

HP Accelerated iSCSI for Multifunction Network Adapters User Guide



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Audience assumptions

This document is for the person who installs, administers, and troubleshoots servers and storage systems. HP assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

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Overview

iSCSI protocol

The HP iSCSI protocol transports block-level storage requests over TCP connections. Using the iSCSI protocol, systems can connect to remote storage and use it as a physical disk although the remote storage provider or target may actually be providing virtual physical disks. HP Accelerated iSCSI supports all targets that are certified and supported by Microsoft iSCSI Software Initiator.

HP Multifunction Server Adapters can be enabled as iSCSI devices or virtual iSCSI host bus adapters (HBAs). iSCSI HBAs provide the capability to run iSCSI protocol over offloaded TCP connections. By offloading the TCP connection processing to an HP Multifunction Server Adapter, CPU utilization is reduced allowing additional processing capacity for applications.

HP Accelerated iSCSI capability

The HP Accelerated iSCSI capability is available as a standard feature with standup and mezzanine HP Multifunction Server Adapters and HP Multifunction Server Adapters for HP BladeSystem servers. It is available as a licensable option, through the purchase of an HP ProLiant Accelerated iSCSI license, for embedded HP Multifunction Server Adapters.

iSCSI supported operating systems

iSCSI capabilities are available on the following operating systems:

- Windows Server 2008
- Windows Server 2008 x64
- Windows Server 2003
- Windows Server 2003 x64

To enable iSCSI on adapters running Windows Server 2003 and Windows Server 2003 x64 systems, the Microsoft® iSCSI Software Initiator version 2.0 or later software must be installed. This software is required to configure the iSCSI protocol, including discovery portals, iSCSI targets, authentication, and so on.

To enable iSCSI on adapters running on Windows Server 2003 (SP1) and Windows Server 2003 x64 (SP1), an updated Storport storage driver from article number KB932755 must be downloaded from the Microsoft (<http://www.microsoft.com>) website.

Supported iSCSI targets

HP Accelerated iSCSI supports all targets that are certified and supported by Microsoft iSCSI Software Initiator.

Download latest drivers, firmware, and documentation

HP updates networking software frequently to include new functionality and features. For the latest driver, firmware, and documentation updates go to the HP website (<http://h18004.www1.hp.com/products/servers/networking/index.html>).

Configuring an iSCSI device

iSCSI configuration through the NCU

Complete the steps in the following sections to enable and configure an iSCSI device or to view iSCSI information through the NCU.

Install the Network Configuration Utility software

If you do not have HP NCU software installed on your server, complete the following steps to install the NCU for Windows operating systems:

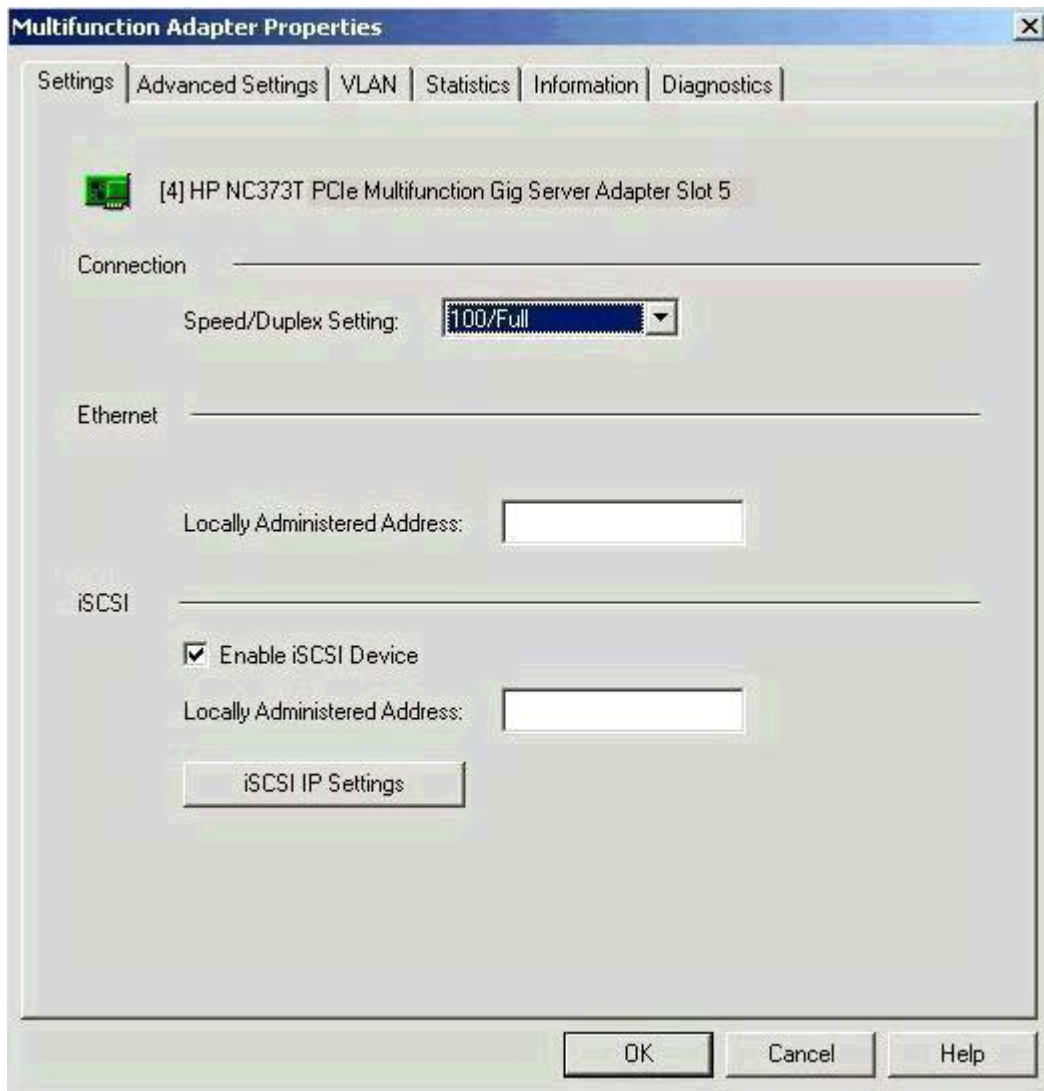
1. Go to the HP website (<http://www.hp.com>).
2. Click **Software & Driver Downloads** from the left menu bar.
3. Type the product name in the **For product** box and press **Enter**. For example, type NC373T.
4. Select an operating system.
5. Click **HP Network Configuration Utility**.
6. Click **download** and save the HP SoftPaq (sp#####.exe) file to a directory on your hard drive. The SoftPaq file is a self-extracting executable with a file name based on the SoftPaq number.
7. Click the SoftPaq file to extract the files and then open the **component.htm** file.

iSCSI Settings tab

To enable iSCSI:

1. Select an **HP Multifunction Adapter** in the NCU Main window and click **Properties** to display the Multifunction Adapter Properties Settings tab. Alternatively, hold down the **Alt** key and enter **p** to display the Settings tab.

2. Select **Enable iSCSI Device** to enable iSCSI on the multifunction adapter. iSCSI cannot be enabled on the device if the adapter is in an Automatic, 802.3ad Dynamic with Fault Tolerance, or Switch-Assisted Load Balancing with Fault Tolerance (SLB) team.



3. (Optional steps). Type a user-defined MAC address for the iSCSI device in the **Locally Administered Address** box. The default MAC address is used if an address is not entered.

4. Click **iSCSI IP Settings**. The iSCSI IP Settings window appears so that you can specify how the IP Address is obtained.

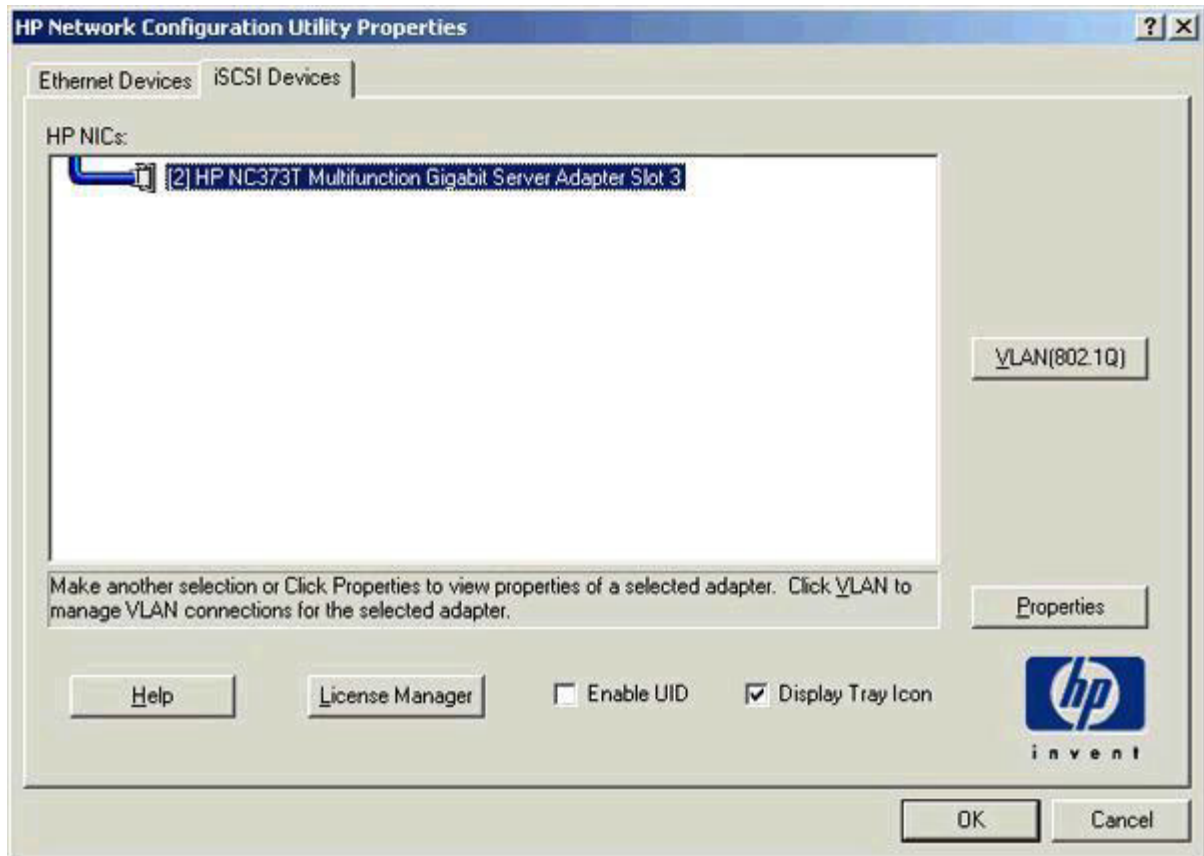


5. On the iSCSI IP Settings window, select one of the following:
 - a. **Obtain an IP Address automatically**. This is the default. If this option is selected, DHCP is used to acquire an IP configuration for the iSCSI device.
 - b. **Use the following IP address**. This option allows you to specify the IP configuration for the iSCSI device. The IP address **MUST** be different from IP addresses that are assigned to other iSCSI devices and Ethernet adapters.
 - IP Address. Enter the IPv4 address (dotted decimal).
 - Subnet Mask. Enter the network subnet mask (dotted decimal).
 - Default Gateway. Enter the default route.
6. Click **OK** to save all changes and return to the Multifunction Adapter Properties Settings tab.

After a Multifunction Server Adapter is enabled as an iSCSI device, it becomes a virtual iSCSI HBA. These devices are displayed on the iSCSI Devices tab on the NCU Main window.

iSCSI Devices tab

The iSCSI Devices tab lists all HP ProLiant Gigabit Ethernet Multifunction server adapters that are iSCSI enabled. A sample iSCSI Devices tab for Windows Server 2003 is shown below.



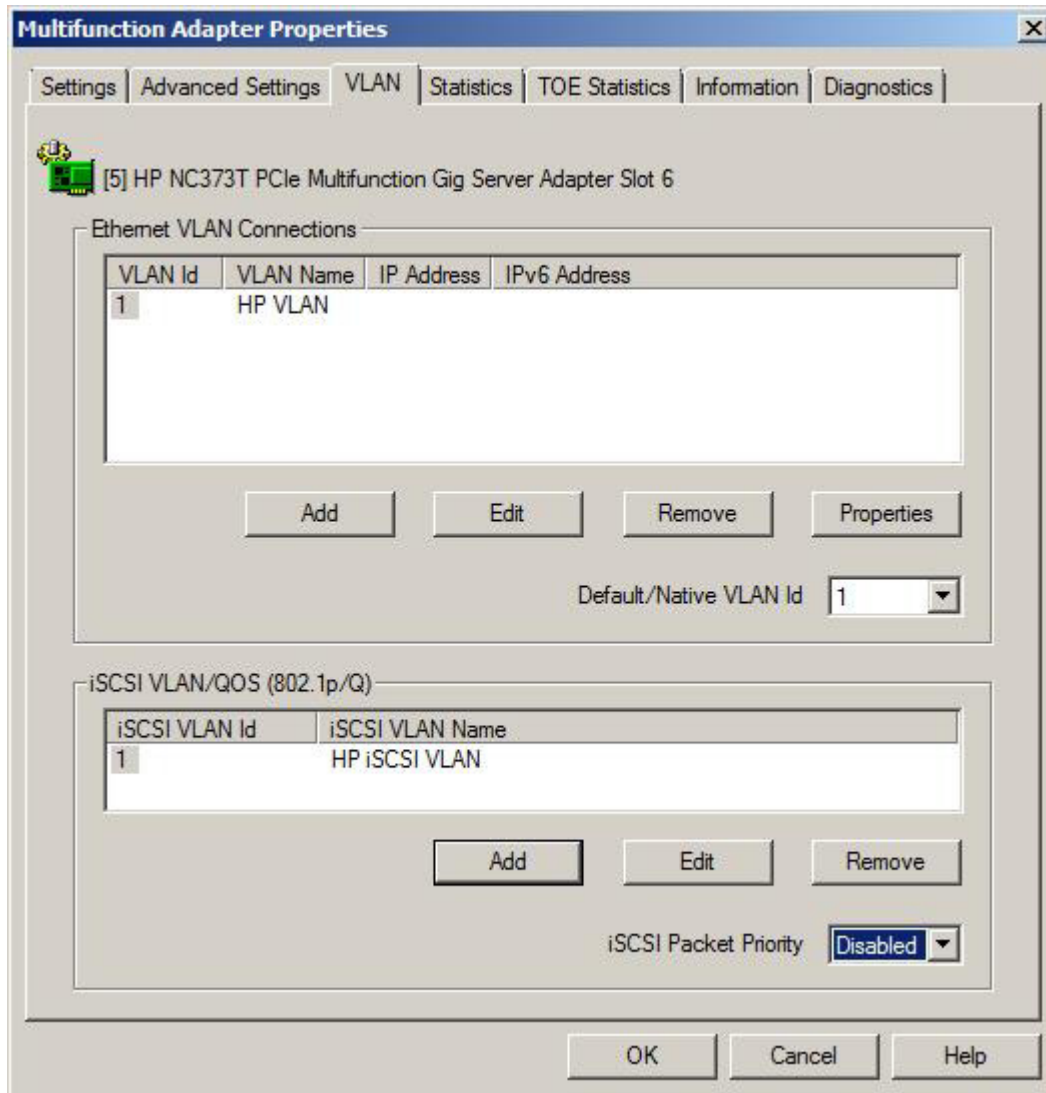
If you upgrade the Network Configuration Utility (NCU) to version 8.20 or later, the following team types are converted to the Transmit Load Balancing (TLB) team type if they include an iSCSI-enabled adapter.

- Automatic
- 802.3ad Dynamic with Fault Tolerance
- Switch-assisted Load Balancing with Fault Tolerance (SLB)

iSCSI VLAN tab

To create an iSCSI VLAN device for an iSCSI-enabled adapter:

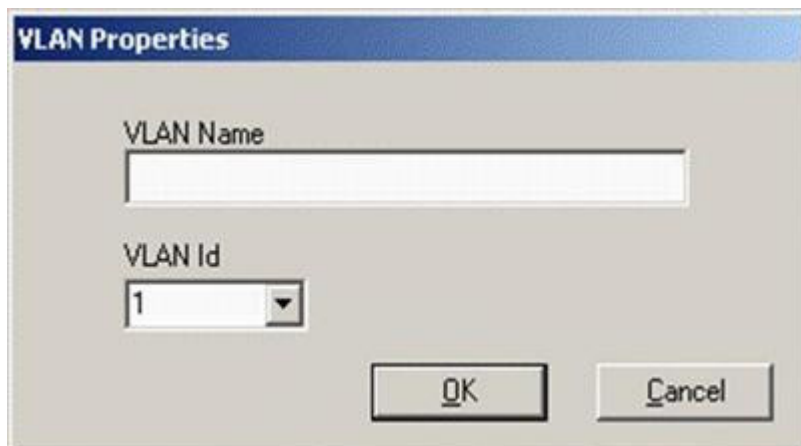
1. Select an HP Multifunction Adapter in the NCU Main window or the iSCSI Devices tab and click **VLAN (802.1Q)** to display the VLAN tab. Alternatively, hold down the **Alt** key and enter **v** to display the VLAN tab.



The iSCSI VLAN/QOS (802.1p/Q) window displays the following information:

- o **iSCSI VLAN Id.** Shows the identifier value used for the iSCSI VLAN device.
- o **iSCSI VLAN Name.** Shows the descriptive name for the VLAN ID.

2. To create an iSCSI VLAN, click **Add** to open the VLAN Properties dialog box. Only one VLAN can be created per iSCSI device.



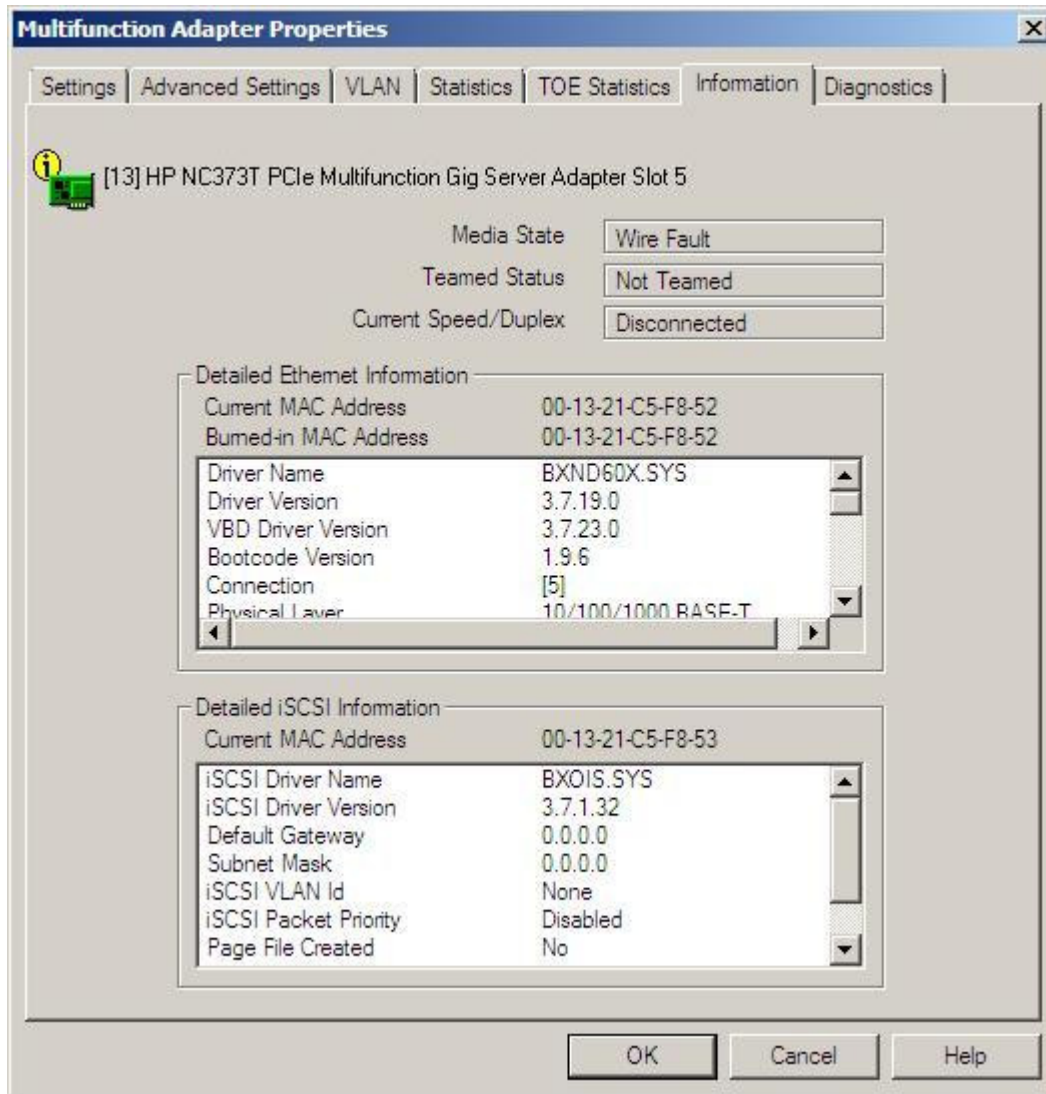
- a. In the VLAN Name box, type a descriptive name.
 - b. Click **VLAN Id** and select an identifier value.
 - c. Click **OK**.
3. To modify an existing iSCSI VLAN, select the **VLAN Id** or **Name** and click **Edit** to open the VLAN Properties dialog box.
 4. To delete an existing iSCSI VLAN, select the **VLAN Id** or **Name** and click **Remove**.
 5. Click **OK** to save all changes.

iSCSI Information tab

To view detailed iSCSI information:

1. Select an **HP Multifunction Adapter** in the NCU Main window and click **Properties** to display the Multifunction Adapter Properties Settings tab. Alternatively, hold down the **Alt** key and enter **p** to display the Settings tab.

2. Select the **Information** tab to display the Multifunction Adapter Properties Information window.



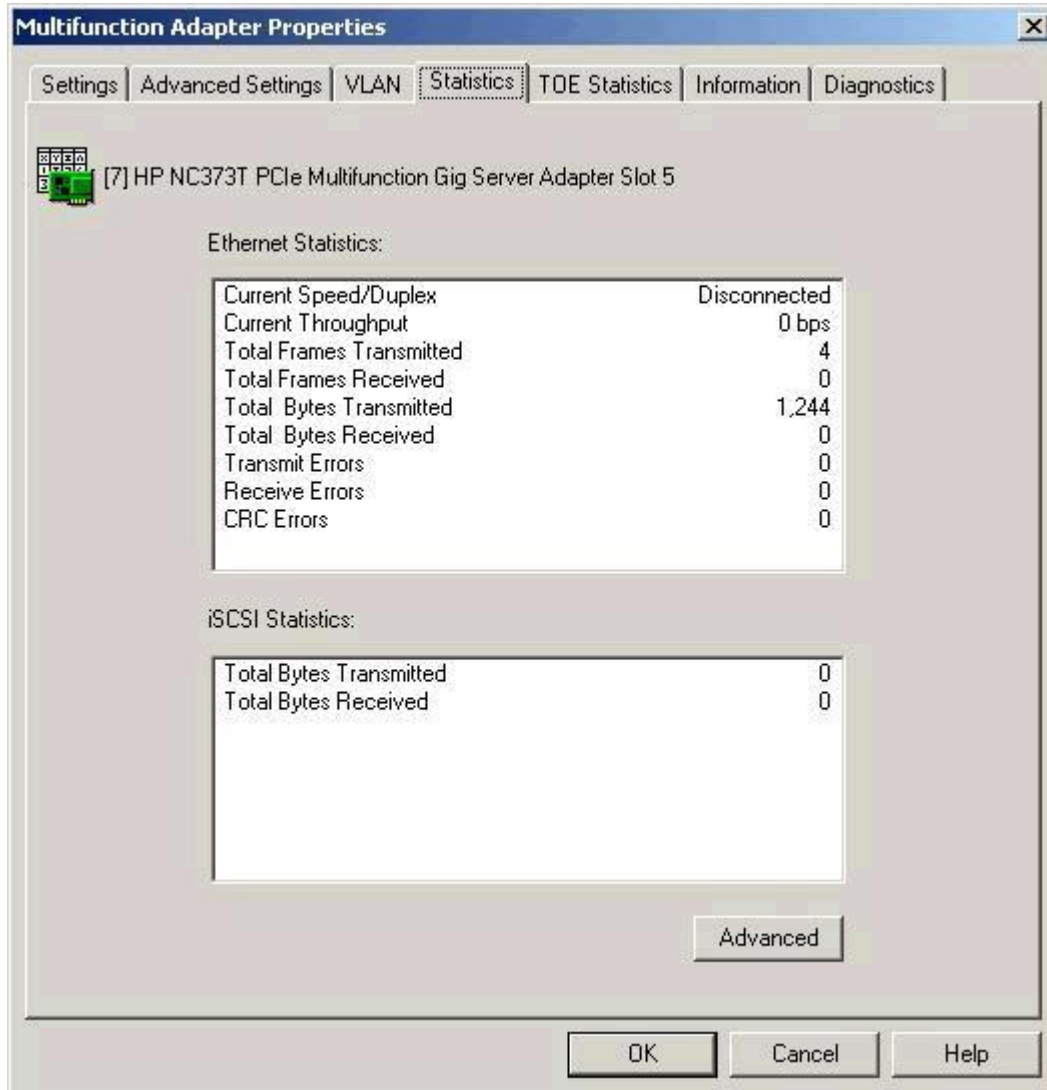
The Detailed iSCSI Information window displays the following:

- **Current MAC Address.** The current MAC address for the iSCSI device.
- **iSCSI Driver Name.** The name of the driver for the iSCSI device.
- **iSCSI Driver Version.** The version of the driver for the iSCSI device.
- **Default Gateway.** The default route for the iSCSI device.
- **Subnet Mask.** The subnet mask (dotted decimal) for the iSCSI device.
- **iSCSI VLAN Id.** The identification number (if any) for the virtual iSCSI VLAN device.
- **iSCSI Packet Priority.** The packet priority for the iSCSI device.
- **Page File Created.** Indicates whether or not the Windows page file was created on an iSCSI drive that is attached to the adapter. The values are Yes and No.
- **DHCP (Dynamic Host Configuration Protocol).** Enabled indicates that DHCP is used to acquire IP configuration; Disabled indicates that the statically configured IP configuration is used.
- **IPv4 Address.** The IPv4 address (dotted decimal) for the iSCSI device.

iSCSI Statistics tab

To view the iSCSI statistics for the selected adapter:

1. Select an **HP Multifunction Adapter** in the NCU Main window and click **Properties** to display the Multifunction Adapter Properties Settings tab. Alternatively, hold down the **Alt** key and enter **p** to display the Settings tab.
2. Select the **Statistics** tab. The Multifunction Adapter Properties Statistics tab appears showing activity on the iSCSI device since it was last initialized.



The following read-only statistics are available:

- o **Total Bytes Transmitted.** Displays the total bytes sent in iSCSI headers and payload.
 - o **Total Bytes Received.** Displays the total bytes received in iSCSI headers and payload.
3. Click **OK** to close the Multifunction Adapter Properties Statistics window.

iSCSI Diagnostics tab

The Diagnostics tab is not supported for iSCSI-enabled adapters.

Acronyms and abbreviations

HBA

host bus adapter

iSCSI

Internet Small Computer System Interface

RSS

Receive-Side Scaling

TOE

TCP/IP Offload Engine

VLAN

virtual local-area network

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