



Advanced System Management  
**Information**





Advanced System Management

**Information**

**Note**

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# Contents

<b>Chapter 1. Introduction</b> . . . . .	1
<b>Chapter 2. Installing Device Drivers</b> . . . . .	3
Required Device Drivers . . . . .	3
Device-Driver Installation Instructions . . . . .	3
<b>Chapter 3. Using the Netfinity Advanced System Management Processor     with Netfinity Manager</b> . . . . .	7
Starting the Netfinity Advanced System Management Processor . . . . .	8
Remote Management Using a Serial Connection or Network Connection . . . . .	9
Configuration Information . . . . .	9
Configuration Settings . . . . .	10
Modem Settings . . . . .	15
Network Settings . . . . .	19
Remote Alert Settings . . . . .	21
Event Log . . . . .	25
Operational Parameters . . . . .	26
System Power Control . . . . .	27
Remote POST Console . . . . .	28
Updating Netfinity Advanced System Management Processor Microcode . . . . .	29
<b>Chapter 4. Using the Netfinity Advanced System Management Processor     without Netfinity Manager</b> . . . . .	31
Establishing a Direct Connection to the Netfinity Advanced System Management Processor . . . . .	31
Netfinity Advanced System Management Processor Menus . . . . .	32
System Power Menu Selections . . . . .	33
Boot Menu Selections . . . . .	34
Using Remote Video Mode to Monitor and Access POST . . . . .	36
<b>Appendix A. Dynamic Connection Manager</b> . . . . .	39
Modem Configuration . . . . .	40
Enabling Remote Access . . . . .	41
Creating Dynamic Connection Manager Entries . . . . .	42
Accessing Remote Systems . . . . .	45
Initialization String Guidelines . . . . .	46



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## Chapter 1. Introduction

This section provides instructions for starting and using the IBM Netfinity Advanced System Management processor for Netfinity Manager. These instructions include details on how to install the configuration utilities and device drivers that the Netfinity Advanced System Management processor requires. This section is intended for anyone who will install and use the Netfinity Advanced System Management processor with Netfinity Manager or Client Services for Netfinity Manager.

This section also provides instructions on using the Netfinity Advanced System Management processor 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 processor. Netfinity Manager is included with this server. If you do not install Netfinity Manager, many of the advanced features of the Netfinity Advanced System Management processor will not be available to you. For information on how to install Netfinity Manager, see the “ServerGuide and Netfinity Manager Information” section of this *Server Library*.
- This section of this *Server Library* explains how to use the Advanced System Management service with the Netfinity Advanced System Management processor that is included with your server. 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 PCI Adapter (included with other types of servers)

The features available with the Advanced System Management service vary depending on the Advanced System Management hardware that they are managing. For detailed information on using the Advanced System Management service with Advanced System Management hardware other than the Netfinity Advanced System Management processor, see the documentation that is included with the option or the *Server Library* that is included with the server.



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## Chapter 2. Installing Device Drivers

This chapter describes how to install device drivers for the Netfinity Advanced System Management processor.

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### Required Device Drivers

The following device drivers are required:

- For OS/2 operating system  
IBMSPO.DLL and IBMSPO.SYS
- For Microsoft Windows NT operating system  
IBMSPW.DLL and IBMSPW.SYS
- For Novell NetWare operating system  
IBMSPN.NLM

#### Notes:

1. If you plan to install Netfinity Manager, you must install the required device drivers *before* you install Netfinity Manager.
2. For a list of supported operating systems, see <http://www.pc.ibm.com/us/netfinity/> on the World Wide Web.

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### Device-Driver Installation Instructions

The device drivers necessary for the Netfinity Advanced System Management processor to function properly can be installed in one of two ways:

- Use the CoPilot ApplicationGuide CD to install the device drivers.  
To install the device drivers with the CoPilot ApplicationGuide CD, follow the instructions provided in the "Installing Application Programs" section of the "ServerGuide and Netfinity Manager Information" section of this *Server Library*.
- Use the CoPilot ApplicationGuide CD and Diskette Factory to create the diskettes that you will need to install the device drivers.

You will need to create one of the following diskettes:

- *IBM Netfinity 5500 Device Drivers for Advanced System Management Processor, version 1.00*
- *IBM Advanced System Management Processor Device Driver Diskette*

**Note:** These diskettes contain device-driver information that applies to all of the servers that support the Netfinity Advanced System Management processor hardware; that is, the Netfinity 5000, Netfinity 5500, and Netfinity 5500 M10 servers.

Follow the Diskette Factory instructions provided on the CoPilot ApplicationGuide CD to create the diskettes.

If you choose to use the CoPilot ApplicationGuide CD to install the device drivers, you will not need to perform any additional steps to finish installing the device drivers.

If you choose to use Diskette Factory to create diskettes and manually install the device drivers, use the following instructions to complete the device driver installation.

1. Insert the diskette labelled *IBM Netfinity 5500 Device Drivers for Advanced System Management Processor, version 1.00* or *IBM Advanced System Management Processor Device Driver Diskette* into the primary diskette drive.

**Note:** For additional information, review the README file on the diskette.

2. Open an operating-system specific window or full screen.

3. Type the following command; then, press **Enter**:

- For OS/2 operating system

**a:\os2\setup**

- For Microsoft Windows NT operating system

**a:\nt\setup**

- For Novell NetWare operating system

**load a:\netware\setup**

4. You will receive a prompt indicating the location (path and directory) where the device drivers (files) will be placed, and asking you if you want the files to be placed in a different location.

- If you want the files to be placed in the indicated directory, press **n**; then, press **Enter**.
- If you want the files to be placed in a different directory, press **y**; then, press **Enter**. Be sure to use a valid directory name, and include the complete path, when the prompt appears.

5. The required device drivers (files) for your operating system will be copied onto the hard disk, in the directory that you selected in step 4.

- For OS/2 operating system

The system will also update the CONFIG.SYS file.

- For Microsoft Windows NT operating system

The system updates the registry, and all device drivers are loaded automatically. The device drivers will run immediately.

- For Novell NetWare operating system

The system will also update the AUTOEXEC.NCF file.

6. Remove the diskette from the diskette drive.

7. If you have the Microsoft Windows NT operating system, go to step 9 on page 5.

8. If you have the OS/2 operating system or the Novell NetWare operating system:
  - a. Perform the shutdown procedure that your operating system uses. Refer to your operating-system documentation for instructions.
  - b. Press **Ctrl+Alt+Del** to restart your server. The device drivers are loaded automatically. The device drivers will run immediately.
9. You have completed the device-driver installation procedure.

**Notes:**

1. To obtain the current device-driver-diskette image for your operating system, go to <http://www.pc.ibm.com/support/> on the World Wide Web and download the image to your server.
2. If you want the IBM ServerGuide program to update your device drivers automatically through IBM Update Connector, follow the instructions in the “ServerGuide and Netfinity Manager Information” section of this *Server Library*.



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## Chapter 3. Using the Netfinity Advanced System Management Processor with Netfinity Manager

This chapter contains information about the Netfinity Advanced System Management processor that is included with your server. This chapter also describes how 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 four 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 another Netfinity system using the network connection (available only when using Advanced System Management service with a Netfinity Advanced System Management PCI Adapter)

With this service, you can dial out and directly access and control the Advanced System Management adapter or processor on a remote system.

**Note:** 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 install 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.

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 an 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.



Figure 1. The Netfinity Advanced System Management Processor

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## Starting the Netfinity Advanced System Management Processor

To start the Netfinity Advanced System Management processor, 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.

- Select **Configuration Information** to view detailed information about the Netfinity Advanced System Management processor, including random-access memory (RAM) microcode, read-only memory (ROM) microcode, and device-driver information. If you are managing the Netfinity Advanced System Management processor of a server, you will also have access to extensive system information. For more information on Configuration Information, see “Configuration Information” on page 9.
- Select **Configuration Settings** to configure many features of the Netfinity Advanced System Management processor. These features include system identification data, dial-in security settings, the time and date reported by the Netfinity Advanced System Management processor clock, timeout and delay values, and advanced modem settings. For more information on Configuration Settings, see “Configuration Settings” on page 10.
- Select **Remote Alert Settings** to configure the Netfinity Advanced System Management processor 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 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. For more information on the Event Log, see “Event Log” on page 25.
- Select **Operational Parameters** to view the current values or status of many system components monitored by the Netfinity Advanced System Management processor. For more information on Operational Parameters, see “Operational Parameters” on page 26.
- Select **System Power Control** to instruct the Netfinity Advanced System Management processor 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 27.
- Select **Remote POST Console** to use the Netfinity Advanced System Management processor to remotely monitor, record, and replay all textual output generated during POST on a remote system that has a supported Netfinity Advanced System Management processor. For more information on using Remote POST, see “Remote POST Console” on page 28.
- To update the microcode on your Netfinity Advanced System Management processor, from the **Options** pull-down menu, select **Update Microcode...** and then select **System Management Subsystem**. For more information on updating microcode, see “Updating Netfinity Advanced System Management Processor Microcode” on page 29.

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## Remote Management Using a Serial Connection or Network Connection

If you want to use your system modem or 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 or use Dynamic Connection Manager to establish a TCP/IP link with the Netfinity Advanced System Management PCI Adapter installed in the remote server and then start the Advanced System Management service. You can also use Dynamic Connection Manager to establish a null modem connection to another system. For more information on Dynamic Connection Manager, see Appendix A, “Dynamic Connection Manager” on page 39.

### 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 Manager entry. 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 the Netfinity Advanced System Management processor and Dynamic Connection Manager to directly access a Netfinity Advanced System Management PCI Adapter that is connected to your network.
3. 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 adapter or processor on the remote system, not the User ID and Password for access to Netfinity services on the remote system.
4. When creating a Dynamic Connection Manager entry to establish a null modem connection with an Advanced System Management adapter or processor 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.
5. 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. Afterwards, Dynamic Connection Manager will attempt to re-establish the serial connection automatically.

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## Configuration Information

The Configuration Information window (shown in Figure 2 on page 10) contains detailed information about the Netfinity Advanced System Management processor, including RAM microcode, ROM microcode, and device-driver information.

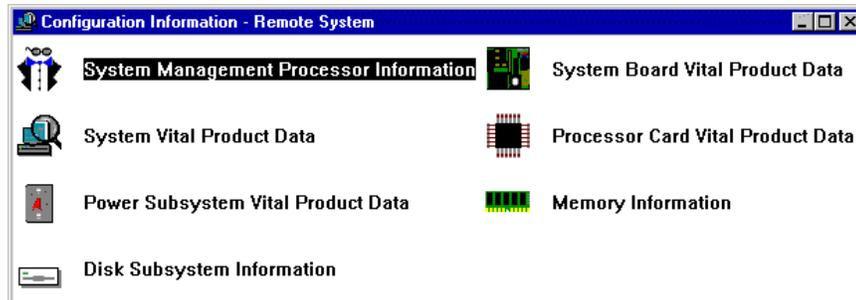


Figure 2. The Configuration Information window

## Configuration Settings

Use the selections available in the Configuration Settings window (see Figure 3 on page 11) to configure many features of the Netfinity Advanced System Management processor. These features include system identification data, dial-in security settings, the time and date reported by the Netfinity Advanced System Management processor clock, timeout and delay values, advanced modem settings, and network settings.

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 15). Select **Network** to open the Network Settings window (see “Network Settings” on page 19).

**Note:** Network Settings configuration is supported only on the Netfinity Advanced System Management PCI Adapter. If you are not using the Netfinity Advanced System Management processor 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 processor.

Field	Description
<b>Name</b>	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 and with pages that are sent to alphanumeric pagers to help you identify the system that generated the alert.
<b>Number</b>	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 and with pages that are sent to alphanumeric pagers to help you identify the system that generated the alert.

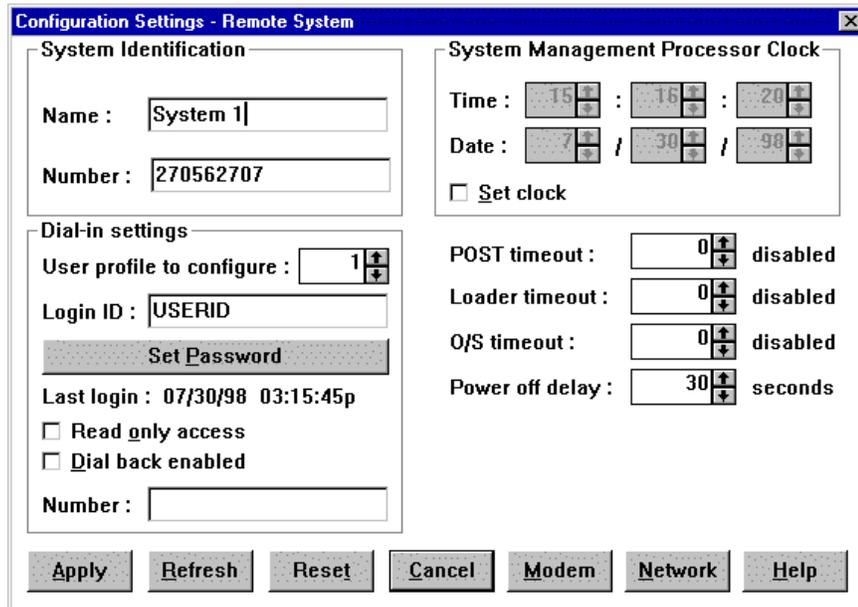


Figure 3. The Configuration Settings window

To change the information provided by these fields:

1. In the **Name** or **Number** field, type the system information that 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 processor. The Dial-In Settings group contains the following items.

Item	Description
<b>User profile to configure</b>	Use the spin buttons to select the user profile that you want to configure. This service supports up to 12 separate profiles on servers.
<b>Login ID</b>	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.) <b>Note:</b> A Login ID <i>must</i> be specified to remotely access the Netfinity Advanced System Management processor.
<b>Set Password</b>	A password must be provided along with the Login ID to allow a remote user to access the Netfinity Advanced System Management processor. After providing a Login ID, click on <b>Set Password</b> to open the Set Password window. (The fields in the Set Password window are case sensitive.) <b>Note:</b> This password must be 5–8 characters in length and must contain at least one nonalphanumeric character.
<b>Last login</b>	Shows the date and time of the last successful login by a remote user.
<b>Read only access</b>	If the <b>Read only access</b> check box is checked, the user whose profile is selected will not be able to alter any of the Netfinity Advanced System Management processor settings when access is granted. The user will, however, be able to see all currently configured settings and values, except passwords.

Item	Description
<b>Dial back enabled</b>	If the <b>Dial back enabled</b> check box is checked, the Netfinity Advanced System Management processor 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 <b>Number</b> field to dial out and attempt to connect with a remote system.

If necessary, select **Modem** to access the Modem Settings window (see “Modem Settings” on page 15). 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 processor. 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 5–8 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.

#### **Important**

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

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

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.

## **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 the Netfinity Advanced System Management processor.

**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 processor 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 processor will wait for the system 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 processor 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 shut down 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.

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 processor will wait for POST to complete. Then, click on **Apply** to save this value. The maximum POST timeout value that you can set is 7650 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 processor 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 processor 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 shut down 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.

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 processor 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 that 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 processor 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 processor will wait between O/S timeout checks. If the O/S fails to respond within 6 seconds, the Netfinity Advanced System Management processor 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 processor 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.

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 that 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 processor will wait for the system operating-system shutdown process to complete before powering off the system.

When the Netfinity Advanced System Management processor 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 processor 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.

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 processor will wait for the system operating-system shutdown to complete before powering off the system. Then, click on **Apply** to save this value. The maximum

Power off delay value that 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
<b>Refresh</b>	Select <b>Refresh</b> to update all data that is shown on the Configuration Settings window, including date, time, and last login.
<b>Reset</b>	Select <b>Reset</b> to set <i>all</i> Advanced System Management settings back to their default values, including configuration settings, dialout settings, and advanced dialout settings.  <b>Important:</b> All previously configured Advanced System Management settings will be permanently lost.
<b>Cancel</b>	Select <b>Cancel</b> 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 10).

**Modem Settings - Remote System**

**Port Configuration**

Port to configure :  Baud rate :

Initialization string :

Hangup string :

Port selected Advanced

**Dialing Settings**

Dial-in enabled  Own port on startup

Dialout retry limit :  Dialout number spacing :

Dialout retry delay :  Dial-in delay (minutes) :

Apply Refresh Cancel Help

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 an Advanced System Management Event occurs. The Port Configuration group contains the following items.

Item	Description
<b>Port to configure</b>	<p>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 processor.</p> <p>The port that you select to use affects the availability of the modem for use by either the Netfinity Advanced System Management processor or the operating system. You can select port configuration entry number 1 for Port A (COM1) or 2 for Port C (COM2).</p> <ul style="list-style-type: none"> <li>• If you select Port A (COM1), the modem will be available for use by the operating system until the Netfinity Advanced System Management processor uses the modem for the first time. After the Netfinity Advanced System Management processor takes control of the modem, the operating system will not be able to access or use the modem until the operating system is restarted.</li> <li>• If you select Port C (COM2), the modem will be dedicated for use by the Advanced System Management adapter or processor only. The operating system will not be able to access a modem that is configured to use Port C (COM2).</li> <li>• The server contains another serial port (Port B). This port is dedicated for use by the operating system only. Do not configure the modem to use this port. The Netfinity Advanced System Management processor will not be able to access a modem that is configured to use Port B.</li> </ul>
<b>Port selected</b>	<p>This check box indicates whether the port number currently displayed in the <b>Port to configure</b> field is the port that is currently designated for use by the Netfinity Advanced System Management processor. Check this check box if you want to configure the Netfinity Advanced System Management processor to use the currently displayed port number.</p>
<b>Initialization string</b>	<p>Type the initialization string that will be used for the specified modem. A default string is provided (ATE0). 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 18.</p>
<b>Hangup string</b>	<p>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 18.</p>
<b>Advanced button</b>	<p>Click this button to open the Advanced Port Configuration window (see Figure 5).</p>

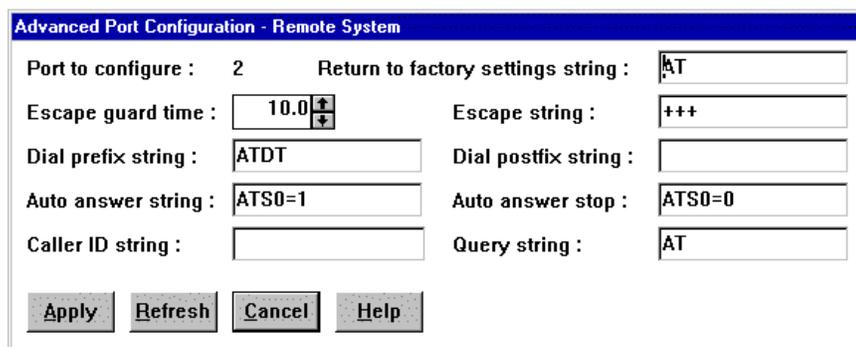


Figure 5. The Advanced Port Configuration window

The Advanced Port Configuration window contains the following items.

Item	Description
<b>Baud rate</b>	Use the spin buttons to specify the baud rate of the modem.
<b>Caller ID string</b>	Type the initialization string that will be used to get Caller ID information from the modem.
<b>Return to factory settings string</b>	Type the initialization string that returns the modem to its factory settings when the modem is initialized. The default is AT&F0.
<b>Query string</b>	Type the initialization string that is used to find out if the modem is attached. The default is AT.
<b>Escape string</b>	Type the initialization string that returns the modem to command mode when it is currently talking to another modem (connected). The default is +++.
<b>Escape guard time</b>	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.
<b>Dial prefix string</b>	Type the initialization string that is used before the number to be dialed. The default is ATDT.
<b>Dial postfix string</b>	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.
<b>Auto-answer string</b>	Type the initialization string that is used to tell the modem to answer the phone when it rings. The default is to answer after two rings or ATS0=2.
<b>Auto-answer stop</b>	Type the initialization string that is used to tell the modem to stop answering the phone automatically when it rings. The default is ATS0=0.

## 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 an Advanced System Management Event occurs. The Dialing Settings group contains the following items.

Item	Description
<b>Dial-in enabled</b>	Check this check box to enable remote users to dial into and access the Netfinity Advanced System Management processor. If this box is unchecked, remote users will be unable to remotely access the Netfinity Advanced System Management processor. Click on <b>Apply</b> after checking or unchecking this check box to save the new setting.
<b>Dialout retry limit</b>	Use the spin buttons to select the number of additional times that the Advanced System Management processor 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.
<b>Dialout retry delay</b>	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
<b>Own port on startup</b>	<p>Check this check box to reserve a serial port for exclusive use by the Netfinity Advanced System Management processor. If the Netfinity Advanced System Management processor is built into your system, checking this box will reserve one of your system serial ports. If the Netfinity Advanced System Management processor is an adapter, checking this box will reserve one of the adapter's integrated communications ports. Click on <b>Apply</b> after checking or unchecking this check box to save the new setting.</p> <p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>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 Netfinity Advanced System Management processor has reclaimed the port for a dialout. If you want to configure the Netfinity Advanced System Management processor 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.</li> <li>2. Port C (COM2) is dedicated for use by the Advanced System Management processor only. Port A (COM1) is used by the operating system, and is available to the Advanced System Management processor only when one of the following conditions exists: <ul style="list-style-type: none"> <li>• The server is powered off</li> <li>• The Advanced System Management processor needs a port to perform a Critical Dialout Event (in this case, the Advanced System Management processor seizes control of the port from the operating system, dials out, and then powers off the server to prevent damage to your hardware).</li> </ul> </li> </ol>
<b>Dialout number spacing</b>	<p>If you have configured more than one Remote Alert Entry to forward alerts, the Netfinity Advanced System Management processor 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 processor 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>
<b>Dial-in delay (minutes)</b>	<p>The <b>Dial-in delay (minutes)</b> field shows the number of minutes that must pass after an incorrect User ID or Password has been used in five successive dial-in attempts before valid dial-in access will be permitted. After the fifth successive login failure, dial-in access is disabled for the number of minutes that you specify, the Netfinity Advanced System Management processor adds an entry in the Event Log noting that dial-in access was suspended due to five successive login failures, and the Netfinity Advanced System Management processor attempts to forward an alert if the <b>Tamper Enabled Alerts</b> 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:

<b>AA</b>	Auto Answer
<b>CD</b>	Carrier Detect
<b>CTS</b>	Clear to Send
<b>DT</b>	Data Transfer
<b>DTR</b>	Data Terminal Ready
<b>LAPM</b>	Link Access Protocol for Modems
<b>MNP</b>	Microcom Networking Protocol
<b>RTS</b>	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 this window, click on **Network** from the Configuration Settings window (see “Configuration Settings” on page 10).

**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 to establish a TCP/IP 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.

Figure 6. The Network Settings window

The Network Settings window contains the following items.

Item	Description
<b>Network interface spinbox</b>	Use the spin buttons to select a network interface to configure. When you have selected the network interface that you want to use, check the <b>Interface: selected</b> check box.
<b>Host name</b>	Type the TCP/IP host name that will be used by the Netfinity Advanced System Management PCI Adapter.
<b>IP address</b>	Type the IP address that will be used by the Netfinity Advanced System Management PCI Adapter.
<b>Subnet mask</b>	Type the subnet mask that will be used by the Netfinity Advanced System Management PCI Adapter.
<b>Gateway</b>	Type the TCP/IP address of the gateway that will be used by the Netfinity Advanced System Management PCI Adapter.
<b>Line type</b>	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, PPP, and Token Ring. Check the <b>Routing</b> check box if needed.
<b>Data rate</b>	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, 4M, 16M, 10M, and 100M.
<b>Duplex</b>	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.
<b>MTU size</b>	Type the maximum transmission unit (MTU) value that will be used by the Netfinity Advanced System Management PCI Adapter.
<b>MAC address</b>	Type the media access control (MAC) address of the network adapter that will be used by the Netfinity Advanced System Management PCI Adapter.

After making any changes to these settings, first click **Apply** to save the changes; then, click **Restart** to restart the Netfinity Advanced System Management PCI

Adapter so that the changes will take effect. Changes to Network Settings will not take effect until the adapter has been restarted.

---

## 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, or an alphanumeric pager when any of the events selected from the **Enabled Alerts** group occurs. 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.

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 noncritical 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 first 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 processor abandons the currently active alert forwarding operation, and moves on to the next one.

Your Netfinity Advanced System Management processor can be configured with up to six separate Remote Alert Entries.

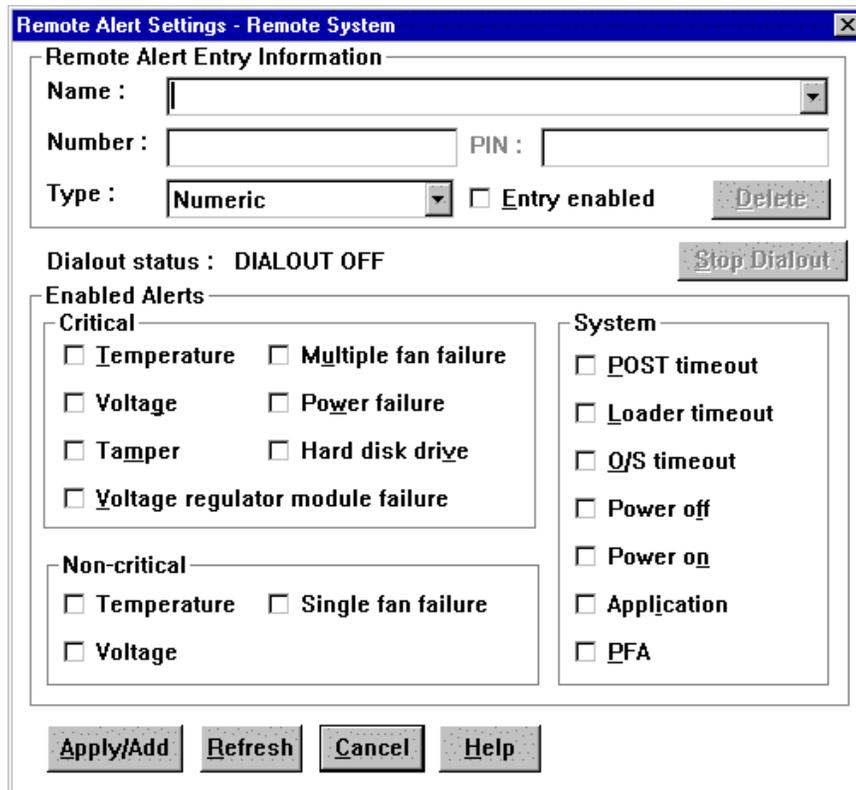


Figure 7. The Remote Alert Settings window

## Remote Alert Entry Information Group

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 that is using a serial link) or an IP address (if you are forwarding the alert to a system that is using a 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 that the Netfinity Advanced System Management processor 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 occurs, the Netfinity Advanced System Management processor will use 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.”
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 processor, result in an alert describing the event being forwarded, using the method selected in the **Type** field, to the recipient specified by the Remote Alert Entry in the **Name** field.

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.

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
<b>Temperature</b>	The Netfinity Advanced System Management processor will forward an alert and then automatically initiate a system shutdown if any monitored temperature exceeds its threshold value.	00	SYSTEM SHUTDOWN DUE TO TEMPERATURE
<b>Voltage</b>	The Netfinity Advanced System Management processor will forward an alert if the voltages of any monitored power sources fall outside their specified operational ranges.	01	SYSTEM SHUTDOWN DUE TO VOLTAGE

Item	Description (if checked)	Numeric Code	Text String
<b>Tamper</b>	The Netfinity Advanced System Management processor will add an entry in the Event Log if six consecutive remote login attempts fail.	02	SYSTEM TAMPER ALERT
<b>Voltage regulator module failure</b>	The Netfinity Advanced System Management processor will forward an alert and then automatically initiate a system shutdown if the voltage regulator module (VRM) fails.	06	VRM FAILURE
<b>Multiple fan failure</b>	The Netfinity Advanced System Management processor will forward an alert (if two or more) of the system cooling fans fail <i>and</i> will automatically initiate a system shutdown.	03	MULTIPLE SYSTEM FAN FAILURES
<b>Power failure</b>	The Netfinity Advanced System Management processor will forward an alert if the system power supply fails.	04	POWER SUPPLY FAILURE
<b>Hard disk drive</b>	The Netfinity Advanced System Management processor 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
<b>Temperature</b>	The Netfinity Advanced System Management processor 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
<b>Voltage</b>	The Netfinity Advanced System Management processor will forward an alert if any monitored voltage exceeds its threshold value.	13	NON-CRITICAL VOLTAGE THRESHOLD EXCEEDED
<b>Single fan failure</b>	The Netfinity Advanced System Management processor will forward an alert if one of the system cooling fans fails.	11	SINGLE FAN FAILURE

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

Item	Description (if checked)	Numeric Code	Text String
<b>POST timeout</b>	The Netfinity Advanced System Management processor will forward an alert if the <b>POST timeout value</b> (specified in the Configuration Settings window) is exceeded.	20	POST/BIOS WATCHDOG EXPIRED. SYSTEM RESTARTED
<b>Loader timeout</b>	The Netfinity Advanced System Management processor will forward an alert if the <b>Loader timeout value</b> (specified in the Configuration Settings window) is exceeded.	26	LOADER WATCHDOG EXPIRED. SYSTEM RESTARTED

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

## Event Log

Use Event Log to open the Event Log window (shown in Figure 8). 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.

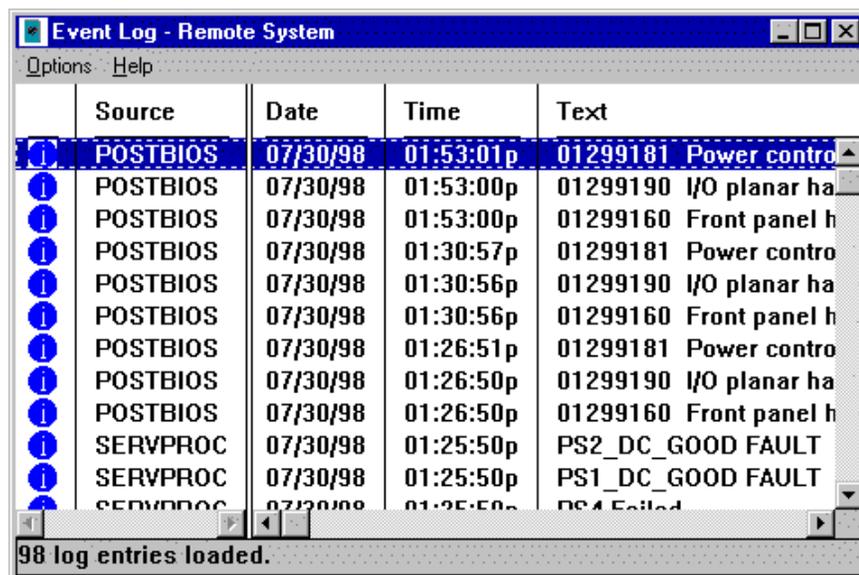


Figure 8. The Event Log window

**Note:** If you are using the Advanced System Management service with your server, the event log will also include any POST error messages.

The following functions are available from the Options pull-down 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 9 on page 27) shows the current values or status of many system components monitored by the Advanced System Management adapter or processor. Available values include:

- Power supply voltages (including +5 V ac, +12 V ac, -3.3 V ac, -12 V ac; Netfinity 5500 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).

System Operational Parameters - My System					
Temperatures (degrees celsius)					
	Value	Warning	Reset	Soft Shutdown	Hard Shutdown
Center card	31.00	39.00	47.00	52.00	57.00
Microprocessor 1	34.00	42.00	47.00	53.00	58.00
Microprocessor 2	34.00	41.00	50.00	57.00	62.00

Voltages			System Status		
Source	Value	Warning Reset			
+5 Volt	5.13	[ 4.90, 5.25]	System Power	ON	
-5 Volt	-5.04	[ -4.90, -5.25]	Power-on Hours	290	
+3 Volt	3.36	[ 3.26, 3.43]	Start-up Count	24	
+12 Volt	12.03	[ 11.50, 12.60]	System State	O/S activity detected	
-12 Volt	-11.80	[ -10.92, -13.20]	Fan 1	83%	
			Fan 2	77%	
			Fan 3	76%	

Figure 9. The Operational Parameters window

**Note:** Some temperature monitors are available on some IBM systems only.

## System Power Control

Use the System Power Control window to instruct the Netfinity Advanced System Management processor 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.

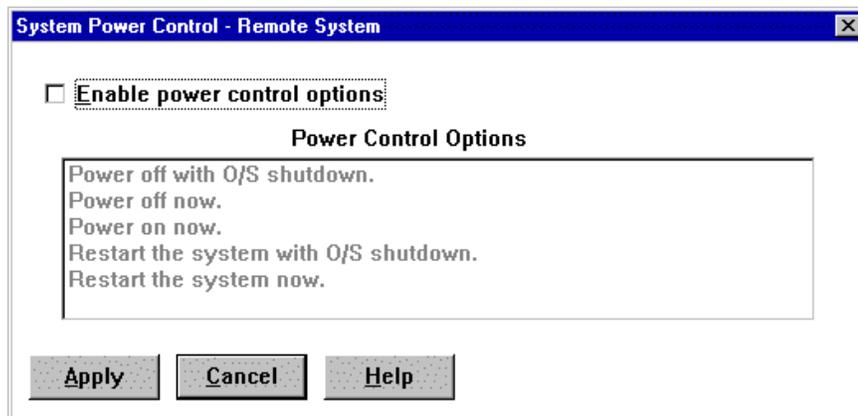


Figure 10. The System Power Control window

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

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

If you are connected to the Advanced System Management adapter or processor 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. To monitor and record the POST data on a remote system:

1. Connect to the Netfinity Advanced System Management processor on the remote system.
2. Open the Remote POST window.
3. Restart the remote system (using the Advanced System Management 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.

A window similar to the illustration in Figure 11 on page 29 appears. Depending on the operating system that you use, your window might contain different information.

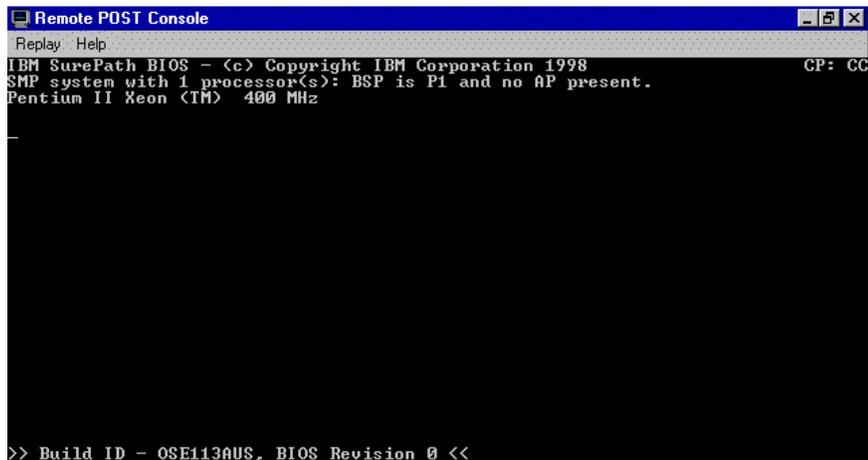


Figure 11. The Remote POST window

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 Advanced System Management adapter or processor on a remote system.

---

## Updating Netfinity Advanced System Management Processor Microcode

### Important

1. If you update the Netfinity Advanced System Management processor 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 10.
2. To obtain the current Netfinity Advanced System Management processor microcode diskette image for your operating system, go to <http://www.pc.ibm.com/support/> on the World Wide Web and download the image to your server.
3. If you want the IBM ServerGuide program to update your Netfinity Advanced System Management processor microcode automatically through IBM Update Connector, follow the instructions in the "ServerGuide and Netfinity Manager Information" section of this *Server Library*.

To update the Netfinity Advanced System Management processor microcode:

1. From the **Options** pull-down menu, select **Update Microcode...** and then select **System Management Subsystem**.
2. A file-selection window appears.
3. Use the file-selection window to select the source disk drive (or diskette drive) and directory where the Netfinity Advanced System Management processor microcode update is located.
4. Select **OK** to continue.
5. Warning notices will appear, asking you to 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 processor microcode, the Advanced System Management service will apply the microcode update to the Netfinity Advanced System Management processor.

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

---

## Chapter 4. Using the Netfinity Advanced System Management Processor without Netfinity Manager

This chapter describes how to use the Netfinity Advanced System Management processor without Netfinity Manager.

If you are unable to use Netfinity Manager to access and manage your Netfinity Advanced System Management processor, you can use a terminal program and a modem to connect directly to the Netfinity Advanced System Management processor. Connect this modem to serial port A (COM1) or management port C (COM2) to use the remote functions. (Refer to your "Hardware Information" section of this *Server Library* for information on your server serial port A (COM1) and management port C (COM2). For more information on configuring the Netfinity Advanced System Management processor modem, see "Modem Settings" on page 15.)

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 processor

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.

---

### Establishing a Direct Connection to the Netfinity Advanced System Management Processor

**To use a terminal program to establish a direct connection with the Netfinity Advanced System Management processor:**

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

Use the following modem settings:

<b>Baud</b>	57.6 k
<b>Data Bits</b>	8
<b>Parity</b>	None
<b>Stop Bits</b>	1
<b>Flow Control</b>	Hardware

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

When you have established a connection with the Netfinity Advanced System Management processor, 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 processor.

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 Netfinity Advanced System Management processor and Netfinity Manager

#### **Important**

For security purposes, change the user name and password using the Netfinity Advanced System Management processor. For more information, see “Configuration Settings” on page 10.

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

---

## **Netfinity Advanced System Management Processor Menu**

When you have logged into the Netfinity Advanced System Management processor, 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. 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.

#### **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.

Menu Selection	Data Available for Viewing
<b>Monitors</b>	System board temperature, microprocessor temperatures, voltage readings, voltage regulator module readings, fan status
<b>Error Logs</b>	Contents of system error log
<b>Service Processor Configuration</b>	Netfinity Advanced System Management processor modem configuration, dial-out entries, dial-out alerts, dial-in logins, system status, thresholds, system statistics, vital product data (VPD) information, and system state
<b>System Services</b>	Status of Netfinity Advanced System Management processor watchdog timers and event alerts sent to the host system.
<b>System Power</b>	Current system power status, power-off configuration, and power-off delay values  <b>Note:</b> You can use selections available from the <b>System Power</b> menu to power the system on or off. For more information, see "System Power Menu Selections" on page 33.
<b>Boot</b>	You can use selections available from the <b>Boot</b> menu to shut down and restart your system or to restart the Netfinity Advanced System Management processor. For more information, see "Boot Menu Selections" on page 34.
<b>Remote Terminal Status</b>	Current remote terminal status
<b>Start Remote Video</b>	Use <b>Start Remote Video</b> 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 36.

When you are finished accessing the Netfinity Advanced System Management processor 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 processor.

---

## 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

To access these functions:

1. Use a terminal program to establish a connection with the Netfinity Advanced System Management processor modem.
2. Log in to the Netfinity Advanced System Management processor.

When you have established a connection with the Netfinity Advanced System Management processor, 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 processor. 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 Netfinity Advanced System Management processor and Netfinity Manager

### Important

For security purposes, change the user name and password using the Netfinity Advanced System Management processor. For more information, see "Configuration Settings" on page 10.

If you update the Netfinity Advanced System Management processor 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 processor, 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 shutdown
- Restart the Netfinity Advanced System Management processor

To access these functions:

1. Use a terminal program to establish a connection with the Netfinity Advanced System Management processor modem.
2. Log in to the Netfinity Advanced System Management processor.

When you have established a connection with the Netfinity Advanced System Management processor, 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 processor. 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 Netfinity Advanced System Management processor and Netfinity Manager

#### Important

For security purposes, change the user name and password using the Netfinity Advanced System Management processor. For more information, see “Configuration Settings” on page 10.

If you update the Netfinity Advanced System Management processor 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 processor, 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
3 Restart SP
```

#### 4. Select a Boot menu item.

- Select **1 Reboot w/OS Shut down** 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 **3 Restart SP** to restart the Netfinity Advanced System Management processor.

---

## Using Remote Video Mode to Monitor and Access POST

You can use a terminal program 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.

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

1. Use a terminal program to establish a connection with the Netfinity Advanced System Management processor modem.
2. Log in to the Netfinity Advanced System Management processor.

When you have established a connection with the Netfinity Advanced System Management processor, 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 processor. 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 Netfinity Advanced System Management processor and Netfinity Manager

### Important

For security purposes, change the user name and password using the Netfinity Advanced System Management processor. For more information, see "Configuration Settings" on page 10.

If you update the Netfinity Advanced System Management processor 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 processor, 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 33 and “Boot Menu Selections” on page 34.

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 processor, all textual output generated during POST will be sent to your terminal window. Your terminal 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**; and then, press **Ctrl+T**. This will end Remote Video mode and return you to the main menu.



---

## Appendix A. 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 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 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.

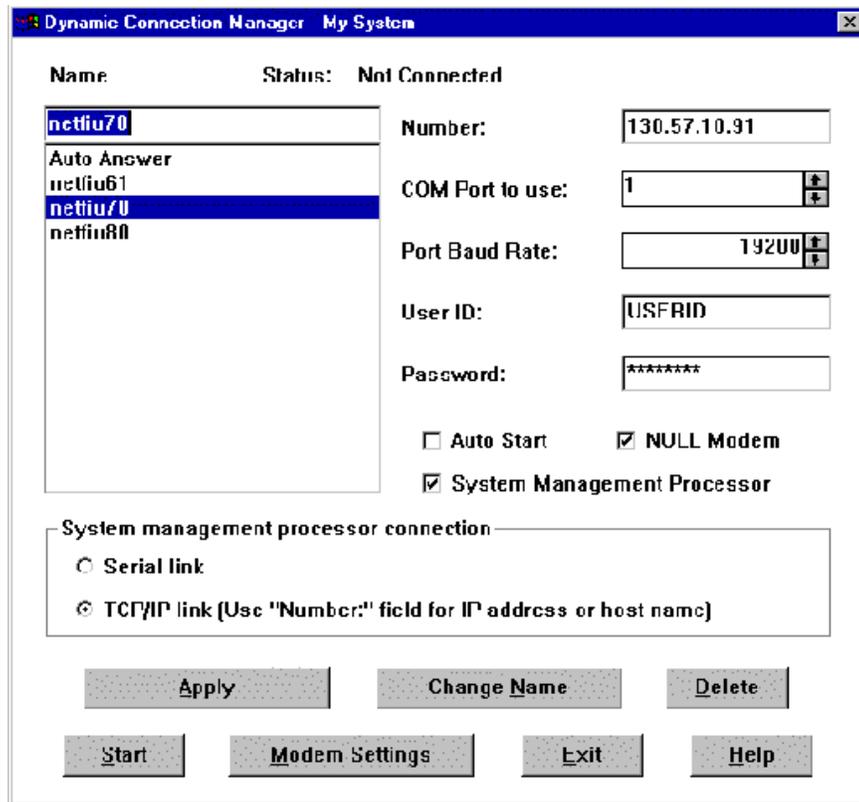


Figure 12. Dynamic Connection Manager

## Modem Configuration

Before you can use the Dynamic Connection Manager serial lining 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 13 on page 41).

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 46.

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

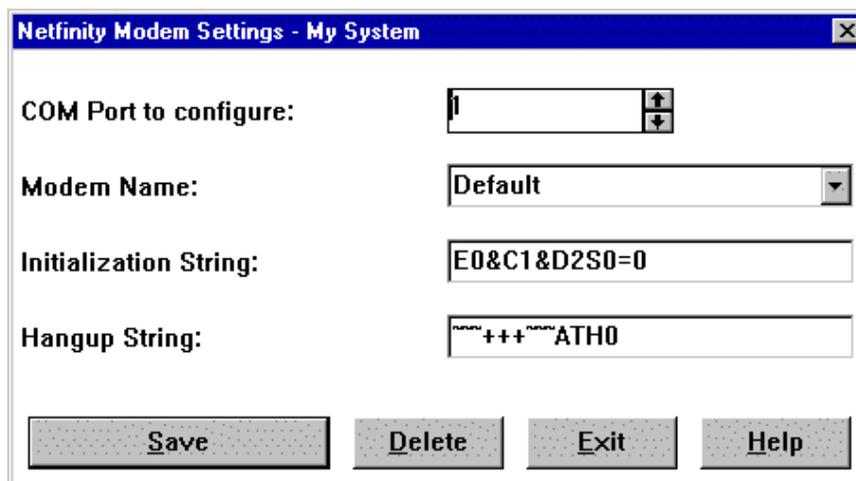


Figure 13. Dynamic Connection Manager — Modem Settings window

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 46.

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.

**Note:** The **Null Modem** check box **must** be checked if remote systems will be using a null modem connection to communicate with this system.

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.

**Note:** The **Null Modem** check box **must** be checked if you will be using a null modem connection to communicate with the remote system.

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 two 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.

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 Connection or Network Connection" on page 9.

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 Connection or Network Connection" on page 9.

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

**Note:** The **Null Modem** check box **must** be checked if you will be using a null modem connection to communicate with the remote system.

10. Save the Dynamic Connection Manager entry.

Select **Apply** to save this entry.

---

## Accessing Remote Systems

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 12 on page 40). 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.

---

## 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 identifiers 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&Y3S0=0
```

- 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&Y3S0=0
```







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