NCD ThinPATH
Software ™

NCD ThinPATH Manager Reference

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NCD ThinPATH Manager 2.20.

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This document has reference information for the following NCD ThinPATH tools for system administrators:

- The Configuration Tool lets you define terminal properties and connections for groups of terminals or specific terminals and distribute the values from a central location.

- The Web Configuration Tool lets you use a web browser to set properties for a specific terminal from any location.

- The Remote Restart Tool lets you restart terminals from a central location. When the terminals restart, they get the new configuration values.

ThinPATH Configuration Tool

To use this tool, select **Start** > **Programs** > **Administrative Tools (Common)** > **NCD ThinPATH Manager** > **NCD ThinPATH Configuration Tool**.

The application has two panes, or frames. The left pane shows a subclass list in a tree view to simplify the process of configuring groups of terminals. With the NCD ThinPATH Configuration Tool, you can define configuration values for groups of terminals or individual terminals in the left pane.

The right pane is similar to the Terminal Properties provided on the NCD ThinSTAR terminals.
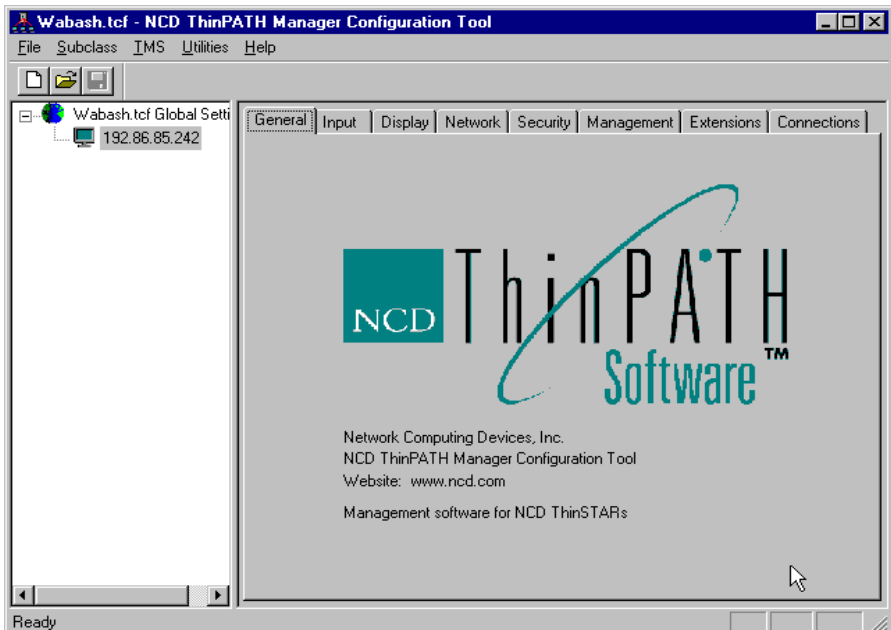
This tool shows the same allowable settings in the same locations as in Terminal Properties. Parameters that cannot be set globally, such as a static IP address, however, are not included in the NCD ThinPATH Configuration Tool. Other parameters are available only through the NCD ThinPATH Configuration Tool. These are described in *Relationship to NCD ThinSTAR Terminal Properties* on page 6.

With the Configuration Tool, you can:

■ Set up groups or individual subclasses of terminals.

■ Configure terminal property settings for a subclass of terminals.

■ Save settings in a configuration file on the Management Server.

■ Register the configuration file so that terminals with NCD ThinSTAR Operating SSoftware version 2.0 or later can receive the file when they restart.

■ Configure terminal identification properties.

■ Choose how much, if any, of the NCD ThinSTAR Configuration Setup Wizard appears when a terminal starts at setup.

You can modify and resave a configuration file at any time; the terminals receive it when they restart. Or, you can create and register a new configuration file. The latest registered configuration file always goes to the terminals.

The configuration file should contain terminal property settings only for the parameters you want to change. There is no need to define and save settings for parameters that have acceptable default values.

What's a Subclass?

A subclass consists of one or more terminals. By assigning terminals to a subclass, you can apply the same terminal property settings to all the terminals in that subclass.

You can configure any terminal property on a global or subclass basis. You may want some settings to apply globally and other settings to apply to a group of terminals. With the NCD ThinPATH Configuration Tool, you can set up subclasses as needed.

Subclass List Tree Control

The top branch of the tree in the left pane has the name of the configuration file prepended to Global Settings. In the example shown on the previous page, it is **Wabash.tcf Global Settings**.

The named items (except Global Settings) that display when the tree is expanded specify custom configuration settings for a subset of terminals, beyond the global configuration settings for all terminals. You define or modify terminal groups or individual terminal subclasses using an editor dialog, which is accessed using either the **Subclass** menu commands or by right-clicking (left-clicking on a left-handed mouse) a tree control item to open the context menu.

You can use the tree control to:

- Create new subclasses

- Select a subclass to configure

- Edit subclasses
  - — Reconfigure subclasses
  - — Add or remove subclass members

- Remove subclasses

Subclass Order

A terminal can be a member of more than one subclass, with different terminal property settings in the subclasses. The Configuration Tool handles this situation by applying settings according to the order of the subclasses in the subclass list. The lower its position in the subclass list, the higher the subclass ranks in precedence. Subclasses at the bottom of the subclass list have highest precedence, so the terminal property setting in the subclass closest to the bottom of the list is assigned to the terminal.

Global settings located at the top of the subclass list have the lowest precedence of all. When a terminal property has a global setting and a different setting for the same item in a subclass, the Configuration Tool assigns the subclass setting to the terminals in that subclass.

Changing the Order of Subclasses

To assign one subclass precedence over another, move the subclass beneath in the subclass list. As stated earlier, the nearer a class is to the bottom of the list, the higher its precedence.

To move a subclass, do one of the following:

■ Click on the name of the subclass you want to move, hold the mouse button down, and drag it to another position in the subclass list.

■ Right-click (left-click on a left-handed mouse) on the subclass name to open the context menu, and then use the **Move Up** or **Move Down** commands to change the position of the subclass.

Note   You cannot change the position of Global Settings in the subclass list.

Properties

The right pane of the Main Window contains properties organized by labeled tabs. You can assign settings to the selected subclass highlighted in the subclass list.

Asterisk in Tab Labels

The asterisk at the end of a tab label, such as **Display***, means that values on the tab have been set or changed, but are not yet saved.

Relationship to NCD ThinSTAR Terminal Properties

Some controls in the Configuration Tool are not provided in Terminal Properties on NCD ThinSTAR terminals or are provided in a different manner.

Include Checkbox

Most top level tabs have an **Include** checkbox for including or removing all the settings on that tab from a configuration.
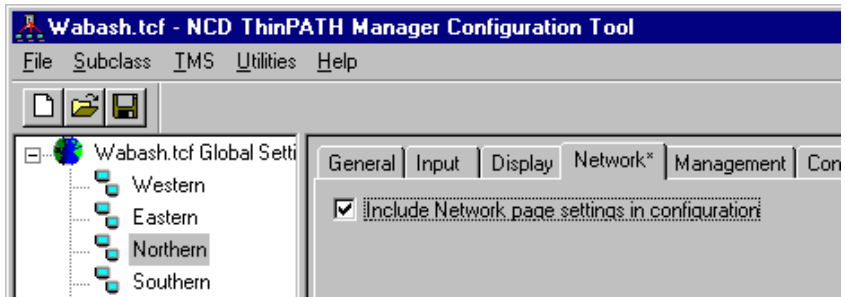
In addition, some tabs have checkboxes you can use to include or exclude the individual settings in the configuration file. When excluded, the corresponding control for changing a setting (if any) is not accessible, so it is not available in the dialog.

Default Button

The **Default** button, located in the lower right corner of all applicable tabs, lets you return the included parameters to their default Terminal Properties settings.

Network Tab

You cannot use the Configuration Tool to specify terminal IP addresses.

Security Tab

The **Security** > **Change Password** tab lets you replace the current Terminal Properties password or set a new one if none exists.

You can use the **Security** > **Terminal Properties Access** tab of the Configuration Tool to allow or disallow user changes to Terminal Properties on the terminal. The settings for tabs you configure to be read-only are not available to be changed in Terminal Properties.

The **Terminal Properties Enable** tab, also on the **Security** tab, allows you to disable the **F2** key command that launches Terminal Properties on NCD ThinSTAR terminals.

Hotkeys Tab

The **Management** > **Hotkeys** tab is used to set the **Up** and **Down** hotkey combinations that are used to bring forward the next active or previous active session. You can also set the **Home** hotkey combination that brings forward or starts the default connection.

Power Tab

The **Management** > **Power** tab provides a control for setting the System Soft Off Timeout wait period. This timer governs the terminal (not the monitor) power saving mode on ThinSTAR 300 and 400 series terminals. ThinSTAR 200 and 250 terminals do not have the power saving mode.

Clients Tab

The **Management** > **Clients** tab contains the same parameters that are available in Terminal Properties, but they are arranged differently. You use the settings on this tab to configure global client properties for clients that allow it, set the default client, set the terminal locale, and disable access to the NCD ThinSTAR Connection Manager **Configure** tab.

Note   The Microsoft Terminal Server client does not support client configuration so they are not shown in the list of client names on the **Management** > **Clients** > **Configure** tab. Only clients that support client configuration are listed.

SNMP Tab

The **Management** > **SNMP** tab of the Configuration Tool is used to configure settings for the Simple Network Management Protocol (SNMP). SNMP, another method for configuring terminals remotely, is an agent in the NCD ThinSTAR Operating Software. By default, SNMP only allows you to view terminal settings—it shows the settings on a read-only basis.

The SNMP settings you make become a part of the configuration file. When the Management Server downloads this configuration file to a terminal, the SNMP agent on the terminal can be reconfigured to allow SNMP writes from the specified SNMP manager.

You can also configure the SNMP agent on the terminal to send a message known as a "trap" to the SNMP manager on the server when the terminal restarts or when an attempt to change terminal property settings fails on the terminal. Traps for these occurrences are available on the **Management** > **SNMP** > **Send Traps** tab:

- **Cold Restart**

  This trap instructs the SNMP agent on the terminal to send a message to the SNMP manager on the server when a terminal restarts. This notifies the system administrator that someone has restarted the terminal.

- **Authentication Failure**

  This trap instructs the SNMP agent on the terminal to send a message to the SNMP manager on the server when an authentication attempt fails. This notifies the system administrator that someone who does not have administrative privileges may be trying to change terminal property settings.

System Tab

The **Management** > **System** tab lets you set the startup state of the Num Lock, Caps Lock, and Scroll Lock keys on the keyboard. You can set up Num Lock, for example, to be on automatically each time the terminal starts up.

Extensions Tab

This tab provides a way to skip some or all of the terminal setup wizard pages.

Connections Tab

The **Connections** tab is for:

■ Setting up connections

■ Limiting the number of connections that run on the terminal

■ Removing connections

The **Connections** > **Configure** tab provides connection wizards similar to those found on the terminal for adding connections for installed clients, such as RDP and ICA.

Note   Client libraries can be added in the future to support configuration of new types of connections.

Configuration Files

The Configuration Tool stores terminal property settings in a configuration file. If the configuration file has been registered with NCD ThinSTAR Management Server, the NCD ThinSTAR terminals receive it when they restart. The terminals must have NCD ThinSTAR Operating Software version 2.0 or later. During restarts, each ThinSTAR terminal checks the configuration file, reads the file if it is new, and applies the settings intended for that terminal.

Use the configuration file to change the default settings of your terminals. It is not necessary to store settings for parameters if you want to leave them at their default settings.

After launching the Configuration Tool, you have these options:

■ **New Configuration Settings**

The Configuration Tool starts with an empty configuration as a new, untitled file. By default, all the tabs, and thus all settings, are excluded.

■ **Open Configuration Settings**

The tool presents a **File Open** dialog that lets you browse to find the configuration file you want to open.

■ **Open Registered Configuration**

If a configuration file is registered with the Management Server, you use this option to open it.

Registered Configuration Files

A registered configuration is the file the Management Server downloads to the ThinSTAR terminals it manages when they restart. The utility program that downloads the file is called TMS.

The Configuration Tool provides three ways to register a configuration file:

■ **TMS** > **Register Current Configuration** command

■ **TMS** > **Register Configuration** command

■ **File** > **Save As** command

After you set and save selected terminal settings in a configuration file, use one of these methods to register the file:

■ Use the **TMS** > **Register Current Configuration** command to register the currently open configuration file. If you have not saved the current configuration yet, the **Save Configuration As** dialog appears so you can specify a filename.
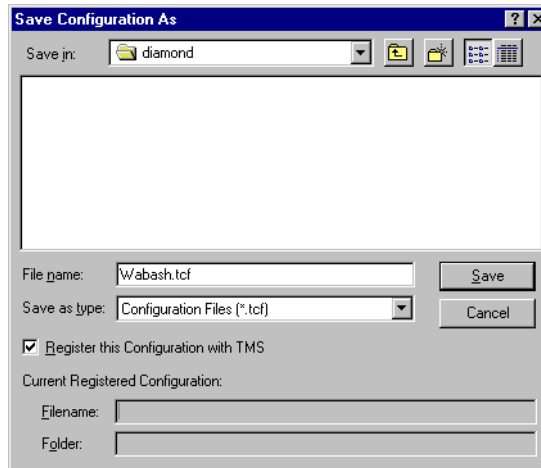
■ Use the **TMS** > **Register Configuration** command. This is like the **Register Current Configuration** command, but you can select any saved configuration file.

■ Use the **File** > **Save As** command. When the **Save Configuration As** dialog appears, click the checkbox beside "Register this Configuration with TMS" and supply a filename.

Note   When you register a configuration file, any previous registration is cancelled. Only one file can be registered at a time.

Cancelling Registration

As long as a configuration file is registered, any terminal supported by the Management Server is updated, as needed, when the terminal restarts. You may want to cancel registration, so that no file is available for the terminals.

For example, you might want to do this if the terminals are configured, or if you are experimenting with terminal property settings. To cancel registration, select **TMS** > **Remove Registration**.

Configuring Subclasses

This section tells how to use the Configuration Tool to set up, modify, and remove individual and group subclasses.

Individual Subclasses and Group Subclasses

You can set up a subclass for a single terminal or for a group of terminals. An individual subclass contains only one terminal and its icon shows one small terminal. A group subclass contains more than one terminal and its icon shows two small terminals.

There are a few differences between individual subclasses and group subclasses. For example:

■ When you set up a group subclass, you need to specify a list of IP addresses, hardware addresses, or serial numbers for the terminals you want to assign as members of the subclass.

■ The name of a group subclass can be any unique name. The name does not affect the list of terminals that receive the parameter settings stored in the configuration file for that group subclass.

■ The name of an individual subclass indicates the terminal that receives the configuration, so the naming rules for an individual subclass are the same as they are for the individual members of a group subclass. Individual subclasses are named by IP address, hardware address or serial number.

IP Address Format

A standard IP address is represented by four decimal values separated by dots (dotted decimal format). The Configuration Tool also accepts IP address ranges. In an IP ranges, the numbers in the first three octets must be the same; only the numbers in the fourth and last octet (the Class C subnet) can be different. For example, 192.45.85.6 is a member of the range indicated by 192.45.85.1 through 192.45.85.10.

If dynamic IP addresses are assigned by DHCP, you won't know which terminal receives a given configuration file. If you are using DHCP, group terminals by their hardware address or serial number.

Hardware Address Format

This is a standard Media Address Control (MAC) or hardware address. It is sometimes called a network address. The format of this address is:

xx:xx:xx:xx:xx:xx

where x represents a hex digit 0–9, A–F

For example: 00:00:A3:08:12:7C

This address is on the terminal. To see it, go to Terminal Properties and select **Inventory** > **Network Settings** > **Address**.

You can also specify a hardware address range, similar to an IP address range. In a hardware address range, you can vary only the values in the last three fields (the last six values).

Serial Number Format

This is the serial number assigned to an NCD ThinSTAR terminal at the factory. To find the serial number for a terminal, go to NCD ThinSTAR Terminal Properties and select **Inventory** > **Hardware**.

Note   Once the ThinSTAR operating software version 2.0 or later has been downloaded to a terminal, the Management Server collects and updates the IP address, hardware address, and serial number from the terminal. This information is then available so that you can identify terminals for remote restarts. See *Managing a Terminal List* on page 19.

Individual Subclasses

Creating a New Individual Subclass

To create (add) a new individual subclass:

1. Select **Subclass** > **New**.

2. In the **Subclass Name** field, enter the IP address, hardware address, or serial number of the NCD ThinSTAR terminal you want to configure.

Note   You can enter only one of the three identifiers:
IP address, hardware address, or serial number. If you are
using dynamic IP addresses assigned by DHCP, it is
better to identify the terminal by its hardware address or
serial number.

3. Click the **Individual Subclass** radio button.

4. Select **After Current Subclass** or **Before Current Subclass** to
    indicate where to place the new subclass in the subclass list.

5. Click **OK** to add the new subclass to the list.

6. With the individual subclass highlighted in the subclass list,
    configure the terminal.

7. Select **File** > **Save** to save the changes in your configuration file.

Editing an Individual Subclass

To edit an individual subclass:

1. In the subclass list, click the name of the subclass to edit.

2. Select **Subclass** > **Edit** (or double-click on the name of the
    subclass).

3. To change the name of the subclass, make the change in the name
    field.

4. To change the subclass from an individual subclass to a group
    subclass, click the **Group Subclass** radio button. You can then
    edit it as a group subclass (see *Editing a Group Subclass* on page 16
    for instructions).

5. Click **OK**.

Removing an Individual Subclass

This procedure deletes the subclass and its tab settings when you
save the configuration file.

To remove an individual subclass:

1. Click the name of the subclass to highlight it.

2. Select **Subclass** > **Delete**, or press the **Delete** key.

3. Click **Yes** if you are sure you want to delete this subclass.

The subclass is deleted when you save the configuration file.

Group Subclasses

Creating a New Group Subclass

To create a new group subclass:

1. Select **Subclass** > **New**.

2. Enter a name for the new subclass in the field provided. You can enter any unique name.

3. Set the type to **Group Subclass** (the default).

4. Select **After Current Subclass** or **Before Current Subclass** to indicate where to place the new subclass in the list.

5. Click **OK**.

    Note   You can specify a list of terminals as subclass members. *Editing a Group Subclass* on page 16 explains how to assign terminals to a new or existing group subclass.

6. Click **OK** when you are done assigning terminals to the group.

7. With the group subclass highlighted in the subclass list, configure the terminal settings for the group.

8. Select **File** > **Save** to save the changes in the configuration file.

Editing a Group Subclass

Editing a group subclass involves adding or removing terminals from it as explained in the next two procedures.

To add terminals to a group subclass:

Note   If the **Edit Subclass** dialog is already open from setting up a new group subclass, skip steps 1 and 2.

1. Click the name of the subclass in the subclass list to highlight it.

2. Select **Subclass** > **Edit**, or double-click on the name of a subclass.

3. Click **Add** to assign subclass members (terminals) to the sub-class, then use either or both of these methods to add members:

   — Select members from the **Managed Terminal List** (discussed in *Managing a Terminal List* on page 19 and shown in the **Select Members** frame) and indicate whether to add them according to their IP address, hardware address, or serial number. You can use the **Ctrl** or **Shift** key or drag the mouse to select multiple members.

   — Enter the IP address, hardware address, or serial number of a new member in the top field of the **Enter Member** frame. To enter a range of IP addresses or hardware addresses, enter the first terminal's address in the top field and the last member's address in the **Through Address** field.

     You cannot use serial numbers to specify a range.

     For IP ranges, the numbers in the first three octets have to be the same; only the numbers in the last octet can be different, for example: 125.211.31.209 – 125.211.31.214

     The **Through Address** must be greater than the first address.

     If you are using dynamic IP addresses assigned by DHCP, it is better to group terminals by their hardware address or serial number.

     You can also specify a hardware address range, varying only the values in the last three fields.

4. If your subclass members contain consecutive ranges of IP addresses, hardware addresses or serial numbers, click the **Expanded List** checkbox on the **Edit Subclass** dialog to toggle between an expanded list that shows all members and a concise list that shows only the member range(s). Click **OK** to add the members.

5. When you finish assigning members to the subclass, click **OK**.

Removing Subclass Members

This procedure deletes the subclass member or members when the configuration file is saved.

To remove subclass members from a group subclass:

1. Highlight the name of the subclass in the subclass list.

2. Select **Subclass** > **Edit** (or double-click on the name of the subclass) and the **Edit Subclass** dialog appears.

3. Highlight the subclass member to remove. You can use the **Ctrl** or **Shift** key or drag the mouse to make multiple selections.

    You can click on a member in an expanded list to remove just that member or click on a range in a collapsed list and delete all the members in that range at once.

4. Click **Remove**.

5. Save the configuration file if you are sure you want to delete the subclass member(s).

Importing Members into a Subclass

The Configuration Tool lets you import members from a text file into a subclass. This capability allows you to import a large list of terminals that may have been exported from another piece of software, such as a database or a UNIX **/etc/hosts** file.

A column of data is delimited by space characters, tab characters, commas or semicolons in the file. Each member to add must be in the same column and on separate lines in the file.

To import members into a subclass:

1. Select the group subclass to which you want to import members.

2. Select **Subclass** > **Import Members**.

3. Locate the file containing the terminals to import and click **OK**.

4. Select import options.

    — Select the method used to store data in the file.

        — If each row contains a single terminal name, select **Each row is entirely the terminal identifier.**

        — If the terminal name is part of other information on each line of the file, select **Fields are delimited within each row.**

    — Make additional selections to filter the data.

5. Click **OK** to import the terminal list.

Removing a Group Subclass

This procedure deletes the subclass along with its tab settings when the configuration file is saved.

To remove a group subclass:

1. Click on the name of the subclass to remove.

2. Select **Subclass** > **Delete**, or press the **Delete** key.

3. Click **Yes** if you are sure you want to delete the subclass.

Managing a Terminal List

To help you create groups of terminals on your network, the Management Server records IP addresses, hardware addresses and serial numbers for all terminals it manages. This list is known as the Managed Terminals List. The Management Server updates entries in the list if a terminal's IP address changes, but it cannot detect terminals that have left the network. If a terminal leaves the network, it remains in the Managed Terminals List. You can use the NCD ThinPATH Remote Restart Tool to remove terminals from the list.

The Remote Restart Tool uses the list to select terminals to restart.

To view the list of managed terminals:

1. Select **Utilities** > **Remote Restart Tool**.

2. To view the properties of an individual terminal, right click on it and select **Properties**.

3. To delete one or more terminals from the list, select **Edit** > **Delete Terminal**, select the terminals to be deleted, and then **OK**.

   Note   Only delete terminal entries for devices no longer on the network. If you remove entries for terminals still managed by the Management Server, the terminals are added to the list the next time they start.

4. Close the **Remote Restart Tool** dialog.

The values in the Status field (Trying Restart, Restarting, Restart Pending, Not Responding, Wake-on-LAN, and Detected Terminal) are explained in *Restart Status Values* on page 35.

Terminals Do Not Receive Configuration Settings

If a terminal you configure with the Configuration Tool does not receive the parameter settings, there is no message to inform you. To troubleshoot the situation:

1. Ensure that the terminal has ThinSTAR Operating Software version 2.0 or later. To see which version is installed, go to the **Inventory** > **About** tab in Terminal Properties. You can check this using the Web Configuration Tool or at the terminal itself.

2. Check to see if the Configuration Tool subclass containing the terminal accurately reflects the terminal's IP address, MAC address, or serial number.

3. Check to see if the terminal and Management Server are on different subnets. If so, the terminal's entry on the **Management** > **Server** tab in Terminal Properties must list the IP address of the Management Server.

4. Verify that the configuration file registered by the Configuration Tool is the correct file.

   To check this, open the registered configuration file; the name of the file appears in the title bar.

   To register another configuration file, go to the **TMS** > **Register Configuration** or the **TMS** > **Register Current Configuration** menu.

5. Check to see if the configuration file has recently been saved. Terminals will ignore configuration files with the same data and time stamp as previously received.

6. Check to see if you are using a network with a spanning tree switch. If so, you may need to increase the Management Server Timeout. The default is five seconds. Go to the **Management** > **Network** > **Timeouts** tab in Terminal Properties on the terminal to change this setting. For more information, see the *NCD ThinSTAR Terminal Properties Reference.*

ThinPATH Web Configuration Tool

With a compatible web browser or the **NCD ThinPATH Manager Remote Restart Tool,** you can use the ThinPATH Web Configuration Tool to view and set most, but not all, of the terminal properties of a ThinSTAR terminal from any location. Netscape 4.0 and Microsoft Internet Explorer 4.0 are compatible browsers.
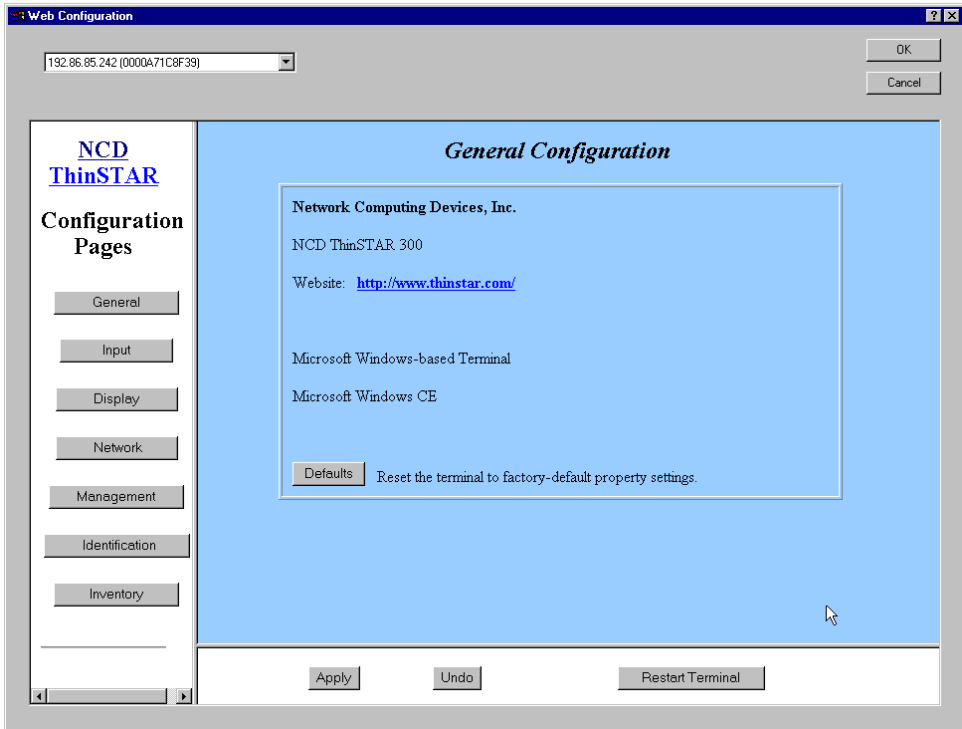
Installing the ThinPATH Web Configuration Tool on Terminals

Before you can configure an NCD ThinSTAR terminal with a web browser, you need to upgrade the terminal with the ThinPATH Web Configuration Tool as explained in the next topic. After the tool is installed on the terminal, you need the terminal's IP address and password. If password protection has not been set up on the terminal, the terminal property settings are displayed in "Read Only" mode so you cannot change any terminal property settings. If

the terminal has password protection set up and you enter the correct password, you can use the ThinPATH Web Configuration Tool to reconfigure the terminal. *Configuring Terminal Properties* on page 24 provides a general procedure for using this tool.

By default, the ThinPATH Web Configuration Tool is not installed on terminals, due to the size of this software component. To install it, change the upgrade policy setting for this tool in TMS.

To install the ThinPATH Web Configuration Tool on terminals:

1. Start the ThinSTAR Manager (TMS) by selecting **Start** > **Settings** > **Control Panel** > **ThinSTAR Manager**.

2. Select the terminal type from the Select Terminal Model drop-down list box.

3. Select **NCD ThinPATH Web Configuration** on the **Software** list and choose the "Upgrade if newer" policy.

4. Restart the ThinSTAR terminal.

5. Immediately after the terminal receives the ThinPATH Web Configuration Tool software, you can use this tool over the web to reconfigure the terminal.

Note   This procedure assumes that password protection for the terminal is set up, and that you have the correct password. If password protection is not set up on the terminal, the terminal property settings are displayed in "Read Only" mode so you cannot change any terminal property settings. If the terminal has password protection set up and you enter the correct password, you can use the ThinPATH Web Configuration Tool to reconfigure the terminal.

Configuring Terminal Properties

To configure terminal properties with a web browser:

1. Start your web browser.

   Note   Use Netscape 4.0 or later, Internet Explorer 4.0 or later, or the NCD ThinPATH Manager Remote Restart Tool.

2. Perform one of the following steps.

   — Enter the URL of the NCD ThinSTAR terminal to configure in the Location or Address entry area of the web browser and press Enter (Return). For example, if the IP address of a terminal is 172.31.0.12, its URL would be http://172.31.0.12. (Most browsers automatically convert the IP address to the correct URL.)

   Or

   — From the ThinPATH Remote Restart Tool, select **Tools** > **Web Configure.** Click the terminal to configure and then OK.

3. When connected to a terminal that has password protection, your web browser displays the Web Configuration Login screen. Enter the password, and the General Configuration (main) page displays with the buttons for all pages available.

   When connected to a terminal that does not have password protection, the General Configuration page displays, but "Read Only" appears at the bottom of the window. It is not possible to modify terminal property settings.

4. Click the appropriate button in the left frame to open the configuration page containing the parameters you want to view or set. For example, click **Network** to open the Network Configuration page to modify a Subnet Mask or Gateway. The configuration pages resemble those in Terminal Properties.

   Note   Clicking the **Defaults** button on the General Configuration page brings up a dialog to confirm that you want to restart the terminal. If you confirm the restart, open connections will be terminated and unsaved work in open applications might be lost.

5. Modify the settings and click **Apply**. The new settings are sent to the terminal. For most terminal properties, changes to settings take effect immediately, but changes to network settings, detailed in *Restarting a Terminal Over the Web* on page 27, don't take effect until after the terminal restarts.

> Note   If you restart the terminal immediately, open connections and unsaved work in open applications may be lost.

6. Click **Restart Terminal** if you want to restart the terminal immediately.

> Note   If the terminal is in a group managed by a server with different settings, the web configuration settings will be overwritten when the terminal restarts.

Setting Audio Over the Web: An Example

Here's an example that shows how to use the ThinPATH Web Configuration Tool with a web browser to set terminal property settings over the web.

This figure shows the **ThinPATH Web Configuration Tool** > **Management** > **Audio** web page provided for setting speaker volume and muting speakers. (On ThinSTAR 300 terminals, you can also enable a microphone.)

To set speaker volume:

1. If it is not already running, start your web browser.

> Note   Use Netscape 4.0 or later or Internet Explorer 4.0 or later.

2. Enter the URL for the ThinSTAR terminal, for example:

   http://172.31.0.12

3. Enter the password for the terminal.

4. When the General Configuration page is displayed in your web browser, click the **Management** button in the left frame.

5. Click the **Audio** button in the top frame to display the audio settings panel.
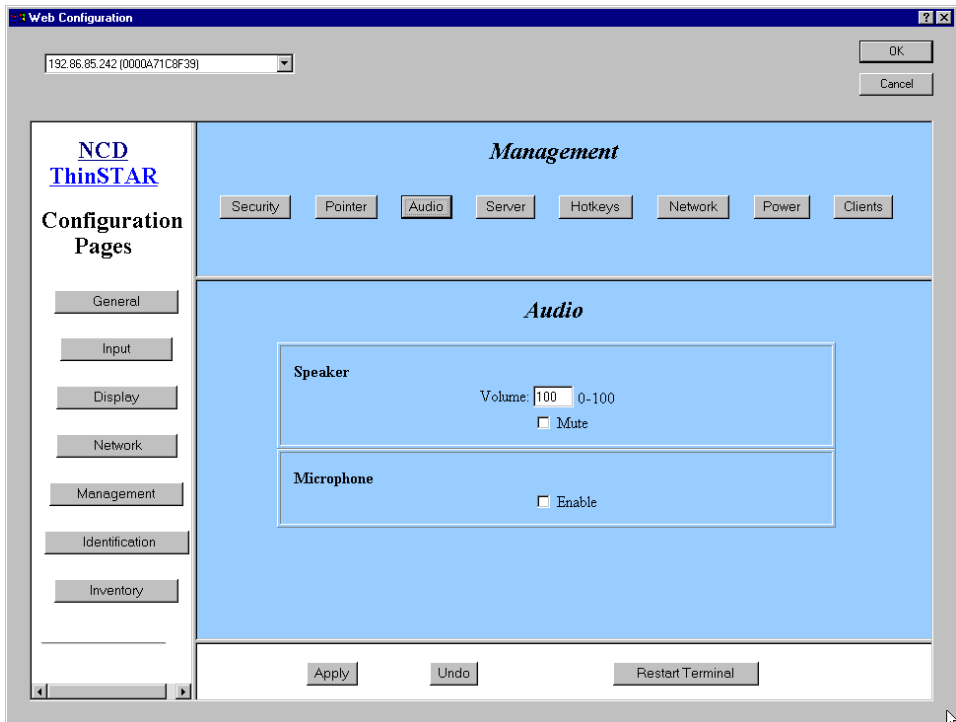
6. Enter a number in the range 0–100 for the speaker volume or click the **Mute** checkbox to disable the speakers.

7. Click the **Enable** checkbox if you want to enable a microphone on the terminal.

8. Click **Apply**. The new audio setting(s) are sent to the terminal.

Restarting a Terminal Over the Web

For most terminal properties, you do not need to restart terminals after changing a setting because the change occurs immediately. Changes to terminal properties related to network settings, however, don't take effect until after the terminal restarts. These include:

- IP address

- Subnet mask

- Gateway

- Settings on the Advanced Network page

To restart the terminal so that changes to these properties take effect:

1. If it is not already running, start your web browser.

2. Enter the URL for the ThinSTAR terminal, for example:

   http://172.31.0.12

3. Click **Restart Terminal**.

4. Close the web browser.

Password Protection

Password protection prevents unauthorized terminal reconfiguration. If a password has been set on the terminal and you enter it correctly, you can reconfigure the terminal. As stated earlier, most changes you make to the terminal properties take place immediately but some changes don't take effect until you restart the terminal.

The ThinPATH Web Configuration Tool allows you to change an existing password over the web. If a terminal does not have password protection, you'll need to use the ThinPATH Configuration Tool or Terminal Properties on the terminal to set the password on the **Security** tab.

ThinPATH Remote Restart Tool

The ThinPATH Remote Restart Tool gives system administrators the ability to restart terminals from the Windows NT server.

To use this tool, select **Start** > **Programs** > **Administrative Tools (Common)** > **NCD ThinPATH Manager** > **NCD ThinPATH Remote Restart Tool**.

You can also access this tool from the ThinPATH Manager Configuration Tool menu by selecting **Utilities** > **Remote Restart Tool**.
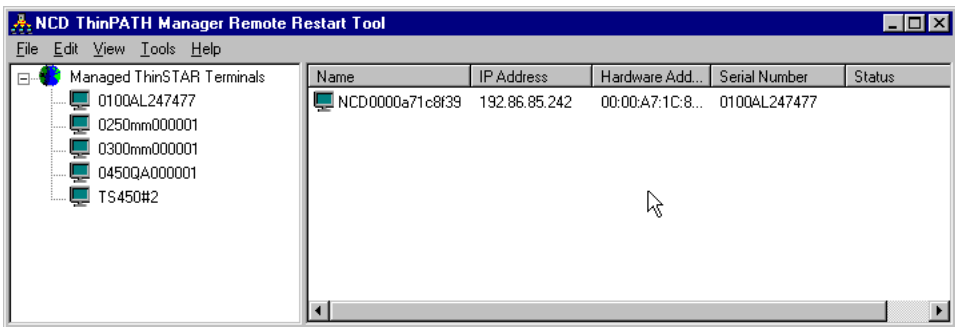
Restarting Terminals

To restart terminals:

1. Start the **NCD ThinPATH Remote Restart** tool.

2. Select **Tools** > **Schedule Restart**. The **Restart Terminals…** dialog displays. The list shows terminals running ThinSTAR operating software version 2.0 or later that have contacted TMS. To remove terminals from the list, see *Managing a Terminal List* on page 19.

3. Select one or more terminals to restart by clicking on the selection box in the left column. A check mark appears in the box when it is selected. Then, click **OK**.

4. Select one of the four restart types described below.

   — **Restart Immediate**. This option restarts terminals immediately, regardless of open connections. Work in progress may be lost depending on whether your Windows Terminal Server resets or disconnects broken connections.

   There are two settings on a Windows Terminal Server for broken or timed-out connections: **Disconnect** and **Reset** (on Windows NT Terminal Server Edition) and **Disconnect** and **End** (on Windows 2000).

   To configure a Windows Terminal Server so terminals can reconnect to open applications after terminal restarts, go to the Advanced Connection Settings tab in **Start** > **Programs** > **Administrative Tools** > **Terminals Server Connection Configuration**, and select the **Disconnect** option.

   To configure Windows 2000 so terminals can reconnect to open applications after a terminal restarts, go to **Start** > **Programs** > **Administrative Tools** > **Terminal Services Configuration**. Double-click **Connections** in the left pane, and double-click **RDP-tcp** in the right pane. On the **Sessions** tab, choose **Disconnect** from session or **End** session.

   With the Disconnect option, when a terminal restarts during a session, the session goes into a disconnect state. When the terminal session restarts, suspended applications reopen.

   Note   If you use the **Reset** (NT) or **End** (Windows 2000) options, any unsaved work is lost when the terminal resets and the session ends. Disconnect is the default configuration.

   — **Restart Pending**. This option restarts terminals automatically after the last connection on the terminal is closed.

   — **Wake on LAN**. If a terminal does not respond to a restart command, this option sends the terminal a Wake on LAN signal, which will turn on and start terminals that have the ability to receive such signals. This feature is not supported on ThinSTAR 200 or 250 series terminals.

— **Detect**. This option pings the selected terminals and updates the Status column of the ThinPATH Remote Restart Tool dialog to show the current status of the selected terminals. *Restart Status Values* on page 35 explains the values in the Status column.

5. Set the delay for the restart command. The delay is the number of seconds that elapse between restart commands sent to multiple terminals. This option is useful when many terminals are restarted at one time; it prevents overloading the ThinSTAR Management Server. Select a number from the drop-down list in the **Delay (seconds)** field.

6. Determine whether or not a report should be generated, and if so, select the **Generate Report** option. If a report is to be created, specify a filename and directory to contain the report.

7. Click **OK** to restart the terminals. The **Restarting Terminals...** dialog displays. The **Status** column is updated to show the latest status of the terminals.

8. Check the Status column of the Restarting Terminals dialog to see the current status of each terminal. *Restart Status Values* on page 35 explains the values in the Status column.

9. Click **Close** to dismiss the dialog.

Finding a Terminal

To find a terminal in the Managed ThinSTAR terminals list:

1. If it is not already running, start the NCD ThinPATH Manager Remote Restart Tool.

2. Select **Find Terminal...** from the **Tools** menu. In a moment, the Find Terminal dialog displays.

3. Enter search criteria into the field. You can search by terminal name, IP address, hardware address, or serial number. Select the **Match Case** option to find only those terminals that match the both the criteria and case you entered

4. Select the radio button corresponding to the search criteria you entered: Name, IP Address, Hardware Address, or Serial.

5. In the **Start from:** field, enter the name of a group of terminals. To see the names of groups that can be selected, press ⋯

6. To extend the search beyond the selected group, select the **Look in following groups** option. A check mark appears in the box when this option is selected. Selecting this option tells the program to search for the specified terminal in the selected group, then in groups following it on the list, then in the terminals that are not assigned to a group.

Scheduling a Restart

1. Start the **NCD ThinPATH Remote Restart** tool.

2. Select **Tools** > **Schedule Restart**. The **Restart Terminals…** dialog displays.

3. Select one or more terminals to restart by clicking the checkbox in the left column. A check mark appears in the box when it is selected. Then, click **OK**. The **Schedule Restart Options** dialog displays.
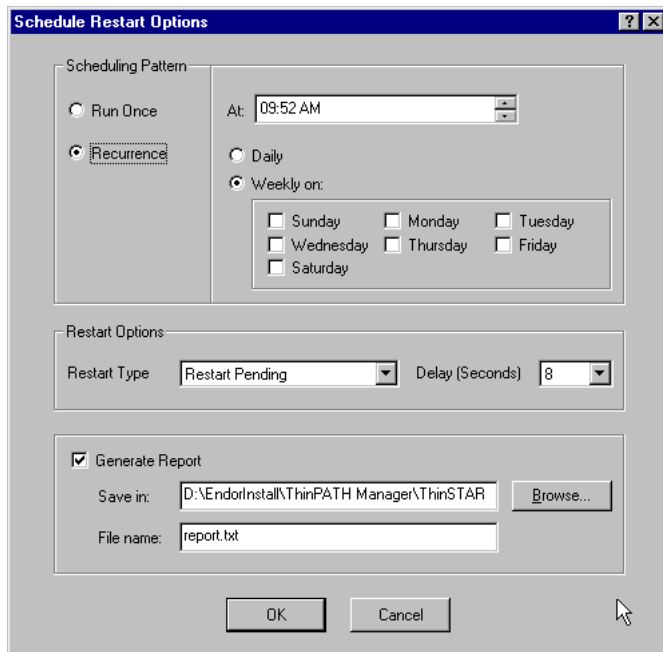
4. Under **Scheduling Pattern**, select one of two options:

   — **Run Once**. Select this option to schedule a restart that occurs only once at a scheduled time.

   — **Recurrence**. Select this option to schedule a restart that reoccurs on a periodic basis.

5. Next, select a time for the restart to take place. Time is shown in 12-hour format. You can enter a time in the **At:** field either by using the keyboard, or using the arrow buttons on the right side

of the field to display a new time. The steps that follow are the ones to use if you are using the keyboard to enter a new time.

— Click on the pair of digits representing the hour. Enter a new hour setting.

— Click on the pair of digits representing the minutes. Enter a new minute setting.

— Click on the AM (or PM) element. Enter a new value (either PM or AM).

6. If the **Scheduling Pattern** selected is **Recurrence**, you also need to define how often the restart should occur. The following two options are available only when **Recurrence** is the selected scheduling pattern.

— **Daily**. Select this option to repeat the restart every day at the selected time.

— **Weekly on:** Select this option to repeat the restart weekly on selected day(s), and then select the days of the week. You can select more than one day of the week. A check mark appears in the box in front of the day's name when it is selected.

The remaining options on this screen are the same as those used to restart a remote terminal immediately.

7. Select the appropriate restart action from the **Restart Type** drop-down list. Using **Restart Immediate** may cause loss of open connections and unsaved work on the terminal.

   Note   Using **Restart Immediate** may cause loss of open connections and unsaved work on the terminal.

8. Determine whether or not a report should be generated, and if so, select the **Generate Report** option. If one is to be created, specify a filename and directory to contain the report.

9. Click **OK** to restart the terminals. The **Restarting Terminals...** dialog displays. The **Status** column is updated to show the latest status of the terminals.

10. Click **Close** to dismiss the dialog.

Viewing the Restart Schedule

Once terminals have been scheduled to restart, it is often useful to view the restart schedule.

To view the terminals scheduled to be restarted, select **Tools** > **Show Scheduled Restart...**.
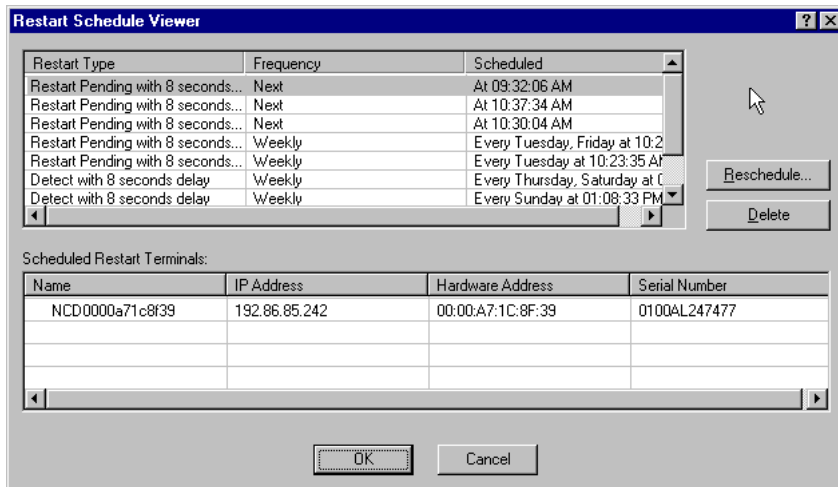
If there are terminals scheduled to be restarted, the **Restart Schedule Viewer** dialog displays.

If there are no terminals currently scheduled to restart, then selecting the **Show Scheduled Restart...** command has no effect.

To cancel a scheduled restart, select the terminal, then click **Delete**.

Restart Status Values

The Status column of the ThinPATH Remote Restart Tool dialog shows the response of each terminal in the list to restart command. This table explains the values in the Status column.

Status Value	Meaning
Trying Restart	A restart command has been sent to the terminal. The software is attempting to restart the terminal. This value appears momentarily.
Restarting	The terminal is currently restarting. This status only appears when the terminal receives a restart command from the Remote Restart Tool—it does not appear when a terminal is physically restarted.
Restart Pending	The terminal has received a restart command that instructs it to delay restarting until all terminal connections are closed, rather than an immediate restart command.
Not Responding	The terminal did not respond to the restart command. This status value displays after the restart command times out. *More on the Restart Command* on page 36 explains why terminals do not restart.
Wake-on-LAN	The terminal received a Wake-on-LAN command and the Remote Restart Tool is waiting for the terminal to power up.
Detected Terminal	The terminal responded to a Detect (ping) request.

More on the Restart Command

Terminals that are powered on respond to the restart command in one of two ways, depending on the type of restart that was selected:

■ They restart immediately.

■ They delay restarting until their last connection closes.

ThinSTAR 200 and 250 terminals that do not restart when commanded are assigned the status of "Not Responding" in the terminal list after the command times out. This probably indicates that the terminal is not powered on.

ThinSTAR 300 and 400 terminals that do not restart on command are sent a Wake-on-LAN command. ThinSTAR 300 and 400 terminals that were turned off using the front power switch receive the command and "wake" or power up and restart. If a ThinSTAR 300 or 400 terminal does not respond to a Wake-on-LAN command, the power switch on the back of the terminal is probably in the Off position, so a remote restart is not possible and the terminal's status remains "Wake-on-LAN."

ThinPATH Manager Installation Errors

The following error and status messages may occur during installation of NCD ThinPATH Manager.

NCD ThinPATH Manager Installation Errors	
Error	**Description/Recommended Response**
You must be logged in as a system administrator on this computer before you can run this program.	You need system administrator privileges. Log on to the Windows NT server as an administrator.
ThinSTAR Management Service not found. This application must be run on a server that has the ThinSTAR Management Service installed.	TMS is required. If TMS is not installed on your Windows NT server, install it when you install NCD ThinPATH Manager. To run the NCD ThinPATH Remote Restart Tool, you must install SNMP Services. The error message appears after you enter the license key if the Microsoft Windows SNMP Network Service is not installed on your system.
To run the NCD ThinPATH Remote Restart Tool, you must install SNMP servers.	The ThinPATH Remote Restart Tool needs the Microsoft Windows SNMP Service. If SNMP service is not installed, select **Start > Settings > Control Panel > Network > Services** and click **Add**. Select **SNMP Service** from the list. You may need to use the original Windows NT operating system CD to complete the installation. SNMP parameters are unnecessary and the actual SNMP service can be stopped, since it is the .dll files that are necessary.

ThinPATH Configuration Tool Errors

The following error messages may appear.

NCD ThinPATH Manager Configuration Tool Errors	
Error	**Description/Recommended Response**
You must be logged in as a system administrator on this computer before you can run this program.	You lack system administrator privileges. Log on to the Windows NT server as an administrator. ThinSTAR Management Service not found. This application must be run on a server that has the ThinSTAR Management Service installed.
ThinSTAR Management Service not found. This application must be run on a server that has the ThinSTAR Management Service installed.	TMS is required. If TMS is not installed on your Windows NT server, install it when you install NCD ThinPATH Manager.
Could not find a valid ThinPATH license. Exiting.	No valid license key has been found. This error may also occur if you have been using an evaluation copy of the NCD ThinPATH Manager software that has expired. Run the License Manager and enter the correct license key(s) that came with NCD ThinPATH Manager. The license key is on the back of the license card in the package.
Invalid Server IP Address, The Manager name must be an IP Address *[or similar message]*	You entered an invalid IP address. Enter the correct IP address.
Invalid Subclass Name. The name must be an IP Address, a Hardware Address, or a Serial Number.	You entered an invalid subclass name. Enter the correct IP address, hardware address, or serial number.

NCD ThinPATH Manager Configuration Tool Errors *(continued)*	
Error	**Description/Recommended Response**
A Group Subclass must contain at least one member. You can choose to Import Subclass Members from a text file or you can convert the Group Subclass to an Individual Subclass and continue.	You clicked **OK** before assigning at least one member to a new group subclass. Assign one or more members to the group subclass.
Password validation error: the passwords entered do not match.	The password you entered as the **New Password** is not identical to the password you entered at **Confirm Password**. Set a new password.

ThinPATH Web Configuration Tool Errors

The following error messages may appear.

NCD ThinPATH Web Configuration Error Messages	
Error	**Description/Recommended Response**
Value of audio_volume should be between 0 and 100 [or similar message]	A setting is out-of-range. Enter a valid value.
Invalid Server IP Address, The Manager name must be an IP Address [or similar message]	You entered an invalid IP address. Enter the correct IP address.
Password validation error: the passwords entered do not match.	The password you entered as the **New Password** is not identical to the password you entered at **Confirm Password**. Set a new password.

ThinPATH Remote Restart Tool Errors

The following error messages may appear.

NCD ThinPATH Remote Restart Errors	
Error	**Description/Recommended Response**
You must have administrator privileges to run this program.	Administrator privileges are required. Log on as an administrator.
The NCD ThinSTAR Management Service must be installed in order to run this program.	TMS is required. If TMS is not installed on your Windows NT server, install it when you install NCD ThinPATH Manager.
Warning: The SNMP network service must be installed in order to restart terminals.	SNMP Network Service is not installed. Install the Microsoft Windows SNMP Network Service on your system. To do this, select **Start > Settings > Control Panel > Network > Services** and click **Add**. Select SNMP Service from the list. You may need to use the Windows NT operating system CD to complete the installation.

Glossary

browser   Software for locating, displaying, and interacting with sites on the World Wide Web. Netscape 4.0 and Internet Explorer 4.0 have been tested and found to work satisfactorily with the ThinPATH Web Configuration Tool.

client   A client is a program that depends to some extent on the services of another program or system. In ThinPATH Manager, a client is a network protocol used to make terminal connections (for example, Microsoft Terminal Server Client).

connection   A method for starting a session on a network server.

DHCP   Dynamic Host Configuration Protocol. A program that assigns dynamic IP addresses.

hardware address   An Ethernet address or Media Address Control (MAC) address.

IP address   The Internet Protocol (IP) address identifies a module on a network using TCP/IP.

remote configuration   The process of changing terminal property settings for one or more terminals from a server or computer at another location.

SNMP   Simple Network Management Protocol. Included in the NCD ThinSTAR Management software. An SNMP agent is another method for setting terminals remotely. It provides a way to set some parameters that are not configurable through other ThinSTAR terminal interfaces.

SNMP trap An SNMP trap directs an SNMP agent running on a terminal to send a message to the server running the SNMP manager to inform the system administrator that a cold restart or authentication failure has occurred on the terminal.

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