



DP83820 GigMAC Win2K Server Driver Release Notes

Revision 5.0.3.32

10/10/2001

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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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 Server driver, version 5.0.3.32 for MS Windows 2000 operating system.

2.0 Product Overview

Load Balancing:

Load balancing feature increases the bandwidth by sharing the load equally across aggregated ports. Multiple ports with the same physical capabilities can be grouped to form an aggregation.

Fail Over/Fault Tolerance:

Fail Over feature provides the fault tolerance on the aggregation.

If any aggregated port fails, the load on that port is distributed to the other member ports of the aggregation. If the failed port comes up again, load is redistributed across all active ports.

For a more thorough tutorial On IEEE 802.3ad see the following IEEE website:

http://grouper.ieee.org/groups/802/3/trunk_study/tutorial/index.html

3.0 Installation

3.1 Release Media

The release media consists of the National Semiconductor's DP83820 GigMAC server driver available on CDROM and the National Semiconductor website..

3.2 Installation Procedure

This section describes the installation of the driver software for making the adapters functional on the Windows 2000 platform.

3.2.1 Hardware Installation

Please refer to the release notes of the DP83820 NDIS5 driver for details on installing the NIC cards in Windows 2000 operating system.

Also requires a load-balancing enabled switch.

Switch Configuration:

Configure the load-balancing enabled switch for Aggregation. (Refer to switch manual).

3.2.2 Software Installation and Configuration

A. Software Installation:

a) Again refer to the release notes of the DP83820 NDIS5 driver for details on installing the NIC card drivers in Windows 2000 operating system.

b) After the drivers are installed for all your NIC cards, the link aggregation configuration utility will be placed onto your 'Control Panel.'

B. System Configuration: This step is not required for systems with only one card or systems where Link Aggregation is not desired. Locate the Link Aggregation utility in the Control Panel and double click. For each aggregation, there is one Master Port/Aggregator Port. From the 'PORTS' scroll down button select a port for your master port. Click on 'Configure Port', then check box 'Aggregation', then check box 'Master Port.' Click OK. Now select additional ports you wish to configure. Click on 'Configure Port' and check box 'Aggregation' and select the 'Aggregation ID' from the Master Port. Continue in this fashion until you have added all the ports to participate in the aggregation (up to 8). Click on 'Exit.' Finally, you'll need to unbind TCP/IP protocol from all but the Master Port. Then restart your system.

3.2.3 Installation Troubleshooting

Please refer to the release notes of the DP83820 NDIS5 driver for details on troubleshooting the NIC cards and drivers.

3.2.4 Disk Space Requirements

350 KB of disk space is required for driver installation.

3.2.5 Errata

This section describes the testing performed on the current driver.

The current driver has been tested with 4 dp83820-based cards in aggregation and in single and multiprocessor systems. The driver has also passed NDISTEST using one card as a single aggregation. The driver has been tested for all parameter settings and has run continual copy/compare and netperf tests in excess of 24 hrs.

Throughput And Performance:

Currently enhances performance for 100Mb media, but degrades at Gigabit speeds. It has been determined that this an OS issue.

3.2.6 Advanced Features

This section describes advanced features provided in this release of the driver.

Wake on LAN / Power Management Support

The DP83820 chip does support power management, the current release of this driver supports only standby Wake On LAN as specified in the Windows 2000 DDK. The ability to turn this on and off will be added to the next revision of the driver.

TCP/IP Checksum Offload and Jumbo Frames Support

The current release of this driver supports both transmit, receive checksum offload and jumbo frames as specified in the Windows 2000 DDK. Optimum performance is achieved by enabling these features.

Pause Frames Support

The current release of this driver supports pause frames, a hardware based flow control mechanism for Ethernet, fast Ethernet and Gigabit networks. By default the driver will advertise this capability upon auto-negotiation with the switch.

IEEE Compliance Support

A number of older Gigabit switches and hubs have been found to be using non-IEEE compliant PHY's, physical layer devices. In order to enable the NIC card to be compatible with these older devices, the advanced properties of the NIC card features a parameter to enable compatibility with these non-compliant devices.

VLAN (802.1Q) & QoS (802.1P) Support

Support for VLAN and QoS has been implemented in the driver.

4.0 Product Documentation

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

5.0 Problem Reporting

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