DP83820 GigMAC SOLARIS Release Notes

Version 1.7, Release 1.6a

9/18/2002

Read This Document Before Attempting To Install Or Use This Product!

This document contains information about factors that must be considered before, during, and after installation.

General Notice:

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Table of Contents

National Semiconductor DP83820 Gigabit Ethernet Adapter

1.0 Introduction

This document presents information to users about National Semiconductor's DP83820 Gigabit Ethernet adapter and the relevant SOLARIS software driver version 1.7 for SOLARIS operating system.

2.0 Product Overview

The DP83820 is a PCI Gigabit Ethernet adapter from National Semiconductor that supports a 33/66MHz, 32/64 bit PCI 2.1/2.2 bus interface. It complies with the emerging 1000 Mbps Ethernet 802.3z specification and supports full duplex operation.

Other features include:

Sl. No.	Advanced Features	Current Status	Remarks
1	Check Sum offload send side	Not Supported	No OS support
2	Check sum offload receive side	Not Supported	No OS support
4	Priority Queues	Not Supported	No OS support
5	Load Balancing	Not Supported	Link Aggregation not implemented.
6	Failover	Not Supported	Link Aggregation not implemented.
7	Multiple VLAN	Not Supported	To be implemented.
8	Receive Packet Spanning multiple buffers	Supported	This needs to be tested with Jumbo frames.
9	Scatter gather DMA support	Supported	Implemented and tested
10	Multiple NIC support	Supported	Implemented and tested
11	Multiprocessor support	Supported	Implemented and tested

12	TBI card support	Supported	Implemented and tested
13	Power Management	Not Supported	To be implemented.
14	Statistics	Not Supported	To be implemented.
15	Hot pluggability	Not Supported	To be implemented
16	Jumbo Frame	Not Supported	GLD MAX packet size is 1500 as per documentation. Need to explore more on this.
17	Flow Control (Pause Frames)	Not Supported	To be implemented
18	Single VLAN	Not Supported	To be implemented

3.0 Installation

3.1 Release Media

The release media consists of the National Semiconductor's DP83820 GigMAC SOLARIS driver available on disk, on the National Semiconductor website.

3.2 Installation Procedure

This section describes the installation of the adapter and the driver software for making the adapter functional on LINUX platforms.

3.2.1 Hardware Installation

This section describes the installation of the GigMAC demo card into a personal computer (PC). To install the card, you need:

- GigMAC demo card
- PC with an available PCI slot
- Screwdriver to open the PC and secure the GigMAC demo card
- Category 5 twisted-pair RJ-45 cable
- Wrist strap
- Blank, formatted floppy disk

Installing the card consists of one optional and three required stages: Copying the Driver to a Floppy Disk (optional), Inserting the Card, Connecting the Network, and Installing the Driver. If the PC into which you are installing the GigMAC demo card is equipped with a CD-ROM, you may skip the first stage and begin with stage II.

Inserting the Card

The second stage in the installation sequence is inserting the card into the PC. For this stage you will need the GigMAC demo card and the screwdriver. Unplug the PC before opening it to avoid electrocution. Be sure to ground yourself before handling the GigMAC card to avoid ElectroStatic Discharge (ESD) damage to the card.

1. Shutdown the PC, and disconnect the power cord.

2. Open the chassis of the PC.

3. Choose an unused PCI slot and remove its metal bracket by loosening the screw on the inside. You will no longer need this metal bracket as the GigMAC demo card has its own. You will need the screw, however.

4. Remove the GigMAC demo card from the ESD-safe packaging. *Warning: Static charge from your body can permanently damage the GigMAC demo card. Do not handle the card without first electrically grounding yourself via wrist strap or by touching a large piece of metal.*

5. Insert the GigMAC demo card into the empty PCI slot in the PC. Orient the card so that the RJ-45 connector points out of the computer.
Warning: The card may fit backwards (with the RJ-45 pointing in) into the PCI slot. Starting the computer with the card inserted backwards may damage the card and/or the PC.

6. When you are certain the card is oriented correctly, press firmly on the card to ensure that it is completely seated in the PCI slot. Secure the GigMAC demo card using the screw from step 3.

7. Close the computer, and reconnect the power cord.

Connecting the Network

The third stage in the installation sequence is connecting the GigMAC demo card to the network. In this stage, you will need only the twisted-pair Category 5 network cable.
After you have inserted the card and closed the PC, connect one end of the twisted-pair cable to the RJ-45 connector on the GigMAC demo card, and the other end to another PC or a network hub or switch.
When connecting the card to another PC, the cable will need to be *crossover*, meaning that pins 1 and 2 must be swapped with pins 3 and 6, respectively, between the two ends of the cable. A crossover cable should not be used when connecting the GigMAC demo card to a network hub or switch.
The next time you turn on the PC, one of the two green link lights on the GigMAC demo card should become illuminated almost immediately. This signifies that the card has established link with the device at the other end of the cable and is ready to send and receive

data.

3.2.2 Software Installation and Configuration

Software Requirements :

1. Solaris OS version 5.7 for Intel
2. Sun Workshop compiler 5.0 for Intel

1. Copy the compressed archive to the build directory
   #cp sol.tar.Z /export/home/build

2. Uncompress tar archive.
   #cd /export/home/build
   #uncompress sol.tar.Z

3. Unarchive the tar file.
   #cd /export/home/build
   #tar -xvf sol.tar

4. Build the driver files

   Refer to README file under /export/home/build/sol directory

5. Copy the driver file and configuration file to the sol/pkg directory.

   #cp dp dp.conf /export/home/build/sol/pkg

6. Change the owner and group id of pkg directory and all the files in it as below.

   #cd /export/home/build/sol
   #chown root pkg
   #chgrp sys pkg

   #cd /export/home/build/sol/pkg
   #chown root *
   #chgrp sys *

7. Execute the following command to build the package dp83820.

   #cd /export/home/build/sol/pkg
   #./buildpkg /export/home/build/sol/pkg

This creates the dp83820 package under /export/home/build/sol/pkg directory.

Installing the package.
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1. Execute the following command to add the dp83820 package to the system.

    #pkgadd -d /export/home/build/sol/pkg dp83820

Configuring the adapter.

Following are the steps for configuring the adapter.

1. Edit /etc/hostname.<interface>
   (And enter only the Machine name in /etc/hostname.<interface>,
    Machine name is got by typing "uname -a" at the prompt)

2. Edit /etc/hosts (Enter the <IP Address> <Machine name>)

3. Edit /etc/netmasks (Enter the <network-number> <netmask>)

4. Execute the following command to configure the adapter after adding
   the package.

    #/opt/dp83820/configure_adapter dp0 <IP Address>

UnInstalling the package.
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1. Execute the following command to unconfigure the adapter.

    #/opt/dp83820/unconfigure_adapter dp0

2. Execute the following command to uninstall the package and the driver from the system.

    #pkgrm dp83820

3.2.3 Installation Troubleshooting

3.2.4 Disk Space Requirements

3.2.5 Errata

This section describes the features and issues to be provided upon final release of the driver.

If any messages beginning with "ASSERTION FAILED" are seen, it is an erroneous behavior.

4.0 Product Documentation

This release notes document, *National Semiconductor Corp DP83820 Gigabit Ethernet Adapter Driver Release Notes*, provides detailed information about installing the National Semiconductor Corp DP83820 Gigabit Ethernet Adapter and Driver software.

5.0 Problem Reporting

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