



# PC Adapter Quickstart Guide

MANU0281-04 - Rev. A - September, 2000

Software Version 5.1/4.1.7

This quickstart installation guide is for system administrators with experience installing network adapters. You should also be familiar with ATM Forum LAN Emulation or Classical IP and your operating system.

For complete procedures, refer to the on-line manual included on the Marconi adapter software CD. See page 18 for information about viewing the on-line manual.

## If Your Marconi PC Adapter isn't Described in This Quickstart

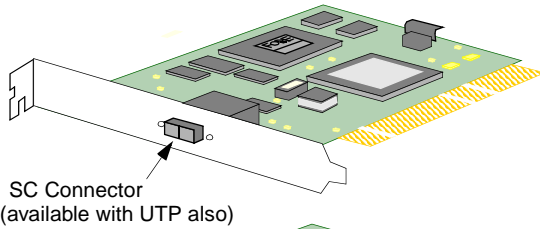
If your adapter isn't one of those shown on page 2, you must get the latest drivers and documentation from Marconi's Technical Assistance Center (TAC). To make sure you have the latest drivers and documentation, visit Marconi's Technical Assistance Center (TAC) website, as described on page 19.

(If you are using a UNIX adapter, please refer to the *UNIX Adapter Quickstart Guide* included with the adapter.)

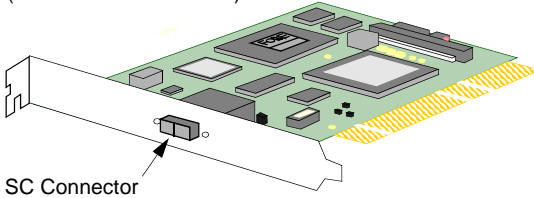
## For the Latest *ForeThought* Driver Software

Due to frequent enhancements and upgrades to the *ForeThought* drivers, the software CD included with your adapter may not have the latest versions. To make sure you have the latest drivers and documentation, visit Marconi's Technical Assistance Center (TAC) website, as described on page 19.

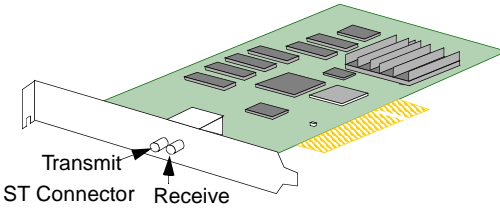
## The Marconi PC Adapters



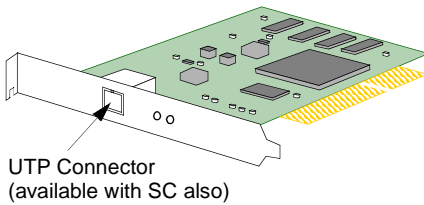
**HE 155**  
5.8" x 3.3"  
Requires 33MHz  
PCI Bus Master Slot  
Available with  
UTP or SC connectors



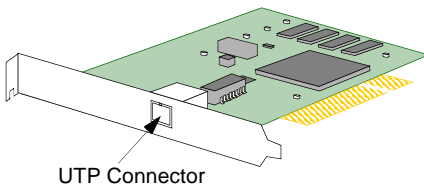
**HE 622**  
5.8" x 3.3"  
Requires 33/66 MHz  
PCI Bus Master Slot  
Available with  
SC connectors



**PCA-200E**  
5.8" x 3.3"  
Requires  
PCI Bus Master Slot  
Available with  
SC, ST, or UTP connectors



**LE 155 Mbps**  
5.8" x 3.3"  
Requires  
PCI Bus Master Slot  
Available with  
SC or UTP connectors



**LE 25 Mbps**  
4.7" x 3.3"  
Requires  
PCI Bus Master Slot  
Available with  
UTP connectors only

## Supported Operating Systems

Adapter	Supported Operating System
HE	Windows NT 4.0 (Intel-based PCs) NetWare 4.11 and 5.0 ( <i>ForeThought</i> 4.1.7)
PCA-200E	Windows 95 and 98 Windows NT 4.0 (Intel-based PCs) NetWare 4.11 and 5.0 ( <i>ForeThought</i> 4.1.7)
LE	Windows 95 and 98 Windows 2000 ("thin" driver only) Windows NT 4.0 (Intel-based PCs)

### Additional Requirements

- CD-ROM drive (if necessary, diskettes can be made from the CD. Refer to page 16 of this quickstart guide.)
- 1 MB free disk space in installation directory
- 16 MB RAM minimum (64M minimum for HE adapter)

#### Marconi WinSock Service Provider Requirements

The Marconi Service Provider can be used by application developers working with the WinSock 2 SDK version 2.0 on Windows NT or Windows 95 and 98. For more information on using the Service Provider, please refer to Appendix D of the *HE/200E/LE ATM Adapters for the PC User's Manual*. This manual is available on the Marconi adapter software CD and can be viewed using an Adobe Acrobat Reader, also included on the CD. See page 18 of this quickstart guide.

## Before You Begin

Review the latest *ForeThought for the PC* release notes. A printed copy is included with the adapter. The latest release notes and manuals are also available as PDF files from the Marconi (formerly FORE Systems) web site, as described on page 18.

After reviewing the release notes, gather the required network information:

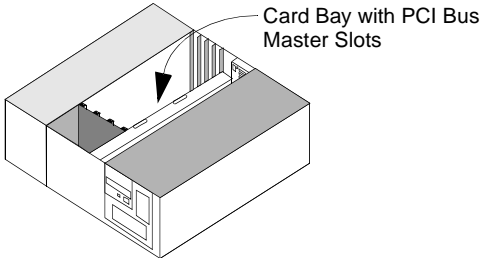
<b>If using LAN Emulation and all LANE services and default settings, you only need to know information for your higher level protocols (i.e. IP address):</b>			
IP Address			
<b>If not using the default settings, you need to know additional information:</b>			
LECS ATM Address	PREFIX	ESI/MAC	SEL
LES ATM Address	PREFIX	ESI/MAC	SEL
UNI Version (3.0 or 3.1)			
ELAN Names			
<b>If using Classical IP, you will need the ATM address of the ARP server:</b>			
ATM Address of ARP Server	PREFIX	ESI/MAC	SEL

## Hardware Installation

### 1 - Shut down the PC and make sure the power is off.

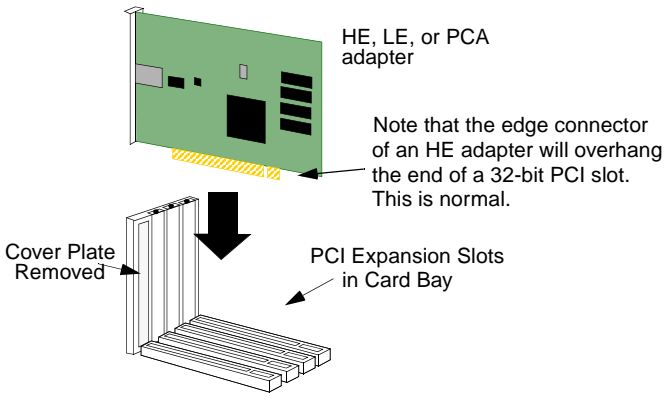
### 2 - Open the PC card bay.

Consult your PC's documentation for platform-specific procedures.



### 3 - Carefully insert and secure adapter in a PCI bus master slot.

Ground yourself to a metal part of the PC chassis using an anti-static grounding wrist strap to prevent static damage.



### 4 - Connect the adapter to the ATM switch.

Connect the adapter to a port that matches the media type used by the adapter. When making a connection with SC or ST fiber optic connectors, make sure the polarity of the connectors is correct (i.e., not reversed on one end). If you have successfully connected a PCA or LE adapter to the switch, the LEDs on the adapter will go out.

### 5 - Proceed to install the ForeThought drivers.

Use the operating system-specific procedures given below to install the drivers.

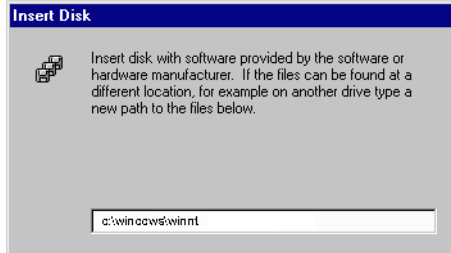
- See page 6 for Windows NT instructions.
- See page 7 for Windows 95 instructions.
- See page 8 for Windows 98 instructions.
- See page 11 for Windows 2000 instructions.
- See page 14 for NetWare instructions.

## Installation on Windows NT 4.0

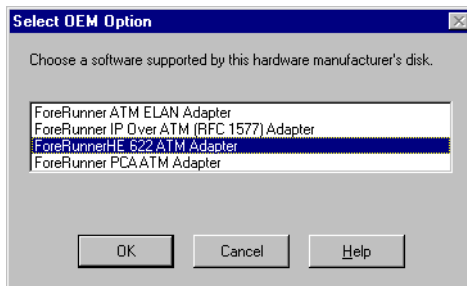
Use the following procedure to install the adapter drivers for Windows NT 4.0 (if you need to create installation diskettes, rather than installing from the Marconi adapter software CD, refer to page 20 of this quickstart guide).

Refer to page 3 for a list of supported operating systems based on adapter type.

1. In the Network Control Panel, select **Add Adapter**.
2. Select **<Other> Requires disk from manufacturer** in the Add Adapter dialog box.
3. When the Insert Disk dialog box appears, change the path to specify `d:\windows\winnt\patch`, where D: indicates your CD-ROM drive. This directory contains the recommended driver.



4. Insert the Marconi adapter software CD in the CD-ROM drive and choose the **OK** button. The Select OEM Option dialog box appears.



5. Select the *ForeRunner* ATM Adapter driver that matches your adapter (PCA-200E, *ForeRunnerHE*, or *ForeRunnerLE*) and proceed through the installation.
6. When you return to the Network Control Panel, select **Add Adapter** and proceed to install one or more *ForeRunner* ATM ELAN and/or IP Over ATM drivers from the `\WINNT` directory of the CD.
  - Install an ELAN driver for each ELAN to which you want to connect.
  - Install an IP Over ATM driver for each Classical IP (RFC 1577) LIS to which you want to connect.
7. Bind protocols and assign IP addresses to the ELAN and IP Over ATM drivers as necessary for your site.
8. Reboot as prompted to load the drivers.

The installation is complete. For complete installation procedures, refer to the manual included in the `\windows\docs` directory of the Marconi adapter software CD.

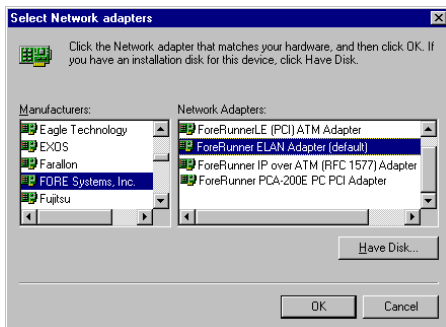
## Installation on Windows 95

Use the following procedure to install the adapter drivers for Windows 95 (if you need to create installation diskettes, rather than installing from the Marconi adapter software CD, refer to page 20 of this quickstart guide).

1. Install the ATM adapter driver via auto-discovery when you boot up your machine after installing the adapter.
  - a. When prompted with the New Hardware Found dialog box, insert the Marconi adapter software CD in the CD-ROM drive and click **OK**.



- b. Change the path to specify `d:\windows\win95\patch`, where `d:` indicates your CD-ROM drive and click the **OK** button. This directory contains the recommended, patched version of the driver. A warning appears, reminding you to install the ELAN or IP Over ATM adapter driver.
  - c. Click **OK** to proceed. The driver files are copied from the CD.
2. **If your site is using LAN Emulation** - In the Network Control Panel, select **Add**. Proceed to install a Marconi Communications (formerly FORE Systems) *ForeRunner* ELAN adapter for each ELAN to which you want to connect. This adapter will appear under FORE Systems in the Select Network adapters dialog box.



3. **If your site is using Classical IP (RFC 1577)** - In the Network Control Panel, select **Add**. Proceed to install a FORE Systems IP Over ATM driver for each Classical IP (RFC 1577) LIS to which you want to connect. For each IP Over ATM driver, you must specify the ATM address of the ARP server.
4. Bind protocols and assign IP addresses to the ELAN and IP Over ATM drivers as necessary for your site.
5. Reboot as prompted to load the drivers.

The installation is complete. For complete installation procedures, refer to the manual included in the `\windows\docs` directory of the Marconi adapter software CD.

## Installation on Windows 98

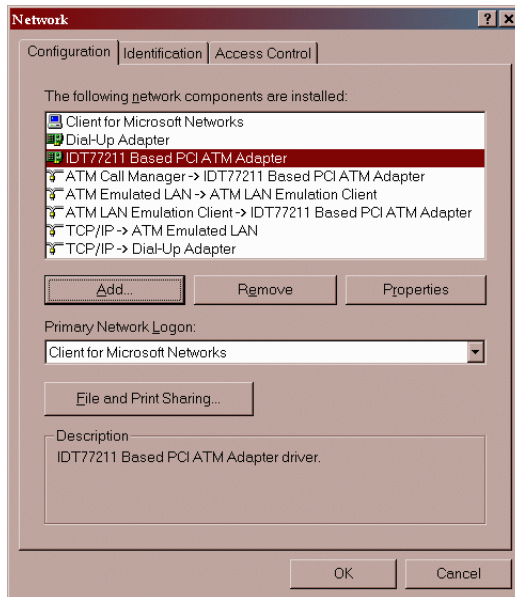
Refer to page 3 for a list of supported operating systems based on adapter type.

### Using the “Thin” Driver Included with Windows 98

After installing the adapter, when you start up the computer Windows 98 recognizes the adapter and displays the New Hardware Found dialog box.



Windows 98 then automatically installs the IDT77211 driver for the adapter, binding it with the Microsoft ELAN client. You can then assign parameters as necessary for your site and reboot as prompted. This completes the installation.



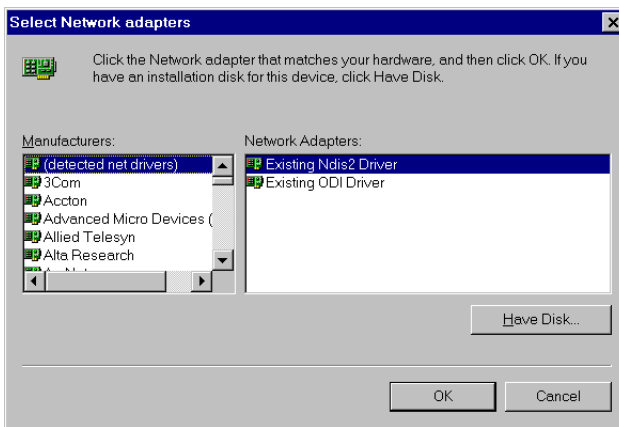
If you are using MPOA or want to use additional features of the Marconi “fat” drivers, use the procedures on page 9 and page 10.



## Using the Marconi “Fat” Driver for LAN Emulation/MPOA

If you want to use the Marconi “fat” drivers provided on the Marconi adapter software CD, you must replace the driver that was automatically installed by Windows 98 (as described on page 8). Use the following procedure:

1. In the Network Control Panel, delete the **IDT77211 Based PCI ATM Adapter** driver and all its bindings that were automatically configured by Windows 98.
2. In Windows Explorer or DOS, delete the `c:\windows\inf\netfore.inf` file.
3. Reboot the computer. Windows 98 auto-discovers the adapter as it starts up and prompts you for *ForeThought* installation files. Insert the Marconi adapter software CD and specify the `\win95\patch` directory of the CD. This directory contains the recommended patched version of the driver.
4. Proceed to install the FORE ATM drivers from the Network Control Panel. When the Select Network adapters dialog box appears, select **Have Disk...** and specify the `\win95\patch` directory of the CD.



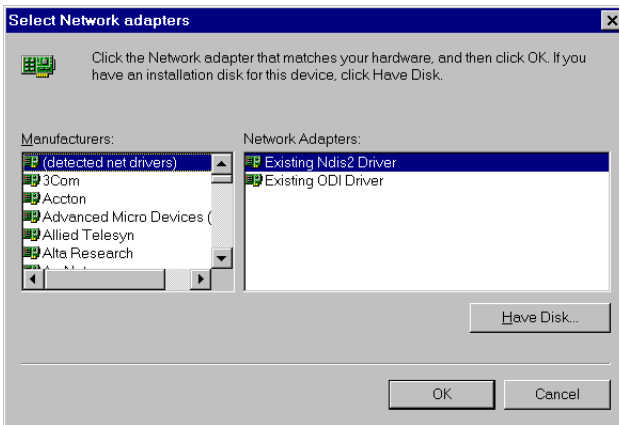
5. When you return to the Network Control Panel, select **Add Adapter** and proceed to install one or more *ForeRunner* ATM ELAN drivers from the `\win95\patch` directory of the CD.  
You can also install *ForeRunner* IP Over ATM drivers as desired, as described on page 10.
6. Bind protocols and assign IP addresses to the ELAN drivers as necessary for your site.
7. Reboot as prompted to load the drivers.

The installation is complete. For complete installation procedures, refer to the manual included in the `\windows\docs` directory of the Marconi adapter software CD.

## Using the Marconi “Fat” Driver for Classical IP

If you want to use the Marconi “fat” drivers provided on the Marconi adapter software CD or available from Marconi TAC, you must replace the driver that was automatically installed by Windows 98 (as described on page 8). Use the following procedure:

1. In the Network Control Panel, delete the **IDT77211 Based PCI ATM Adapter** driver and all its bindings that were automatically configured by Windows 98.
2. In Windows Explorer or DOS, delete the `c:\windows\inf\netfore.inf` file.
3. Reboot the computer. Windows 98 auto-discovers the adapter as it starts up and prompts you for *ForeThought* installation files. Insert the Marconi adapter software CD and specify the `\win95\patch` directory of the CD. This directory contains the recommended patched version of the driver.
4. Proceed to install the FORE ATM drivers from the Network Control Panel. When the Select Network adapters dialog box appears, select **Have Disk...** and specify the `\win95\patch` directory of the CD.



5. When you return to the Network Control Panel, select **Add Adapter** and proceed to install one or more *ForeRunner* IP Over ATM drivers from the `\win95\patch` directory of the CD. You must specify the ATM address of the ARP server. You can also install *ForeRunner* ATM ELAN drivers as desired, as described on page 9.
6. Bind protocols and assign IP addresses to the ELAN drivers as necessary for your site.
7. Reboot as prompted to load the drivers.

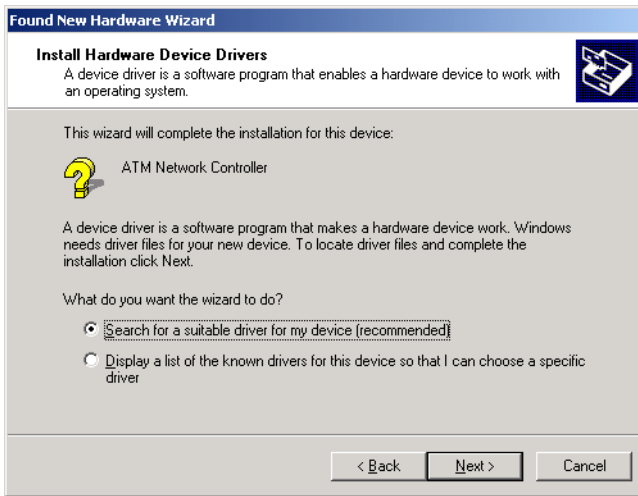
The installation is complete. For complete installation procedures, refer to the manual included in the `\windows\docs` directory of the Marconi adapter software CD.

## Installation on Windows 2000

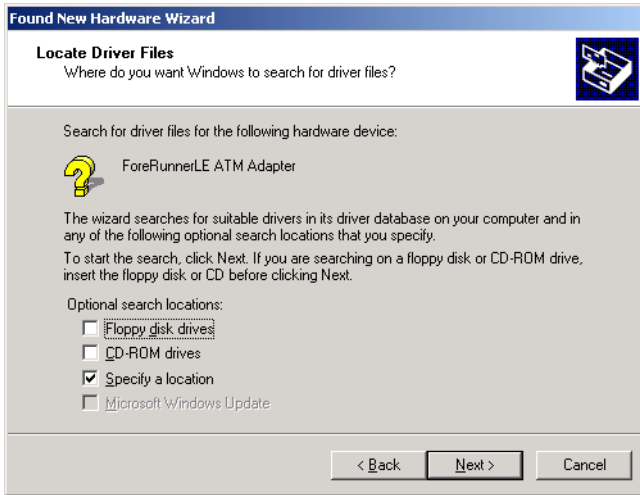
When using an HE or PCA adapter with Windows 2000, when you start the PC after installing the adapter, Windows 2000 discovers the hardware and automatically installs the driver for the adapter. The drivers for these adapters are included on the Windows 2000 distribution CD. For the LE adapter, you must install the driver from the Marconi adapter software CD.

Use the following procedure to install the LE adapter driver for Windows 2000:

1. After installing the adapter, when you start up the computer Windows 2000 displays the New Hardware Found dialog box. This indicates that the Windows 2000's Plug-and-Play feature has detected the LE adapter that you installed.  
Windows 2000 then also displays the Welcome to the New Hardware Wizard dialog box.
2. Click **Next** to proceed. Windows 2000 displays the Found New Hardware Wizard - Install Hardware Device Drivers dialog box.



3. Select the **Search for a suitable driver for my device (recommended)** option (the default option) and click **Next** to proceed. The Found New Hardware Wizard - Locate Driver Files dialog box appears.
4. Insert the Marconi adapter software CD in your CD drive.
5. Select **Specify a location** and de-select the other options.



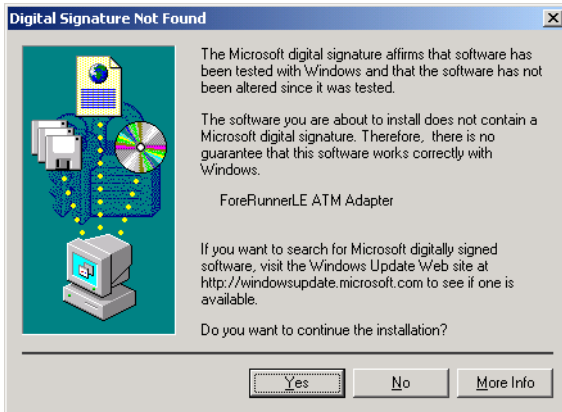
6. Click **Next** to proceed. A dialog box appears in which you can specify the location of the driver files.



- Specify the path `d:\windows\Windows2000` (where `d:\` indicates your CD drive) and click **OK**.

The Found New Hardware Wizard - Driver Files Search Results dialog box appears.

- Click **Next** to proceed. Because the LE adapter did not undergo the formal Microsoft Certification and receive a digital signature, the Digital Signature Not Found dialog box appears.



- Click **Yes** to proceed.

The install wizard copies the driver to the correct location and installs a default ATM ELAN connection. The system will display a final dialog box to show installation is finished.

- Click **Finish** to complete the installation process. You do not need to reboot your PC.

To edit the properties of the driver, access the Network and Dialup Connections control panel. Two icons appear, an **ATM Connection** icon and an **ATM ELAN Connection** icon.

- If your site is using Classical IP, double-click the **ATM Connection** icon and edit the TCP/IP properties and specify an ARP server address.
- If your site is using LAN Emulation, double-click the **ATM ELAN Connection** icon to edit the TCP/IP properties and, if not using the default ELAN, change the ELAN name.

## Installation on NetWare

Use the following procedure to install the *ForeThought* 4.1.7 adapter drivers for NetWare (if you need to create installation diskettes, rather than installing from the Marconi adapter software CD, refer to page 17 of this quickstart guide).

Refer to page 3 for a list of supported operating systems based on adapter type.

1. Be sure you have the latest versions of the following NLMs. For the latest versions, go to <http://support.novell.com/search/pat1st.htm>.

- CLIB
- NWSNUT.NLM
- ETHERTSM.NLM
- TOKENTSM.NLM
- MSM.NLM
- NBI.NLM

2. You must include the following NetWare start-up parameter in the server's `STARTUP.NCF` file:

```
set minimum packet receive buffers=<n>
```

In this parameter, the variable `<n>` has the value 200 for your first Marconi adapter card, and must include an additional 100 for each additional physical adapter you have installed in the machine. For example, if you have installed one adapter, set the parameter to 200. If you have two adapters, set the parameter to 300.

3. You must include the following NetWare start-up parameter in the server's `STARTUP.NCF` file:

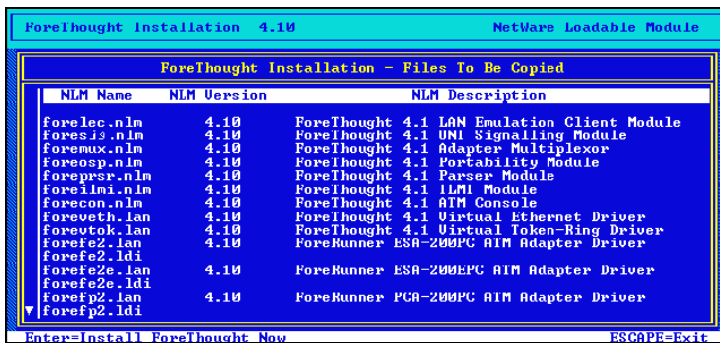
```
set maximum physical receive packet size=<value>
```

You must assign a value depending on the largest MTU size used by the ELANs to which the host is connected.

If Your MTU Size is...	Set the Maximum Physical Receive Packet Size to...
1514	1584
4542	4608
9232	9312
18188	18240

4. At the NetWare server prompt, use the `SEARCH ADD` command to indicate a path to the `\NETWARE` directory of the CD. For example, `SEARCH ADD G:\NETWARE`, where `G:` indicates your CD-ROM drive.
5. Insert the Marconi adapter software CD in the CD-ROM drive.

6. At the server prompt, issue the **LOAD FOREINST** command and run the installation utility. The *ForeThought* installation panel appears.



7. Press **<ENTER>** to proceed through the installation.
8. Edit your **AUTOEXEC.NCF** and **STARTUP.NCF** files as necessary for your site.
  - a. Load the appropriate ATM driver for your adapter:
    - FOREFPHE for an HE adapter
    - FOREFP2E for a PCA-200E adapter
  - b. Load the appropriate ELAN driver, **FOREVETH** for an Ethernet ELAN, or **FOREVTOK** for a Token Ring ELAN.
  - c. Bind required protocols to the **FOREVETH** or **FOREVTOK** driver.
9. Restart the server to implement the changes.

For complete installation procedures and a description of the **LOAD** commands for the Marconi drivers, refer to the manual included in the `\netware\docs` directory of the Marconi adapter software CD.

## Creating Installation Diskettes

### For Windows NT, Windows 95, and Windows 98

Use the following procedure if you need to create installation diskettes for Windows NT, 95, or 98, rather than installing directly from the Marconi Adapter CD.

When creating diskettes for Windows, note that you must create separate installation diskettes for HE, LE and 200E adapters.

1. In a DOS window, open the `\windows\winnt\patch` or `\windows\win95\patch` directory in the Marconi adapter software CD, depending on your operating system. (The `\win95\patch` directory contains the driver files for use with Windows 98 also.)
2. Insert a blank floppy diskette in your disk drive.
3. From the DOS prompt, run the `CRDISK.BAT` file. This command has the following syntax:

```
CRDISK [source-directory] <pca|le|he>
```

*source-directory* is the path of the directory containing the Windows NT driver files. If you don't specify a source-directory, the default is the current working directory.

`pca` indicates that you want to create a diskette with the files for a PCA adapter.

`le` indicates that you want to create a diskette with the files for an LE adapter.

`he` indicates that you want to create a diskette with the files for an HE adapter.

For example, if you want to create a diskette for a PCA adapter, and the current directory is the directory containing the *ForeThought* 5.1 Windows NT files, use the following command:

```
CRDISK PCA
```

The `CRDISK.BAT` file will copy all the required files to the diskette.

NOTE: Before you run `CRDISK`, you must set the Windows CPU variable to `i386` with the command `SET CPU=I386`



Refer to "Adjusting the Default Environment Space" on page 17 if you receive an error similar to Out of environment space.

4. Proceed to install the drivers using the procedure in the manual or this quickstart guide. However, instead of inserting the CD when indicated, insert the diskette in your drive and accept the default path of `A:`, where `A:` indicates your floppy drive.

### For Windows 2000

To create installation diskettes for Windows 2000, rather than installing directly from the Marconi Adapter CD, simply copy the files in the `\windows\Windows2000` directory to a floppy disk. Follow the procedure given in this quickstart. When the Found New Hardware Wizard - Locate Driver Files dialog box appears, confirm that **Floppy disk drives** is checked and click Next to proceed. Windows 2000 discovers and installs the driver files.



## For NetWare

Use the following procedure if you need to create installation diskettes for NetWare, rather than installing directly from the Marconi Adapter CD:

1. Insert a blank floppy diskette in your disk drive.
2. In Windows Explorer, copy the files within the `\netware\patch` directory to the root directory of the diskette.
3. Proceed to install the drivers using the procedure in the manual or this quickstart guide. However, you do not need to mount the CD.

IF YOUR FLOPPY DRIVE IS NOT A: You must specify a search path to indicate the floppy drive.

## Adjusting the Default Environment Space

When creating installation diskettes on a Windows platform, you may receive an error similar to `Out of environment space`. To resolve this problem, you must increase the space for environment variables.

### In Windows 95/98

To increase the default environment space for all MS-DOS programs running in Windows, edit the Shell command in the `Config.sys` file. To do this, follow these steps:

1. Click **Start**, click **Run**, type `sysedit` in the Open box, and then click OK.
2. Click the `Config.sys` file, and then type a new Shell command or replace any existing Shell command with the following line

```
SHELL=<path>\COMMAND.COM /E:4096 /P
```

where `<path>` is the drive letter and path in which the Windows system files are located.



The above command sets the environment size to 4 KB. If necessary, you can specify a higher value up to a maximum of 32 KB.

### In Windows NT

To specify additional space for environment variables:

1. In Control Panel, double-click **System**.
2. In the Environment list, select **ComSpec**.
3. To increase the amount of environment space, use the following syntax:

```
ComSpec = <drive:\windir>\system32\cmd.exe /e:2048
```

where `<drive:\windir>` is the drive and folder where the Windows NT system files are located.



The above command sets the environment size to 2 KB. If necessary, you can specify a higher value up to a maximum of 32 KB.

## For Additional Information

### Viewing the On-line Manual

The on-line manual contains:

- Complete installation procedures
- An ATM, LANE, MPOA, and Classical IP overview
- Troubleshooting information
- Additional information for using your Marconi adapter.

You can read and print the on-line manual using the Acrobat Reader included with the manual on the Marconi adapter software CD.

If you already have the Acrobat Reader installed on your machine, you can simply run Acrobat and open 51pc.pdf (the PC User Manual) in the \windows\docs or \netware\docs directory of the software CD.

If you do not have Acrobat Reader installed on your machine, run the Acrobat installer to load Reader on your machine. Run the ar302.exe file in the \acrobat\win directory of the CD. The Acrobat Reader is also available, with complete documentation, from:

<http://www.adobe.com/>

### Note for NetWare Users

Acrobat is unavailable in NetWare. You must run Acrobat from a Windows-based machine.

### The Marconi Web Site

For the latest technical documentation and release notes for the Marconi adapters and other Marconi products, visit the Marconi (formerly FORE Systems) TACTics Online web site at:

<http://www.marconi.com/tactics>

To view the documentation:

1. Log on to TACTics Online. If necessary, register for an account using the **Create User Account** link.
2. Click the Documentation>Manuals/Docs link.
3. Click **Broadband Routing and Switching** in the **Communications** area.
4. Click **ForeRunner ATM Adapters** in the **Edge Products** area.
5. Select the document you want from the list.

## Contacting Technical Support

In the U.S.A., customers can reach Marconi Technical Assistance Center (TAC) using any one of the following methods:

1. Go to Marconi's World Wide Web technical support site:

**<http://www.marconi.com/tactics>**

2. Send questions, via e-mail, to:

**[support@fore.com](mailto:support@fore.com)**

3. Telephone questions to "support" at:

**800-671-3673 or 724-742-6999**

4. FAX questions to "support" at:

**724-742-7900**

Technical support for customers outside the United States should be handled through the local distributor or via telephone at the following number:

**+1 724-742-6999**

No matter which method is used to reach Marconi Support, customers should be ready to provide the following:

- A support contract ID number
- The serial number of each product in question
- All relevant information describing the problem or question

### Using TACTics Online

If you have an active ForeMan Support Agreement you can now submit, update, and track your cases electronically via TACTics Online. The latest software updates are also available to download via TACTics Online. TACTics Online provides Marconi's Customers and Channel Partners with real time support on the World Wide Web.

To submit cases or view details of your existing cases, as well as access the other features within TACTics Online, go to:

**<http://www.marconi.com/tactics>**

If you have registered for an account please enter the account name and password. If you need to obtain an account select **Create User Account** from the TACTics Online login page.

Once you are logged in select the feature that you would like to access.



## Marconi Communications

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