

The background of the page features a large, light gray watermark of the IBM Netfinity logo. The logo consists of a stylized 'N' formed by several parallel diagonal lines, with the word 'Netfinity' written in a sans-serif font across the middle of the 'N'.

IBM Netfinity

**Advanced Systems Management PCI Adapter
Software User's Guide**



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Software User's Guide**

Important

Before using this information and the product it supports, be sure to read the general information under Appendix B, "Product Warranties and Notices" on page 59.

First Edition (April 1999)

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Advanced System Management

This section includes instructions for installing, starting, and using Advanced System Management for Netfinity Manager. This section is intended for anyone who will install and use Advanced System Management with Netfinity Manager or Client Services for Netfinity Manager.

This option includes a complete, licensed copy of Netfinity Manager. This version of Netfinity Manager replaces the version of Netfinity Manager that was included with your copy of ServerGuide. Netfinity Manager includes updated software designed to support your Netfinity Advanced System Management PCI Adapter. If you have previously installed an earlier version of Netfinity Manager on your server, uninstall the earlier version and then install the version of Netfinity Manager included with this option.

The Advanced System Management service, installed when you install Netfinity Manager, provides the most extensive functionality available with your Netfinity Advanced System Management PCI Adapter. If you do not install Netfinity Manager, many of the advanced functions of the Netfinity Advanced System Management PCI Adapter will not be available to you. For information on how to install Netfinity Manager, see the *ServerGuide and Netfinity Manager Information* section of your Server Library.

This section also provides instructions on using the Netfinity Advanced System Management PCI Adapter without Netfinity Manager.

Important!

- The Advanced System Management service, installed when you install Netfinity Manager, provides the most extensive functionality available with your Netfinity Advanced System Management PCI Adapter. Netfinity Manager is included with this server. If you do not install Netfinity Manager, many of the advanced functions of the Netfinity Advanced System Management PCI Adapter will not be available to you.
- This section of this server library explains how to use the Advanced System Management service with the Netfinity Advanced System Management PCI Adapter installed in a server that also a Netfinity Advanced System Management Processor (integrated with Netfinity 5000, Netfinity 5500, and Netfinity 5500 M10). This service can also be used to manage other Advanced System Management hardware, including:
 - PC Server Advanced System Management Adapter Option
 - Netfinity Advanced System Management Processor only (integrated with Netfinity 5000, Netfinity 5500, and Netfinity 5500 M10)
 - Netfinity Advanced System Management PCI Adapter only (included with Netfinity 7000 M10)

The features available with the Advanced System Management service vary depending on the Advanced System Management hardware you are managing. For detailed information on using the Advanced System Management service with Advanced System Management hardware other than the Netfinity Advanced System Management PCI Adapter when installed in a server with an Advanced System Management Processor, see the documentation that is included with the option or the server library that is included with the server.

Using Advanced System Management

This chapter describes how to use the Advanced System Management service for Netfinity Manager to change configuration, modem, network, and automatic dialout settings.

With the Advanced System Management service, you can configure system management events (such as POST, loader, and operating system timeouts or critical temperature, voltage, and tamper alerts). If any of these events occurs, the Advanced System Management service can be configured to automatically forward a Netfinity alert in one of five ways:

- Alert forwarded to another Netfinity system using the modem
- Alert forwarded to a standard numeric pager
- Alert forwarded to an alphanumeric pager
- Alert forwarded to a Netfinity Manager system using a TCP/IP network connection (available only when using Advanced System Management with a Netfinity Advanced System Management PCI Adapter)
- Alert forwarded in SNMP format to an SNMP Manager (available only when using Advanced System Management with a Netfinity Advanced System Management PCI Adapter)

With this service, you can use your system's modem to dial out and directly access and control a remote system's Advanced System Management PCI Adapter or

Advanced System Management Processor. If the remote system has a Netfinity Advanced System Management PCI Adapter installed and the adapter is connected to a Transmission Control Protocol/Internet Protocol (TCP/IP) network, you can use the Dynamic Connection Manager service (installed when you installed Netfinity Manager and the Advanced System Management service) to open a TCP/IP link with the Netfinity Advanced System Management PCI Adapter from your Netfinity Manager system. Finally, if your Netfinity Advanced System Management PCI Adapter or Advanced System Management Processor is connected to an RS-485 Interconnect network, or if the remote Netfinity Advanced System Management PCI Adapter or Advanced System Management Processor to which you have connected using your system's modem or TCP/IP connection is connected to an RS-485 Interconnect network, you can use this connection to access and manage the Advanced System Management PCI Adapter or Advanced System Management Processor of any other system that is connected to the RS-485 Interconnect network. For more information, see "Dynamic Connection Manager" on page 34.

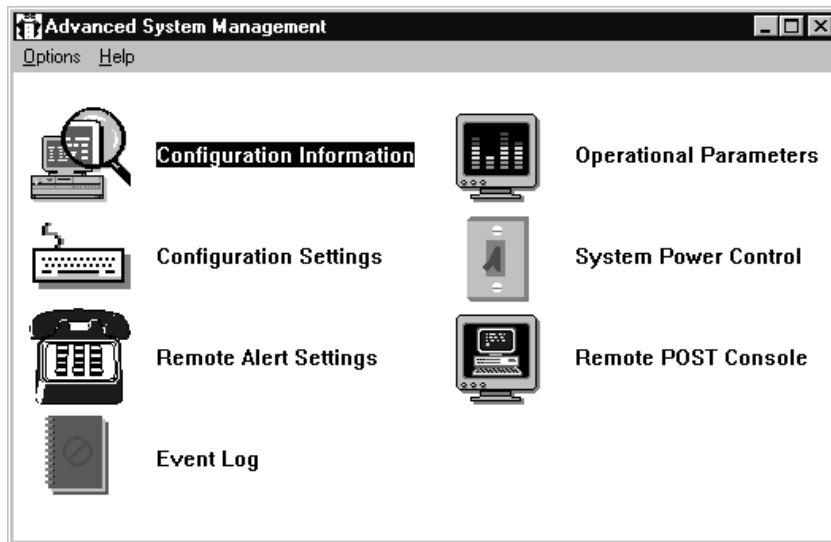


Figure 1. The Advanced System Management service

In addition, with Advanced System Management, you can remotely monitor, record, and replay all textual data generated during power-on self-test (POST) on a remote system that includes a Advanced System Management adapter or processor. While monitoring a remote system during POST, you can enter key commands on your keyboard that will then be relayed to the remote system.

Using the Advanced System Management PCI Adapter as a Network Gateway

In systems that contain both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the adapter acts as an Ethernet or Token Ring network gateway (or as a shared modem resource). In this configuration, the Advanced System Management Processor generates all alerts, timeouts, and other system management information. This data is relayed to the Advanced System Management PCI Adapter using the RS-485 connection between the processor and the adapter. The adapter then forwards this information to other systems on the Ethernet or Token Ring network (or uses its modem to forward this data using a serial connection).

When configuring systems that have both the Advanced System Management PCI Adapter and the Advanced System Management Processor, all system management settings (such as remote alerts settings and timeout settings) must be configured on the Advanced System Management Processor. However, before using TCP/IP to communicate with your Advanced System Management PCI Adapter, you must also first establish a serial or RS-485 connection with the adapter and configure the network settings. For information on establishing serial or RS-485 connections, see “Dynamic Connection Manager” on page 34. For information on configuring network settings, see “Network Settings” on page 19.

Starting Advanced System Management

To start the Advanced System Management service, double-click on the Advanced System Management icon in the Netfinity Service Manager window. Then double-click on any of the selections available in the Advanced System Management window to access the function or configuration information that you need.

Note: This starts Advanced System Management on your local system and will enable you to configure and manage the Advanced System Management PCI Adapter or Advanced System Management Processor installed in your own system only. To access, configure, and manage an Advanced System Management PCI Adapter or Processor in a remote system, you must first establish a connection with the remote system by using Dynamic Connection Manager. For more information on using Dynamic Connection Manager, see “Dynamic Connection Manager” on page 34.

- Select **Configuration Information** to view detailed information about the Netfinity Advanced System Management PCI Adapter, including random-access memory (RAM) microcode, read-only memory (ROM) microcode, and device-driver information. For more information on Configuration Information, see “Configuration Information” on page 6.
- Select **Configuration Settings** to configure many features of the Netfinity Advanced System Management PCI Adapter. These features include system identification data, dial-in security settings, the time and date reported by the system management processor clock, timeout and delay values, and advanced modem settings. For more information on Configuration Settings, see “Configuration Settings” on page 7.
- Select **Remote Alert Settings** to configure Advanced System Management alert forwarding functions. For more information on Remote Alert Settings, see “Remote Alert Settings” on page 21.
- Select **Event Log** to view the contents of the Netfinity Advanced System Management PCI Adapter Event Log. Information about all remote access attempts and dialout events that have occurred is recorded in the Event Log. For more information on the Event Log, see “Event Log” on page 28.
- Select **Operational Parameters** to view the current values or status of many system components monitored by the Netfinity Advanced System Management PCI Adapter. For more information on Operational Parameters, see “Operational Parameters” on page 29.
- Select **System Power Control** to instruct the Netfinity Advanced System Management PCI Adapter to power off the system, restart the system, or power

on the system. For more information on System Power Control, see “System Power Control” on page 30.

- Select **Remote POST Console** to remotely monitor, record, and replay all textual output generated during POST on a remote system that has a Netfinity Advanced System Management PCI Adapter. For more information on using Remote POST, see “Remote POST Console” on page 31.
- To update the microcode on your Netfinity Advanced System Management PCI Adapter, from the **Options** pulldown menu, select **Update Microcode...** and then select **System Management Subsystem**. For more information on updating microcode, see “Updating Netfinity Advanced System Management PCI Adapter Microcode” on page 33.

Remote Management Using a Serial, TCP/IP, or RS-485 Connection

If you want to use your system's modem, TCP/IP, or RS-485 network connection to access and manage the Advanced System Management adapter or processor on a remote system, use Dynamic Connection Manager to:

- establish a serial connection with the remote system
- use Dynamic Connection Manager to establish a TCP/IP or RS-485 link with the Netfinity Advanced System Management PCI Adapter installed in the remote server
- or use Dynamic Connection Manager to establish a RS-485 link with the Advanced System Management Processor installed in the remote server

Then, start the Advanced System Management service. You can also use Dynamic Connection Manager to establish a null modem connection to another system. Finally, you can use Dynamic Connection Manager to establish a serial or TCP/IP connection with a remote Netfinity Advanced System Management PCI Adapter and then “pass through” that Netfinity Advanced System Management PCI Adapter and remotely access and manage any Advanced System Management adapter or processor that is connected to the remote Netfinity Advanced System Management PCI Adapter using an RS-485 Interconnect network. For more information on Dynamic Connection Manager, see “Dynamic Connection Manager” on page 34.

Notes:

1. Be sure to check the **System Management Processor** check box in the Netfinity Dynamic Connection Manager window when you create the Dynamic Connection Control entry or before establishing an RS-485 Interconnect connection. If this check box is not checked, the connection with the remote Netfinity Advanced System Management PCI Adapter will fail. Null modem connections and TCP/IP link entries do not require that this box be checked.
2. TCP/IP linking over a network connection is available only when you are using Advanced System Management and Dynamic Connection Manager to directly access a Netfinity Advanced System Management PCI Adapter that is connected to your network.
3. RS-485 Interconnect connections are available only when :
 - you are using Advanced System Management and Dynamic Connection Manager to directly access the Netfinity Advanced System Management PCI Adapter installed in your own system (Netfinity 7000 M10 only).

- you are using Advanced System Management and Dynamic Connection Manager to access an Advanced System Management adapter or processor that is connected to the same RS-485 Interconnect network that your Advanced System Management adapter or processor is connected to **or**
- you have first established a serial connection, null modem connection, or TCP/IP link with a remote Netfinity Advanced System Management PCI Adapter that is connected to other Advanced System Management adapters or processors on an RS-485 Interconnect network.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

4. When using Dynamic Connection Manager to configure a Dynamic Connection entry for use by the Advanced System Management service, be sure to enter the Login ID and Password for access to the Advanced System Management processor or adapter in a remote system, not the User ID and Password for access to Netfinity Manager services on the remote system.
5. When creating a Dynamic Connection Manager entry to establish a null modem connection with an Advanced System Management processor or adapter in a remote system, make sure that the **Port Baud Rate** value (configured using the Dynamic Connection Manager service) is set to match the **Baud Rate** value (configured using the Advanced System Management service) of the target system. If the **Port Baud Rate** and the **Baud Rate** values do not match, the connection will fail.
6. If you are connected through a modem and the serial connection is broken, Dynamic Connection Manager will detect the loss of the carrier and will then display *No carrier detected* in the window. Dynamic Connection Manager will then attempt to re-establish the serial connection automatically.

Configuration Information

The Configuration Information window (shown in Figure 2 on page 7) contains detailed information about the Netfinity Advanced System Management PCI Adapter, including RAM microcode, ROM microcode, and device-driver information.

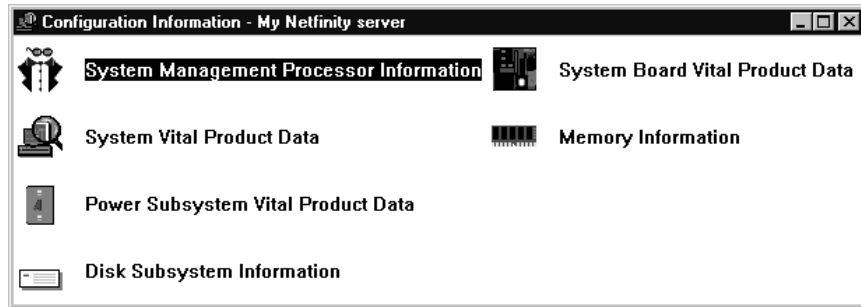


Figure 2. The Configuration Information window

Configuration Settings

Use the selections available in the Configuration Settings window (see Figure 3 on page 8) to configure many features of your Netfinity Advanced System Management PCI Adapter. These features include system identification data, dial-in security settings, the time and date reported by the system management processor clock, timeout and delay values, modem settings, and network settings.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

This window contains:

- System Identification group
- Dial-in settings group
- System Management Processor Clock group
- POST timeout, Loader timeout, O/S timeout, and Power off delay fields

This window also includes the Modem button and the Network button. Select **Modem** to open the Modem Settings window (see “Modem Settings” on page 13). Select **Network** to open the Network Settings window (see “Network Settings” on page 19).

Note: Network setting configuration is supported only on the Netfinity Advanced System Management PCI Adapter. If you are not using Advanced System Management to access or manage a Netfinity Advanced System Management PCI Adapter the **Network** button will not be available.

The System Identification Group

The System Identification group contains two fields to help you identify the system that contains the Netfinity Advanced System Management PCI Adapter.

Field	Description
Name	Can be used to provide a name for the system, the name of the system user, or the name of a contact. This information is included with forwarded Netfinity alerts, SNMP alerts, and pages that are sent to alphanumeric pagers to help you identify the system that generated the alert.
Number	Can be used to identify the system with a specific serial or identification number, to record the phone number used to dial into the system, or to provide the phone number of a contact. This information is included with forwarded Netfinity alerts, SNMP alerts, and pages that are sent to numeric pagers to help you identify the system that generated the alert.

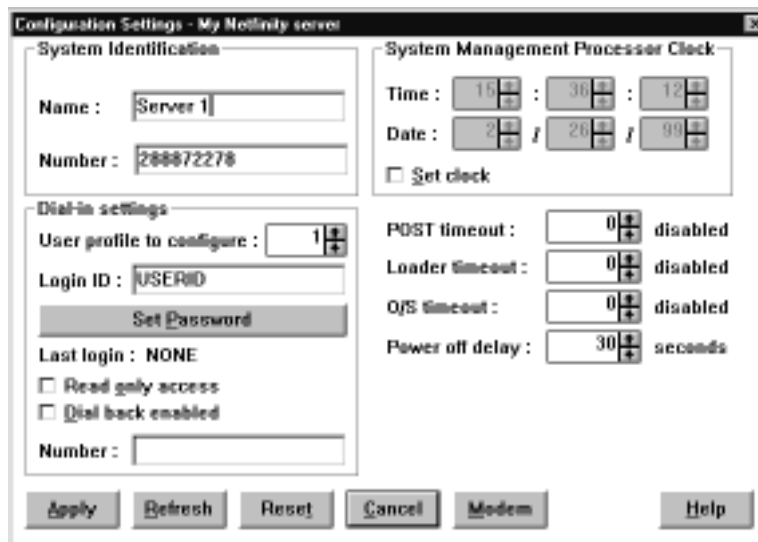


Figure 3. The Configuration Settings window

To change the information provided by these fields:

1. In the **Name** or **Number** field, type the system information you want to record.
2. Select **Apply** to save this information.

The Dial-In Settings Group

Use the selections available in the Dial-In Settings group to enable or disable dial-in support, and to enable users to dial in and access the Netfinity Advanced System Management PCI Adapter. The Dial-In Settings group contains the following items.

Item	Description
User profile to configure	Use the spin buttons to select the user profile that you want to configure. This service supports up to twelve separate profiles on IBM Netfinity 7000 systems.
Login ID	Type in this field the login ID that will be used by the remote user. Up to 12 Login IDs can be configured. (This field is case sensitive.) Note: A Login ID <i>must</i> be specified to remotely access the Netfinity Advanced System Management PCI Adapter.
Set Password	A password must be provided along with the Login ID to allow a remote user to access the Netfinity Advanced System Management PCI Adapter. After providing a Login ID, click on Set Password to open the Set Password window. (The fields in the Set Password window are case sensitive.) Note: This password must be 6–8 characters in length and must contain at least one nonalphanumeric character.
Last login	Shows the date and time of the last successful login by a remote user.
Read only access	If the Read only access check box is checked, the user whose profile is selected will not be able to alter any of the Netfinity Advanced System Management PCI Adapter settings when access is granted. The user will, however, be able to see all currently configured settings and values except passwords.
Dial back enabled	If the Dial back enabled check box is checked, the Netfinity Advanced System Management PCI Adapter will automatically terminate the connection as soon as the user whose profile is selected logs in, and will then use the telephone number that is entered in the Number field to dial out and attempt to connect with a remote system. Note: This applies only when you are using a modem to establish a serial connection with another modem. This setting has no effect on passthrough connections.

If necessary, select **Modem** to access the Modem Settings window (see “Modem Settings” on page 13). From the Modem Settings window, you can specify modem settings and dialing settings.

To create a new login ID for a remote user:

1. In the **Login ID** field, type the ID that will be used by the remote user. This ID can be up to 8 characters.
2. Remote users must provide a password along with a login ID in order to access the Netfinity Advanced System Management PCI Adapter. Select **Set Password** to open the Set Password window.

From the Set Password window:

- a. In the **Enter Password** field, type a password.
Note: This password must be 6–8 characters in length and must contain at least one nonalphanumeric character.
 - b. In the **Re-enter Password** field, type the same password that you typed in the **Enter Password** field.
 - c. Click on **OK** to save this password and close the Set Password window.
3. Click on **Apply** to save the new user ID.

To delete the currently selected login ID:

1. Use the spin buttons beside the **User ID to configure** field to select a previously configured User profile.
2. Click on the **Login ID** field.
3. Using the Backspace or Delete key, delete the currently displayed login ID.
4. Click on **Apply** to remove the user ID.

Important

For security purposes, change the user name and password using the Advanced System Management service.

If you update the Netfinity Advanced System Management PCI Adapter microcode, the default user name (USERID) and password (PASSWORD) are reset. If you had previously changed them, you will need to change them again.

The System Management Processor Clock Group

Use the selections available in the System Management Processor Clock group to set the time and date that is reported by your Netfinity Advanced System Management PCI Adapter.

Note: The System Management Processor clock is separate from and independent of the system clock. Changes made to this setting will have no effect on the system clock.

To change the currently set time or date:

1. Verify that there is a check in the **Set System Management Processor Clock** check box. This check box *must* be checked to enable the Advanced System Management service to change the currently stored time and date values.
2. Use the spin buttons beside each field to set the time or date.
 - The **Time** fields represent, when viewed from left to right, hours, minutes, and seconds.
 - The **Date** fields represent, when viewed from left to right, month, date, and year.
3. Click on **Apply** to save the new time and date.

POST Timeout

The **POST timeout** field shows the number of seconds that the Netfinity Advanced System Management PCI Adapter will wait for the system's power-on self-test (POST) to complete before generating a POST Timeout event. If POST takes longer than the configured amount of time to complete and the **POST timeout** check box (found in the **Enabled Alerts** group of the Remote Alert Settings window) is checked, the Netfinity Advanced System Management PCI Adapter will automatically restart the system one time and will attempt to forward an alert to all enabled Remote Alert Entries. Once the system is restarted, **POST timeout** is automatically disabled until the system is properly shutdown and restarted.

Note: If you do not check this check box and a POST timeout is detected, the system will restart but no alert will be forwarded.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To set the POST timeout value, use the spin buttons beside the **POST timeout** field to set the number of seconds that the Netfinity Advanced System Management PCI Adapter will wait for POST to complete. Then, click on **Apply** to save this value. The maximum POST timeout value you can set is 7650 seconds. The minimum POST timeout value you can set is 210 seconds. Set this value to 0 to disable POST timeout detection.

For more information on the Remote Alert Settings window, see “Remote Alert Settings” on page 21.

Loader Timeout

The **Loader timeout** field shows the number of seconds that the Netfinity Advanced System Management PCI Adapter will wait for the system loading process to complete before generating a Loader Timeout event. The Loader Timeout measures the amount of time that passes between the completion of POST and the end of operating system (O/S) startup. If this takes longer than the configured amount of time to complete and the **Loader timeout** check box (found in the **Enabled Alerts** group of the Remote Alert Settings window) is checked, the Netfinity Advanced System Management PCI Adapter will automatically restart the system one time and will attempt to forward an alert to all enabled Remote Alert Entries. Once the system is restarted, **Loader timeout** is automatically disabled until the system is properly shutdown and restarted.

Note: If you do not check this check box and a Loader timeout is detected, the system will restart but no alert will be forwarded.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To set the Loader timeout value, use the spin buttons beside the **Loader timeout** field to set the number of seconds that the Netfinity Advanced System Management

PCI Adapter will wait between POST completion and O/S startup before generating a timeout event. Then, click on **Apply** to save this value. The maximum Loader timeout value you can set is 7650 seconds. Set this value to 0 to disable Loader timeout detection.

For more information on the Remote Alert Settings window, see “Remote Alert Settings” on page 21.

O/S Timeout

A periodic signal is sent from the Netfinity Advanced System Management PCI Adapter to the O/S to confirm that the O/S is running properly. The O/S Timeout event occurs when the O/S does not respond to the signal within 6 seconds. The **O/S timeout** field shows the number of seconds that the Netfinity Advanced System Management PCI Adapter will wait between O/S timeout checks. If the O/S fails to respond within 6 seconds, the Netfinity Advanced System Management PCI Adapter will attempt to restart the system, and if the **O/S timeout** check box (found in the **Enabled Alerts** group of the Remote Alert Settings window) is checked, the Netfinity Advanced System Management PCI Adapter will automatically restart the system one time and will attempt to forward an alert to all enabled Remote Alert Entries.

Note: If you do not check this check box and an O/S timeout is detected, the system will restart but no alert will be forwarded.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To set the O/S timeout value, use the spin buttons beside the **O/S timeout** field to set the number of seconds that the Netfinity Advanced System Management PCI Adapter will wait between O/S timeout checks. Then, click on **Apply** to save this value. The maximum O/S timeout value you can set is 255 seconds. Set this value to 0 to disable O/S timeout detection.

For more information on the Remote Alert Settings window, see “Remote Alert Settings” on page 21.

Power Off Delay

The **Power off delay** field shows the number of seconds that the Netfinity Advanced System Management PCI Adapter will wait for the operating system shutdown process to complete before powering off the system.

When the Netfinity Advanced System Management PCI Adapter initiates a power down procedure and the **Power off** check box (found in the **Enabled Alerts** group of the Remote Alert Settings window) is checked, the Netfinity Advanced System Management PCI Adapter will automatically attempt to forward an alert to all

enabled Remote Alert Entries. This alert is forwarded after the system is powered off and the **Power off delay** time has passed.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To set the power off delay value, use the spin buttons beside the **Power off delay** field to set the number of seconds that the Netfinity Advanced System Management PCI Adapter will wait for the system's operating system shutdown to complete before powering off the system. Then, click on **Apply** to save this value. The maximum Power off delay value you can set is 9999 seconds. Set this value to 0 to disable the Power Off Delay.

For more information on the Remote Alert Settings window, see “Remote Alert Settings” on page 21.

Other Configuration Settings Functions

The Configurations Settings window also includes three additional buttons:

Button	Description
Refresh	Select Refresh to update all data that is shown on the Configuration Settings window, including date, time, and last login.
Reset	Select Reset to set <i>all</i> Advanced System Management settings back to their default values, including configuration settings, dialout settings, and advanced dialout settings. Important: All previously configured Advanced System Management settings will be permanently lost.
Cancel	Select Cancel to close this window without saving any changes.

Modem Settings

Use the Modem Settings window to specify modem and dialing settings. To open this window, click on **Modem** from the Configuration Settings window (see “Configuration Settings” on page 7).

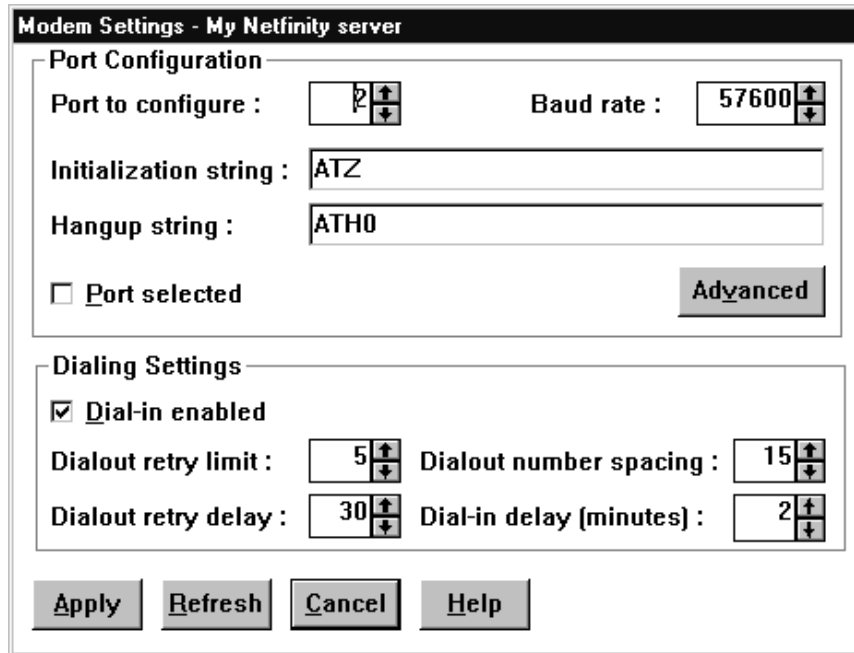


Figure 4. The Modem Settings window

The Port Configuration Group

Use the Port Configuration group to specify and configure the modem that will be used to forward the alert when a Advanced System Management Event occurs. The Port Configuration group contains the following items.

Item	Description
Port to configure	Use the spin buttons to select the port that your modem is configured to use. This spin button will show only values that are available for use by your Netfinity Advanced System Management PCI Adapter. The port that you select to use affects the availability of the modem for use by either the Netfinity Advanced System Management PCI Adapter or the operating system. The ports that are available to the system or to the Advanced System Management service vary depending on your hardware configuration. For information on what ports are available see "Advanced System Management Port Reference" on page 16.
Port selected	This check box indicates whether the port number currently displayed in the Port to configure field is the port that is currently designated for use by the Netfinity Advanced System Management PCI Adapter. Check this check box if you want to configure the Netfinity Advanced System Management PCI Adapter to use the currently displayed port number.
Initialization string	Type the initialization string that will be used for the specified modem. A default string is provided (ATZ). Do not change this string unless your dialout functions are not working properly. If you need to change the initialization string, see "Initialization String Guidelines" on page 19.

Item	Description
Hangup string	Type the initialization string that will be used to instruct the modem to disconnect. A default string is provided (ATH0). Do not change this string unless your dialout functions are not working properly. If you need to change the initialization string, see "Initialization String Guidelines" on page 19.
Advanced button	Click this button to open the Advanced Port Configuration window (see Figure 5 on page 15)

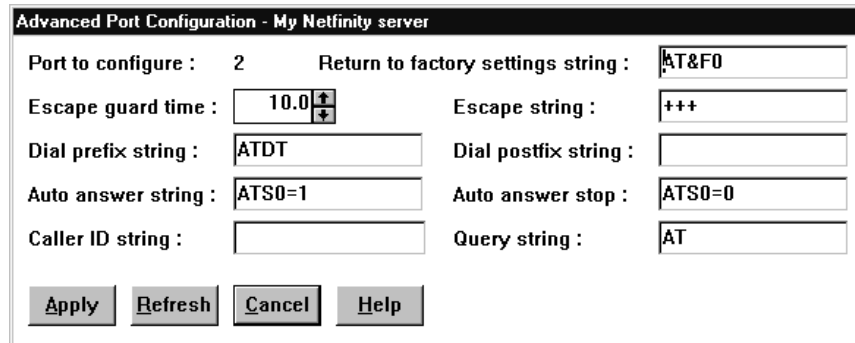


Figure 5. The Advanced Port Configuration window

The Advanced Port Configuration window contains the following items.

Item	Description
Baud rate	Use the spin buttons to specify the baud rate of the modem.
Caller ID string	Type the initialization string that will be used to get Caller ID information from the modem.
Return to factory settings string	Type the initialization string that returns the modem to its factory settings when the modem is initialized. The default is AT&F0.
Query string	Type the initialization string that is used to find out if the modem is attached. The default is AT.
Escape string	Type the initialization string that returns the modem to command mode when it is currently talking to another modem (connected). The default is +++.
Escape guard time	Type in this field the length of time before and after the escape string is issued to the modem. This value is measured in 10 millisecond intervals. The default value is 1 second.
Dial prefix string	Type the initialization string that is used before the number to be dialed. The default is ATDT for touchtone dialing.
Dial postfix string	Type the initialization string that is used after the number is dialed to tell the modem to stop dialing. The default is the Carriage Return character or ^M.
Auto-answer string	Type the initialization string that is used to tell modem to answer the phone when it rings. The default is to answer after two rings or ATSO=2.
Auto-answer stop	Type the initialization string that is used to tell the modem to stop answering the phone automatically when it rings. The default is ATSO=0.

Advanced System Management Port Reference

The port that you select to use affects the availability of the modem for use by either the Netfinity Advanced System Management PCI Adapter or the operating system. The ports that are available to the system or to the Advanced System Management service vary depending on your hardware configuration.

- If the system has an Advanced System Management Processor only, use this table to determine what ports are available.

Physical Ports (as labeled)	A	B	C
Ports Available to Advanced System Management	Port 1 Shared	N/A	Port 2 Dedicated
Ports Available to Operating System	COM 1 Shared	COM 2	N/A

- If the system has an Advanced System Management PCI Adapter only, use this table to determine what ports are available.

Physical Ports (as labeled)	A	B	MODEM	COM_AUX
Ports Available to Advanced System Management	N/A	N/A	Port 1 Shared	Port 2 Dedicated
Ports Available to Operating System	COM 1	COM 2	COM 3 Shared	N/A

- If the system has an Advanced System Management PCI Adapter and an Advanced System Management Processor, use this table to determine what ports are available.

Physical Ports (as labeled)	A	B	C	MODEM	COM_AUX
Ports Available to Advanced System Management	Port 1 Shared	N/A	Port 2 Dedicated	N/A	N/A
Ports Available to Operating System	COM 1 Shared	COM 2	N/A	N/A	N/A

Notes:

1. Shared ports are seen by the operating system when the system is running. Shared ports are seen by the Advanced System Management PCI Adapter or Processor when the machine is starting up or powered off. The shared port will also be seen by the system, but not by the Advanced System Management PCI Adapter or Processor, when started with DOS

2. In a system with the Advanced System Management PCI Adapter only (for example, the Netfinity 7000 M10), the device driver must be running for the operating system to see COM3.

The Dialing Settings Group

Use the Dialing Settings group to specify settings related to the modem, and to configure the modem that is used to forward an alert when a Advanced System Management Event occurs. The Dialing Settings group contains the following items.

Item	Description
Dial-in enabled	Check this check box to enable remote users to dial into and access the Netfinity Advanced System Management PCI Adapter. If this box is unchecked, remote users will be unable to remotely access the Netfinity Advanced System Management PCI Adapter. Click on Apply after checking or unchecking this check box to save the new setting.
Dialout retry limit	Use the spin buttons to select the number of additional times that Advanced System Management will attempt to forward an alert. The Dialout Retry Limit applies only to attempts to forward the alert information to an alphanumeric pager. If you are forwarding the alert information to either a Netfinity system or a numeric pager, only one attempt will be made to forward this information. The maximum value for this field is 8.
Dialout retry delay	Use the spin buttons to specify the number of seconds that Advanced System Management will wait before retrying a dialout attempt. The minimum value for this field is 30 seconds, and the maximum value is 240 seconds.

Item	Description
Own port on startup	<p>Check this check box to reserve a serial port for exclusive use by the Netfinity Advanced System Management PCI Adapter. Checking this box will reserve one of the adapter's integrated communications ports. Click on Apply after checking or unchecking this check box to save the new setting.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Check this box if you are configuring your system for dial-in access. If this check box is not checked, you will be unable to dial into this system unless the adapter has reclaimed the port for a dialout. If you want to configure the Netfinity Advanced System Management PCI Adapter to always be dial-in enabled, regardless of whether the system is currently powered on, you must check this check box. When this check box is checked, you cannot configure the specified port for use by your system. 2. Port C is dedicated for use by the Netfinity Advanced System Management PCI Adapter only. Port A is used by the operating system, and is available to the Netfinity Advanced System Management PCI Adapter only when one of the following conditions exists: <ul style="list-style-type: none"> • The server is powered off • The Netfinity Advanced System Management PCI Adapter needs a port to perform a Critical Enabled Alert Event (in this case, the Netfinity Advanced System Management PCI Adapter seizes control of the port from the operating system, dials out, and then powers off the server to avoid damage to your hardware).
Dialout number spacing	<p>If you have configured more than one Remote Alert Entry to forward alerts, the Netfinity Advanced System Management PCI Adapter will attempt to contact each of these entries sequentially. Use the spin buttons to specify the number of seconds for the Netfinity Advanced System Management PCI Adapter to wait between dialout attempts for separate Remote Alert Entries.</p> <p>The minimum value for this field is 15 seconds, and the maximum value is 120 seconds.</p>
Dial-in delay (minutes)	<p>The Dial-in delay (minutes) field shows the number of minutes that must pass after an incorrect User ID or Password has been used in six successive dial-in attempts before valid dial-in access will be permitted. After the sixth successive login failure, dial-in access is disabled for the number of minutes that you specify, the Netfinity Advanced System Management PCI Adapter adds an entry in the Event Log noting that dial-in access was suspended due to six successive login failures, and the Netfinity Advanced System Management PCI Adapter attempts to forward an alert if the Tamper Enabled Alerts check box has been checked (see Figure 7 on page 22).</p> <p>The minimum value for this field is 4 minutes, and the maximum value is 240 minutes.</p>

Initialization String Guidelines

If you need to provide a new initialization string, refer to the user's guide that came with your modem. Your initialization string must contain commands that configure your modem as follows:

- Command echoing OFF
- Online character echoing OFF
- Result codes ENABLED
- Verbal result codes ENABLED
- All codes and Connect messages with BUSY and DT detection
- Protocol identifiers added – LAPM/MNP/NONE V42bis/MNP5
- Normal CD operations
- DTR ON-OFF hang-up, disable AA and return to command mode
- CTS hardware flow control
- RTS control of receive data to computer
- Queued and nondestructive break, no escape state

Note: The abbreviations in these commands have the following meanings:

AA	Auto Answer
CD	Carrier Detect
CTS	Clear to Send
DT	Data Transfer
DTR	Data Terminal Ready
RTS	Ready to Send

Changing Dialout Entry Settings

To apply settings to a selected Dialout Entry:

1. Specify Modem Settings.
2. Specify Dialing Settings.
3. Click on **Apply** to save these settings and return to the Remote Alert Settings window.

Network Settings

Use the Network Settings window to specify network settings on the Netfinity Advanced System Management PCI Adapter. To open the Network Settings window, click on **Network** from the Configuration Settings window (see "Configuration Settings" on page 7).

Note: This window is only available when you are using the Advanced System Management service to manage a system that has a Netfinity Advanced System Management PCI Adapter or if you have used Dynamic Connection Manager to establish a TCP/IP, serial, or RS-485 Interconnect link with a Netfinity Advanced System Management PCI Adapter.

Figure 6. The Network Settings window

The Network Settings window contains the following items.

Item	Description
Network interface spinbox	Use the spin buttons to select a network interface to configure. When you have selected the network interface you want to use, check the Interface: selected check box. Only one network interface can be enabled at a time.
Host name	Type the TCP/IP host name that will be used by the Netfinity Advanced System Management PCI Adapter.
IP address	Type the IP address that will be used by the Netfinity Advanced System Management PCI Adapter.
Subnet mask	Type the subnet mask that will be used by the Netfinity Advanced System Management PCI Adapter.
Gateway	Type the TCP/IP address of the gateway that will be used by the Netfinity Advanced System Management PCI Adapter.
Line type	Use the spin buttons to select the line type that will be used by the Netfinity Advanced System Management PCI Adapter. Available selections are Ethernet and Token Ring. Check the Routing check box if needed. Default setting is Ethernet.
Data rate	Use the spin buttons to select the data rate that will be used by the Netfinity Advanced System Management PCI Adapter. Available selections are AUTO (applies to both Ethernet and Token Ring connections), 4M (for Token Ring connections only), 16M (for Token Ring connections only), 10M (for Ethernet connections only), and 100M (for Ethernet connections only). Default setting is AUTO.
Duplex	Use the spin buttons to select the duplex method that will be used by the Netfinity Advanced System Management PCI Adapter. Available selections are AUTO, FULL and HALF. Default setting is AUTO.

Item	Description
MTU size	Type the maximum transmission unit (MTU) value that will be used by the Netfinity Advanced System Management PCI Adapter. Available settings are 60–1514 for Ethernet connections (1514 is the recommended setting), 60–4440 for 4MB Token Ring connections (4440 is the recommended setting), and 60–17936 for 16MB Token Ring connections (4440 is the recommended setting). Default setting is 1514.
MAC address	Type the media access control (MAC) address of the network adapter being used by the Netfinity Advanced System Management PCI Adapter. Set this field to 0 to get a unique MAC address.

After making any changes to these settings, first click **Apply** to save the changes and then click **Restart** to restart the Netfinity Advanced System Management PCI Adapter so that the changes will take effect. Changes to Network Settings on a Netfinity Advanced System Management PCI Adapter will not take effect until the adapter has been restarted.

Attention

If you have installed the Netfinity Advanced System Management Token Ring Connection, you must not enable or use the Ethernet port that is included on your Advanced System Management PCI Adapter. Enabling the Ethernet port while the IBM Turbo 16/4 Token Ring PCMCIA card is installed on your adapter will cause your system to become unstable. To enable, configure, or use the Ethernet port, you **must** first remove the IBM Turbo 16/4 Token Ring PCMCIA card from your Advanced System Management PCI Adapter.

Remote Alert Settings

Use the Remote Alert Settings window (shown in Figure 7 on page 22) to configure the Advanced System Management adapter or processor alert forwarding functions. If you configure a Remote Alert Entry, the Advanced System Management adapter or processor will attempt to forward an alert to a remote Netfinity system (through a serial connection or a network connection), a numeric pager, an alphanumeric pager, or an SNMP community when any of the events selected from the **Enabled Alerts** group occur. This alert will contain information about the nature of the event that occurred, the time and date at which the event occurred, and the name of the system that generated the alert.

Before Advanced System Management can forward alerts to SNMP communities, you must configure the Advanced System Management SNMP settings. To configure SNMP settings, click on **SNMP**. This will open the SNMP Settings window. For more information, see “SNMP Settings” on page 27.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

You can configure the Advanced System Management adapter or processor to forward alerts to multiple pagers or Netfinity Manager systems in response to individual critical and non-critical dialout events. Therefore, the **Dialout status** text will read DIALOUT ON as soon as the first alert forwarding operation begins, change to DIALOUT OFF when the alert forwarding operation is completed, change to DIALOUT ON again when the second alert forwarding operation begins, change to DIALOUT OFF when the second alert forwarding operation is completed, and so on. If you click on **Stop Dialout**, the Netfinity Advanced System Management PCI Adapter abandons the currently active alert forwarding operation, and moves on to the next one.

Your Netfinity Advanced System Management PCI Adapter can be configured with up to twelve separate Remote Alert Entries.

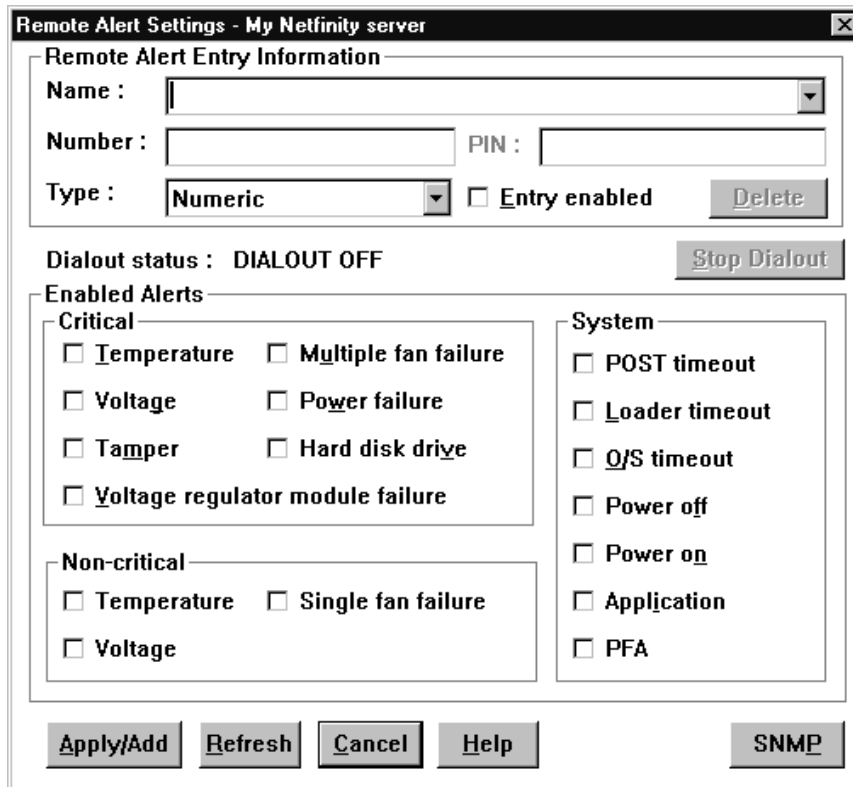


Figure 7. The Remote Alert Settings window

Remote Alert Entry Information Group

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To edit or create a Remote Alert Entry:

1. In the **Name** field, type the name of the person or system to which the alert will be forwarded. The information in the **Name** field is strictly for your use in identifying the Remote Alert Entry. If you are editing a previously configured Remote Alert Entry, select the entry that you want to edit from the **Name** selection list.
2. In the **Number** field, type a telephone number (if you are forwarding the alert to a pager or to a Netfinity system using a serial link) or an IP address (if you are forwarding the alert to a system using the network adapter; this feature is supported only with a Netfinity Advanced System Management PCI Adapter) that will be used to forward the alert.
Note: Depending on your paging service, you might need to increase the amount of time that this alert action waits after dialing the telephone number before it transmits the numeric data. To increase the amount of time that will pass before the numeric data is transmitted, add one or more commas (,) to the end of the telephone number. Each comma will cause the modem to wait two seconds before transmitting the numeric data.
3. In the **PIN** field, type the personal identification number required by your alphanumeric pager provider. This field will be active only if you select Alpha-numeric in the **Type** field.
4. From the **Type** selection list, select the type of connection the Netfinity Advanced System Management PCI Adapter will attempt to make in order to forward the event notification. You can select Numeric (for standard pagers), Alpha-numeric (for alphanumeric pagers), Netfinity Serial (for using a serial link to connect to a remote Netfinity system), or Netfinity IP (for using a TCP/IP link to connect to a remote Netfinity system; available only on systems with a Netfinity Advanced System Management PCI Adapter).
5. Check the **Entry enabled** check box to activate this Remote Alert Entry. If the **Entry enabled** check box is not checked, no alerts will be forwarded to this entry.
6. Select dialout events from the **Enabled Alerts** group. If any of the checked events occur, the Netfinity Advanced System Management PCI Adapter will use the the telephone number or IP address specified in the **Number** field to forward an alert describing the event using the method selected in the **Type** field. For more detailed information about these events, see “Enabled Alerts Group” on page 24.

7. Click on **Apply/Add** to save these settings.

To remove a previously configured Remote Alert Entry, select the name of the entry from the **Name** selection list and then select **Delete**.

Enabled Alerts Group

Use the selections available in the Enabled Alerts group to specify which events will result in all currently configured Entries being contacted by the Advanced System Management adapter or processor. Any selected items will, if detected by the Netfinity Advanced System Management PCI Adapter, result in an alert describing the event being forwarded, using the method selected in the **Type** field, to the recipient specified by the **Name** field in the Remote Alert Entry window.

If the alert is being forwarded to a pager, Advanced System Management will include information about the event that triggered the alert. If the alert is forwarded to a numeric (or standard), pager, the page will include a code number that corresponds to the triggering event. If the alert is forwarded to an alphanumeric pager, the page will include both a code number and a text string that describe the triggering event. For more information on the numeric codes and text strings that are transmitted to pagers, refer to the following tables.

All numeric codes and text strings are included in forwarded Netfinity Manager alerts, regardless of whether they are forwarded using a serial or TCP/IP link. All information is also included in forwarded SNMP alerts.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see "Using the Advanced System Management PCI Adapter as a Network Gateway" on page 3.

The Enabled Alerts group is divided into the **Critical**, **Non-critical**, and **System** groups. The **Critical** Enabled Alerts group contains the following items.

Item	Description (if checked)	Numeric Code	Text String
Temperature	The Netfinity Advanced System Management PCI Adapter will forward an alert and then automatically initiate a system shutdown if any monitored temperatures exceed their threshold values.	00	SYSTEM SHUTDOWN DUE TO TEMPERATURE

Item	Description (if checked)	Numeric Code	Text String
Voltage	The Netfinity Advanced System Management PCI Adapter will forward an alert if the voltages of any monitored power sources fall outside their specified operational ranges.	01	SYSTEM SHUTDOWN DUE TO VOLTAGE
Tamper	The Netfinity Advanced System Management PCI Adapter will add an entry in the Event Log if six consecutive remote login attempts fail.	02	SYSTEM TAMPER ALERT
Voltage regulator module failure	The Netfinity Advanced System Management PCI Adapter will forward an alert and then automatically initiate a system shutdown if the voltage regulator module (VRM) fails.	06	VRM FAILURE
Multiple fan failure	The Netfinity Advanced System Management PCI Adapter will forward an alert if two (or more) of the system's cooling fans fail <i>and</i> will automatically initiate a system shutdown.	03	MULTIPLE SYSTEM FAN FAILURES
Power failure	The Netfinity Advanced System Management PCI Adapter will forward an alert if the system's power supply fails.	04	POWER SUPPLY FAILURE
Hard disk drive	The Netfinity Advanced System Management PCI Adapter will forward an alert if one or more of the hard disk drives in the system fail.	05	DASD FAULT

The **Non-critical** Enabled Alerts group contains the following items.

Item	Description (if checked)	Numeric Code	Text String
Temperature	The Netfinity Advanced System Management PCI Adapter will forward an alert if any monitored temperature exceeds its threshold value. However, unlike the Critical Temperature event, this Alert will <i>not</i> initiate a system shutdown automatically.	12	NON-CRITICAL TEMPERATURE THRESHOLD EXCEEDED
Voltage	The Netfinity Advanced System Management PCI Adapter will forward an alert if any monitored voltage exceeds its threshold value.	13	VOLTAGE

Item	Description (if checked)	Numeric Code	Text String
Single fan failure	The Netfinity Advanced System Management PCI Adapter will forward an alert if one of the system's cooling fans fails.	11	SINGLE FAN FAILURE

The **System Enabled Alerts** group contains the following items.

Item	Description (if checked)	Numeric Code	Text String
POST timeout	The Netfinity Advanced System Management PCI Adapter will forward an alert if the POST timeout value (specified in the Configuration Settings window) is exceeded.	20	POST/BIOS WATCHDOG EXPIRED. SYSTEM RESTARTED
Loader timeout	The Netfinity Advanced System Management PCI Adapter will forward an alert if the Loader timeout value (specified in the Configuration Settings window) is exceeded.	26	LOADER WATCHDOG EXPIRED. SYSTEM RESTARTED
O/S timeout	The Netfinity Advanced System Management PCI Adapter will forward an alert if the O/S timeout value (specified in the Configuration Settings window) is exceeded.	21	OPERATING SYSTEM WATCHDOG EXPIRED. SYSTEM RESTARTED
Power off	The Netfinity Advanced System Management PCI Adapter will forward an alert if the system is powered off.	23	SYSTEM COMPLEX POWERED OFF
Power on	The Netfinity Advanced System Management PCI Adapter will forward an alert if the system is powered on.	24	SYSTEM COMPLEX POWERED ON
Application	The Netfinity Advanced System Management PCI Adapter will forward an alert if it receives a Netfinity alert (Netfinity can forward alerts directly to the Netfinity Advanced System Management PCI Adapter using the Alert Manager Forward Alert to System Management Subsystem action).	22	APPLICATION LOGGED EVENT
PFA	The Netfinity Advanced System Management PCI Adapter will forward an alert if it receives a Predictive Failure Analysis (PFA) alert from the system.	27	PFA

SNMP Settings

Use the SNMP Settings window to specify SNMP settings for the Netfinity Advanced System Management PCI Adapter. These settings must be configured correctly for the Netfinity Advanced System Management PCI Adapter to forward alerts to SNMP managers on the network. To open the SNMP Settings window, click on **Remote Alert Settings** from the Advanced System Management window and then click on **SNMP**.

Note: This window is only available when you are using the Advanced System Management service to manage a system that has a Netfinity Advanced System Management PCI Adapter or if you have used Dynamic Connection Manager to establish a TCP/IP, serial, or RS-485 Interconnect link with a Netfinity Advanced System Management PCI Adapter. If you are not connected to a system that has a Netfinity Advanced System Management PCI Adapter, this window will not be available.

SNMP Settings - My Netfinity server

SNMP agent enabled **T**raps disable

System contact:

System location:

SNMP Communities

Community:

Community name:

Community IP address 1:

Community IP address 2:

Community IP address 3:

Figure 8. The SNMP Settings window

The SNMP Settings window contains the following items.

Item	Description
SNMP Agent Enabled checkbox	Check this checkbox to enable Netfinity Advanced System Management PCI Adapter to forward alerts to SNMP managers on your network.
Traps Disable	Check this checkbox to prevent SNMP traps from being sent.
System Contact	Type in this field the name of the SNMP System Contact.
System Location	Type in this field information regarding your system's location.
Community spinbox	Use this spinbox to select and define up to three SNMP communities. Note: SNMP alerts will be sent only to the currently selected SNMP communities.

Item	Description
Community Name	Type in this field the name of the selected SNMP community.
Community IP Address 1, 2, and 3	Type in these fields the IP addresses for the selected SNMP community.

After making any changes to these settings, click **Apply** to save the changes. Then, close this window and click **Restart** in the Network Settings window. Changes to Network Settings on a Netfinity Advanced System Management PCI Adapter will not take effect until the adapter has been restarted.

Event Log

Use Event Log to open the Event Logs window (shown in Figure 9). This window contains all entries that are currently stored in the Advanced System Management adapter or processor event log. Information about all remote access attempts and dialout events that have occurred is recorded in the Advanced System Management adapter or processor event log.

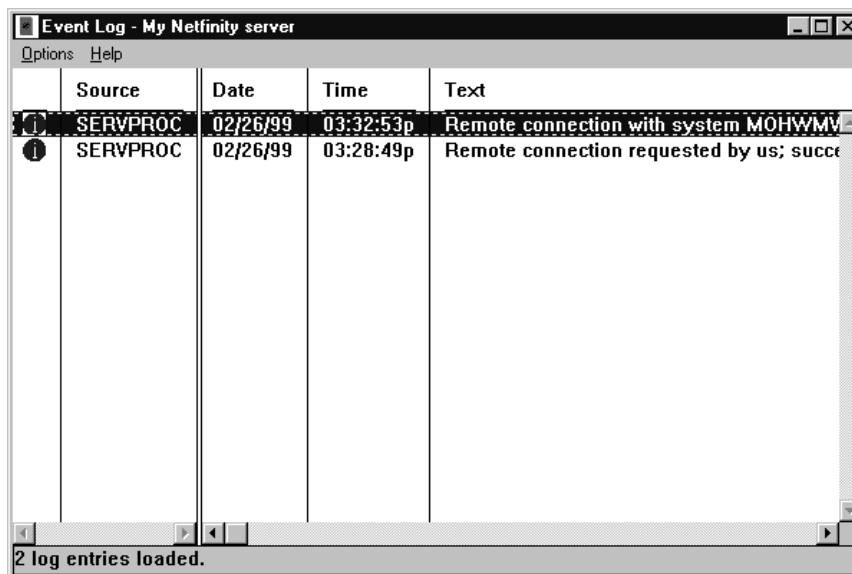


Figure 9. The Event Log window

Notes:

1. If you are using the Advanced System Management service with a Netfinity Advanced System Management PCI Adapter installed in a Netfinity 7000 M10 server, the event log might contain entries that begin with the text I2C Message. These messages are normal and are intended for use by IBM servicers in the event of system problems.
2. If you are using the Advanced System Management service with a Netfinity 7000 M10, 5000, 5500, 5500 M10, or 5500 M20 server, the event log will also include any POST error messages.

The following functions are available from the Options pulldown menu in the Event Log window:

- Load
Refreshes the contents of the Event Log window.
 - Print to File
Saves the contents of the Event Log window to a text file.
 - Print to Printer
Sends the contents of the Event Log window to a printer attached to your system.
 - Clear Log
Erases all entries that are currently stored in the Event Log (including any entries that are not currently visible in the Event Log window).
- Note:** Once you use **Clear Log** to erase the entries in the Event Log, they are permanently erased and cannot be retrieved.

Operational Parameters

The Operational Parameters window (see Figure 10 on page 30) shows the current values or status of many system components monitored by the Advanced System Management adapter or processor.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

Available values include:

- Power supply voltages (including +5 V ac, +12 V ac, -3.3 V ac, -12 V ac; Netfinity 7000 servers feature additional -5 V ac and voltage regulator module (VRM) monitors).
- Current temperatures and threshold levels for system components such as far-end adapter, center adapter, microprocessors, system board, and hard disk drive backplane.

Notes:

1. Monitored system components vary by Advanced System Management adapter or processor.
 2. VRM voltages are monitored, but not displayed.
- System state (including O/S started, O/S running, POST started, POST stopped (error detected), and system powered off/state unknown).
 - System power status (on or off).

- Power on hours—the total number of hours that the system has been powered on. (This is a cumulative count of all powered-on hours, not a count of hours since the last system restart).

Temperatures (degrees celsius)					
	Value	Warning Reset	Warning	Soft Shutdown	Hard Shutdown
Microprocessor 1	27.00	43.00	55.00	62.00	65.00
Microprocessor 2	27.00	42.00	53.00	60.00	65.00
Disk backplane	23.00	38.00	42.00	45.00	50.00

Voltages			System Status	
Source	Value	Warning Reset		
+5 Volt	5.04	[4.90, 5.25]	System Power	ON
-5 Volt	-5.12	[-5.75, -4.25]	Power-on Hours	647
+3 Volt	3.29	[3.25, 3.35]	Start-up Count	125
+12 Volt	12.10	[11.50, 12.50]	System State	O/S activity detected
-12 Volt	-11.98	[-13.00, -10.20]	Fan 1	100%
			Fan 2	100%

Figure 10. The Operational Parameters window

System Power Control

Use the System Power Control window to instruct the Netfinity Advanced System Management PCI Adapter to power off the system, restart the system, or power on the system. To initiate any of the power control options, you must first check the **Enable power control options** check box. If this check box is unchecked, the **Power Control Options** field will not be available.

Enable power control options

Power Control Options

Power off with O/S shutdown.
 Power off now.
 Restart the system with O/S shutdown.
 Restart the system now.

Apply **Cancel** **Help**

Figure 11. The System Power Control window

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

The following System Power Control functions are available at all times.

Function	Description
Power off with O/S shutdown	Performs an O/S shutdown before removing power from the system.
Power off now	Immediately removes power from the system.
Restart the system with O/S shutdown	Performs an O/S shutdown, removes power from the system, and then restores power to the system.
Restart the system now	Immediately removes power from the system, and then restores power to the system.

If you are directly connected to the Netfinity Advanced System Management PCI Adapter through a modem or TCP/IP link, the **Power on now** selection will also be available. This function powers up the system and allows the microprocessor to perform POST, loading, and O/S startup procedures.

To initiate a Power Control Option:

1. Check the **Enable power control options** check box.

Note: To initiate any of the power control options, you must first check the **Enable power control options** check box. If this check box is unchecked, the **Power Control Options** field will not be available.

2. From the **Power Control Options** field, select the Power Control Option you want to activate.
3. Click on **Apply**.

Remote POST Console

You can use the Advanced System Management Remote POST Console function to remotely monitor, record, and replay all textual output generated during POST.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To monitor and record the POST data on a remote system:

1. Connect to the remote system's Netfinity Advanced System Management PCI Adapter.
2. Open the Remote POST window.
3. Restart the remote system (using the Advanced System Management's System Power Control functions).

All POST data will be displayed in and recorded by the Remote POST Console as the remote system completes POST. While you are monitoring POST on a remote system, all local keystrokes are relayed automatically to the remote system, enabling you to interact with the POST process on the remote system.

To review data after POST completes, disconnect from the remote system and use the Replay functions.

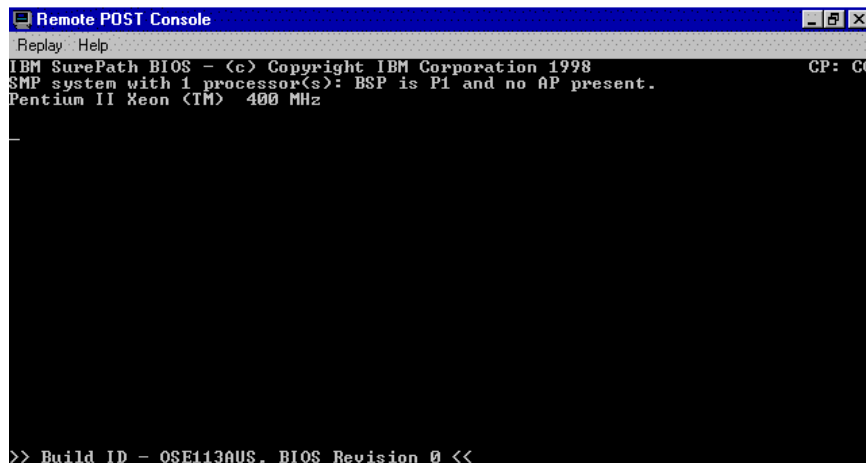


Figure 12. The Remote POST window

Use the selections available in the Replay pull-down menu to replay the textual output that was captured during the last Remote POST operation. All text that was displayed by the remote system during POST will be displayed as it appeared on the remote system.

- To begin playing the recorded POST data, or to resume playing the recorded POST data after stopping playback, click on **Replay Last POST**.
- To halt playback of the recorded POST data, click on **Stop**.

- To resume viewing the recorded POST data from the beginning, click on **Restart**.
- Select **Fast**, **Medium**, or **Slow** to specify the speed at which the recorded POST data is displayed in the Remote POST window.

Note: Remote POST data can be replayed only when you are *not* connected to a remote system's Netfinity Advanced System Management PCI Adapter.

Updating Netfinity Advanced System Management PCI Adapter Microcode

Important

If you update the Netfinity Advanced System Management PCI Adapter microcode, the default user name (USERID) and password (PASSWORD) are reset. If you had previously changed them, you will need to change them again. For more information, see "Configuration Settings" on page 7.

To update the Netfinity Advanced System Management PCI Adapter microcode:

1. From the **Options** pulldown menu, select **Update Microcode...** and then select **System Management Subsystem**.
A file selection window appears.
2. Use the file selection window to select the source disk drive (or diskette drive) and directory where the Netfinity Advanced System Management PCI Adapter microcode update is located.
3. Select **OK** to continue.
4. Warning notices will appear, asking that you verify that you want to continue. Select **OK** to continue or **Cancel** to stop the microcode update process.

When you have verified that you want to proceed with updating the Netfinity Advanced System Management PCI Adapter microcode, the Advanced System Management service will apply the microcode update to the Netfinity Advanced System Management PCI Adapter.

During this process, some of the monitoring functions of the Netfinity Advanced System Management PCI Adapter (such as the environmental monitors) will be disabled. Once the microcode update is complete, all system monitoring will resume.

Dynamic Connection Manager

Dynamic Connection Manager is an updated and enhanced version of the Serial Connection Control service that is included with Netfinity Manager. This enhanced version of Serial Connection Control is installed with Netfinity Manager 5.2.1 or later only if the Advanced System Management option is selected during installation. If you do not select the Advanced System Management installation option when installing Netfinity Manager 5.2.1 or later, Serial Connection Control will be installed instead of Dynamic Connection Manager. For information on Serial Connection Control, see the Serial Connection Control chapter of your *Netfinity Manager User's Guide*.

Like Serial Connection Control, Dynamic Connection Manager enables you to remotely access another Netfinity Manager system using a modem installed in your system. Once properly configured, you can access and manage other Netfinity Manager systems using only a modem, just as if they were attached to your LAN. If you use Dynamic Connection Manager to connect with a Netfinity Manager, you can then use the remote system's Remote System Manager to pass through that system and manage any other Netfinity Manager system on the remote system's network.

Also, if your system is not LAN-attached, the Netfinity Manager Dynamic Connection Manager service will enable your system administrator to manage your system using any Netfinity Manager application without having to visit your office or interrupt your work.

In addition to the functions provided by the Serial Connection Control service, you can use Dynamic Connection Manager to link directly to the TCP/IP or RS-485 Interconnect network subsystem included with the Netfinity Advanced System Management PCI Adapter. Once this link is established, you can use the Advanced System Management service to directly access, monitor, configure, and manage the Netfinity Advanced System Management PCI Adapter regardless of whether the server in which it is installed is currently powered on or operational.

Notes:

1. Your system must have a properly installed and configured modem that supports at least 9600 baud to use Dynamic Connection Manager serial linking functions.
2. Your system must be attached to a TCP/IP network and you must enable the TCP/IP protocol driver (enabled during installation. If it is not currently enabled, use Network Driver Configuration to enable it) to use Dynamic Connection Manager TCP/IP linking function.
3. Your system must be attached to an RS-485 Interconnect network to use Dynamic Connection Manager RS-485 Interconnect linking function.

Note: Dynamic Connection Manager enables you to use a serial or TCP/IP connection to connect to a remote Advanced System Management adapter or processor, and then use the RS-485 Interconnect function to "pass through" and connect to other Advanced System Management adapters or processors on the remote system's RS-485 Interconnect network. For more information, see "RS-485 Interconnect Pass-Through Management" on page 42.

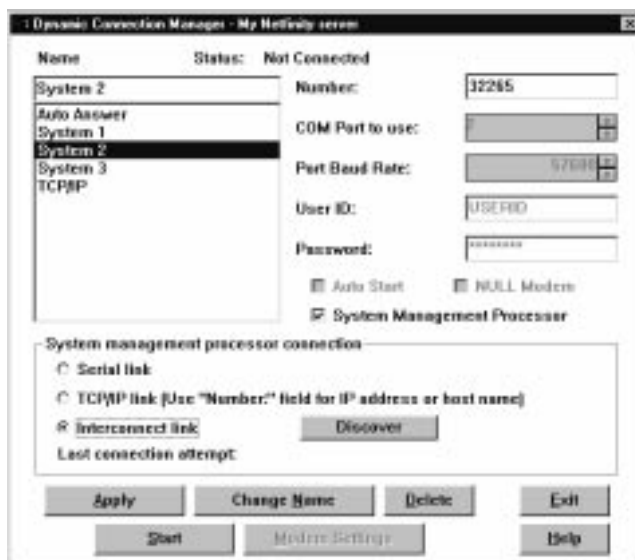


Figure 13. Dynamic Connection Manager

Modem Configuration

Before you can use the Dynamic Connection Manager serial linking functions to access remote systems or to enable remote access of your own system, you must ensure that your modem is properly configured.

To configure your system's modem:

1. Select **Modem Settings** from the Dynamic Connection Manager window.
This will open the Modem Settings window (see Figure 14 on page 36).
2. Select the **COM Port** for the modem that you are configuring.

Use the spin buttons beside the **COM Port to configure** field to select the modem's COM port.

3. Select a **Modem Name**, or type in a new one.

Select from the **Modem Name** field the name of your system's modem, or type in a new one. Netfinity Manager comes preconfigured with settings for some popular modem types. However, if your modem is not listed in the **Modem Name** field, or if you do not know what kind of modem your system has, select **Default**. If your modem does not function properly when using the **Default** settings, see "Initialization String Guidelines" on page 42.

Note: Selecting a preconfigured Modem Name or **Default** will automatically fill in the other modem configuration information.

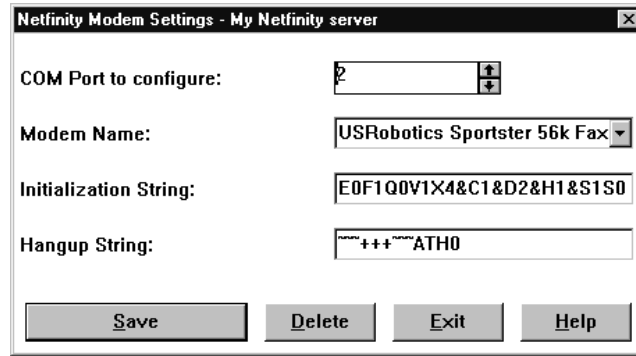


Figure 14. Dynamic Connection Manager — Modem Settings window

4. If you typed in a modem name, type in the proper **Initialization String** for your system's modem.

If you selected one of the preconfigured Modem Names, this field will be filled in for you. However, you might need to edit this field if Netfinity Manager did not come with preconfigured settings for your modem. If you need more information, see "Initialization String Guidelines" on page 42.

5. Type in the proper **Hangup String** for your system's modem.

The **Hangup String** field contains the command that will be sent to the modem to instruct it to close the connection to the phone line. This string will function properly on most modems. If your modem does not respond correctly to the default hangup string, see the documentation that came with your modem for more information.

6. Select **Save** to save these settings and enable this modem to be used by Dynamic Connection Manager.

Enabling Remote Access

Once you have configured your modem for use with Dynamic Connection Manager, you must grant access to your system to your network administrator or other authorized users. Authorized users can then use Dynamic Connection Manager to access your system. To grant access to your system:

1. Select Auto Answer from the **Name** Selection list to set the Dynamic Connection Manager service to Auto Answer mode.
2. Use the Security Manager service to configure a User ID/Password combination for the authorized user to use when logging on to your system.

To set the Dynamic Connection Manager service to Auto Answer mode:

1. Start the Netfinity Manager Dynamic Connection Manager service.
2. Select **Auto Answer** from the Dynamic Connection Manager window's **Name** field.

The Auto Answer setting will enable the Dynamic Connection Manager service to automatically answer incoming phone calls through the modem. Once it has answered the telephone, it will attempt to establish a link with the calling system.

3. Select **Null Modem** if the connection will be established using a null modem connection.

4. Set the Dynamic Connection Manager User ID and Password.

Use the Security Manager service to configure a User ID/Password combination for the authorized user to use when logging on to your system. When remote users dial into the modem on this system, they will need to provide a User ID and a Password to get access to the Netfinity Manager services on this system. For information on how to configure Netfinity Manager User ID/Password combinations, see the Security Manager chapter of your *Netfinity Manager User's Guide*.

5. Select **Start**.

Once you select **Start**, the Dynamic Connection Manager service will begin waiting for an incoming call. Once "Waiting for call" appears in the Dynamic Connection Manager window status field, you can select **Exit**. Dynamic Connection Manager will continue to wait in the background for incoming calls.

Note: If you want the Dynamic Connection Manager service to automatically start and begin waiting for incoming calls when Netfinity Manager is started, select **Auto Answer**, and then select the **Auto Start** check box.

Once you have configured your system's modem for use with the Dynamic Connection Manager service, you can create Serial Connection entries that will enable you to remotely access other Netfinity Manager systems.

Creating Dynamic Connection Manager Entries

Dynamic Connection Manager entries are added by filling in the appropriate fields in the Dynamic Connection Manager window. You can create two types of entries:

- Netfinity Manager connections

Create a Netfinity Manager connection to use Dynamic Connection Manager and your modem establish a serial connection with the Dynamic Connection Manager service or the Serial Connection Control service on remote systems running Netfinity Manager. Once you establish this connection, you can use Netfinity Manager services to remotely monitor and manage the remote system just as if it were attached to your network.

- System Management Processor connections

Create a Netfinity Manager connection to use Dynamic Connection Manager to connect directly with a PC Server Advanced System Management Adapter, Netfinity Advanced System Management Processor, or Netfinity Advanced System Management PCI Adapter that is installed in one of your servers. If you use Dynamic Connection Manager to directly link to remote Advanced System Management hardware Netfinity Manager does not need to be running on the remote servers to use the Advanced System Management service to monitor and manage their Advanced System Management hardware.

Note: System Management Processor connections enable you to use **only** the Advanced System Management service. Other Netfinity Manager services will not be available on the remote system.

Creating Netfinity Manager Connection Entries

To add a new Dynamic Connection Manager Netfinity Manager connection entry:

1. Assign a name to the entry.

Type in the **Name** field a unique name for the Dynamic Connection Manager entry that you are creating for an individual system. For example, the System Name of the system that you are configuring for Dynamic Connection Manager access would be a good entry. However, the Name entry is purely descriptive, and can be anything at all.

2. Enter the remote system's telephone number.

Type in the **Number** field the telephone number of the system that you will be accessing. Be sure to include the area code and any prefixes that might be necessary to reach this system (for example, some phone systems require that you dial a 9 to get an external phone line).

Note: Do not use parentheses or dashes in the telephone number.

3. Assign a COM Port.

Select the **COM Port** of the modem that you will be using to access the remote system.

4. Specify the modem's baud rate.

Select the **Baud Rate** of the modem that you will be using to access the remote system.

Notes:

- a. If your serial connections fail frequently, try lowering the baud rate. Higher baud rates are more sensitive to line noise.
 - b. For best performance, select a baud rate that equal to or greater than your modem's maximum speed.
5. Enter a User ID for logging on to the remote system.

Type in a **User ID** that will allow access to the remote system. This must match a User ID/Password combination that has been configured to allow access in the remote system's Security Manager.

6. Enter a password for logging on to the remote system.

Type in a **Password** that will allow access to the remote system. This must match a User ID/Password combination that has been configured to allow access in the remote system's Security Manager.

7. Select **Null Modem** if the connection will be established using a null modem connection.

8. Save the Dynamic Connection Manager entry.

Select **Apply** to save this entry.

Creating System Management Processor Connection Entries

To add a new Dynamic Connection Manager System Management Processor Connection entry:

1. Check the **System Management Processor** check box.

When you check this check box, the **System management processor connection** button group selections are enabled.

2. Select a **System management processor connection** type.

You can choose one of three connection types:

- Serial link

Select **Serial link** from the **System management processor connection** button group to use your modem to connect directly with the modem that is configured for use by the remote PC Sever Advanced System Management Adapter, Netfinity Advanced System Management PCI Adapter, or Netfinity Advanced System Management Processor.

- TCP/IP link

Select **TCP/IP link** from the **System management processor connection** button group to use your TCP/IP network connection to connect directly with the TCP/IP subsystem that is built into a Netfinity Advanced System Management PCI Adapter that is attached to your network.

Note: TCP/IP links are available **only** with the Netfinity Advanced System Management PCI Adapter.

- Interconnect link

Select **Interconnect link** from the **System management processor connection** button group to access Advanced System Management adapters or processors that are connected to the Netfinity Advanced System Management PCI Adapter on an RS-485 Interconnect network. RS-485 connections do not require any additional configuration. If you are using the RS-485 Interconnect function, see "Accessing Remote Systems (RS-485 Interconnect Links)" on page 41 for more information.

3. Assign a name to the entry.

Type in the **Name** field a unique name for the Dynamic Connection Manager entry that you are creating for an individual Advanced System Management Adapter or Processor. For example, the System Name of the system in which the adapter or processor is installed would be a good entry. However, the Name entry is purely descriptive, and can be anything at all.

4. Enter an access number for the remote system.

Type in the **Number** field the telephone number (if you selected **Serial link** from the **System Management processor connection** button group) or the TCP/IP address (if you selected **TCP/IP link** from the **System Management processor connection** button group) of the Advanced System Management adapter or processor that you will be accessing. If you are configuring a serial link, be sure to include the area code and any prefixes that might be necessary to reach this adapter or processor (for example, some phone systems require that you dial a 9 to get an external phone line).

Note: Do not use parentheses or dashes in the telephone number.

5. Assign a COM Port.

Select from the **COM Port to use** field the COM port of the modem or network adapter that you will be using to access the Advanced System Management adapter or processor.

6. Specify the **Port Baud Rate**.

If you are configuring a serial link, specify baud rate of the modem that you will be using to access the remote system.

Notes:

- a. If your serial connections fail frequently, try lowering the baud rate. Higher baud rates are more sensitive to line noise.
 - b. For best performance, select a baud rate that equal to or greater than your modem's maximum speed.
7. Enter a User ID for logging on to the remote Advanced System Management adapter or processor.
- Type in a **User ID** that will allow access to the remote Advanced System Management adapter or processor. This must match a User ID/Password combination that has been configured, using the Advanced System Management service, to allow access to the Advanced System Management adapter or processor. For information on how to configure User ID/Password combinations for Advanced System Management, see "Remote Management Using a Serial, TCP/IP, or RS-485 Connection" on page 5
8. Enter a password for logging on to the remote Advanced System Management adapter or processor.
- Type in a **Password** that will allow access to the remote Advanced System Management adapter or processor. This must match a User ID/Password combination that has been configured, using the Advanced System Management service, to allow access to the Advanced System Management adapter or processor. For information on how to configure User ID/Password combinations for Advanced System Management, see "Remote Management Using a Serial, TCP/IP, or RS-485 Connection" on page 5
9. Select **Null Modem** if the connection will be established using a null modem connection.
10. Save the Dynamic Connection Manager entry.
- Select **Apply** to save this entry.

Accessing Remote Systems (Serial and TCP/IP Links)

Once you have created one or more Dynamic Connection Manager entries, you are ready to access remote systems.

Remote systems are accessed from the Dynamic Connection Manager window (see Figure 13 on page 35). To access a remote system:

1. Select from the **Name** field the Dynamic Connection Manager entry for the remote system that you want to access.
2. Select **Start** to initiate the serial connection process.

Once you have initiated the Dynamic Connection Manager process, your system will attempt to contact the remote system using either your modem or network adapter. Once it contacts the remote system, Dynamic Connection Manager will attempt to use the User ID/Password combination to access the remote system. If the connection is successful, you can add (or discover) the remote system with Remote System Manager. Then, you can remotely access and manage the remote system just as if it were part of your network.

Notes:

1. If you create a System Management Processor Connection you will be able to use only the Advanced System Management service. Once the link is established, start the Advanced System Management service by double-clicking on the Advanced System Management icon in your Netfinity Service Manager window.
2. To establish a Netfinity Manager Connection, the remote system *must* have its own Dynamic Connection Manager or Serial Connection Control service running in Auto Answer mode. If the remote system is not in Auto Answer mode, your telephone call will not be answered by the remote system's modem.
3. If you want Dynamic Connection Manager to automatically start and attempt to access a specific remote system when Netfinity Manager is started, select the remote system's entry, and then select the **Auto Start** check box. Only one entry can be configured to start automatically.

Accessing Remote Systems (RS-485 Interconnect Links)

Unlike serial and TCP/IP links, RS-485 Interconnect links do not require extensive configuration prior to attempting to connect with other Advanced System Management adapters or processors on the RS-485 Interconnect network. To establish an RS-485 Interconnect link:

1. Check the **System Management Processor** check box.
When you check this check box, the **System management processor connection** button group selections are enabled.
2. Click on **Interconnect Link** in the **System management processor connection** button group.
3. Click the **Discover** button to open the Discover Interconnect window.

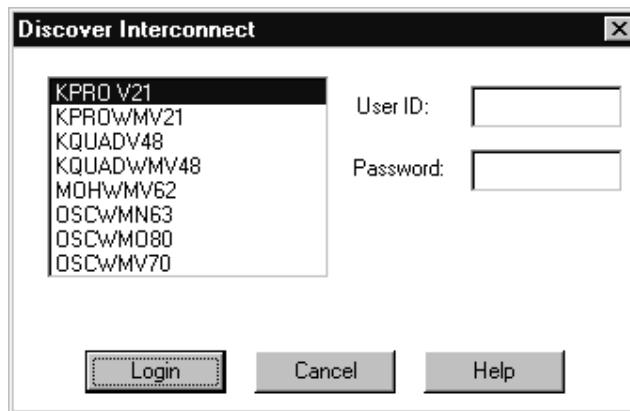


Figure 15. Dynamic Connection Manager — Discover Interconnect window

The Discover Interconnect window displays a list of all Advanced System Management adapters or processors that are attached to and accessible through the RS-485 Interconnect network.

4. Select an Advanced System Management adapter or processor from the list displayed in the Discover Interconnect window.

5. Enter a User ID for logging on to the remote Advanced System Management adapter or processor.

Type in a **User ID** that will allow access to the remote Advanced System Management adapter or processor. This must match a User ID/Password combination that has been configured, using the Advanced System Management service, to allow access to the Advanced System Management adapter or processor. For information on how to configure User ID/Password combinations for Advanced System Management, see “Remote Management Using a Serial, TCP/IP, or RS-485 Connection” on page 5

6. Enter a password for logging on to the remote Advanced System Management adapter or processor.

Type in a **Password** that will allow access to the remote Advanced System Management adapter or processor. This must match a User ID/Password combination that has been configured, using the Advanced System Management service, to allow access to the Advanced System Management adapter or processor. For information on how to configure User ID/Password combinations for Advanced System Management, see “Remote Management Using a Serial, TCP/IP, or RS-485 Connection” on page 5.

7. Click on **Login** to establish the RS-485 link with the selected Advanced System Management adapter or processor.

RS-485 Interconnect Pass-Through Management

You can use the Dynamic Connection Manager to manage Advanced System Management adapters or processors that are attached to an RS-485 Interconnect network, even if your own system and Netfinity Advanced System Management PCI Adapter are not attached to the same RS-485 Interconnect as the systems that you want to manage. To establish a pass-through RS-485 link:

1. Configure and establish a serial or TCP/IP link with a Netfinity Advanced System Management PCI Adapter that is attached to a remote RS-485 Interconnect network.

For information on how to configure and establish serial or TCP/IP links, see “Creating System Management Processor Connection Entries” on page 38 and “Accessing Remote Systems (Serial and TCP/IP Links)” on page 40.

2. After the serial connection or TCP/IP link is established, click on **Interconnect link** in the **System management processor connection** button group and then click on **Discover**. The Discover Interconnect window will open and a list of Advanced System Management adapters and processors that are connected to the RS-485 Interconnect network that the remote Netfinity Advanced System Management PCI Adapter to which you connected using the serial or TCP/IP link is displayed. Select and login to any of these systems, just as you would if they were attached to your own system on an RS-485 Interconnect network.

Initialization String Guidelines

Although most modems share similar initialization string codes, there are differences from modem to modem. Therefore, it is very difficult to provide appropriate initialization strings for *all* modems. In some cases you might need to create your own initialization string for your modem. If you do, consult the documentation that comes with your modem for the appropriate initialization string codes.

- Required Initialization Codes

For a modem to operate correctly with the Netfinity Manager Dynamic Connection Manager service, the initialization string must configure the modem as follows:

- Command echoing OFF
- Online character echoing OFF
- Result codes ENABLED
- Verbal result codes ENABLED
- All codes and connect messages with BUSY and DT detection
- Protocol ind added - LAPM/MNP/NONE V42bis/MNP5
- Normal CD operations
- DTR ON-OFF hangup, disable AA and return to command mode
- CTS hardware flow control
- RTS control of received data to computer
- Queued and nondestructive break, no escape state
- Auto-answer off

Example: The initialization string for a U.S. Robotics Sportster modem using only the settings required for correct operation would be:

```
E0F1Q0V1X4&A3&C1&D2&H1&R2&Y3
```

- Additional Initialization Codes

In addition to the required initialization codes, you can optimize the operation of the Netfinity Manager Dynamic Connection Manager service by configuring your modem with the following additional settings:

- Speaker ON until carrier detected
- Software flow control disabled
- Auto-error control
- Variable data rate

Example: The initialization string for a U.S. Robotics Sportster modem using all the required and additional settings would be:

```
E0F1M1Q0V1X4&A3&C1&D2&H1&I0&K1&M4&N0&R2&Y3
```

Accessing the Netfinity Advanced System Management PCI Adapter without Netfinity Manager

This chapter describes how to use the Netfinity Advanced System Management PCI Adapter without using Netfinity Manager.

If you are unable to use Netfinity Manager to access and manage your Netfinity Advanced System Management PCI Adapter, you can use a terminal program and a modem to connect directly to the Netfinity Advanced System Management PCI Adapter. You can also use a null modem connection. For more information on configuring the Netfinity Advanced System Management PCI Adapter modem, see "Modem Settings" on page 13 and "Advanced System Management Port Reference" on page 16.

Also, if the Netfinity Advanced System Management PCI Adapter is attached to and configured to use a TCP/IP network (using the Ethernet port), you can use a TELNET session or web browser to connect to the Netfinity Advanced System Management PCI Adapter. For more information on configuring the Netfinity Advanced System Management PCI Adapter network functions, see "Network Settings" on page 19.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see "Using the Advanced System Management PCI Adapter as a Network Gateway" on page 3.

When connected, you will be able to access a variety of monitor, configuration, and error log data. You can also:

- Power the remote system on or off
- Shut down and restart the server
- Initiate remote video mode on the Netfinity Advanced System Management PCI Adapter

Remote video mode enables you to remotely monitor all textual output generated during POST. All POST data will be displayed in the terminal program window as the remote system completes POST. While you are monitoring POST on the remote system, all local keystrokes are relayed automatically to the remote system, enabling you to use POST utilities (such as system configuration, redundant array of independent disks [RAID] mini-configuration program, and diagnostic programs) that can be accessed during POST.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

Establishing a Direct Connection to the Netfinity Advanced System Management PCI Adapter

You can establish a direct connection to the Netfinity Advanced System Management PCI Adapter in one of three ways:

- Connect using a serial connection and a terminal program
- Connect using a TCP/IP network connection and a TELNET session
- Connect using a TCP/IP network connection and a web browser

Using a Terminal Program to Connect

To use a terminal program to establish a connection with the Netfinity Advanced System Management PCI Adapter:

1. Use a terminal program to establish a connection with the Netfinity Advanced System Management PCI Adapter modem.

Use the following modem settings:

Baud 57.6 k
Data Bits 8
Parity None
Stop Bits 1
Flow Control Hardware

2. Dial the Netfinity Advanced System Management PCI Adapter.
3. Log in to the Netfinity Advanced System Management PCI Adapter.

When you have established a connection with the Netfinity Advanced System Management PCI Adapter, you will be prompted for a user name and password. You must provide a user name and password combination that has been previously configured for use with the Netfinity Advanced System Management PCI Adapter.

You can use one of two user name and password combinations:

- The default user name (USERID) and password (PASSWORD)
Note: The default user name and password are case sensitive. You must use all caps, and the “0” in PASSWORD is the numeral zero.
- A user name and password that you define using the Advanced System Management service and Netfinity Manager

Important

For security purposes, change the user name and password using the Advanced System Management service. For more information, see “Configuration Settings” on page 7.

If you update the Netfinity Advanced System Management PCI Adapter microcode, the default user name (USERID) and password (PASSWORD) are reset. If you had previously changed them, you will need to change them again.

When you have logged in, you will be presented with the Netfinity Advanced System Management PCI Adapter menu system. For more information, see “Netfinity Advanced System Management PCI Adapter Menus” on page 49

Using a TELNET Session to Connect

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To use a TELNET session to establish a connection with the Netfinity Advanced System Management PCI Adapter:

1. ensure that your TELNET client is configured for VT100 emulation, and that the VT100 arrow keys are enabled. If your TELNET client is not correctly configured certain keys will not function properly.
2. TELNET to the TCP/IP address or hostname that has been assigned to the Netfinity Advanced System Management PCI Adapter.

For information on configuring the Netfinity Advanced System Management PCI Adapter network functions, see “Network Settings” on page 19.

3. Log in to the Netfinity Advanced System Management PCI Adapter.

When you have established a connection with the Netfinity Advanced System Management PCI Adapter, you will be prompted for a user name and password. You must provide a user name and password combination that has been previously configured for use with the Netfinity Advanced System Management PCI Adapter.

You can use one of two user name and password combinations:

- The default user name (USERID) and password (PASSWORD)

Note: The default user name and password are case sensitive. You must use all caps, and the “0” in PASSWORD is the numeral zero.

- A user name and password that you define using the Advanced System Management service and Netfinity Manager

Important

For security purposes, change the user name and password using the Advanced System Management service. For more information, see “Configuration Settings” on page 7.

If you update the Netfinity Advanced System Management PCI Adapter microcode, the default user name (USERID) and password (PASSWORD) are reset. If you had previously changed them, you will need to change them again.

When you have logged in, you will be presented with the Netfinity Advanced System Management PCI Adapter menu system. For more information, see “Netfinity Advanced System Management PCI Adapter Menus” on page 49.

Using a Web Browser to Connect

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

Connecting to the Netfinity Advanced System Management PCI Adapter using a web browser is supported only when using one of the following web browsers:

- Microsoft Internet Explorer 4.01 with SP1
- Netscape Communicator 4.04

Connecting with other web browsers is unsupported and may cause unpredictable results.

To use a web browser to establish a connection with the Netfinity Advanced System Management PCI Adapter:

1. Type in the location or URL address field of your web browser the TCP/IP address or hostname that has been assigned to the Netfinity Advanced System Management PCI Adapter.

For information on configuring the Netfinity Advanced System Management PCI Adapter network functions, see “Network Settings” on page 19..

2. Log in to the Netfinity Advanced System Management PCI Adapter.

When you have established a connection with the Netfinity Advanced System Management PCI Adapter, you will be prompted for a user name and password. You must provide a user name and password combination that has been previously configured for use with the Netfinity Advanced System Management PCI Adapter.

You can use one of two user name and password combinations:

- The default user name (USERID) and password (PASSWORD)

Note: The default user name and password are case sensitive. You must use all caps, and the “0” in PASSWORD is the numeral zero.

- A user name and password that you define using the Advanced System Management service and Netfinity Manager

Important

For security purposes, change the user name and password using the Advanced System Management service. For more information, see “Configuration Settings” on page 7.

If you update the Netfinity Advanced System Management PCI Adapter microcode, the default user name (USERID) and password (PASSWORD) are reset. If you had previously changed them, you will need to change them again.

When you have logged in, you will be asked to provide a timeout period of between 5 and 20 minutes. Enter the timeout value, and then press **Enter**. You will then be presented with the Netfinity Advanced System Management PCI Adapter menu system. For more information, see “Netfinity Advanced System Management PCI Adapter Menus”

Netfinity Advanced System Management PCI Adapter Menus

When you have logged into the Netfinity Advanced System Management PCI Adapter, the following main menu appears:

```
2 Monitors
3 Error Logs
4 Service Processor Configuration
5 System Services
6 System Power
7 Boot
B Remote Terminal Status
Y Disconnect Current Logon
Z Start Remote Video
```

To access a menu item, press the number or letter that corresponds to the information that you want to access (or, if you are using a Web Browser to access the Netfinity Advanced System Management PCI Adapter, click on the menu selection that corresponds to the information that you want to access). After you select a menu item, subsequent menus will offer more specific information that pertains to the selection you made from the main menu. To return to the main menu, press the **Esc** key. To return to the previously viewed menu, press the **Backspace** key.

Note

- Selecting **Y Disconnect Current Logon** ends the current session and requires you to enter a new user name and password before continuing.
- Selecting **Read** displays the last entry.
- Selecting **Read Last** steps backwards through the entries.
- Selecting **Write** executes the command.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

Menu Selection	Data Available for Viewing
Monitors	System board temperature, microprocessor temperatures, voltage readings, voltage regulator module readings, fan status
Error Logs	Contents of system error log
Service Processor Configuration	Netfinity Advanced System Management PCI Adapter modem configuration, dial-out entries, dial-out alerts, dial-in logins, system status, thresholds, system statistics, vital product data (VPD) information, and system state
System Services	Status of Netfinity Advanced System Management PCI Adapter watchdog timers and event alerts sent to the host system.
System Power	Current system power status, power-off configuration, and power-off delay values Note: You can use selections available from the System Power menu to power the system on or off. For more information, see “System Power Menu Selections.”
Boot	You can use selections available from the Boot menu to shut down and restart your system or to restart the Netfinity Advanced System Management PCI Adapter. For more information, see “Boot Menu Selections” on page 52.
Remote Terminal Status	Current remote terminal status
Start Remote Video	Use Start Remote Video to enable your terminal program to remotely monitor and manage the server during POST. For more information, see “Using Remote Video Mode to Monitor and Access POST” on page 54.

When you are finished accessing the Netfinity Advanced System Management PCI Adapter using a terminal program, select **Disconnect Current Logon** from the main menu and then use your terminal program to close the connection to the Netfinity Advanced System Management PCI Adapter.

System Power Menu Selections

You can use the selections available from the System Power menu to:

- View data regarding the current server power status
- View data regarding the server power configuration
- Power the server off
- Power the server on

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To access these functions:

1. Use a terminal program, TELNET session, or Web Browser to establish a connection with the Netfinity Advanced System Management PCI Adapter.
2. Log in to the Netfinity Advanced System Management PCI Adapter.

When you have established a connection with the Netfinity Advanced System Management PCI Adapter, you will be prompted for a user name and password. You must provide a user name and password combination that has been previously configured for use with the Netfinity Advanced System Management PCI Adapter. You can use one of two user name and password combinations:

- The default user name (USERID) and password (PASSWORD)

Note: The default user name and password are case sensitive. You must use all caps, and the “0” in PASSWORD, is the numeral zero.

- A user name and password that you define using the Advanced System Management service and Netfinity Manager

Important

For security purposes, change the user name and password using the Advanced System Management service. For more information see “Configuration Settings” on page 7.

If you update the Netfinity Advanced System Management PCI Adapter microcode, the default user name (USERID) and password (PASSWORD) are reset. If you had previously changed them, you will need to change them again.

When you have logged into the Netfinity Advanced System Management PCI Adapter, the following main menu appears:

- 2 Monitors
- 3 Error Logs
- 4 Service Processor Configuration
- 5 System Services
- 6 System Power
- 7 Boot
- B Remote Terminal Status
- Y Disconnect Current Logon
- Z Start Remote Video

3. Select **6 System Power**.

The following System Power menu appears:

- 1 Current Power Status
- 2 Power Configuration
- 3 Power On
- 4 Power Off

4. Select a System Power menu item.

- Select **1 Current power Status** for information about the current server power status.
- Select **2 Power Configuration** for information about the server power configuration.
- Select **3 Power On** to power the server on (if it is currently powered off).
- Select **4 Power Off** to power the server off (if it is currently powered on).

Boot Menu Selections

You can use the selections available from the Boot menu to:

- Shut down the server operating system and then restart the server
- Restart the server immediately, without first performing an operating system shut down
- Restart the Netfinity Advanced System Management PCI Adapter

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To access these functions:

1. Use a terminal program, TELNET session, or Web Browser to establish a connection with the Netfinity Advanced System Management PCI Adapter.

2. Log in to the Netfinity Advanced System Management PCI Adapter.

When you have established a connection with the Netfinity Advanced System Management PCI Adapter, you will be prompted for a user name and password. You must provide a user name and password combination that has been previously configured for use with the Netfinity Advanced System Management PCI Adapter. You can use one of two user name and password combinations:

- The default user name (USERID) and password (PASSWORD)

Note: The default user name and password are case sensitive. You must use all caps, and the “0” in PASSWORD, is the numeral zero.

- A user name and password that you define using the Advanced System Management service and Netfinity Manager

Important

For security purposes, change the user name and password using the Advanced System Management service. For more information see “Configuration Settings” on page 7.

If you update the Netfinity Advanced System Management PCI Adapter microcode, the default user name (USERID) and password (PASSWORD) are reset. If you had previously changed them, you will need to change them again.

When you have logged into the Netfinity Advanced System Management PCI Adapter, the following main menu appears:

```
2 Monitors
3 Error Logs
4 Service Processor Configuration
5 System Services
6 System Power
7 Boot
B Remote Terminal Status
Y Disconnect Current Logon
Z Start Remote Video
```

3. Select **7 Boot**.

The following Boot menu appears:

```
1 Reboot w/OS shutdown
2 Reboot immediately
4 Restart SP
```

4. Select a Boot menu item.

- Select **1 Reboot w/OS Shutdown** to shut down the server operating system and then restart the server.
- Select **2 Reboot immediately** to restart the server immediately, without first shutting down the operating system.
- Select **4 Restart SP** to restart the Netfinity Advanced System Management PCI Adapter.

Using Remote Video Mode to Monitor and Access POST

You can use a terminal program or TELNET session to remotely monitor all textual output generated during POST. All POST data will be displayed in the terminal program window as the remote system completes POST. While you are monitoring POST on the remote system, all local keystrokes are relayed automatically to the remote system, enabling you to use POST utilities (such as system configuration, RAID mini-configuration program, or diagnostic programs) that can be accessed during POST.

Note: Remote Video Mode using a Web Browser is not supported.

Important!

If your system has both an Advanced System Management Processor and an Advanced System Management PCI Adapter, the Advanced System Management Processor generates all system management data while the Advanced System Management PCI Adapter acts as a network gateway (or shared modem resource) only. For more information on how to configure your Advanced System Management PCI Adapter and Advanced System Management Processor in this configuration, see “Using the Advanced System Management PCI Adapter as a Network Gateway” on page 3.

To use Remote Video Mode to monitor and access POST on the server:

1. Use a terminal program, TELNET session, or Web Browser to establish a connection with the Netfinity Advanced System Management PCI Adapter.
2. Log in to the Netfinity Advanced System Management PCI Adapter.

When you have established a connection with the Netfinity Advanced System Management PCI Adapter, you will be prompted for a user name and password. You must provide a user name and password combination that has been previously configured for use with the Netfinity Advanced System Management PCI Adapter. You can use one of two user name and password combinations:

- The default user name (USERID) and password (PASSWORD)

Note: The default user name and password are case sensitive. You must use all caps, and the “0” in PASSWORD, is the numeral zero.

- A user name and password that you define using the Advanced System Management service and Netfinity Manager

Important

For security purposes, change the user name and password using the Advanced System Management service. For more information, see “Configuration Settings” on page 7.

If you update the Netfinity Advanced System Management PCI Adapter microcode, the default user name (USERID) and password (PASSWORD) are reset. If you had previously changed them, you will need to change them again.

When you have logged into the Netfinity Advanced System Management PCI Adapter, the following main menu appears:

- 2 Monitors
- 3 Error Logs
- 4 Service Processor Configuration
- 5 System Services
- 6 System Power
- 7 Boot
- B Remote Terminal Status
- Y Disconnect Current Logon
- Z Start Remote Video

3. Start (or restart) the server.

- If the remote server is currently powered off:
 - a. Select **6 System Power** from the main menu.
 - b. Select **4 Power On** from the System Power menu.
- If the server is currently powered on, you must restart the server. You can use selections from the System Power menu or the Boot menu to restart the server in several ways.

To restart the server using System Power menu selection:

- a. Select **6 System Power** from the main menu.
- b. Select **3 Power Off** from the System Power menu.
- c. Once the server has powered off, select **4 Power On** to restore power to the server.

To restart the server using Boot menu selections:

- a. Select **7 Boot** from the main menu.
- b. Select either **1 Reboot w/OS Shutdown** or **2 Reboot Immediately** to restart the server.

Note: For information on the System Power and Boot menus, see “System Power Menu Selections” on page 50 and “Boot Menu Selections” on page 52.

4. After you restart the server, return to the main menu and select **Z Start Remote Video**.

Once you have started Remote Video mode on the Netfinity Advanced System Management PCI Adapter, all textual output generated during POST will be sent to your terminal window or TELNET session. Your terminal or TELNET session will also act as a fully-active remote session, enabling you to enter keyboard commands that will be sent to the remote server. In this way, you can enter key commands and key-combinations that access POST operations and utilities, such as system setup or the RAID mini-configuration program.

When you have finished using Remote Video mode, press **Ctrl+R**; then press **Ctrl+E**; then press **Ctrl+T**. This will end Remote Video mode and return you to the main menu.

Configuring the Netfinity Advanced System Management PCI Adapter without Netfinity Manager

This option includes a DOS-based Advanced System Management Configuration Utility called SPUTIL.EXE that enables you to configure many features on your Advanced System Management PCI Adapter without using Netfinity Manager. This utility can be found on the Advanced System Management CD-ROM, included with your option. For more information on this utility, see the README.TXT file on this CD.

Appendix A. Help and Service Information

During the warranty period, you can get toll-free technical support 24 hours a day, 7 days a week, to answer any questions about your adapter.* If you need warranty service, return or exchange is available. In addition, if your IBM options are installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Before calling, please prepare for your call by following these steps.

CAUTION:

To avoid electrical shock, unplug your computer and all attached devices from electrical outlets before performing any troubleshooting procedure.

Step 1: Troubleshooting

You might be able to solve the problem yourself. Before calling IBM, you might want to try the following troubleshooting procedures.

1. Remove and reattach all adapter cables.
2. Remove the adapter.
3. Inspect the adapter for damage.
4. Reinstall the adapter.
5. Place the adapter in a different slot, if possible.
6. Check the system documentation for instructions about the installation of options. Look for a section about system setup or system configuration. Follow all procedures.
7. After completing these steps, reassemble the system, connect the power cord, and retry the failing operation.

Step 2: Preparing for the Call

To assist the technical support representative, have available as much of the following information as possible:

1. Option name, description, and serial number (if any)
2. Proof of purchase
3. Computer manufacturer, model, serial number, and manual
4. Exact wording of the error message (if any)
5. Description of the problem
6. Hardware and software configuration information for your system

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

* Response time will vary depending on the number and nature of calls received.

Step 3: Placing the Call to IBM

Use one of the following numbers:

- Within the United States, call 1-800-772-2227
- Within Canada, call 1-800-565-3344
- Outside the United States and Canada, contact your IBM reseller, IBM marketing representative, or your place of purchase.

Appendix B. Product Warranties and Notices

Warranty Statements

The warranty statements consist of two parts: Part 1 and Part 2. Part 1 varies by country. Part 2 is the same for both statements. Be sure to read both the Part 1 that applies to your country and Part 2.

- **United States, Puerto Rico, and Canada (Z125-4753-05 11/97)**
(Part 1 - General Terms on page 59)
- **Worldwide except Canada, Puerto Rico, Turkey, and United States (Z125-5697-01 11/97)**
(Part 1 - General Terms on page 61)
- **Worldwide Country-Unique Terms**
(Part 2 - Country-Unique Terms on page 63)

IBM Statement of Limited Warranty for United States, Puerto Rico, and Canada (Part 1 - General Terms)

This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1. The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

Machine - IBM Netfinity Advanced Systems Management PCI Adapter

Warranty Period* - Three Years

**Contact your place of purchase for warranty service information. Some IBM Machines are eligible for On-site warranty service depending on the country where service is performed.*

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for the Machine, contact your reseller or IBM. In the United States, call IBM at 1-800-772-2227. In Canada, call IBM at 1-800-565-3344. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
 - b. secure all programs, data, and funds contained in a Machine,
 - c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations, and
 - d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

IBM Statement of Warranty Worldwide except Canada, Puerto Rico, Turkey, United States (Part 1 - General Terms)

This Statement of Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1. The warranties provided by IBM in this Statement of Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

Machine - IBM Netfinity Advanced Systems Management PCI Adapter

Warranty Period* - Three Years

**Contact your place of purchase for warranty service information. Some IBM Machines are eligible for On-site warranty service depending on the country where service is performed.*

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for the Machine, contact your reseller or IBM. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
 - b. secure all programs, data, and funds contained in a Machine,
 - c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfil their obligations, and
 - d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Part 2 - Worldwide Country-Unique Terms

ASIA PACIFIC

AUSTRALIA: The IBM Warranty for Machines: The following paragraph is added to this Section: The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other legislation and are only limited to the extent permitted by the applicable legislation.

Extent of Warranty: The following replaces the first and second sentences of this Section: The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

Limitation of Liability: The following is added to this Section: Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

PEOPLE'S REPUBLIC OF CHINA: Governing Law: The following is added to this Statement: The laws of the State of New York govern this Statement.

INDIA: Limitation of Liability: The following replaces items 1 and 2 of this Section:

1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

NEW ZEALAND: The IBM Warranty for Machines: The following paragraph is added to this Section: The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: The following is added to this Section:
Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

The following terms apply to all EMEA countries.

The terms of this Statement of Warranty apply to Machines purchased from an IBM reseller. If you purchased this Machine from IBM, the terms and conditions of the applicable IBM agreement prevail over this warranty statement.

Warranty Service

If you purchased an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchased an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

The applicable laws, Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided. However, the laws of Austria govern this Statement if the warranty service is provided in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, and Ukraine.

The following terms apply to the country specified:

EGYPT: Limitation of Liability: The following replaces item 2 in this Section:
2. as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

FRANCE: Limitation of Liability: The following replaces the second sentence of the first paragraph of this Section:

In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).

GERMANY: The IBM Warranty for Machines: The following replaces the first sentence of the first paragraph of this Section:

The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section:
The minimum warranty period for Machines is six months.

In case IBM or your reseller are unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

Extent of Warranty: The second paragraph does not apply.

Warranty Service: The following is added to this Section:
During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Production Status: The following paragraph replaces this Section:

Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.

Limitation of Liability: The following is added to this Section:

The limitations and exclusions specified in the Statement of Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

In item 2, replace "U.S. \$100,000" with "1.000.000 DEM."

The following sentence is added to the end of the first paragraph of item 2:

IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

IRELAND: Extent of Warranty: The following is added to this Section:

Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: The following replaces items one and two of the first paragraph of this Section:

1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to the greater of Irish Pounds 75,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section:

IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY: Limitation of Liability: The following replaces the second sentence in the first paragraph:

In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: (item 1 unchanged) 2) as to any other actual damage arising in all situations involving non-performance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

The following replaces the second paragraph of this Section:

Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: (items 1 and 2 unchanged) 3) indirect damages, even if IBM or your reseller is informed of their possibility.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND: Limitation of Liability: The following is added to this Section:

IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

TURKIYE: Production Status: The following replaces this Section:

IBM fulfils customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

UNITED KINGDOM: Limitation of Liability: The following replaces items 1 and 2 of the first paragraph of this Section:

1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; 2. the amount of any other actual direct damages or loss, up to the greater of Pounds Sterling 150,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

The following item is added to this paragraph:

3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section:

IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default will be limited to damages.

NORTH AMERICA

CANADA: Warranty Service: The following is added to this Section:
To obtain warranty service from IBM, call **1-800-465-6666**.

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To obtain warranty service from IBM, call **1-800-IBM-SERV**.

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Electronic Emissions

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

IBM is not responsible for any radio or television interference caused by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Class A emission compliance statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Japanese Voluntary Control Council for Interference (VCCI) Statement

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