

Release Notes
For
NSC DP83820 Gigabit Ethernet Adapters
On FreeBSD

Document Ref. No.: NSC_GIGA_1.0_FreeBSD _RN_1.0

Revision History

Version	Date
1.0	07/25/01

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1.0 Introduction

This document presents release notes for National Semiconductor's DP83820 Gigabit Ethernet network adapter card, on FreeBSD 4.3 OS.

1.1 Objective

The objective of this document is to describe the following:

- Installing the dp83820 network device driver in FreeBSD 4.3.
- Building the dp83820 network device driver in FreeBSD 4.3.
- Configuring IP address.

1.2 References

- FreeBSD 4.3 man pages.
- Comprehensive Design Description for Driver for NSC DP83820 gigabit Ethernet adapters On FreeBSD. Document Ref. No.: NSC_GIGA_1.0_FreeBSD_DD_1.0
- TCP/IP Illustrated vol2. Authors – Gary R. Wright, W. Richard Stevens
Publishers – Addison-Wesley.

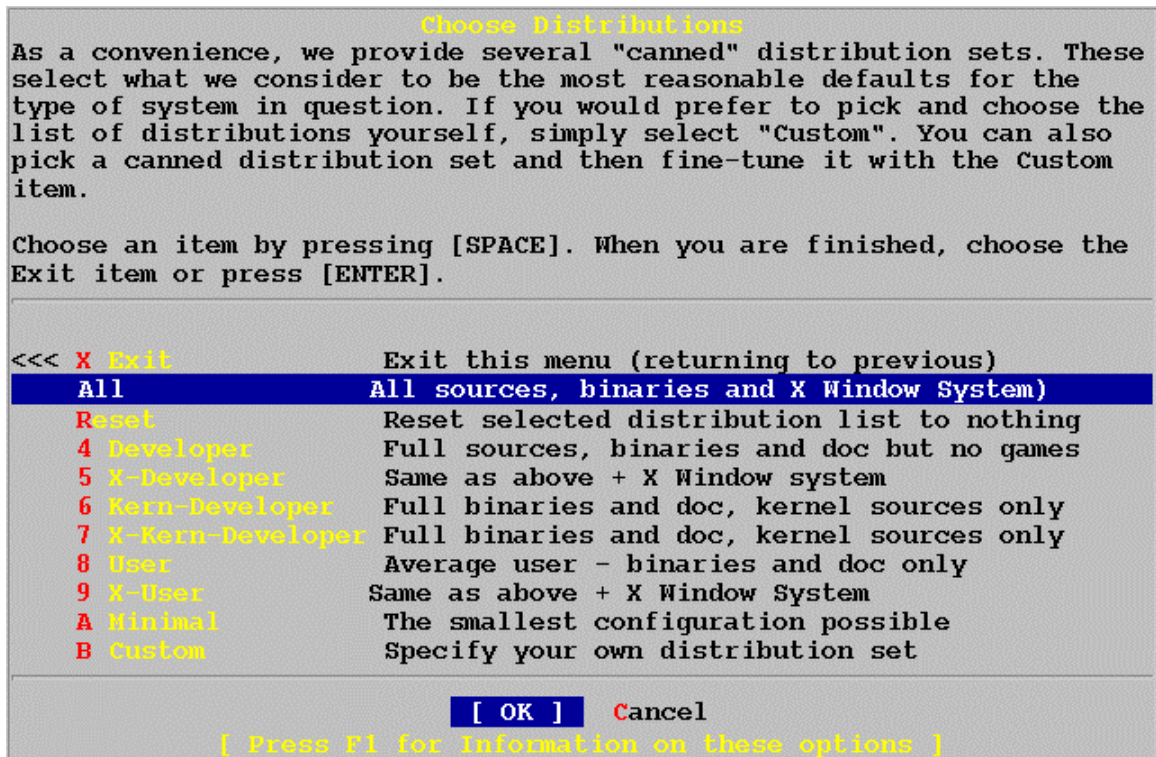
2.0 Software Requirement

OS Version: FreeBSD 4.3

In order to build the driver, the following options has to be selected during the FreeBSD 4.3 OS installation:

- Option 4
- Option 5
- Option 8

The FreeBSD OS installation screen snapshot showed in the following figure:



3.0 Installing the driver

3.1 Method 1

The installation procedure described here will automatically load the driver during every system start up.

Step 1: Login as root

Step 2: untar dp83820.tar.
 #tar -xvf dp83820.tar

Step 3: Go to dp83820 directory.

Step 4: If user wants to re-build the driver, refer **building the driver section**.
 Otherwise use the existing dp83820.ko

Step 5: copy the dp83820.ko to /modules

Step 6: open /boot/loader.conf

Step 7: At the end of the file, add the following line (It is case sensitive):

```
#dp83820_load="YES"
```

Step 8: reboot the system

3.2 Method 2

The driver loaded using this installation procedure will not be available after system re-boots.

Step 1: Login as root

Step 2: untar dp83820.tar.
 #tar -xvf dp83820.tar

Step 3: Go to dp83820 directory.

Step 4: If user wants to re-build the driver, refer **building the driver section**.
 Otherwise use the existing dp83820.ko

Step 5: Load the driver using the following command:

```
#kldload ./dp83820.ko
```

4.0 Building the driver

Step 1: Login as root

Step 2: untar dp83820.tar.
#tar -xvf dp83820.tar

Step 3: Go to dp83820 directory.

Step 4: Execute the following:

```
#make clean  
#make
```

5.0 Building the driver with the debug messages

Step 1: Login as root

Step 2 : untar dp83820.tar.
#tar -xvf dp83820.tar

Step 3: Go to dp83820 directory.

Step 4: Open makefile, in CFLAGS we include two extra flags
They are NSMDEBUG and NSCDEBUG.
#CFLAGS = -D_DP83820_ -g -DNSMDEBUG -DNSCDEBUG

Step 5: Execute the following:

```
#make clean  
#make
```

6.0 IP address for the interface

6.1 Method 1

If you want to configure the IP address permanently, follow this method.

Step 1: login as root

Step 2: Make sure dp83820 driver is loaded. Verify using kldstat.

Step 3: Open /etc/rc.conf

Step 4: Add the following line at the end of the rc.conf file.
Ifconfig_<interface_name>="inet <ip address> netmask 255.255.255.0"

Step 5: Execute the following commands:
?? shutdown now

- init 2

6.2 Method 2

The IP address configured using this method will be effective till system gets reboot. After reboot the IP address configured during previous boot will not be available.

Step 1: login as root

Step 2: Make sure dp83820 driver is loaded. Verify using kldstat.

Step 3: Execute the following command:

```
#ifconfig <interface_name> <ip_address>
```

7.0 Limitations

The Alpha release of DP83820 driver does not support the following features:

- Checksum Off-loading.
- Setting the following User configurable parameters:
 - Transmit buffer count
 - Receive buffer count
 - Max packet size
- Power Management.
- VLAN
- TBI card