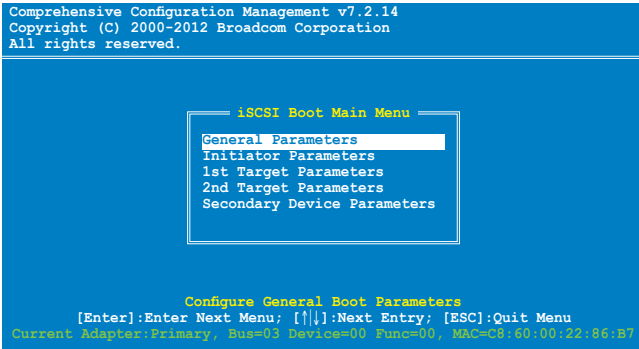
VLAN ID [1]

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 [BRM 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.

```
CComprehensive Configuration Management v7.2.14
Copyright (C) 2000-2012 Broadcom Corporation
All rights reserved.

Initiator Parameters
IP Address      : 0.0.0.0
Subnet Mask    : 0.0.0.0
Default Gateway: 0.0.0.0
Primary DNS    : 0.0.0.0
Secondary DNS  : 0.0.0.0
iSCSI Name     : ign.1995-05.com.broadcom.iscsiboot
CHAP ID        :
CHAP Secret    :

Configure Initiator IP address
[Enter]:Enter Next Menu; [↑↓]:Next Entry; [ESC]:Quit Menu
Current Adaptor:Primary, Bus=03 Device=00 Func=00, MAC=CB:60:00:22:86:B7
```

1st / 2nd Target Parameters

Key in the necessary parameters.

```
Comprehensive Configuration Management v7.2.14
Copyright (C) 2000-2012 Broadcom Corporation
All rights reserved.

1st Target Parameters
Connect        : Disabled
IP Address     : 0.0.0.0
ICP Port       : 3260
Boot LUN       : 0
iSCSI Name    :
CHAP ID        :
CHAP Secret    :

Enable/Disable Target Establishment
[←→][Enter][Space]:Toggle Value; [↑↓]:Next Entry; [ESC]:Quit Menu
Current Adaptor:Primary, Bus=03 Device=00 Func=00, MAC=CB:60:00:22:86:B7
```



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

Secondary Device Parameters

Key in the necessary parameters.

```
Comprehensive Configuration Management v7.2.14
Copyright (C) 2000-2012 Broadcom Corporation
All rights reserved.

Secondary Device Parameters
Secondary Device      : 00:00:00:00:00:00
Use Independent Target Portal : Disabled
Use Independent Target Name   : Disabled
Configure Secondary Device   : Invoke

Select Secondary Device
[Enter]:Enter New Value; [↑↓]:Next Entry; [ESC]:Quit Menu
Current Adaptor:Primary, Bus=03 Device=00 Func=00, MAC=CB:60:00:22:86:B7
```


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

3 Driver installation

3.1 Windows® Server OS Driver Installation

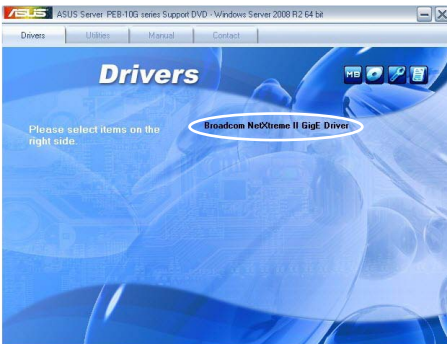
To update the Ethernet card driver for Windows® Server OS:

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

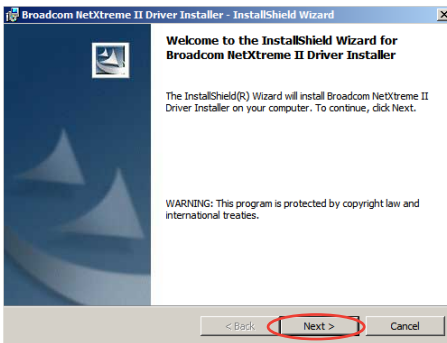


- If Windows® automatically detects the LAN controllers and displays a New Hardware Found window, click **Cancel** to close this window.
- If Autorun is NOT enabled in your computer, browse the contents of the Support CD to locate the file **Setup.exe**. Double-click **Setup.exe** to run the CD.

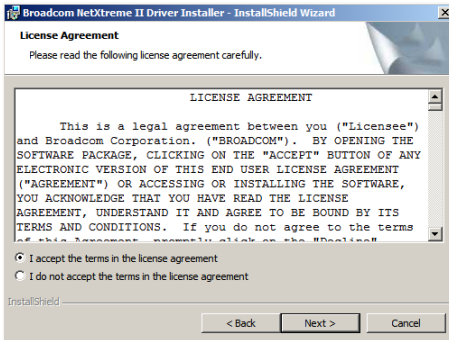
3. Click **Broadcom NetXreme II GigE Driver**.



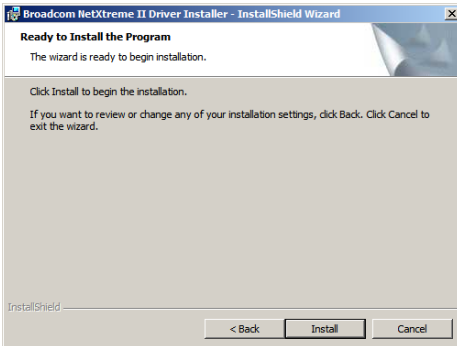
4. Click **Next** when the **Broadcom NetXreme II Driver Installer–InstallShield Wizard** window appears.



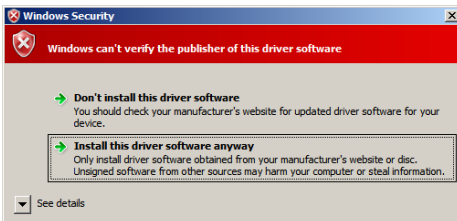
5. Toggle **I accept the terms in the license agreement** and click **Next** to continue.



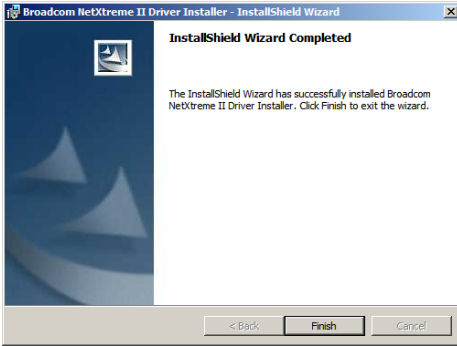
6. Follow the screen instructions to complete the installation.



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



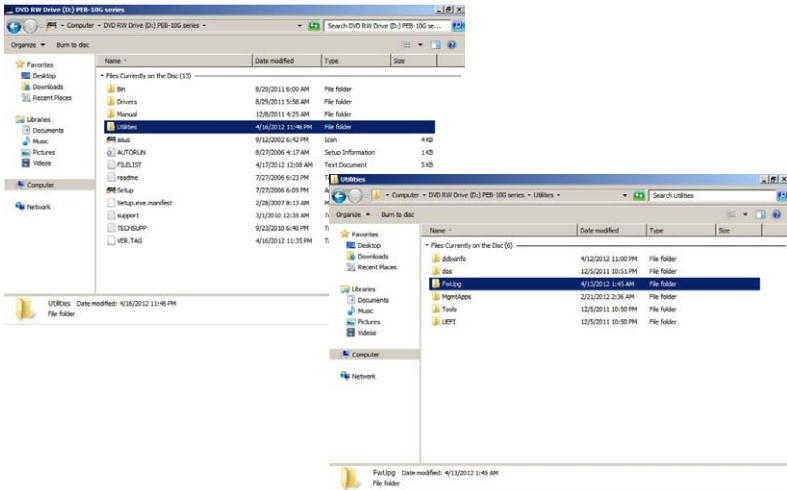
- When finished, press **Finish** to exit the installation wizard.



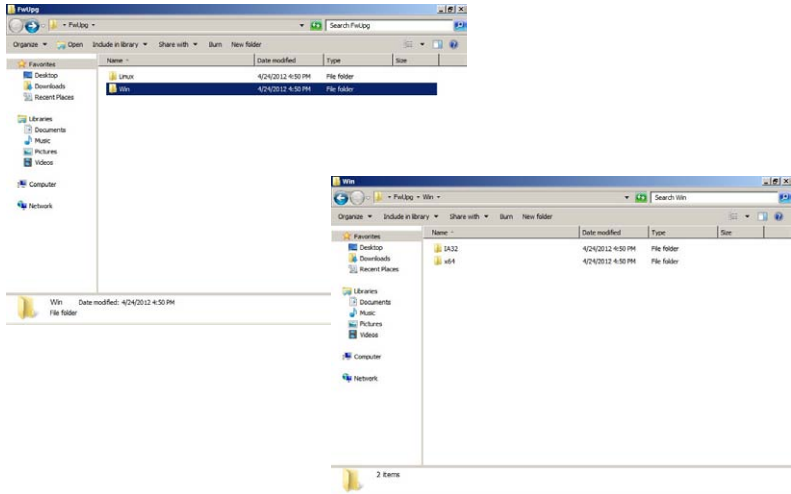
3.1.1 Checking Windows® Server OS firmware version

To check the Windows® Server OS firmware version:

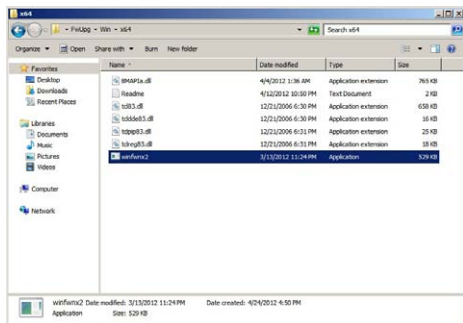
- Insert the support CD to the optical drive. Go to **Computer** and double-click **PEB-10G series**.
- Go to **Utilities** and copy the **FwUpg** folder to your desktop.



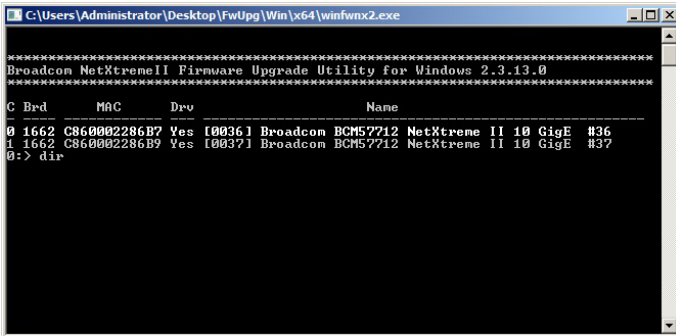
3. Go to **Win** folder and select the platform.



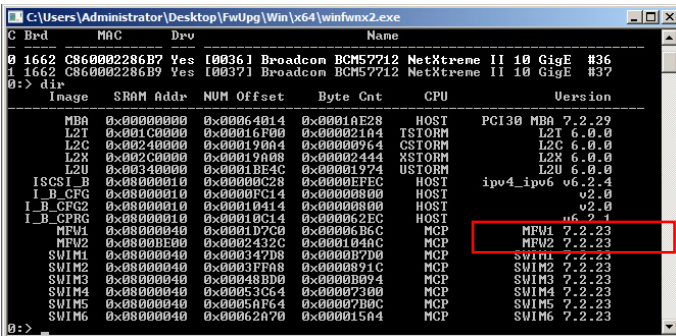
4. Follow the **Readme.txt** for installing **winfwnx2**. Ensure that the drivers are installed.
5. Double-click **winfwnx2.exe**.



6. Key in the command `dir` .



7. Check the version number in entry **MFW1/2**.



3.2 Linux OS Driver Installation



The following Linux operating systems are supported by PEB-10G/SFP+:
Red Hat Enterprise AS 5.7/5.8
Red Hat Enterprise AS 6.1/6.2
SuSE Linux Enterprise Server 11.1/11.2

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:

```
root@localhost:~/driver
File Edit View Terminal Tabs Help
[root@localhost driver]# rpm -ivh netxtreme2-7.0.35-1.src.rpm
 1:netxtreme2 ##### [100%]
[root@localhost driver]#
```

For SuSE Linux:

```
Terminal
File Edit View Terminal Help
Directory: /Driver
Thu May 20 10:05:39 EDT 2010
Linux:~/Driver # rpm -ivh netxtreme2-7.0.35-1.src.rpm
 1:netxtreme2 ##### [100%]
Linux:~/Driver #
```

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:

```
root@localhost:~/rpmbuild/SPECS
File Edit View Search Terminal Help
[root@localhost ~]# cd Desktop/Driver
[root@localhost Desktop]# rpm -ivh netxtreme2-7.0.35-1.src.rpm
 1:netxtreme2 ##### [100%]
[root@localhost Desktop]# cd ~/rpmbuild
[root@localhost rpmbuild]# ls
SOURCES SPECS
[root@localhost rpmbuild]# cd SPECS
[root@localhost SPECS]# ls
netxtreme2.spec
[root@localhost SPECS]#
```

For SuSE Linux:

```
Terminal
File Edit View Terminal Help
Directory: /root/Desktop
Thu May 20 10:41:14 EDT 2010
Linux:~/Desktop # cd /usr/src
Linux:/usr/src # ls
linux linux-2.6.32.12-0.7 linux-2.6.32.12-0.7-obj linux-obj packages
Linux:/usr/src # cd packages
Linux:/usr/src/packages # ls
BUILD SPEC BUILD_SPEC SPEC
Linux:/usr/src/packages #
```

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

or

(For RPM version 4.x.x)

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

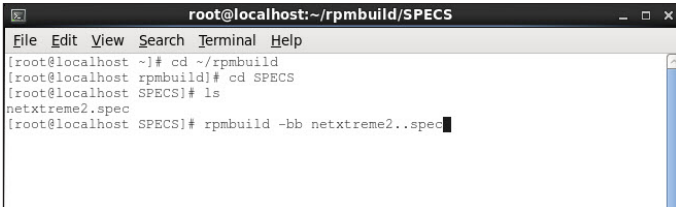
Note that the RPM path is different for different Linux distributions.

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>"
```

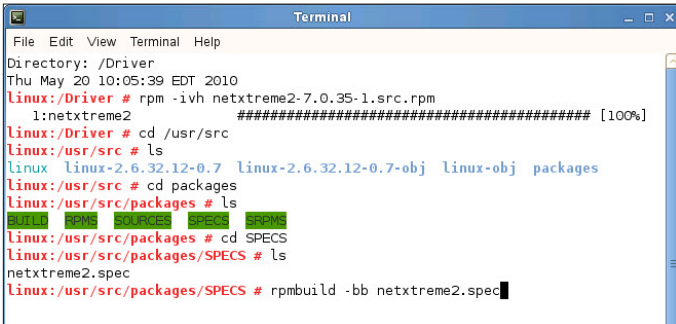
<kernel version> in the form of **2.x.y-z** is the version of another kernel that is installed on the system.

For Red Hat Linux:



```
root@localhost:~/rpmbuild/SPECS
File Edit View Search Terminal Help
[root@localhost ~]# cd ~/rpmbuild
[root@localhost rpmbuild]# cd SPECS
[root@localhost SPECS]# ls
netxtreme2.spec
[root@localhost SPECS]# rpmbuild -bb netxtreme2..spec
```

For SuSE Linux:

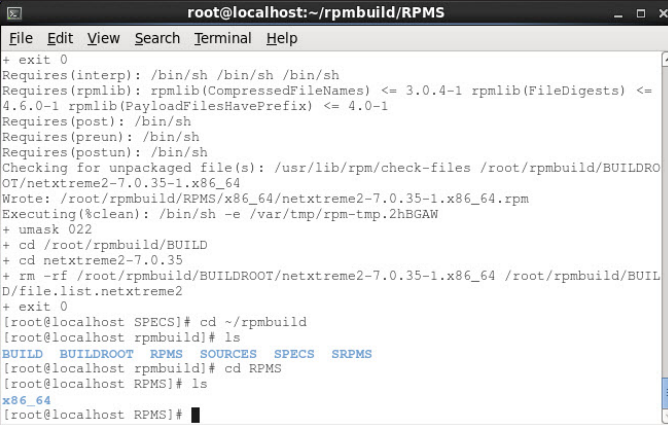


```
Terminal
File Edit View Terminal Help
Directory: /Driver
Thu May 20 10:05:39 EDT 2010
linux:/Driver # rpm -ivh netxtreme2-7.0.35-1.src.rpm
1:netxtreme2 ##### [100%]
linux:/Driver # cd /usr/src
linux:/usr/src # ls
linux linux-2.6.32.12-0.7 linux-2.6.32.12-0.7-obj linux-obj packages
linux:/usr/src # cd packages
linux:/usr/src/packages # ls
SPECS SPECS2
linux:/usr/src/packages # cd SPECS
linux:/usr/src/packages/SPECS # ls
netxtreme2.spec
linux:/usr/src/packages/SPECS # rpmbuild -bb netxtreme2.spec
```

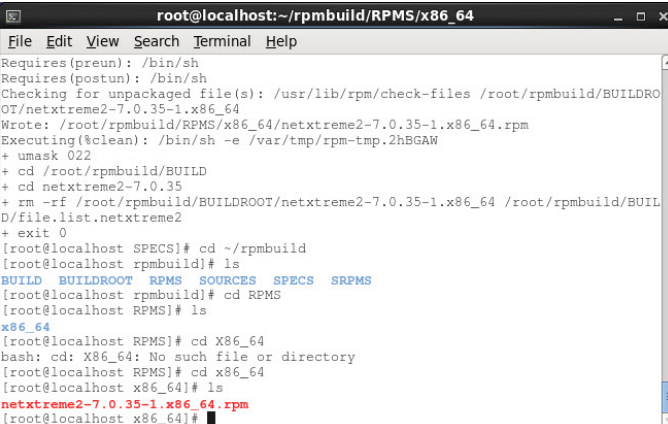
3. Install the newly built package (driver and main page):

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

For Red Hat Linux:



```
root@localhost:~/rpmbuild/RPMS
File Edit View Search Terminal Help
+ exit 0
Requires(interp): /bin/sh /bin/sh /bin/sh
Requires(rpmlib): rpmlib(CompressedFileNames) <= 3.0.4-1 rpmlib(FileDigests) <=
4.6.0-1 rpmlib(PayloadFilesHavePrefix) <= 4.0-1
Requires(post): /bin/sh
Requires(preun): /bin/sh
Requires(postun): /bin/sh
Checking for unpackaged file(s): /usr/lib/rpm/check-files /root/rpmbuild/BUILDRO
OT/netxtreme2-7.0.35-1.x86_64
Wrote: /root/rpmbuild/RPMS/x86_64/netxtreme2-7.0.35-1.x86_64.rpm
Executing(%clean): /bin/sh -e /var/tmp/rpm-tmp.2hBGAW
+ umask 022
+ cd /root/rpmbuild/BUILD
+ cd netxtreme2-7.0.35
+ rm -rf /root/rpmbuild/BUILDROOT/netxtreme2-7.0.35-1.x86_64 /root/rpmbuild/BUIL
D/file.list.netxtreme2
+ exit 0
[root@localhost SPECS]# cd ~/rpmbuild
[root@localhost rpmbuild]# ls
BUILD BUILDROOT RPMS SOURCES SPECS SRPMS
[root@localhost rpmbuild]# cd RPMS
[root@localhost RPMS]# ls
x86_64
[root@localhost RPMS]# █
```



```
root@localhost:~/rpmbuild/RPMS/x86_64
File Edit View Search Terminal Help
Requires(preun): /bin/sh
Requires(postun): /bin/sh
Checking for unpackaged file(s): /usr/lib/rpm/check-files /root/rpmbuild/BUILDRO
OT/netxtreme2-7.0.35-1.x86_64
Wrote: /root/rpmbuild/RPMS/x86_64/netxtreme2-7.0.35-1.x86_64.rpm
Executing(%clean): /bin/sh -e /var/tmp/rpm-tmp.2hBGAW
+ umask 022
+ cd /root/rpmbuild/BUILD
+ cd netxtreme2-7.0.35
+ rm -rf /root/rpmbuild/BUILDROOT/netxtreme2-7.0.35-1.x86_64 /root/rpmbuild/BUIL
D/file.list.netxtreme2
+ exit 0
[root@localhost SPECS]# cd ~/rpmbuild
[root@localhost rpmbuild]# ls
BUILD BUILDROOT RPMS SOURCES SPECS SRPMS
[root@localhost rpmbuild]# cd RPMS
[root@localhost RPMS]# ls
x86_64
[root@localhost RPMS]# cd x86_64
bash: cd: X86_64: No such file or directory
[root@localhost RPMS]# cd x86_64
[root@localhost x86_64]# ls
netxtreme2-7.0.35-1.x86_64.rpm
[root@localhost x86_64]# █
```

```

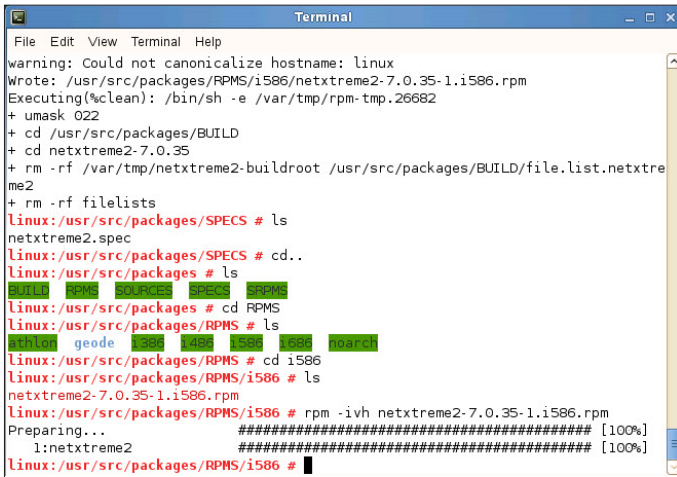
root@localhost:~/rpmbuild/RPMS/x86_64
File Edit View Search Terminal Help
Requires(preun): /bin/sh
Requires(postun): /bin/sh
Checking for unpackaged file(s): /usr/lib/rpm/check-files /root/rpmbuild/BUILDRO
OT/netxtreme2-7.0.35-1.x86_64
Wrote: /root/rpmbuild/RPMS/x86_64/netxtreme2-7.0.35-1.x86_64.rpm
Executing(%clean): /bin/sh -e /var/tmp/rpm-tmp.2hBGAW
+ umask 022
+ cd /root/rpmbuild/BUILD
+ cd netxtreme2-7.0.35
+ rm -rf /root/rpmbuild/BUILDROOT/netxtreme2-7.0.35-1.x86_64 /root/rpmbuild/BUIL
D/file.list.netxtreme2
+ exit 0
[root@localhost SPECS]# cd ~/rpmbuild
[root@localhost rpmbuild]# ls
BUILD BUILDROOT RPMS SOURCES SPECS SRPMS
[root@localhost rpmbuild]# cd RPMS
[root@localhost RPMS]# ls
x86_64
[root@localhost RPMS]# cd X86_64
bash: cd: X86_64: No such file or directory
[root@localhost RPMS]# cd x86_64
[root@localhost x86_64]# ls
netxtreme2-7.0.35-1.x86_64.rpm
[root@localhost x86_64]# rpm -ivh netxtreme2-7.0.35-1.x86_65.rpm

```

```

root@localhost:~/rpmbuild/RPMS/x86_64
File Edit View Search Terminal Help
Executing(%clean): /bin/sh -e /var/tmp/rpm-tmp.2hBGAW
+ umask 022
+ cd /root/rpmbuild/BUILD
+ cd netxtreme2-7.0.35
+ rm -rf /root/rpmbuild/BUILDROOT/netxtreme2-7.0.35-1.x86_64 /root/rpmbuild/BUIL
D/file.list.netxtreme2
+ exit 0
[root@localhost SPECS]# cd ~/rpmbuild
[root@localhost rpmbuild]# ls
BUILD BUILDROOT RPMS SOURCES SPECS SRPMS
[root@localhost rpmbuild]# cd RPMS
[root@localhost RPMS]# ls
x86_64
[root@localhost RPMS]# cd X86_64
bash: cd: X86_64: No such file or directory
[root@localhost RPMS]# cd x86_64
[root@localhost x86_64]# ls
netxtreme2-7.0.35-1.x86_64.rpm
[root@localhost x86_64]# rpm -ivh netxtreme2-7.0.35-1.x86_65.rpm
error: open of netxtreme2-7.0.35-1.x86_65.rpm failed: No such file or directory
[root@localhost x86_64]# rpm -ivh netxtreme2-7.0.35-1.x86_64.rpm
Preparing...
1:netxtreme2
##### [100%]
##### [100%]
[root@localhost x86_64]#

```

```
Terminal
File Edit View Terminal Help
warning: Could not canonicalize hostname: linux
Wrote: /usr/src/packages/RPMS/i586/netxtreme2-7.0.35-1.i586.rpm
Executing(%clean): /bin/sh -e /var/tmp/rpm-tmp.26682
+ umask 022
+ cd /usr/src/packages/BUILD
+ cd netxtreme2-7.0.35
+ rm -rf /var/tmp/netxtreme2-buildroot /usr/src/packages/BUILD/file.list.netxtre
me2
+ rm -rf filelists
Linux:/usr/src/packages/SPECS # ls
netxtreme2.spec
Linux:/usr/src/packages/SPECS # cd..
Linux:/usr/src/packages # ls
BUILD RPMS RPMS.i386 RPMS.i586 RPMS.x86_64
Linux:/usr/src/packages # cd RPMS
Linux:/usr/src/packages/RPMS # ls
kblton geode i586 i686 i686 i686 i686 i686
Linux:/usr/src/packages/RPMS # cd i586
Linux:/usr/src/packages/RPMS/i586 # ls
netxtreme2-7.0.35-1.i586.rpm
Linux:/usr/src/packages/RPMS/i586 # rpm -ivh netxtreme2-7.0.35-1.i586.rpm
Preparing... ##### [100%]
 1:netxtreme2 ##### [100%]
Linux:/usr/src/packages/RPMS/i586 #
```

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

```
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/unsupported-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.

3.2.1 Checking Linux OS firmware version

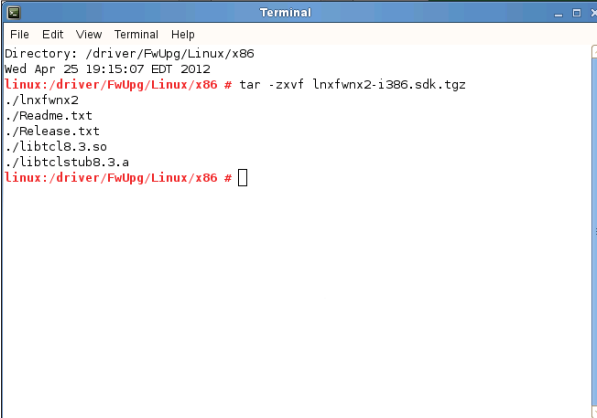
To check the Linux OS firmware version:

1. Insert the support CD to the optical drive. Double-click **PEB-10G series** on your desktop.
2. Go to **Utilities** and copy the **FwUpg** folder to your desktop.
3. Go to **Linux** folder and select the platform.

For **SUSE Linux**:

1. Follow the **Readme.txt** for installing **Inxfwnx2**. Ensure that the drivers are installed.
2. Key in the command to untar the **Inxfwnx2** SDK package:

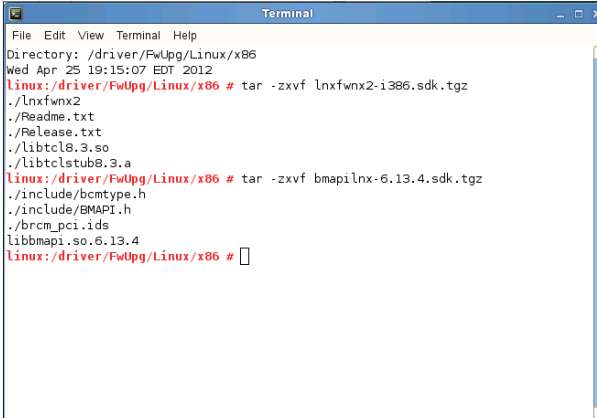
```
tar -zxvf inxfwnx2-{arch}.sdk.tgz
```



```
Terminal
File Edit View Terminal Help
Directory: /driver/FwUpg/Linux/x86
Wed Apr 25 19:15:07 EDT 2012
Linux:/driver/FwUpg/Linux/x86 # tar -zxvf inxfwnx2-i386.sdk.tgz
./Inxfwnx2
./Readme.txt
./Release.txt
./libtcl8.3.so
./libtclstub8.3.a
Linux:/driver/FwUpg/Linux/x86 #
```

3. Key in the command to untar the **BMAPI library** SDK package:

```
tar -zxvf bmapilnx-{version}.sdk.tgz
```



```
Terminal
File Edit View Terminal Help
Directory: /driver/FwUpg/Linux/x86
Wed Apr 25 19:15:07 EDT 2012
Linux:/driver/FwUpg/Linux/x86 # tar -zxvf inxfwnx2-i386.sdk.tgz
./Inxfwnx2
./Readme.txt
./Release.txt
./libtcl8.3.so
./libtclstub8.3.a
Linux:/driver/FwUpg/Linux/x86 # tar -zxvf bmapilnx-6.13.4.sdk.tgz
./include/bcmtype.h
./include/BMAPI.h
./brcm_pci.ids
libbmapilnx.so.6.13.4
Linux:/driver/FwUpg/Linux/x86 #
```

4. Key in the command `ls` . Then key in the command `ln -sf $(BMAPI_LIB_NAME)-{version}$ (BMAPI_LIB_NAME) .so.6`
5. Copy `brcm_pci.ids` to `/usr/share` directory.

```

Terminal
File Edit View Terminal Help
linux:/driver/FwUpp/Linux/x86 # tar -zxvf bmapilnx-6.13.4.sdk.tgz
./include/bcctype.h
./include/bcAPI.h
./brcm_pci.ids
libbmapi.so.6.13.4
linux:/driver/FwUpp/Linux/x86 # ls
bmapilnx-6.13.4-1.1386.rpm  libbmapi.so.6.13.4  lnxfwvx2-i386.sdk.tgz
bmapilnx-6.13.4.sdk.tgz  libtcl8.3.so       Readme.txt
brcm_pci.ids             libtclstub8.3.a   Release.txt
include                  lnxfwvx2
linux:/driver/FwUpp/Linux/x86 # ln -sf libbmapi.so.6.13.4 libbmapi.so.6
linux:/driver/FwUpp/Linux/x86 # cp brcm_pci.ids /usr/share

```

6. Key in the command `dir` . Check the version number in entry **MFW1/2**.

```

Terminal
File Edit View Terminal Help
linux:/driver/x86 # ./lnxfwx2

*****
Broadcom NetXtremeII Firmware Upgrade Utility for Linux v2.3.13
*****

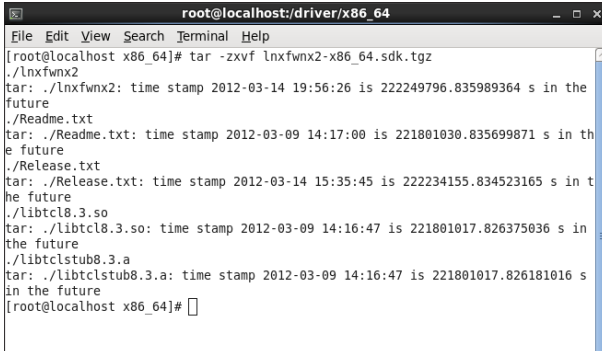
C Brd      MAC          Drv          Name
-----
0 1662 C860002286C7 Yes NetXtreme II BCM57712 10Gigabit PCIe rev 01 (eth1)
1 1662 C860002286C9 Yes NetXtreme II BCM57712 10Gigabit PCIe rev 01 (eth2)
0:> █

Terminal
File Edit View Terminal Help
0 1662 C860002286C7 Yes NetXtreme II BCM57712 10Gigabit PCIe rev 01 (eth1)
1 1662 C860002286C9 Yes NetXtreme II BCM57712 10Gigabit PCIe rev 01 (eth2)
0:> dir
dir
-----
Image      SRAM Addr  NVM Offset  Byte Cnt  CPU          Version
-----
MBA        0x00000000 0x00064014 0x0001AE28  HOST       PCI30 MBA 7.2.29
L2T        0x001C0000 0x00016F00 0x000021A4  TSTORM    L2T 6.0.0
L2C        0x00240000 0x000190A4 0x00000964  CSTORM    L2C 6.0.0
L2X        0x002C0000 0x00019A08 0x00002444  XSTORM    L2X 6.0.0
L2U        0x00340000 0x0001BE4C 0x00001974  USTORM    L2U 6.0.0
I SCSI_B   0x08000010 0x00000C28 0x0000EFEC  HOST       ipv4_ipv6 v6.2.4
I_B_CFG0   0x08000010 0x0000FC14 0x00000800  HOST       v2.0
I_B_CFG2   0x08000010 0x00010414 0x00000800  HOST       v2.0
I_B_CPRG   0x08000010 0x00010C14 0x000062EC  HOST       v6.2.1
MFW1       0x08000040 0x0001D7C0 0x00006B6C  MCP        MFW1 7.2.23
MFW2       0x0800BE00 0x0002432C 0x0001044C  MCP        MFW2 7.2.23
SWIM1      0x08000040 0x000347D8 0x0000B7D0  MCP        SWIM1 7.2.23
SWIM2      0x08000040 0x0003FFAB 0x0000B91C  MCP        SWIM2 7.2.23
SWIM3      0x08000040 0x00048BD0 0x0000B094  MCP        SWIM3 7.2.23
SWIM4      0x08000040 0x00053C64 0x00007300  MCP        SWIM4 7.2.23
SWIM5      0x08000040 0x0005AF64 0x00007B0C  MCP        SWIM5 7.2.23
SWIM6      0x08000040 0x00062A70 0x000015A4  MCP        SWIM6 7.2.23
0:> █

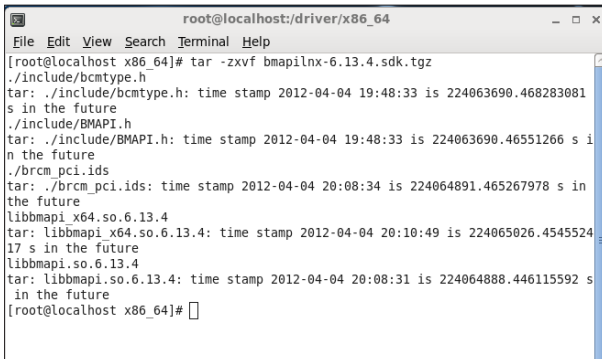
```

For Red Hat Linux:


1. Repeat the steps and commands for SUSE Linux in installing **lnxfwnx2**. Follow the **Readme.txt** and ensure that the drivers are installed.



```
root@localhost:driver/x86_64
[root@localhost x86_64]# tar -zxvf lnxfwnx2-x86_64.sdk.tgz
./lnxfwnx2
tar: ./lnxfwnx2: time stamp 2012-03-14 19:56:26 is 222249796.835989364 s in the future
./Readme.txt
tar: ./Readme.txt: time stamp 2012-03-09 14:17:00 is 221801030.835699871 s in the future
./Release.txt
tar: ./Release.txt: time stamp 2012-03-14 15:35:45 is 222234155.834523165 s in the future
./libtcl8.3.so
tar: ./libtcl8.3.so: time stamp 2012-03-09 14:16:47 is 221801017.826375036 s in the future
./libtclstub8.3.a
tar: ./libtclstub8.3.a: time stamp 2012-03-09 14:16:47 is 221801017.826181016 s in the future
[root@localhost x86_64]#
```



```
root@localhost:driver/x86_64
[root@localhost x86_64]# tar -zxvf bmapilnx-6.13.4.sdk.tgz
./include/bcmtypes.h
tar: ./include/bcmtypes.h: time stamp 2012-04-04 19:48:33 is 224063690.468283081 s in the future
./include/BMAPI.h
tar: ./include/BMAPI.h: time stamp 2012-04-04 19:48:33 is 224063690.46551266 s in the future
./brcm_pci.ids
tar: ./brcm_pci.ids: time stamp 2012-04-04 20:08:34 is 224064891.465267978 s in the future
libbmap_i_x64.so.6.13.4
tar: libbmap_i_x64.so.6.13.4: time stamp 2012-04-04 20:10:49 is 224065026.454552417 s in the future
libbmap_i.so.6.13.4
tar: libbmap_i.so.6.13.4: time stamp 2012-04-04 20:08:31 is 224064888.446115592 s in the future
[root@localhost x86_64]#
```



```
root@localhost:driver/x86_64
[root@localhost x86_64]# ln -sf libbmap_i_x64.so.6.13.4 libbmap_i_x64.so.6
```

```

root@localhost:driver/x86_64
File Edit View Search Terminal Help
[root@localhost x86_64]# ln -sf libbmap_i_x64.so.6.13.4 libbmap_i_x64.so.6
[root@localhost x86_64]# cp brcm_pci.ids /usr/share
[root@localhost x86_64]#

```

2. Key in the command `dir`. Check the version number in entry **MFW1/2**.

```

root@localhost:driver/x86_64
File Edit View Search Terminal Help
[root@localhost x86_64]# ln -sf libbmap_i_x64.so.6.13.4 libbmap_i_x64.so.6
[root@localhost x86_64]# cp brcm_pci.ids /usr/share
[root@localhost x86_64]# ./lnxfwnx2

*****
Broadcom NetXtremeII Firmware Upgrade Utility for Linux v2.3.13
*****

C Brd      MAC      Drv      Name
-----
0 1662 C860002286C7 Yes NetXtreme II BCM57712 10Gigabit PCIe rev 01 (eth4)
1 1662 C860002286C9 Yes NetXtreme II BCM57712 10Gigabit PCIe rev 01 (eth5)
0:>

```

```

root@localhost:driver/FwUpg/Linux/x86_64
File Edit View Search Terminal Help
0 1662 C860002286C7 Yes NetXtreme II BCM57712 10Gigabit PCIe rev 01 (eth0)
1 1662 C860002286C9 Yes NetXtreme II BCM57712 10Gigabit PCIe rev 01 (eth1)
0:> dir
dir
-----
Image      SRAM Addr  NVM Offset  Byte Cnt  CPU      Version
-----
MBA        0x00000000 0x00064014 0x0001AE28 HOST     PCI30 MBA 7.2.29
L2T        0x001C0000 0x00016F00 0x000021A4 TSTORM   L2T 6.0.0
L2C        0x00240000 0x000190A4 0x00009954 CSTOREM  L2C 6.0.0
L2X        0x002C0000 0x00019A08 0x00002444 XSTOREM  L2X 6.0.0
L2U        0x00340000 0x0001BE4C 0x00001974 USTOREM  L2U 6.0.0
ISCSI_B   0x00000010 0x00000C28 0x0000EFEC HOST     ipv4_ipv6 v6.2.4
I_B_CFG   0x00000010 0x0000FC14 0x00000000 HOST     v2.0
I_B_CFG2  0x00000010 0x00010414 0x00000000 HOST     v2.0
I_B_CPRG  0x00000010 0x00010C14 0x0000062EC HOST     v6.2.1
MFW1      0x00000040 0x0001D7C0 0x00006B6C MCP      MFW1 7.2.23
MFW2      0x0000BE00 0x0002432C 0x000104AC MCP      MFW2 7.2.23
SWIM1     0x00000040 0x000347D8 0x000007D0 MCP      SWIM1 7.2.23
SWIM2     0x00000040 0x0003FFA8 0x00000891C MCP      SWIM2 7.2.23
SWIM3     0x00000040 0x00048BD0 0x000008094 MCP      SWIM3 7.2.23
SWIM4     0x00000040 0x00053C64 0x000007300 MCP      SWIM4 7.2.23
SWIM5     0x00000040 0x0005AF64 0x000007B0C MCP      SWIM5 7.2.23
SWIM6     0x00000040 0x00062A70 0x000015A4 MCP      SWIM6 7.2.23
0:>

```

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Online support <http://support.asus.com/techserv/techserv.aspx>

* EUR 0.14/minute from a German fixed landline; EUR 0.42/minute from a mobile phone.

DECLARATION OF CONFORMITY

Per FCC Part 2, Section 2, 1.077(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 : LAN Card

Model Number : PEB-10G/SFP+/SINGLE, PEB-10G/SFP+/DUAL

Conforms to the following specifications:

- FCC Part 15, Subpart B, Unintentional Radiators
- FCC Part 15, Subpart C, Intentional Radiators
- FCC Part 15, Subpart E, Intentional 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 : Apr. 12, 2012

Ver. 110101

EC Declaration of Conformity



We, the undersigned,

Manufacturer: **ASUSTek COMPUTER INC.**
Address, City: **No. 150, LI-TE RD., PEITOU, TAIPEI 112, TAIWAN R.O.C.**
Country: **TAIWAN**
Authorized representative in Europe: **ASUS COMPUTER GmbH**
Address, City: **HARKORT STR. 21-23, 40880 RATINGEN**
Country: **GERMANY**

declare the following apparatus:

Product name : **LAN Card**
Model name : **PEB-10G/SFP+/SINGLE, PEB-10G/SFP+/DUAL**

conform with the essential requirements of the following directives:

- 2004/108/EC-EMC Directive**
- EN 55022:2010
- EN 61000-3-2:2006+A1:2009+A2:2009
- EN 61000-3-3:2008
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CE marking

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