
Addendum to IBM Token-Ring PCI Family Adapter User's Guide

About this addendum

This addendum updates the *IBM Token-Ring PCI Family Adapter User's Guide* to include information on the following topics:

- Windows® 2000 driver installation. See "Windows 2000 driver installation" on page 2.
- Managed Driver Upgrade for for Windows 95, Windows 98, Windows NT, and Windows 2000. See "Managed Driver Upgrade for Windows 95, Windows 98, Windows NT, and Windows 2000" on page 3.
- Remote unattended installation (RUI) of Windows 95, Windows 98, Windows 2000, and Windows NT®. See "Remote unattended installation of Windows 95, Windows 98, Windows 2000, and Windows NT" on page 4.
- Troubleshooting Utility for Windows 95 OSR2, Windows 98, Windows NT 4.0, and Windows 2000. See "Troubleshooting Utility" on page 5.

The addendum is applicable to the following token-ring adapters:

- IBM 16/4 Token-Ring PCI Adapter 2
- IBM 16/4 Token-Ring PCI Adapter 2 with Wake on LAN
- IBM High-Speed 100/16/4 Token-Ring PCI Adapter

Software packages

You can obtain the latest drivers and other software packages from the IBM Networking Support Web site at www.ibm.com/networking/support.

1. Select your adapter from the product list.
2. Select **Downloads**.
3. Select your operating system and the software package you want.
4. Follow the instructions provided on Web page for downloading and executing the software package.
5. Follow the instructions provided in this addendum to complete the software installation.

The following software packages are applicable to this addendum:

Package or Image	Description	Executable
Device Drivers	Windows 95 OSR2, Windows 98, Windows NT 4.0, and Windows 2000	PC99LOGO.EXE
Managed Driver Upgrade	Windows 95 Windows 98 Windows NT 4.0 Windows 2000	WINMDU95.EXE WINMDU98.EXE WINMDUNT.EXE WINMDU2K.EXE
Remote unattended installation (RUI) diskette	Windows 95, Windows 98, Windows NT, and Windows 2000	RUI.EXE
Troubleshooting Utility	Windows 95 OSR2, Windows 98, Windows NT 4.0, and Windows 2000	TRSHOOT.EXE

Windows 2000 driver installation

Before installing the device driver, make sure that the adapter is installed in your computer. For information on installing your adapter, refer to "Chapter 2. Installing the Adapter Hardware" in the *IBM Token-Ring PCI Family Adapter User's Guide*.

Windows 2000 may automatically install a default device driver for your adapter. However, we recommend that you upgrade to the driver that we provide for the adapter. Use the following procedure to install the upgraded driver for Windows 2000.

1. Take *one* of the following actions:
 - If you are using Windows 2000 Professional, select **My Network Places** on the Windows desktop. Go to step 2.
 - If you are using Windows 2000 Server, click **Networking** and **Network Identification** on the left sidebar of the Windows 2000 Configure Your Server window. Go to step 4.
2. Select **Network and Dial-up Connections** to display the Network and Dial-up Connections window.
3. Scroll the left side of the window to locate and select **Network Identification**.
4. In the System Properties window, select the **Hardware** tab.
5. Select the **Device Manager** button.
6. In the Device Manager window, click the + next to Network adapters to expand the list of adapters.
7. Select your adapter and select the **Properties** button.
8. In the Properties window for your adapter, select the **Configure** button.
9. Select the **Driver** tab.
10. Select the **Update driver...** button to open the Update Device Driver Wizard.
11. Select **Next** to continue.
12. On the next page, select **Search for the best driver for your device** and then select **Next**.
13. The next page of the wizard will ask where you would like to look for the device driver.
 - If you are installing from a diskette, insert the diskette and make sure that the **Floppy disk drives** checkbox is checked.
 - If you are installing from a location on your hard drive, make sure that the **Specify a location** checkbox is checked.
14. Select **Next** to continue. Make sure that driver you want updated is displayed on the screen and select **Next**.

Note: If the wizard does not specify the correct driver location, for example the CD-ROM or diskette drive, perform the following steps:

 - a. Click the **Back** button twice.
 - b. Select **Display a list of known drivers . . .** and then select **Next**.
 - c. Select **Have Disk. . .** and then specify the location of the driver (the CD-ROM or diskette drive letter).
 - d. After you select the correct driver, an Update Driver Warning window might appear. If so, click **Yes** to continue.
15. The next page of the wizard should confirm that the hardware and device driver are found. Select **Next** again to begin copying files.

Notes:

- a. Windows might prompt you for the driver diskette. If so, type the letter of your drive.
- b. Windows might also prompt you for the Windows 2000 CD-ROM in order to install its default network protocols. Make sure that the location of your Windows 2000 installation files (for example, d:\ or d:\win2000 or c:\windows\catroot) appears in the entry and select **OK**.
- c. A Digital Signature Not Found window might appear saying that the driver is not digitally signed. If so, select **Yes** to continue.

After the files are copied, the wizard displays a message to inform you that the driver was installed.

16. Select **Finish** to continue.
17. Select **Yes** when asked to reboot the system.
18. Check for the following conditions to determine whether the adapter is working correctly and whether installation has been completed successfully:
 - The device driver files loaded successfully.
 - The Local Area Connection icon on the Network and Dial-up Connections window shows that the device is working correctly.
 - The adapter LEDs indicate normal operation: Green ON, Amber OFF.

Managed Driver Upgrade for Windows 95, Windows 98, Windows NT, and Windows 2000

Managed Driver Upgrade is a package that assists local users and system administrators in upgrading their systems to the latest level of the driver. The package consists of the new driver, all necessary support files, and an executable program that can upgrade the driver without any user intervention.

Managed Driver Upgrade can be run locally by the user, or remotely by a system administrator using management software such as Tivoli TME[®] 10 Software Distribution.

Running Managed Driver Upgrade locally

To run the Managed Driver Upgrade locally, perform the following procedure.

1. Download the correct package. There are packages for Windows 95, Windows 98, Windows NT 4.0, and Windows 2000.
2. Run the package and extract all the files to a single directory such as c:\temp.
3. If you are using Windows NT 4.0, log in using a user ID with administrator privileges.
4. Open a DOS or command window.
5. Run the Managed Driver Upgrade executable. The name of the executable is TRMDU95.EXE for Windows 95, TRMDU98.EXE for Windows 98, TRMDU00.EXE for Windows 2000, and TRMDUNT.EXE for Windows NT 4.0.
6. Enter the following command line options as needed. Refer to the following table.

Table 1. Managed Driver Upgrade command line options

Option	Explanation
/boot=[y,n]	The adapter needs to be rebooted before the upgrade takes effect. The Managed Driver Upgrade executable can force the system to reboot after it completes. Set /boot=y if you want the system to reboot. Set /boot=n if you do not want the system to reboot. The default is /boot=y.
/down=[y,n]	There are times when you might want to revert to a previous version of a driver. Set /down=y in these cases. Set /down=n to prevent an older driver from being accidentally installed over a newer driver. The default is /down=n. Windows NT 4.0 does not support this option.
/file=[y,n]	Controls the logging ability of the Managed Driver Upgrade executable. /file=y will generate a log file in the same directory where the executable resides. /file=n suppresses logging. The default is /file=y
/name=[XXXXXXXX.XXX]	Customizes the name of the log file. The name can be any valid Windows filename. The default name is MYOUT.DAT.

For example, to execute on Windows 98, log to a file called TRMDU.LOG, and reboot after completion, enter the following on the command line:

```
TRMDU98 /boot=y /file=y /name=TRMDU.LOG
```

Running Managed Driver Upgrade remotely

To run the Managed Driver Upgrade from a remote location using management software, perform the following procedure.

1. Download the correct package to the management server. There are packages for Windows 95, Windows 98, Windows NT 4.0, and Windows 2000.
2. Run the package and extract all the files to a single directory.
3. Repackage the files according to the specifics of the management software.
4. Follow the directions included with the management software to schedule an update. During the update, all the files in the package are typically pushed to the client, and the executable is started. The command line options for the executable described in Table 1 can typically be passed to the executable by the management software.

The Managed Driver Upgrade should be completely transparent to the user. The log file generated by Managed Driver Update will be stored in a directory designated by the management software. Refer to the management software for details on how to locate this directory.

Remote unattended installation of Windows 95, Windows 98, Windows 2000, and Windows NT

Instructions for this environment are available from the download package Web page.

Troubleshooting Utility

Troubleshooting Utility is an application that you can use to collect information about your system to help diagnose problems with your token-ring PCI adapter. It is available for Windows 95 OSR2, Windows 98, Windows NT 4.0, and Windows 2000.

Troubleshooting Utility helps you identify and solve network problems that involve the adapter. It analyzes your system and all token-ring PCI adapters in your system. Using the available information, it offers suggestions for solving your networking problems. Troubleshooting Utility also generates an adapter information report that provides detailed information about your system to enable your network administrator or other support personnel to efficiently assist you. You can also use it to create a Diagnostic diskette.

If Troubleshooting Utility verifies that your adapter is working correctly, yet you are still having networking problems, you should use Windows Help to verify that the correct services and protocols are installed for your network.

Installing Troubleshooting Utility

You need the self-extracting installation package TRSHOOT.EXE in order to install Troubleshooting Utility. You can obtain this package from the adapter CD-ROM or the Web. For Windows 9x systems, the package automatically installs an IBM LAN Adapter Management IOCTL driver as a Windows protocol.

To install Troubleshooting Utility, run the software package executable and follow the instructions on the installation wizard windows.

A folder containing Troubleshooting Utility, Troubleshooting Utility Help, and a deinstall icon are copied to your computer.

Starting Troubleshooting Utility

You can use Troubleshooting Utility in the wizard mode or expert mode. The wizard mode provides a series of windows that guide you through the troubleshooting process. The expert mode is for more advanced users.

To start Troubleshooting Utility, perform the following steps.

1. Select **Start** → **Programs** → **Troubleshooting Utility** → **Troubleshooting Utility**.
2. Select **one** of the following options:
 - Select the **Wizard** button to run the Wizard. The Wizard provides a series of windows that guide you through the troubleshooting process.
 - Select the **Expert** button to display a dialog box with tabs for each troubleshooting process task.

Using Troubleshooting Utility

In the wizard mode, Troubleshooting Utility displays windows for performing troubleshooting tasks.

In the expert mode, Troubleshooting Utility displays a dialog box with tabs for performing troubleshooting tasks.

Window / Tab	Task
Adapter Analysis	Summarizes the adapter's operational status. See "Viewing adapter analysis information".
NIC Status	Displays status information about the instances of the drivers installed in your system. See "Viewing NIC status".
Event Log	Displays any logged messages about your adapter. See "Viewing the event log" on page 8.
Build Diagnostic Diskette	Gives you access to functions for building a Diagnostic diskette. See "Building a Diagnostic diskette" on page 8.
Contact Information	Provides a place to enter your name, address, telephone number, and customer report ID (if one has previously been assigned by support personnel). This information is printed on the adapter information report. See "Entering contact information" on page 8.
Adapter Information Report	Gives you access to the functions for generating a report containing information collected about your system. The information in this report is may be useful to support personnel in diagnosing problems with your adapter. See "Generating an adapter information report" on page 9.

Viewing adapter analysis information

Adapter analysis information displays on the first window that appears when you run Troubleshooting Utility Wizard. This information is also displayed on the NIC Status tab when you run Troubleshooting Utility in the expert mode.

Troubleshooting Utility analyzes your system and all token-ring PCI adapters in your system. For each adapter found, the adapter's burned-in address (MAC address) and current operating status is displayed. A summary of the operational status and suggestions for correcting problems are displayed.

Viewing NIC status

The information displayed on the NIC Status tab might help you to quickly identify a problem. The NIC Instance list box contains a list of the adapters that are found in your system. This list is obtained from the registry.

On Windows NT 4.0 systems, the token-ring PCI adapters are listed in:
HKEY_LOCAL_MACHINE\Software\Microsoft\Windows_NT\CurrentVersion\NetworkCards. The token-ring PCI instances are listed in:
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\IBMTRP.

On Windows 9x systems, the token-ring PCI instances are listed in:
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Class\Net\.

On Windows 2000 systems, the token-ring PCI instances are listed in:
HKEY_LOCAL_MACHINE\Software\Microsoft\Windows NT\Current Version\Network Cards\# in the registry variable 'ServiceName'.

To view NIC status, complete the following steps:

1. Click the arrow beside Select NIC Instance to display a list of all NIC instances.
2. Click the instance you want to troubleshoot.

The information for the instance you selected displays in the fields. This information includes:

- MAC address. This is the address of the NIC encoded in the adapter memory at the factory. This address can also be found on the adapter card label. This is a unique address that the network software uses to distinguish the adapter from others in the network
- Transmit/Receive Test. The transmit/receive test indicates the number of packets being transmitted and received without errors by the adapter. These counters are updated approximately every 2 seconds. If the transmit and receive fields are being incremented, traffic is being processed by the adapter. If no other stations are on the ring, these counters will increment very slowly.
- Hardware status. This is the current status of the NIC. The status is represented by the following values that correspond to the NDIS_HARDWARE_STATUS-type values:

Status	NDIS_HARDWARE_STATUS-type value	Explanation
Ready	NdisHardwareStatusReady	The NIC is available and capable of sending and receiving data over the wire.
Initializing	NdisHardwareStatusInitializing	The NIC is initializing.
Resetting	NdisHardwareStatusReset	The NIC is resetting.
Closing	NdisHardwareStatusClosing	The NIC is closing.
Not Ready	NdisHardwareStatusNotReady	The NIC is closed, shut down, or broken.

- Ring state. This is the state of the NIC with respect to entering the ring. The ring state is represented by the following values that correspond to the NDIS_802_5_RING_STATE values:

Status	NDIS_802_5_RING_STATE value	Explanation
Open	NdisRingStateOpened	This specifies an open ring.
Closed	NdisRingStateClosed	This specifies a closed ring.
Opening	NdisRingStateOpening	This specifies a ring that is opening.
Closing	NdisRingStateClosing	This specifies a failure of a ring open operation.
Open Failure	NdisRingStateOpenFailure	The NIC is closed, shut down, or broken
Ring Failure	NdisRingStateRingFailure	This specifies a failure of a ring.

- Ring status. This indicates the last ring status, which corresponds to the NDIS token-ring ring status codes (OID_802_5_CURRENT_RING_STATUS) as listed in the following table:

Status	OID_802_5_CURRENT_RING_STATUS
Signal Loss	NDIS_RING_SIGNAL_LOSS
Hard Error	NDIS_RING_HARD_ERROR
Soft Error	NDIS_RING_SOFT_ERROR
Transmit Beacon	NDIS_RING_TRANSMIT_BEACON
Wire Fault	NDIS_RING_LOBE_WIRE_FAULT

Status	OID_802_5_CURRENT_RING_STATUS
Auto Removal Error	NDIS_RING_AUTO_REMOVAL_ERROR
Remove Received	NDIS_RING_REMOVE_RECEIVED
Counter Overflow	NDIS_RING_COUNTER_OVERFLOW
Single Station	NDIS_RING_SINGLE_STATION
Ring Recovery	NDIS_RING_RING_RECOVERY

- Analysis. A summary of the operational status and suggestions for correcting problems are displayed in this section of the NIC Status tab.

Viewing the event log

The event log displays all messages relating to the token-ring PCI adapters that have been generated since the last reboot of the machine. On NT systems, these messages are parsed from the Event Viewer, which is an NT Common Administrative Tool. On Windows 9x systems, these messages are parsed from the NDISLOG.txt file. This screen or tab is displayed only when there are messages to present. If no token-ring PCI events have been generated since the system was last rebooted, the screen or tab is not displayed.

Building a Diagnostic diskette

To build a Diagnostic diskette, perform the following steps:

1. Insert a blank, high-density diskette into your diskette drive (usually drive A).
2. Click the **Build** button to build the Diagnostic diskette.

When the build is finished, you can run the diagnostics immediately if you want.

3. To run the diagnostics, leave the diskette in the diskette drive and click the **Reboot** button.

When you click the Reboot button, your computer automatically reboots before running the diagnostics.

When you finish running diagnostics, the system prompts you to remove the diskette and reboot the system. After the system reboots, Troubleshooting Utility resumes execution.

Entering contact information

The information you enter on this tab is printed on the adapter information report. For information on creating this report, see "Generating an adapter information report" on page 9.

To enter support information, complete the following steps:

1. Type your name, e-mail address, and telephone number in the fields provided.
2. If you have already reported your problem and received a customer report ID, type the customer report ID. If you do not have a customer report ID, leave this field blank.
3. Type a brief description of the problem.
4. Click **Yes** or **No** to indicate whether or not this is a new install.
5. Click **Yes** or **No** to indicate whether or not you have run the Diagnostic diskette.

For information on building a Diagnostic diskette, see "Building a Diagnostic diskette".

Generating an adapter information report

The adapter information report contains information about the devices installed in your computer, including the adapters. The information collected in this report might be useful in determining the cause of a networking problem. Included is the following information:

- Operating system information
- Information about your computer such as model and BIOS level
- List of PCI device drivers installed in your system
- Detailed information about each PCI device such as PCI bus configuration

The information is copied to a file called ADPTINFO.PCI. This file is saved on the root directory of drive C. However, on Windows NT systems that have NTFS on drive C, the ADPTINFO.PCI file is saved to a FAT formatted diskette in drive A.

To generate the report, perform the procedure that is applicable to your operating system.

Windows 9x: To generate an adapter information report on Windows 9x, perform the following steps.

1. Click the **Generate** button to create the report file (ADPTINFO.PCI).
2. Click the **Print** button to print the report on your default printer.

Windows NT: To generate an adapter information report on Windows NT, perform the following steps.

1. Insert a blank, high-density diskette into your diskette drive (usually drive A).
2. Select the BUILD button to build the pci_info diskette.
3. Select the REBOOT button to generate the adapter information report.
4. When prompted, remove the diskette from drive A and reboot your computer. When NT starts, Troubleshooting Utility resumes.
5. Click the PRINT button to print the report on your default printer. If the file system on drive C is NTFS, you must reinsert the pci_info diskette into your diskette drive.

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