
Automation Control Products

ThinManager 5.0 Help Manual



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1 Introduction

1.1 Documentation Contents

This documentation covers the following topics:

- What is New in ThinManager 5.0?
- A Quick Start Checklist
- Standard ThinManager Installation
- ThinManager Licensing
- Redundancy
- The ThinManager Interface
- The Menu items
- Adding thin client hardware
- Configuration Wizards
- The Terminal Configuration Wizard
- The PXE Server Configuration Wizard
- Display Servers
- Display Clients (formerly Terminal Server Groups and Application Groups)
- Failover and Instant Failover
- Modules
- Citrix ICA
- Hotkeys
- MultiMonitor
- Reports
- WinTMC
- Shadowing
- ThinManager Security
- TermSecure

- TermMon ActiveX Control
- A ThinManager Troubleshooting Guide to aid in deployment

1.2 ACP ThinManager 5.0

ThinManager is a server-side configuration, management, and hardware enabling software for Terminal Services based thin client systems.

ThinManager is a software program that allows thin clients to boot, receive a configuration, and connect to a terminal server. ThinManager provides terminal configuration, session management, and session status monitoring. ACP ThinManager provides quick replacement of terminals and an almost seamless switch from terminal server to terminal server in case of terminal server failure.

A thin client is a device that connects to a server, logs onto a separate independent session, and runs its applications on the server and not locally on the thin client. **Thin Clients** first connect to a ThinManager Server where it receives its configuration. This configuration sends the terminal to a terminal server where it logs in.

Note: The terms **Thin Client** and **Terminal** are used interchangeably in this document.

The keystrokes and mouse movements from the thin client are sent to the terminal server. The terminal server session determines the response and sends the screen display back to the terminal. This simplifies maintenance and management by eliminating the need to install and configure operating systems and applications on the thin client. All configuration, management, installation and applications are on the server, not the thin client.

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1.3 What is New in ThinManager 5.0?

New – PXE Support

ThinManager 5.0 now supports thin clients capable of network booting through PXE. This expands the selection of thin client hardware that works with ThinManager.

See PXE Server Configuration Wizard for details.

New – Xli Licensing

ThinManager Xli licensing includes a MultiMonitor, WinTMC, and TermSecure license with every Terminal Connection license. ThinManager Xli licensing is required for PXE boot of thin clients.

1.4 Evolution of ThinManager Terminology

ThinManager has evolved over the years leading to changes in terminology and function.

1.4.1 Essential ThinManager Functionality

The booting of a thin client is a two-step process:

- The thin client connects to ThinManager to receive its configuration.
- This configuration sends the thin client to a terminal server to login and run a session.

The ThinManager may be on the same physical computer as the terminal server or it may be on a different computer.

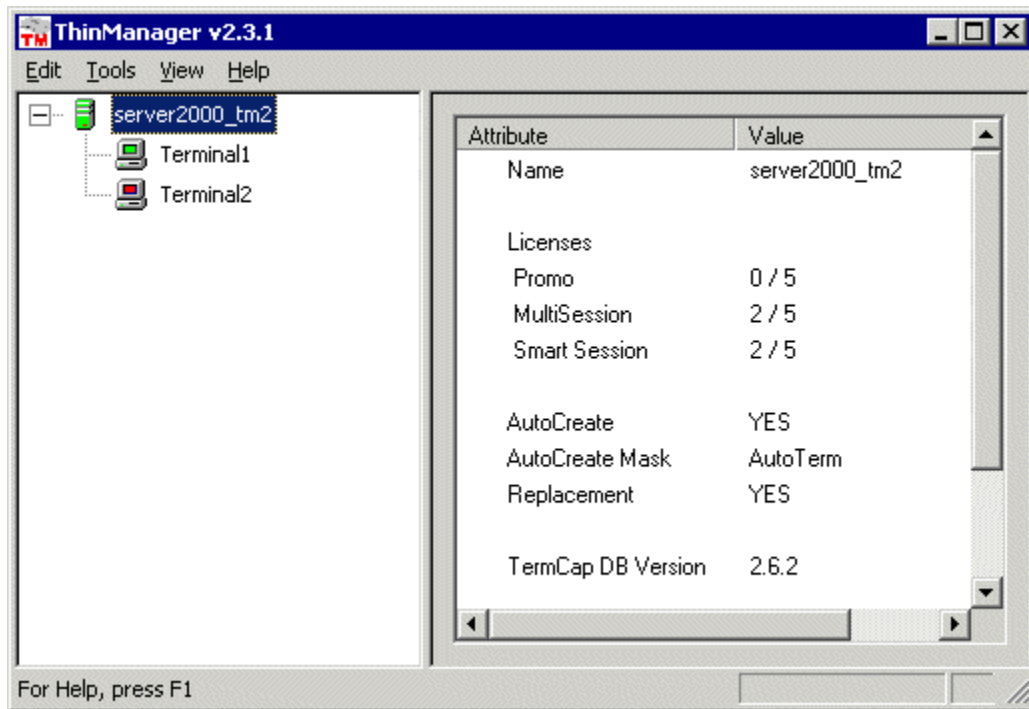
1.4.2 The Client/Server Relationship in Terminal Services

This is how the client/server relationship works in terminal services:

- The client (fat or thin) connects to a terminal server, logs on, and starts a session.
- The client sends mouse and keystrokes to the terminal server for processing.
- The terminal server processes the input, generates the corresponding graphics, and sends the graphics calls to the client for display.
- The client displays the graphics locally for the user.

1.4.3 Hardware Configuration Tool

Early versions of ThinManager functioned as a tool for configuring the thin client hardware.

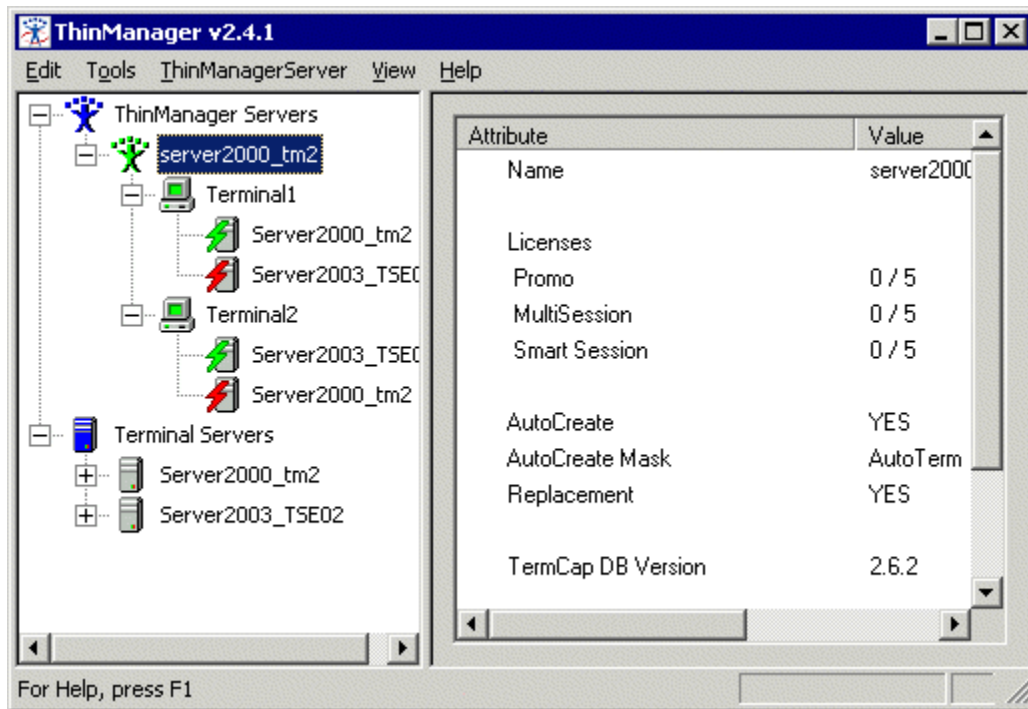


ThinManager 2.3.1 Interface

The status of the terminal was limited to indicating if a terminal was on or off by use of green or red colors on the terminal icons.

1.4.4 Wizards

Configuration wizards were added in ThinManager 2.4.

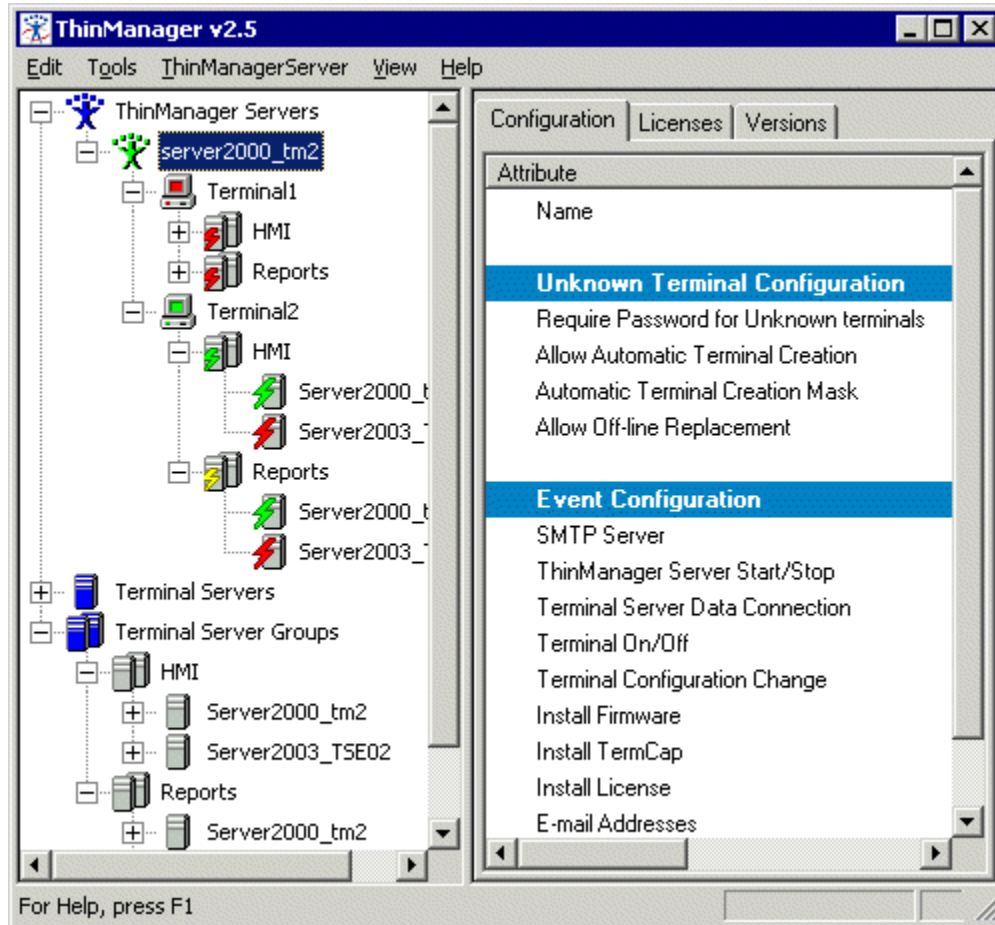


ThinManager 2.4 Interface

The tree was expanded to show what terminal servers the terminals were assigned to. Green and red lightning bolts indicated whether a terminal had an active connection to the terminal server.

1.4.5 Terminal Server Groups

ThinManager 2.5 introduced Terminal Server Groups. These were collections of terminal servers that a terminal could connect to and run a session on.



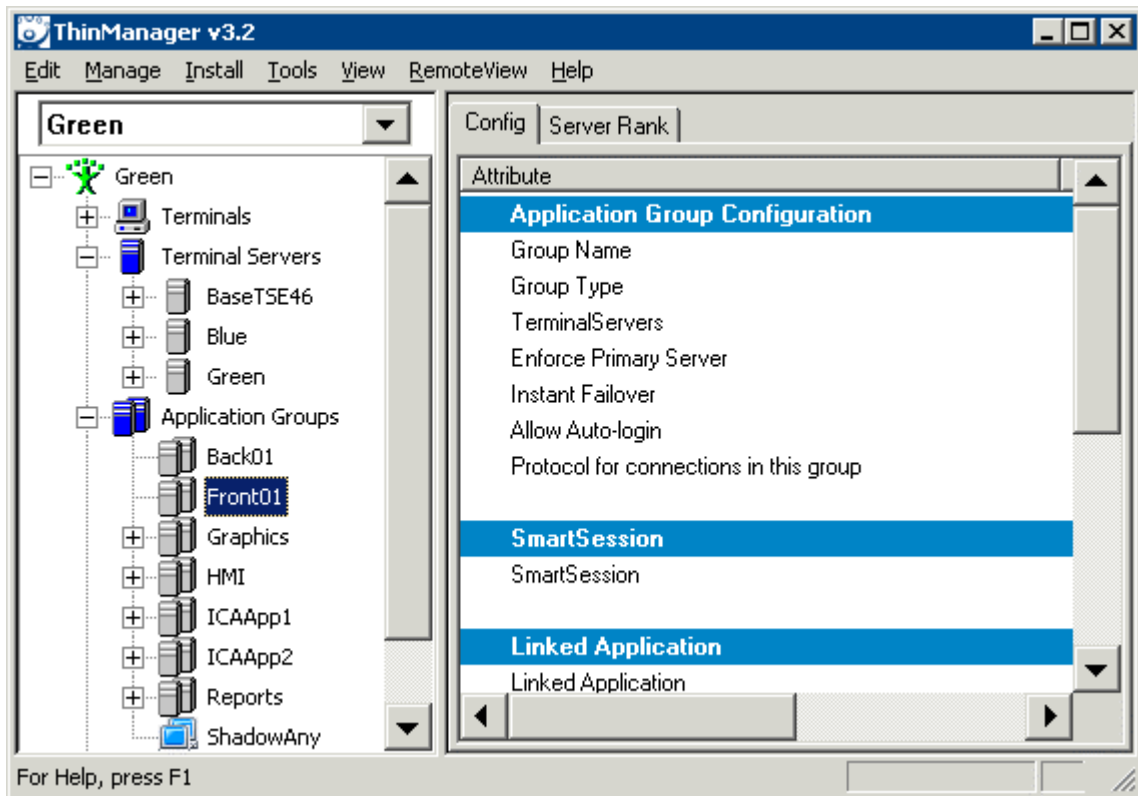
ThinManager 2.5 Interface

The use of Terminal Server Groups increased the power of ThinManager through AppLink and MultiSession.

AppLink is the deployment of specific applications and MultiSession is the ability to run multiple sessions on a terminal at the same time. In the example Terminal2 is using MultiSession to run two AppLink apps (HMI and Reports).

1.4.6 Application Groups

Terminal Server Groups were renamed Application Groups in ThinManager 3.2.

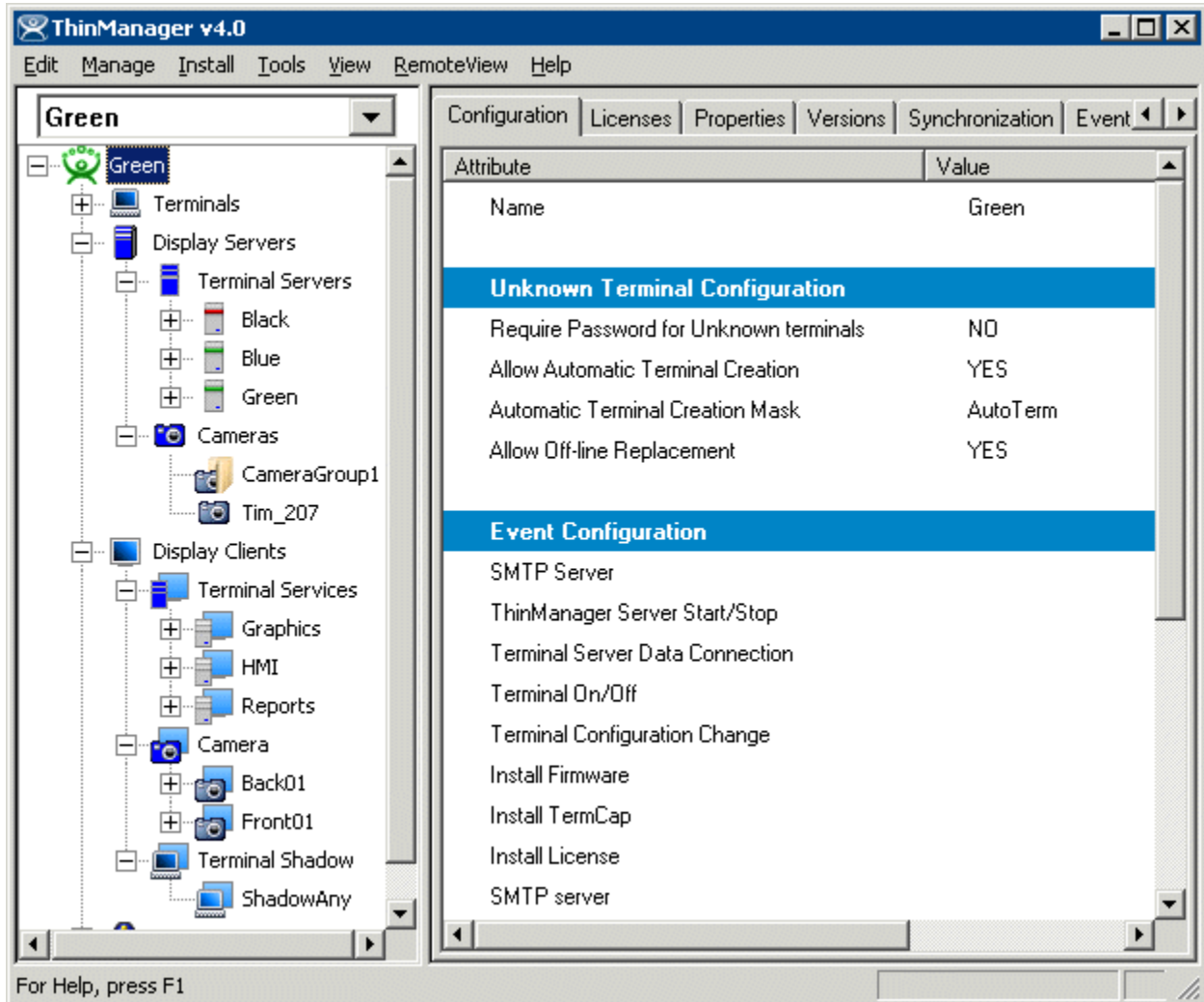


ThinManager3.2 Interface

Terminal Server Groups didn't describe Terminal-to-Terminal shadowing accurately because that function isn't coming from the terminal server but is coming from the shadowed terminal.

1.4.7 Display Servers and Display Clients

ThinManager 4.0 added IP cameras, an additional source to display on the ThinManager Ready thin client leading to a major change in terminology.



ThinManager 4.0 Interface

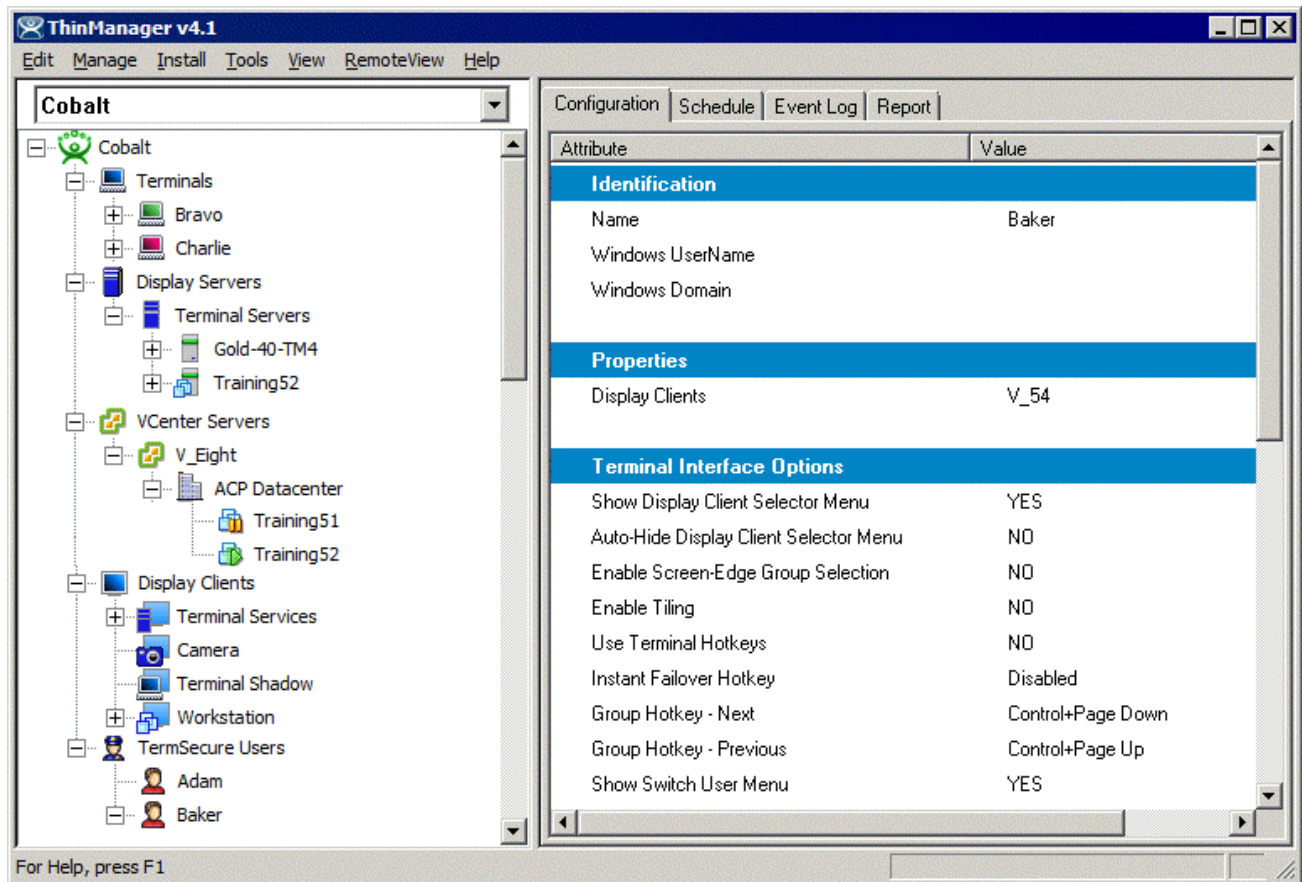
Important Definitions:

A **server** is defined as device, computer, or application that provides applications, files, or data for use by other computers.

A **client** is defined as device, computer, or application that requests data, resources, or services from a server or software program that shares data with the server.

Display Servers – ThinManager 4 uses Display Servers to denote devices that provide content that can be displayed on the client. Examples include the traditional terminal server and IP cameras.

Display Clients - ThinManager 4 uses Display Clients to denote the graphic rendering of the output from a Display Server. This could be a traditional Terminal Server session, IP Camera display, or a Terminal-to-Terminal Shadow session.



ThinManager 4.1 Interface

ThinManager 4.1 adds vCenter server control and management to ThinManager.

2 System Overview

2.1 Quick Start Checklist

Microsoft

- ❑ Build a terminal server with the Microsoft Windows 2003 or 2008 Server operating system. Enable Terminal Services. See Non-ThinManager Components.
- ❑ Create a Microsoft Licensing Server and add a TS CAL (Terminal Server Client Access License) for each thin client. They also require a normal CAL. See Microsoft Licenses.
- ❑ Create a Microsoft user profile for each terminal on the terminal server. Make sure that the user is a member of the Remote Desktop Users Windows group. See Creating Microsoft User Profiles.
- ❑ Apply appropriate security to each user profile using the standard Microsoft techniques.

ThinManager

- ❑ Install ACP ThinManager software onto a computer to create a ThinManager Server. See Installation of ThinManager.
- ❑ Create a Master ACP License and add enough Product Licenses for each thin client. See Adding a Master License to ThinManager.

Hardware

- ❑ Establish the IP addressing scheme for the thin clients, Static IP or DHCP. See IP Address Assignment.
- ❑ If using DHCP, configure Option 066 to list the IP address of the ThinManager Server. See DHCP.
- ❑ Attach the terminals to ThinManager by either:
 - Turning on the terminal and selecting the "Create New Terminal" option when the offline terminals are listed.
 - Pre-creating the terminals in ThinManager and selecting the proper terminal name when the terminal is turned on and offline terminals are listed.

Results

- ❑ Step 1: The clients will connect to the ThinManager Server and download the firmware and configuration.
- ❑ Step 2: The configuration will send them to the terminal server to login and start a session.

Note: It is a good idea to schedule an automatic backup of your configuration. See Scheduling for details.

2.2 Required Components

Thin Clients require a number of components to function properly. These include:

- Terminal Services from Microsoft
- Client Communication Protocol, either Microsoft RDP or Citrix ICA
- ACP ThinManager software
- ThinManager Ready or PXE Capable Thin Client Hardware
- Standard TCP/IP network infrastructure

2.2.1 Windows Terminal Server Operating System

The first component is the Terminal Server. This is a computer with a version of Microsoft's Windows 2003 or 2008 Server that has the Terminal Services functionality activated. The operating system allows multiple users to log into the server and run independent, isolated sessions. The operating system controls the server, provides security, controls user access, and runs the applications.

The terminal servers need a Microsoft Terminal Services Licensing Server with Terminal Services/Remote Desktop Services Client Access Licenses (TS/RDS CALs) added.

See Microsoft Licenses for details.

2.2.2 Client Communication Protocol

The second component is the **Client Communication Protocol**. The Client Communication Protocol is the protocol used for client-to-server communications in the Terminal Services Environment. The protocol handles all video, information, and user input such as keyboard and mouse input. This can be either the default RDP protocol that is installed by default with any Windows Terminal Server operating systems or an ICA protocol available separately from Citrix.

The **RDP (Remote Desktop Protocol)** is the Client-Communication Protocol that is included with Microsoft Terminal Services and can be used by Thin Clients to connect to Windows 2000/2003/2008 Terminal Servers. The RDP connection to a Windows 2000 Terminal Server is limited to a 256-color depth (8-bit) while the Windows 2003/2008 Server connection can be made at a higher color depth.

The **ICA (Independent Computer Architecture) Protocol** is available by installing and licensing a **Citrix** component on the Terminal Servers.

2.2.3 ThinManager Administrative Software

The third component is **ACP ThinManager** software from Automation Control Products. ThinManager is used to configure, manage, and control the ThinManager thin clients. Although ThinManager is treated as a single entity, it really has two main components, the ThinManager interface and the ThinServer service.

- **ThinServer** is a service that is the engine of the program. It starts automatically, runs in the background, and provides essential functions to control the thin clients. ThinServer is installed during ThinManager installation if selected.
- **ThinManager** is the administrative software that facilitates the configuration and organization of the thin clients. This is the visible component of the ThinManager software. ThinManager displays

information generated by ThinServer. ThinManager can be installed on any computer on the network, including the terminal server.

Note: ThinManager Server is used to describe a computer running ThinManager and ThinServer that provides control and configuration to Thin Clients, even if the computer is a workstation.

One instance of ThinManager can provide client connection to several terminal servers. The thin clients would boot from the ThinManager server but could be assigned to any of several terminal servers.

2.2.4 ThinManager Ready Thin Client Hardware

ACP ThinManager is designed to control and configure ACP Enabled Thin clients. These are ThinManager Ready thin clients produced by a variety of manufacturing partners and displaying the ThinManager Ready sticker. The ACP website (<http://www.thinmanager.com>) has links to the ACP Partners.



ThinManager Ready Logos

ThinManager Enabled thin clients should display a ThinManager Ready Logo.

The

2.3 Connection Overview

When a terminal is powered on:

- For ThinManager Ready thin clients:
 - An IP address is requested from a DHCP server by default. The DHCP server needs to have **Option 066** set to the ThinManager Server IP address and **Option 067** set to **firmware.acp** to specify a ThinManager Server IP address. Units with the ACP BootLoader 5.01 and later can use DHCP and have the ThinManager Server statically assigned on the unit. See DHCP Server Setup and Boot Process for details.
 - Alternately, the terminal may be assigned a static IP address and the ThinManager Server IP address.
- For PXE thin clients:
 - An IP address and boot file is requested from a DHCP server, or ThinManager if configured.. See PXE Server Configuration Wizard for details.
- The terminal connects to the ThinManager Server to download its configuration.
- The ThinManager configuration will tell the terminal which terminal server to connect and login to.
- The terminal will connect to that terminal server and display the Windows login dialog box or will automatically login with help from the ThinManager configuration.
- The terminal will create a session on the terminal server, allowing applications to run.

The Thin client can be assigned to a single terminal server, or it can be assigned to multiple terminal servers in case of terminal server failure. Display Clients are groups of terminal servers that have added functionality for the thin client.

2.4 Failover Overview

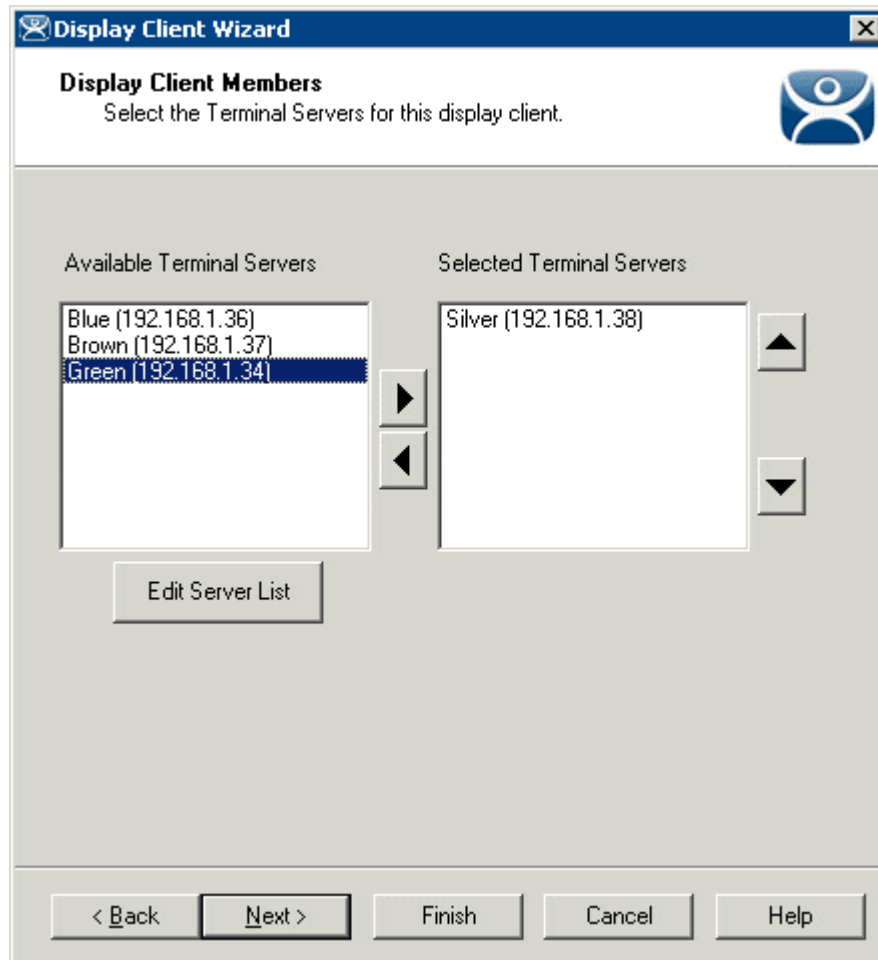
Server failures in any network or system can disrupt productivity and data management. ACP ThinManager (version 2.3 and later) has a failover capability built into it that allows terminals to connect to a secondary terminal server if the terminal server that they are logged into fails. This will lessen the effect of server failures on the terminal server network. The terminals can detect the server crash, drop the connection to it, and connect to a secondary server in seconds.

To initiate ACP ThinManager Failover protection, four steps are needed:

- **Multiple Servers:** The first step is to have multiple terminal servers, with appropriate applications and licenses installed.
- **Terminal Server Addressing In ThinManager:** When configuring the display clients to use individual terminal servers, list the terminal servers, in the order of preferred connection, in ThinManager. Upon boot, each terminal will try to connect to the first server in the list (the primary server). If it is not available, it will try the next on the list (a secondary server) until a connection is made. When using a SmartSession Group the terminal will connect to the terminal server with the lightest load.
- **Sufficient Memory:** The third step is to have sufficient memory capacity on the servers to accommodate the addition of terminals during failover. If you do not plan for the extra capacity, the servers can be taxed with the addition of the new terminals.

- **User Permissions:** Each terminal server needs the appropriate Windows 2000/2003/2008 user profiles and permissions. The terminals will not log into a secondary session unless it has a user profile on that server.

ACP ThinManager allows the use of several terminal servers, defined as the primary and as backups. If the primary terminal server fails, the thin client will detect the server failure and will initiate a new session on a backup server. This allows the operator to continue their work and minimize the effect of a server failure.



Failover Configured for Display Clients in the Display Client Wizard

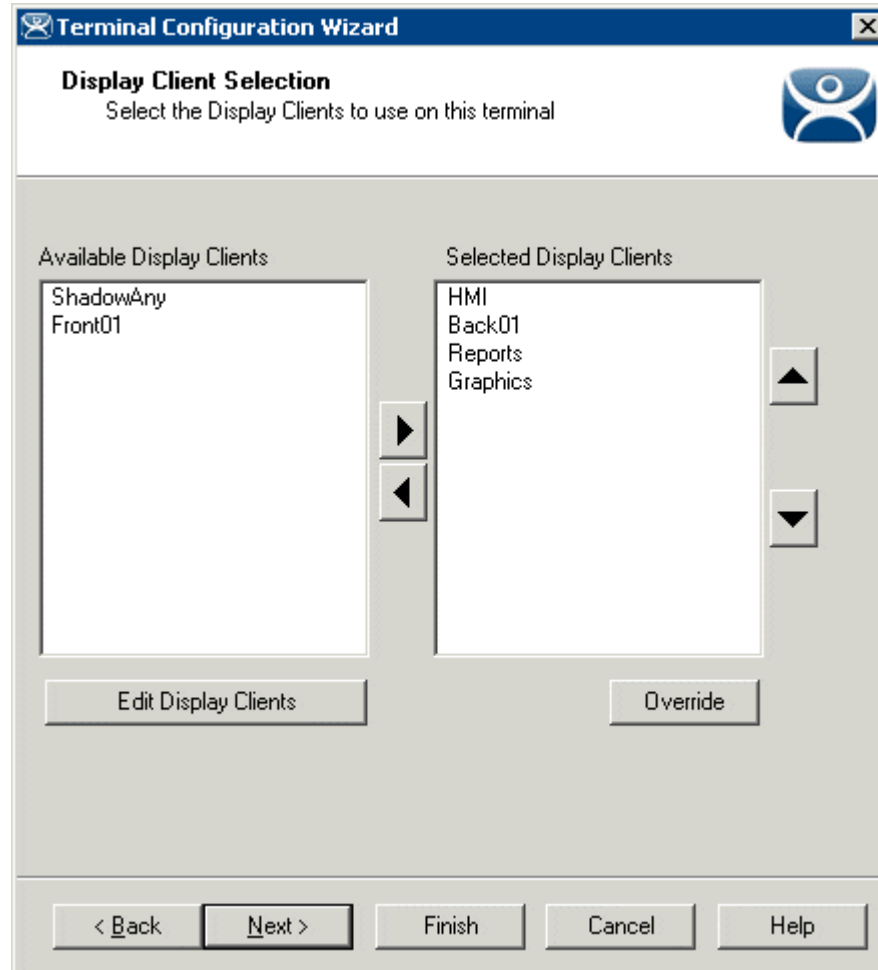
Failover when using Display Clients is configured in the Display Client Wizard by adding multiple terminal servers to the Display Client. See Display Client List for details.

Instant Failover is an advanced configuration of failover. The terminal will log into two terminal servers and start a session on each one. The primary session will be displayed, with the secondary session cascaded behind it. If the primary terminal server fails, the terminal will switch focus to the already initiated secondary session and display the secondary session, saving the time needed to switch terminal servers and load applications.

See Instant Failover for further details.

2.5 MultiSession Overview

MultiSession is the ability for a Terminal to display several Display Clients at one time. Normally the Display Clients are cascaded with only one active at a time. Tiling allows a thumbnail of each Display Client to be displayed at the same time.



Display Client Selection Page of Terminal Configuration Wizard

MultiSession is initiated by adding multiple Display Clients on the Display Client Selection page of the Terminal Configuration Wizard.

See SessionTiling Options for details.

2.6 MultiMonitor Overview

MultiMonitor is the ability of some thin clients to use up to five monitors on the thin client. These monitors can be used to display single screen Display Clients or the monitors can be merged to form spanned windows of two or more monitors.

The MultiMonitor function can be applied to the WinTMC client running on a Windows PC with multiple monitors.

Note: MultiMonitor requires the usage of Display Clients instead of using individual terminal servers.

See MultiMonitor for more details.

2.7 TermSecure Overview

TermSecure is a new ThinManager feature that allows users to logon to a thin client and access user-specific or terminal-specific Display Client. This does not replace the Windows logon but adds an additional layer of security and control.

Terminals and Display Clients can be assigned Access Group permissions. A TermSecure User can use those terminals and Display Clients only if the TermSecure User has been assigned to the same Access Group Display Clients

TermSecure has two main attributes:

- **SecureAccess:** Manages user access to terminal servers and sessions through ThinManager authentication and group permissions.
- **SmartContext:** Allows the movement of the display of a TermSecure User's terminal server sessions between multiple thin clients; initiated by either manual login or the use of an authentication device. This allows a user to leave one terminal, logon to a different terminal, and reconnect to their session, essentially having the session follow him from terminal to terminal.

TermSecure logins can be initiated by a manual login or by the use of an ID device like USB drives or ProxCards for login.

See TermSecure User Configuration Wizard for details.

Note: TermSecure requires the usage of Display Clients instead of using individual terminal servers.

2.8 PXE Boot Overview

PXE (Preboot Execution Environment; sometimes pronounced "pixie") is an environment that allows a computer to boot over a network. ThinManager provides a complete PXE boot environment that does not require any additional software components. The ThinManager PXE Server conforms to version 2.1 of the Intel PXE boot specification.

The Thin Client computer must be capable of PXE Booting. Most standard BIOS ROMS include a PXE Option ROM. In order to PXE boot, the PXE Option ROM must be enabled in the BIOS. The PXE boot method (boot from network) should be set to first in the boot order. Disabling the other boot devices in the BIOS will ensure that the unit will only boot via PXE.

See PXE Server Configuration for more details.

3 Installation of ThinManager

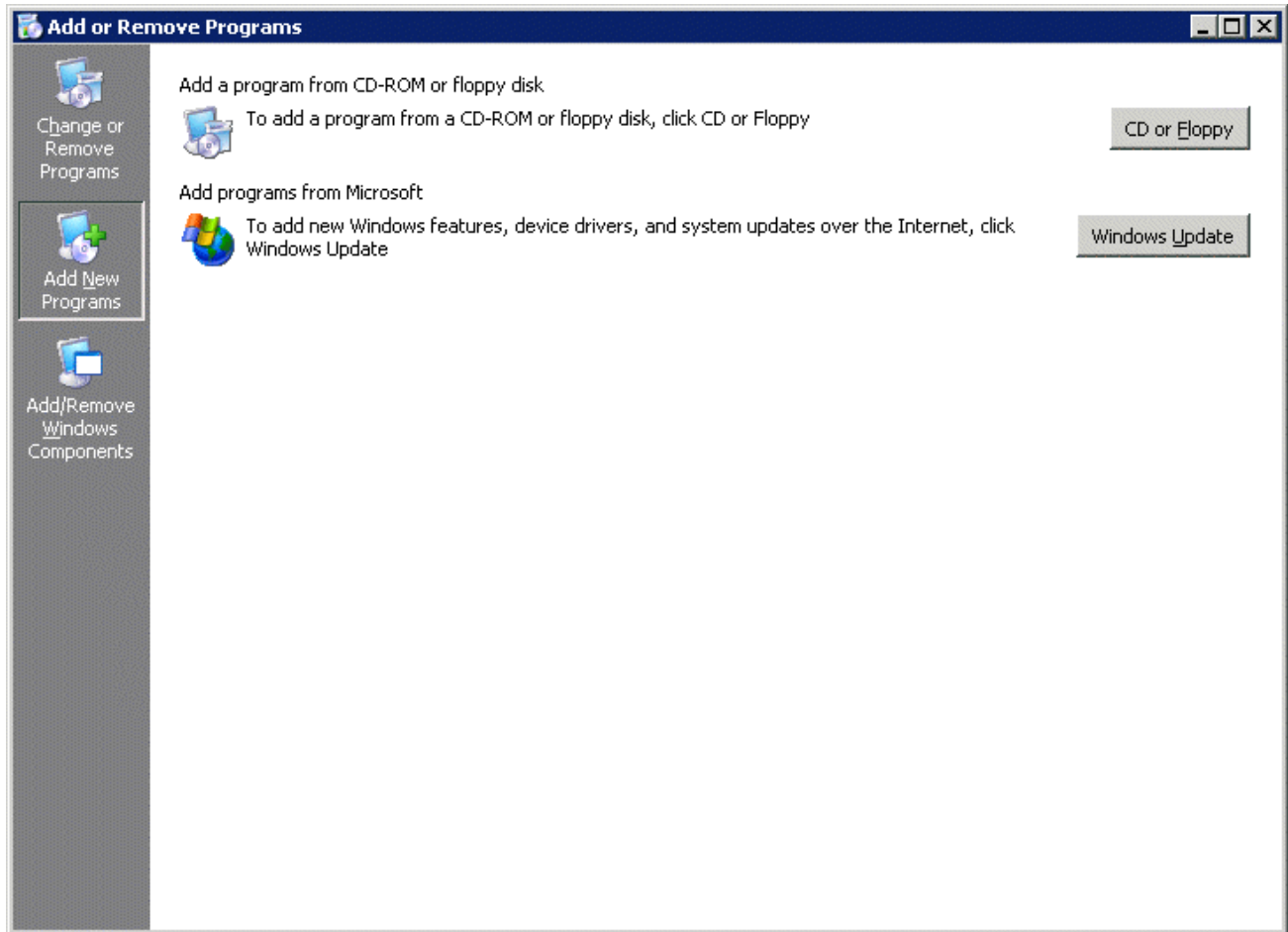
3.1 Standard ThinManager Installation

3.1.1 Windows Server 2003

Note: The installation of the latest Microsoft .NET Framework may require a restart.

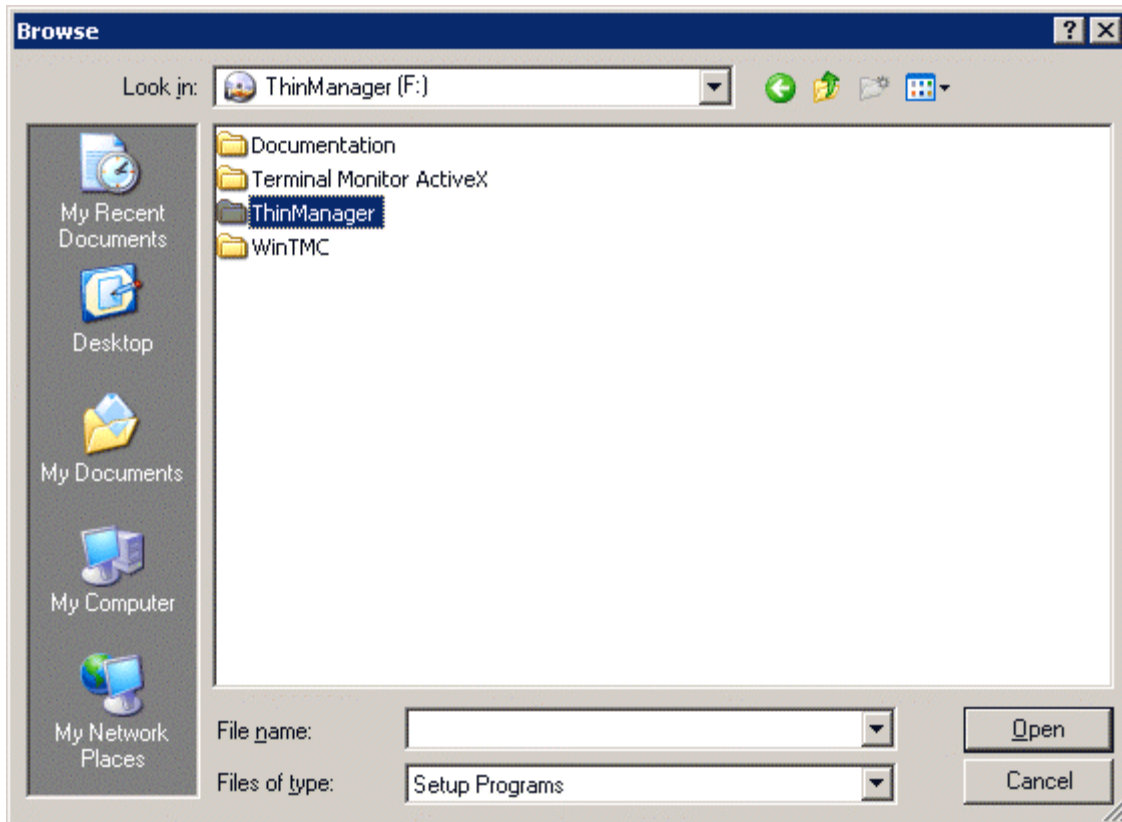
ThinManager can be installed on a Windows server or a workstation (NT 4.0 SP5 and later). On Microsoft Windows 2003/ 2008 Servers, software needs to be added in the **Install Mode** through the **Control Panel > Add/Remove Programs**. Failure to use the Install Mode can prevent an application from working properly.

Select **Start > Settings > Control Panel > Add/Remove Programs** to open the **Add/Remove Programs** dialog box.



Add/Remove Programs

Select the **CD or Floppy** button on the **Add/Remove Programs Properties** dialog box to open the Installation wizard. The wizard will prompt for the insertion of the ThinManager CD. When the CD is inserted, the wizard will ask for the path to the setup program.

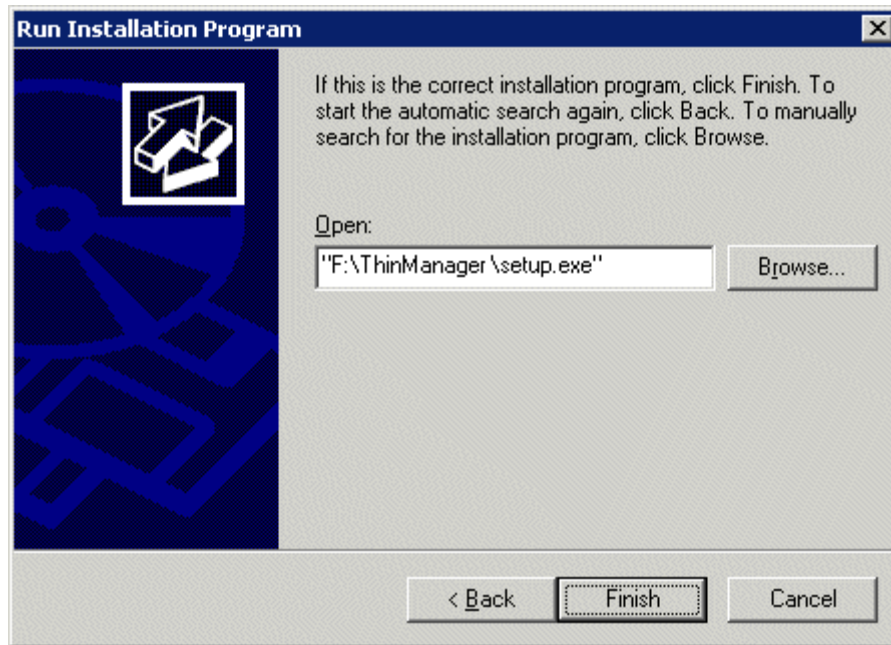


Install CD File System

The ThinManager CD has 4 folders.

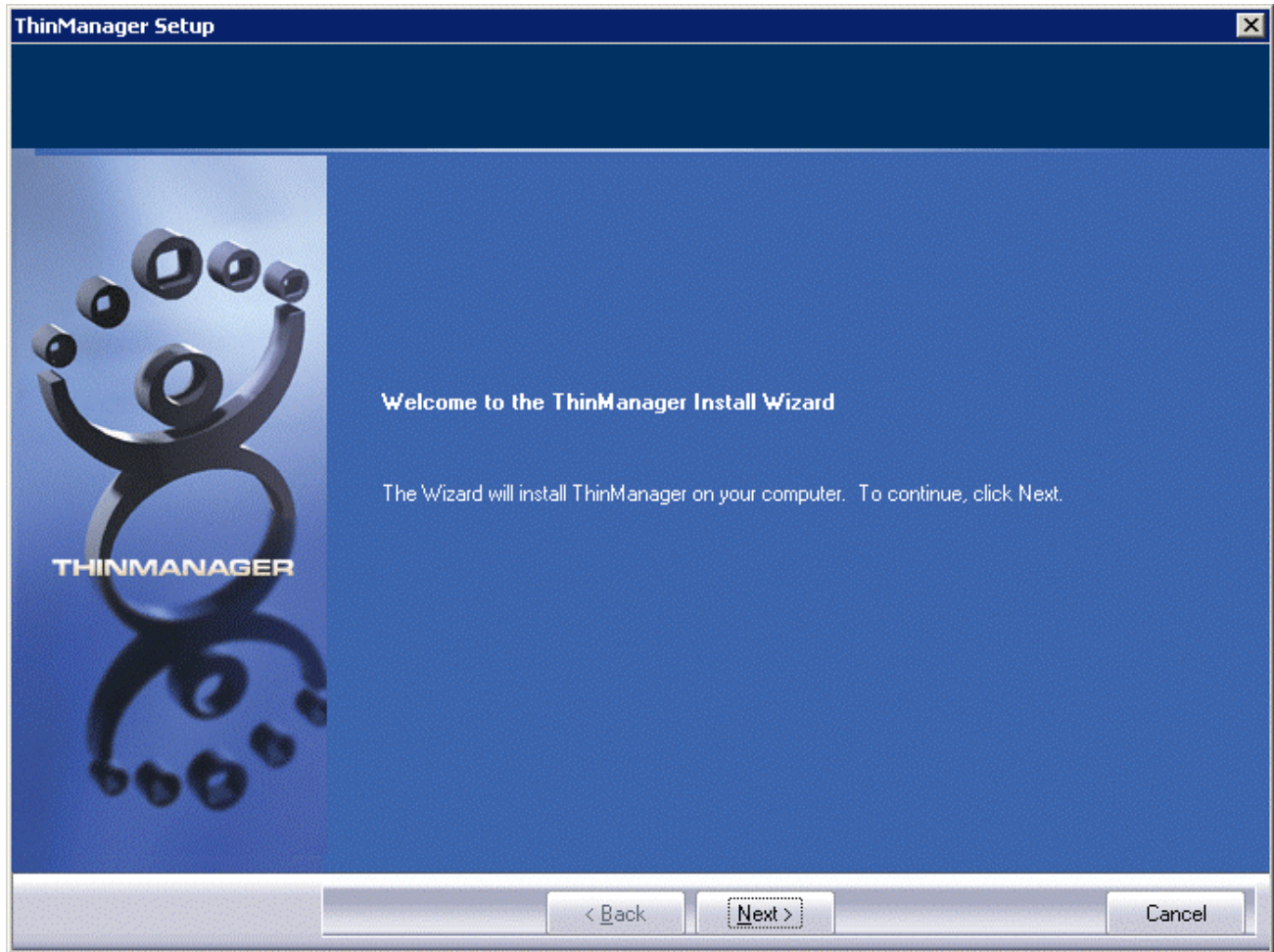
- **Documentation** – This folder contains a copy of this documentation in *.pdf format.
- **Terminal ActiveX** – This folder contains the Terminal Monitor ActiveX and companion documentation. See TermMon ActiveX Control for details.
- **ThinManager**– This folder contains the ThinManager setup program.
- **WinTMC** – This folder contains the WinTMC setup program. See WinTMC Installation for details.

Browse to the **setup.exe** file in the ThinManager folder to install ThinManager.



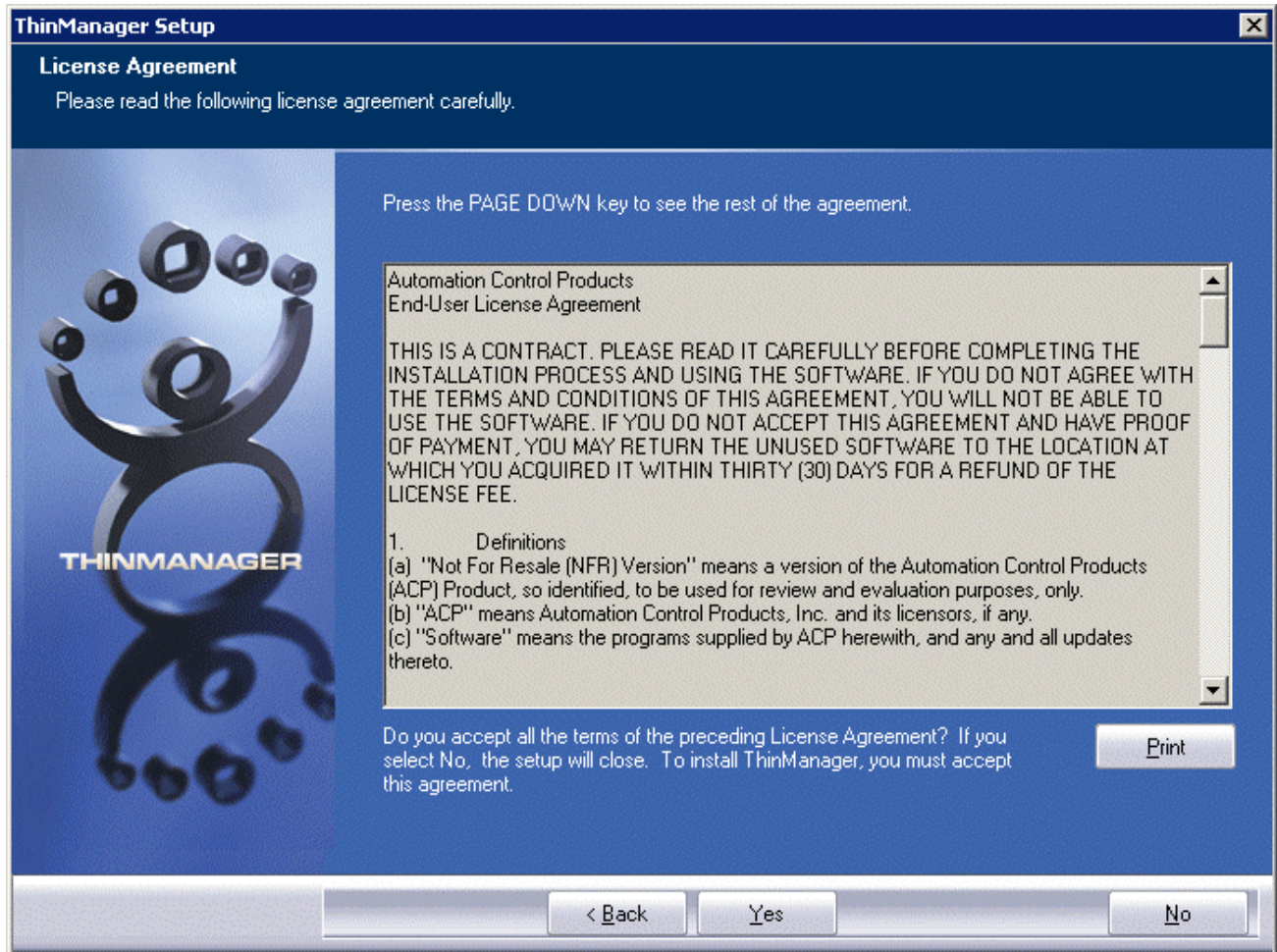
Run Installation Program Window

Once the ThinManager setup program is selected, select **Next** to continue the installation.



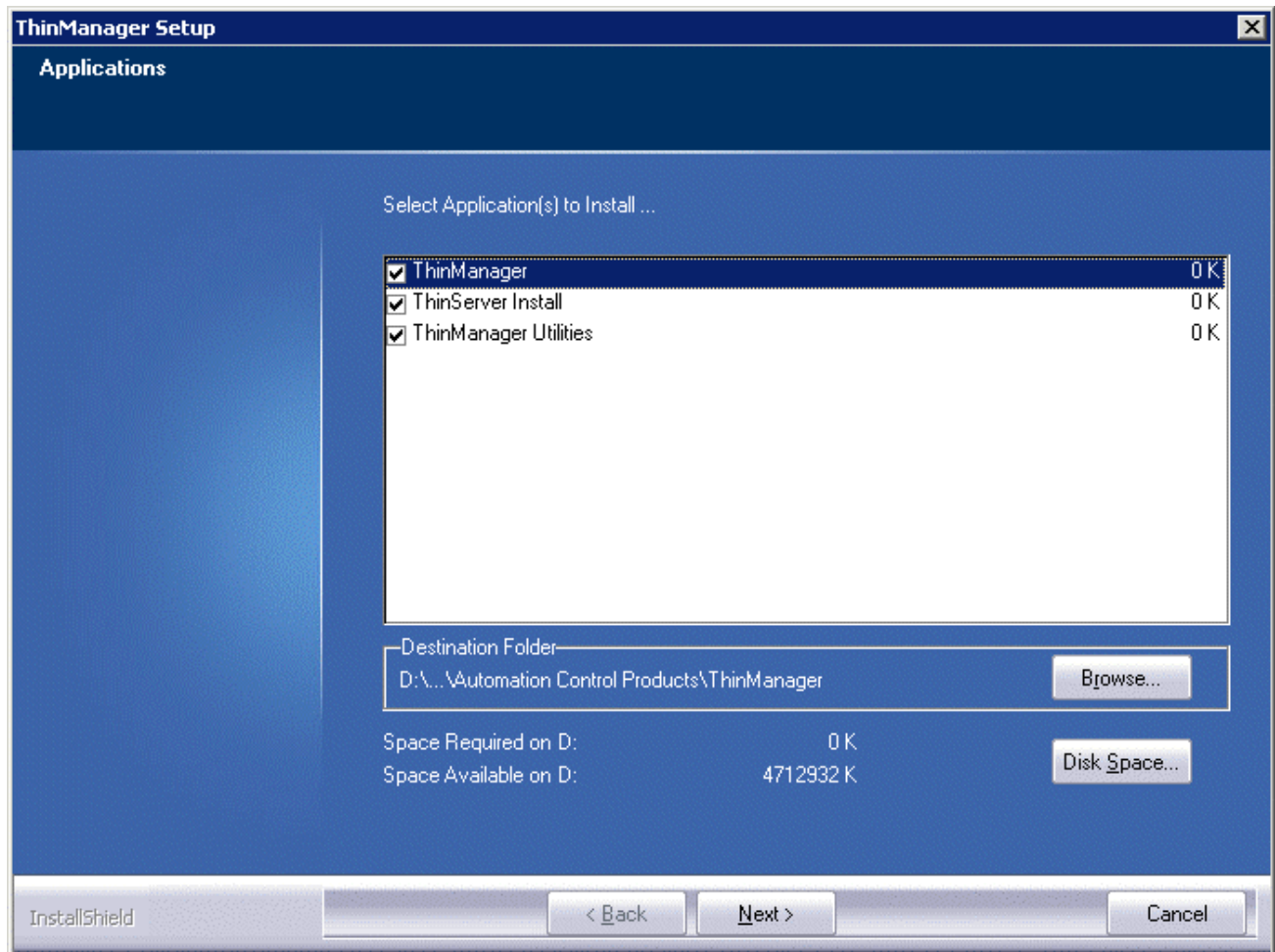
ThinManager Setup Wizard

The ThinManager Setup Wizard will lead the user through the installation process. Select **Next** to continue.



End-User Licensing Agreement

Read the End-User Licensing Agreement (EULA). If you agree to the conditions, select **Yes** to continue.



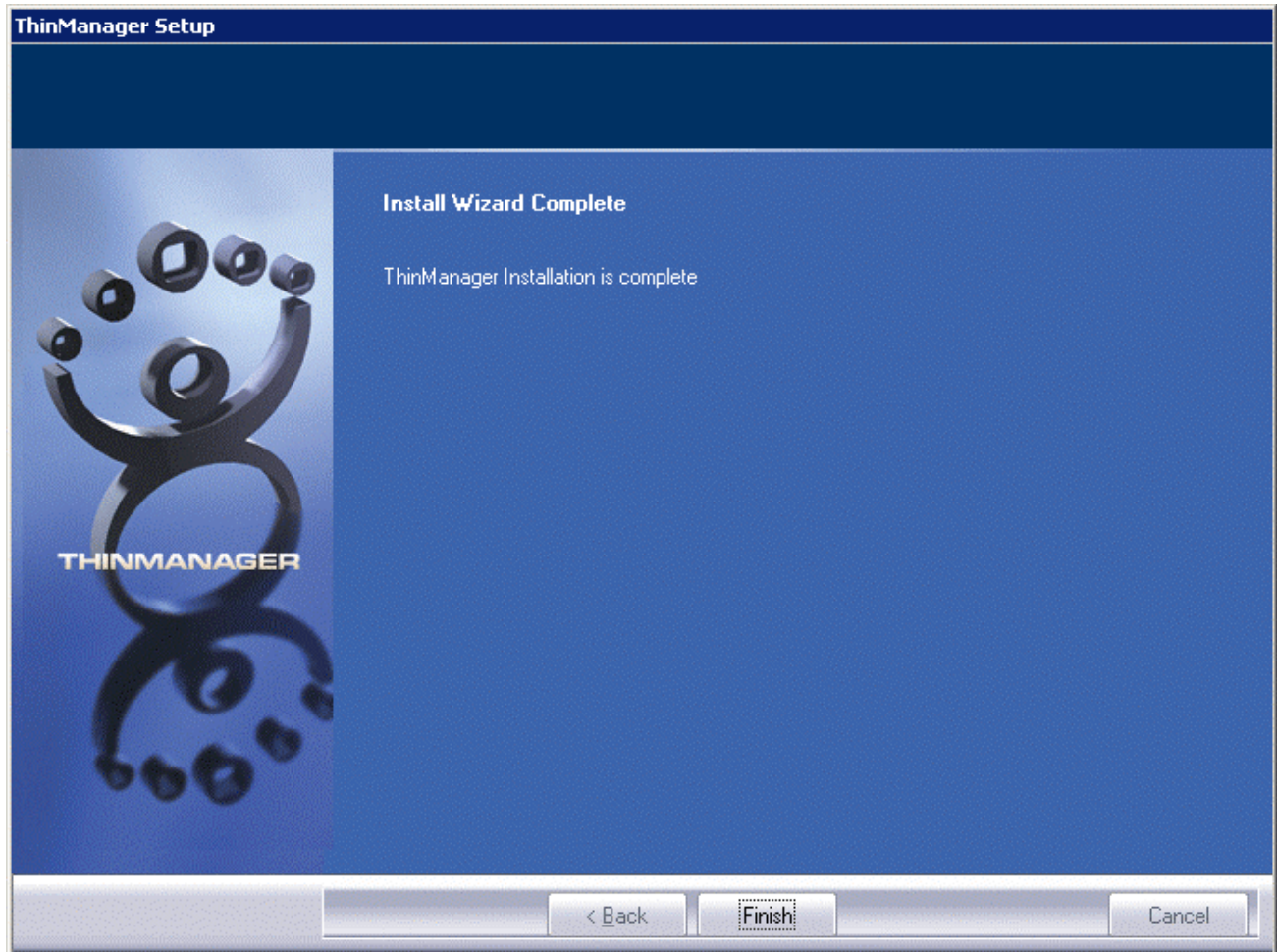
Application Selection

The installation wizard will display the components of the ThinManager installation. Although ThinManager appears to be a seamless program, it has two major components and utilities.

- **ThinManager** is the graphic user interface. It is installed to view and control the program.
- **ThinServer** is the engine that drives the program. It is a vital component that needs to be installed with ThinManager to allow thin clients to boot and be configured. ThinServer is the component that requires licensing. It is separated from ThinManager in the installation to allow additional instances of ThinManager to be installed for remote administration.
- **ThinManager Utilities** includes tools like the touch screen calibration program. These utilities need to be installed on every terminal server that have clients with touch screens connected to them.

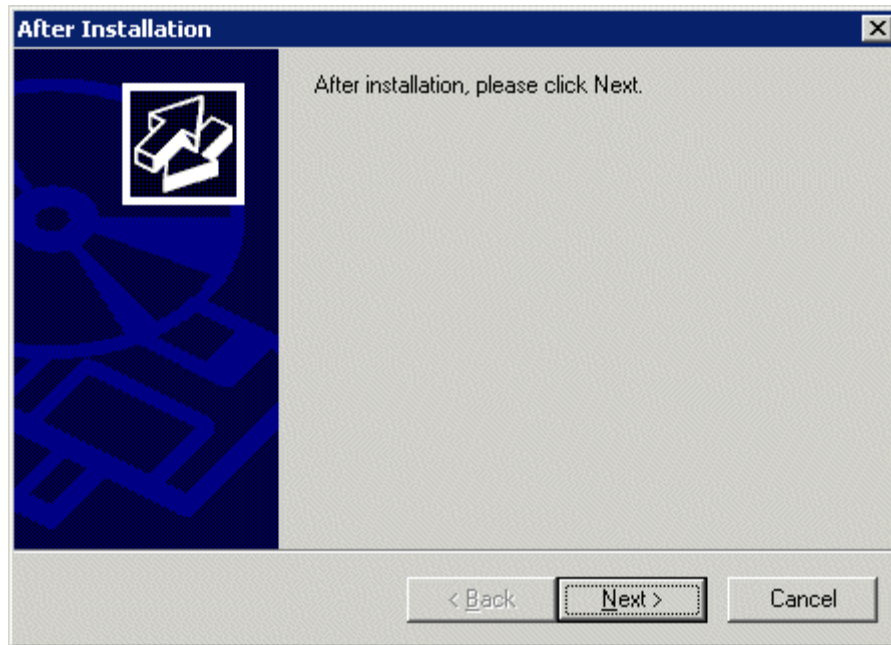
Note: If touch screens are being used with thin clients, the **ThinManager Utilities** program needs installed on every terminal server to provide the **Calibrate Touch** program for connected thin clients.

The **Browse** button will allow the user to change the path to the folder where ThinManager will be installed. Check the desired components and select **Next**.



Installation Wizard Completion

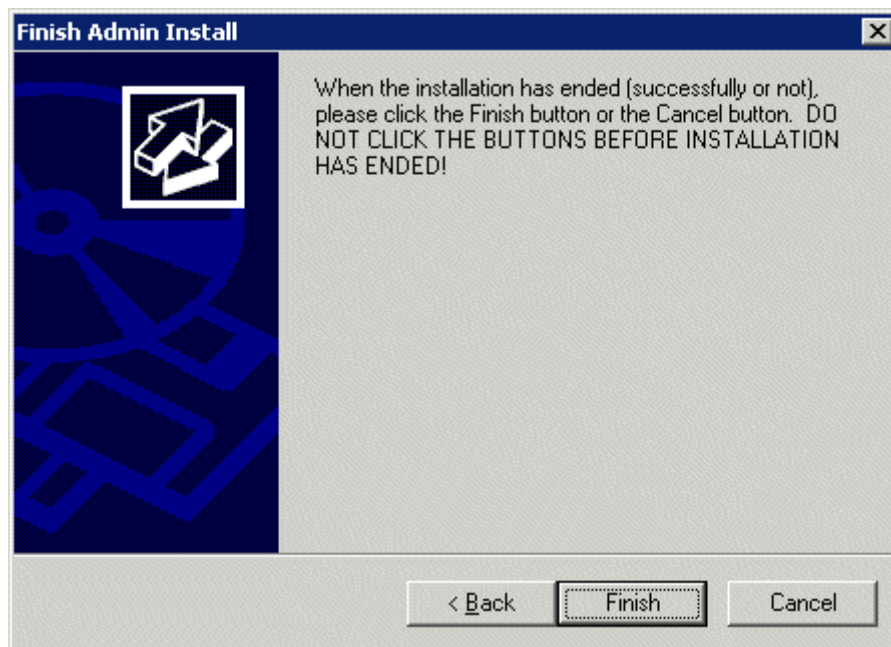
When the wizard has finished select the **Finish** button.



After Installation Dialog

After the ThinManager Setup wizard has finished, one needs to complete the installation through the Microsoft dialog boxes.

Select **Next** to continue.



Finish Installation

Select Finish to complete the installation.

ThinManager now needs licenses installed. See Licensing ThinManager for details.

3.1.2 Windows Server 2008

Note: The installation of the latest Microsoft .NET Framework may require a restart.

It is a common practice to install ThinManager on a terminal server but ThinManager is independent of terminal services and doesn't need to be installed on a terminal server.

Applications on terminal servers need to be installed in the **Install Mode**. Open the Control Panel and click on the **Install Application on Terminal Server** icon to start the installation wizard.

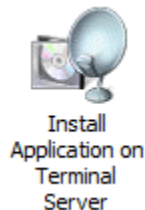


Figure 1 - Install Application on Terminal Server Icon

Once the wizard begins navigate to the ThinManager **setup.exe** program and continue with the wizard as described in Licensing ThinManager. ThinManager will install a 32-bit version on 32-bit operating systems and a 64-bit version on 64-bit operating systems.

The Install Mode can also be entered by typing **change user /install** at a command prompt. You can then run the **setup.exe** to install ThinManager.

Type **change user /execute** when finished installing to leave the Install Mode.

See Allow Inbound Traffic to Firewall for details on configuring the 2008 server to allow connections.

3.2 WinTMC Installation

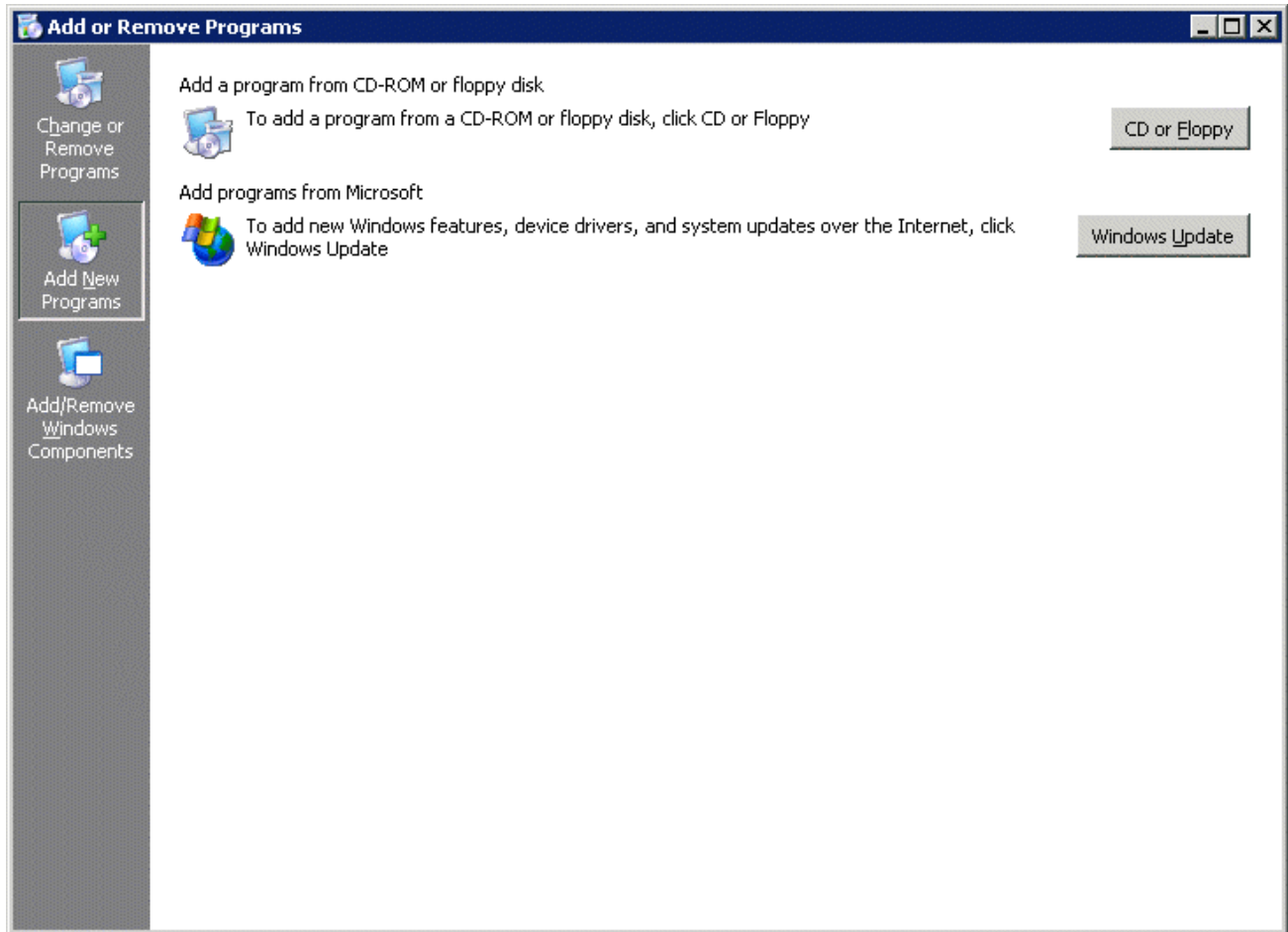
The WinTMC program is a terminal client that is installed on a PC. When the WinTMC client is run it connects to a ThinManager Server, receives its configuration, and then connects to a terminal server and launches a session. The session is then displayed in the WinTMC client as a window or as a full screen, bringing terminal server computing to PCs.

Note: Do not install WinTMC on a ThinManager Server. The two programs will compete over the 2031 port.

The WinTMC client needs to be installed on each PC that it is run on.

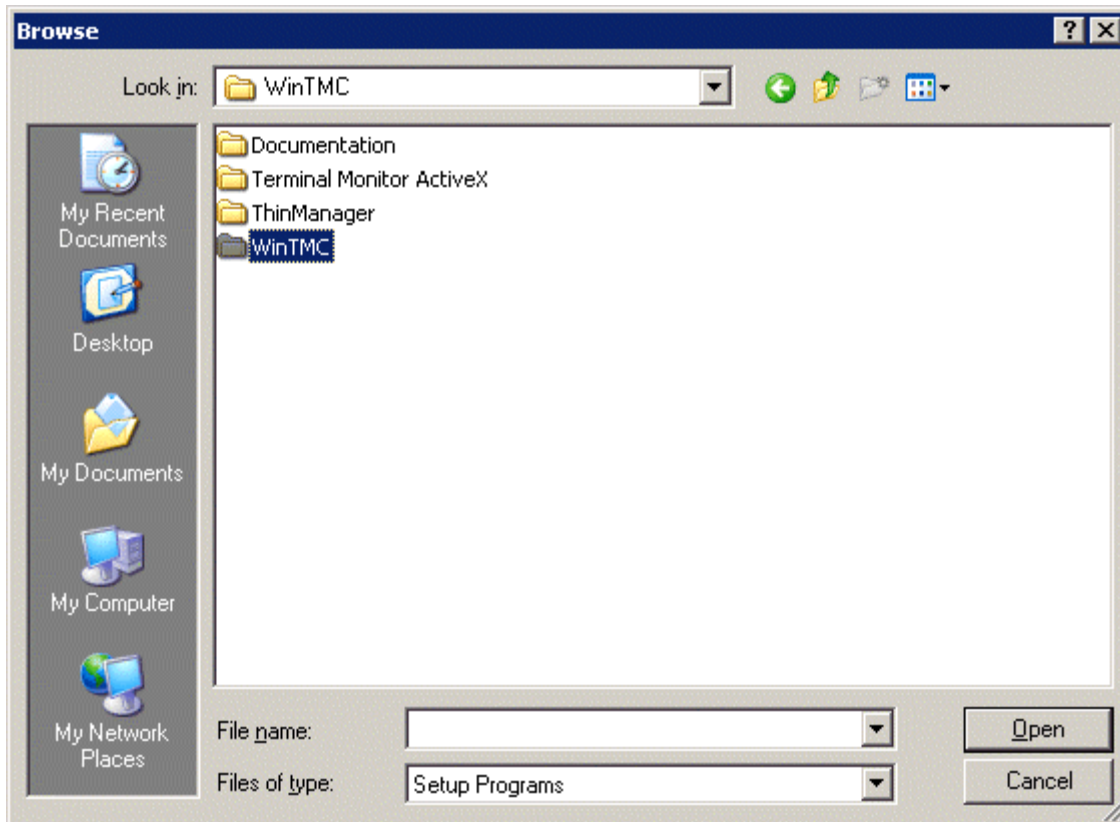
Note: Although PCs don't have as strict a requirement as terminal servers; it is a good idea to install the WinTMC client using the Add and Remove Programs feature.

The ThinManager Install CD contains the installation for the ThinManager program and the WinTMC client. To install the WinTMC client on a PC select **Start > Settings > Control Panel > Add/Remove Programs** to open the **Add/Remove Programs** dialog box.



Add/Remove Programs

Select the **CD or Floppy** button on the **Add/Remove Programs Properties** dialog box to open the Installation wizard. The wizard will prompt for the insertion of the ThinManager CD. When the CD is inserted, the wizard will ask for the path to the setup program.

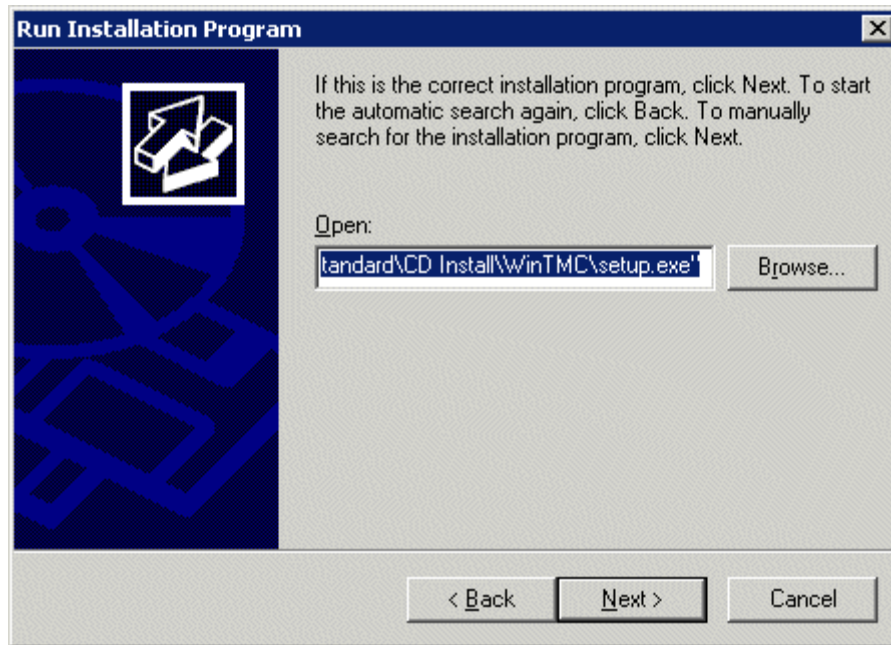


Install CD File System

The ThinManager CD has 4 folders.

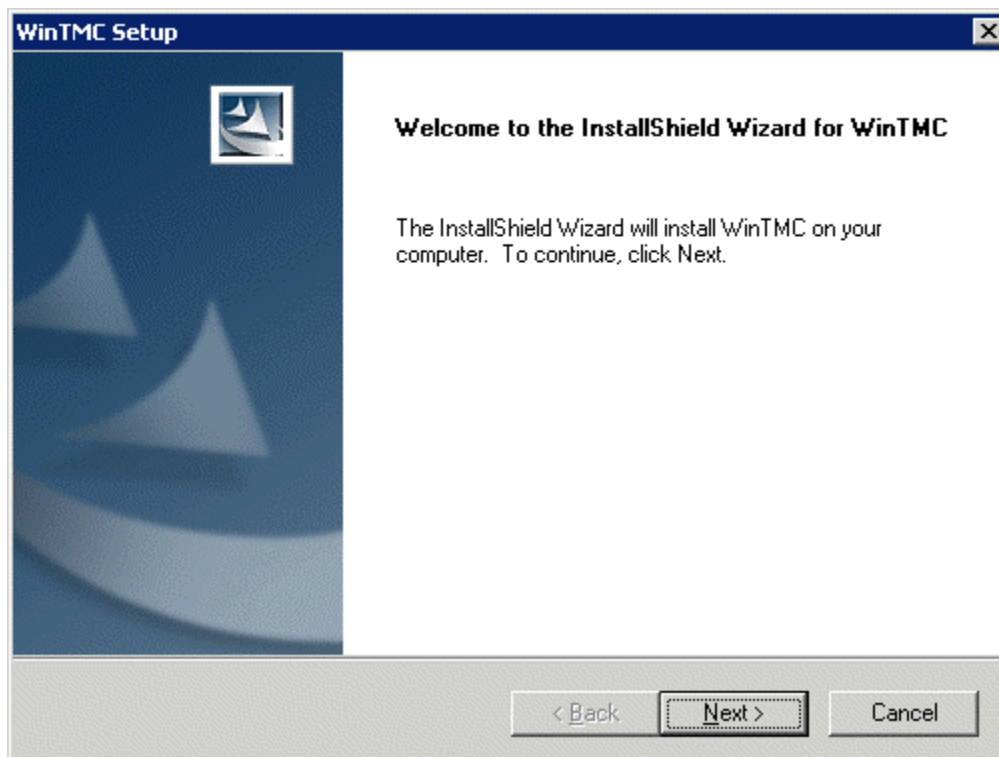
- **Documentation** – This folder contains a copy of this documentation in *.pdf format.
- **Terminal ActiveX** – This folder contains the Terminal Monitor ActiveX and companion documentation. See TermMon ActiveX Control for details.
- **ThinManager**– This folder contains the ThinManager setup program.
- **WinTMC** – This folder contains the WinTMC setup program.

Browse to the **setup.exe** file in the WinTMC folder to install the WinTMC client.



Run Installation Program Window

Once the WinTMC setup program is selected, click the **Next** button to continue with the install.



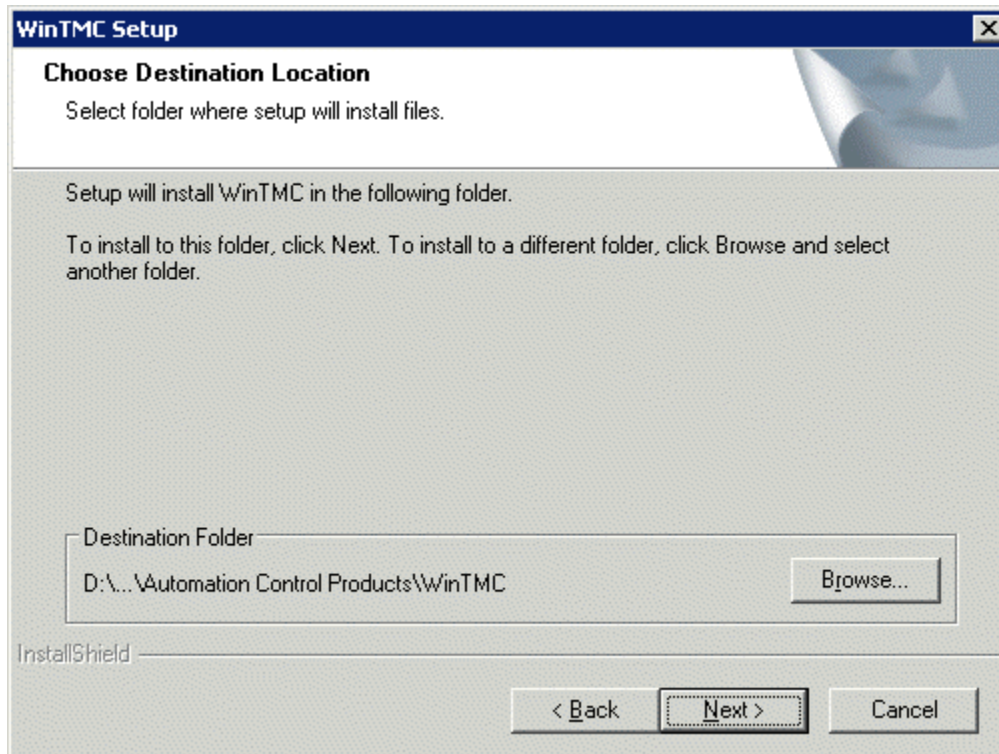
WinTMC Setup Wizard

The WinTMC Setup wizard will launch. Select **Next** to continue.



License Agreement

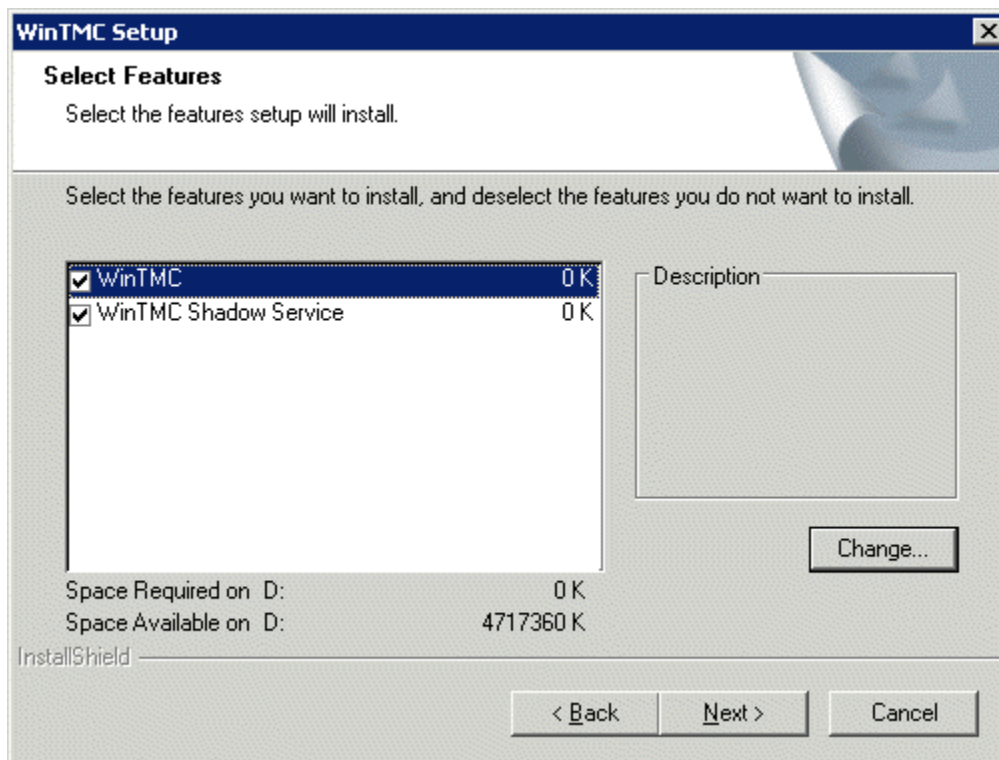
Read the End-User License Agreement (EULA). If you agree with the conditions select **Yes** to continue.



Choose Destination Location

The **Browse** button will allow the user to change the path to the folder where the WinTMC client will be installed.

Select **Next** to continue.



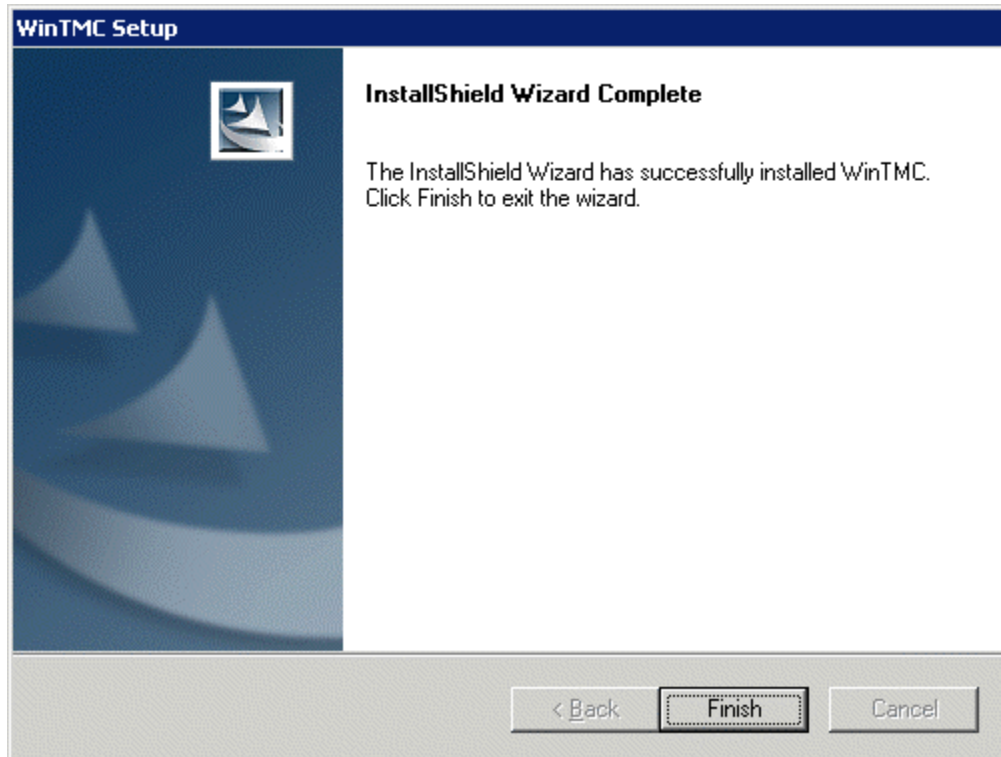
Feature Selection

The WinTMC installation program has two options.

- **WinTMC** - This is the client application that needs to be installed to use the client.
- **WinTMC Shadow Service** - This optional program allows the PC to be shadowed from within ThinManager by authorized users.

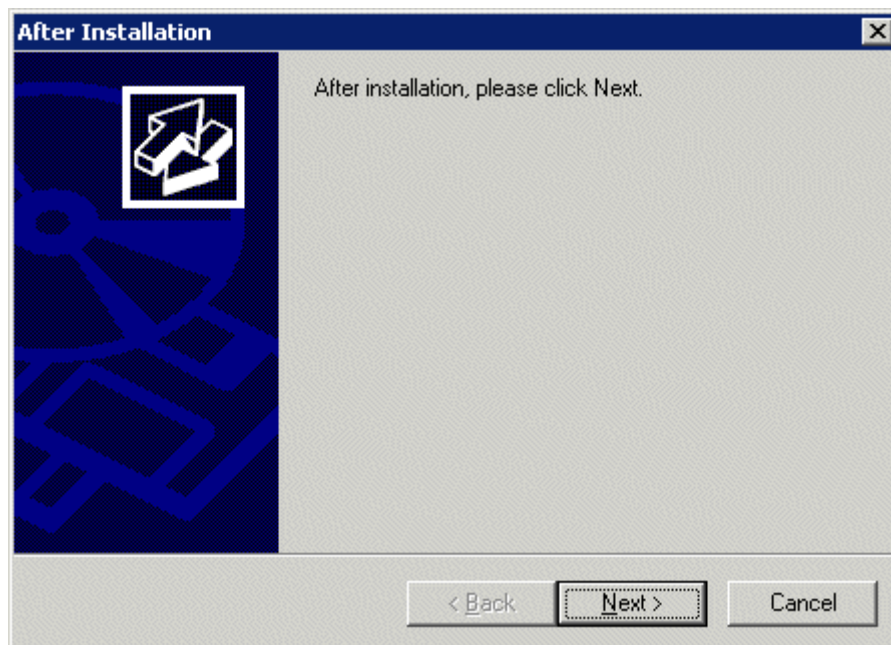
Note: The WinTMC Shadow Service will function even when the WinTMC isn't active.

Select the **Next** button to continue with the WinTMC installation.



WinTMC Installation Completion

When the wizard has finished select the **Finish** button.



After Installation Dialog

After the WinTMC setup wizard has finished, one needs to complete the installation through the Microsoft dialog boxes.

Select **Next** to continue.



Finish Installation

Select **Finish** to complete the installation.

4 Licensing ThinManager

4.1 ThinManager Licensing

ThinManager 5.0 introduced changes in licensing.

Master Licenses – Each ThinManager Server or synchronized pair of ThinManager Servers use a single Master License to contain the product licenses. Product license codes of individual license components are added to the master license. When the master license is activated the product licenses are included in the activation and a single master license file is downloaded, containing the functionality of the member component licenses.

The master license can be for a single ThinManager Server or for a Mirrored Redundant pair of ThinManager Servers, or a fully redundant pair of ThinManager Servers, depending on the component licenses. See Redundant ThinManager Servers for details on Stand Alone, Mirrored, and Fully Redundant systems.

4.1.1 Standard Licensing

Product Licenses – Product licenses are the licenses that are added to the Master License to provide the needed functions. The Product Licenses are:

- **Terminal Connection License** – This is the main product license that allows a terminal to receive its configuration. It is needed by every terminal.
- **MultiMonitor** – This product license, with a Terminal Connection License, allows a specialized thin client to use up to five monitors on a single thin client. See MultiMonitor for details.
- **WinTMC** - This product license, with a Terminal Connection License, allows ThinManager to manage the RDP connection and terminal services experience of a PC. See WinTMC Fat Clients for details.
- **TermSecure** – This product license enables additional security features for users. It can be used to grant them special access to hidden applications or allows access to a user's application from any terminal in the system. See TermSecure for details.
TermSecure licensing is **per-user licensing**. Each instance of ThinManager will install with licensing for five users of TermSecure included. Additional TermSecure product codes can be purchased to increase the number of TermSecure users beyond the initial five users.

Components included in the ThinManager Terminal Connection Licenses include:

- MultiSession
- SmartSession
- Instant Failover

- Redundant Ethernet
- Share Keyboard and Mouse

4.1.2 XLi Licensing

XLi Licenses are added to a master license the same way as standard licenses. XLi licenses include all features from the standard licenses plus MultiMonitor, WinTMC, Term Secure, and PXE Boot.

4.1.3 Master License Advantages

The use of a Master License means that there is one license for the ThinManager Server. You only need to activate and transfer one master license if you need to decommission an old ThinManager Server and build a new one.

New license components get added to the master license and the master license is re-activated and re-applied to the ThinManager Server.

4.2 License Activation

4.2.1.1 Installation

Install ThinManager on a computer, or on two computers if you have redundant or mirrored Terminal Connection product licenses.

See Installation of ThinManager and Redundant ThinManager Servers for details.

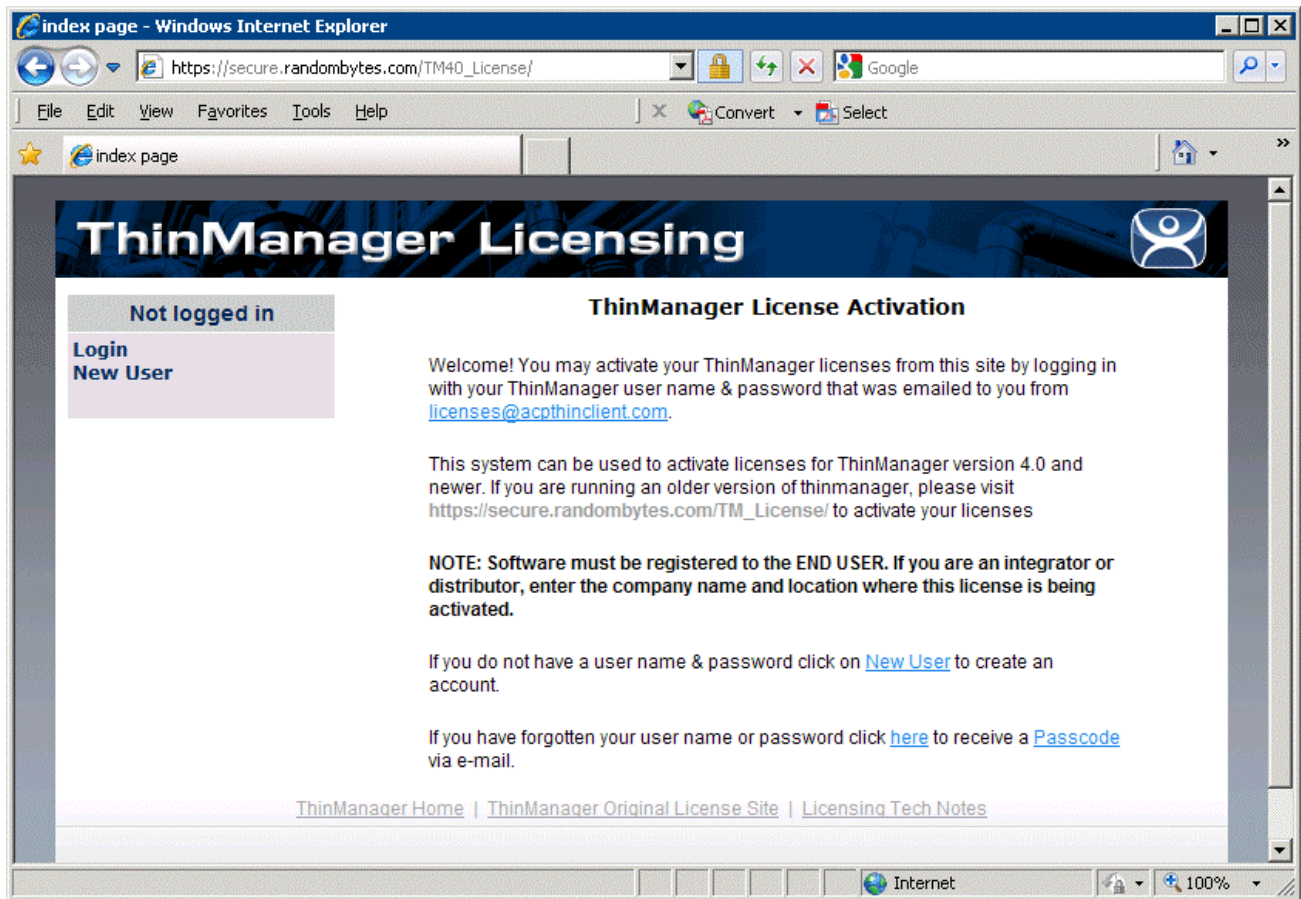
4.2.1.2 Synchronization

Synchronize the ThinManager Servers if you are using redundancy or mirrored redundancy.

See Automatic Synchronization for details.

4.2.1.3 Online Activation

Go to www.thinmanager.com and follow the links to the License Activation to activate the license.

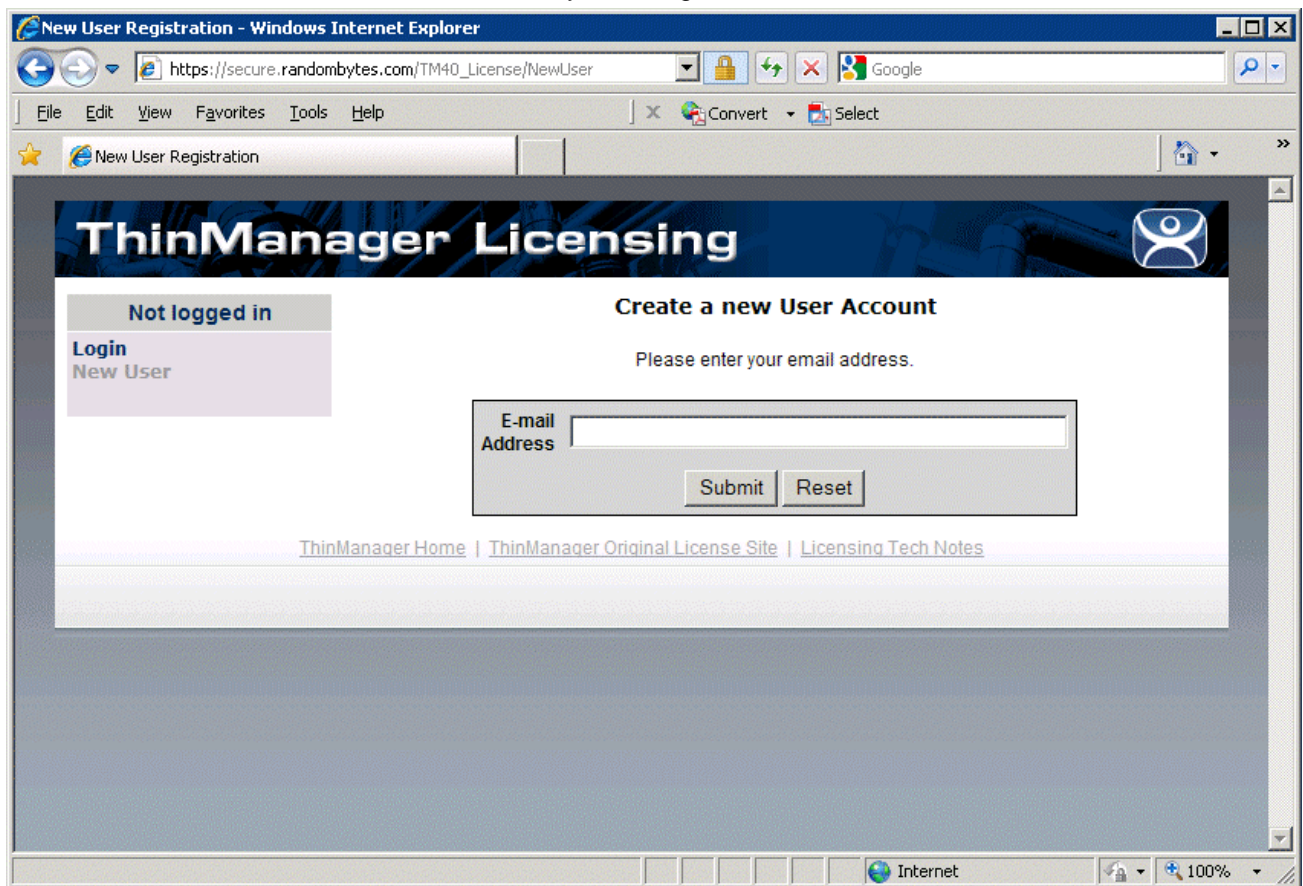


License Activation Site

Login with an existing account or use the **New User** link to create a new account.

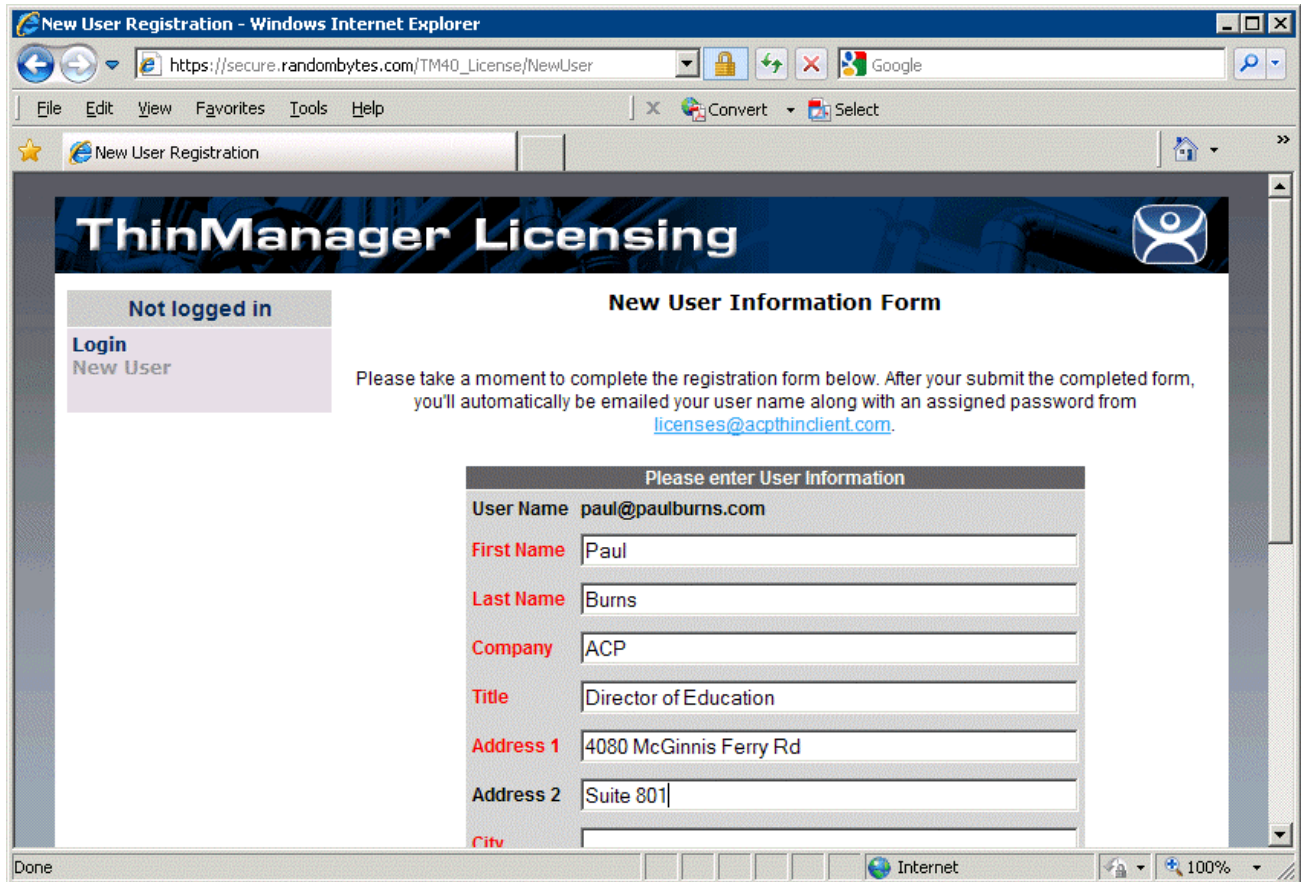
4.2.1.4 New Account

An account can be created on the license site by selecting the **New User** link.



New User Entry

Enter your e-mail address to start the creation process.



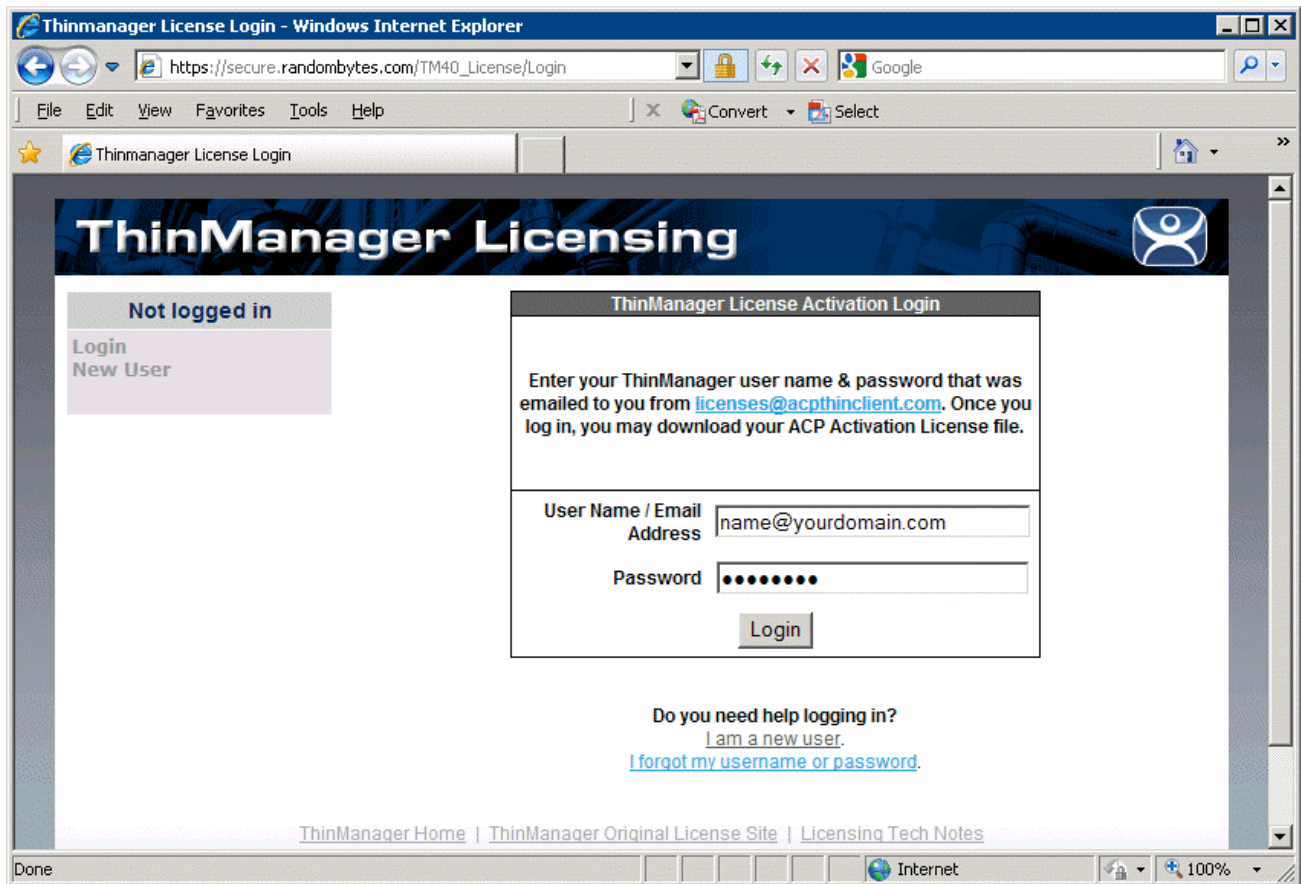
New User Information Entry

Enter the required information and select the **Submit** button.

A password will be sent to the e-mail address that allows access to the site.

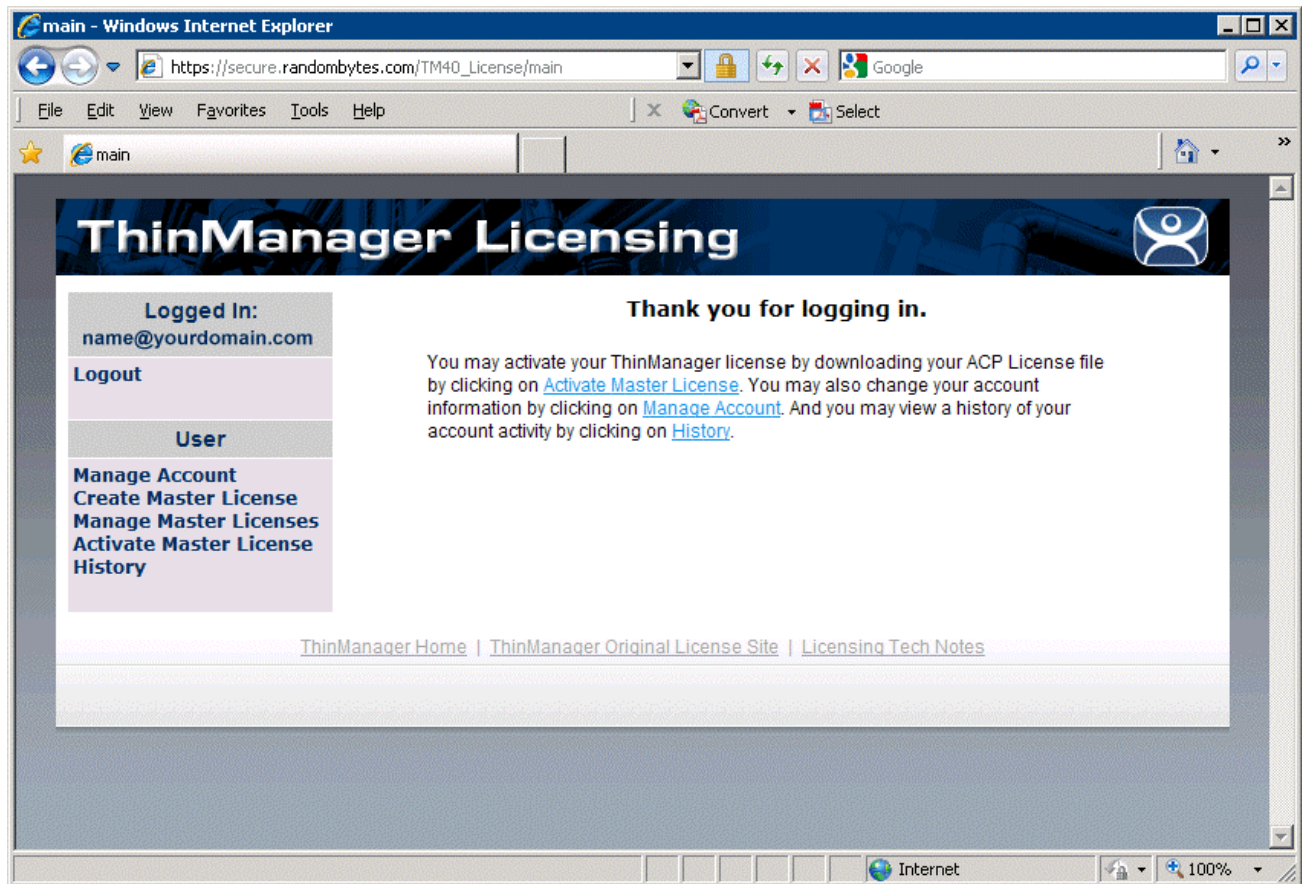
4.2.1.5 Login to Site

Select the **Login** link to enter the site.



Login

Enter the e-mail address used in the creation of the account. Enter the password that was sent to that account to login to the site. Select the **Login** button.



License Site Main Screen

The ThinManager Licensing site has a sidebar with 6 functions:

- **Logout** – This will log you out of the site and end your session.
- **Manage Account** – This allows you to change the details of the account, like address and phone number. It also has a link that allows you to change the password to one of your choosing.
- **Create Master License** – This creates the Master License that acts as a shell or container to hold the individual license product codes.
- **Manage Master License** – This allows you to add the product license codes of the individual license components to the master license.
- **Activate Master License** – This allows the master license to be activated and downloaded for installation.
- **History** – This shows the history of actions taken by the user.

4.2.1.6 Creating a Master License

Select the **Create Master License** link to initiate the creation of a master license.

The screenshot shows a web browser window titled "Create a master license form - Windows Internet Explorer". The address bar shows the URL "https://secure.randombytes.com/TM40_License/MasterLicense/Crea". The page content includes a navigation menu on the left with options like "Logout", "User", "Manage Account", "Create Master License", "Manage Master Licenses", "Activate Master License", and "History". The main content area has a header with "[View Licenses] [Create New] [Activate]". Below this is a form with the following fields and values:

Server Name / Server Description	
Site Description	
Company Name	ACP
Company Address	4080 McGinnis Ferry Rd Suite 801
City	Alpharetta
State	GA
Zip/Postal Code	30005
Country	USA
License Redundancy	<input checked="" type="radio"/> None <input type="radio"/> Full Redundancy <input type="radio"/> Mirrored Redundancy
<input type="button" value="Submit"/>	

Create Master License

Enter a description of the license for your usage in the **Server Name/Server Description** field.

Select the redundancy level that matches the redundancy level of your Terminal Connection product license and select the **Submit** button.

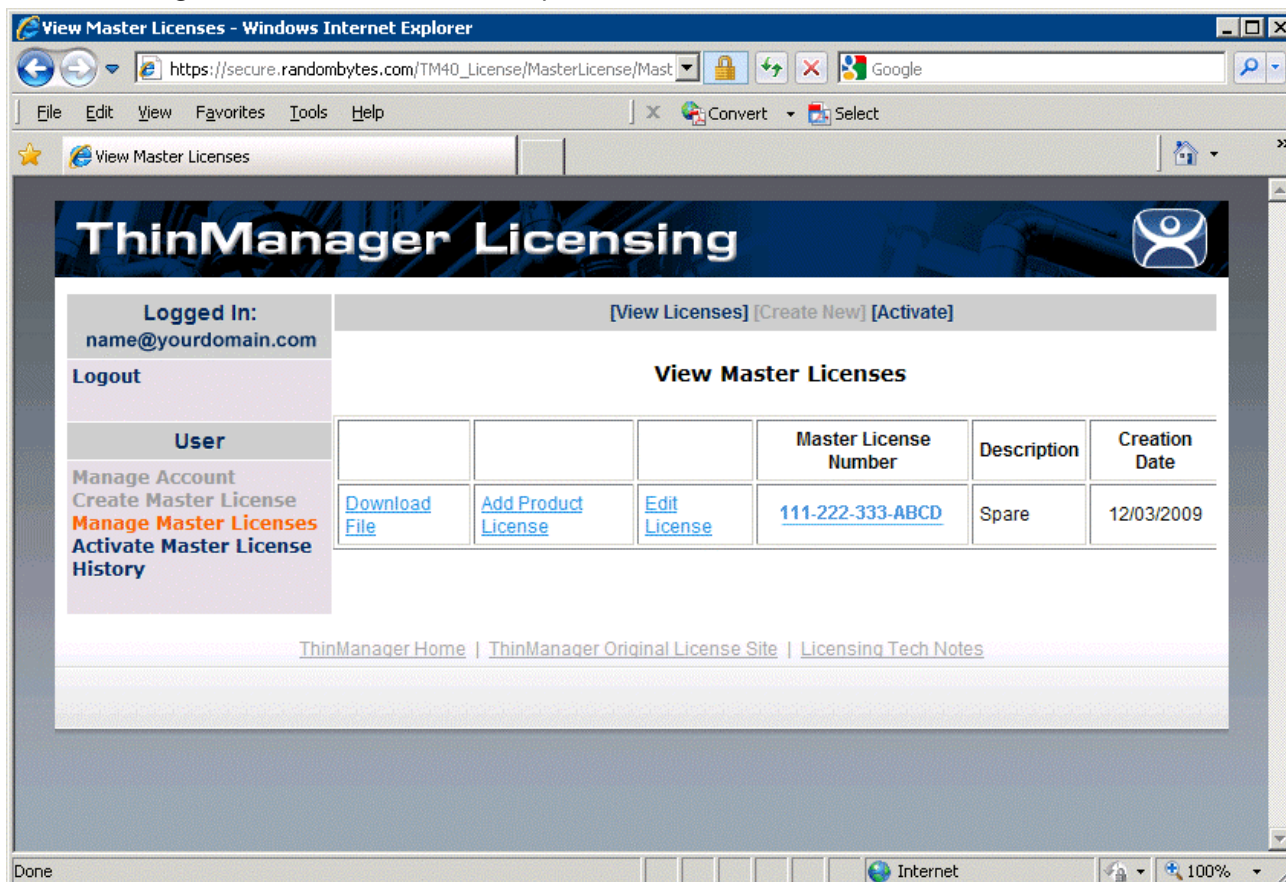


Master License Information

The site will create a master license and display the information for you. It is useful to print this page for your records.

4.2.1.7 Manage Master Licenses

Use the **Manage Master License** link to add product licenses to the Master License.



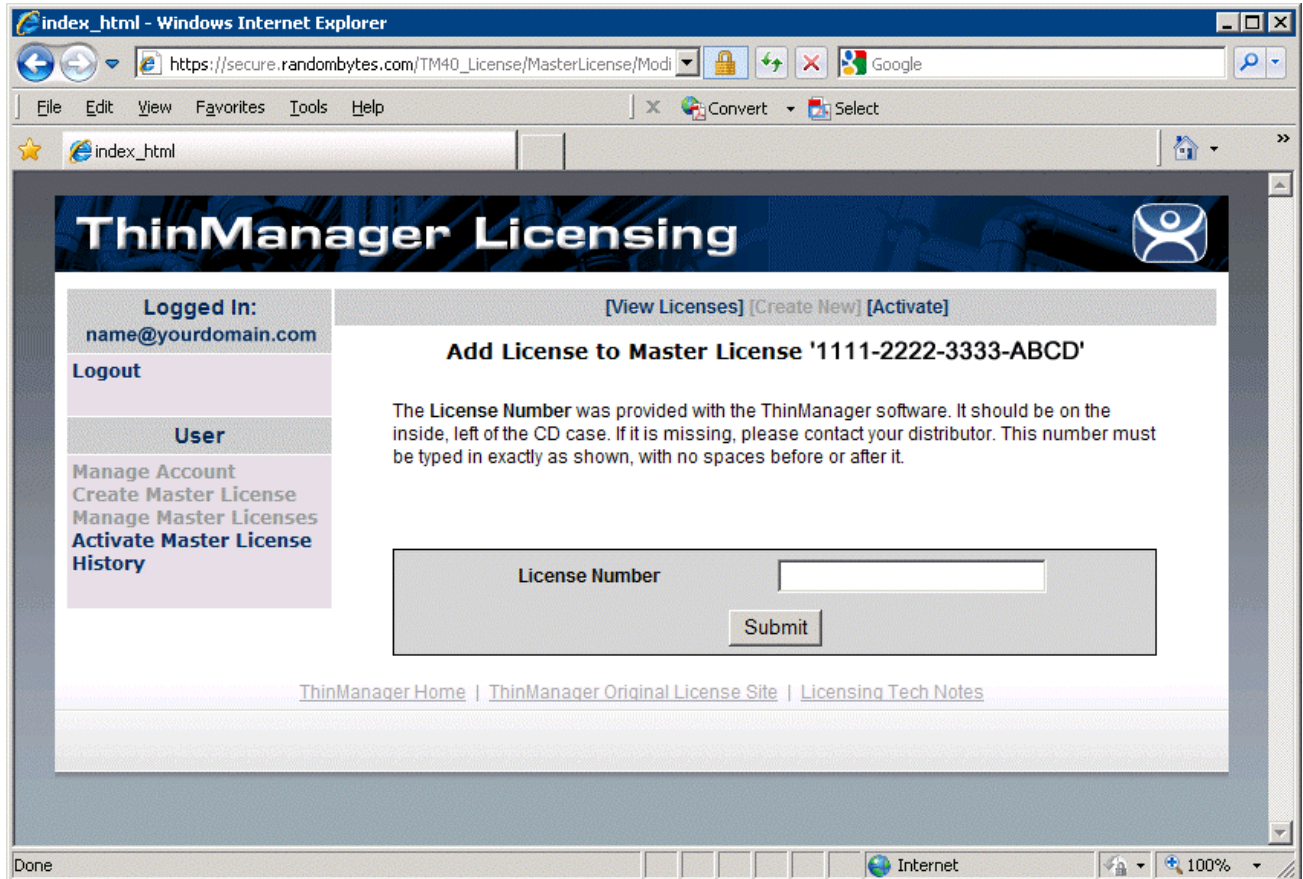
View Master License

Selecting the **Manage Master License** link will display the master licenses.

- **Download File** – This link will download the master license file once the product codes of the component licenses are added. The Master License needs to be activated before downloading. If this link is selected before activation it will prompt for activation. See Download the Master License for details.
- **Add Product License** – This link will allow a product code of a license to be added to the master license. See Add Product License for details.
- **Edit License** – This link allows the descriptions of the master license to be edited.
- **Master License Number** – This link displays the master license details.

4.2.1.8 Add Product License

The Master License needs the product license codes of the component licenses to be added to the master license. This is done by selecting the **Add Product License** link of the **Manage Master License** page.



Add Product Code Window

Enter the product license code (license number) of the component license to the **License Number** field and select the **Submit** button.



Add Product Code Result Window

When a product code of a license is successfully added to the master license the web site will show a confirmation message.

Enter as many product codes as you have licenses to add to the master license.

The master license will need activation and downloading after each group of product licenses are added.

4.2.1.9 Redundant Master License with Non-Redundant Product Licenses

If you have non-redundant Terminal Connection Licenses you can add them to a mirrored or fully redundant master license. When you add the product license it will ask which ThinManager Server you want to apply the license to. Apply half to the Primary and half to the Secondary.

The screenshot shows the ThinManager Licensing web interface. At the top, the title "ThinManager Licensing" is displayed in a large, bold font. To the right of the title is a logo consisting of a stylized figure inside a circle. Below the title bar, there is a navigation menu with the following items: "Logged In: paul@paulburns.com", "Logout", "User", "Manage Account", "Create Master License", "Add Product License", "Activate Master License", "Manage Master Licenses", "History", "Support", and "Tech Support". In the top right corner of the main content area, there are three links: "[View Licenses]", "[Create New]", and "[Activate]". The main content area is titled "Select the target server for this product license". Below this title, a message states: "This master license is redundant or mirrored, and the product license is not. You must pick the server on which the product license will be installed". The form contains the following fields and controls: "Master License Number" with the value "ABCD-1234-ABCD-5678", "License Number" with the value "12345678-12345678", and "Target Server" with two radio buttons: "Primary" (which is selected) and "Secondary". A "Submit" button is located below the "Target Server" section. At the bottom of the page, there are three links: "ThinManager Home", "ThinManager Original License Site", and "Licensing Tech Notes".

Stand-alone License on a Redundant ThinManager Server

Once the product licenses are assigned to the target server it can be activated and applied.



Logged In:
paul@paulburns.com

[\[View Licenses\]](#) [\[Create New\]](#) [\[Activate\]](#)

Logout

User

Manage Account
Create Master License
Add Product License
Activate Master License
Manage Master Licenses
History

Support

Tech Support

License Details

License Number	51BC-CA72-C4AA-E167
Server Description	Demo_Redundundacy
Site Description	
Created	01/20/2011
Created By	paul@paulburns.com
City/State	Alpharetta/GA
Disabled	NO
Activate Limit	1
Support	None
Description	Demo_Redundundacy
Redundancy	full
[Edit] [Delete] [Remove Product License]	

Product Licenses

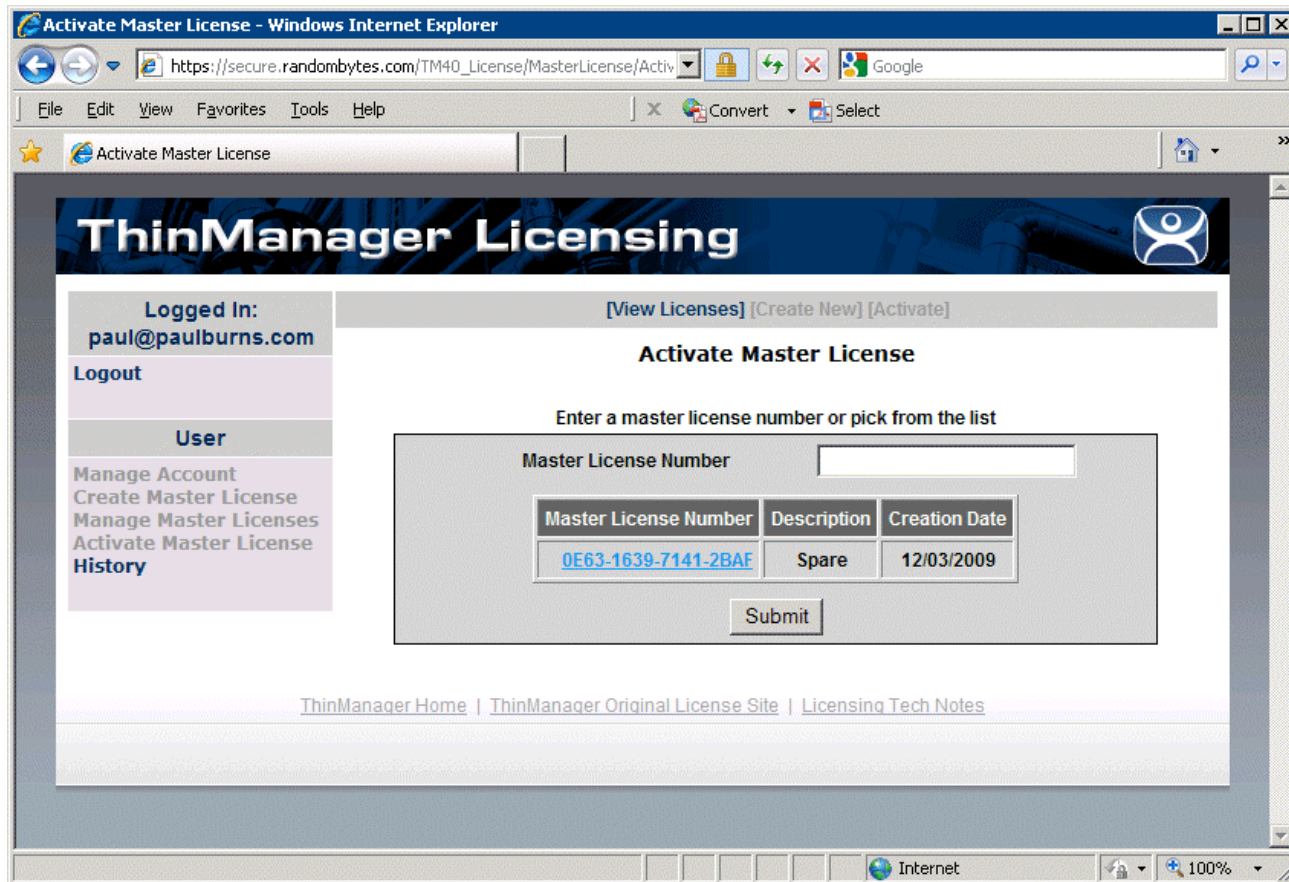
Product License	Type	Count	Redundancy	Primary	Secondary	Version
12345678-12345678	Terminal Connection License	5	none	Valid	Invalid	4.0
87654321-87654321	Terminal Connection License	5	none	Invalid	Valid	4.0

Stand-alone License on a Redundant ThinManager Server

Stand-alone Product Licenses applied to the Primary will show "Valid" for the Primary and "Invalid" for the Secondary, and visa versa.

4.2.1.10 **Activate the Master License**

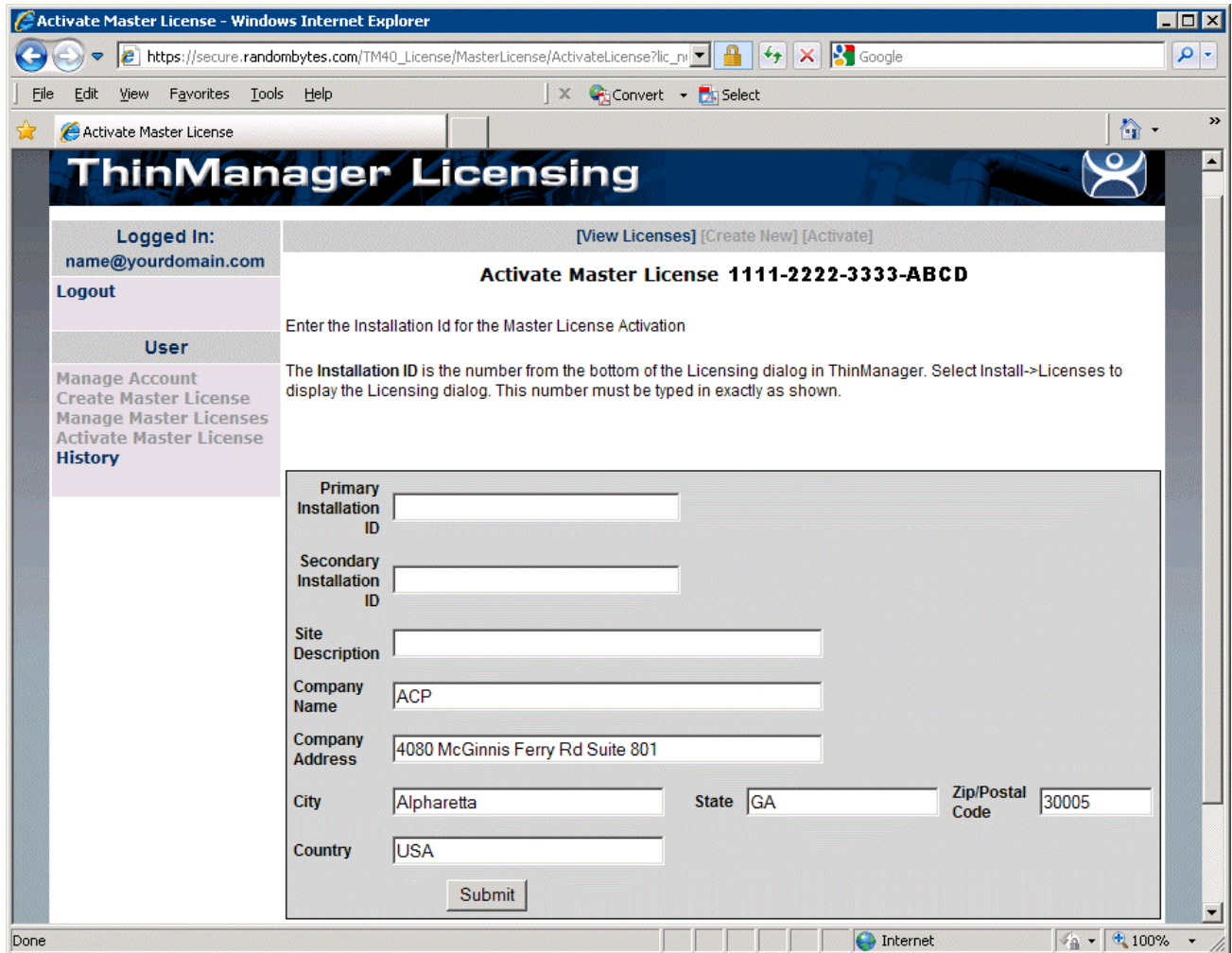
The Master License needs activated and downloaded once the product license codes of the component licenses have been added to the master license. This is done by selecting the **Activate Master License** link of the **Manage Master License** page.



Activate Master License Page

Selecting the **Activate Master License** link will display the **Activate Master License** page with a list of all the master licenses that are registered to the person logged in.

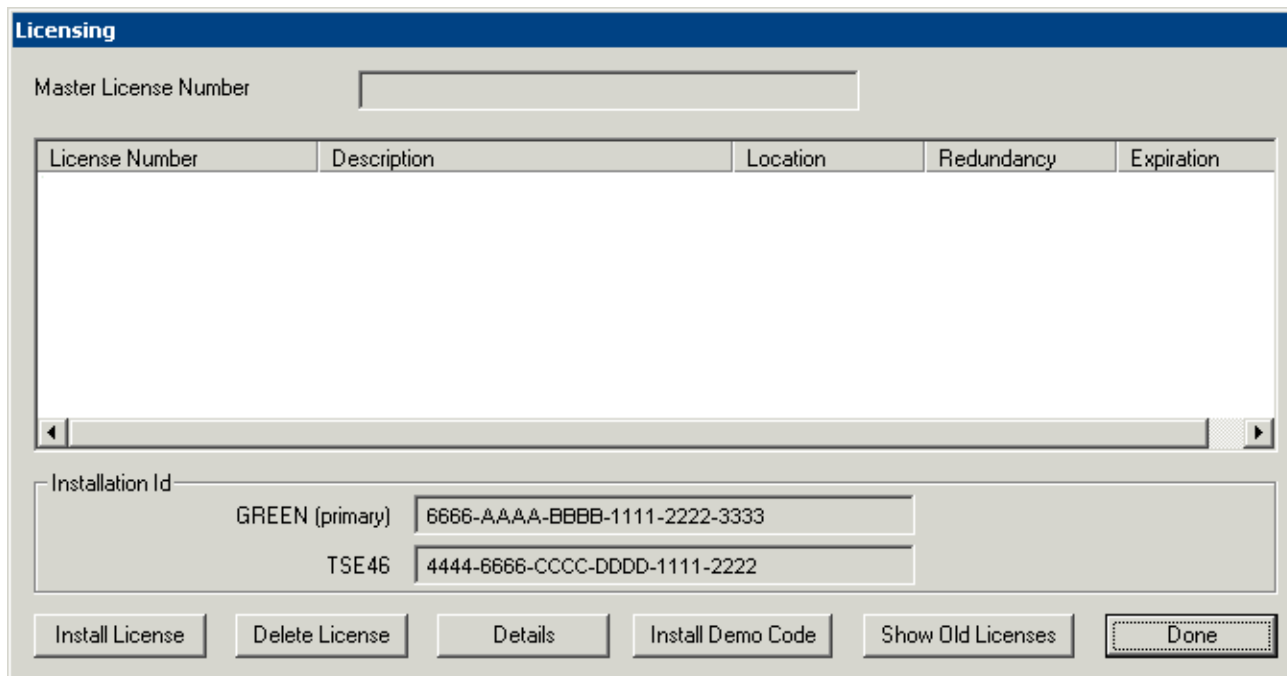
Select the master license from the table or enter the master license number into the **Master License Number** field and select the **Submit** button.



Activate Master License Page

Activation requires the entry of the Installation ID of the ThinManager Servers that the master license will be installed on.

The Installation IDs will need to be added each time the Master License is activated or re-activated.



ThinManager Licensing Window with Installation IDs

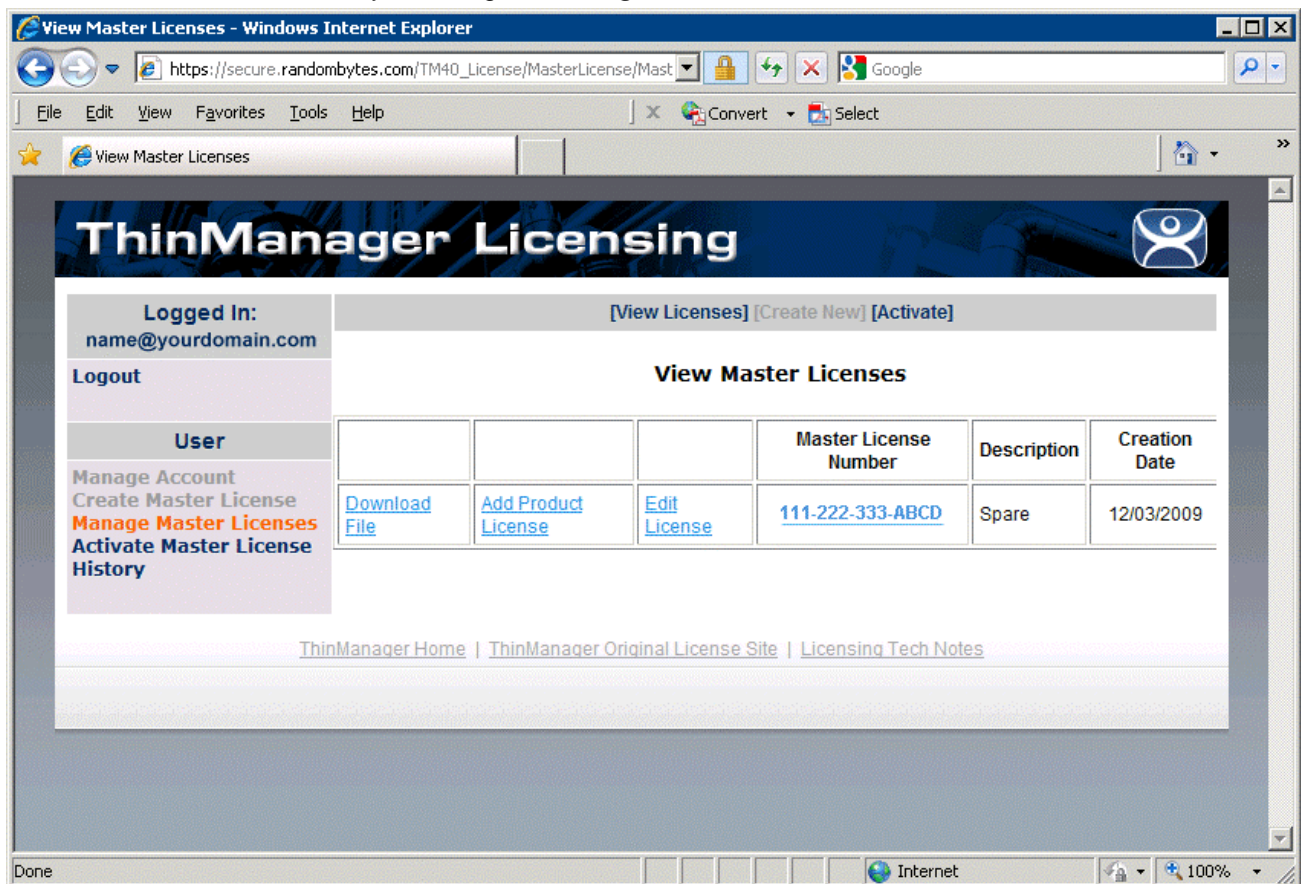
The Installation IDs are shown on the **Licensing** window that is launched by selecting **Install > Licenses** from the ThinManager menu.

Enter the required installation IDs into the **Primary Installation ID** field (and the **Secondary Installation ID** field if needed) on the **Activate Master License** page of the License Activation web site.

Select the **Submit** button to finish the activation.

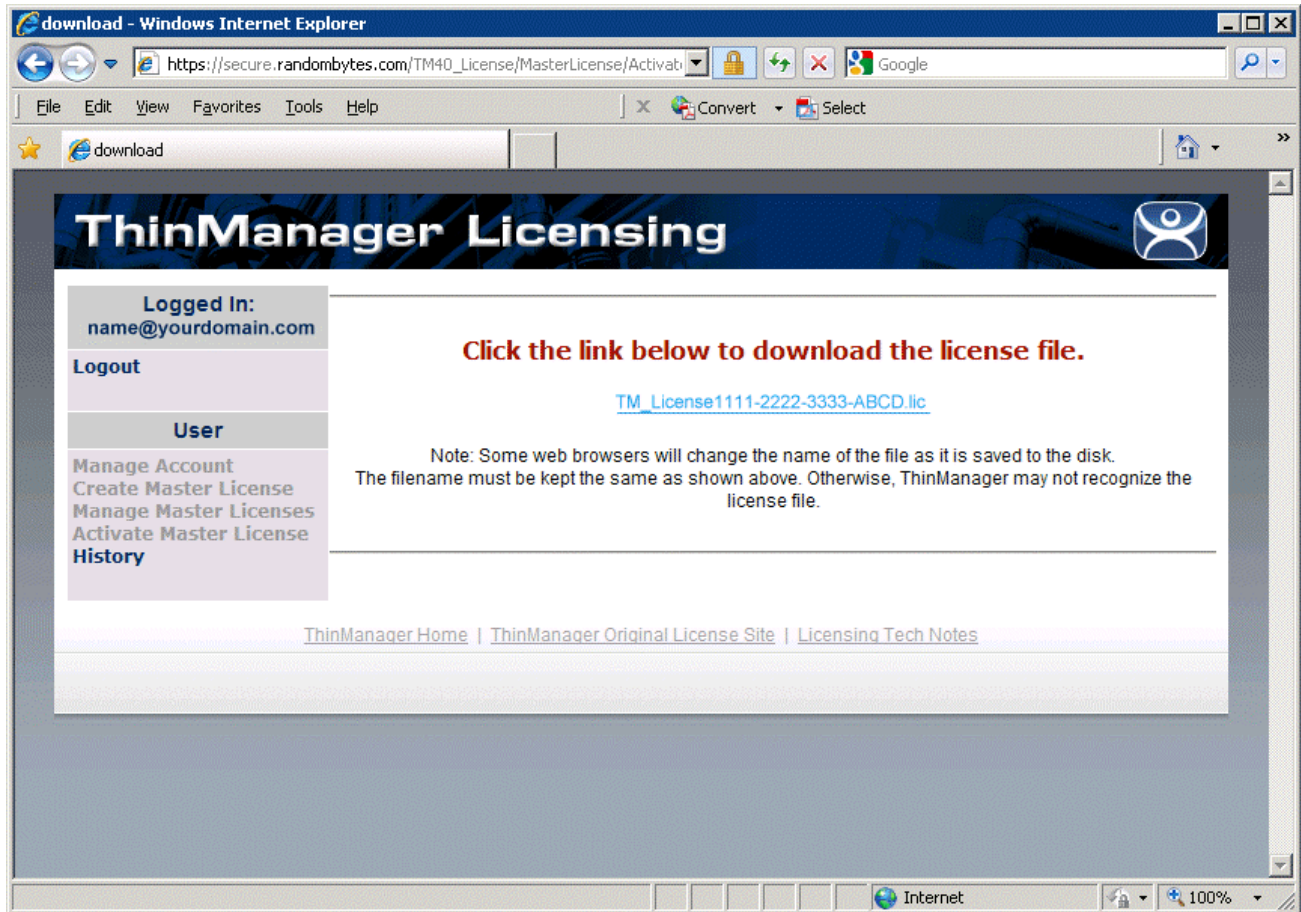
4.2.1.11 Download the Master License

Download the master license by selecting the **Manage Master Licenses** link from the main menu.



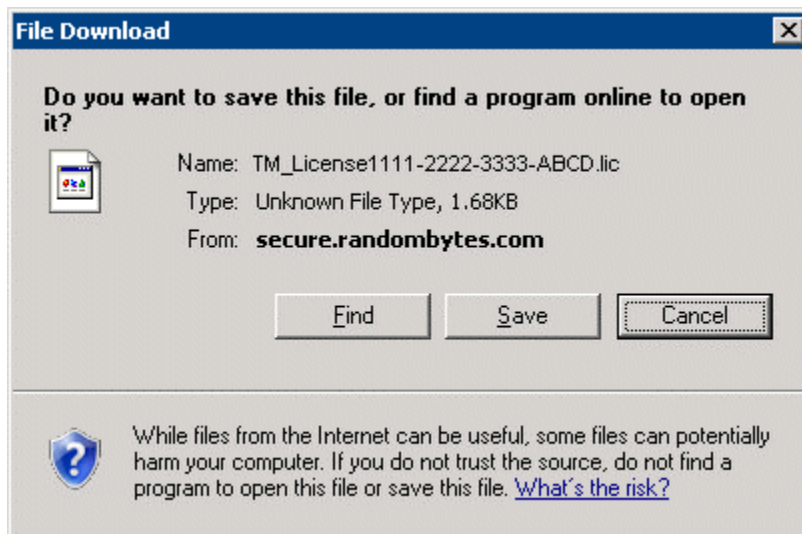
View Master License

Select the **Download File** link for the master license.



Master License Download

Select the link on the page to start the download.



File Download Window

The download will begin and prompt you to save the file. Do not save it directly into the ThinManager folder but save it to a folder that is accessible from ThinManager.

4.3 Adding a Master License to ThinManager

Licenses are added to ThinManager Servers by selecting **Install>Licenses** from the ThinManager Menu.

License Number	Description	Location	Redundancy	Expiration
----------------	-------------	----------	------------	------------

Installation Id: GREEN (primary) 6666-A.A.A.A-B.B.B.B-1111-2222-3333

Buttons: Install License, Delete License, Details, Install Demo Code, Show Old Licenses, Done

Licensing Window – Single ThinManager Server

Single, unsynchronized ThinManager Servers will display the Installation ID for the local ThinManager Server.

License Number	Description	Location	Redundancy	Expiration
----------------	-------------	----------	------------	------------

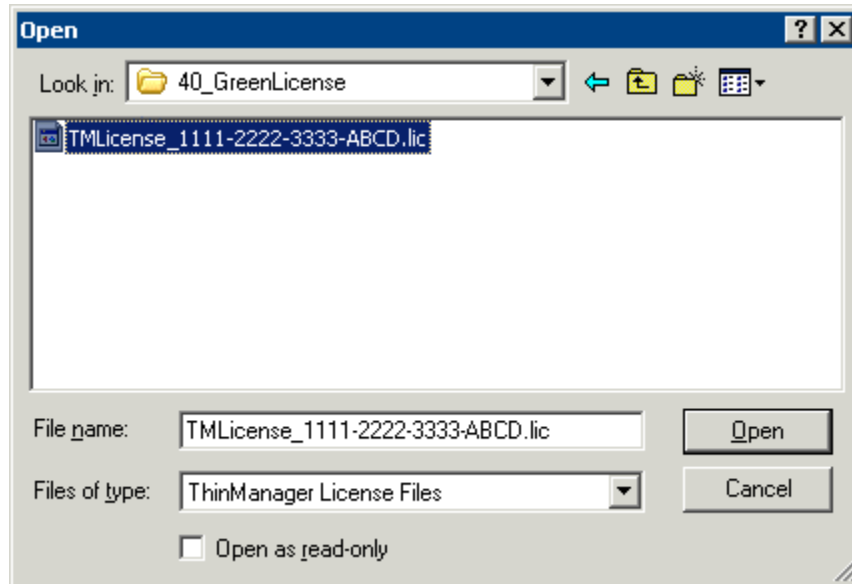
Installation Id: GREEN (primary) 6666-A.A.A.A-B.B.B.B-1111-2222-3333
TSE46 4444-6666-C.C.C.C-D.D.D.D-1111-2222

Buttons: Install License, Delete License, Details, Install Demo Code, Show Old Licenses, Done

Licensing Window – Single ThinManager Server

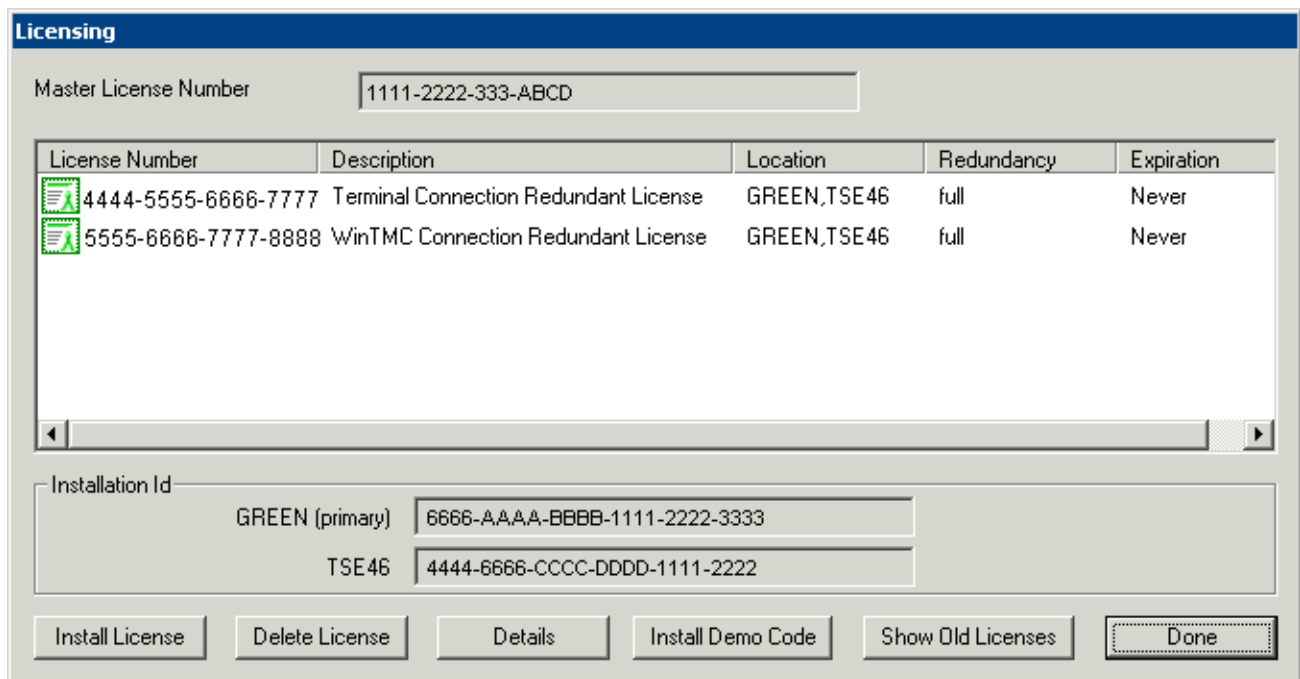
Synchronized ThinManager Servers will show the Installation IDs for both redundant ThinManager Servers. See Automatic Synchronization for details.

Select the **Install License** button to launch a file browse window.



File Browser for License Files

Browse to the folder that the master license is saved in. Highlight the master license and select the **Open** button to install the license.

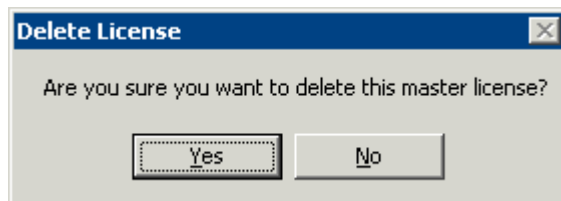


Licensing Window with Licenses Installed

The master license will be displayed in the **Master License Number** field. The product code of each component license will be displayed in the license window.

4.3.1 Delete License

The **Delete License** button will delete the Master License.

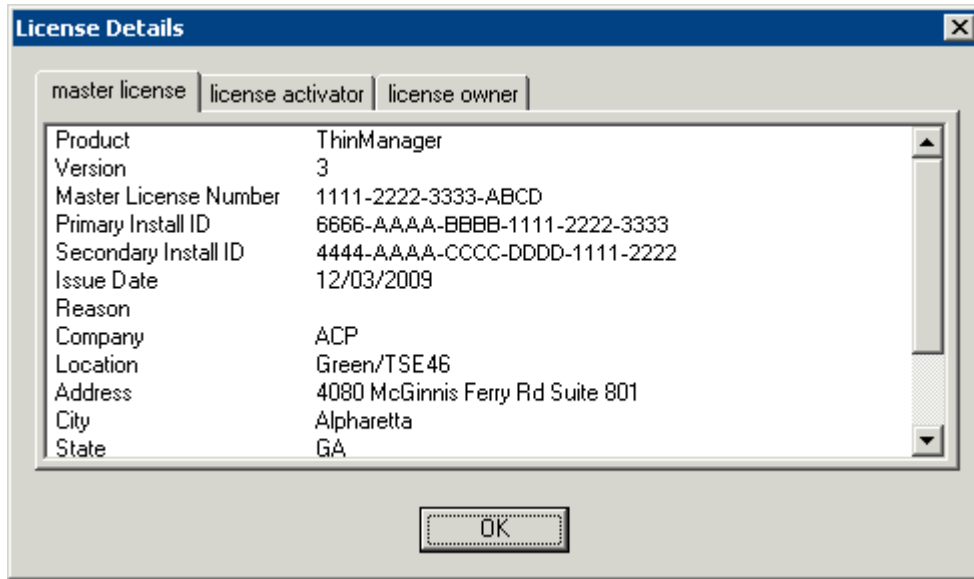


Delete License Prompt

Selecting the **Delete License** button will open a **Delete License** window. Selecting **Yes** will delete the license while selecting **No** will cancel the deletion and close the window.

4.3.2 License Details

The **License Details** button will open the **License Details** window with information about the Master License.

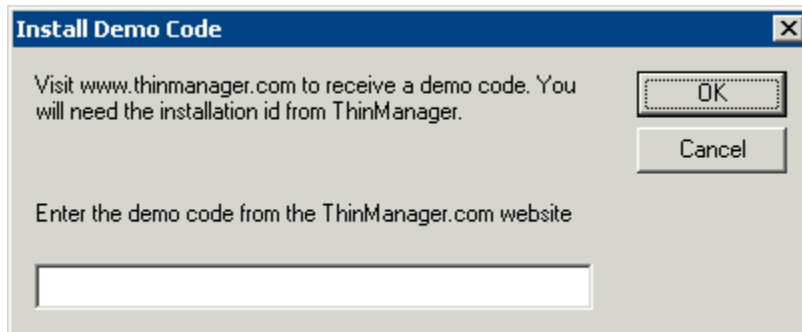


Master License Details

The **License Details** window shows information about the master license, the activator of the license, and the owner of the license on the **Master License**, **License Activator**, and **License Owner** tabs.

4.3.3 Install Demo Code

The **Install Demo Code** button will open the **Install Demo Code** window and allow a user to add a demo code to give ThinManager temporary functionality.

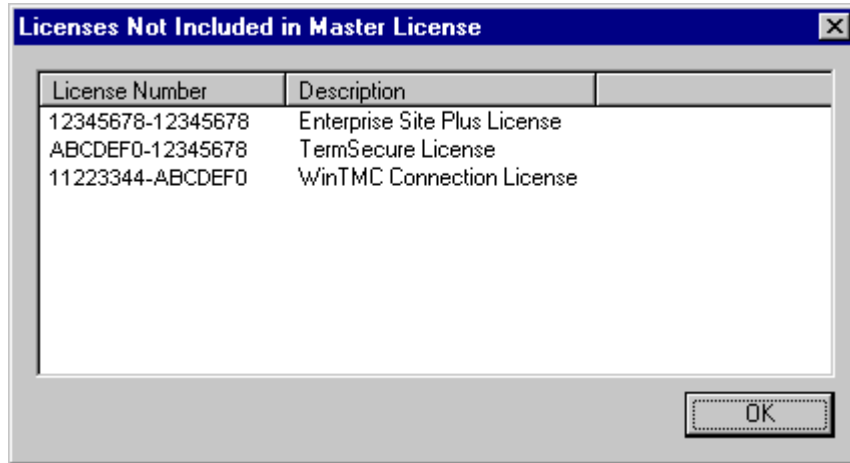


Install Demo Code Window

A Demo Code gives ThinManager temporary functionality, normally for 30 days.

4.3.4 Show Old Licenses

The **Show Old Licenses** button will show ThinManager 3.X licenses in a **Licenses Not Included in Master License** window.



Not Included in Master License Window

The **Not Included in Master License** window shows licenses installed in previous versions on ThinManager before the upgrade to ThinManager 5.

4.4 WinTMC Licenses

Each WinTMC requires a Terminal Connection License and a WinTMC License. The product license code for the WinTMC is added to the master license like other product license codes as described in License Activation.

4.5 TermSecure Licenses

TermSecure is licensed on a Per-User License. Each ThinManager Server installation comes with a 5-user TermSecure license. This allows you to try and use TermSecure with ThinManager before buying.

Additional user licenses for TermSecure can be purchased and added to the master license as described in License Activation.

4.6 Upgrading to ThinManager 5 from Older ThinManager versions

Start the activation process by going to https://secure.randombytes.com/TM40_License. See Online Activation for details.

Login to the license site. Create an account as needed. See New Account for details.

Select the **Create Master License** link to create a new Master License. See Creating a Master License for details.

Select the Manage **Master License** link to view the master license. Select the **Add Product License** link and add each of your current Product License Numbers to the newly created Master License. See Add Product License for details.

The ThinManager 3.X Product License Numbers can be found by selecting **Install > Licenses > Show Old Licenses** in ThinManager. See Show Old Licenses for details.

Activate the Master License once all the product codes are added. Select the **Activate Master License** link to activate the master license. See Activate the Master License for details.

Once the Master License is activated it need to be downloaded and installed in ThinManager. See Activate the Master License; Download the Master License, and Adding a Master License to ThinManager for details.

5 Redundant ThinManager Servers

5.1 Redundancy Overview

ACP uses the term **Failover** to describe having two or more **terminal servers** that the thin clients can connect and run a session from.

ACP uses the term **Redundancy** to describe having two or more **ThinManager Servers** that the thin clients can connect and receive a configuration from.

ThinManager can be installed in three modes:

- Single ThinManager Server
- Full Redundancy
- Mirrored Redundancy

Single ThinManager Server – No Redundancy: A system with a single ThinManager Server will have all the terminals boot from that computer, receive their configuration, and then connect to the assigned terminal servers. If the ThinManager Server fails the terminals will continue to function as designed because they hold their configuration in memory. If the terminal reboots it will be unable to connect to the failed ThinManager Server and will not receive their configuration or connect to a terminal server until the ThinManager Server comes back online.

Full Redundancy – Two ThinManager Servers: A fully redundant system has two licensed ThinManager Servers that are synchronized with the same configuration on each. The thin clients are configured to boot from either ThinManager Server to receive their configuration. If the primary ThinManager Server fails the terminals will continue to function as designed because they hold their configuration in memory. If the terminal reboots it will be unable to connect to the failed primary ThinManager Server but will switch and boot from the secondary ThinManager Server and will receive the configuration and connect to a terminal server.

Mirrored Redundancy – Two ThinManager Servers: This is a form of redundancy that is controlled with a mirrored license. You use two synchronized ThinManager Servers that the terminals can boot from as in a fully redundant system. The difference is that administrative functions like shadowing and configuration changes are limited to the primary ThinManager Server.

Mirrored redundancy is a means to provide a redundant ThinManager Server at a lower cost. It provides a backup ThinManager Server to keep production running until a replacement can be found for the primary ThinManager Server.

Note: All Enterprise licenses include Full Redundancy.

5.1.1 Redundancy Differences

No Redundancy - Single ThinManager Server

- Least expensive.
- If the ThinManager Server fails the thin clients continue to run from their configuration loaded into RAM.
- If the thin client reboots the thin clients cannot retrieve their configuration until the ThinManager Server is restored.
- The Master License is created with “None” for its redundancy.

Mirrored Redundancy- Two ThinManager Servers

- Provides redundancy at a lower cost than full redundancy.
- If the ThinManager Server fails the thin clients continue to run from their configuration loaded into RAM.
- Configuration changes can be made only on the primary ThinManager Server. If it fails the thin clients are able to retrieve their configuration from the backup and run as configured. Configuration changes must wait until the primary ThinManager is restored.
- The Master License is created with “Mirrored Redundancy”. It uses Mirrored Terminal Connection Product Licenses.

Full Redundancy - Two ThinManager Servers

- If the ThinManager Server fails the thin clients continue to run from their configuration loaded into RAM.
- If a ThinManager Server fails, the other ThinManager Server will provide configuration.
- The ThinManager configuration can be changed on either ThinManager Server at anytime.
- Requires a duplicate set of licenses on the backup ThinManager Server.
- The Master License is created with “Full Redundancy”. It uses Redundant Terminal Connection Product Licenses.

5.2 Creating a Redundant Pair of ThinManager Servers

To create a redundant pair of ThinManager Servers:

1. Install ThinManager on two computers. See Standard ThinManager Installation.
2. Configure the thin clients on the primary ThinManager Server. See Terminal Configuration Wizard.
3. Synchronize the two ThinManager Servers. See Synchronize Configuration[Help73].
4. Create a Master License with Full Redundancy and add a Redundant Terminal Connection Product License or add two Terminal Connection Product Licenses and apply one to the Primary ThinManager Server and one to the Secondary ThinManager Server. See ThinManager Licensing for details.
5. Configure the thin clients to boot from two ThinManager Servers using the DHCP server or static IP addressing. See DHCP Server Setup or Configuring New Hardware.

See Licensing ThinManager for details about Redundant License activation.

5.3 Creating Mirrored Redundancy

Mirrored Redundancy provides redundancy at a reduced cost from full redundancy.

To set up Mirrored redundancy:

1. Install ThinManager on two computers. See Standard ThinManager Installation.
2. Synchronize the two ThinManager Server. See Manual Synchronization.
3. Create a Master License with Mirrored Redundancy and add a Mirrored Terminal Connection Product License to the Master License. See ThinManager Licensing for details
4. Configure the thin clients on the primary ThinManager Server. The configurations will be transferred to the secondary ThinManager Server. See Terminal Configuration Wizard.
5. Configure the thin clients to boot from two ThinManager Server using the DHCP server or static IP addressing. See DHCP Server Setup or Configuring New Hardware.

Administrative functions like changing configuration or shadowing can be only performed on the primary ThinManager Server. If the primary fails the thin clients will continue running from their configuration stored in memory. If they reboot they are able to retrieve their configuration from the backup and run as configured. Configuration changes must wait until the primary ThinManager is restored.

6 ThinManager Interface

6.1 Opening ThinManager

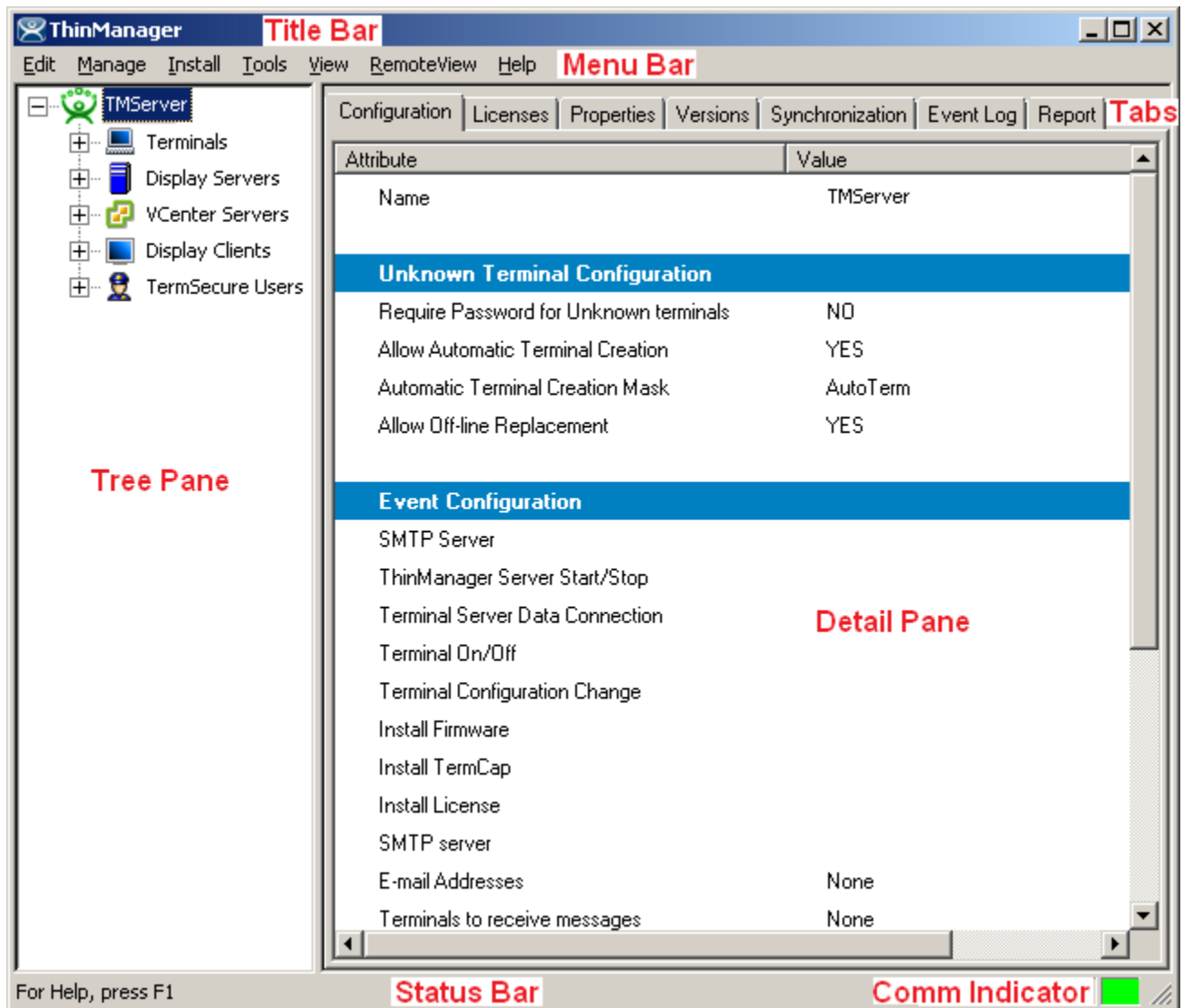
ThinManager is used for the configuration of Thin Clients in the ACP thin client environment.

ThinManager can be started using any of the traditional Windows methods, based on the administrator's preference:

- Run from the Start Menu, **Start > Programs > Automation Control Products > ThinManager**.
- Run from the Run line, **Start > Run > C:\Program Files\Automation Control Products\ThinManager\ThinManager.exe** (default path).
- Run from a command prompt, **C:\Program Files\Automation Control Products\ThinManager\ThinManager.exe** (default path).
- Run from a shortcut on the desktop.
- Run from a ThinManager icon in the system tray, if this option is selected in **View > Options** from the menu bar.
- Run from Windows Explorer.

Note: ThinManager can be run on a terminal with full privileges if the user is an administrator or a member of the ThinManager Administrator's group. See ThinManager Server Configuration wizard for details on ThinManager User Groups.

6.2 ThinManager Graphic User Interface



ACP ThinManager Graphic User Interface

The **ThinManager** administrative interface provides "at-a-glance management". The groups and terminals are displayed in the tree pane. The configuration data is displayed in the detail panel. Color-coded icons in the tree pane show the on-line status of terminals.

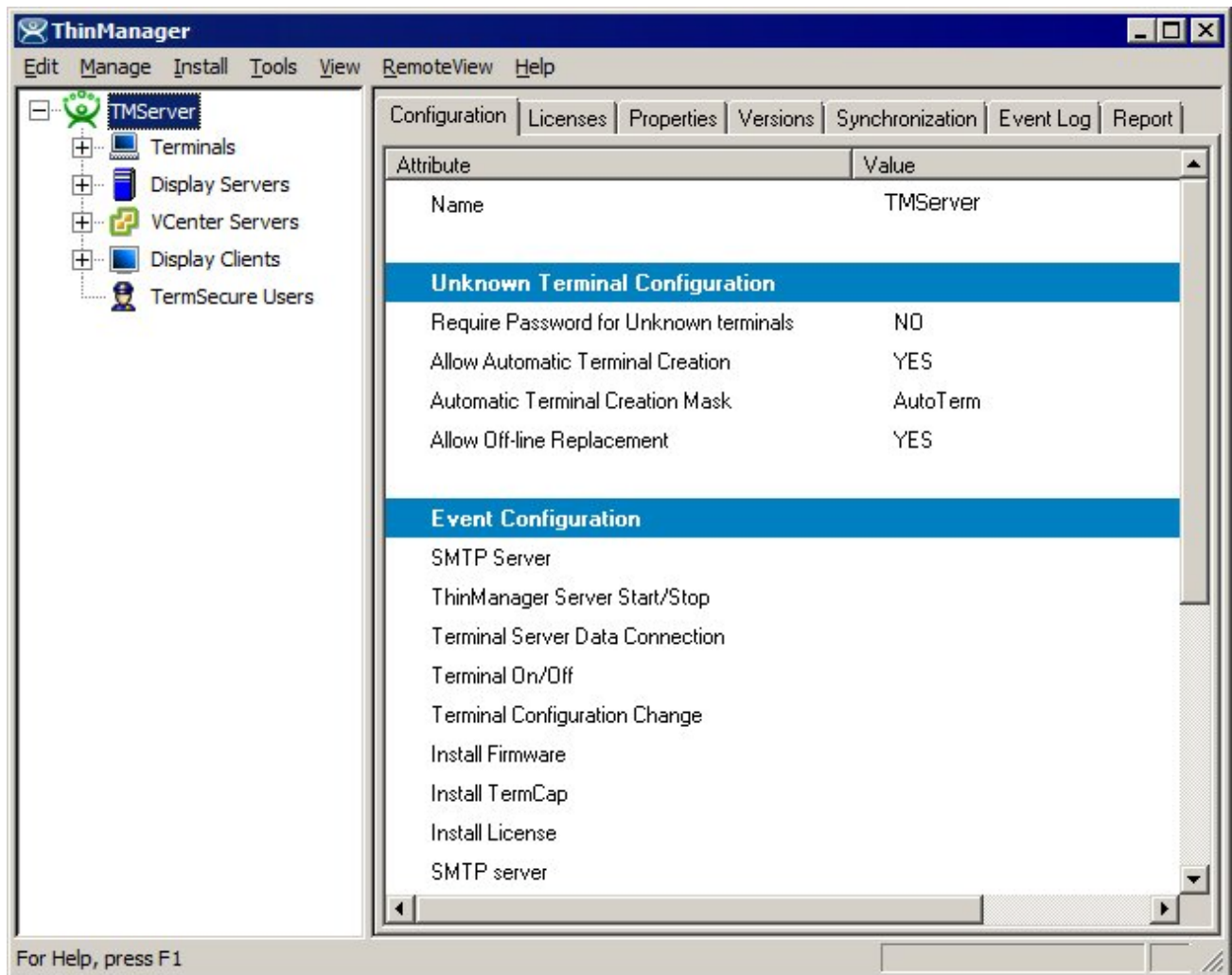
The sections of the **ThinManager** interface include:

- A **Title Bar** with the standard Windows Minimize/Maximize/Close shortcut icons.
- A **Menu Bar** with commands.
- A **Tree Pane** with an expandable/collapsible tree showing the Terminals, Display Servers, Display Clients, TermSecure Users on the ThinManager Server. Terminals that are on-line have a green monitor icon, while stopped or rebooting terminals have a red monitor icon.
- A tabbed **Details Pane** with information about settings and configurations. The blue group icon denotes a property that was obtained from the group. The details pane is tabbed for organization. The tabs that are shown depend on the tree item that is highlighted.

- A **Status Bar** that shows advice and tips.
- The **Communication Indicator** shows green when ThinManager is talking to a ThinManager Server. ThinManager will wait until this communication is finished before processing additional requests.

6.3 Tree Pane

The tree pane shows the members of the ACP Thin Client Network in an expandable tree.



ACP ThinManager With Tree

The Tree has five branches.

- **Terminals** – This lists terminal groups and terminals. Terminal groups can be expanded to show member terminals and terminals can be expanded to show assigned display clients.
- **Display Servers** – This lists the display server types that can be used when configuring display clients.
- **VCenter Servers** - This allows ThinManager to list and manage VMWare VCenter servers.

- **Display Clients** – This lists the display client types that can be added to a terminal configuration. They can be expanded to show the members of each display client type.
- **TermSecure Users** – This lists configured TermSecure Users and any created groups of TermSecure users.

6.4 Icons

6.4.1 Tree Icons

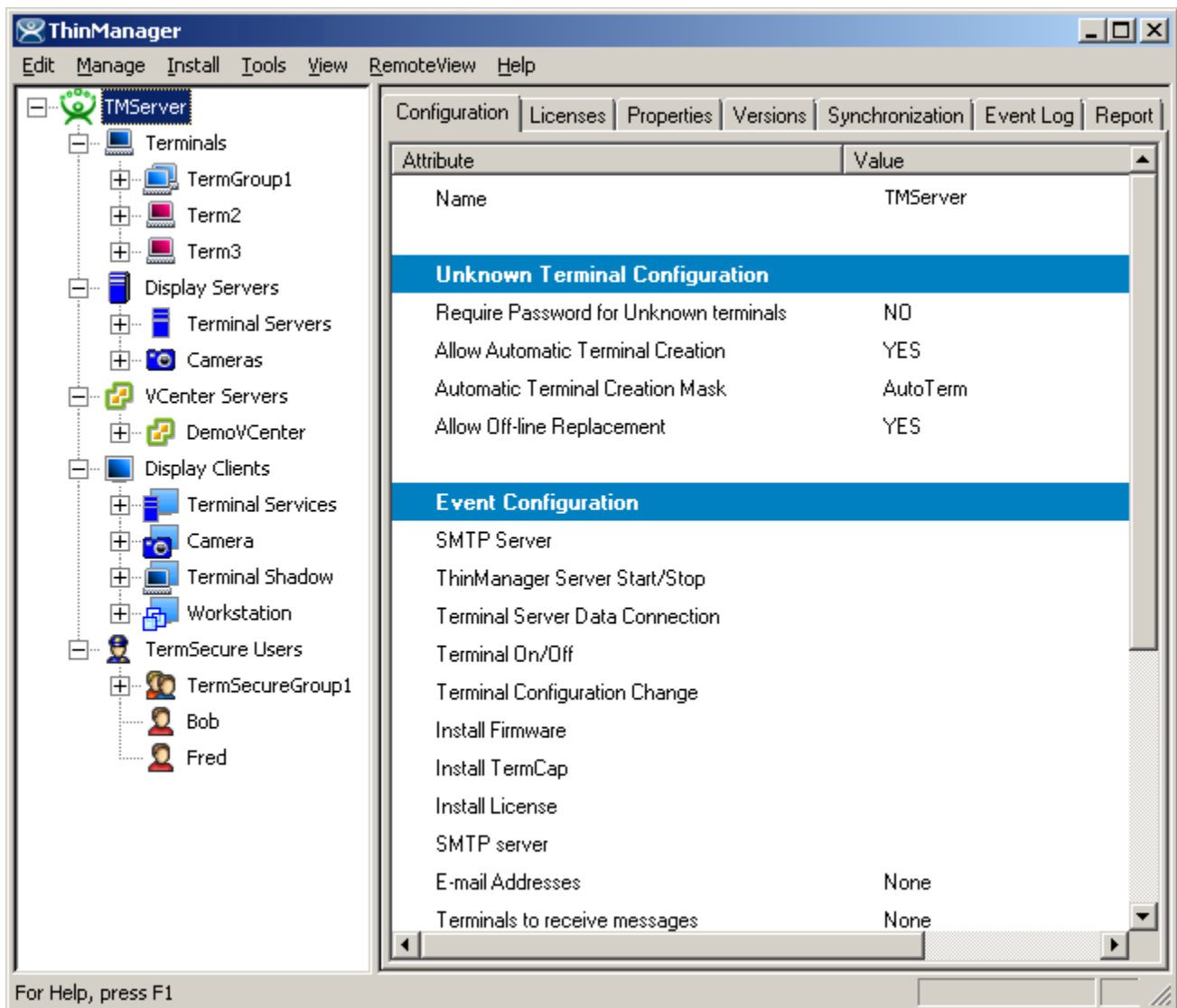
Several of the menu tools and other features are dependent on what icon is highlighted in the tree.

The tree is divided into five branches, **Terminals**, **Display Servers**, **VCenter Servers**, **Display Clients** and **TermSecure Users**.



Five Tree Branches

Each of the branches, shown as a blue icon, can be expanded.



Expanded Tree Showing Icon Variety

Terminal Groups can be expanded to show the subgroups and terminals that are members of the group.

Terminals can be expanded to show the display clients assigned to it.

Display Clients can be expanded to show the members that are assigned to it.

TermSecure User Group can be expanded to show the TermSecure Users that are members of the group.

Each of the branches of the tree can be expanded.

6.4.1.1 ThinManager Server Icons



ThinManager Server - Connected



ThinManager Server - Disconnected

ThinManager Server Icons

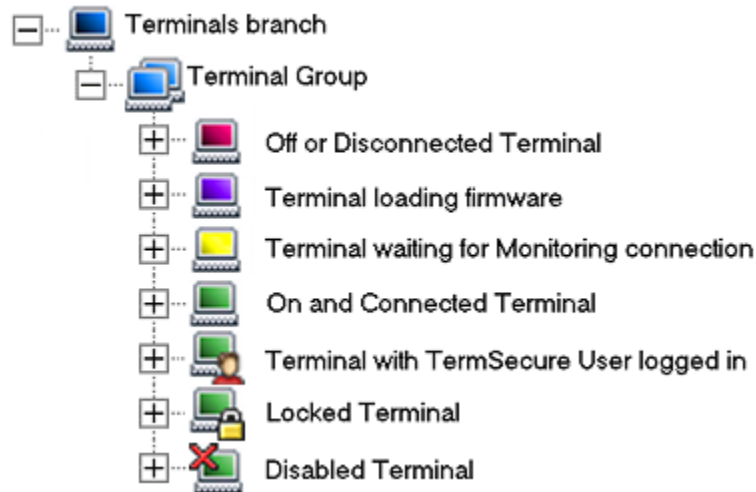
ThinManager can connect to several ThinManager Servers, but only one ThinManager Server tree can be displayed at a time. The tree shows the local ThinManager Server by default. Other ThinManager Servers can be added to the ThinManager Server drop-down box by selecting **Edit > Add ThinManager Server** from the menu bar.

A **Green ThinManager Server** icon represents a ThinManager Server that has an active communication link with the program. These can be collapsed or expanded to show the Group and Terminal icons that nest under the ThinManager Server icons.

A **Red ThinManager Server** icon represents a ThinManager Server that is not communicating with the program. Right clicking on a red ThinManager icon and selecting **Reconnect** will reinitiate communications to the ThinManager Server.

6.4.1.2 Terminal Icons

The Terminals branch can be expanded to show Terminal Groups and terminals.



Group and Terminal Icons

A **Group** is represented by an icon of two monitors with a blue screen. Subgroups can be nested under Groups.

A **Terminal** is represented by an icon of a single monitor.

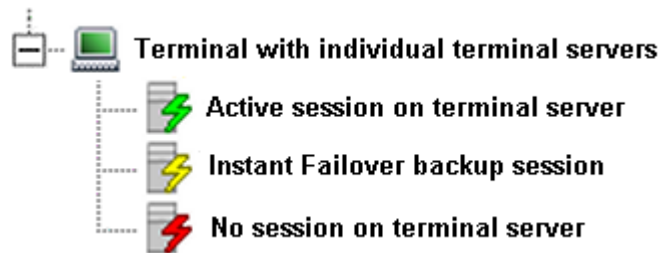
- A **Red terminal screen** indicates that the Terminal is off or not communicating with the ThinManager Server.

- A **Purple terminal screen** indicates that the Terminal is loading the firmware during the boot process.
- A **Yellow terminal screen** indicates that the Terminal has loaded firmware, received its configuration and is in the process of establishing a monitor connection to the ThinManager Server.
- A **Green terminal screen** indicates that the Terminal is on and communicating with the ThinManager Server.
- A **Terminal with a Head** icon indicates that a TermSecure User is logged onto the terminal. The TermSecure User name will be displayed in parentheses.
- A **Terminal with a Lock** or a locked group icon means that that terminal or group is being modified and cannot be changed by another user. If the Group or Terminal remains locked after its configuration wizard is closed, it can be unlocked by using **Edit > Unlock** from the menu bar.
- A **Terminal with a Red X** indicated that an administrator has disabled the terminal.

Note: The purple and yellow screen will not be visible before the terminal has connected the first time and is defined in ThinManager.

The purple and yellow screens are only visible during a reboot and not after a restart, as a restarted terminal does not reload firmware.

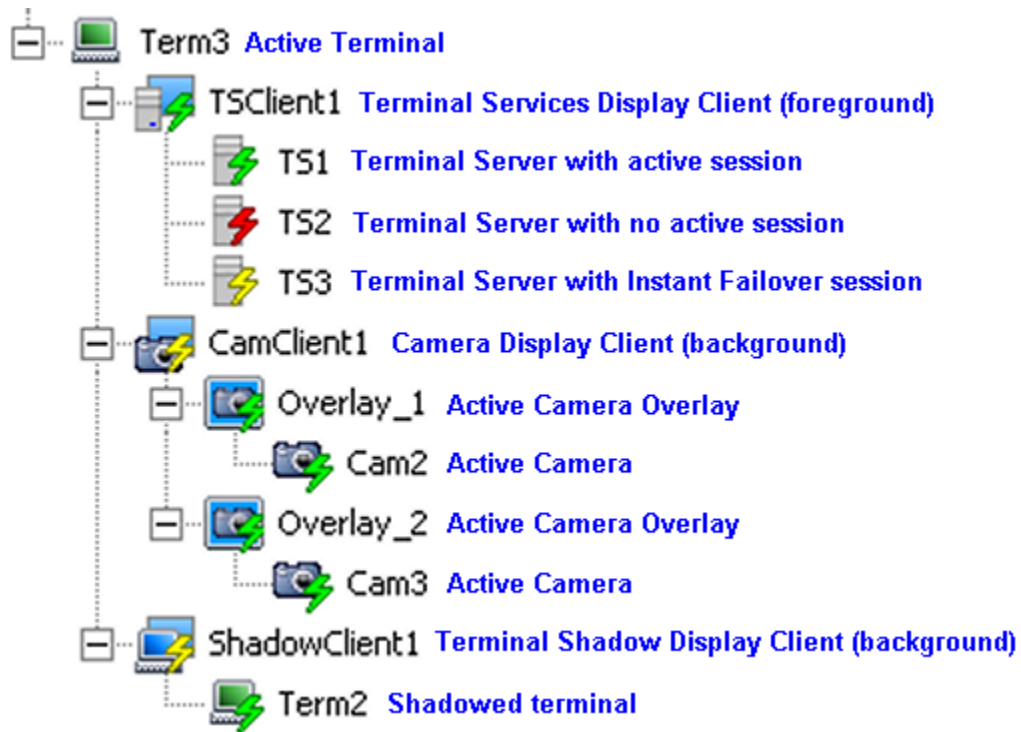
The Terminal icon can be expanded to show the assignment of the terminal.



Terminal Assigned to Individual Terminal Servers

A terminal that is using individual terminal servers may expand to show a terminal server icon with three connection states.

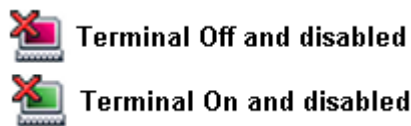
- A **green lightning bolt** indicates an active connection to the terminal server.
- A **yellow lightning bolt** indicates an active connection that is cascaded in the background while using Instant Failover.
- A **red lightning bolt** indicates an inactive connection to the terminal server.



Terminal using Display Clients

A terminal that is using Display Clients can be expanded to show the status of the Display Clients. The Display Clients can be expanded to show the status of the Display Client members.

If a Group or Terminal is disabled using the **Tools > Disable** function, it will be displayed with a red **X** over the terminal icon. An entire ThinManager Server or an entire Group can be disabled, but the ThinManager Server icon and the Group icon will not show an **X**, just the terminal icons.



Disabled Terminal Icons

A **Red terminal screen** with a Red **X** indicates that the Terminal is disabled and is either turned off or rebooted and waiting to be enabled.

A **Green terminal screen** with a Red **X** indicates that the disabling has been applied to the terminal that is turned on. The terminal has a disabling screen and is waiting for enabling.

If a Group or Terminal is disabled using the **Tools > Disable** function, it will be displayed with a red **X** over the terminal icon. An entire ThinManager Server or an entire Group can be disabled, but the ThinManager Server icon and the Group icon will not show an **X**, just the terminal icons.

Once a terminal is disabled, a disabling screen will appear on the terminal until the terminal has been enabled.



Disabling Screen

If a terminal is active when it is disabled, it will display the **Disable Screen** with a message indicating the disabled status in the upper left corner.

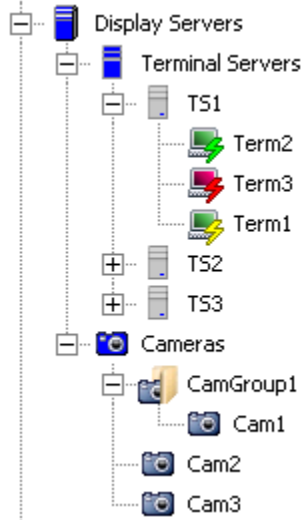


Disabled Terminal

If a terminal is booted when disabled, the boot process will be halted until the terminal is enabled. See Disable Terminals for details.

6.4.1.3 Display Servers Branch

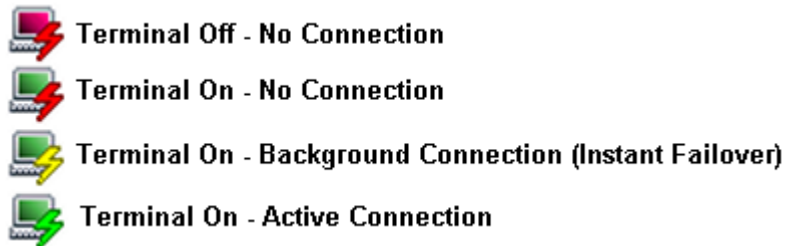
The Display Servers section of the tree is where display sources are defined and configured. These definitions will be used when defining a Display Client. Examples of Display Servers are Terminal Servers and IP Cameras.



Display Servers Tree Branch

6.4.1.4 Terminal Server Connection Icons

The Display Servers Terminal Servers branch can be expanded to show the Terminal Servers that are configured. The Terminal Servers can be expanded to show the member terminal servers. The member terminal servers can be expanded to show the terminals connected to them. The monitor screen color and the lightning bolt color indicate the terminal's status on the Terminal Server.

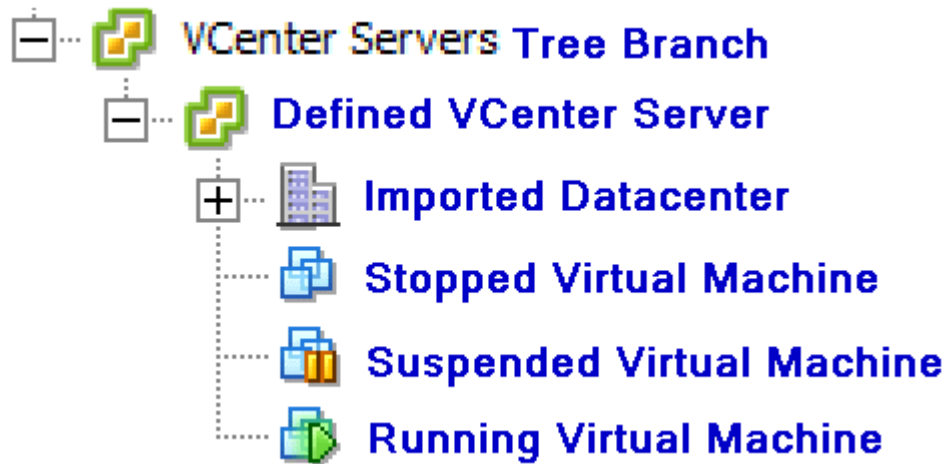


Terminal Server Connection Icons

The monitor screen color indicates the ThinManager Server connection status. The lightning bolt color indicates the Terminal Server connection status.

- A **Red monitor** screen indicates that the terminal is off or unable to communicate to the ThinManager Server.
- A **Green monitor** screen indicates that the terminal is on and able to communicate to the ThinManager Server.
- A **Red lightning bolt** represents a lack of active connection to the terminal server.
- A **Green lightning bolt** represents a connection to the terminal server with an active session.
- A **Yellow lightning bolt** represents a connection to the terminal server with a session that is the backup session in Instant Failover mode.

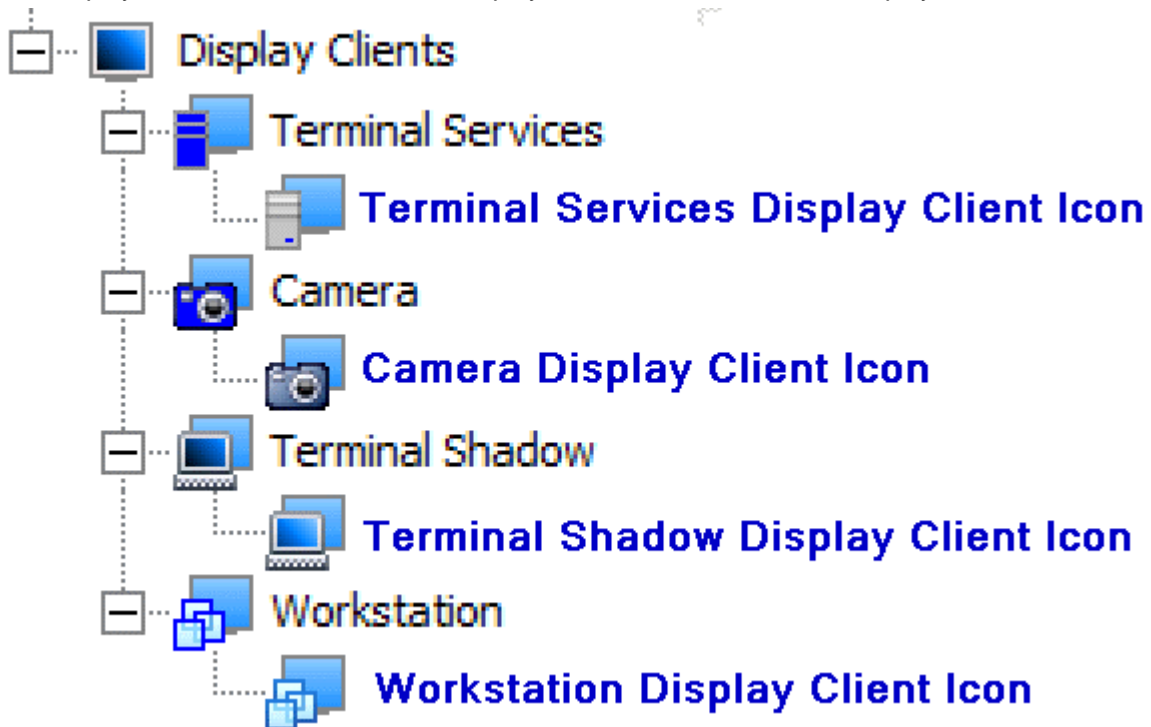
6.4.1.5 VCenter Server Icons



VCenter Server Tree Icons

6.4.1.6 Display Clients Branch

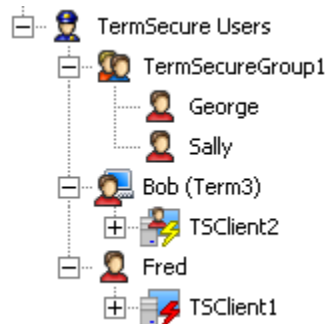
The Display Clients section of the tree is where the usage of a Display Server is defined. Display Clients are added to the terminal configuration. Examples of Display Clients are Terminal Services Display Clients, IP Camera Display Clients, Terminal Shadow Display Clients, and Workstation Display Clients.



Display Client Tree Branch

6.4.1.7 TermSecure User Branch

The **TermSecure Users** branch can be expanded.



TermSecure User Tree

The TermSecure User branch expands to show TermSecure User Groups.

A **Two-headed icon** represents a TermSecure User Group. This can be expanded to show member TermSecure Users.

A **Single-headed icon** represents a TermSecure User. This can be expanded to show any Display Clients that are assigned to the TermSecure User.

A **Single-head with Terminal icon** represents a TermSecure User that is logged in on a terminal. The terminal name is shown in parentheses. This can be expanded to show any Display Clients that are assigned to the TermSecure User.

A TermSecure User that is not active or logged into a terminal server will show the normal Display Client icon.

A TermSecure User that is active and logged into a terminal will show an icon of the TermSecure User head with the Display Client

6.5 Details Pane

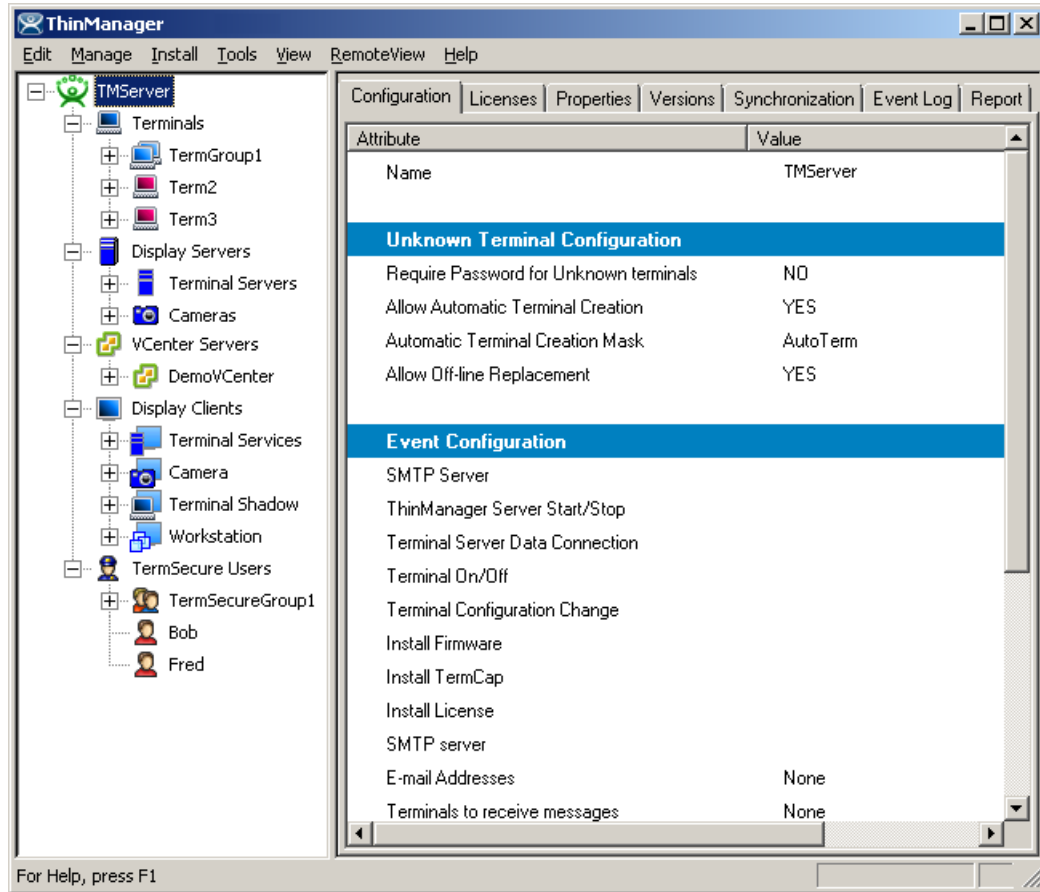
The Details Pane has tabs to provide additional information. Highlighting different items in the tree will display a different set of tabs and the corresponding set of information.

6.5.1 ThinManager Server Detail Tabs

Highlighting the green **ThinManager Server** will show:

- **Configuration** - These are the configuration parameters set in the ThinManager Server Configuration Wizard and include the Event Messaging summary.
- **Licenses** - This displays the installed licenses, the quantity used and the quantity available. ThinManager lists all the license files and identifies whether that are valid or invalid. This tab will display licenses for both ThinManager Servers if the pair is auto-synchronized.
- **Versions** - This displays the version numbers of ThinManager, the firmware, and the TermCap database.
- **Synchronization** – This will show the synchronization status of the ThinManager Server. See Automatic Synchronization for details.

- **Event Log** - This displays events for the ThinManager Server. The events and duration are configurable in the ThinManager Server Configuration wizard. See Event Selection Page for details.
- **Report** – This will display the selected report for the ThinManager Server. See Reports for details.

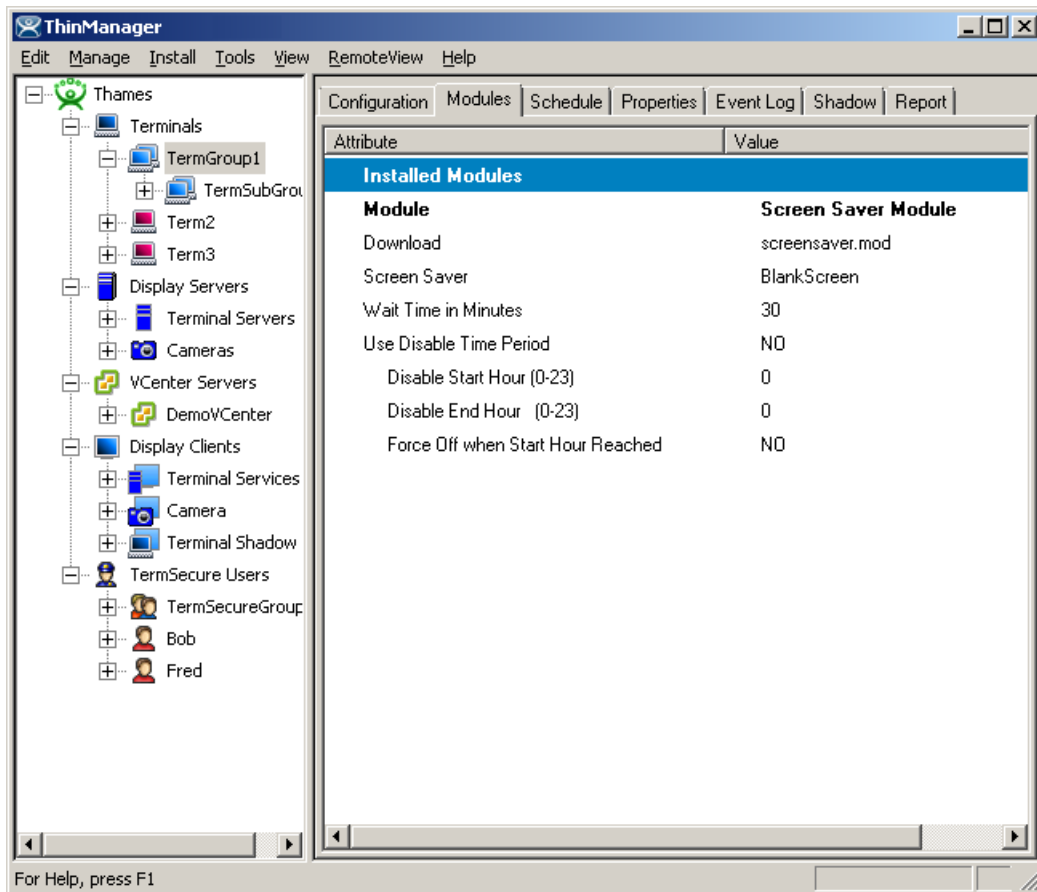


ThinManager Server Tabs

6.5.2 Terminal Group Detail Tabs

Highlighting a **Group** will show:

- **Configuration** - These are the configuration parameters set in the Group Configuration Wizard and include Terminal Server assignments, video settings, and monitoring settings. See Terminal Group Configuration Wizard for details.
- **Modules** - This lists the assigned modules and parameters for the Group. See Modules for details.
- **Schedule** – This will display any events scheduled for the Group. See Terminal Schedule for details.
- **Properties** - This is blank for a Group.
- **Event Log** - This is blank for a Group.
- **Shadow** – This is blank for a Group
- **Report** – This will display the selected report for the group. See Reports for details.

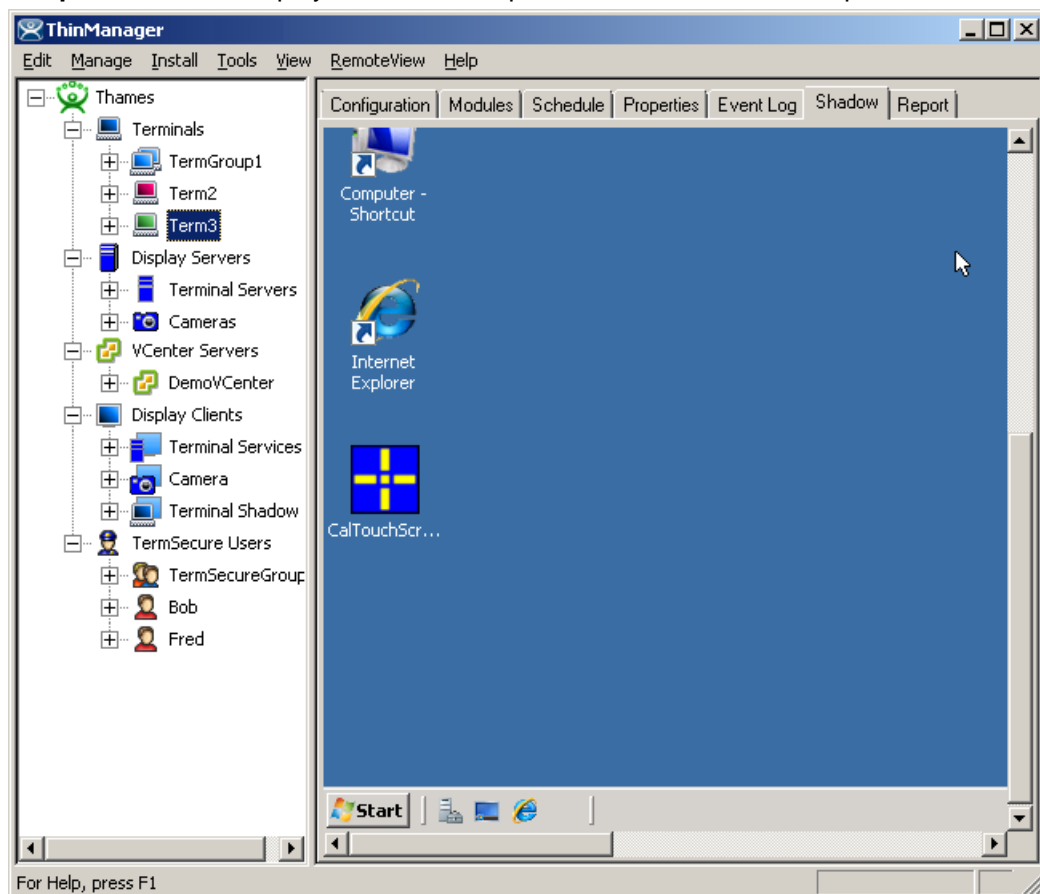


Group Tabs – Modules

6.5.3 Terminal Detail Tabs

Highlighting a **Terminal** will show:

- **Configuration** - These are the configuration parameters set in the Terminal Configuration Wizard and include Terminal Server assignments, video settings, and monitoring settings. See Terminal Configuration Wizard for details.
- **Modules** - This lists the assigned modules and parameters for the Terminal. See Modules for details.
- **Schedule** – This will display any events scheduled for the terminal. See Terminal Schedule for details.
- **Properties** - This shows the IP address, firmware version, make and model, CPU, memory usage, Terminal Up Time, CPU load, and BootROM version of the Terminal.
- **Event Log** - This shows the terminal events and terminal configuration events for that terminal, if event logging is enabled in the ThinManager Configuration Wizard. See Event Selection Page for details.
- **Shadow** – This tab shows what the terminal is displaying on its monitor. Administrators can interact with the session while ThinManager Power Users can view the session but not control it. See ThinManager Security Groups for details.
- **Report** – This will display the selected report for the terminal. See Reports for details.



Terminal Tabs – Shadow

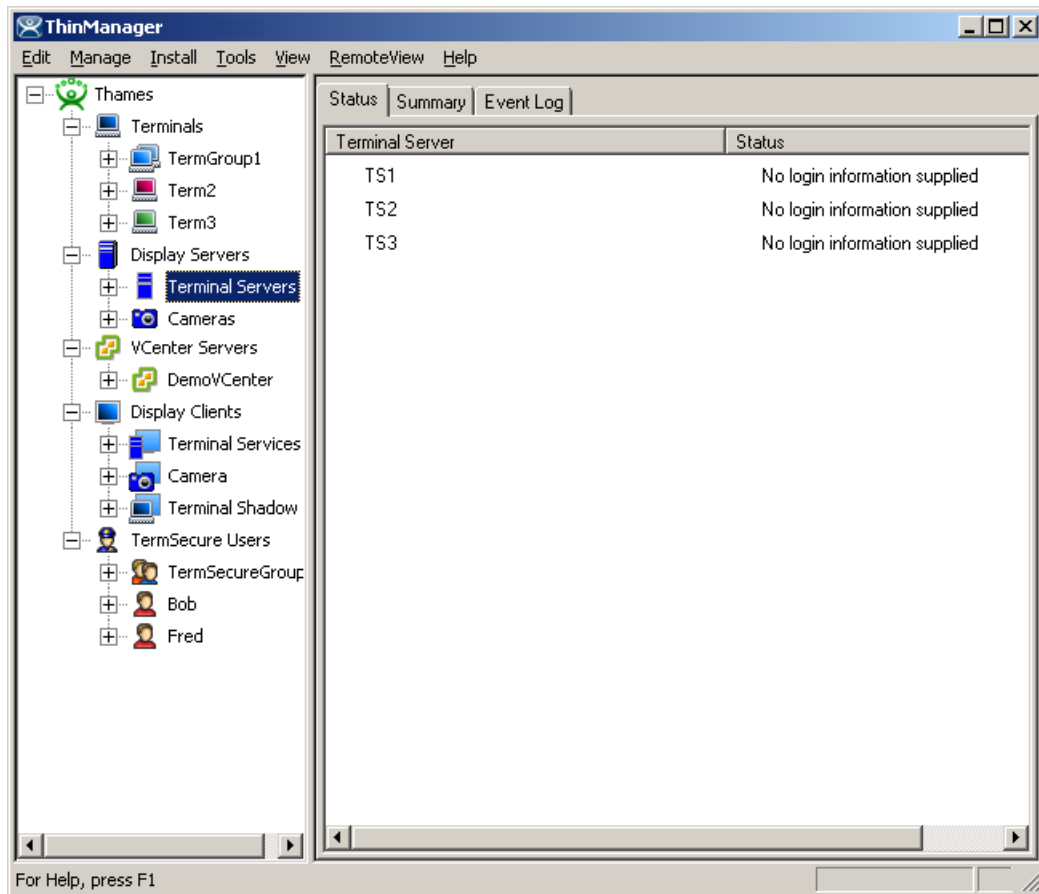
6.5.4 Terminal Server Detail Tabs

Highlighting the blue **Terminal Server** branch will show:

- **Status** - This shows the status of the communication connection between the local ThinManager Server and the defined Terminal Servers and ThinManager Servers. This shows whether the local ThinManager Server is able to retrieve the updated resource information used in determining the SmartSession Server Ranking. See Terminal Server Name Page for details.
- **Summary** - This will report information on the terminal servers like available memory, uptime, CPU utilization, and operating system.
- **Event Log** - This shows the terminal events and terminal configuration events for that terminal server, if event logging is enabled in the ThinManager Configuration Wizard. See Event Selection Page for details.

The Connection Status of the Terminal Servers may have different messages:

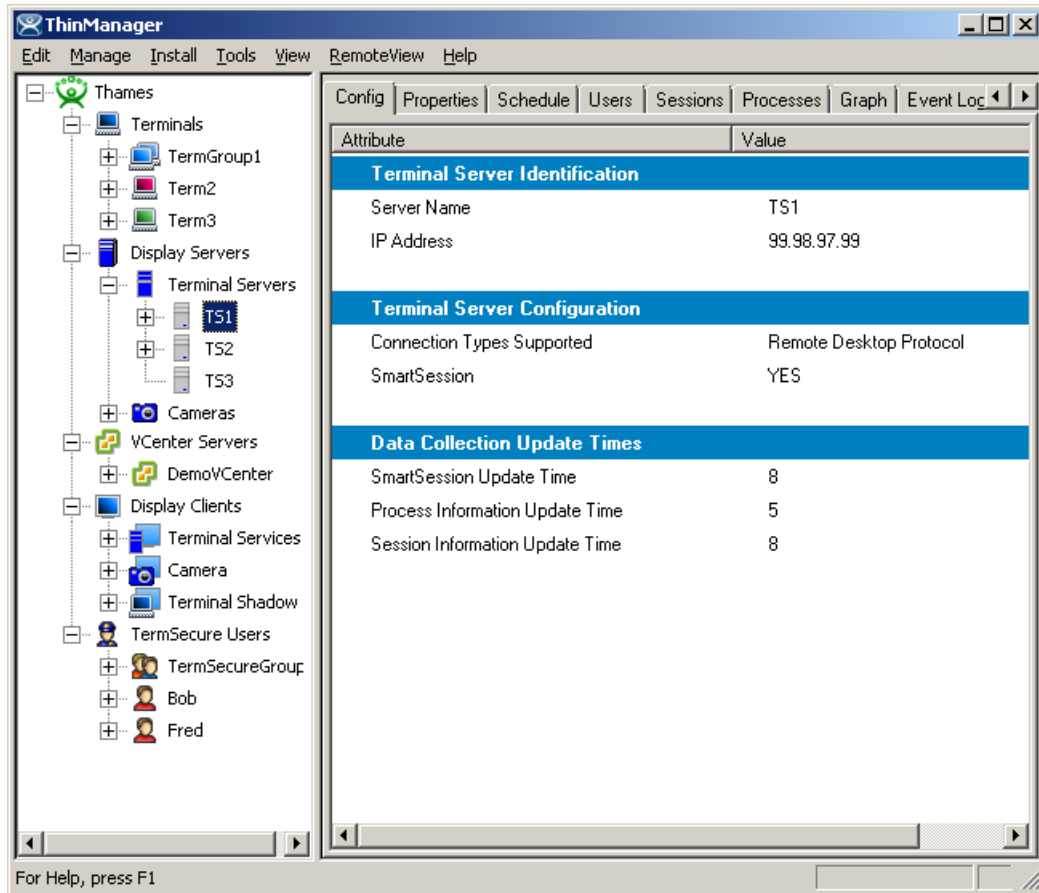
- **OK** indicates a good connection.
- **WTSAPI32.dll connection failed** occurs when the terminal server is off or unreachable.
- **No login information supplied** indicates that the Terminal Server didn't have a username and password added in the Terminal Server List Wizard.
- **User specified does not have permission to connect** indicates that the Terminal Server had an invalid username and password added in the Terminal Server List Wizard.



Terminal Servers Tabs – Status

Highlighting an individual **Terminal Server** will show:

- **Configuration** - This shows the installed Client Communication Protocols and the SmartSession settings for the Terminal Server. See Terminal Server Capabilities Page for details.
- **Properties** – This tab displays the server resource data like total memory, free memory, uptime, and CPU speed.
- **Schedule** – This will display any events scheduled for the Group. See Terminal Server Schedule for details.
- **Users** - This tab displays information from the Terminal Services Manager. It shows users that are logged into the Terminal Server. Right clicking on a user will show options that allow the session to be **Reset** (logged off), **Disconnected**, or have a message sent to it.
- **Sessions** - This tab displays information from the Terminal Services Manager. It shows users that are logged into the Terminal Server. Right clicking on a user will show options that allow the session to be **Reset** (logged off), **Disconnected**, or have a message sent to it.
- **Processes** - This tab displays information from the Terminal Services Manager. It shows the processes running on the Terminal Server and can have them sorted by Session ID (users) or Process Name. Right clicking on a process will give the option to kill the process.
- **Graph** – This tab will display the CPU usage and memory usage of the terminal server as a graph. This graph can contain one hour of historical data.
- **Event Log** - This shows the terminal events and terminal configuration events for that terminal, if event logging is enabled in the ThinManager Configuration Wizard. Event Selection Page for details.
- **Connect** – This tab will open a connection from ThinManager to the terminal server. This session allows administrators to manage the terminal server from within ThinManager. See Connect Options for details.
- **Report** – This will display the selected report for the terminal server. See Reports for details.



Terminal Server Tabs

6.5.5 Modifying a Terminal

Modifying a terminal allows you to reconfigure the terminal or change group settings such as touch screen usage, video resolution, or to assign it to a terminal server.

To modify a terminal open the Terminal Configuration Wizard or the Terminal Properties by either:

- Highlighting the terminal in the **ThinManager** tree pane by clicking on the terminal name or icon and select **Edit > Modify** from the **ThinManager** menu bar.
- Right-clicking on the terminal icon in the **ThinManager** tree pane and select **Modify**.
- Double-clicking on a terminal icon in the **ThinManager** tree pane.

This will launch the **Terminal Configuration Wizard**, allowing changes to be made.

Note: The terminal will need to be restarted for the changes to take effect.

6.5.6 Deleting a Terminal

A terminal can be deleted from the **ThinManager** by:

- Highlighting the terminal in the **ThinManager** tree pane and selecting **Edit > Delete** from the **ThinManager** menu bar
- Right-clicking a terminal icon in the tree pane of **ThinManager** and selecting **Delete Terminal**.

6.5.7 Restarting a Terminal

A restart will reload any changes to a terminal configuration or firmware without a cycling of power.

A terminal or group can be restarted by:

- Selecting **Tools>Restart Terminal** from the ThinManager menu bar. This will restart all the terminals on the server if the server is highlighted. If a group is highlighted, all members of the group will be highlighted. If a terminal is highlighted, the terminal is restarted.
- Right-clicking a group icon in the tree pane of ThinManager and selecting **Restart Terminals**. This will reboot all the terminals in the group.
- Right- clicking a terminal icon in the tree pane of ThinManager and selecting **Restart Terminal**. This will restart only the highlighted terminal.

6.5.8 Rebooting a Terminal

A reboot will cycle power to the terminal, reloading firmware and configuration.

A terminal or group can be rebooted by:

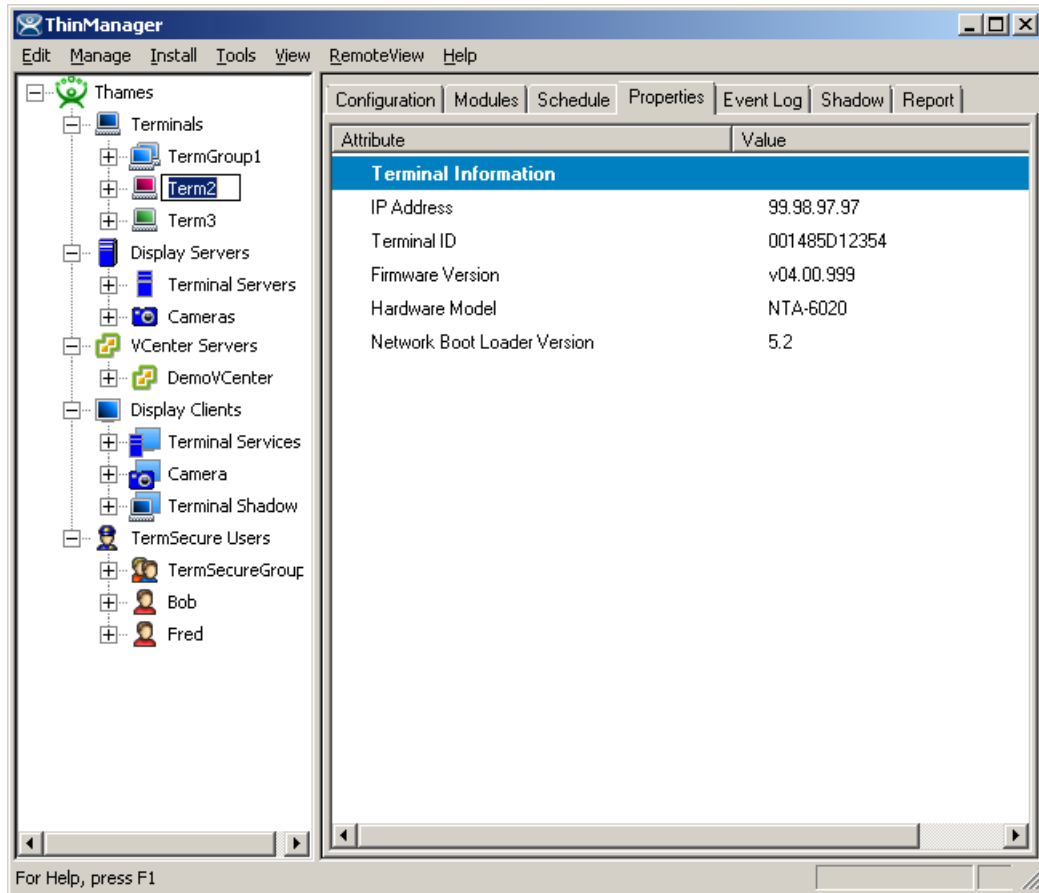
- Selecting **Tools>Reboot Terminals** from the ThinManager menu bar. This will reboot all the terminals on the server if the server is highlighted. If a group is highlighted, all members of the group will be highlighted. If a terminal is highlighted, the terminal is rebooted.
- Right-clicking a group icon in the tree pane of ThinManager and selecting **Reboot Terminals**. This will reboot all the terminals in the group.
- Right-clicking a terminal icon in the tree pane of ThinManager and selecting **Reboot Terminal**. This will reboot only the highlighted terminal.

6.5.9 Renaming a Terminal

Terminals can be renamed by:

- Highlighting the Terminal and selecting **Edit > Rename**.
- Right-clicking the Terminal and selecting **Rename**.

Note: Renaming a terminal can be accomplished the same way that files or directories are renamed in **Windows Explorer**. Single click twice on the terminal name; this will draw a box around the name and highlight it. Type the new terminal name.



Renaming a Terminal

The terminal name should be less than 15 characters because of limitations on the terminal server.

Tip on single clicking twice: Click once to highlight the name, move the mouse slightly and click again. This will prevent Windows from confusing the two single clicks with a double click.

7 Menu Items

7.1 Edit

Edit contains commands for adding, deleting, and changing configurations. The functions listed are dependent on what is highlighted in the tree.

7.1.1 Add Terminal

Edit > Add Terminal will launch the **Terminal Creation Wizard** to start the process of adding a new terminal. This command will be displayed when the ThinManager Server, Terminals branch, or a Terminal Group is highlighted.

See Terminal Configuration Wizard for details.

7.1.2 Add Terminal Group

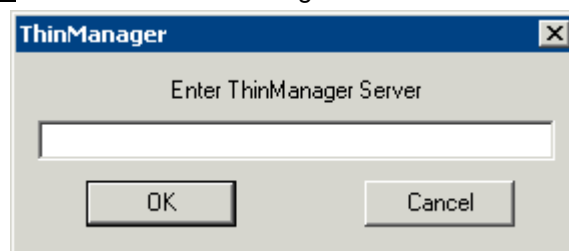
Edit > Add Terminal Group will launch the **Group Creation Wizard** to start the process of adding a new group of terminals. This command will be displayed when the ThinManager Server, Terminals branch, or a Terminal Group is highlighted.

See Terminal Group Configuration Wizard for details.

7.1.3 Add ThinManager Server

Edit > Add ThinManager Server will allow the remote administration of multiple ThinManager Servers by adding an additional ThinManager Server to the ThinManager Server drop-down box above the tree. A user logged in with administrative rights can connect to multiple ThinManager servers for management.

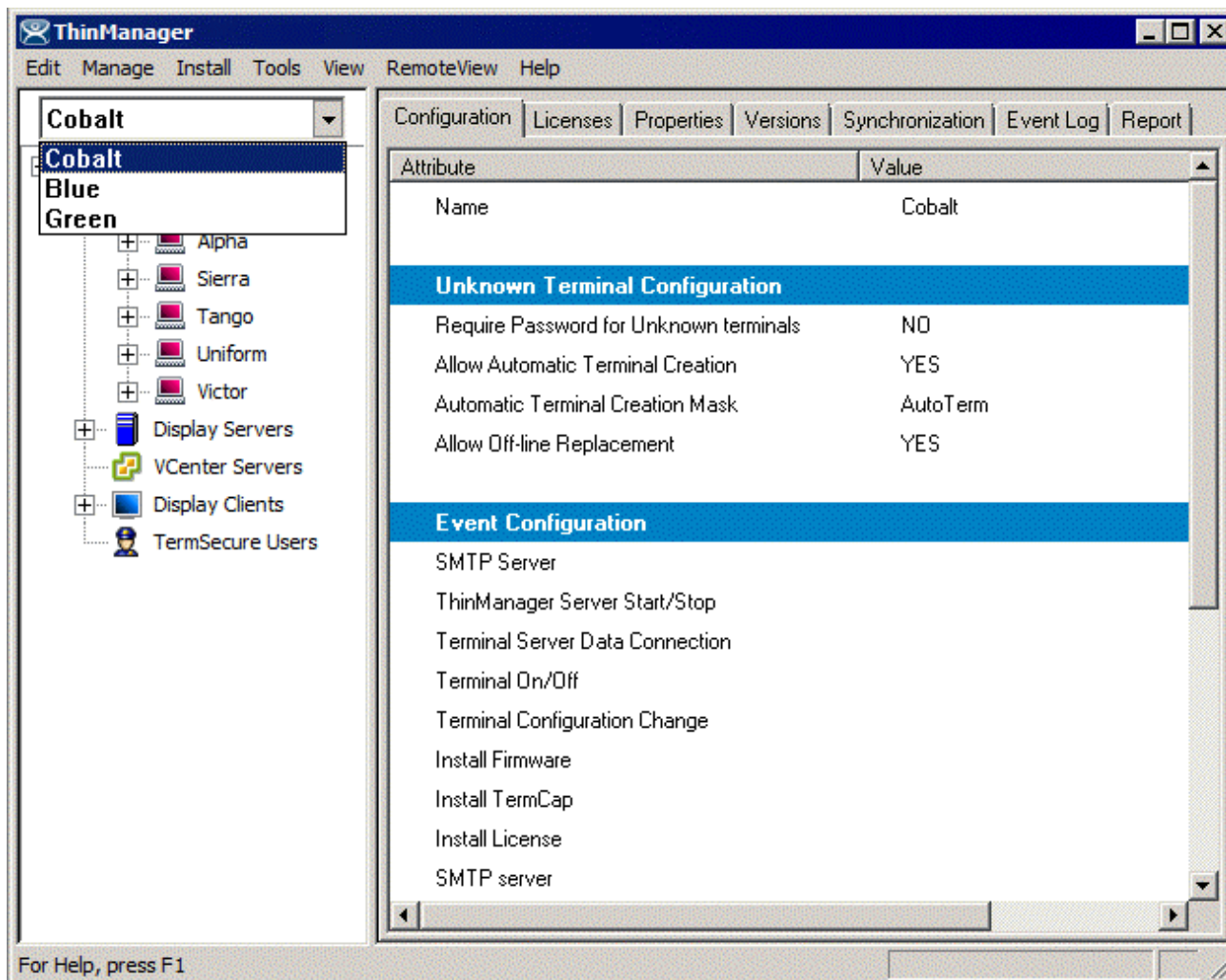
Selecting **Add ThinManager Server** will launch a dialog box.



Add ThinManager Server Dialog Box

Enter computer name or the IP address of a ThinManager server. This adds the ThinManager Server to the ThinManager Server drop-down box above the tree pane of the local ThinManager so that the configuration can be displayed in the tree when needed.

Note: The ThinManager Server may need to be defined in the ThinManager Server List Wizard.



ThinManager Adding an Additional ThinManager Server

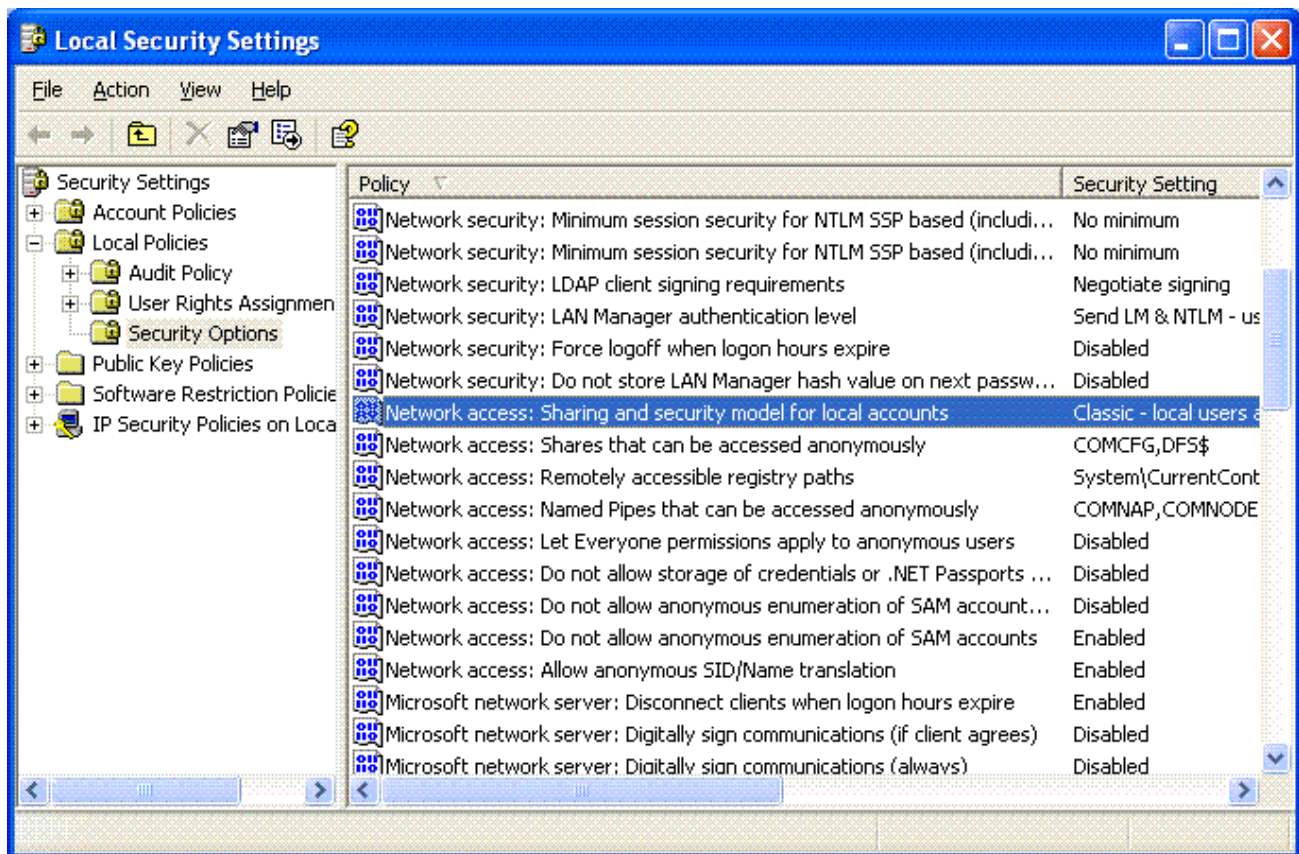
The new ThinManager Server will be added to the ThinManager Server drop-down box. Selecting the new ThinManager Server in the drop-down will display the tree for that ThinManager Server.

Members of the Administrator group or the ThinManager Administrators group have full control of the remote ThinManager Server and can make changes as needed. Members of the ThinManager Power Users group can monitor the connection.

See ThinManager Security Groups for more details.

If ThinManager is installed on a Windows XP Pro workstation, it cannot be added to a ThinManager on a Windows 2003 unless a security option is changed.

In Windows XP Pro select **Start > Control Panel > Administrative Tools > Local Security Policy**.



Windows XP Pro – Local Security Settings

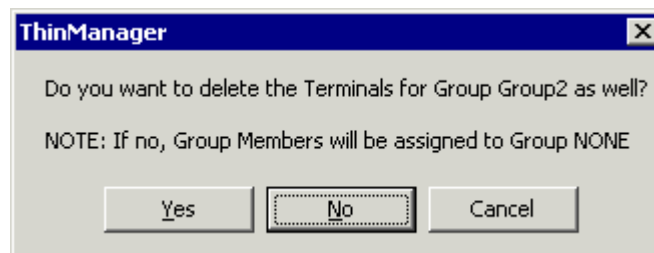
Highlight the **Security Options** folder in the **Local Security Settings** program. Change the **Network access: Sharing and Security model for local accounts** from the default **Guest Only** to **Classic** to match the setting of the Windows 2003 terminal server.

7.1.4 Remove ThinManager Server

Edit > Remove ThinManager Server will delete a highlighted ThinManager Server from the tree.

7.1.5 Delete

Edit > Delete will launch a message box that will remove a highlighted ThinManager Server, group or terminal. Deleting a remote ThinManager Server will remove it from the local list.



Delete Group Message Box

Deleting a group will give the option of deleting the group terminals or moving them under the server without a group.

7.1.6 Modify

The function of **Edit > Modify** depends on what tree icon is highlighted when **Modify** is selected.

- **Modify** will launch the **ThinManager Server Configuration Wizard** for a highlighted ThinManager Server. This allows the ThinManager Server to be configured as described in the ThinManager Server Configuration Wizard.
- **Modify** will launch the **Terminal Group Configuration Wizard** for a highlighted group. Modifications can be made as described in Terminal Group Configuration Wizard.
- **Modify** will launch the **Terminal Configuration Wizard** for a highlighted terminal. Modifications can be made as described in Terminal Configuration Wizard.
- **Modify** will launch the appropriate **Display Server Configuration Wizard** for a highlighted Display Server member.
- **Modify** will launch the appropriate **VCenter Server Property Wizard** for a highlighted VCenter member.
- **Modify** will launch the appropriate **Display Client Configuration Wizard** for a highlighted Display Client member.
- **Modify** will launch the **TermSecure Configuration Wizard** for a highlighted TermSecure user or group.

7.1.7 Rename

Edit > Rename will allow a highlighted tree item to have its name changed.

Note: The terminal name should be less than 15 characters because of limitations of the terminal server.

7.1.8 Lock

When a tree member is opened for modification, the entry in the configuration is automatically locked to prevent two people from making changes at one time.

Edit > Lock will manually lock the configuration of a tree member to prevent it from being changed. A lock icon will designate the locked state.

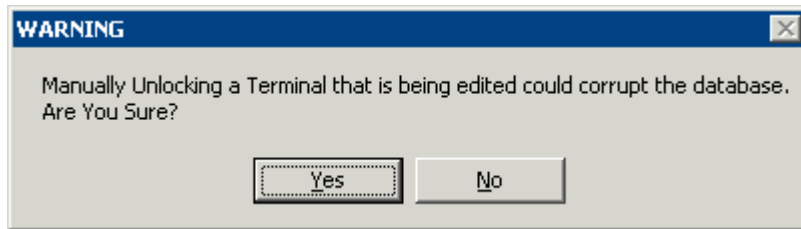


Lock Icons

7.1.9 Unlock

Edit > Unlock will manually unlock a tree member that was locked while being modified. This is used if the server was shut down while a tree member was locked, preventing the member from being unlocked automatically when the modifications are complete.

Using the Unlock function will display a warning to alert the user.



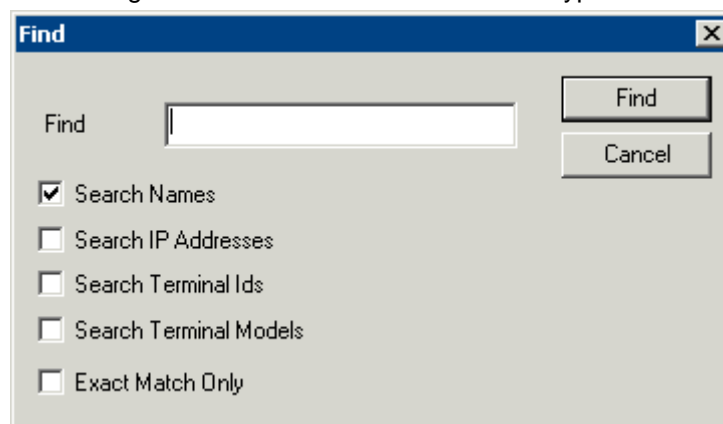
Lock Warning Message

Unlocking a locked member can cause a loss of configuration data if another user is modifying it.

Note: This tool is to be used only when a tree member remains locked due to an unexpected server shut down while a member is being configured. Using this tool while another is configuring that terminal can lead to corruption of the database.

7.1.10 Find

Edit > Find launches a **Find** dialog that searches the tree for the item typed into the **Find** field.



Find Dialog Box

The **Find** function has several checkboxes to enhance the search:

- **Search Names** – this, when checked, will search for a name entered in the **Find** field.
- **Search IP Addresses** - this, when checked, will search for an IP address entered in the **Find** field.
- **Search Terminal Ids** - this, when checked, will search for a MAC address/Terminal ID entered in the **Find** field.
- **Search Terminal Models** – this, when checked, will search for a thin client model entered in the **Find** field.
- **Exact Match Only** - this, when checked, will limit searches to exact matches to the name entered in the **Find** field.

CTRL+F is the short cut key to launch **Find**.

7.1.11 Find Next

Edit > Find Next will continue searching the tree for the next instance of the text in the **Find** field of the **Find** dialog box.

F3 is the shortcut key for this function.

7.2 Manage

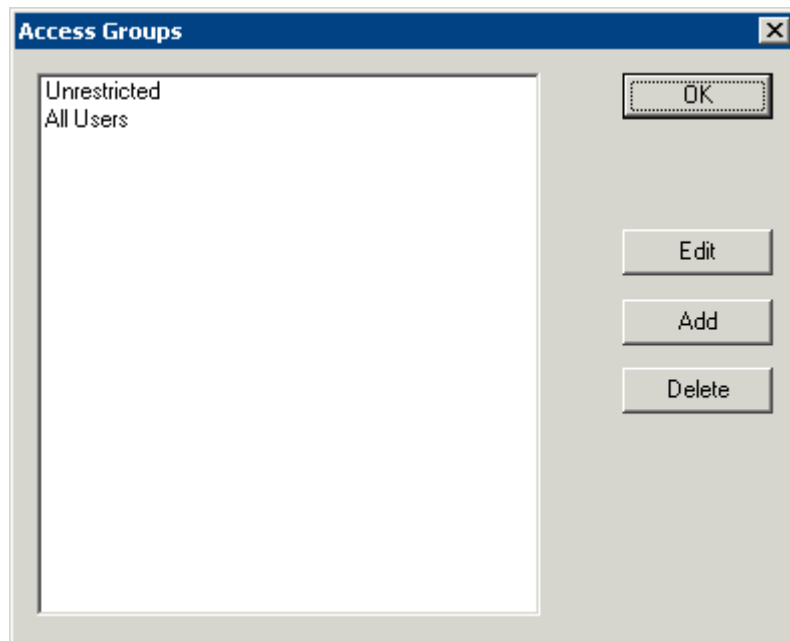
7.2.1 ThinManager Server List

Manage > ThinManager Server List will launch the **ThinManager List Wizard**. See ThinManager Server List for details.

7.2.2 TermSecure Access Groups

Selecting **Manage > TermSecure Access Groups** will launch the **Access Groups** window to create Permission Groups for use with TermSecure.

See Permissions for more details.



Access Groups Window

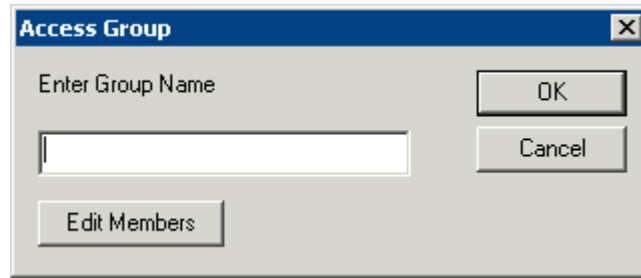
Select the **OK** button to accept the changes and close the window.

Select the **Edit** button to change the highlighted Access Group.

Select the **Add** button to add a new Access Group.

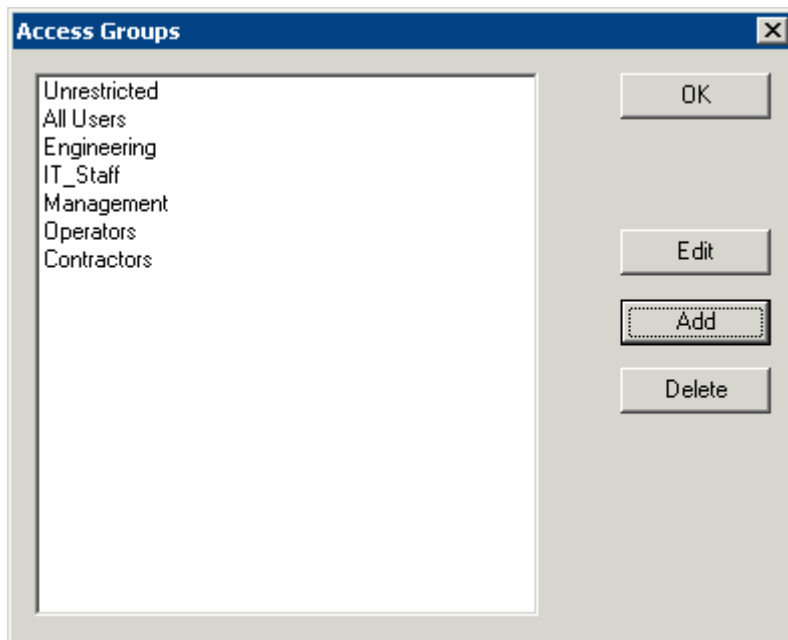
Select the **Delete** button to remove the highlighted Access Group.

If the **Add** button is selected, an **Access Group Creation** window will be displayed.



Access Group Creation Window

Enter a name for the new Access Group and select **OK** to create the group.



TermSecure Access Groups Added

Defined Access Groups will be displayed in the **Access Group** window. See Permissions for more details.

7.2.3 DNS Configuration

Manage > DNS Configuration will launch the **DNS Configuration Wizard**. See DNS Configuration for details.

7.2.4 PXE Server

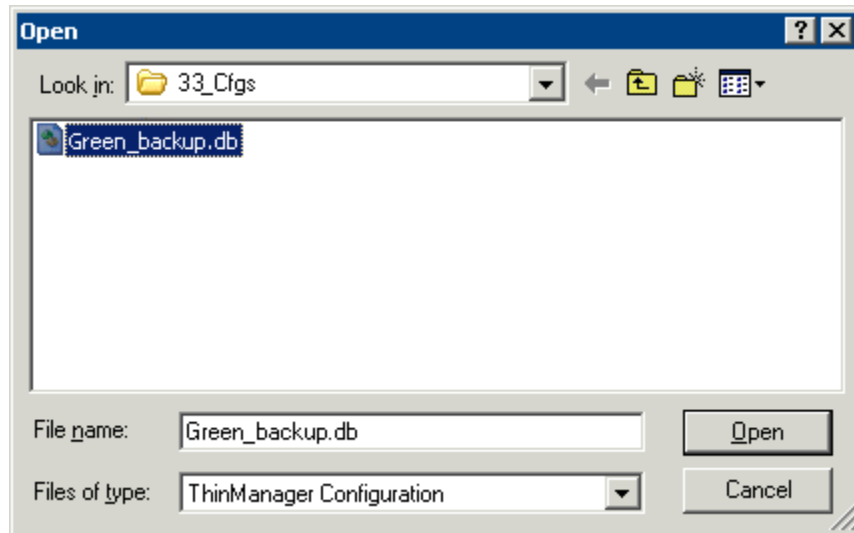
Manage > PXE Server will launch the PXE Server Configuration Wizard. See PXE Server Configuration Wizard for details.

7.2.5 Configure Default Terminal

Manage > Configure Default Terminal will launch the Terminal Properties for the “Default” terminal. This default terminal is used as a template that terminals created during **Auto-Creation** are based on. See Auto-Creation of Terminals for details on Auto-Creation of terminals.

7.2.6 Restore Configuration

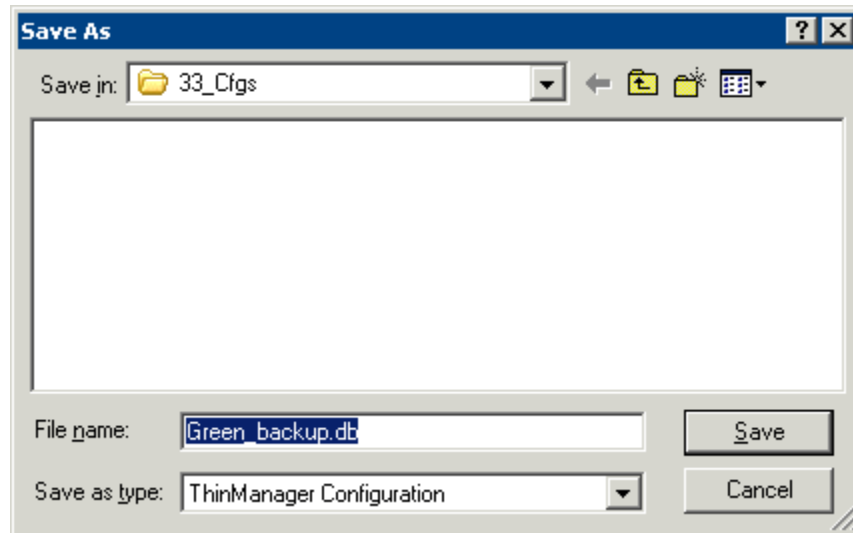
Manage > Restore Configuration will allow a backed up ThinManager configuration to be applied to the ThinManager Server. Select **Restore Configuration** to launch the desired ThinManager Configuration file in the browse window and select **Open**. The backup copy will overwrite the existing configuration.



Restore ThinManager Configuration

7.2.7 Backup Configuration

Manage > Backup Configuration allows the ThinManager Configuration to be saved. Select **Backup Configuration** to launch a browse window and select the **Save** button to save a backup copy.



Backup ThinManager Configuration

7.2.8 Synchronize Configuration

Manage > Synchronize Configuration allows the configuration of multiple ThinManager Servers to be kept identical so that a terminal will boot with the same configuration regardless of what ThinManager Server the terminal connects to.

Note: ThinManager has an Automatic Synchronization feature that will keep two ThinManager Servers synchronized without requiring a manual input. See [ThinManager Server List Page](#) for details.

Although Automatic Synchronization is the preferred method of synchronization, Manual Synchronization is useful to synchronize the configurations on the primary and backup ThinManager Servers before turning on the Automatic Synchronization.

Selecting **Synchronize Configuration** will launch the **Synchronize ThinManager Server Configurations Wizard**. See Manual Synchronization for details.

7.2.9 Reconnect

This command will reinitiate the connection between the highlighted ThinManager Server and the ThinServer service.

7.2.10 Disconnect

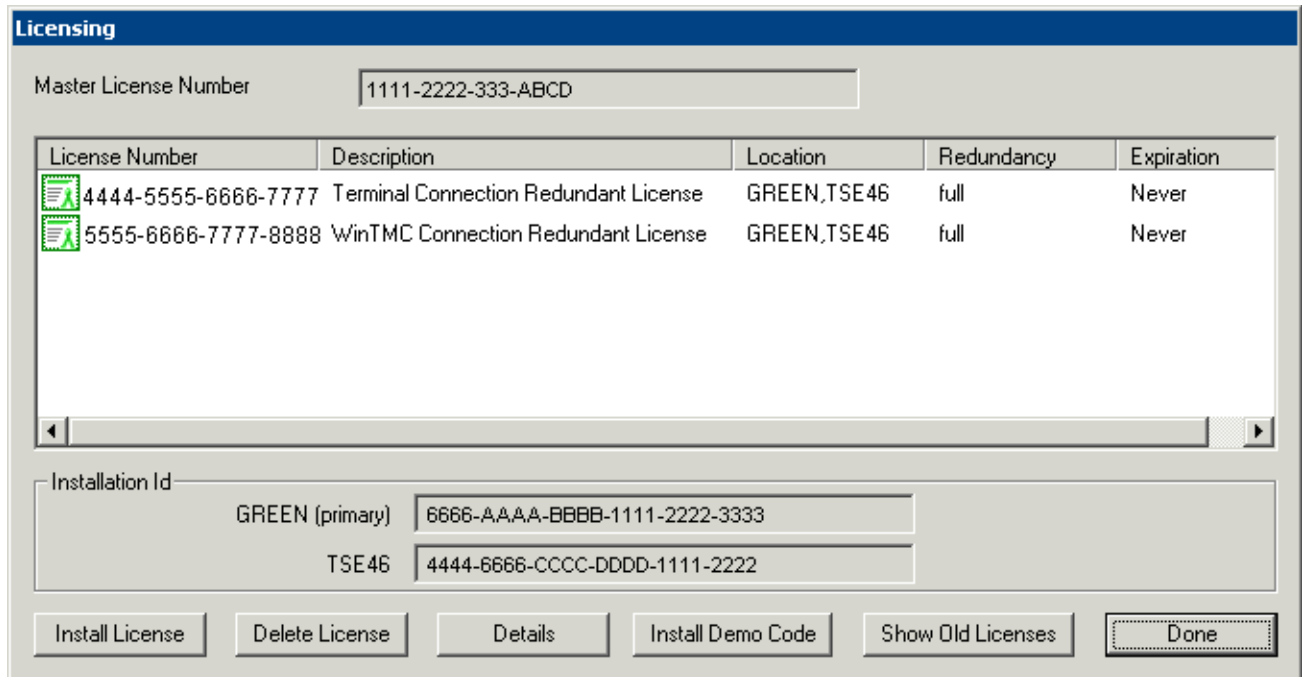
This command will disconnect the connection between the highlighted ThinManager Server and the ThinServer service.

7.3 Install

Install is a new menu item that contains the commands from **Manage** that involve installation.

7.3.1 Licenses

Install > **License** opens up the Licensing dialog box.



Licensing Window

The **Master License Number** field shows the number of the installed master license. See Creating a Master License for details.

The **Licensing** window displays several columns.

- **License Number** – This displays the component product license numbers included in the installed master license. A green monitor indicates a valid license while invalid licenses will display a red “X”.
- **Location** – This lists the ThinManager Server(s) that the component product license applies to.
- **Redundancy** – This indicates whether the license type is redundant or mirrored.
- **Description** – This lists the license type.
- **Expiration** – This displays the license expiration date.

The **Installation ID** field displays the Installation ID number that is used in the license activation process. ThinManager Servers that are auto-synchronized will display the Install ID of both ThinManager Servers.

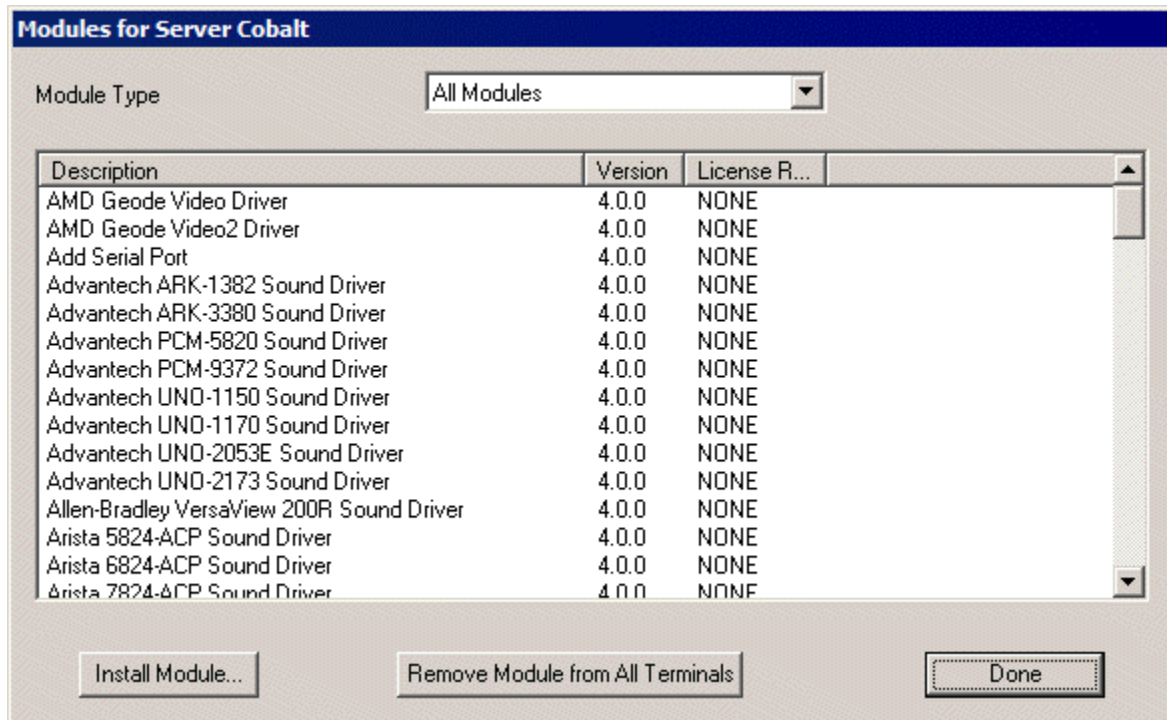
- **Install License** – This button launches a file browser that allows a license file to be added.
- **Delete License** – This button allows a highlighted license to be deleted.
- **Details** – This button displays the details of a highlighted license.
- **Install Demo Code** – This button allows a Demo Code to be added to give temporary functionality.

- **Show Old Licenses** – This lists the previously installed ThinManager 3.x licenses on the ThinManager Server.
- **Done** – This button closes the Licensing window.

See Licensing ThinManager for details.

7.3.2 Modules

Install > Modules open the Modules dialog box. This displays the modules that are available to the ACP Enabled thin clients. See Module Overview for details.



Installed Modules Windows

The **Module Type** drop-down allows all modules to be displayed or allows the modules to be filtered by type.

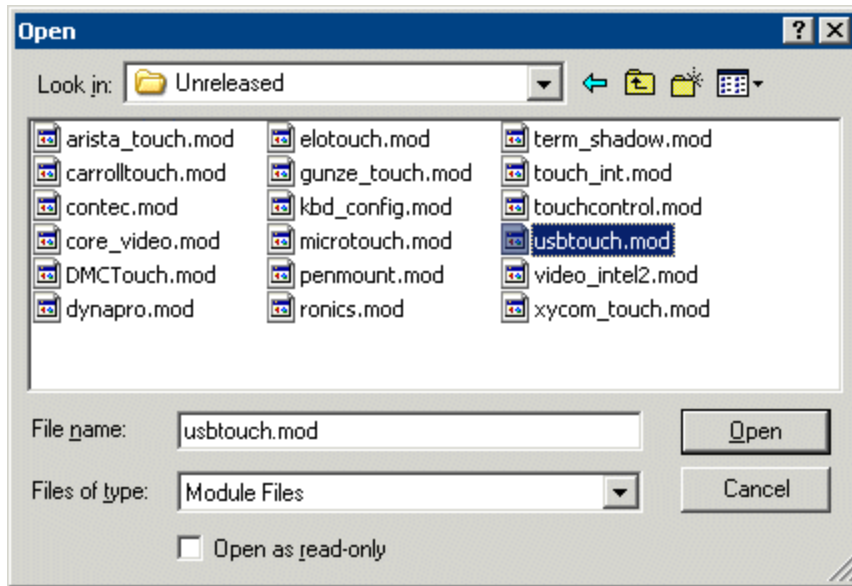
The **Modules for Server X** window has three columns.

- **Description** – This lists the modules by name.
- **Version** – This is the version number of the module. This can be compared against the latest versions from <http://www.thinmanager.com/support/downloads.shtml#modules>.
- **License Req'd** – This shows what license is required, if any, to use the module.

The **Modules for Server X** window has three buttons.

- **Install Module** – This button launches a file browser that allows a module file to be added or updated.
- **Remove Module form All Terminals** – This button will remove a highlighted module from all terminals. It doesn't remove the module from the system; it just removes it from the configurations.
- **Done** – This button closes the Modules window.

Selecting **Install Module...** will launch a dialog box that allows modules files to be selected.



Open Module File

A module can be added to the list of available modules by highlighting the desired module file and selecting **Open**. . The window will close when the license is installed.

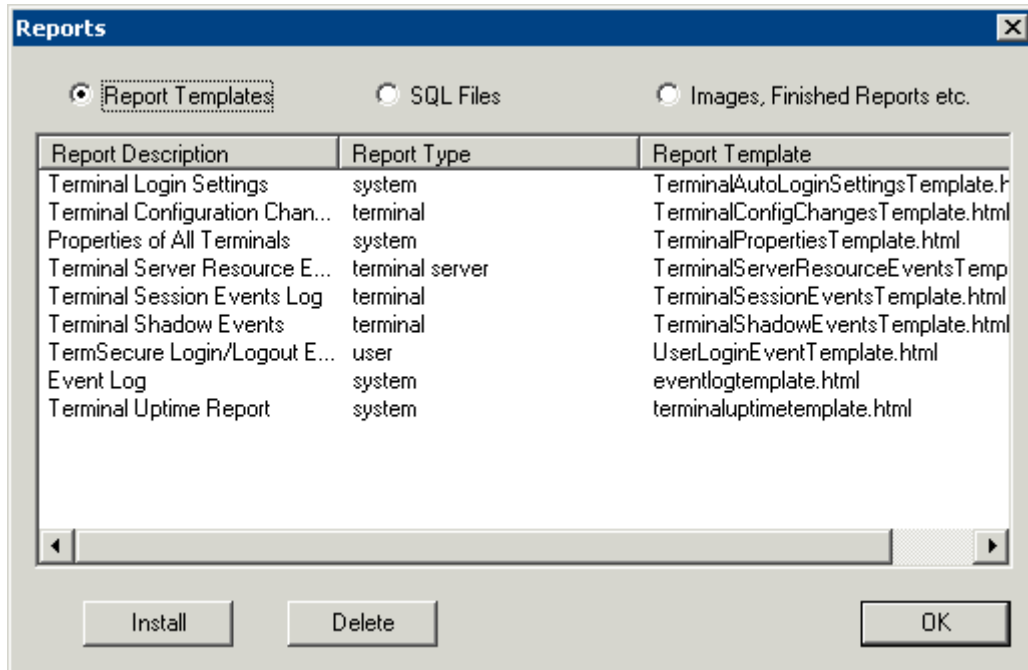
Note: The module files should not be saved directly into the ThinManager folder but should be saved to another folder and be installed using ThinManager.

See Module Overview for details

7.3.3 Reports (Installation)

Install > Reports will launch a **Reports** window that allows additional reports to be added to ThinManager. Each report has two components, an HTML template and a SQL query.

See Reports for information on reports.

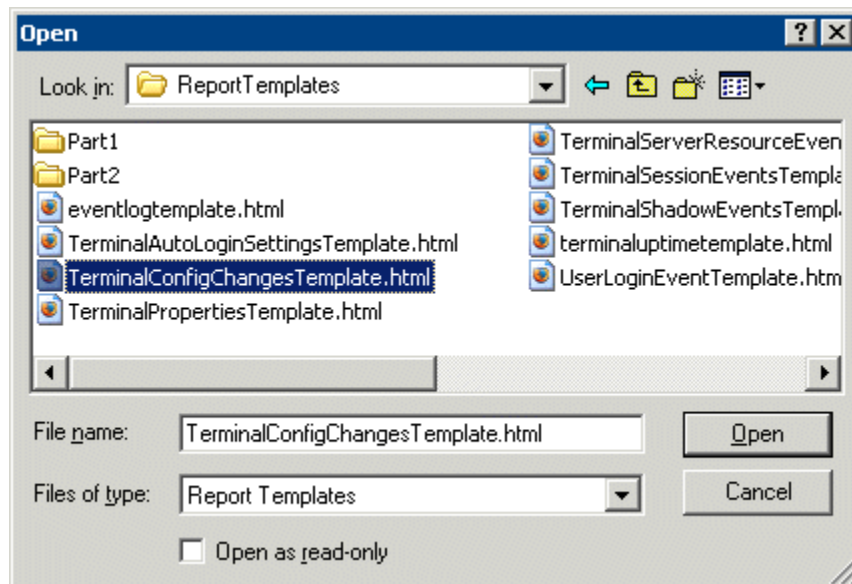


Reports Window –Reports Templates

The **Reports** window has radio buttons to display report templates, SQL files, and images, finished reports, and assorted files.

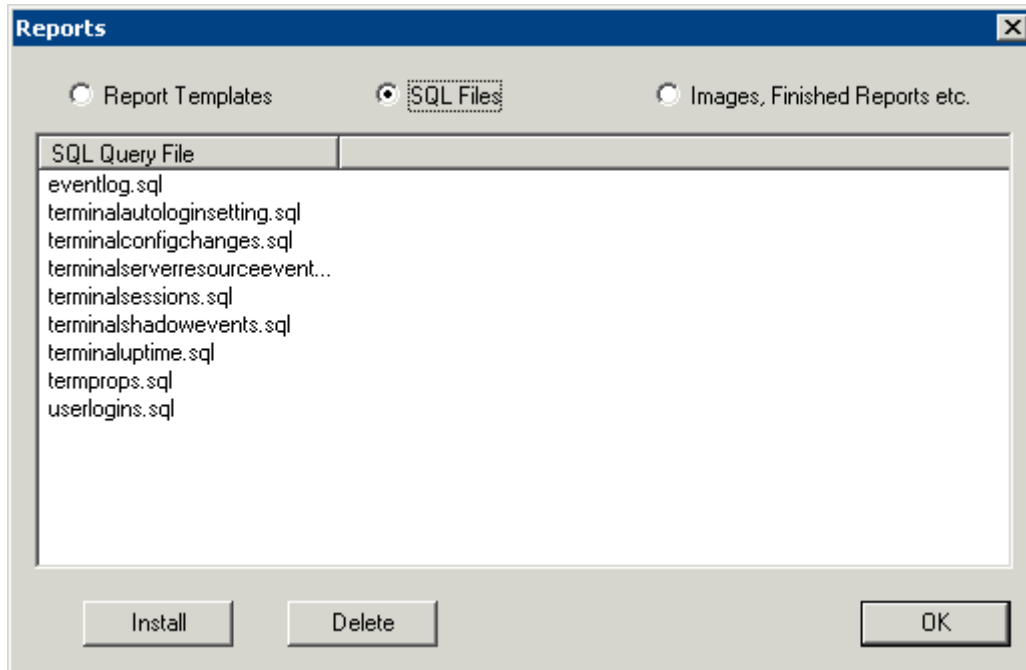
Selecting the **Report Template** radio button will display installed report templates. ThinManager installs a variety of templates. New templates can be downloaded from www.thinmanager.com.

Selecting the **Install** button will launch a file browser to install new templates. Selecting the **Delete** button will delete a highlighted report.



Open File Window

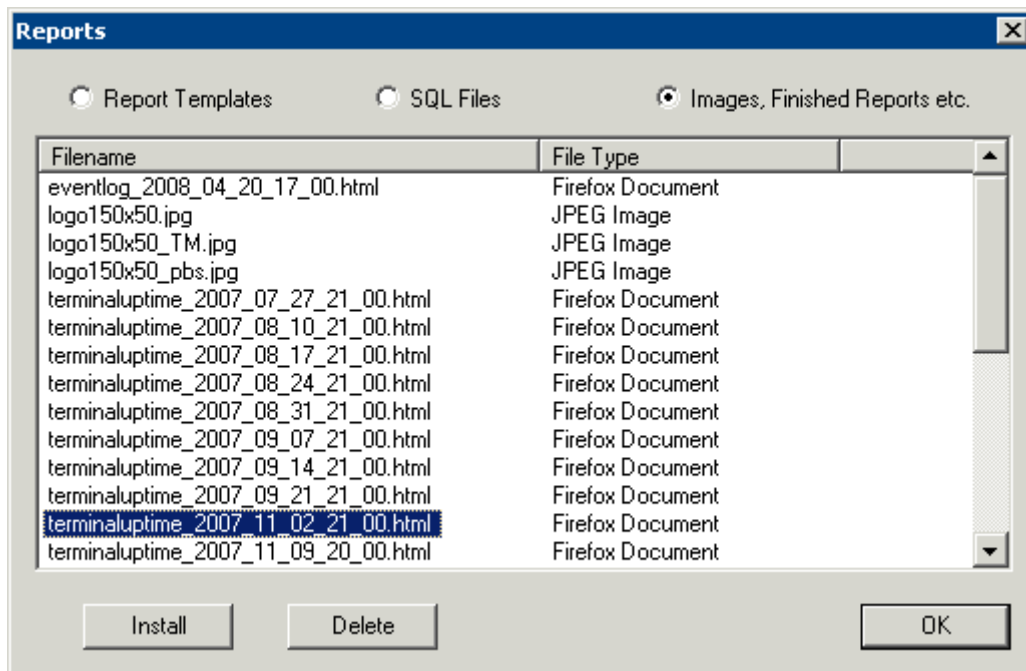
Navigated to the desired template, highlight the file, and select **Open**. This will install the template and close the file browser window.



Reports Window – SQL Files

Selecting the **SQL Files** radio button will display installed SQL queries. ThinManager installs a variety of SQL queries as companions to the report templates. New SQL queries for new reports can be downloaded from www.thinmanager.com.

Selecting the **Install** button will launch a file browser to install new SQL queries. Selecting the **Delete** button will delete a highlighted SQL query.



Reports Window – Images, Finished Reports, etc.

Selecting the **Images, Finished Reports, etc.** radio button will display installed images and reports.

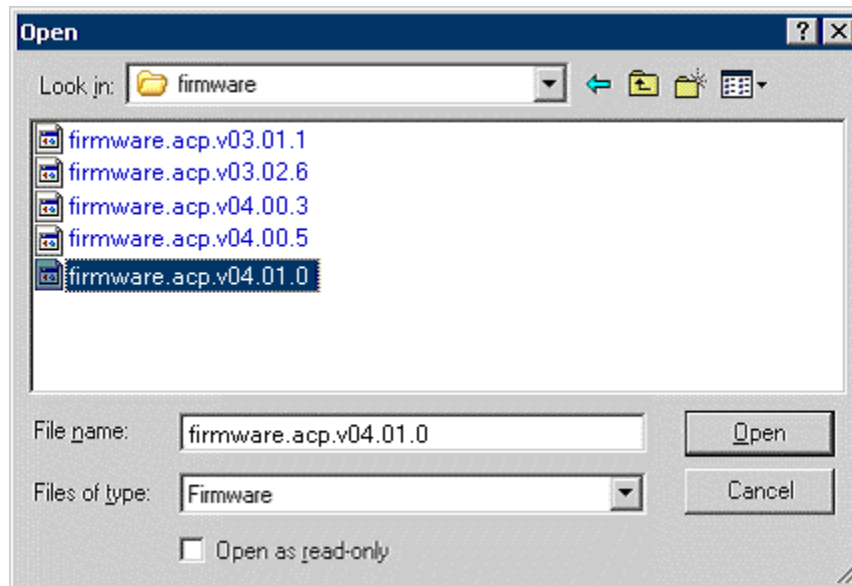
Selecting the **Install** button will launch a file browser to install new images. Selecting the **Delete** button will delete a highlighted image, report, or file. This is a handy way to delete older copies of backed up reports and configurations that were saved using the Scheduler. See System Schedule for details.

Selecting the **OK** button will close the **Reports** window.

7.3.4 Firmware

ThinManager allows the firmware for the thin client to be upgraded with the latest version from the ThinManager web site (www.thinmanager.com).

Select **Install > Firmware** to launch a file browser.

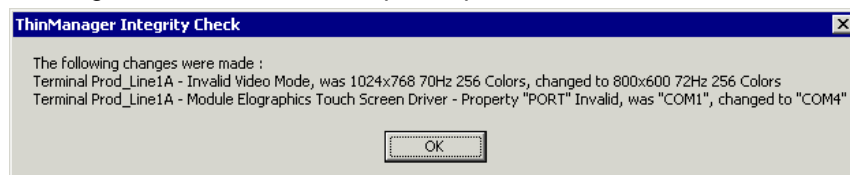


Install New Firmware

Select the new version of the **firmware.acp** and select **Open**. This will install the new version of the firmware. The thin clients will download the new version of firmware the next time they are rebooted.

7.3.5 TermCap Database

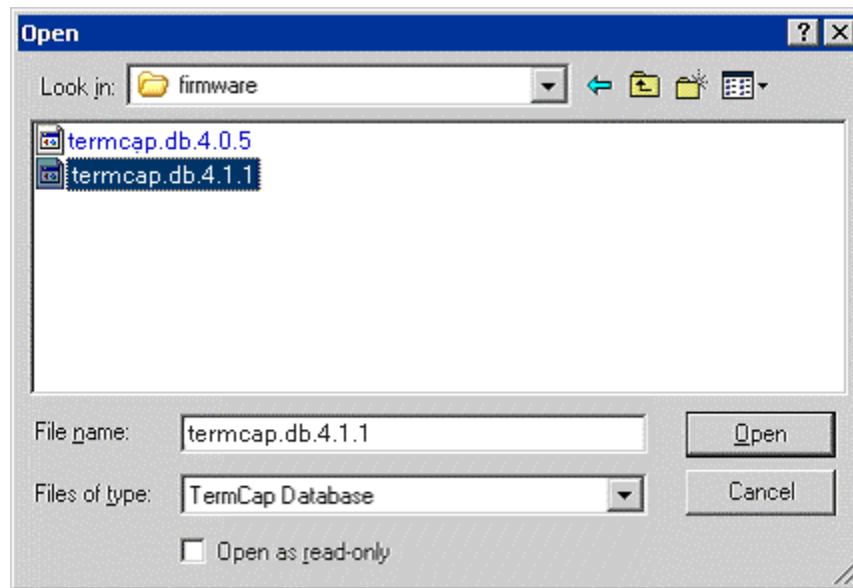
ThinManager has a **Terminal Capability Database (termcap.db)** that provides ThinManager with the configuration parameters for each thin client model. At each terminal connection, the TermCap database is checked and an integrity check is performed. If the configuration does not match the terminal specifications, ThinManager may reconfigure the terminal to acceptable parameters.



Terminal Capabilities Integrity Check

The Terminal Capability database can be updated with the current release from the ThinManager web site (www.thinmanager.com).

To update the Terminal Capabilities Database, select **Install > TermCap Database**.



Install New TermCap Database

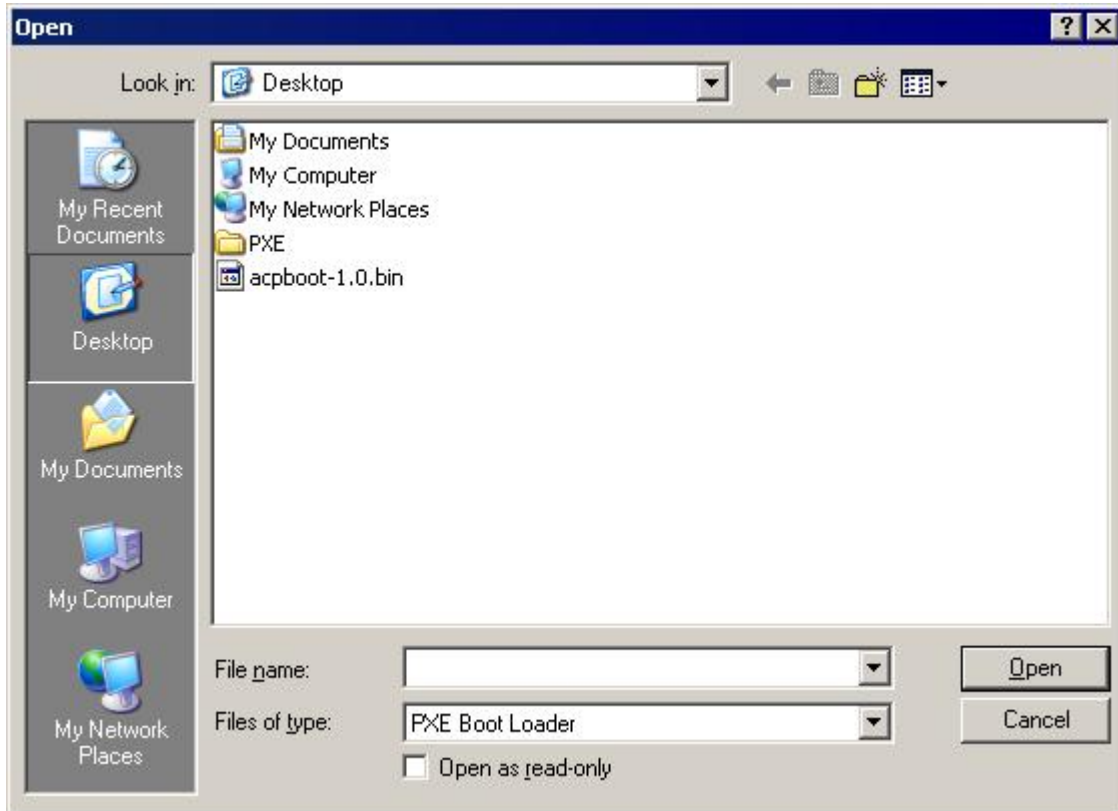
An **Open** dialog box will be launched.

Select the new version of the **termcap.db** and select the **Open** button. This will install the new version.

7.3.6 PXE Boot Loader

ThinManager uses a initially boots PXE thin clients from a boot file (**acpboot.bin**).

To install the PXE Boot Loader, select **Install > PXE Boot Loader**.



An **Open** dialog box will be launched.

Select the **acpboot.bin** file and select the **Open** button. This will install the file.

7.4 Tools

Tools contain commands that affect the terminals.

7.4.1 Restart Terminals

Tools > Restart Terminals will perform an intelligent restart of a terminal. It will load any changes to the configuration, modules, firmware, and reconnect them to the terminal server without cycling power to the terminal, unless it is needed to reload the firmware.

Note: Restarting a terminal does not close the session on the terminal server nor does it unlock a frozen session. It reloads changes independent of the session on the terminal server. It will reconnect to the same session without changing the session.

- Highlight a **terminal** in the ThinManager tree pane and select this command to restart a terminal.

- Highlight a **group** in the ThinManager tree pane and select this command to restart all the terminals of the group.
- Highlight a **ThinManager Server** in the ThinManager tree pane and select this command to restart all the terminals on the ThinManager Server.

7.4.2 Reboot Terminals

Tools > Reboot Terminals will cycle the power to the terminal, reloading the firmware and configuration, and reconnect it to the terminal server. The function of this command has been largely replaced by the ***Restart Terminal*** command.

Note: Rebooting a terminal does not close the session on the terminal server nor does it unlock a frozen session. It reboots and reloads the firmware and configuration independent of the session on the terminal server. It will reconnect to the same session without changing the session.

- Highlight a **terminal** in the ThinManager tree pane and select this command to reboot a terminal.
- Highlight a **group** in the ThinManager tree pane and select this command to reboot all the terminals of the group.
- Highlight a **ThinManager Server** in the ThinManager tree pane and select this command to reboot all the terminals on the ThinManager Server.

7.4.3 Reboot Terminal Server

Tools > Reboot Terminal Server will send a command to restart the highlighted terminal server.

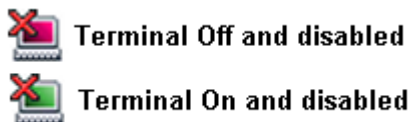
- Highlight a **terminal server** in the ThinManager tree pane and select this command to restart a terminal server.

Caution: ***Reboot Terminal Server*** will restart the terminal server and log off all sessions without giving users a chance to save their data. Use wisely.

7.4.4 Disable Terminals

The ***Disable Terminal*** command will disable any highlighted Group or Terminal by displaying a lockout screen. The terminal will wait until it is enabled with the ***Tools > Enable Terminal*** function to be functional again. This allows terminals to be locked down for security reasons, or to prevent the terminals from accessing the terminal servers.

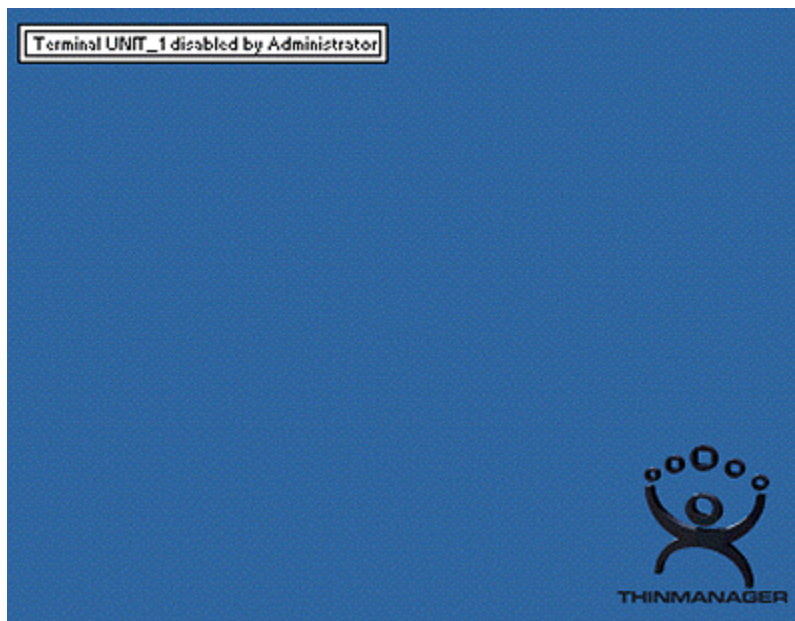
Highlighting a Terminal Server, or Group in the ThinManager tree and selecting ***Tools > Disable Terminal*** will disable every terminal assigned to it.



Disabled Terminal Icons

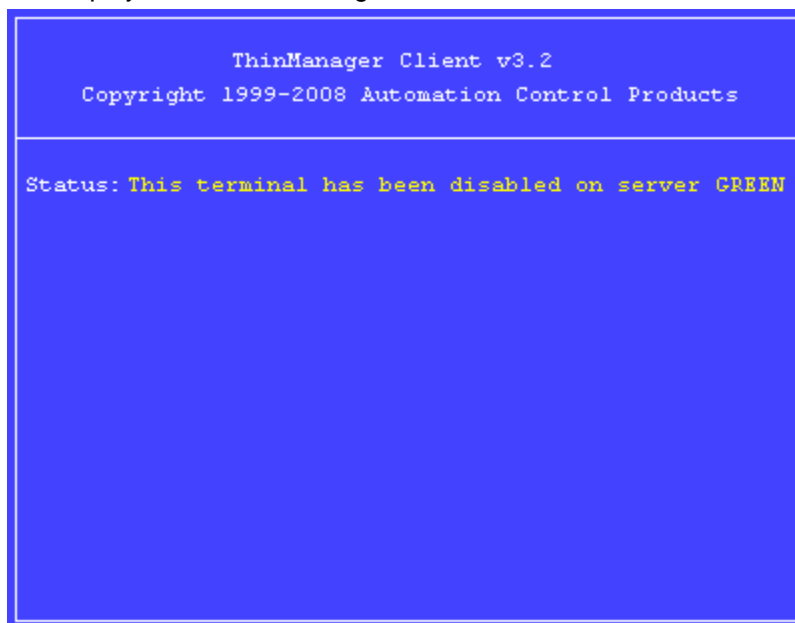
If a Group or Terminal is disabled using the ***Tools > Disable*** function, it will be displayed with a red **X** over the terminal icon. An entire ThinManager Server or an entire Group can be disabled, but only the terminal icons will show the **X**, not the ThinManager Server icon or the Group icons.

Once a terminal is disabled, a disabling screen will appear on the terminal until the terminal has been enabled.



Disabled Terminal Screen – Logged On

A logged on terminal will display a screen indicating that the terminal is disabled.



Disabled Boot Screen

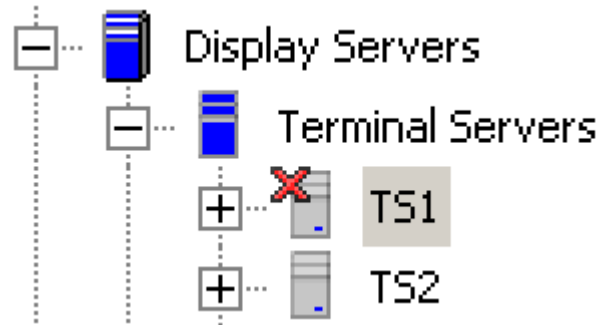
Terminals that are booted while disabled will halt on a blue screen indicating that the terminal is disabled.

7.4.5 Enable Terminals

The **Enable Terminal** command will remove the disabling from a highlighted Group or terminal and allow it to continue functioning or resume the boot process.

7.4.6 Disable Terminal Server

The **Disable Terminal Server** command will disable all connections from the selected terminal server to all thin clients logged onto that server. The sessions will be disconnected but not reset.



Disabled Terminal Servers

This is useful in updating terminal servers. Clients can be disconnected and have their sessions logged off, allowing the server can be updated. Once it is updated in can be enabled to allow client to connect to it again.

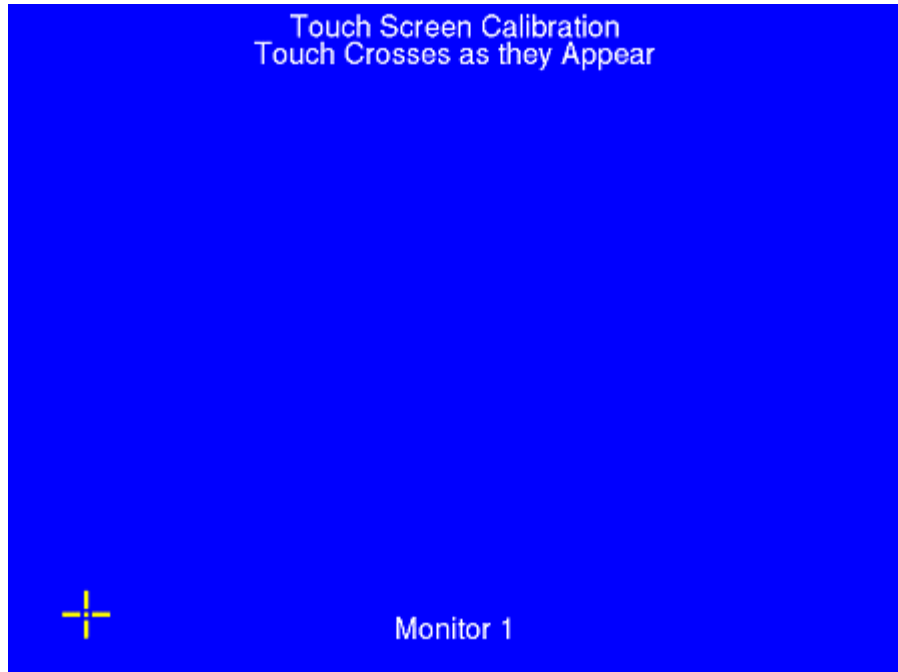
7.4.7 Enable Terminal Server

The **Enable Terminal Server** command will enable a disabled terminal server to allow connections from thin clients.

7.4.8 Calibrate Touch Screen

ThinManager has a touch screen configuration utility that can calibrate a thin client touch screen. The utility can be started three ways:

- On the thin client, select **Start > Program Files > Automation Control Products > Calibrate Touch Screen** (or **Start > Program Files > Acp > CalTouchScreen**). This is useful because it allows the operator to calibrate the touch screen without administrative support.
- On the ThinManager Server, highlight the desired terminal in ThinManager and select **Tools > Calibrate Touch Screen** from the menu bar. This will launch the calibration on the selected terminal.
- The **Calibration Touch Down Time (seconds)** setting on the touch screen module will allow the calibration to be triggered by holding a finger on the touch screen for the amount of time set in the parameter. See Touch Screen Modules for details.
- The **TermMon ActiveX** can be configured to launch the calibration program. See TermMon ActiveX Control for details.



Touch Screen Calibration Screen

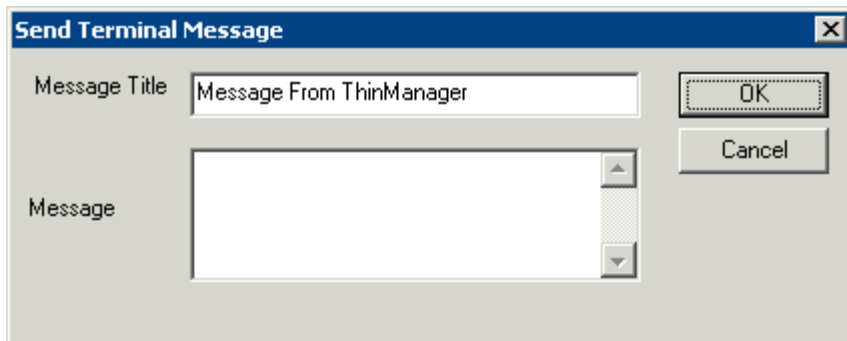
A new touch screen calibration program was released with ThinManager 2.6 and is included in the 2.6 and later touch screen modules. When the calibration is run, a “+” appears in the lower left. Touch the center of the + and then touch the center of the other four +s as they appear. This provides touch screen mapping for the terminal.

Note: The touch screen module must first be added through the Module page in the Terminal Configuration wizard.

To launch the calibration program from the **Start** menu from within the session requires that the ThinManager Utilities be installed on each terminal server. See Standard ThinManager Installation in Windows for details.

7.4.9 Send Message

Send Message will send a message to a highlighted terminal.



Send Message Window

Enter the message into the Message text box. The **Message Title** can be changed, if desired.

Select the **OK** button to send or the **Cancel** button to cancel.



Send Message Window

When a message is sent, an ACP splash screen will be displayed with the message until the message is acknowledged.

7.4.10 Clear Event Log

Selecting Clear Event Log will clear the event log. The event log is configured the **ThinManager Server Configuration Wizard** that is launched by double-clicking on the ThinManager in the tree or highlighting the ThinManager and selecting **Edit > Modify** from the menu.

7.5 View

7.5.1 Status Bar

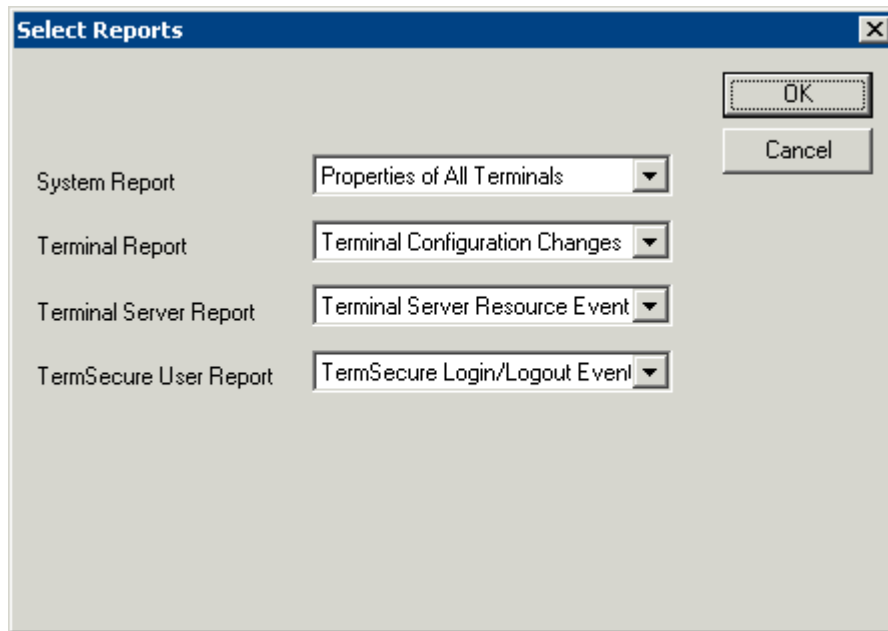
The **Status Bar** shows advice and comments on the bottom of the **ThinManager** window. When the **Status Bar** command is checked, the **Status Bar** text is visible. When the **Status Bar** command is unchecked, the **Status Bar** text is invisible.

7.5.2 Show Connected Only

View > Show Connected Only, if checked, will simplify the tree by removing unconnected terminals, terminal servers and terminal server groups.

7.5.3 Reports (Selection)

View > Reports will open the **Select Reports** window.



Select Reports Window

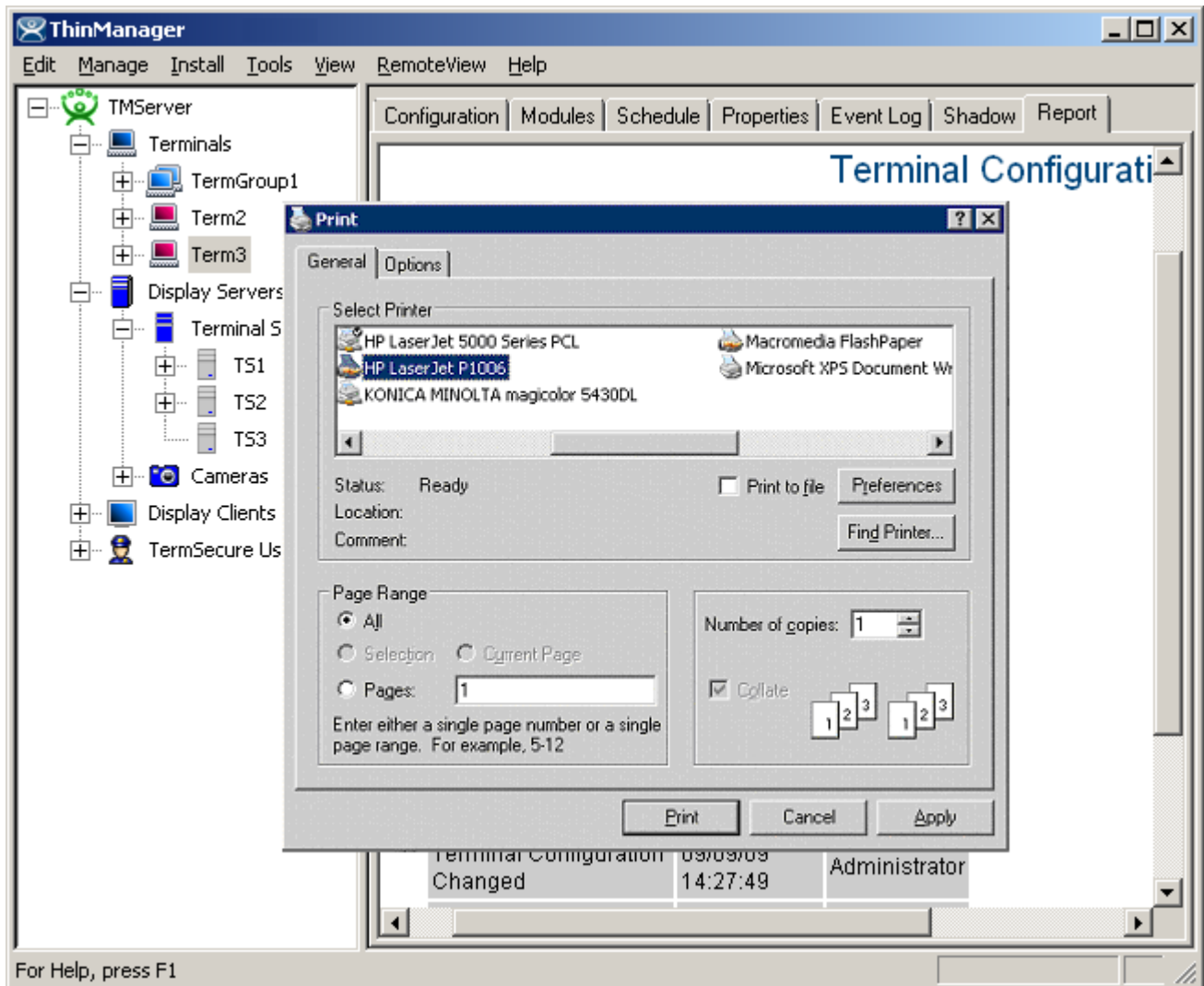
The Select Reports window allows the selection of the default report that will display when the Report tab is selected for a ThinManager Server, terminal, terminal server, or TermSecure user.

The default reports can be changed by selecting a different report in the drop-down boxes.

See Reports for details.

7.5.4 Print

View > Print will print the highlighted tab of the Details pane..

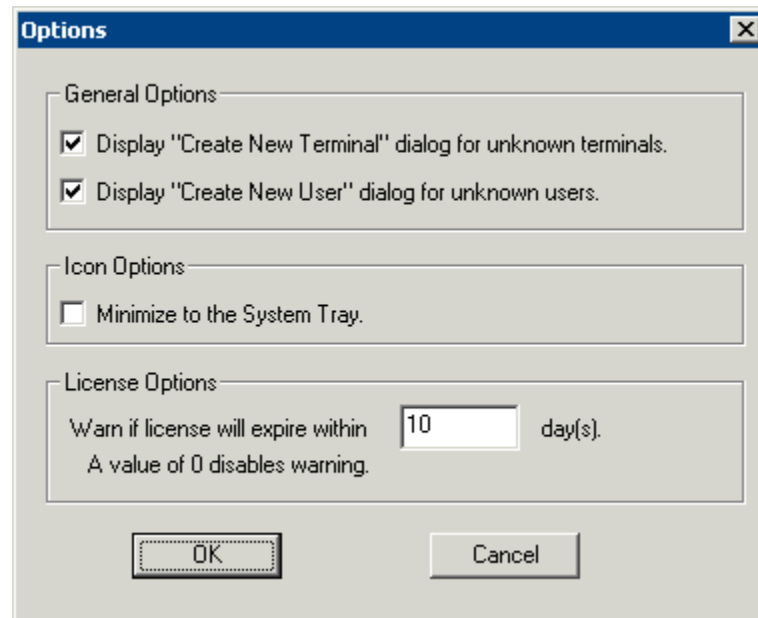


Print Reports

A **Print** dialog box will appear to allow the selection of the printer and the desired number of copies.

7.5.5 Options

Selecting **Options** will launch the Options dialog box.



Options

The **Display “Create New Terminal” dialog for unknown terminals** check box, if selected, will launch the **Terminal Configuration Wizard** on the ThinManager Server when a new terminal is added.

The **Display “Create New User” dialog for unknown users** check box, if selected, will launch the **TermSecure User Configuration Wizard** on the ThinManager Server when an unknown ID device (USB key or ID card) is read by a terminal.

Note: Checking the **Display “Create New User” dialog for unknown users** check box is useful for assigning ID cards to TermSecure Users. See Card and Badge Configuration for a TermSecure User for details.

The **Minimize to the System Tray** checkbox will send the ThinManager icon in the system tray when ThinManager is minimized.

Warn if license will expire within ___ day(s) will set the warning period before license expiration. This is useful for time-limited demonstration and Trialware licenses.

7.6 RemoteView

7.6.1 Interactive Shadow

Interactive Shadow, if checked, allows Administrators and members of the ThinManager Security Groups that have interactive shadow permissions to interact and control a shadowed terminal session. If this value is unchecked the sessions will be viewable, but observers cannot take control of the session.

7.6.2 Scaled to Window

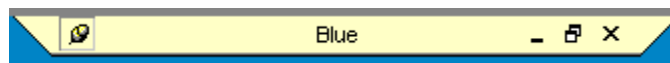
Scaled to Windows, if checked, will scale the shadowed terminal session to fit the Details pane of ThinManager. If this value is unchecked the session will be viewed regular-sized, requiring the use of scroll bars to view portions of the screen.

7.6.3 Go FullScreen

This allows the connection from the **Connect** tab on ThinManager to the terminal server to be displayed full screen instead of in a window in ThinManager.

This session can be switched to full-screen by selecting **RemoteView > Go FullScreen** in the menu. This changes the appearance from running from within a window to running as a desktop.

The full screen session will have a tool tab at the top of the screen with controls that allow the window to be switched back to the window or to close the connection.



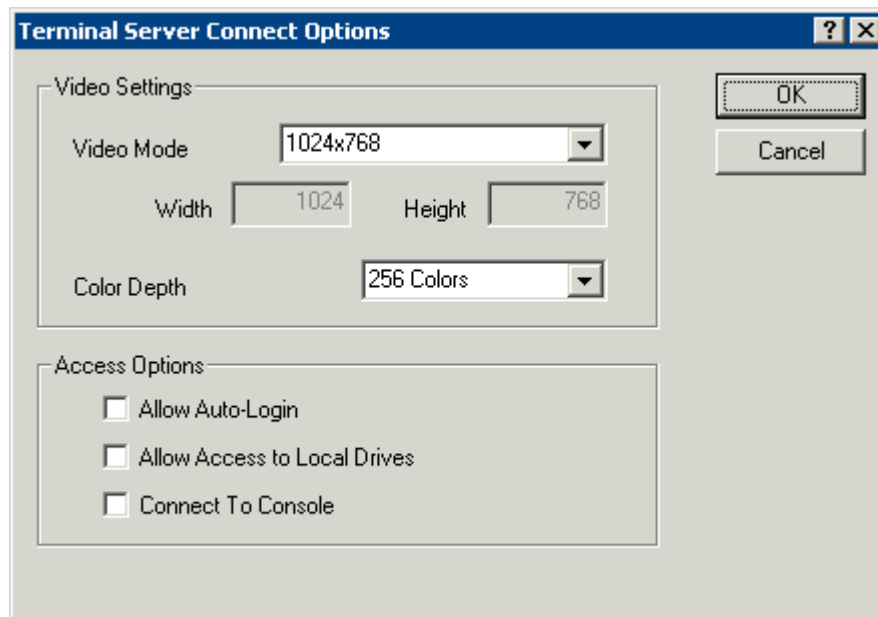
Remote Session Tool Bar

The standard Minimize, Maximize, and Close icons on the Remote Session Tool Bar allow control over the session.

The hot keys of **CTL+ALT+BREAK** will allow you to switch to full screen mode or to exit full screen mode.

7.6.4 Connect Options

Selecting **RemoteView > Connect Options** will launch the Terminal Server Connect Options window that allows the terminal server **Remote View** connection to be configured.



Terminal Server Connect Options

The **Video Settings** include:

- **Video Mode** – This allows the connection to be displayed at a specific resolution or as full screen.

- **Width** – This allows the connection to be displayed at a specific width if the **Video Mode** is set to **Custom**.
- **Height** – This allows the connection to be displayed at a specific height if the **Video Mode** is set to **Custom**.
- **Color Depth** - This allows the connection to be displayed at a specific color depth. Windows 2003 is required for high-color.

The **Access Options** include:

- **Allow Auto-Login** – This allows the connection to login without prompting when checked. It will use the login information that is entered on the **Terminal Server Name** page of the **Terminal Server Wizard**.
- **Allow Access to Local Drives** – This allows the user to access the hard drive on the remote computer from the remote connection.
- **Connect To Console** – This allows the ThinManager user to capture the console session for display through ThinManager instead of starting a new session on the terminal server.

7.6.5 Send Key

Send Key allows the sending of key commands to the shadowed session that are normally saved for the local machine and don't function in shadowing. These include:

- **CTLL+ALT+DEL**
- **CTL+ESC**
- **ALT+Tab**
- **ALT+Shift+Tab**
- **ALT+ESC**
- **ALT+Space.**

Select **RemoteView > Send Key** and the desired key combination to send the key command to the shadowed session.

Note: The Key Block module will block this command if it is used on the terminal. See Key Block Module for details.

7.7 Help

7.7.1 Help Topics

Selecting **Help Topics** will launch the ThinManager Help file. This file can also be launched by selecting **F1** while using ThinManager.

7.7.2 About ThinManager

Selecting **About ThinManager** will display a dialog box with ThinManager version information, copyright information, and contact information for ThinManager.

7.8 Right Click Menus in the Tree Pane

7.8.1 Right Click on the ThinManager Server Icon

- **Reconnect** - This causes the ThinServer service to try to reconnect to the highlighted ThinManager Server.
- **Modify** - This launches the **ThinManager Server Configuration Wizard** to configure the highlighted ThinManager Server.
- **Remove** - This removes the highlighted ThinManager Server from the tree. It does not remove any configuration or uninstall the program.

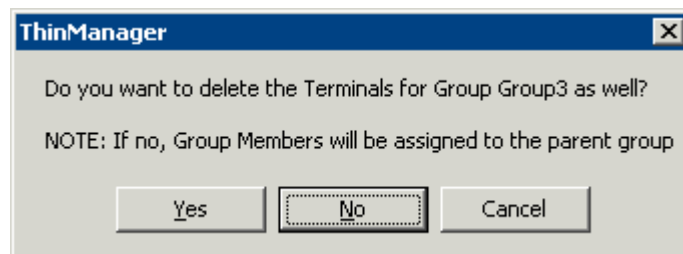
See Add ThinManager Server for details.

7.8.2 Right Click on the Terminals Branch Icon

- **Add Terminal** - This launches the **Terminal Configuration Wizard** to create a terminal.
- **Add Group** - This launches the **Terminal Group Configuration Wizard** to create a group.
- **Restart Terminals** - This sends a signal to all the terminals to reload any changes to its configuration, modules, or firmware. It will only do a full reboot if needed.

7.8.3 Right Click on a Terminal Group Icon

- **Add Terminal** - This launches the **Terminal Configuration Wizard** to create a terminal in the group.
- **Add Group** - This launches the **Terminal Group Configuration Wizard** to create a group.
- **Restart Terminals** - This sends a signal to all the terminals under the highlighted icon to reload any changes to its configuration, modules, or firmware. It will only do a full reboot if needed.
- **Modify** - This launches the **Terminal Group Configuration Wizard** to configure the highlighted group.
- **Rename** - This allows the Group to be renamed.
- **Delete** - This removes the Group from the ThinManager configuration. Member terminals can be deleted with the group, or moved out of the group, depending on the choice in the confirmation window.



Delete Group confirmation Window

Selecting **Yes** will delete the Group and all member terminals.

Selecting **No** will delete only the group. The member terminals will be moved out of the group and retain their configuration as individuals.

Selecting **Cancel** will stop the process and allow the group to remain as it is.

7.8.4 Right Click on a Terminal Icon

- **Modify** - This launches the **Terminal Configuration Wizard** to configure the highlighted terminal.
- **Rename** - This allows the terminal to be renamed.
- **Delete** - This removes the terminal from the ThinManager configuration.
- **Go to TermSecure User** - This changes the focus of the tree to the TermSecure User that is logged into the terminal.
- **Restart Terminal** - This sends a signal to the terminal to reload any changes to the configuration, modules, or firmware. It will only do a full reboot if needed.

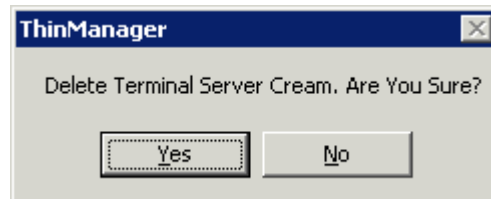
7.8.5 Right Click on the Display Servers Terminal Servers Branch Icon

- **Add Terminal Server** - This launches the **Terminal Server Wizard** to create and configure a new terminal server.
- **Edit Terminal Server** - This launches the **Terminal Server List Wizard** to allow the configuration of an existing terminal server.

See Terminal Services Display Servers for details

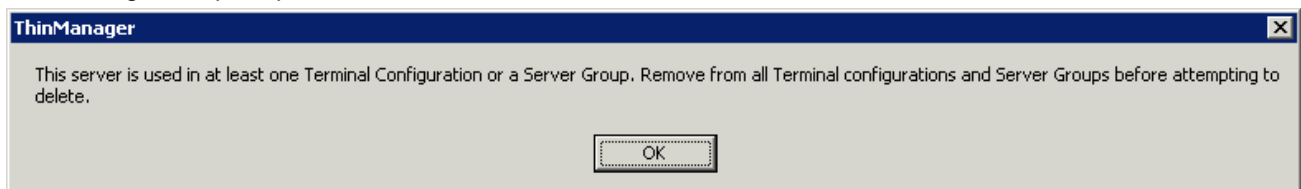
7.8.6 Right Click on a Terminal Server Icon

- **Modify** - This launches the **Terminal Server Configuration Wizard** to allow changes to the configuration of the highlighted terminal server.
- **Rename** - This allows the terminal server to be renamed.
- **Delete** - This removes the terminal server from the ThinManager configuration.



Terminal Server Deletion Confirmation

ThinManager will prompt for confirmation before deletion.



Terminal Server Deletion Error

A terminal server cannot be deleted from a configuration if it still has terminals assigned to it.

- **Restart Terminals** - This sends a signal to the terminal to reload any changes to all terminals connected to the terminal server. It will only do a full reboot if needed.

7.8.7 Right Click on the VCenter Servers Branch Icon

The branches of the VCenter Server tree have various right-click menus:

- **VCenter Servers:**
 - **Add vCenter Server** – Launches the **VCenter Server Property Wizard** to allow a VCenter Server to be defined.
- **Defined VCenter Servers:**
 - **Remove** – Removes the defined VCenter Server.
- **Imported Datacenter:**
 - **Rename** – Allows you to rename the datacenter.
 - **Delete** – Allows you to delete the datacenter.
- **Virtual Machine:**
 - **Power Operations:**
 - **Power On** – Turns on a stopped or suspended virtual machine.
 - **Power Off** – Turns off a stopped or suspended virtual machine.
 - **Suspend** – Suspends a running virtual machine and stores the state.
 - **Reset** – Cycles power to the virtual machine to restart the virtual machine.
 - **Snapshot:**
 - **Take Snapshot** – Captures and stores the state of the virtual machine.
 - **Revert to Current Snapshot** – Reapplies the stored state of a previously saved virtual machine.
 - **Snapshot Manager** – Launches the Snapshot management tool.
 - **Rename** – Allows the virtual machine to be renamed.
 - **Remove from Inventory** – Removes the virtual machine from the tree without deleting the files.
 - **Delete** – Removes the virtual machine from the tree AND deletes the file system.

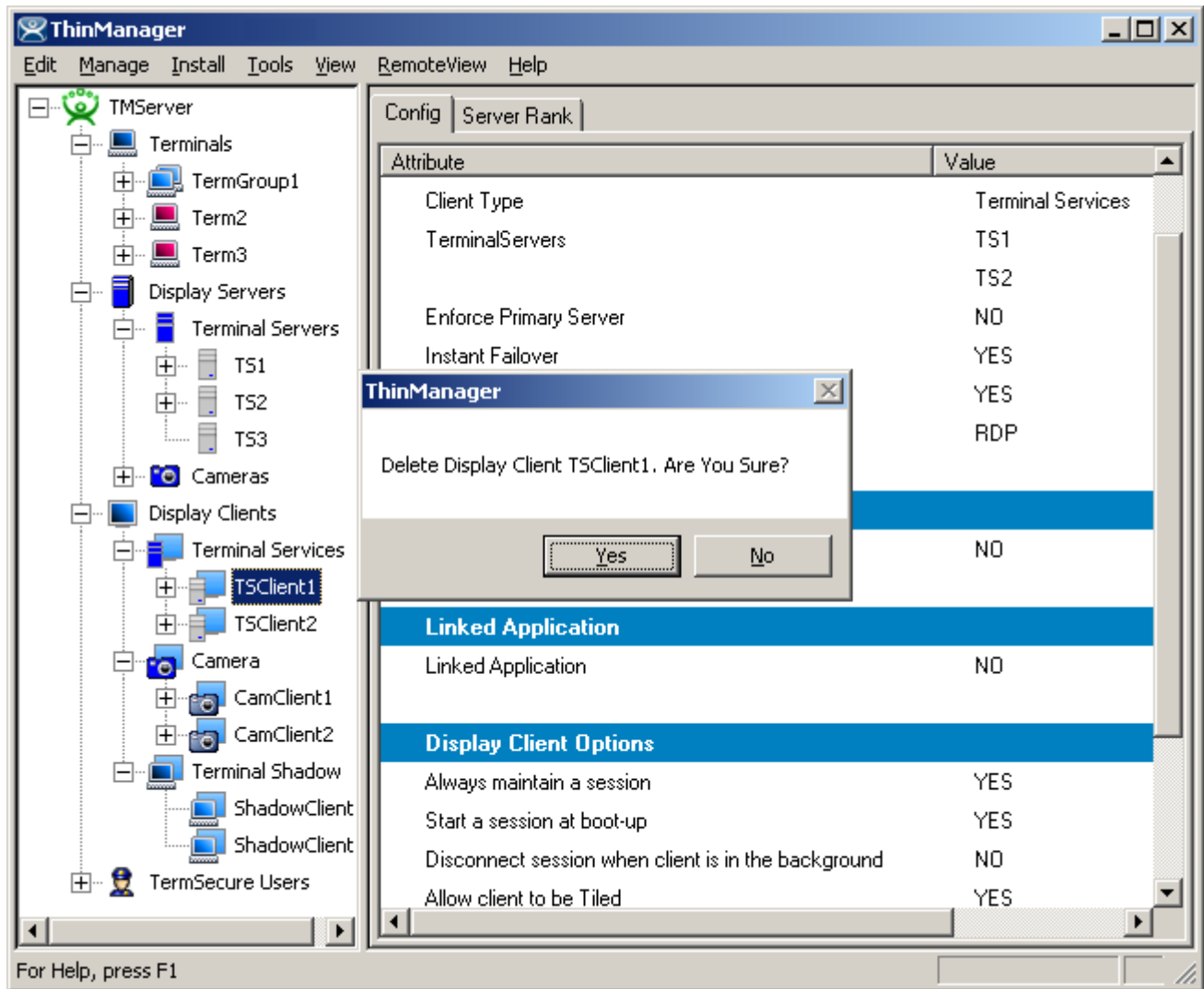
7.8.8 Right Click on the Display Client Branch Icon

- **Add Display Client**- This launches the **Display Client Wizard** to create and configure a new Display Client.
- **Edit Display Client**- This launches the **Display Client List** to allow the configuration of an existing Display Client.

See Display Client List for details.

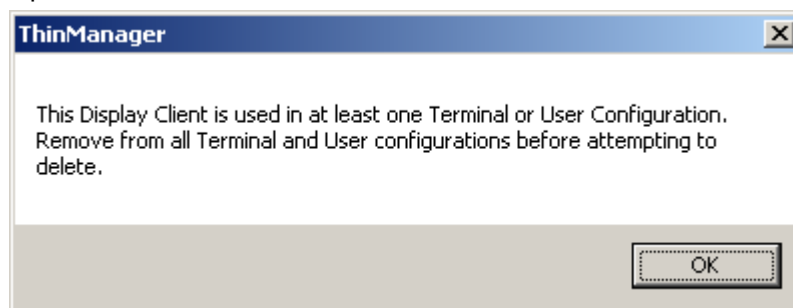
7.8.9 Right Click on a Display Client Member Icon

- **Modify** - This launches the **Display Client Configuration Wizard** to allow changes to the configuration of the highlighted Display Client.
- **Rename** - This allows the Display Client to be renamed.
- **Delete** - This removes the Display Client from the ThinManager configuration.



Terminal Services Display Client Deletion Confirmation

ThinManager will prompt for confirmation before deletion.



Display Client Deletion Error

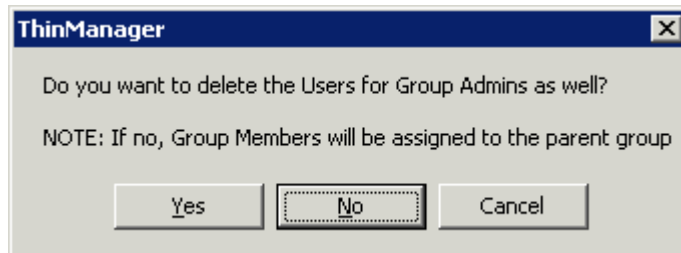
A Display Client cannot be deleted from a configuration if it still has terminals assigned to it.

7.8.10 Right Click on the TermSecure Users Branch

- **Add TermSecure User** – This launches the **TermSecure User Configuration Wizard** to allow a TermSecure User to be defined.
- **Add TermSecure User Group** – This launches the **TermSecure User Group Configuration Wizard** to allow a TermSecure User Group to be defined.

7.8.11 Right Click on a TermSecure Users Group Icon

- **Add TermSecure User** – This launches the **TermSecure User Configuration Wizard** to allow a TermSecure User to be defined.
- **Add TermSecure User Group** – This launches the **TermSecure User Group Configuration Wizard** to allow a TermSecure User Group to be defined.
- **Modify** - This launches the **TermSecure User Group Configuration Wizard** to allow changes to the configuration of the highlighted TermSecure User Group.
- **Rename** - This allows the TermSecure User Group to be renamed.
- **Delete** - This will remove the TermSecure User Group from the ThinManager configuration. Members can be deleted with the group or moved out of the group, depending on the choice in the confirmation window.



Delete Group confirmation Window

Selecting **Yes** will delete the Group and all members.

Selecting **No** will delete only the group. The members will be moved out of the group and retain their configuration as individuals.

Selecting **Cancel** will stop the process and allow the group to remain as it is.

7.8.12 Right Click on a TermSecure Users Icon

- **Modify** - This launches the **TermSecure User Configuration Wizard** to allow changes to the configuration of the highlighted TermSecure User.
- **Rename** - This allows the TermSecure User to be renamed.
- **Delete** - This removes the TermSecure User from the ThinManager configuration.
- **Logoff User** – This logs the TermSecure User out the terminal that it is currently logged into.
- **Go to Terminal** - This changes the focus of the tree to the terminal that the TermSecure User is logged into.

8 Adding Thin Client Hardware

8.1 The Boot Process

There are two methods that an ACP Enabled thin client can use to boot. The standard method is to connect to a ThinManager Server and download the firmware and its configuration across the network. This allows for an easy update of the firmware and ensures that all the terminals share the same firmware. Embedded ThinManager Ready thin clients have the firmware embedded in them on a compact flash or disk-on-chip and boot locally then connect to a ThinManager Server to download its configuration. See Firmware Update (Disk On Chip / Compact Flash) Update Module for details.

A ThinManager Ready thin client goes through a number of steps from the initial power on to the complete connection to a terminal server. Understanding this process will aid in terminal configuration and troubleshooting.

The steps are:

1. **POST:** Once a ThinManager Ready thin client is turned on it begins the **Power On Self-Test** to examine the hardware and to test the memory.
2. **IP Address Assignment:** The terminal needs an IP address to connect to the network. By default, it receives an IP Address from a DHCP server, but this can be changed to use an assigned static IP. See IP Address Assignment for details.
3. **ThinManager Server Connection:** After receiving an IP address the terminal will connect to the ThinManager Server. This is the Boot Server Host as defined in the DHCP scope Option 066 or the Primary ThinManager Server defined in the static IP address configuration.
4. **Firmware Loading:** Next the terminal will download the firmware from the ThinManager Server.
5. **Terminal Configuration Download:** Established terminals will receive their configuration and proceed. New terminals will need to be defined on the ThinManager Server, either through the Terminal Configuration Wizard or the Create New Terminal method.
6. **ACP ThinManager Logo Screen:** After the terminal receives its configuration, it will display an ACP splash screen with the ThinManager logo.
7. **Client Communication Connection:** Next the terminal will launch its Client Communication protocol.
8. **Terminal Server Connection:** The thin client will connect to the terminal server(s) that it is assigned to in its configuration.
9. **Windows Login:** Next the terminal will display the Windows Login dialog box, prompting for a valid username and password. If these have been entered into the username and password fields on the Terminal Configuration Wizard of ThinManager, the terminal will login automatically and display the Windows desktop or a defined initial program.

Note: Windows 2000 prevents auto-login with RDP by default. To allow auto-login see RDP-tcp Login Settings for details.

Windows Session: The terminal logs onto a session on terminal server. The terminal will pass mouse clicks and keystrokes to the session on the terminal server. The terminal server will process the data and send the graphics back to the terminal for display, giving a full Windows experience to the user.

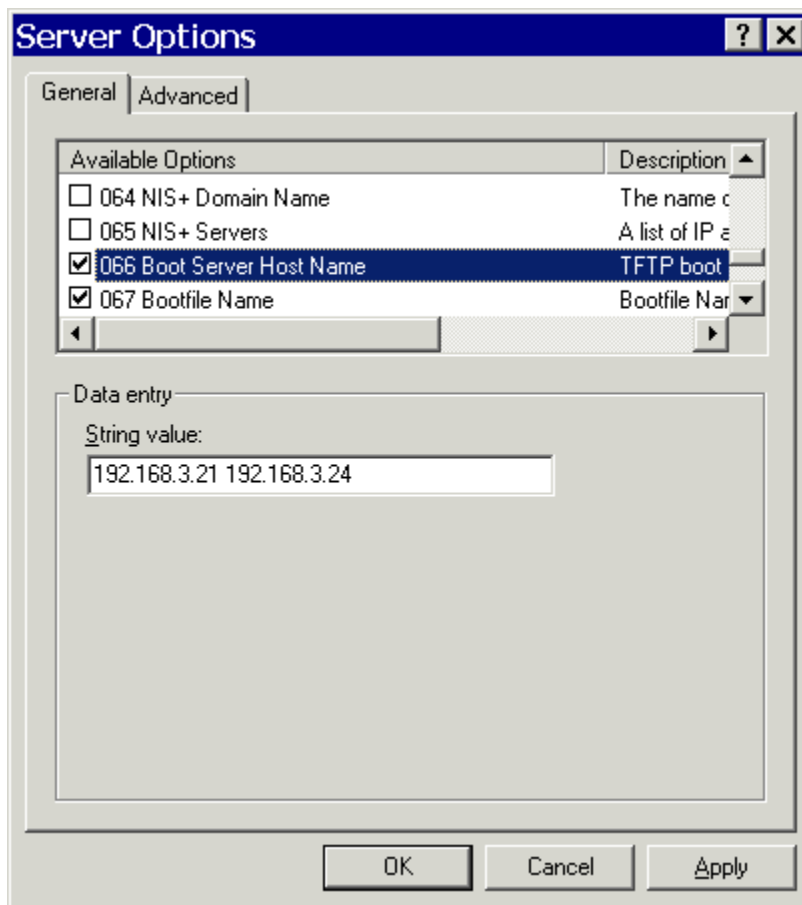
8.2 IP Address Assignment

ThinManager Ready thin clients are set by default to automatically receive an IP address from a DHCP server. Most ThinManager Ready thin clients may use a manually assigned Static IP address instead.

Note: The ThinAdapter and ThinAdapter Plus require DHCP.

8.2.1 DHCP

ThinManager Ready thin clients are set to use **DHCP** (Dynamic Host Configuration Protocol) by default. The DHCP Server needs two options configured for ThinManager Ready thin clients.



DHCP Options

Option 066 - Boot Server Host Name must be set to the IP address of the ThinManager Server. If redundant ThinManager Servers are being used, the IP addresses of multiple ThinManager Servers can be entered, separated with a space.

Option 067 - Bootfile Name must be set to **firmware.acp**.

Details are at DHCP Server Setup for details.

ThinManager Ready thin clients use DHCP (Dynamic Host Configuration Protocol) by default. If they have been set to use a static IP they can be reset to DHCP from static IP by pressing **any key** when prompted during the boot sequence to open the IP Configuration Menu.

```
ACP Network Boot Loader v4.5
Copyright 1999-2003 Automation Control Products

IP Configuration Menu
(A) Terminal IP Address 192.168.3.115
(B) Primary ThinManager Server IP Address = 192.168.3.11
(C) Secondary ThinManager Server IP Address = 192.168.3.12
(D) Router IP Address = 0.0.0.0
(E) Subnet Mask = 255.255.255.0
(F) Password Status : Disabled
(H) Help
(Q) Abort Changes and Exit
(S) Save Changes and Exit
Enter new Terminal IP Address
Enter 'D' for DHCP or Static IP as X.X.X.X : D
```

IP Configuration Menu - DHCP

Press the **A** key to allow a change to DHCP and enter **D** key to set the configuration to DHCP. Press the **Enter** key to return to main menu.

Press the **S** key to save the configuration and continue with the boot process.

```
ACP Network Boot Loader v4.5
Copyright 1999-2003 Automation Control Products

Status: Connecting to ThinManager Server 192.168.3.11

Terminal IP Information
IP Method : DHCP
Terminal IP : 192.168.3.173
Primary ThinManager Server : 192.168.3.11
SecondaryThinManager Server : 192.168.3.12
Router : 192.168.3.36

Download Progress Meter
```

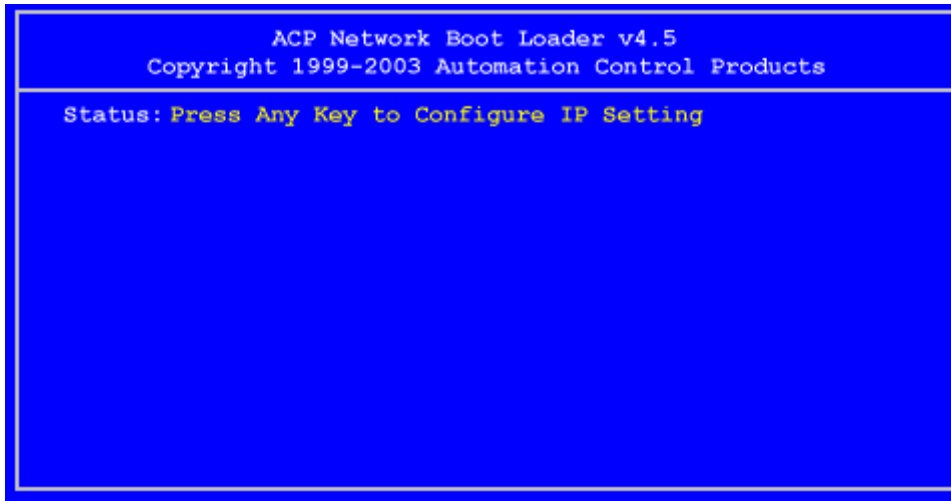
Boot Process - Firmware Download

The terminal will connect to the ThinManager Server and download the firmware.

The download bar will be purple if the terminal is using Multicast during the download. See MultiCast Configuration Page for details.

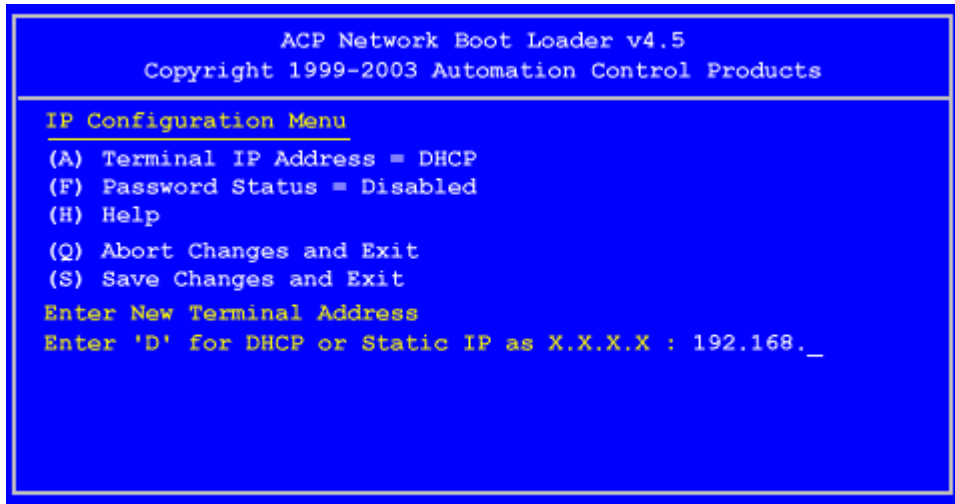
8.2.2 Static IP

Most models of ThinManager Ready thin clients allow the usage of static IPs. These are set by interrupting the boot process to launch the IP Configuration Menu and adding the static IPs.



Boot Process - Press Any Key Prompt

To set the terminal to use a static IP, press **any key** at the appropriate moment of the boot sequence.



IP Configuration Menu – Static IP

Press the **A** to allow the client IP to change from DHCP.

Type in the static IP address for the client, including the separating periods and press the **Enter** key.

```
ACP Network Boot Loader v4.5
Copyright 1999-2003 Automation Control Products

IP Configuration Menu
(A) Terminal IP Address 192.168.3.115
(B) Primary ThinManager Server IP Address = 192.168.3.11
(C) Secondary ThinManager Server IP Address = 192.168.3.12
(D) Router IP Address = 0.0.0.0
(E) Subnet Mask = 255.255.255.0
(F) Password Status : Disabled
(H) Help
(Q) Abort Changes and Exit
(S) Save Changes and Exit
Enter new Terminal IP Address
Enter 'D' for DHCP or Static IP as X.X.X.X : D
```

IP Configuration Menu - Options

Once the Terminal has a static IP assigned, the IP Configuration Menu will be shown to allow the setting of other values.

- **(A) Terminal IP Address** - This should be a unique address for the terminal.
- **(B) Primary ThinManager Server IP Address** - This should be the unique address for your main ThinManager Server.
- **(C) Secondary ThinManager Server IP Address** - The Secondary ThinManager field allows the terminal to use two ThinManager Servers. If the terminal cannot connect to the Primary ThinManager Server, it will connect to the Secondary ThinManager Server to receive its configuration. If you are not using a Secondary ThinManager Server, set the IP address to 0.0.0.0.
- **(D) Router IP Address** - Fill in the IP address of the router or gateway if one is being used. If not this should be set to 0.0.0.0.
- **(E) Subnet Mask** - Set this to your subnet mask. 255.255.255.0. is a standard setting.
- **(F) Password Status** - Allows a password to be set to prevent unauthorized people from changing the configuration.
- **(H) Help** - Will launch a Help to explain the IP Configuration Menu.
- **(Q) Abort Changes and Exit** - This will cancel any setting changes and let the terminal continue to boot with the old settings.
- **(S) Save Changes and Exit** - This will apply any changes and allow the terminal to continue to boot with the new settings.

Type the letter of the desired setting and type the IP address, with periods. Press the **Enter** key on the keyboard to accept each change.

Once configured the terminal will connect to the ThinManager Server and download the firmware and configuration.

8.2.3 Hybrid IP Addressing

ThinManager Ready thin clients that have BootROM version 5.01 or later have the ability to use DHCP for the client IP address and have the ThinManager Server IP addresses entered as static IPs to save having to configure the DHCP server with Option 066.

Selecting any key when prompted during bootup opens the IP Configuration Menu.

```
ACP Network Boot Loader v5.01
Copyright 1999-2004 Automation Control Products

IP Configuration Menu
(A) Terminal IP Address = DHCP
(B) Primary ThinManager Server IP Address = DHCP (Option 66)
    Secondary ThinManager Server IP Address = DHCP (Option 66)
(F) Password Status : Disabled
(G) Load Default Values
(H) Help

(O) Abort Changes and Exit
(S) Save Changes and Exit
Select Letter :
```

Boot Loader v5.01 Default Values

Typing the **B** key will allow the configuration of a static IP for the ThinManager Server. Type the numbers and periods for the address.

```
ACP Network Boot Loader v5.01
Copyright 1999-2004 Automation Control Products

IP Configuration Menu
(A) Terminal IP Address = DHCP
(B) Primary ThinManager Server IP Address = 192.168.3.11
(C) Secondary ThinManager Server IP Address = 192.168.3.12
(F) Password Status = Disabled
(G) Load Default Values
(H) Help

(O) Abort Changes and Exit
(S) Save Changes and Exit
Select Letter :
```

DHCP with Static ThinManager Server

Once a ThinManager Server is assigned, typing **C** will allow a redundant secondary ThinManager Server to be assigned.

Type **S** to save the changes and allow the connection to the ThinManager Server. The terminal will now boot using DHCP.

Note: The Escape key will let you exit the entry field and return to the IP Configuration Menu.

8.3 Configuring New Hardware

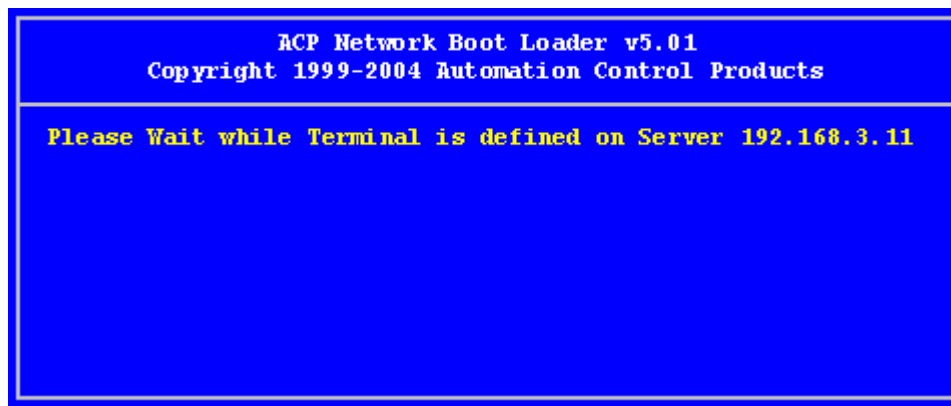
The configuration of terminals is done in ThinManager on the ThinManager Server and not on each individual terminal. When a new, undefined ThinManager Ready Thin Client is first connected to a ThinManager Server one of three things will happen:

- If the ThinManager Server has no terminals that are configured and offline, then the terminal will go into the **Create New Terminal Mode** and launch the **Terminal Configuration Wizard** on the ThinManager Server. Once the terminal is configured on the ThinManager Server it will automatically download its configuration upon boot up.
- If the ThinManager Server has terminals that are created and offline, the terminal will go into **Replace or Create Mode** and list the offline terminals that are available for selection. Once a configuration is selected, the terminal will take that identity. During any following boot up the terminal will automatically download its configuration.
- A third scenario is to use the **Auto-Create Terminal Mode** to create an array of terminals.

8.4 Create New Terminal Mode

Turning on a terminal for the first time will initiate the **Create New Terminal mode** if:

- No terminals are defined in ThinManager, or
- All the defined terminals are currently connected, or
- All the defined terminals that are turned off have the **Allow This Terminal To Be Replaced If Off Line** check box unselected.

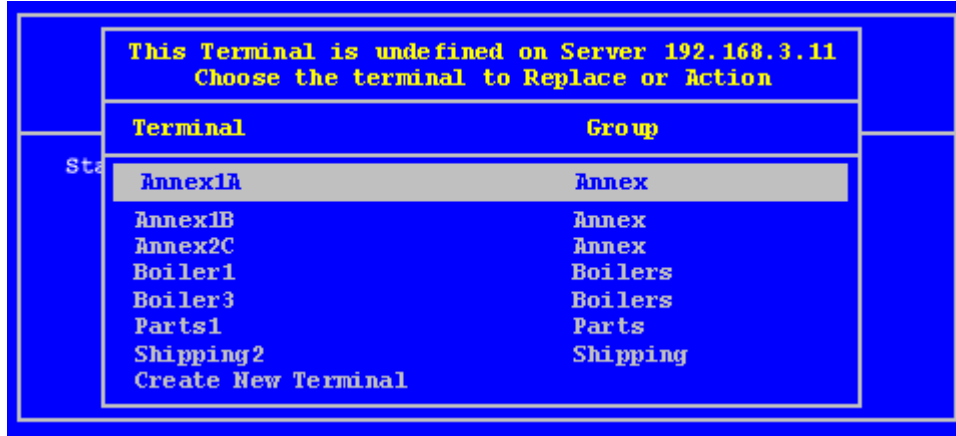


Create New Terminal Mode Screen

When a terminal enters the Create New Terminal Mode, the terminal will launch the Terminal Configuration Wizard on the ThinManager Server. The terminal will display a screen indicating that it will wait until the configuration is finished before progressing further.

8.5 Replace or Create New Terminal Mode

Turning on a terminal for the first time will initiate the **Replace or Create New Terminal Mode** if one or more of the defined terminals are offline and they have the **Allow This Terminal To Be Replaced If Off Line** check box selected.



Replace or Create Mode

The screen will display all the offline terminals that the terminal can replace. Highlight the desired terminal name using the keyboard and press the **Enter** button. The terminal will retrieve the selected configuration and assume its identity.

8.6 Auto-Creation of Terminals

Auto-Create allows new terminals to be created and configured in an array, using the **Default Terminal** as a template.

Turning on a terminal for the first time will initiate the **Replace or Auto-Create Terminal** mode if:

- The Auto-Create mode is enabled by the selection of the **Enable AutoCreate** check box on the **Unknown Terminal** page of the **ThinManager Server Configuration Wizard**. The **ThinManager Server Configuration Wizard** is launched by selecting **Manage > Settings** from the ThinManager menu.

And

- The **Default terminal** is configured as a template for the new terminals. This is done by selecting **Manage > Configure Default Terminal** on the ThinManager menu.

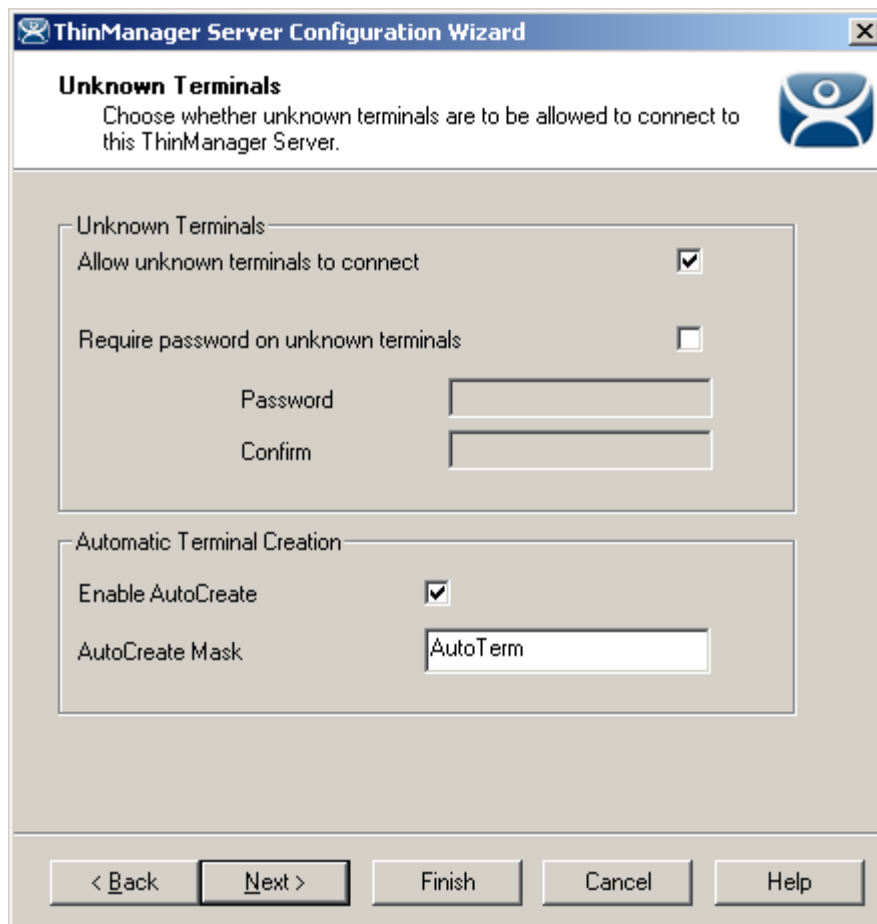
And

- The user selects **Auto-Create** from the **Replace or Action Menu** as the terminal boots and connects. The user can do a replacement instead of an Auto-Create.

8.6.1 Enabling AutoCreate

Open the **ThinManager Server Configuration Wizard** by right clicking on the ThinManager Server in the tree and selecting **Modify**, or select **Manage > Settings** from the menu.

The terminal will be given the name of the **Auto-Create Mask** and a number, starting with “0”. The Auto-Create Mask is configured on the **Unknown Terminals** page of the **ThinManager Server Configuration Wizard**.



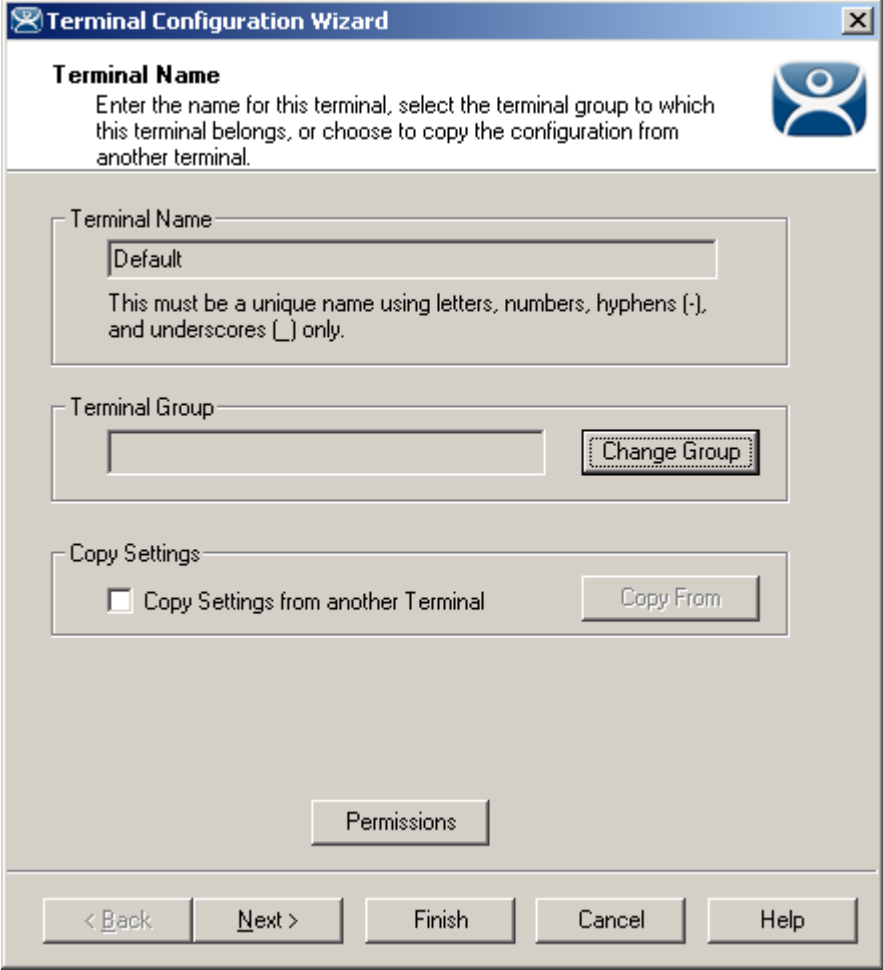
The screenshot shows the 'Unknown Terminals' configuration window. The title bar reads 'ThinManager Server Configuration Wizard'. The main heading is 'Unknown Terminals' with a sub-instruction: 'Choose whether unknown terminals are to be allowed to connect to this ThinManager Server.' There are two main sections: 'Unknown Terminals' and 'Automatic Terminal Creation'. In the 'Unknown Terminals' section, 'Allow unknown terminals to connect' is checked, 'Require password on unknown terminals' is unchecked, and there are empty text boxes for 'Password' and 'Confirm'. In the 'Automatic Terminal Creation' section, 'Enable AutoCreate' is checked, and the 'AutoCreate Mask' text box contains the value 'AutoTerm'. At the bottom, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Unknown Terminals

Check the **Enable AutoCreate** checkbox and enter an AutoCreate Mask name. This allows new terminals to be added to the system and configured without additional input from the server.

8.6.2 Configuring Default Terminal

The Default Terminal is created by selecting **Manage > Configure Default Terminal**. This will launch the **Terminal Configuration Wizard** for a terminal pre-named “Default”.



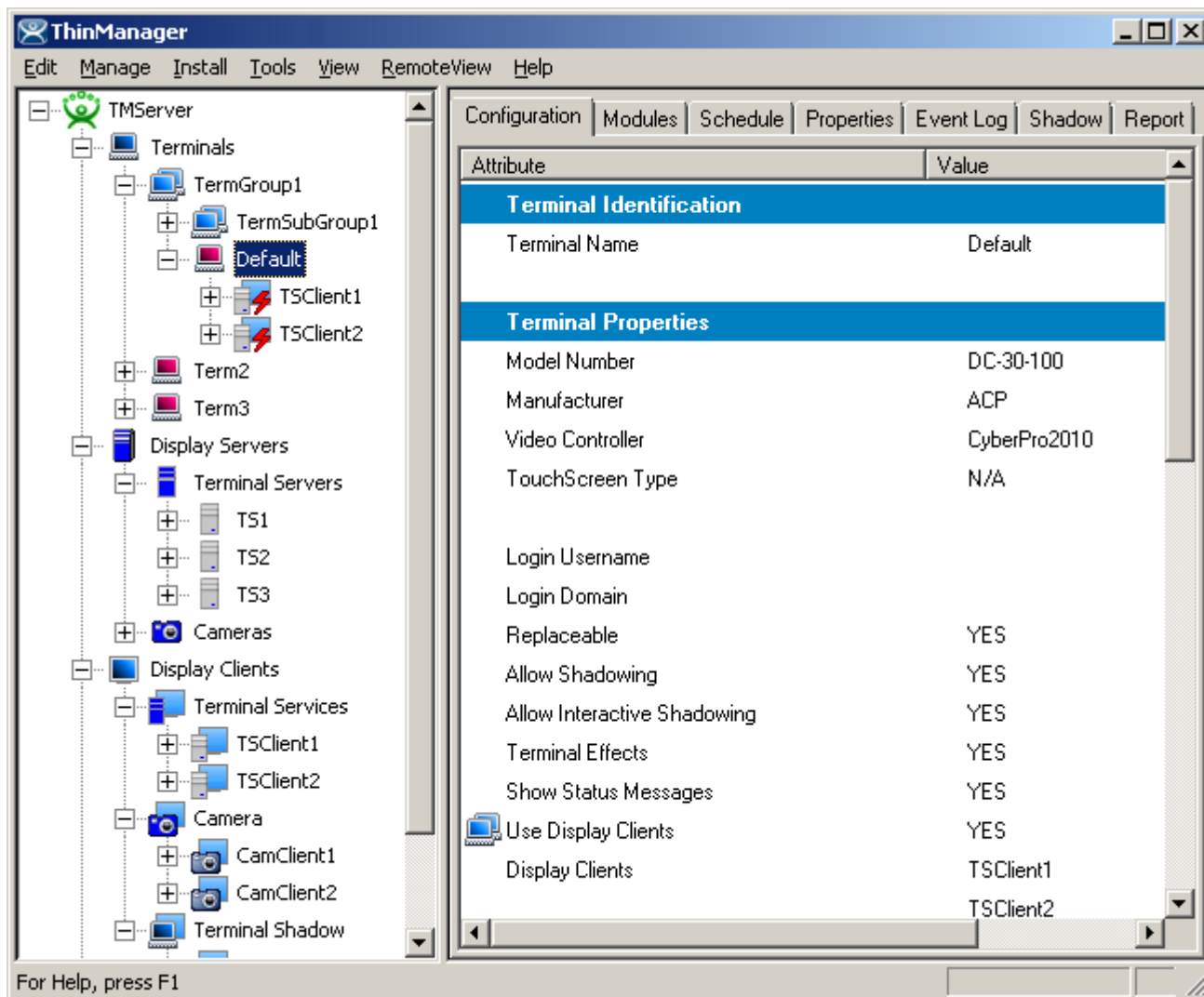
The screenshot shows the "Terminal Configuration Wizard" dialog box. The title bar reads "Terminal Configuration Wizard" with a close button. The main area is titled "Terminal Name" and contains the following elements:

- A text box containing "Default".
- A note: "This must be a unique name using letters, numbers, hyphens (-), and underscores (_) only."
- A "Terminal Group" section with an empty text box and a "Change Group" button.
- A "Copy Settings" section with a checkbox labeled "Copy Settings from another Terminal" (which is unchecked) and a "Copy From" button.
- A "Permissions" button.
- A footer bar with five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Default Terminal Configuration

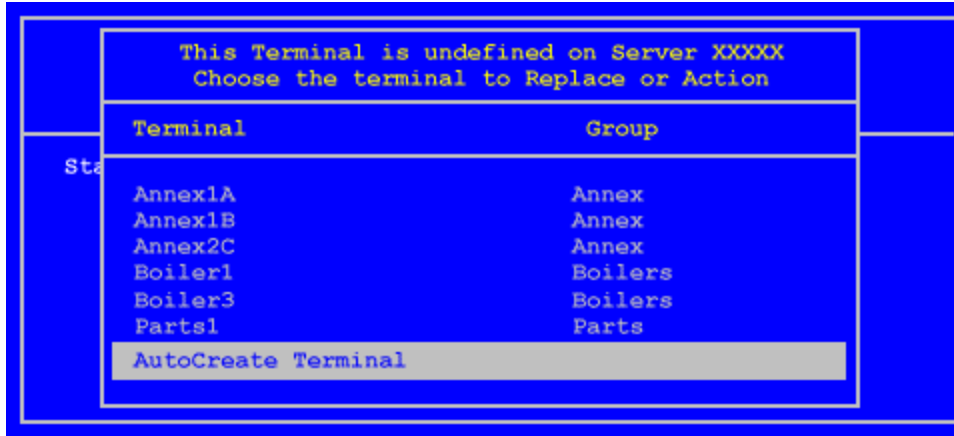
Configure the terminal with the desired settings. The Default terminal can be added to a Group by selecting the **Change Group** button.

Once the wizard is finished, the Default terminal will be displayed in the ThinManager Server tree.



ThinManager Tree with Default Terminal

Once the **Enable AutoCreate** check box on the Server Properties window is checked and the Default Terminal is created and configured, any new terminal connected to the ThinManager Server will have **AutoCreate Terminal** as an option.



Replace or Action Menu

The user needs to scroll to **AutoCreate Terminal** and press the **Enter** key to automatically create and configure the terminal.

The new terminal will be given the AutoCreate Mask and a number, starting at 0, for its name. This name will also be entered in the **Username** field of the **Log In Information** page of the **Terminal Configuration Wizard**.

9 Configuration Wizards

9.1 Introduction to Wizards

ACP ThinManager uses wizards for configuration. Wizards take two forms.

- **List Wizards** associate Terminal Servers and ThinManager Servers with their IP addresses or assign server functions to groups of Terminal Servers.
- **Configuration Wizards** set the parameters and options for individual terminals, groups of terminals, Display Servers, Display Clients, TermSecure Users, and TermSecure Server Groups. This is where the terminals and TermSecure Users have their settings defined.

This help will list the wizards in the following order:

- ThinManager Server List
- ThinManager Server Configuration Wizard
- DNS Configuration
- PXE Server Configuration Wizard
- Terminal Configuration Wizard
- Terminal Group Configuration Wizard
- Display Server Configuration Wizards
 - Terminal Services Display Servers
 - Camera Configuration Wizard
- VCenter Server Configuration Wizard
- Display Client Configuration Wizards
 - Terminal Services Display Clients
 - Camera Display Clients
 - Terminal Shadow Display Clients
- TermSecure Configuration
 - TermSecure User Configuration Wizard
 - TermSecure Users Group Configuration Wizard

9.1.1 List Wizards

The List Wizards are:

Terminal Server List – Used to show defined Terminal Servers, or Terminal Services Display Servers. The **Terminal Server Configuration Wizard** can be launched from here. Launched by:

- Expanding the **Display Server** branch, right clicking on the **Terminal Servers** icon, and selecting **Edit Terminal Server List**.

See Terminal Services Display Servers for details.

Display Client List – Used to show defined Display Clients. The **Display Client Configuration Wizard** can be launched from here. Launched by:

- Right clicking on the **Display Client** icon, and selecting **Edit Display Client List**.

See Display Client List for details

ThinManager Server List – Used to define ThinManager Servers and setup Automatic Synchronization. Launch by:

- Selecting **Manage > ThinManager Server List**.

See ThinManager Server List for details.

9.1.2 Configuration Wizards

The Configuration Wizards are:

Domain Name Server Wizard – Used to configure DNS, if needed. Launched by:

- Selecting **Manage > DNS Configuration**.

See DNS Configuration for details.

PXE Server Configuration Wizard – Used to configure ThinManager for use with PXE thin clients. Launched by:

- Selecting **Manage > PXE Server**.

See PXE Server Configuration Wizard for details.

ThinManager Server Configuration Wizard – Used to configure global ThinManager properties like scheduling, e-mail notification, and user access. Launched by:

- Double clicking on the ThinMan icon.
- Right clicking on the ThinMan icon and selecting **Modify**.
- Highlighting the ThinMan icon and selecting **Edit > Modify**.

See ThinManager Server Configuration Wizard for details

Terminal Configuration Wizard – Used to configure Terminals, both thin clients and PCs with WinTMC installed. Launched by:

- Selecting **Edit > Add Terminal** in the menu.
- Right clicking on the **Terminals** branch icon and selecting **Add Terminal**.
- Double clicking on an existing terminal icon.

See Terminal Configuration Wizard for details.

Terminal Group Configuration Wizard – Used to configure groups of Terminals, both thin clients and PCs with WinTMC installed. Launched by:

- Selecting **Edit > Add Terminal Group** in the menu.
- Right clicking on the **Terminals** branch icon and selecting **Add Group**.
- Double clicking on an existing terminal group icon.

See Terminal Group Configuration Wizard for details.

Terminal Server Wizard – Used to define and configure Terminal Servers. Launch by:

- Expand the Display Server branch, right click on the **Terminal Servers** icon and select **Add Terminal Server**
- Double clicking on an existing **Terminal Server** icon.

Camera Configuration Wizard – Used to define and configure IP cameras as Display Servers. Launch by:

- Expand the Display Server branch, right click on the **Cameras** icon and select **Add Camera**.
- Double clicking on an existing **Cameras** icon.

See Camera Configuration Wizard for details

VCenter Server Wizard - Used to create and configure VCenter Servers. These are virtual machines managed by VMWare's vCenter Server. Launch by:

- Highlighting the **VCenter Server** branch, right clicking, and selecting **Add VCenter Server**.

Display Client Wizards - Used to create and configure Display Clients. These include the Terminal Services, Camera, Terminal Shadow, and Workstation Display Clients. Launch by:

- Highlighting the **Display Clients** branch, right clicking, and selecting **Add Display Client**.
- Expanding the **Display Clients** branch, highlighting **Terminal Services**, right clicking, and selecting **Add Display Client**.
- Expanding the **Display Clients** branch, highlighting **Camera**, right clicking, and selecting **Add Display Client**.
- Expanding the **Display Clients** branch, highlighting **Workstation**, right clicking, and selecting **Add Display Client**.
- Expanding the **Display Clients** branch, highlighting **Terminal Shadow**, right clicking, and selecting **Add Display Client**.
- Double clicking on an existing **Display Client** icon.

See Display Client Configuration Wizard for details

TermSecure User Configuration Wizard – Used to define and configure TermSecure Users. Launch by:

- Highlighting the **TermSecure User** branch, right clicking, and selecting **Add TermSecure User**.
- Double clicking on an existing **TermSecure User** icon.

See TermSecure User Configuration Wizard for details.

TermSecure User Group Configuration Wizard – Used to define and configure TermSecure User Groups. Launch by:

- Highlighting the **TermSecure User** branch, right clicking, and selecting **Add TermSecure User Group**.
- Double clicking on an existing **TermSecure User Group** icon.

See TermSecure Users Group Configuration Wizard for details.

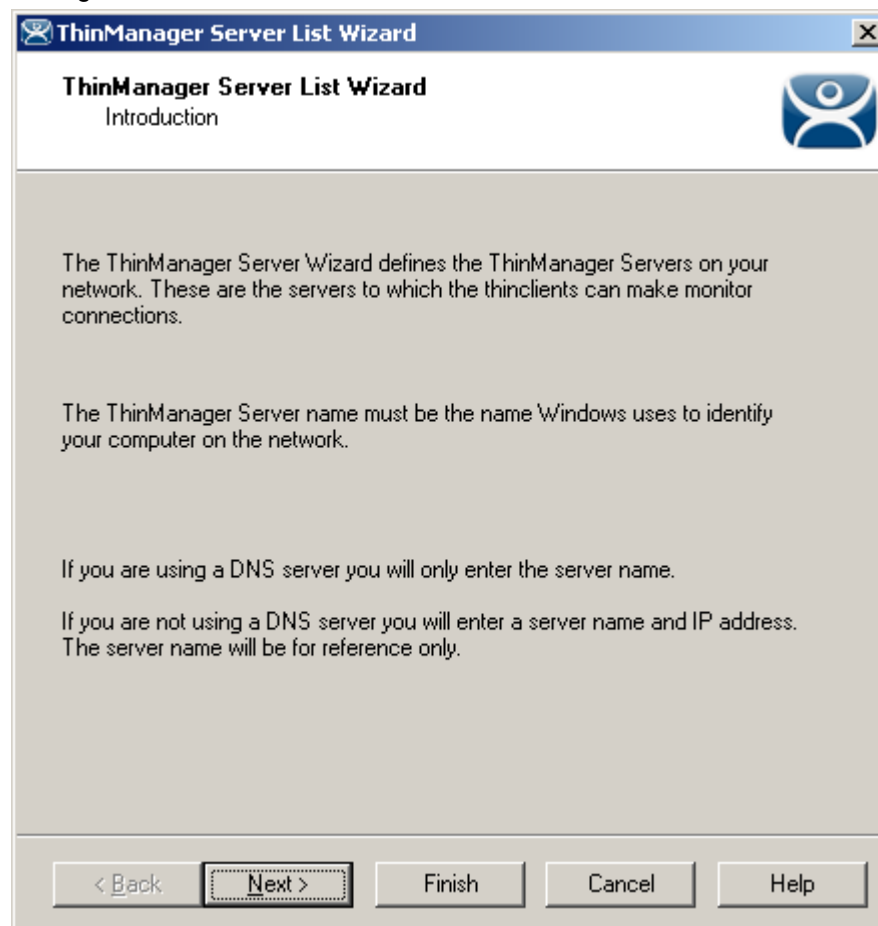
9.2 ThinManager Server List

Selecting **Manage > ThinManager Server List** will launch the ThinManager Server List Wizard to allow the definition of ThinManager Servers. The definition of ThinManager Servers allows the connection to remote ThinManager Servers and allows the synchronization of ThinManager Server configurations.

Multiple ThinManager Servers should be synchronized so that a terminal will receive the same configuration regardless of the ThinManager Server that it boots from.

Automatic Synchronization will connect all of the configuration databases on the ThinManager Servers in this list and keep them synchronized so that a change on one is a change on all. See Automatic Synchronization for details.

Manual Synchronization requires a user to synchronize the configurations after each configuration change. See Synchronize Configuration for details.

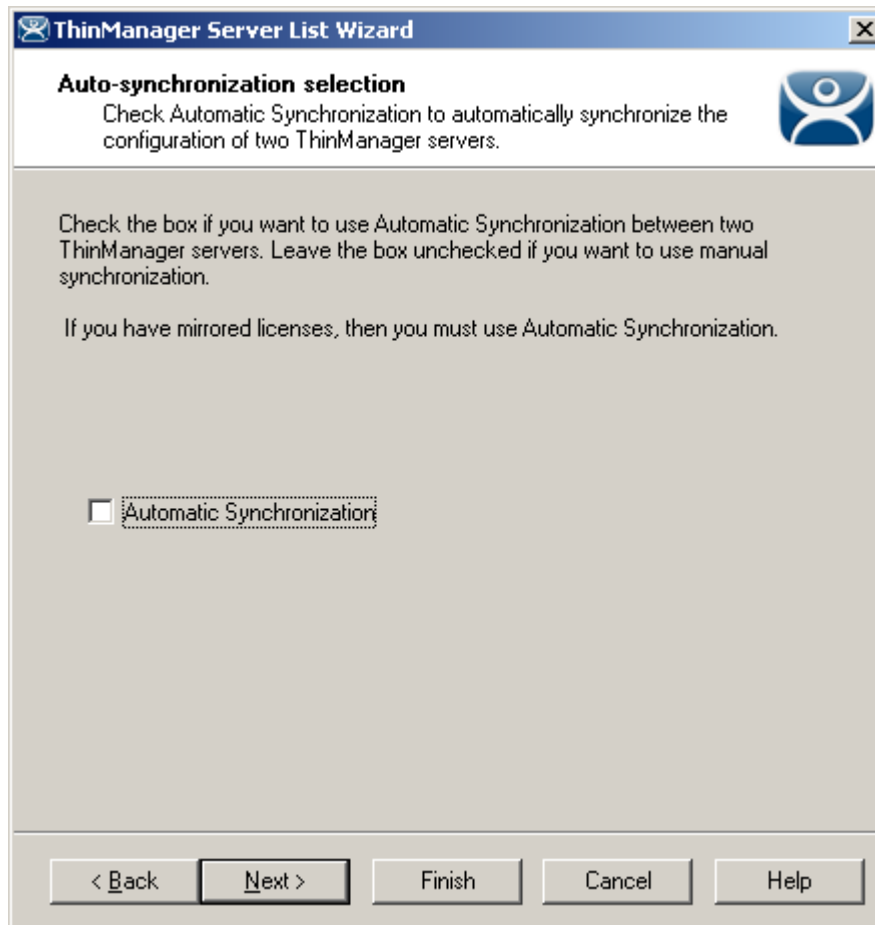


ThinManager Server List Wizard - Introduction

Importance of Page: This displays introductory information

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.2.1.1 Auto-Synchronization Selection Page



Auto-synchronization Selection

Importance of Page: Enables Auto-synchronization.

Settings:

- **Automatic Synchronization** – Check this to initiate auto-synchronization.

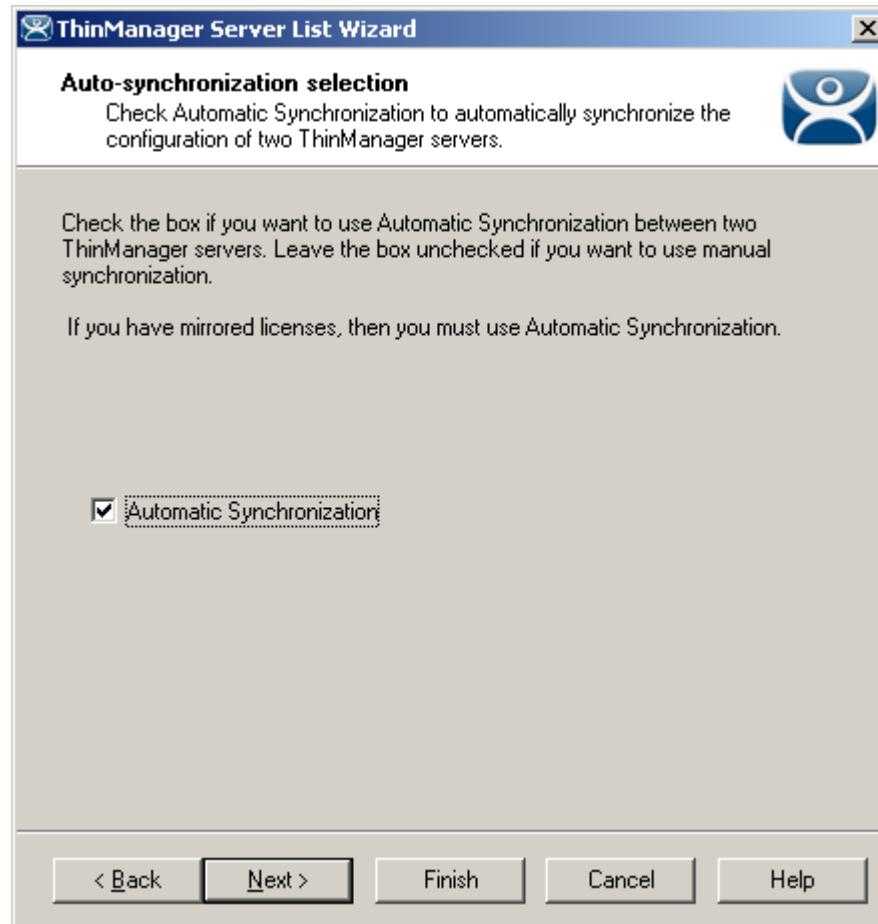
Why Change from Default Settings: Auto-synchronization is required for Mirrored licenses and Redundant Licenses. It also makes sure that redundant ThinManager Servers have the same configuration.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.2.2 Automatic Synchronization

Multiple ThinManager Servers should be synchronized so that a terminal will receive the same configuration regardless of the ThinManager Server that it boots from.

Automatic synchronization is required for Mirrored licenses, Redundant licenses, and Enterprise Server licenses



Auto-synchronization Selection

Select the **Automatic Synchronization** checkbox and select the **Next** button to configure Auto-synchronization.

9.2.2.1 Automatic Synchronization Configuration

The screenshot shows a Windows-style dialog box titled "ThinManager Server List Wizard" with a sub-header "Auto-synchronization Configuration". Below the sub-header is a descriptive text: "Define the primary and secondary ThinManager servers. These servers will be synchronized." and a blue icon. The main area contains two sections: "Primary ThinManager Server" and "Secondary ThinManager Server". Each section has an "Edit" button and two text input fields labeled "Name" and "IP Address". At the bottom of the dialog are five buttons: "< Back", "Next >", "Finish" (which is highlighted with a dotted border), "Cancel", and "Help".

Auto-synchronization Configuration

Importance of Page: Defines and displays the Primary and Secondary ThinManager Servers. This allows a terminal to boot from a backup if the primary fails.

Fields:

- **Name (Primary ThinManager Server)** – This field is for the NetBios name of the Primary ThinManager Server. Use its real name and not a shortcut or nickname. The name is entered by using the **Edit** button.
- **IP Address (Primary ThinManager Server)** – This field is for the IP address of the Primary ThinManager Server. It is entered by using the **Edit** button.
- **Name (Secondary ThinManager Server)** – This field is for the NetBios name of the Secondary ThinManager Server. . Use its real name and not a shortcut or nickname. The name is entered by using the **Edit** button.
- **IP Address (Secondary ThinManager Server)** – This field is for the IP address of the Secondary ThinManager Server. It is entered by using the **Edit** button.

Buttons:

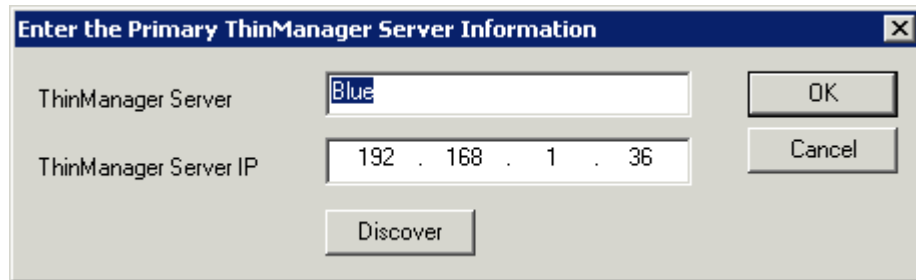
- **Edit (Primary ThinManager Server)** – This button launched the **Enter The Primary ThinManager Server Information Window** that is used to define the primary ThinManager Server.

- **Edit (Secondary ThinManager Server)** – This button launched the Enter The Secondary ThinManager Server Information Window that is used to define the backup ThinManager Server.

Why Change from Default Settings: The Name and IP address of both ThinManager Servers need to be defined for auto-synchronization to work.

9.2.2.2 Defining the ThinManager Servers

Select each **Edit** button on the Auto-synchronization Configuration page to launch the **Enter ThinManager Server Information Window** for each ThinManager Server.

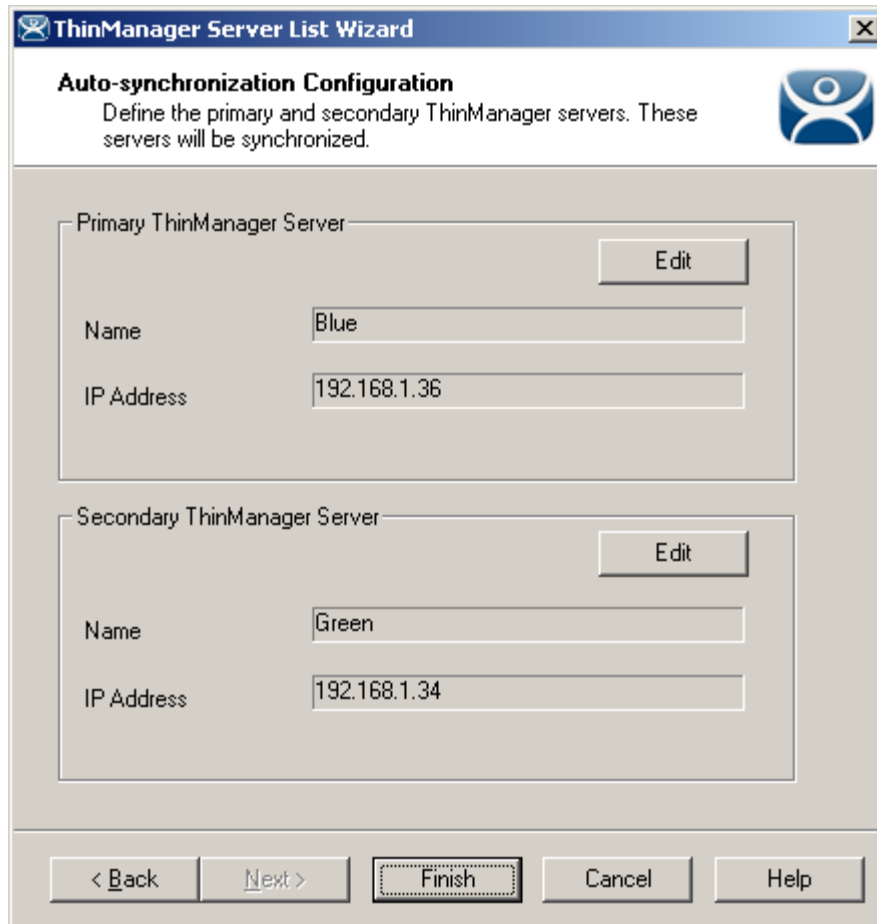


Enter ThinManager Server Information Window

Enter the name of the ThinManager Server in the ThinManager Server field.

Enter the IP address of the ThinManager Server. The **Discover** button will enter the IP address for you.

Select the **OK** button to accept the settings or the **Cancel** button to close without saving.



Auto-synchronization Configuration

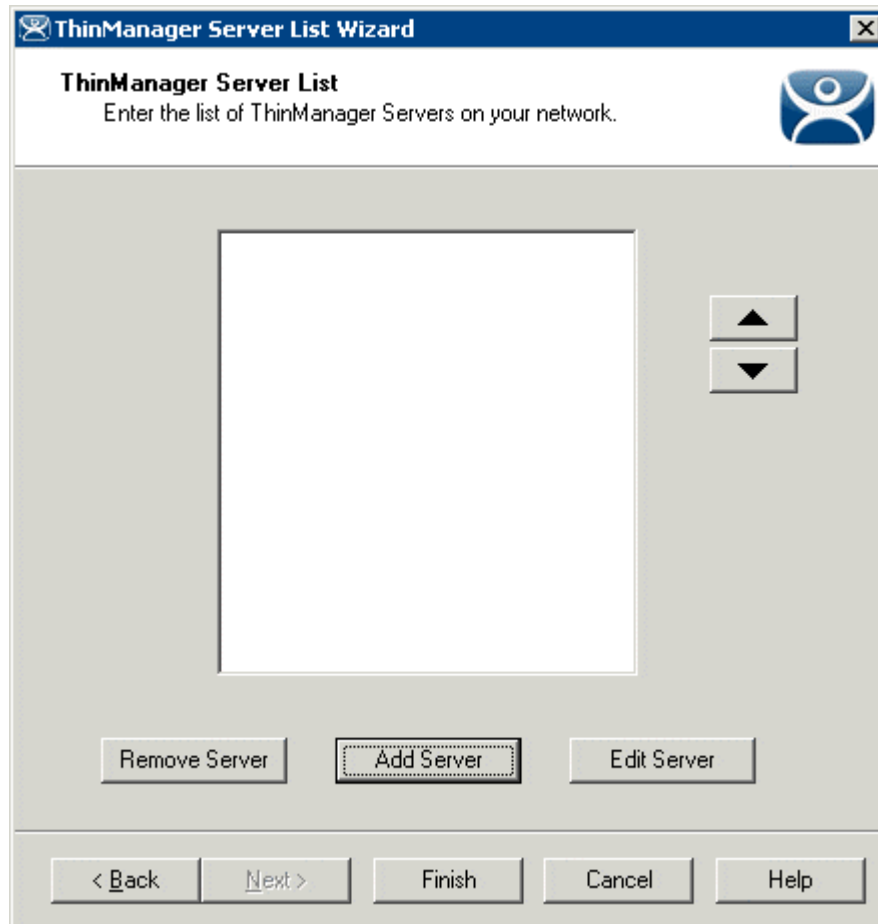
When complete, the **Auto-synchronization Configuration** window will show the Primary and Secondary ThinManager Servers. This will automatically synchronize their configuration so that a terminal will receive the same configuration regardless of the ThinManager Server that it boots from.

Additionally, the status lights for the terminals will be displayed in the trees of both ThinManager Servers.

Select **Finish** to save and close, or **Cancel** to close without saving.

9.2.3 Defining ThinManager Servers for Manual Synchronization

9.2.3.1 ThinManager Server List Page



ThinManager Server List - Blank

Importance of Page: This page allows ThinManager Servers to be defined.

The ThinManager Server List is the collection of ThinManager Servers on the network. These include ThinManager Servers that the terminal will communicate with to keep the connection status lights in the ThinManager tree updated. It also allows access to remote ThinManager Servers that allow network wide monitoring, control, and management.

Fields:

- **List Box (Unlabeled)** – The list box will display a list of defined ThinManager Servers and their IP addresses.

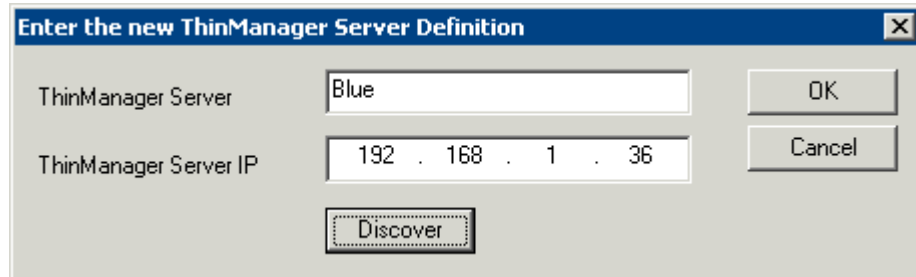
Buttons:

- **Remove Server** – This button will clear a highlighted ThinManager Server from the list.
- **Add Server** – This button will launch a window that allows the entry of a ThinManager Server name and IP address.
- **Edit Server** – This button will launch a window that allows the change of a highlighted ThinManager Server name and IP address.

- **Arrows** – These buttons adjust the order of the ThinManager Servers. The computer on top is considered the Primary ThinManager Server.

Why Change from Default Settings: The ThinManager Servers need to be defined and listed in the window to be available for manual synchronization and remote access.

Select the **Add Server** button on the **ThinManager Server List Page** to launch the **Enter the new ThinManager Server Definition Window**.



The screenshot shows a dialog box titled "Enter the new ThinManager Server Definition". It features two input fields: "ThinManager Server" containing the text "Blue" and "ThinManager Server IP" containing the IP address "192 . 168 . 1 . 36". Below the IP field is a "Discover" button. To the right of the input fields are "OK" and "Cancel" buttons. The dialog box has a standard Windows-style title bar with a close button in the top right corner.

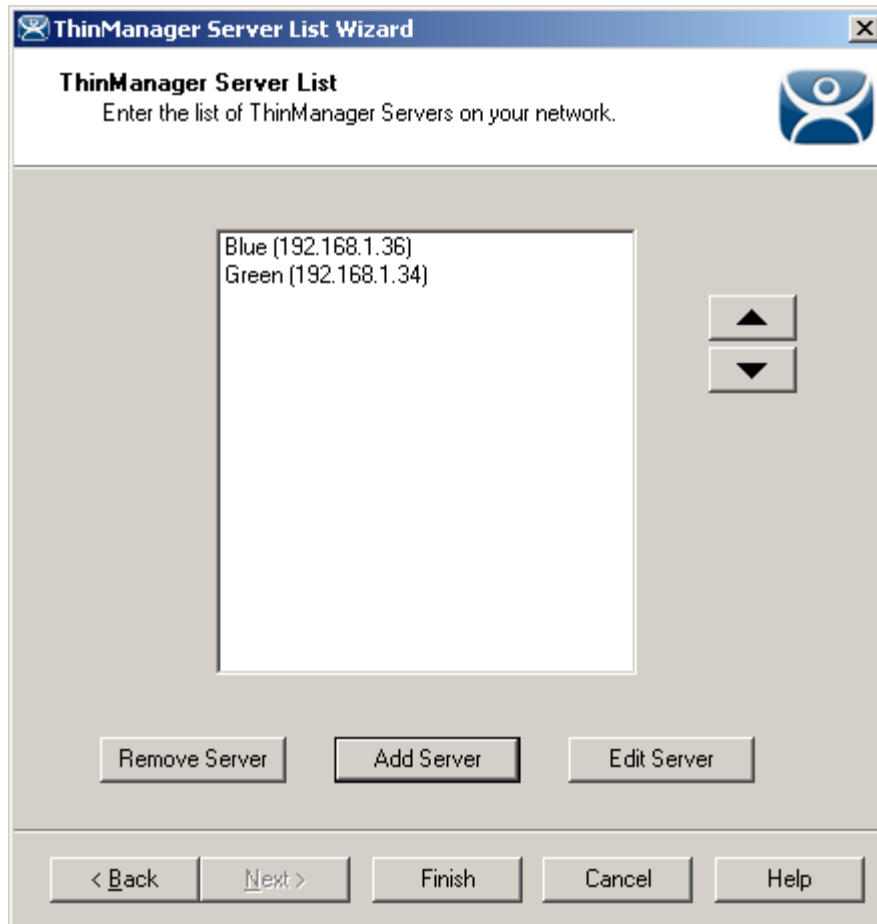
ThinManager Server Definition

Enter the name of the ThinManager Server in the **ThinManager Server** field.

Enter the IP address of the ThinManager Server in the ThinManager Server IP field. The **Discover** button will enter the IP address for you.

Select the **OK** button to accept the settings or the **Cancel** button to close without saving.

Repeat until all ThinManager Servers are defined.



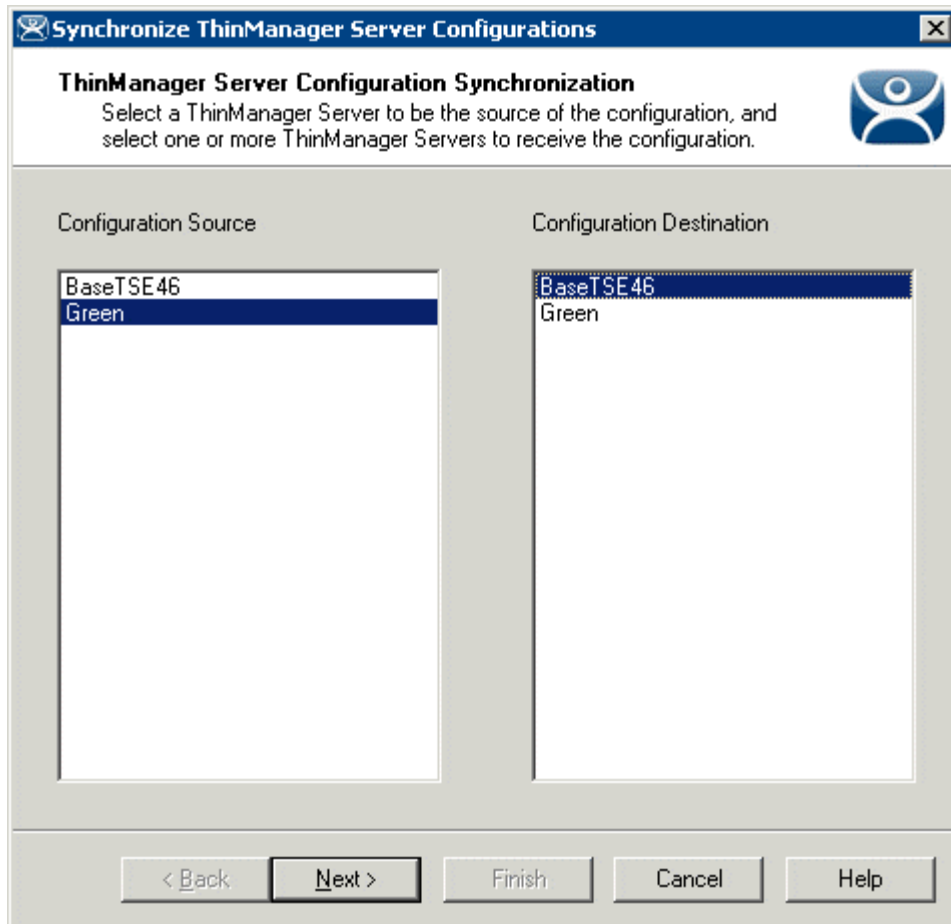
ThinManager Server List - Filled

When all of the desired ThinManager Servers are added to the list, select **Finish** to close the **ThinManager Server List wizard**.

9.2.4 Manual Synchronization

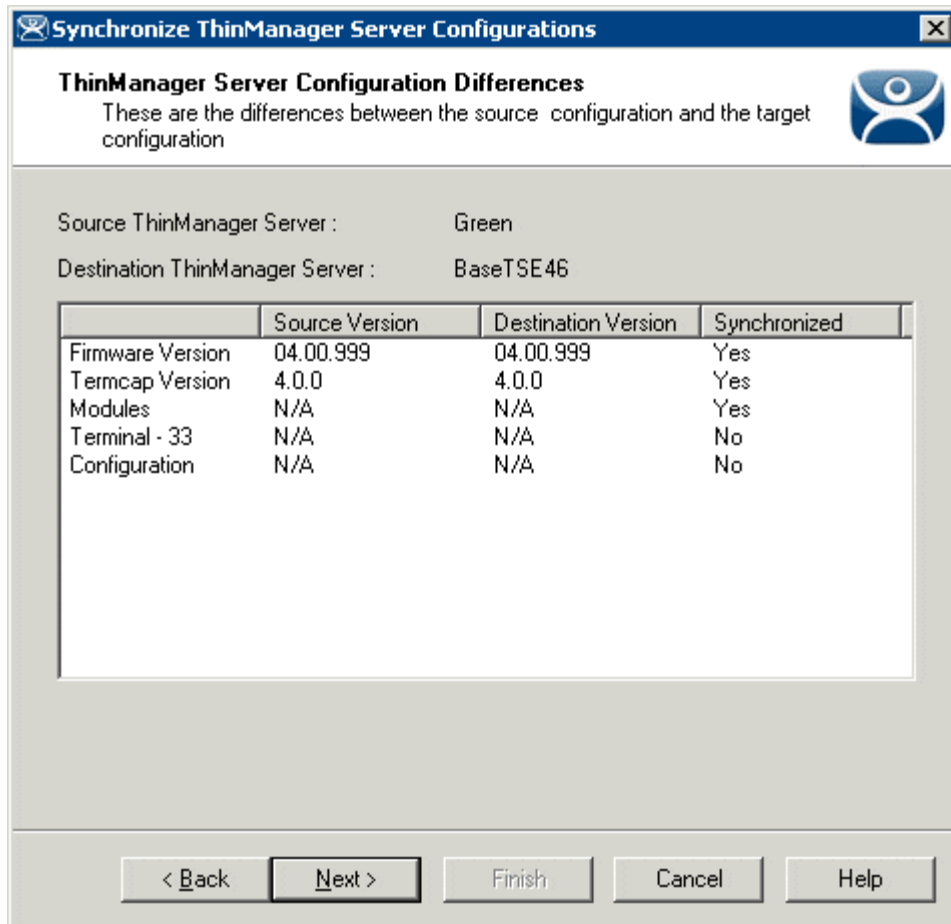
Redundant ThinManager Servers should be synchronized so that the same configuration is available to thin clients regardless of where they boot. Auto-synchronization is the preferred method (see Automatic Synchronization Configuration) but the ThinManager Servers can be manually synchronized.

Select **Manage > Synchronize Configurations** from the menu to initiate the manual synchronization. This will launch the **Synchronize ThinManager Server Configurations** wizard.



Synchronize ThinManager Server Configuration Wizard

Highlight the primary ThinManager Server as the **Configuration Source** ThinManager Server and the secondary ThinManager Server as the **Configuration Destination**. Select **Next** to proceed. Although many ThinManager Servers can be defined in the ThinManager Server List it is normal to have just a primary and a backup ThinManager Server.

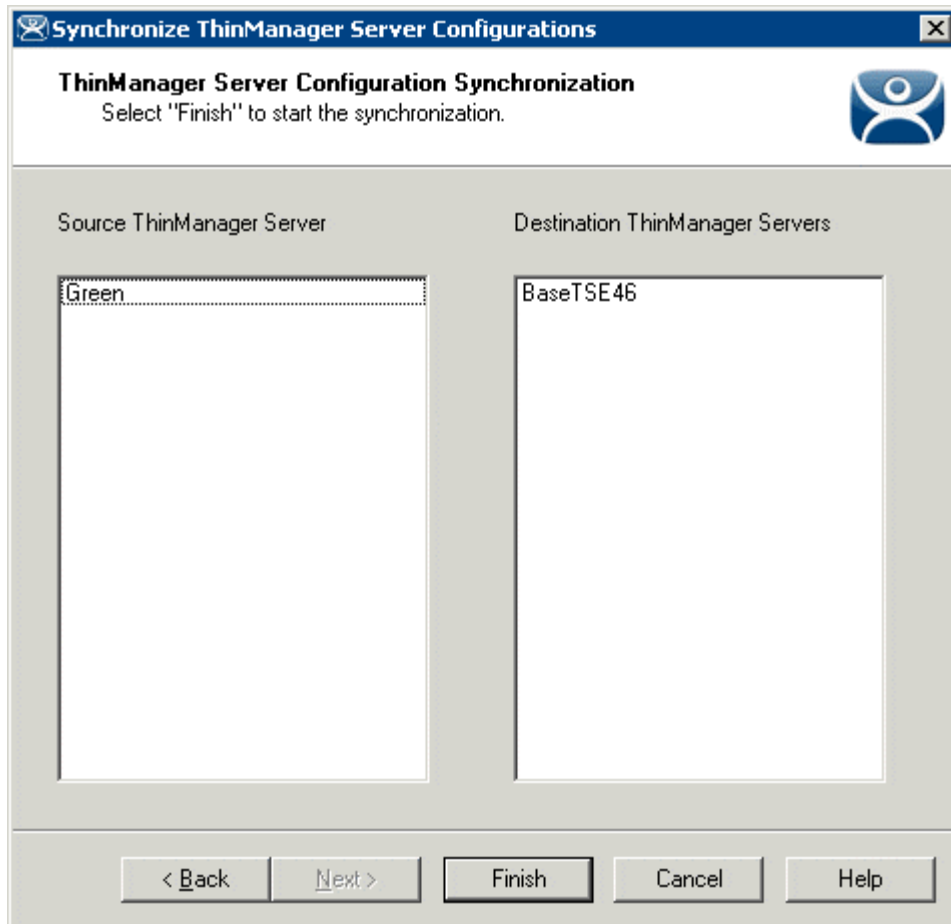


Synchronization Differences

The ThinManager Synchronization Wizard will list the files being updated, including the firmware, TermCap database, modules, and the configuration. It synchronizes everything but the licenses.

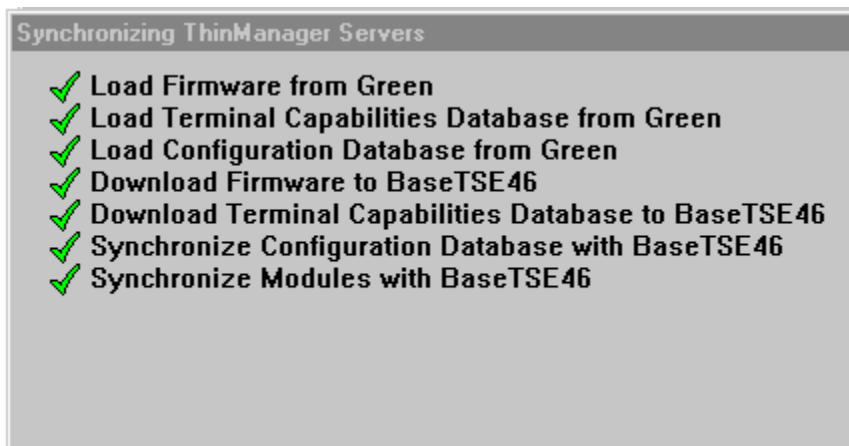
Note: The Synchronization tool does not compare and contrast then make changes back and forth. Synchronization will take the files and configuration from the source ThinManager Server and overwrite the corresponding files on the destination ThinManager Server.

Select **Next** to continue.



ThinManager Server Synchronization Confirmation

The ThinManager Server Configuration Wizard will prompt for a confirmation of the synchronization before proceeding. Select **Finish** to finalize the synchronization.



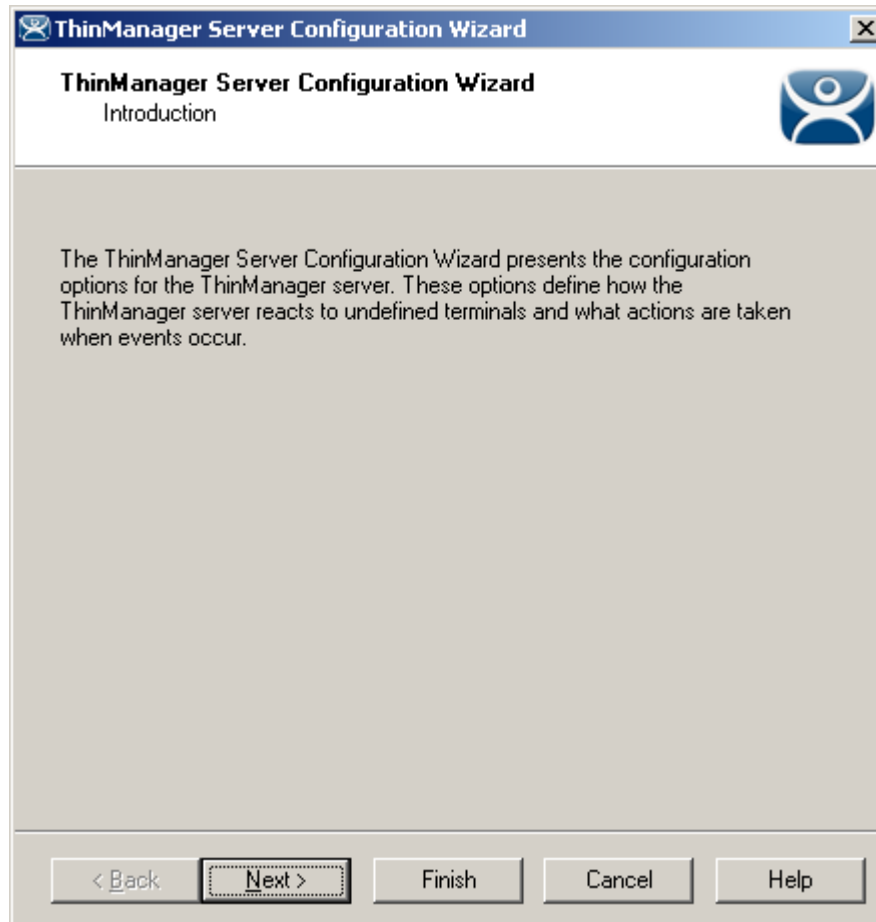
Synchronization Progress Meter

ThinManager will display the progress of the synchronization as it updates the files.

9.3 ThinManager Server Configuration Wizard

The ThinManager Server Configuration wizard allows the configuration of global ThinManager settings. It can be launched by:

- Selecting **Edit > Modify** while the ThinMan icon is highlighted in the ThinManager tree, or
- Double-clicking on the ThinManager icon in the tree, or
- Right clicking the ThinMan icon and selecting **Modify**.



ThinManager Server Configuration Wizard

Importance of Page: This displays introductory information
Select **Next** to Configure the ThinManager Server settings.

9.3.1.1 Unknown Terminals Page

ThinManager Server Configuration Wizard

Unknown Terminals
Choose whether unknown terminals are to be allowed to connect to this ThinManager Server.

Unknown Terminals

Allow unknown terminals to connect

Require password on unknown terminals

Password

Confirm

Automatic Terminal Creation

Enable AutoCreate

AutoCreate Mask

< Back Next > Finish Cancel Help

Unknown Terminals

Importance of Page: Controls creation and replacement of terminals through use of passwords and auto-creation.

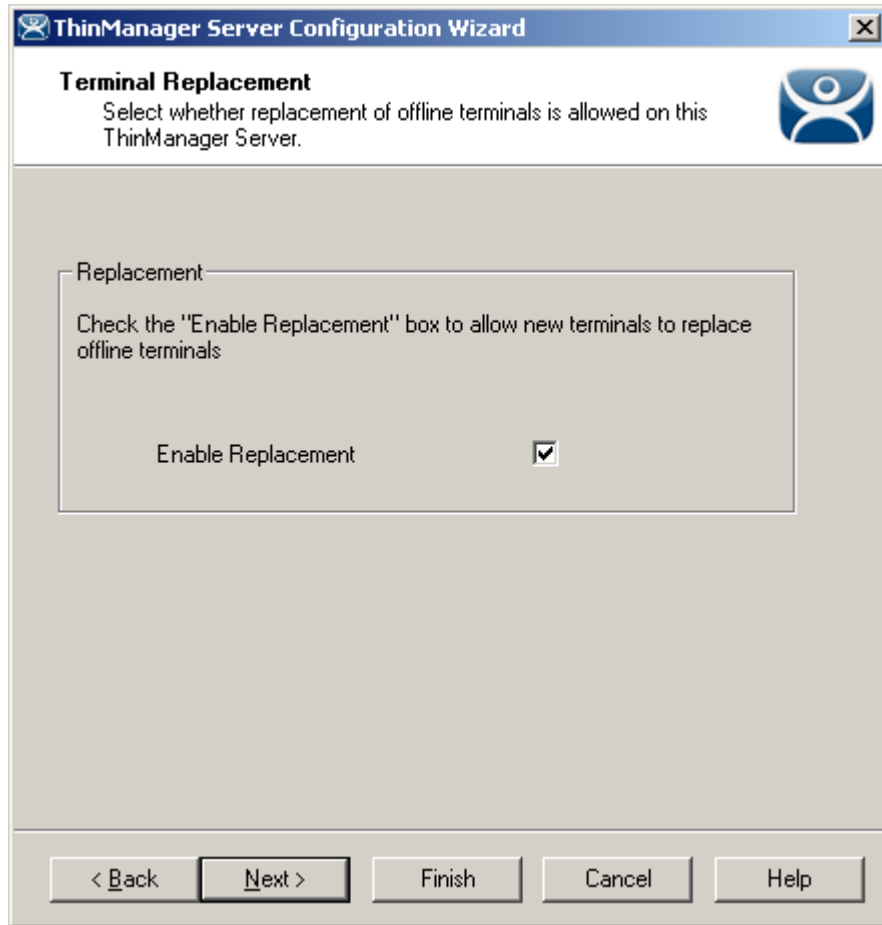
Settings:

- **Allow unknown terminals to connect** - This checkbox, if selected, lets new terminals be added to the ThinManager Server. Replacements and new terminals are prevented if this box is un-selected.
- **Require password on unknown terminals** - This checkbox, if selected, allows use of a password so that only authorized personnel can add terminals to the ThinManager Server. If checked, the password fields become active and allow the addition of a password.
- **Enable AutoCreate** - This checkbox, if selected, allows the auto-creation of an array of terminals as described in Auto-Creation of Terminals.
- **AutoCreate Mask** - This field is the base name used in the array of terminals when using Auto-Creation of Terminals.

Why Change from Default Settings: requiring a password can control who adds terminals. Using auto-creation can be helpful in some large deployments.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.3.1.2 Terminal Replacement Page



Terminal Replacement

Importance of Page: Sets the global setting for enabling replacement of offline terminals.

Note: Terminals that are on cannot be replaced until they are turned off.

Settings:

- **Enable Replacement** – This checkbox gives **global permission** for terminals to be replaced. Un-selecting this will prevent **all** terminals from showing up in the replacement list when a new terminal is added, making **Create New Terminal** the only option. This feature is also available for the Group and terminal level on the first page of the corresponding wizard. However, if this checkbox is unselected in the **ThinManager Server Configuration Wizard**, checking it in a **Terminal Configuration Wizard** will have no effect.

Why Change from Default Settings: Un-selecting this will prevent **all** terminals from showing up in the replacement list when a new terminal is added, making **Create New Terminal** the only option.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.3.1.3 Historical Logging Page

ThinManager Server Configuration Wizard

Historical Logging
Select the items to log and how long to maintain the logged information.

Historical Data

Maintain Historical Log for days

Event Log

Maintain Event Log for days

Choose events to log

- Terminal Server Events
- Terminal Events
- Terminal Configuration changes
- TermSecure User Configuration changes

< Back Finish Cancel Help

Historical Logging

Importance of Page: Sets the duration that logs are maintained.

Settings:

- **Maintain Historical Log for X days** - This field determines the length of time that the terminal server CPU and memory data from the **Terminal Server Graph** tab is stored. See Details Pane for an example of the graph.
- **Maintain Event Log for X days** - This field determines how long the event log is kept.
- **Choose events to log** - These checkboxes determine what events are stored in the log.
 - **Terminal Server Events** - This checkbox, when selected, records events of the terminal servers.
 - **Terminal Events** - This checkbox, when selected, records events of the terminal.
 - **Terminal Configuration Changes** - This checkbox, when selected, records changes to the terminal configuration.
 - **User Configuration Changes** - This checkbox, when selected, records changes to the TermSecure User configuration.

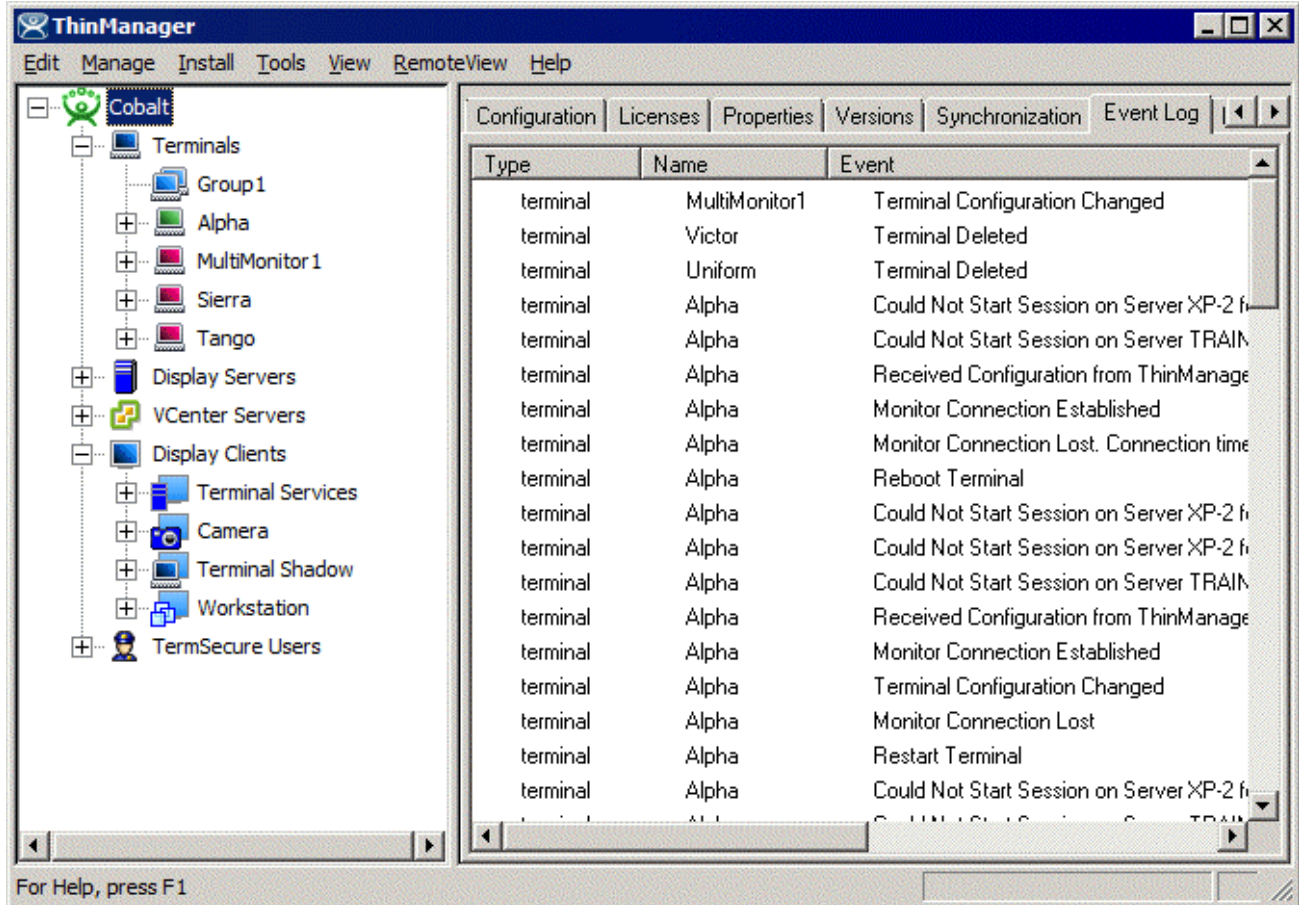
Buttons:

- **Clear History** - This button will erase the Historical log.

- **Clear Event Log** - This button will erase the Event log.

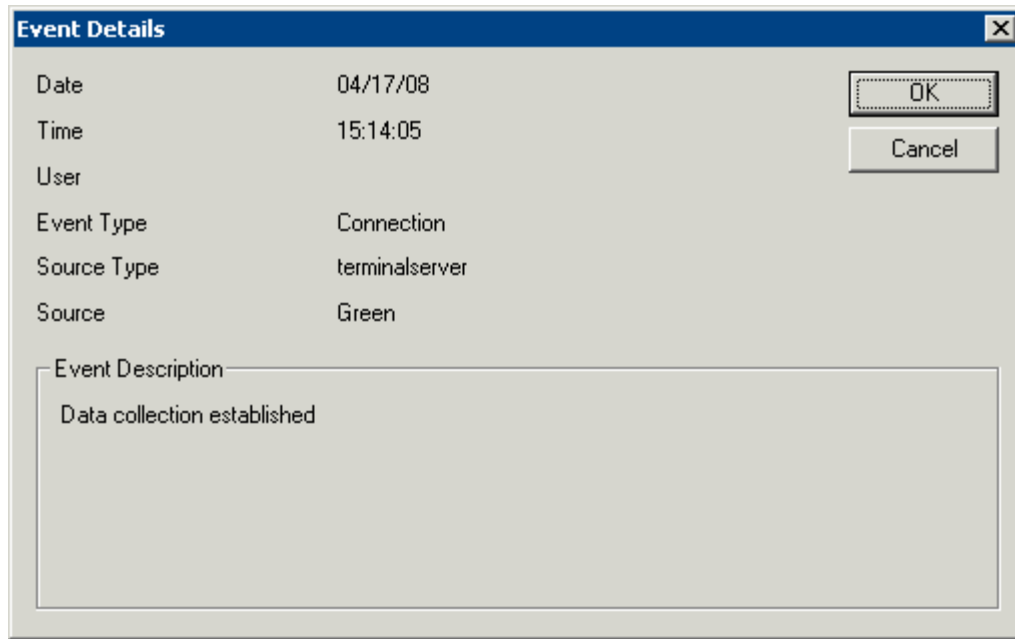
Why Change from Default Settings: You can add Terminal Server events and TermSecure User events that aren't collected by default. You can change the duration of the logs.

Selecting the **Event Log** tab will show the events for the highlighted tree icon.



Event Log Tab

Details of an event can be obtained by double-clicking on an event.

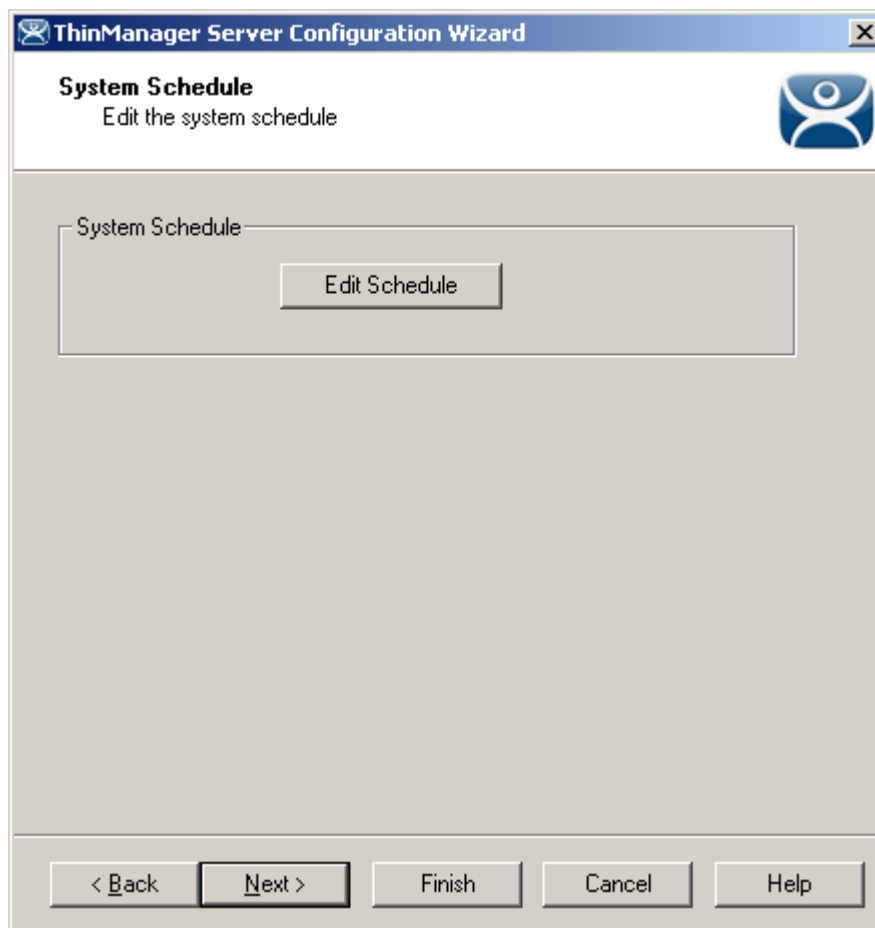


Event Detail

The **Event Details** window shows details of the selected event. Select either the **OK** or **Cancel** button to close.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.3.1.4 System Schedule



System Schedule

Importance of Page: Allows schedules to be setup for ThinManager and the ThinManager system.

Buttons:

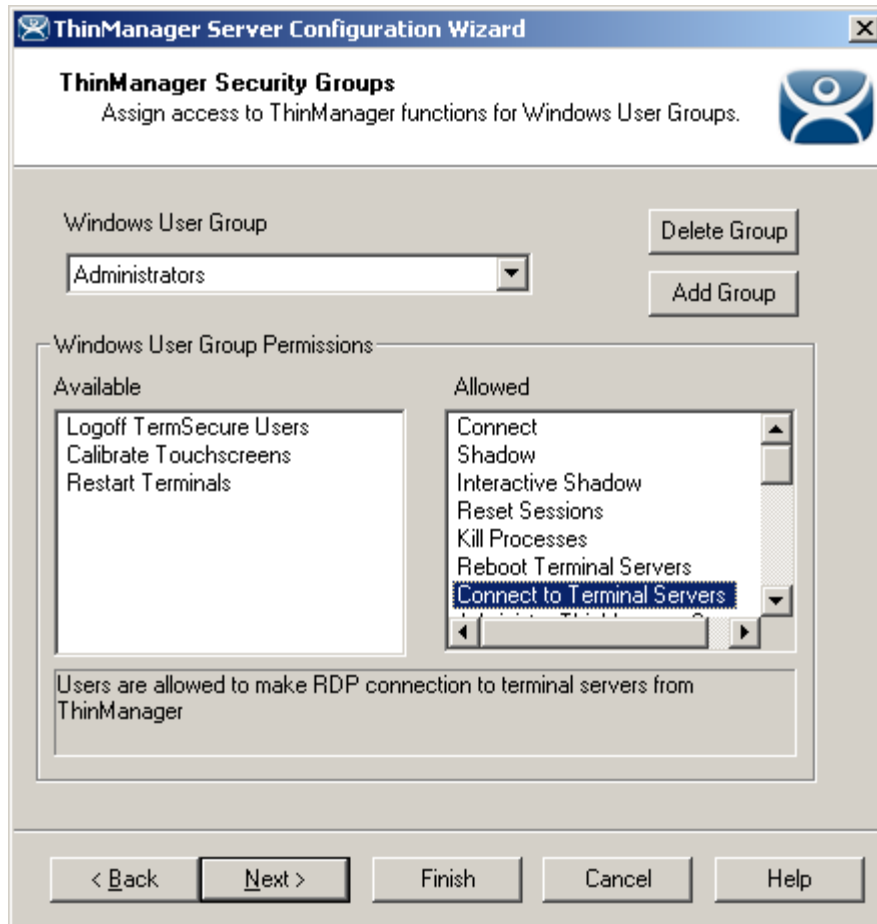
- **Edit Schedule** – This button launched the **Event Schedule** window. See Scheduling for details.

Why Change from Default Settings: Automating backups, reports, and actions with the Scheduler saves time.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.3.1.5 ThinManager Security Groups

Access to ThinManager can be assigned to Windows User Groups on the **ThinManager Security Groups** page.



ThinManager Security Groups

Importance of Page: Normally administrators are the only people who have access to ThinManager functions. This page allows access to be granted to people so they can perform specific jobs without being elevated to the administrator role.

Settings:

- **Windows User Group** – This dropdown shows the group that is being configured.

Fields:

- **Available** – This list box shows the ThinManager functions that are available to the Windows group displayed in the **Windows User Group** box. These functions can be added to the **Allowed** list by double clicking.
- **Allowed** – This list box shows the ThinManager functions that are granted to the Windows group displayed in the **Windows User Group** box. These functions can be removed from the **Allowed** list by double clicking.

Buttons:

- **Delete Group** – This button will remove the highlighted group in the **Windows User Group** box.
- **Add Group** – This button launched the **New Window Group** window where a new Windows© group can be added to the configuration. See Add Windows Group for details.

Why Change from Default Settings: Creating a Windows Group and granting access to ThinManager functions allows people to use ThinManager without being an administrator.

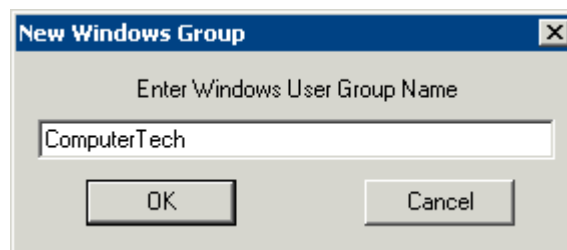
ThinManager allows different levels of access and functionality based on standard Windows groups. By default only members of the Windows Administrator group has the ability to connect to ThinManager and use the application. The ThinManager Security Groups allows other Windows groups to be granted privileges in ThinManager.

ThinManager comes with privileges pre-defined for six groups. Each of these groups (except Administrators) needs to be created on the domain controller or in the Local Users and Groups on the Computer Management console and members added before they can be used.

- **Administrators** - The Microsoft defined Administrator group is given all privileges by default in ThinManager. This may be denied by unselecting the various allowed **Windows User Group Permissions**.
- **ThinManager Administrators** have full permission to do anything within ThinManager including the power to logoff sessions, kill processes, send messages, restart terminals, calibrate touch screens, change terminal configurations, update firmware, update the TermCap, and restore configurations. Administrators and members of ThinManager Administrators can shadow terminals and interactively control the terminal session. **These privileges may not be removed** and will be grayed out.
- **ThinManager Interactive Shadow Users** - Members of this group may shadow a terminal interactively.
- **ThinManager Power Users** can logoff sessions, kill processes, send messages, restart terminals, and calibrate touch screens. They cannot change terminal configurations, update firmware, update the TermCap, and restore configurations. ThinManager Power Users can shadow terminals from within ThinManager but cannot interact with the session.
- **ThinManager Shadow Users** - Members of this group may shadow a terminal but not interactively.
- **ThinManager Users** can view only. They cannot logoff sessions, kill processes, send messages, restart terminals, or calibrate touch screens. ThinManager Users cannot shadow a terminal.

Selecting the **Add Group** button to launch the **New Windows Group** window will allow the configuration of additional Windows User Groups.

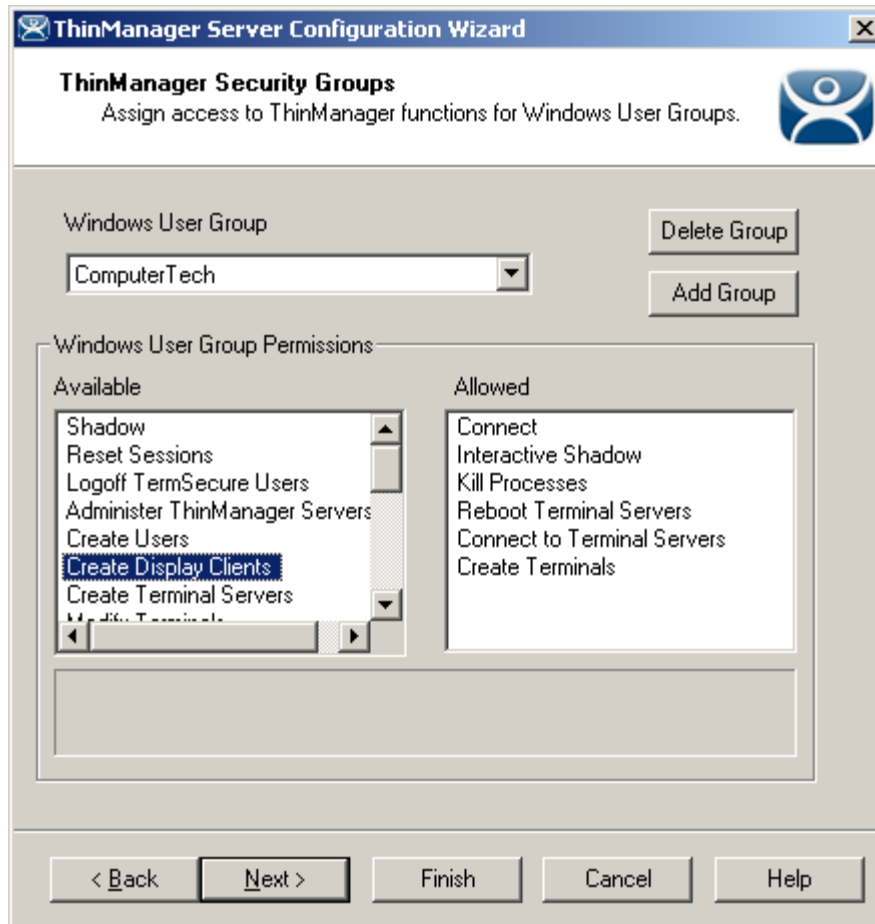
9.3.1.6 Add Windows Group



New Window User Group Window

Adding a Windows Group name in the **Enter Windows User Group Name** field of the **New Window Group** window and selecting the **OK** button will add the Windows User Group to the drop-down list.

Note: This doesn't create the user group on any servers. This just adds the name of an existing group to the list that ThinManager is maintaining.

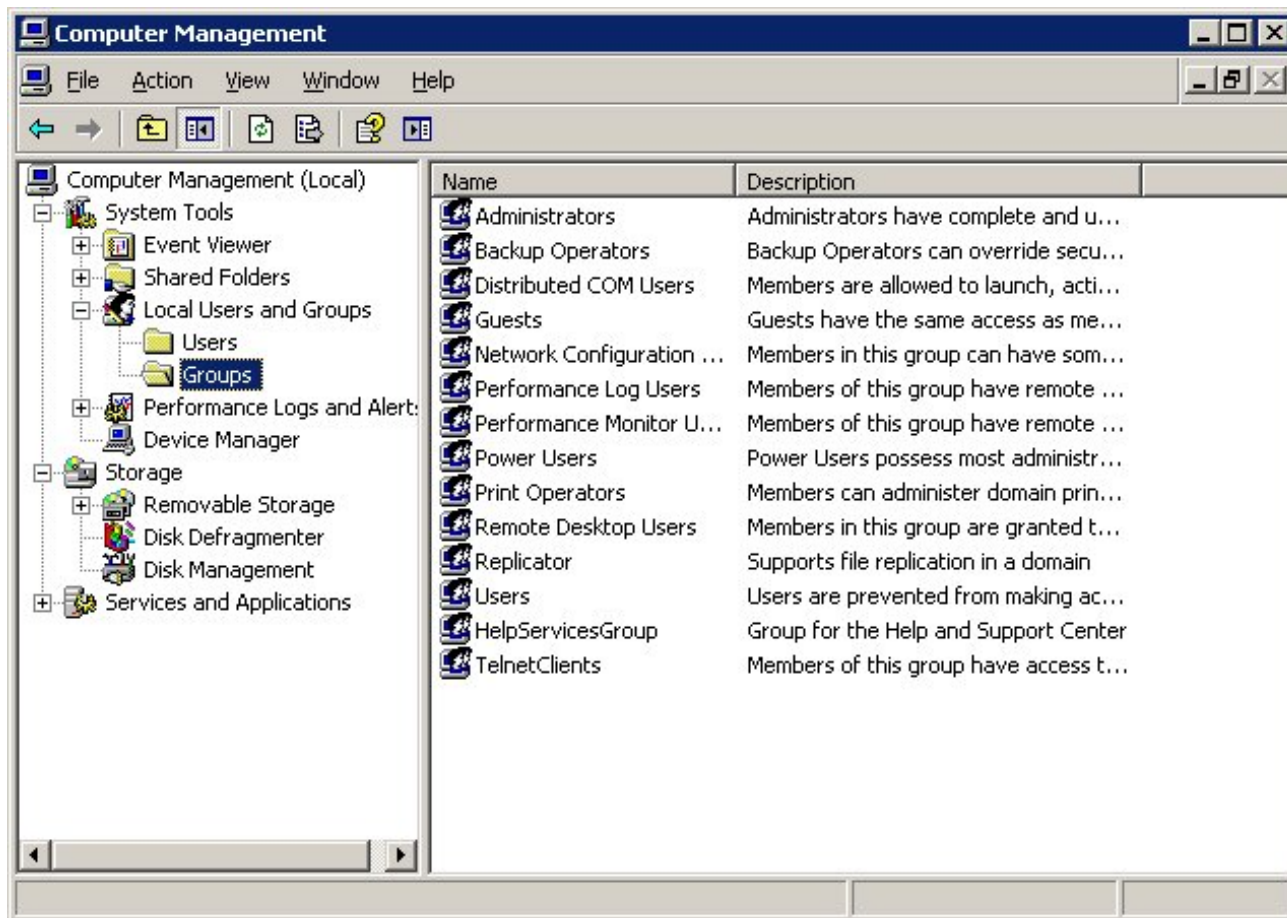


ThinManager Security Groups Page

Select the group from the **Windows Users Group** drop-down. Choose the permissions you want to grant to the group by double clicking on the function in the **Available Windows User Group Permissions** list. Members of the Windows User Group will have the selected permissions the next time they login.

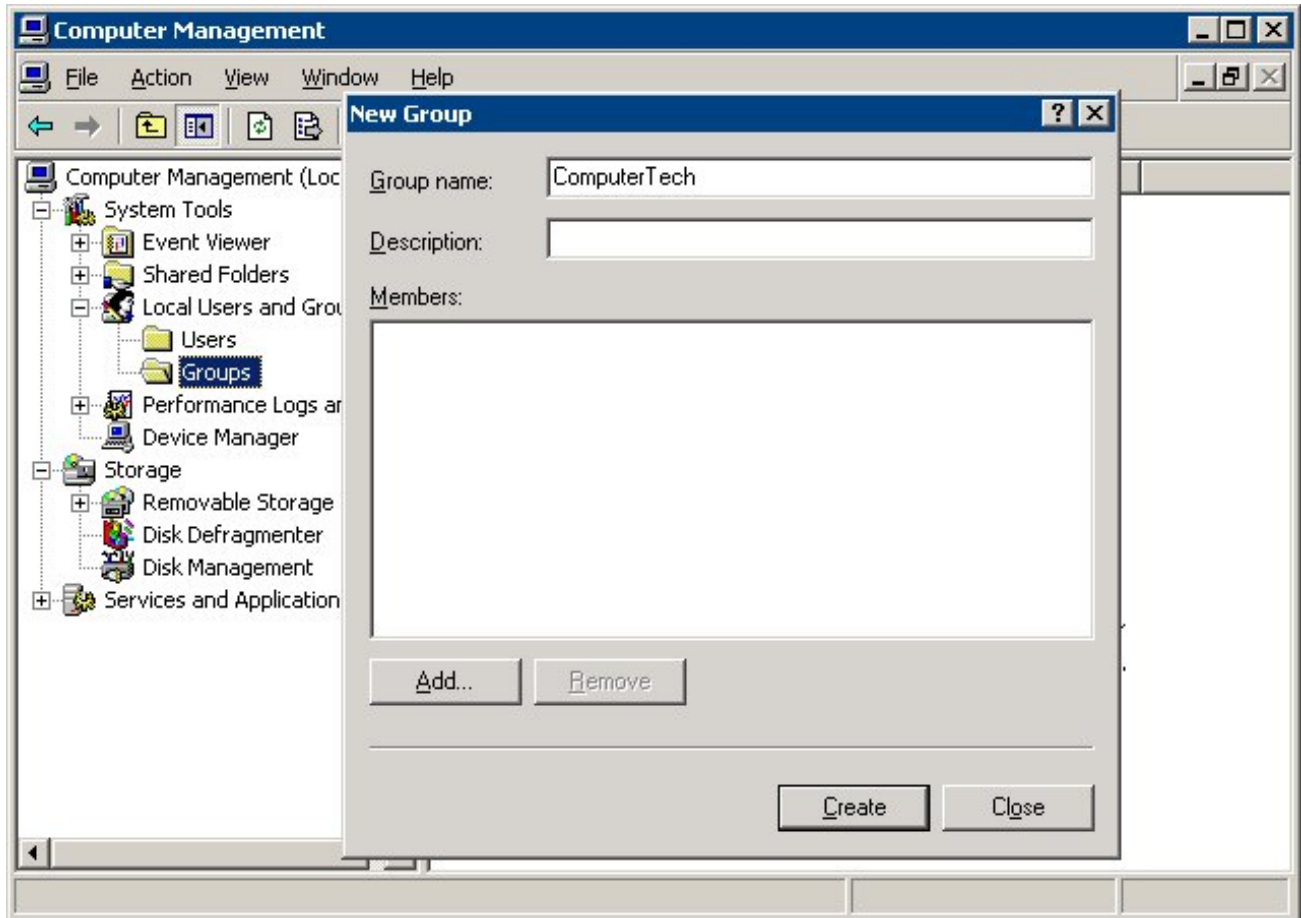
Although ThinManager has Windows User Groups pre-configured with privileges, these groups have not been created on the terminal servers.

To create a Windows User Group, open the **Computer Management Console** by selecting **Start > Settings > Control Panel > Administrative Tools > Computer Management**.



Created ThinManager Security Groups

Highlight **Groups** in the tree and select **Action > New Group** to launch the **New Group window**.



Microsoft New Group Windows

Enter the group name in the **Group name** field.

Add **Users** to the Windows User Group by selecting the **Add** button.

Select the **Create** button to finish the Windows User Group creation. Members of the Windows User Group will have the selected permissions the next time they login.

Note: The ThinServer service may need to be stop and restarted to load the new ThinManager Security Group settings.

Select **Next** to continue the **ThinManager Server Configuration Wizard**, **Finish** to save and close, or **Cancel** to close without saving.

9.3.1.7 Event Selection Page

	E-mail	Windows Message
ThinManager Server Start / Stop	<input type="checkbox"/>	<input type="checkbox"/>
Terminal Server Monitor Connection	<input type="checkbox"/>	<input type="checkbox"/>
Terminal Monitor Connection	<input type="checkbox"/>	<input type="checkbox"/>
Terminal Configuration Modified	<input type="checkbox"/>	<input type="checkbox"/>
Firmware Installation	<input type="checkbox"/>	<input type="checkbox"/>
TermCap Database Installation	<input type="checkbox"/>	<input type="checkbox"/>
License Installation	<input type="checkbox"/>	<input type="checkbox"/>

Event Selection

Importance of Page: ThinManager has event notification. E-mails or Windows messages can be sent by ThinManager to identify changes in the setup, configuration or status.

Settings:

- **Email** – Checking the **E-mail** checkbox will send an e-mail message when that event occurs. The e-mail needs to be set up on the next page of the wizard.
- **Windows Messages** – Checking the **Windows Message** checkbox will send a message to a terminal when that event occurs. The terminal needs to be defined on the next page of the wizard.

Why Change from Default Settings: Information about these events can be useful. The event needs checked to add the notification.

The ThinManager Server Stop/Start, Terminal Server Monitor Connection, and Terminal Monitor Connection events may indicate the failure of the ThinManager Server, Terminal Server, or terminal. Sharing information on configuration changes, firmware, TermCap, or license installation can be useful when management is shared among a group. Sending an e-mail to all group members keeps them informed of all changes.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.3.1.8 E-Mail or Windows Message Recipients Page

The screenshot shows a window titled "ThinManager Server Configuration Wizard" with a close button in the top right corner. The main heading is "E-mail or Windows Message Recipients" with a sub-instruction: "Enter the e-mail addresses to receive e-mails, and select the terminals that will receive Windows messages." A blue envelope icon is in the top right. The "E-Mail" section contains three text boxes: "SMTP Server" with "mail.yourdomain.com", "E-mail Return Address" with "thinserver@thinmanager.com", and "E-mail Addresses" with "it@yourdomain.com" and "maint@yourdomain.com". Below the "E-mail Addresses" box are "Add" and "Delete" buttons. The "Messages" section contains a "Terminals" text box with "Term2" and "Add" and "Delete" buttons. At the bottom are navigation buttons: "< Back", "Next >" (highlighted with a dashed border), "Finish", "Cancel", and "Help".

Email or Windows Messaging Recipients

Importance of Page: This page defines what users are notified of event changes from the **Event Selection** page.

Fields:

- **SMTP Server** - Enter the SMTP (Simple Mail Transfer Protocol) server to be used by the ThinManager Server in the field.
- **E-Mail Return Addresses** - Enter the return e-mail address to be used by the ThinManager Server in the field
- **E-Mail Addresses** - ThinManager will send an e-mail message to the addresses in this text box when an event selected on the **Event Select** page occurs.
- **Terminals** - ThinManager will send a message to the terminals in this text box when an event selected on the **Event Select** page occurs.

Buttons:

- **Add (E-Mail Addresses)** - Select this button to add e-mail addresses through the **Enter the E-mail address** window.
- **Delete (E-Mail Addresses)** - Select this button to delete a highlighted e-mail address from the **E-mail Addresses** list.

- **Add (Terminals)** - Select this button to add a terminal through the **Select Terminal(s)** window.
- **Delete (Terminals)**- Select this button to delete a highlighted terminal from the **Terminals** list.

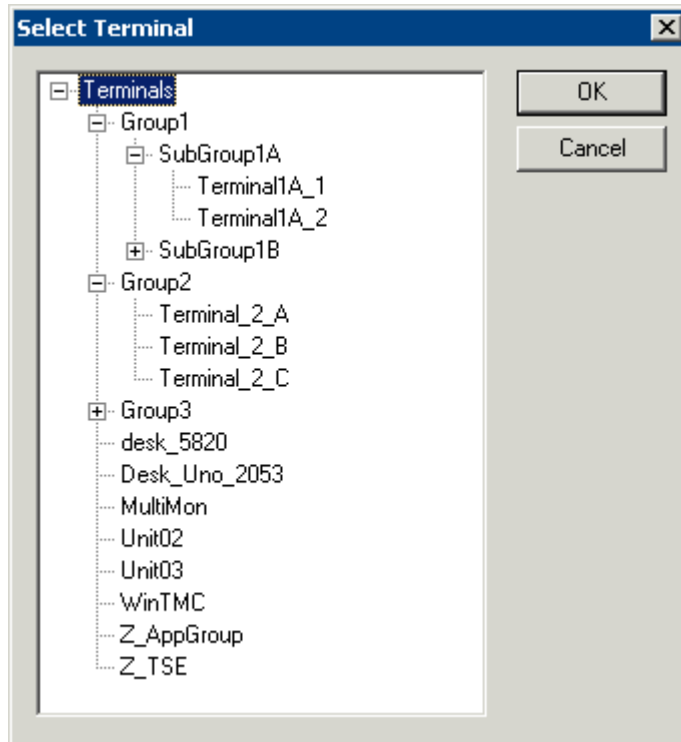
Add (E-Mail Addresses) - Select this button to add e-mail addresses through the **Enter the E-mail address** window.



Enter the E-mail Address Window

Enter the desired e-mail address in the entry form and select **OK**. Select the **Cancel** button to close the window without making changes.

Add (Terminals) - Select this button to add a terminal through the **Select Terminal(s)** window.



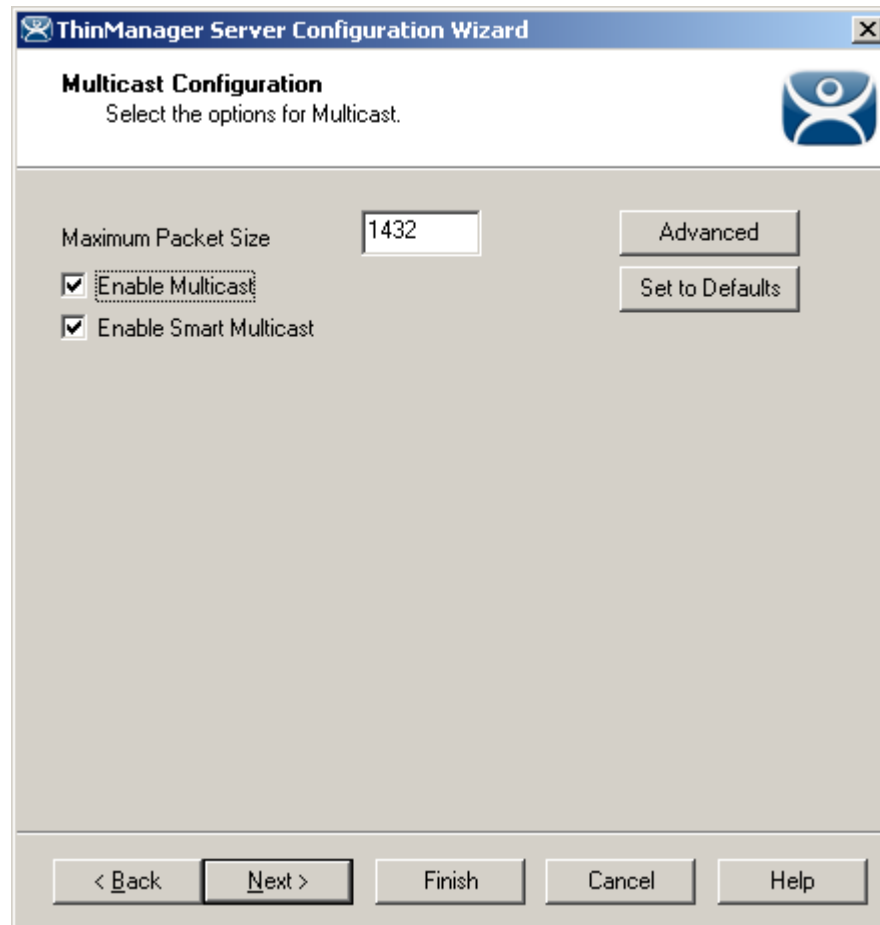
Terminal Selection Window

The **Select Terminal(s)** windows will list the terminals configured on the ThinManager Server. Highlight the desired terminal and select the **OK** button.

Why Change from Default Settings: You need to add recipients for event notification to work.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.3.1.9 Multicast Configuration Page



Multicast Configuration Page

Importance of Page: Allows multicast to be configured for ThinManager Servers.

Fields:

- **Maximum Packet Size** – This allows the firmware download packet size to be changed, if needed.

Settings:

- **Enable Multicast** - This checkbox, if selected, enables Multicast.
- **Enable Smart Multicast** - This checkbox, if selected, enables Smart Multicast.

Buttons:

- **Advanced** - This button, if selected, displays the advanced settings.
- **Set to Defaults** - This button, if selected, sets the advanced settings back to the defaults.

Why Change from Default Settings: You may need to change the settings if there is a conflict with another multicast server on the network.

Multicast provides the ability for an unlimited number of terminals to boot simultaneously from the same data stream. This feature reduces the amount of network traffic and reduces the amount of load on the ThinManager Server when multiple terminals are booting concurrently. This function is especially useful for low bandwidth connections and highly utilized networks.

Smart Multicast allows the terminal firmware to be sent directly to the terminal while a single terminal is booting. If additional terminals request the terminal firmware during this time, the firmware will be multicast so that all terminals can receive the firmware from a single data stream. If Smart Multicast is disabled, the firmware will always be sent as a multicast transmission.

Multicast is only available on terminals with ACP Boot Loader Version 5.0 and later. No local terminal configuration is needed to use Multicast.

Unicast – ThinManager has error checking that will switch a terminal's firmware download to unicast if the multicast download fails.

The thin client will continue to try to use multicast at each boot but will use unicast if multicast keeps failing.

Advanced Settings – Selecting the **Advanced** button will reveal advanced settings for multicast.

The screenshot shows the 'ThinManager Server Configuration Wizard' window, specifically the 'Multicast Configuration' step. The title bar reads 'ThinManager Server Configuration Wizard'. Below the title bar, the text says 'Multicast Configuration' and 'Select the options for Multicast.' There are two checkboxes: 'Enable Multicast' and 'Enable Smart Multicast', both of which are checked. A 'Maximum Packet Size' field is set to '1432'. There are two buttons: 'Advanced' and 'Set to Defaults'. Below these are two sections: 'Multicast Settings' and 'IGMP Settings'. The 'Multicast Settings' section has three fields: 'Address' (224 . 100 . 100 . 100), 'Port' (1758, with a range of 1-65535), and 'Time-to-Live (TTL)' (60, with a range of 1-255). The 'IGMP Settings' section has two fields: 'Version' (2, with a range of 1,2) and 'Time-to-Live (TTL)' (1, with a range of 1-255). At the bottom of the window are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Advanced Multicast Options

Importance of Page: This allows changing the multicast settings if there is a conflict with another multicast server on the network.

Settings:

- **Multicast Settings**

- **Address** – This is the IP address that will be used for Multicast transmissions.
- **Port** – This is the destination port that will be used for Multicast transmissions.
- **Time-to-Live (TTL)** – This is the maximum number of router hops for Multicast packets. Setting this value to 255 allows for unlimited hops.

- **IGMP Settings (Internet Group Management Protocol)**
 - **Version** – This sets the IGMP version for use with multicast capable routers.
 - **Time-to-Live (TTL)** – This sets the time-to-live value for IGMP packets.

Buttons:

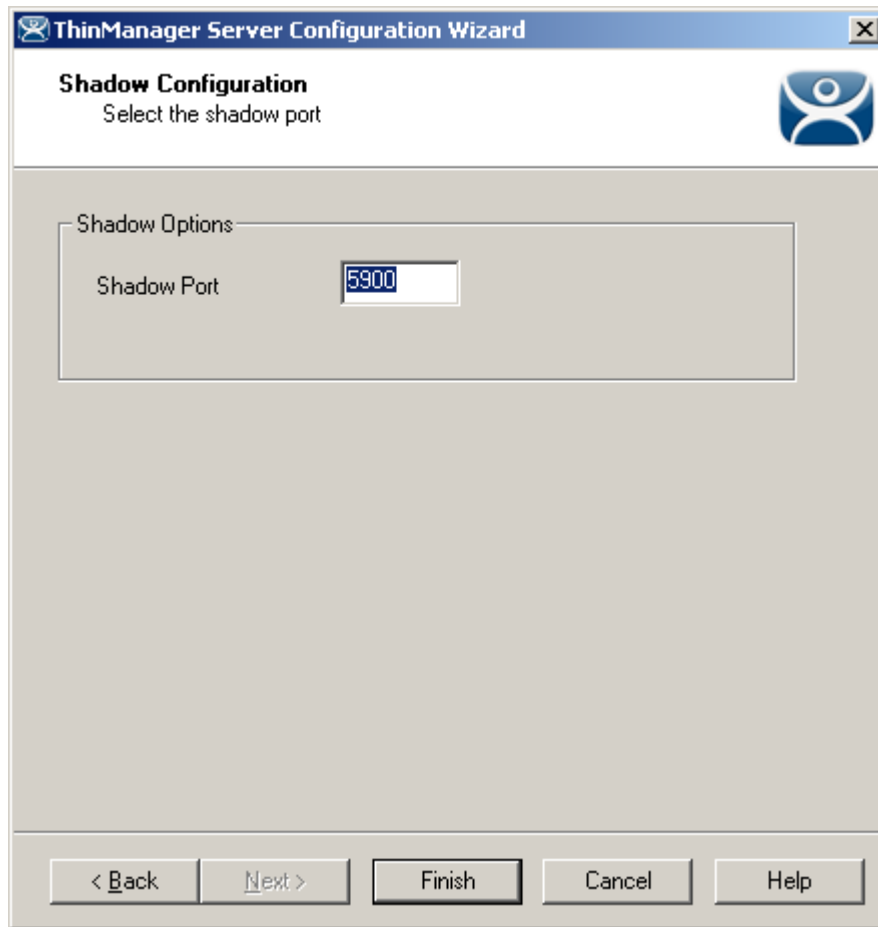
- **Advanced** - This button displays the advanced settings.
- **Set to Defaults** - This button sets the advanced settings back to the defaults.

Why Change from Default Settings: Change these if a conflict develops.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.3.1.10 Shadow Configuration Page

ThinManager allows the port used for shadowing to be configured.



Shadow Configuration Port

Importance of Page: This allows the port that is used for shadowing to be changed.

Settings:

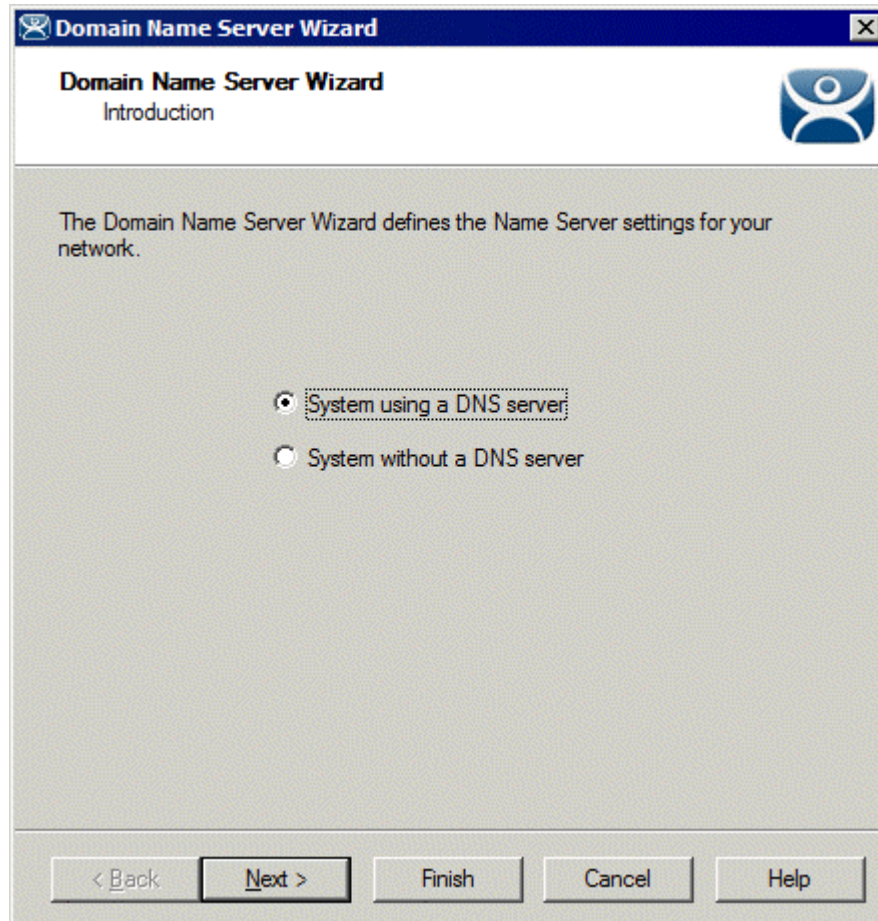
- **Shadow Port** – ThinManager uses port 5900 as the default port for shadowing. Entering a different port number into the Shadow Port field will change the port used if it is in conflict with another processes use of the port.

Why Change from Default Settings: ThinManager uses the same port as VNC. If VNC is installed on a WinTMC PC then there could be a conflict between shadowing services. If this happens the port can be changed in ThinManager.

Select **Finish** to accept changes or select **Cancel** to close without making changes.

9.4 DNS Configuration

Selecting **Manage > DNS Configuration** will launch the **Domain Name Server Wizard** to allow the definition of Domain Name Servers.



Domain Name Service Wizard - Introduction

Importance of Page: This allows you to use a DNS server to identify terminal servers instead of relying on IP addresses.

Settings:

- **System without a DNS server** - This is selected if you are not using a DNS server for computer identification. No configuration is needed. Select the **Finish** button to close the wizard.
- **System using a DNS server** - This is selected if you are not using a DNS server for computer identification.. Select the **Next** button to launch the **Domain Name Service Configuration** screen.

Why Change from Default Settings: Using a DNS server allows you to point to a server by name instead of IP address as the DNS server will handle name resolution.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

9.4.1.1 Domain Name Server Configuration Page

The screenshot shows a window titled "Domain Name Server Wizard" with a close button (X) in the top right corner. Below the title bar, the text reads "Domain Name Server Configuration" followed by "Enter the list of DNS servers on your network and your domain information." To the right of this text is a blue icon of a person's head and shoulders. The main area of the window contains a large empty list box labeled "DNS Servers" with up and down arrow buttons to its right. Below the list box are two buttons: "Add DNS Server" and "Remove DNS Server". Underneath these are two text input fields: "Domain" and "Search Domain". Below the "Search Domain" field is a button labeled "Read DNS Setting from this computer". At the bottom of the window is a navigation bar with five buttons: "< Back", "Next >", "Finish" (which is highlighted with a dotted border), "Cancel", and "Help".

Domain Name Server Configuration

Importance of Page: This is the page where the DNS server is defined in ThinManager.

Fields:

- **DNS Servers** – The DNS Servers that ThinManager and the terminals will use need to be listed in this list box. They are added with the **Add DNS Server** button. See DNS Server Entry Window for details.
- **Domain** - This is a field for the DNS domain name.
 - **Search Domain** - This field will be added as a prefix to any DNS searches.

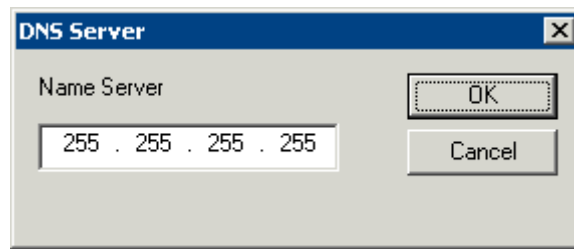
Buttons:

- The **Add DNS Server** - This button will launch the **DNS Server** dialog box that allows a DNS Server to be added to the list.
- **Remove DNS Server** - This button will remove a highlighted DNS server from the list.
- **Arrows (Up/Down)** - The arrow keys will change the order of DNS servers used. Highlight a DNS server in the list and select the appropriate arrow.
- **Read DNS Setting from this computer** - This button will transfer the DNS settings from the current computer into ThinManager

Why Change from Default Settings: The default is blank. You need to add values for this to work.

Select **Finish** to save and close, or **Cancel** to close without saving.

9.4.1.2 DNS Server Entry Window



Domain Name Server Configuration - Add DNS Server

Selecting the **Add DNS Server** button will launch a **DNS Server** dialog box that allows the IP address of the DNS server to be entered.

Add the IP address of the DNS server into the **DNS Server** dialog and select **OK**. Additional IP addresses can be listed by selecting the **Add DNS Server** button again.

Select the **Finish** button when the DNS configuration is done.

10 Terminal Configuration

10.1 Terminal Configuration Wizard

The Terminal Configuration Wizard is used to configure terminals for use with ThinManager.

If a terminal is a member of a terminal group that has a group setting in use then the terminal will have that setting grayed out and deactivated. The setting will need to be changed at the group level in the Group Configuration Wizard and not the Terminal Configuration Wizard.

Launch the Terminal Creation Wizard by:

- Selecting the ThinManager Server in the ThinManager tree and selecting **Edit > Add Terminal** from the menu bar, or
- Selecting the **Terminals** branch in the ThinManager tree, right-clicking on the Terminals icon, and selecting the **Add Terminal** option, or
- Selecting a Group in the ThinManager tree, right-clicking on the Group icon, and selecting the **Add Terminal** option. This puts the terminal in that group.

10.1.1.1 Terminal Name Page

Terminal Name
Enter the name for this terminal, select the terminal group to which this terminal belongs, or choose to copy the configuration from another terminal.

Terminal Name
This must be a unique name using letters, numbers, hyphens (-), and underscores (_) only.

Terminal Group
Change Group

Copy Settings
 Copy Settings from another Terminal
Copy From

Permissions

< Back Next > Finish Cancel Help

Terminal Configuration Wizard - Terminal Name

Importance of Page: Names the terminal and allows it to be added to a group.

Settings:

- **Terminal Name** – Required field for unique terminal name. Keep it under 15 characters.
- **Terminal Group** – Adds the terminal to a group of terminals by using the **Change Group** button.
- **Copy Settings** – Allows the terminal to be created quickly by copying configuration from an existing terminal.

Buttons:

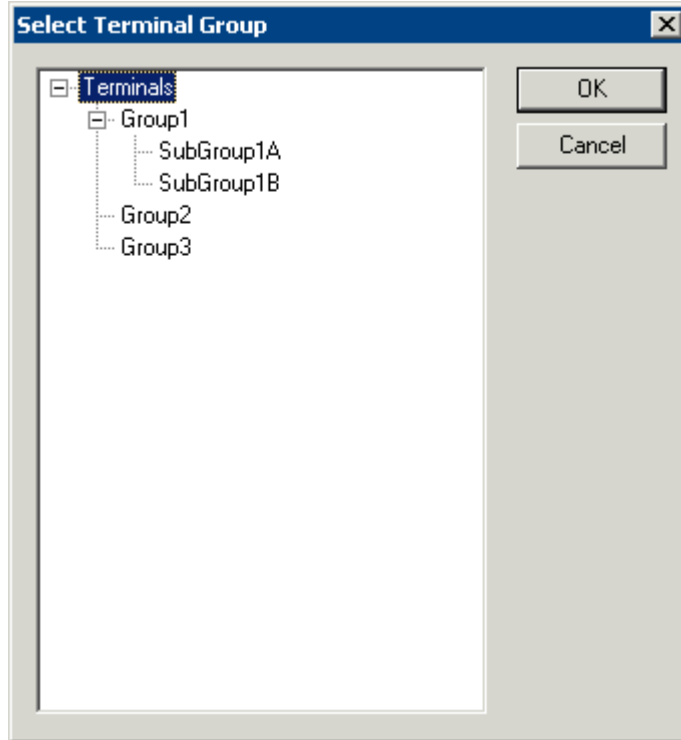
- **Change Group** – Launches tree to select group for the terminal to join. See Changing a Terminal's Group for details.
- **Copy From** – Launches tree that allows an existing terminal configuration to be applied to the new terminal. Only active when checkbox is selected.
- **Permissions** – Applies TermSecure permissions to the terminal. See Permissions for details.

Why Change from Default Settings:

Terminal needs a unique name. It can have setting from another terminal applied to speed configuration. Adding to a group will speed configuration and management.

10.1.1.2 *Joining a Group*

The Change group button launches the **Select Group** window to allow the terminal to join a group of terminals.



Select Group Window

Expand the Terminals tree to show the created groups. Highlight the desired group and select **OK** to join. This will close the window.

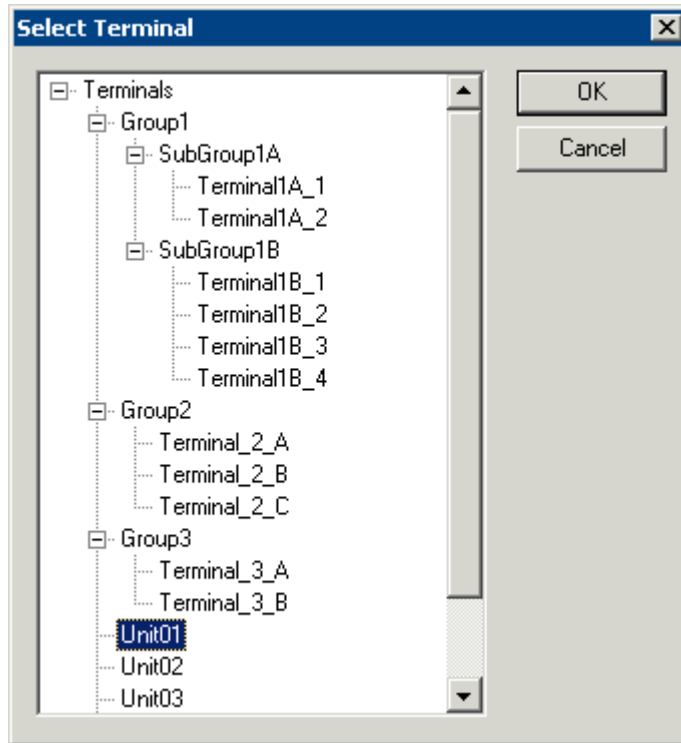
To remove a terminal from a group highlight **Terminals** and select the **OK** button.

Cancel will close without changes.

10.1.1.3 *Copy Settings*

Terminal configuration can be sped up by copying the settings from an established terminal.

Select the **Copy Settings from another Terminal** checkbox and then select the **Copy From** button: This will launch the **Select Terminal** window that allows the terminal to copy settings from another terminal.



Select Terminal Window

The **Select Terminal** window will show a tree of the configured Terminal Groups and terminals. Highlight the terminal that you wish to copy and select the **OK** button to load the settings and return to the Terminal Configuration Wizard.

The **Cancel** button will close the **Select Terminal** window without making changes.

10.1.1.4 Terminal Hardware Page

Terminal Configuration Wizard

Terminal Hardware
Select the manufacturer and model of this terminal.

Use this to configure the type of hardware for this terminal.

Make / OEM: ACP

Model: DC-30-100

OEM Model: DC-30-100

Video Chipset: CyberPro2010

Terminal ID: None

Clear

Edit

< Back Next > Finish Cancel Help

Terminal Configuration Wizard - Hardware Configuration

Importance of Page: Defines the hardware used for the terminal.

Settings:

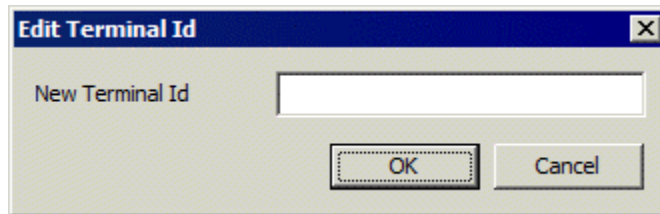
- **Make/OEM:** This dropdown allows the make of the hardware to be selected.
- **Model:** This dropdown allows the model of the hardware to be selected.
- **OEM Model:** This displays the actual model used once the terminal connects to ThinManager.
- **Video Chipset:** This displays the video chipset used once the terminal connects to ThinManager.
- **Touch Type:** This displays the touch screen controller used if the thin client has an integrated touch screen.
- **Terminal ID** – This displays the MAC address of a connected terminal. We use it to identify the thin client. On WinTMC c clients this will be the terminal name.

Buttons:

- **Clear:** This will remove the **Terminal ID** identifier from the configuration of an inactive terminal. The MAC address of a terminal is used for the Terminal ID. Clearing the Terminal ID will free hardware that has already been tied to a configuration and allow the terminal to be tied to a different

configuration, without deleting its original configuration. It will also allow the make and model of the hardware to be changed.

- **Edit:** Selecting this button will launch the **Edit Terminal ID** window that allows you to manually change the MAC address of the configuration. This allows you do a replacement of an old terminal by entering the MAC address of the replacement. Entering the new MAC address allows the new terminal to boot and retrieve its configuration without selecting the terminal from the list.



Edit Terminal ID Window

Why Change from Default Settings: Using the correct make & model of the hardware during configuration allows the wizard to display only settings that are appropriate for that specific model, making configuration more accurate.

If you add a different model than you used in configuration then ThinManager will adjust the configuration to match the new hardware. This is down with help from the TermCap database. See TermCap Database for details.

A **WinTMC** connection needs to be configured as **Generic/Personal Computer**. See WinTMC Overview for details.

Note: The default **Make** and **OEM Model** is set to the oldest unit, the ACP **DC-30-100** because all following units exceed its capabilities. If you configure your units as a DC-30-100 you will want to adjust the video setting once the actual hardware is attached, as the DC-30-100 video is limited to 800x600, 256-color resolution.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.1.5 Terminal Options

Terminal Configuration Wizard

Terminal Options
Select the options for this terminal.

Terminal Replacement

Allow replacement at terminal if off line

Terminal Schedule

Set Schedule Schedule

Terminal Effects

Enable Terminal Effects
 Show terminal status messages

Shadowing

Allow terminal to be shadowed YES

Allow Interactive Shadow

< Back Next > Finish Cancel Help

Terminal Options Page

Importance of Page: Provides configuration of a few terminal functions.

Settings:

- **Allow replacement at terminal if offline** – This allows the terminal to show up in the replacement list during a new terminal connection
- **Set Schedule** – This will allow the Schedule button to become active. See Scheduling for details.
- **Enable Terminal Effects** - This allows the desktops in MultiSession to slide smoothly into the desktop instead of appearing instantaneously.
- **Show terminal status messages**, - This allows the terminal to display status messages in the upper left corner of the screen.
- **Allow terminal to be shadowed** – This dropdown sets the Shadowing setting allowing the configuration of Shadowing Options.
- **Allow Interactive Shadow** – This allows users with Shadowing permission to interactively shadow the terminal. See Interactive Shadow for details.

Buttons:

Schedule – This launches the Event Schedule window for the terminal. See Scheduling for details.

Why Change from Default Settings:

- **Allow replacement at terminal if offline** – This prevents an offline terminal from being selected when adding a new terminal. Turning this off prevents a critical configuration from being transferred. If this is turned off then an administrator will need to turn it back on if this terminal needs replaced.
- **Show terminal status messages** - Suppressing incidental messages like Display Client switching and TermSecure logins can keep an operator from worrying about non-essential messages.
- **Allow terminal to be shadowed** - Changing the setting controls connection settings:
 - **No** – This will prevent the terminal from being shadowed by anyone.
 - **Ask** – This will ask the user to allow shadowing. The user will need to say **Yes** on a message window before the shadowing is allowed.
 - **Warn** - Will display a message window alerting the terminal that it is to be shadowed, but doesn't require user input before the shadowing is allowed.
 - **Yes** – Will allow shadowing to occur without warning or user input.

Allow Interactive Shadow – Unselecting will prevent the observer from controlling the session. This “Look but don't touch” mode prevents an observer from clicking the wrong buttons.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.1.6 Terminal Mode Selection Page

The screenshot shows a window titled "Terminal Configuration Wizard" with a close button in the top right corner. The main title is "Terminal Mode Selection" and the subtitle is "Select the operating modes for this terminal". There is a blue icon of a person in the top right corner. The main area contains three sections:

- Method of Terminal Server Selection:** A group box containing two radio buttons. The first is "Use Display Clients" (selected) and the second is "Select Individual Terminal Servers". Below the radio buttons is the text "Selecting Display Clients is recommended."
- TermSecure:** A group box containing a checkbox labeled "Enable TermSecure", which is currently unchecked.
- MultiMonitor:** A group box containing a checkbox labeled "Enable MultiMonitor", which is currently unchecked.

At the bottom of the window, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Server Specification

Importance of Page: This page has the settings that allow the use of Display Clients, TermSecure, and MultiMonitor.

Settings:

Method of Terminal Server Selection

- ***Use Display Clients*** - This setting is required to use most features and functions like SmartSession load balancing, MultiSession, and Terminal-to-Terminal shadowing.
- ***Select Individual Terminal Servers*** - This is a legacy setting from earlier versions of ThinManager. Using this setting will limit the features available.

If ***Use Display Clients*** is selected, two other settings may become available:

- ***Enable TermSecure*** – This checkbox enables TermSecure on the terminal. This checkbox will only be displayed if the ThinManager Server has a TermSecure license installed. See TermSecure for details on this function.
- The ***Enable MultiMonitor*** checkbox will be displayed if the hardware selected on the **Terminal Hardware** page is a MultiMonitor-capable thin client. Selecting this will allow the terminal to be configured for MultiMonitor. See MultiMonitor for details.

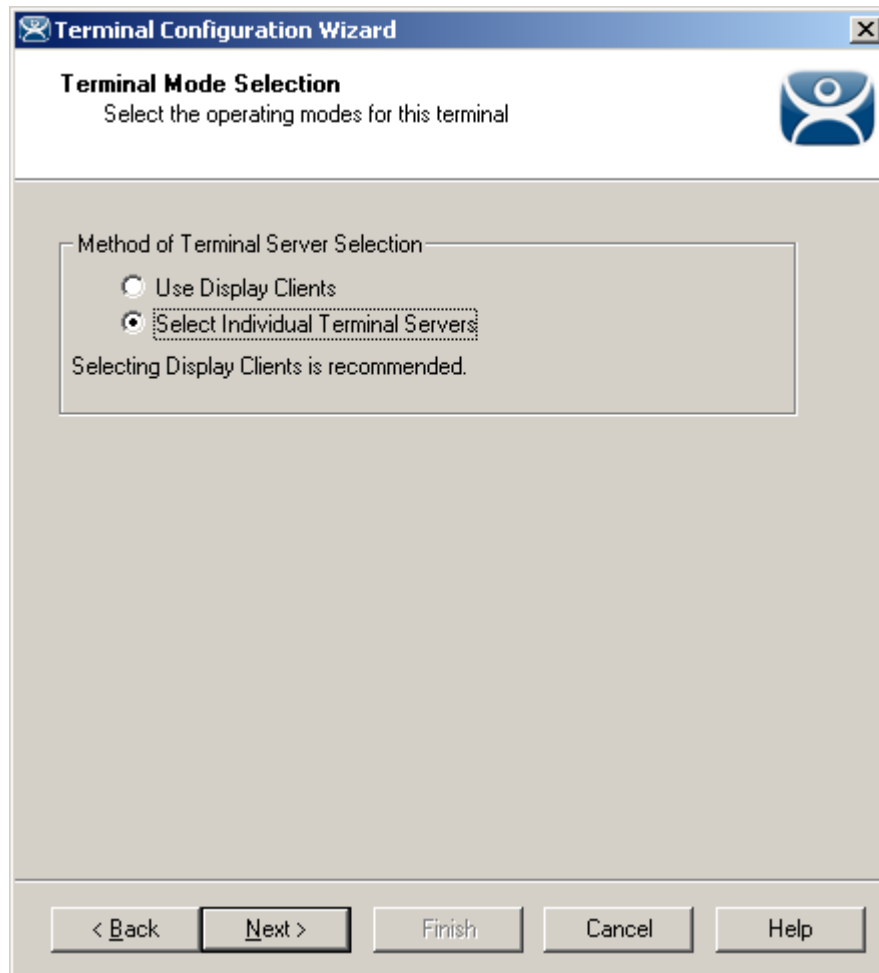
Why Change from Default Settings:

We recommend using Display Clients because that expands the features and functions available.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.2 Terminals Using Individual Terminal Servers

Terminals may connect to a series of individual terminal servers by selecting the **Select Individual Terminal Servers** on the **Terminal Mode Selection** page. Although this is **not the recommended method** this is covered here.



Terminal Configuration Wizard - Terminal Server Specification

Importance of Page: Used to select the legacy individual terminal server method.

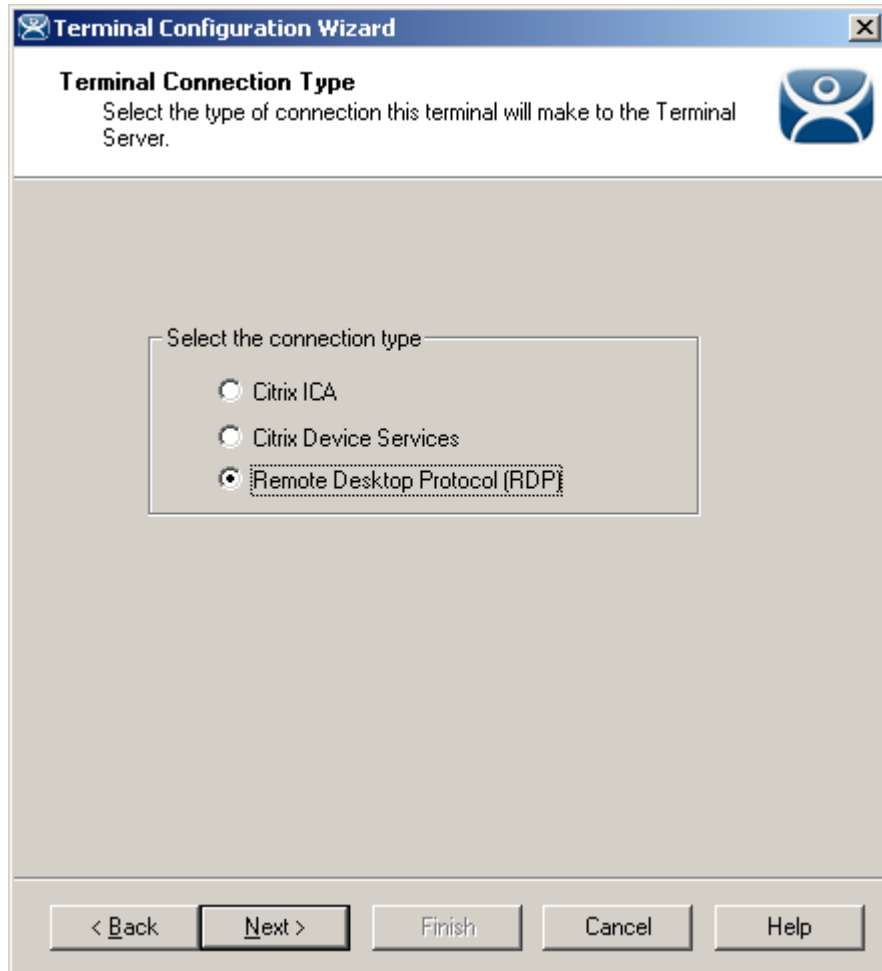
Note: We strongly recommend using Display Clients because that expands the features and functions available.

Settings:

- **Select Individual Terminal Servers** - This is a legacy setting from earlier versions of ThinManager. Using this setting will limit the features available. Selecting this enables use of the individual terminal server method.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

The **Terminal Connection Type** page is displayed next to allow the selection of the desired Client Communication Protocol.



Terminal Configuration Wizard - Connection Type

Importance of Page: Selects the client/server communication protocol.

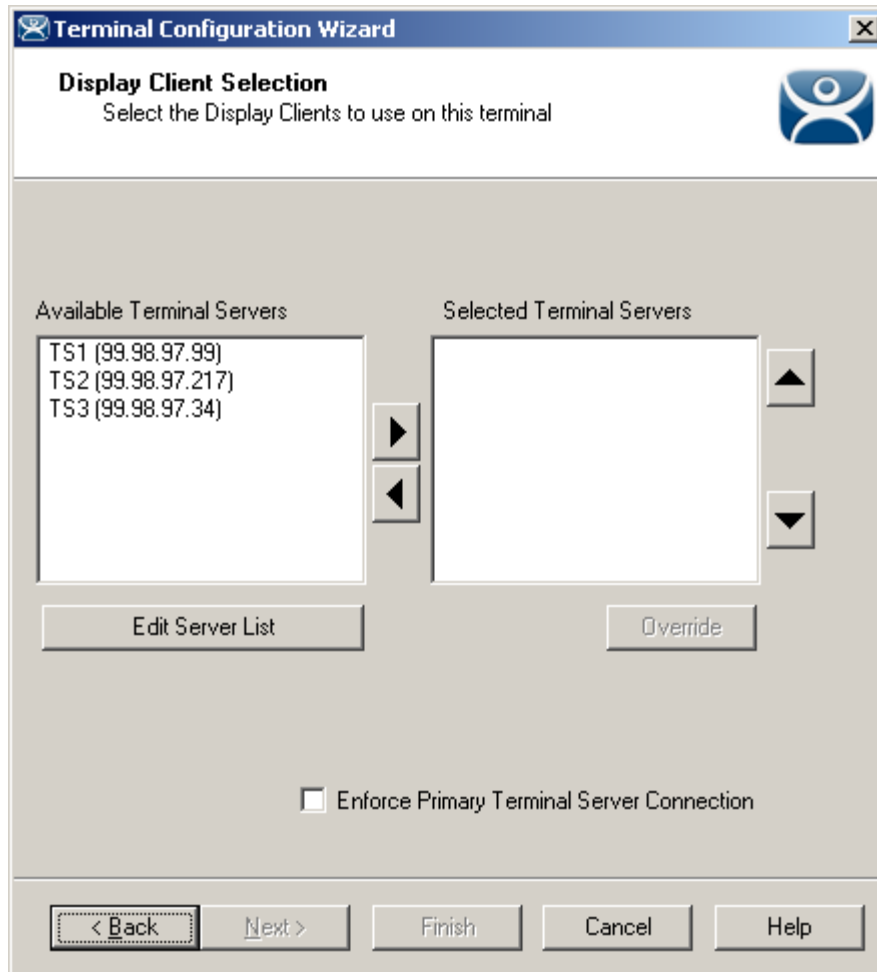
Settings:

- **Citrix ICA** – This allows the use of the Citrix© ICA protocol in client to server communications.
- **Citrix Device Services** – This is a legacy version of the ICA protocol used on Windows NT and Windows 2000 terminal servers.
- **Remote Desktop Protocol (RDP)** – This is the default protocol from Microsoft©. It is automatically installed on Microsoft© terminal servers.

Why Change from Default Settings: This is where the terminal is configured to use the Citrix© ICA protocol if the Citrix© ICA protocol is going to be used instead of the default RDP.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

Selecting the Citrix ICA setting will change the path of the Terminal Configuration Wizard to display additional configuration pages. See Citrix for details.



Terminal Server Selection

Importance of Page: This allows the selection of the terminal servers that the terminal will use. Adding multiple terminal servers to the **Selected Terminal Server** list will establish failover.

List Box:

- **Available Terminal Servers** – This is the list of the terminals configured in the Terminal Server Configuration Wizard and available to the terminal. If the Available Terminal Server list box is empty the Terminal Server Configuration Wizard can be launched with the **Edit Server List** button to define the terminal servers.
- **Selected Terminal Servers** – This is the list of terminal servers that the terminal will connect to, in the order that they will connect. Move the terminal servers to this list with the left and right arrow or by double clicking on the name. Listing two or more terminal servers configures Failover. The terminal will connect to the first in the list. If it fails than the terminal will try the next in the list.

Buttons:

- **Arrows** – The left and right arrows move the terminal servers between list boxes. The up and down arrow change the order that the terminal servers are used. The top terminal server is considered the primary terminal server.

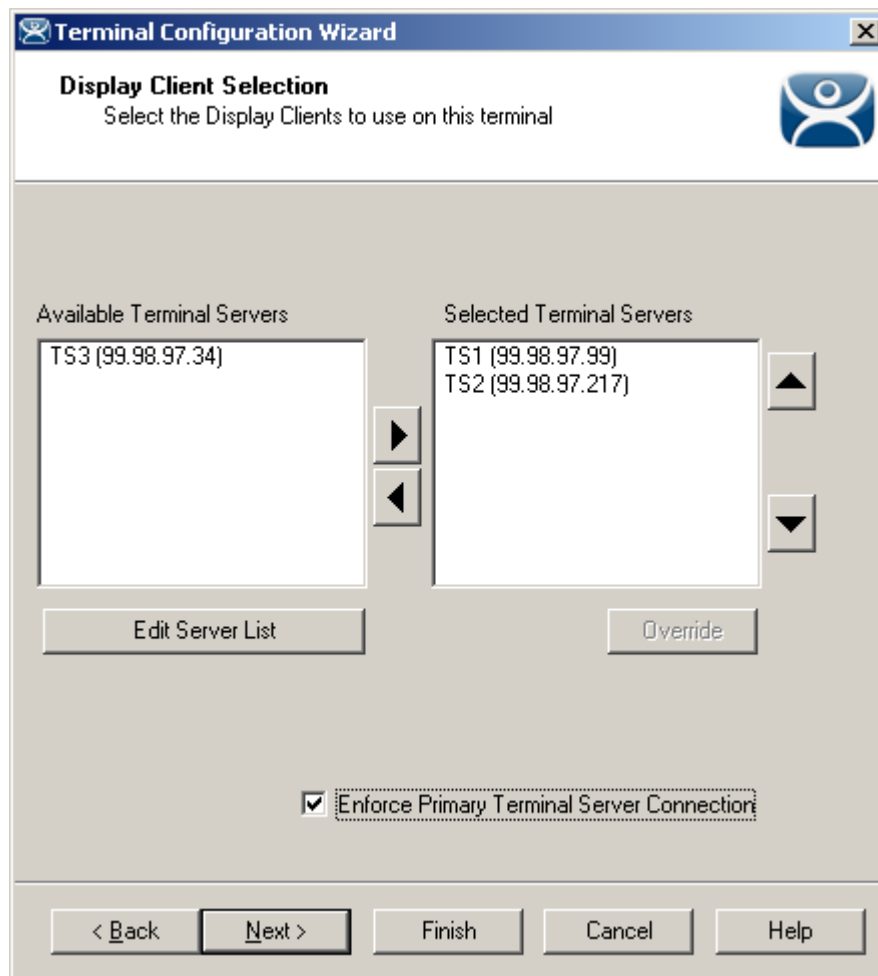
- **Edit Server List** – This launches the **Terminal Server Configuration Wizard** that allows terminal servers to be defined within ThinManager. Selecting **Manage > Terminal Server List** from the ThinManager menu will also launch the Terminal Server Configuration Wizard.
- **Override** – This is not used with individual terminal servers.

Settings:

- **Enforce Primary Terminal Server Connection** – This will cause a terminal that failed over to a backup terminal server to return to the primary terminal server whenever that server becomes available.

Why Change from Default Settings: It is critical to list the terminal servers that the terminal will use. The wizard will not advance without a terminal server selected.

If the **Available Terminal Servers** column is empty, the **Terminal Server List Wizard** needs to be run to define the terminal servers. Select the **Edit Server List** to launch the Terminal Server Configuration Wizard and define the terminal servers.



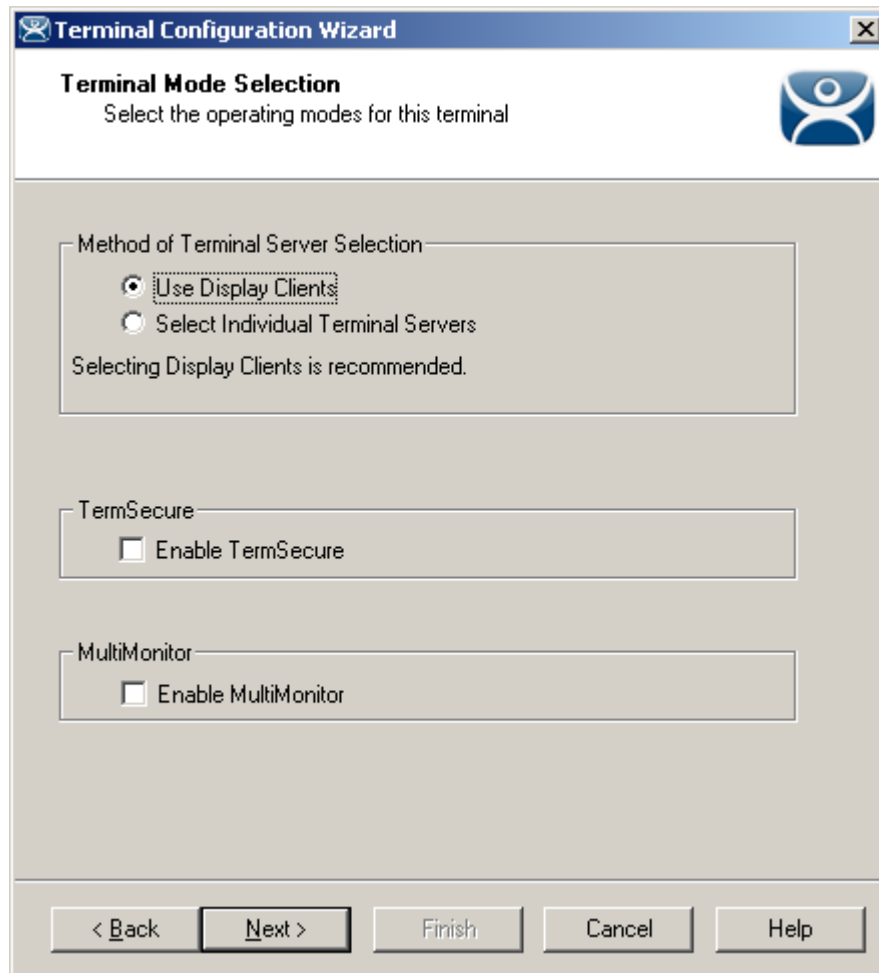
Terminal Configuration Wizard - Terminal Server Selection

This is an example of a terminal with the terminal servers selected.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.3 Terminals Using Display Clients

Terminals may be configured to use Display Clients by selecting the **Use Display Clients** on the **Terminal Mode Selection** page instead of using the **Select Individual Terminal Servers** setting.



Terminal Configuration Wizard - Terminal Server Specification

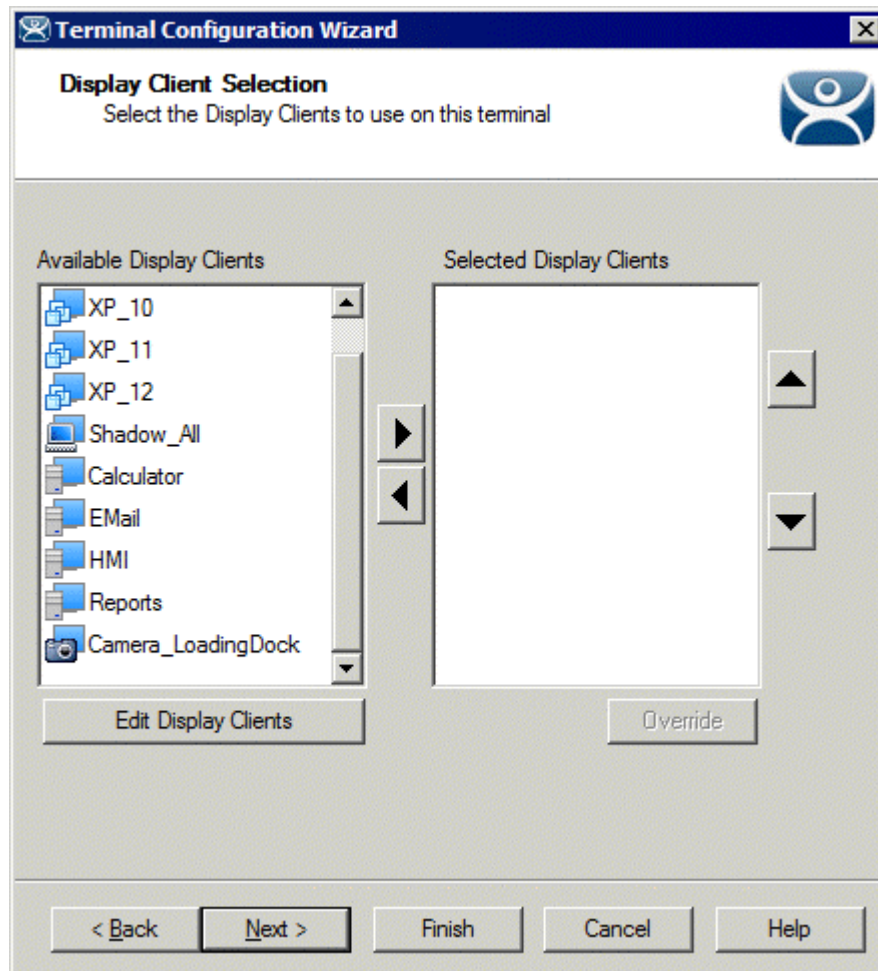
If the **Use Display Clients** is selected, two other settings may become available:

- **Enable TermSecure**, when checked, will enable TermSecure functionality. This checkbox will only be displayed if the ThinManager Server has a TermSecure license installed. See TermSecure for details on this function.
- The **Enable MultiMonitor** checkbox will be displayed if the hardware selected on the **Terminal Hardware** page is a MultiMonitor-capable thin client. Selecting this will allow the terminal to be configured for MultiMonitor. See MultiMonitor for details.

Select **Next** to continue configuration.

10.1.4 Display Client Selection

The *Display Client Selection* page is displayed next to allow the selection of the desired Display Clients.



Terminal Configuration Wizard – Display Client Selection

Importance of Page: This allows the selection of the Display Clients that the terminal will use. Adding multiple Display Clients to the **Selected Display Clients** list will establish MultiSession.

List Box:

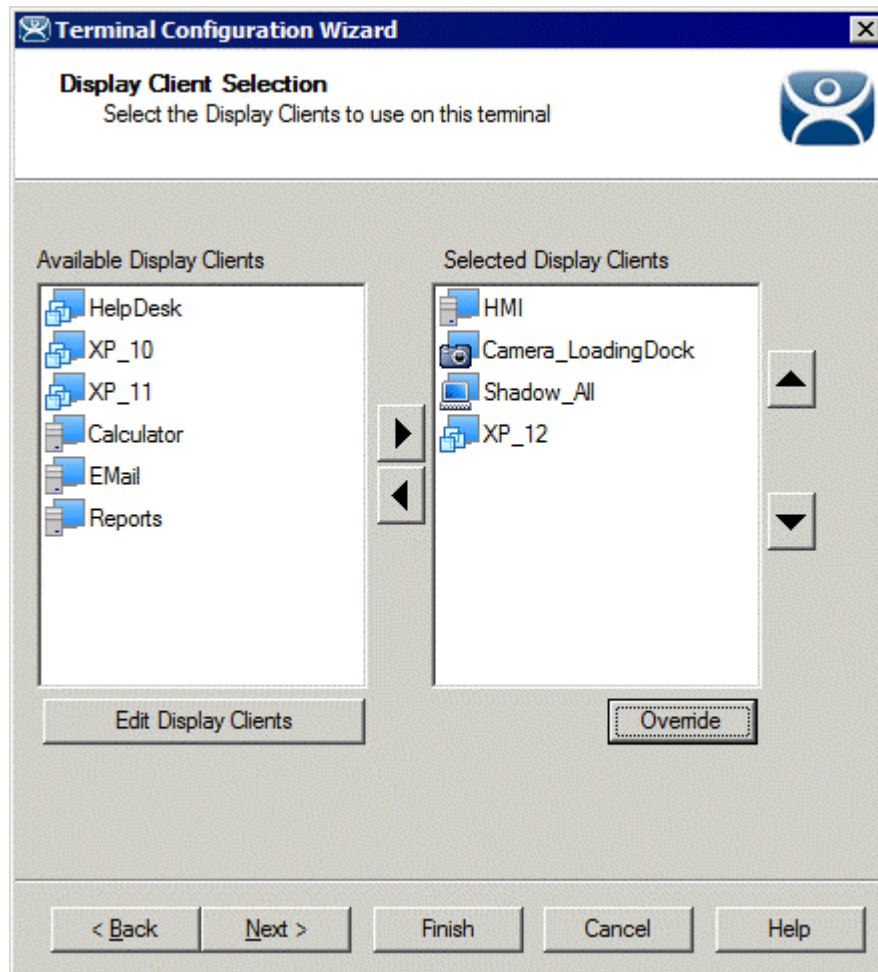
- **Available Display Clients** – This is the list of the Display Clients configured in the Display Client Configuration Wizard and available to the terminal. If the Available Display Client list box is empty the Display Client Configuration Wizard can be launched with the **Edit Display Clients** button to define the Display Clients.
- **Selected Display Clients**– This is the list of the Display Clients that the terminal will connect to, in the order that they will connect. Move the Display Clients to this list with the left and right arrow or by double clicking on the name. Listing two or more the Display Clients configures MultiSession. The terminal will display the first in the list and cascade the others.

Buttons:

- **Arrows** – The left and right arrows move the Display Clients between list boxes. The up and down arrow change the order that the Display Clients are used. The top Display Clients is displayed on top at startup.
- **Edit Display Clients** – This launches the **Display Client Configuration Wizard** that allows Display Clients to be defined within ThinManager.
- **Override** – This allows a highlighted Display Client to use a different login or screen resolution than the terminal.
See Display Client Override for details.

Why Change from Default Settings: It is critical to list the Display Clients that the terminal will use. The wizard will not advance without a Display Client selected.

If the **Available Display Clients** column is empty, the **Display Clients List Wizard** needs to be run to configure Display Clients. Select the **Edit Display Clients** button to launch the **Display Client List Wizard** as shown in Display Client List.

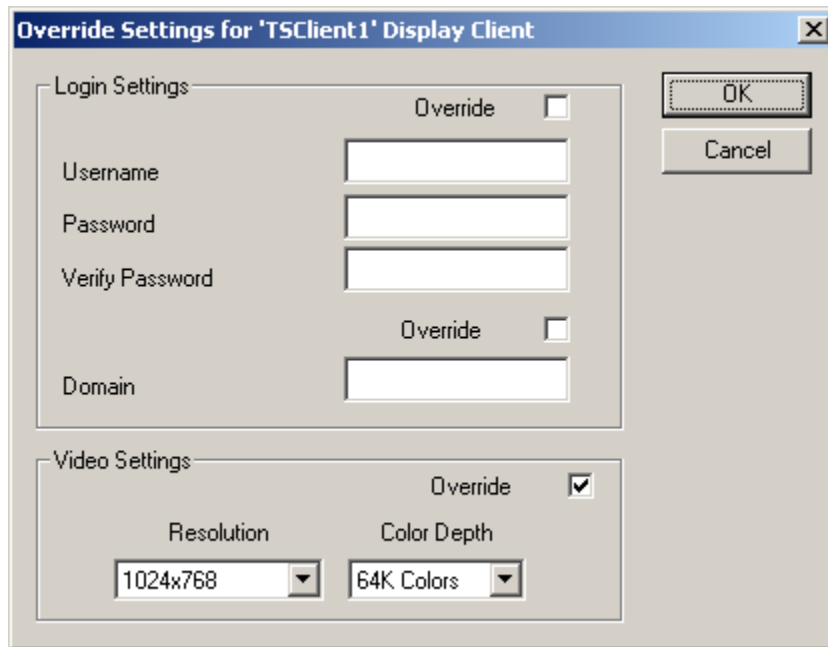


Terminal Configuration Wizard – Display Client Selection

This is an example of a terminal with the Display Clients selected.

10.1.4.1 Display Client Override

ThinManager has an **Override** button that will allow any Display Client to be configured to login with a different user account than the terminal. The **Override** button becomes active when two or more Display Client are added to the **Selected Display Client** column.



Override Settings Window

Importance of Page: Allows a Display Client to use a different login or screen resolution than the terminal.

Settings:

- **Override - Login Settings**– This needs checked to use this setting.
Using this override with a blank username and password will force the user to manually login.
 - **Username** – Field for the username of the Windows© user account you want to use.
 - **Password** – Field for the password for the username.
 - **Verify Password** – Field to confirm the password.
- **Override - Domain**– This needs checked to use this setting.
 - **Domain** – Field for the domain of the user account.
- **Override - Video Settings**– This needs checked to use this setting.
 - **Resolution** – Dropdown for the video resolution to use for the Display Client.
 - **Color Depth** – Dropdown for the color depth to use for the Display Client.

Buttons:

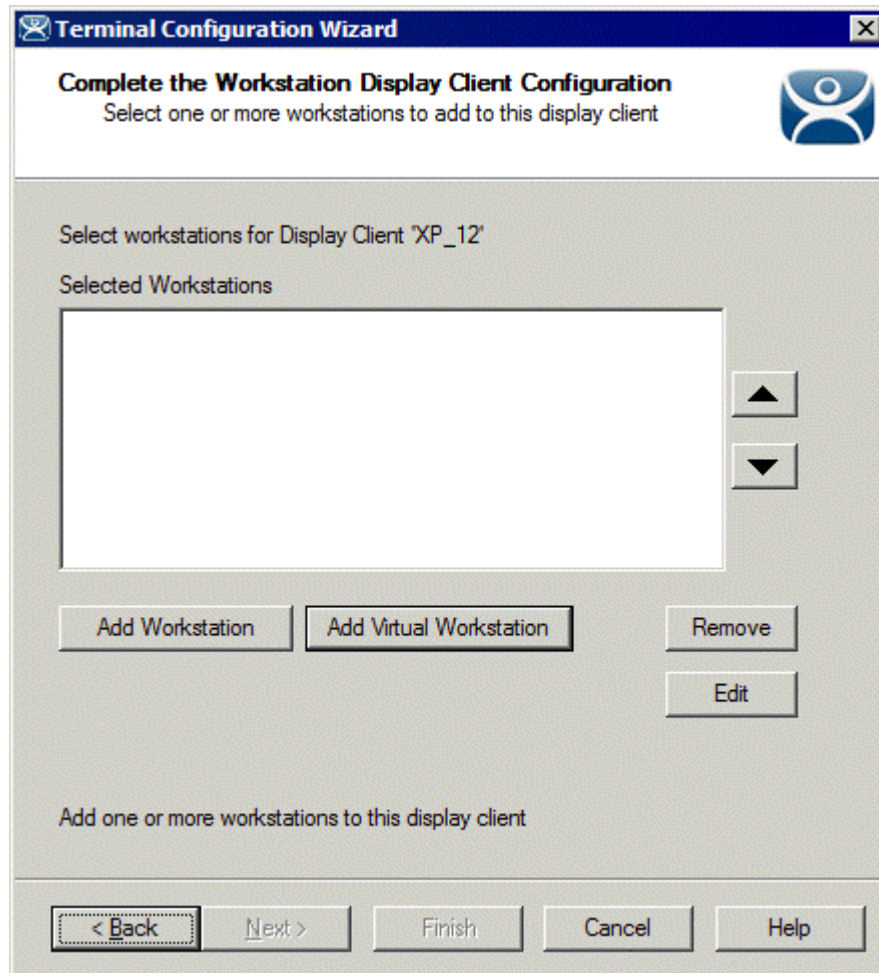
- **OK** – Accepts changes and closes window.
- **Cancel** – Closes window without changes.

Why Change from Default Settings: The defaults are blank and will not override anything until changed.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.4.2 Virtual Workstations

If you choose a Workstation Display Client you will need to associate it to an available workstation. This is done on the **Complete the Workstation Display Client Configuration** page.



Complete the Workstation Display Client Configuration Page

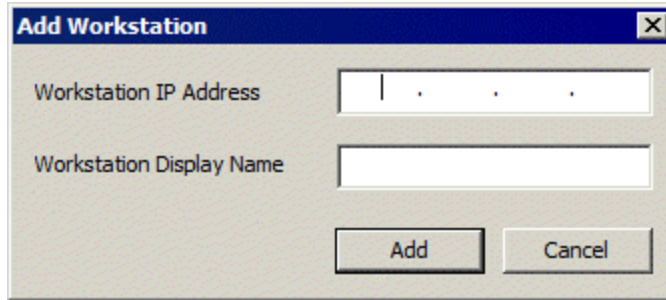
Importance of Page: Allows a workstation to be associated with a Workstation Display Client so that the terminal can display a workstation.

Buttons:

- **Add Workstation** – Accepts changes and closes window.
- **Add Virtual Workstation** – Closes window without changes.
- **Remove** – This removes a highlighted workstation.
- **Edit** – This allows a highlighted workstation to be changed.
- **Arrows** –The up and down arrow change the order that multiple workstations are used.

Why Change from Default Settings: The default is blank and will not deploy a workstation until a workstation is added.

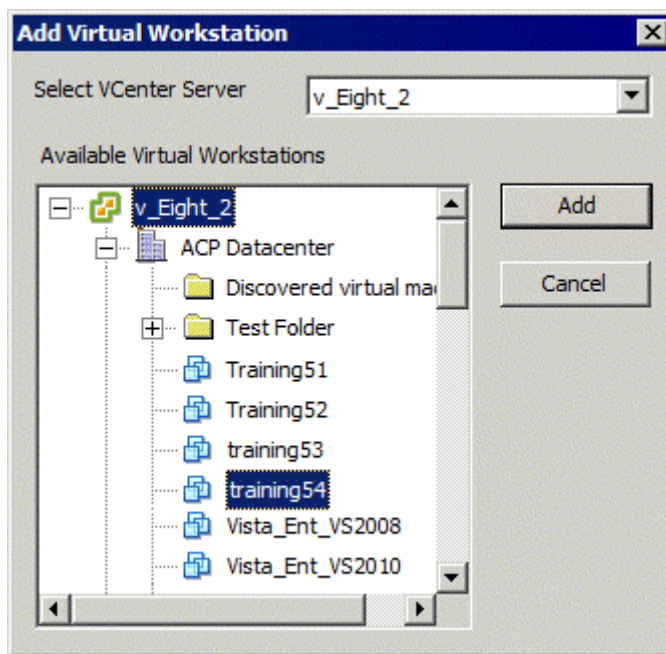
Selecting the **Add Workstation** button will launch the **Add Workstation** window.



Add Workstation Window

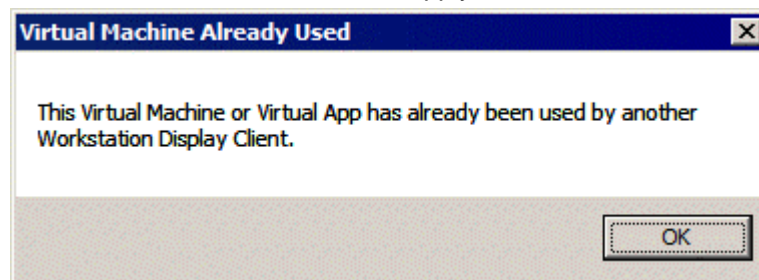
Enter the Workstation name and IP address in the **Workstation Display Name** and **Workstation IP Address** fields.

Selecting the **Add Virtual Workstation** button will launch the **Add Virtual Workstation** window.



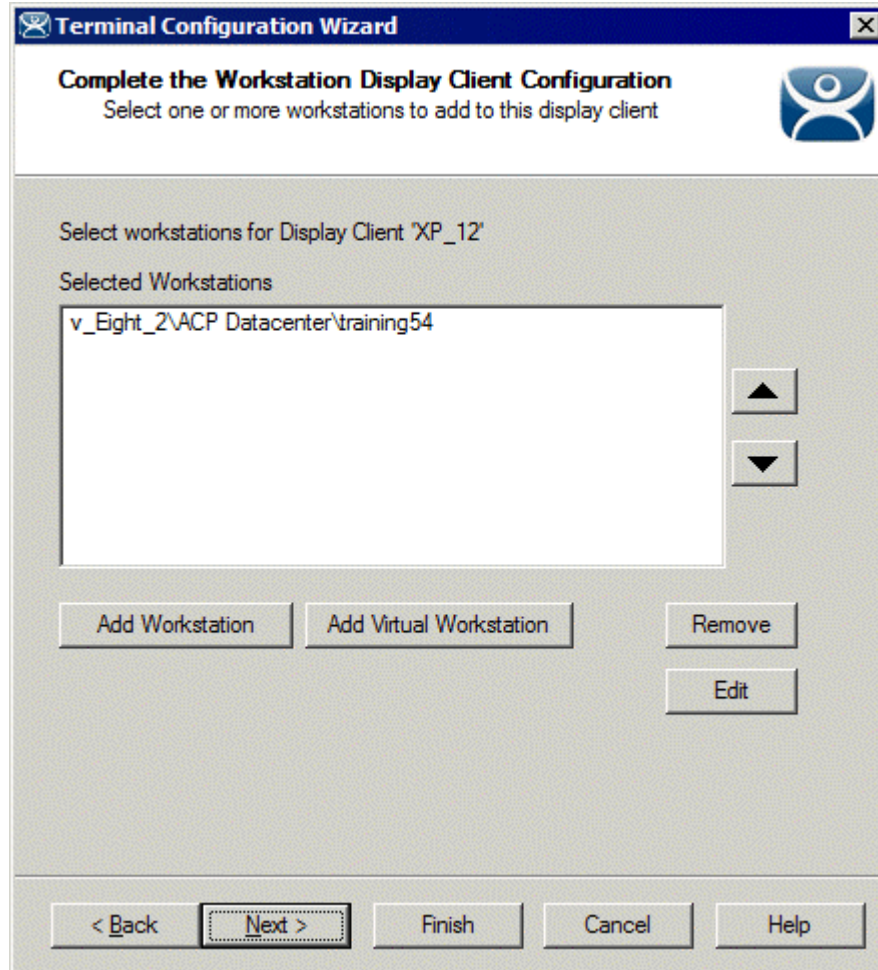
Add Workstation Window

The **Add Virtual Workstation** window will show the configured VCenter Servers. Expand the tree and select the desired virtual workstation. Select the **Add** button to apply that virtual workstation.



Error Message

Each virtual machine can only be used once since workstations have a one-to-one relationship with the accessing terminal. If you try to apply a workstation twice you will receive an error message.

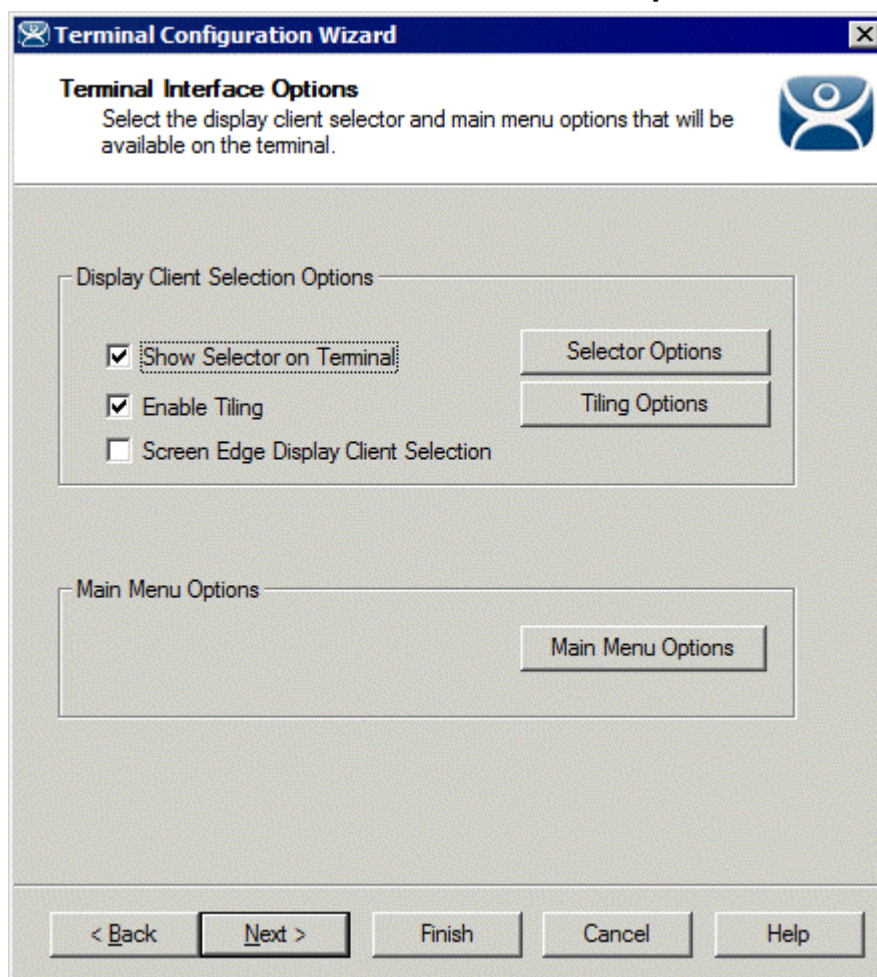


Complete the Workstation Display Client Configuration Page

Once a workstation has been applied for that display client it will be listed in the **Selected Workstations** textbox.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.4.3 Terminal Interface Options



Terminal Interface Options Page

Importance of Page: This page contains the setting that allows navigation between sessions when using MultiSession.

Settings:

- **Show Group Selector on Terminal** - This checkbox, if selected, will display an on-screen drop-down menu that can be activated by mouse.
- **Enable Tiling** – This checkbox, when selected, allows the Display Clients to be tiled on the monitor to provide an overview of all the sessions at once. See SessionTiling Options for details.
- **Screen Edge Group Selection** - This checkbox, if selected, will activate a feature that will switch windows if the mouse is moved off screen.

Buttons:

Selector Options – This button launches the **Group Selector Options** window that has the settings for switching between sessions when using MultiSession. See Terminal Interface Options Hotkeys for details.

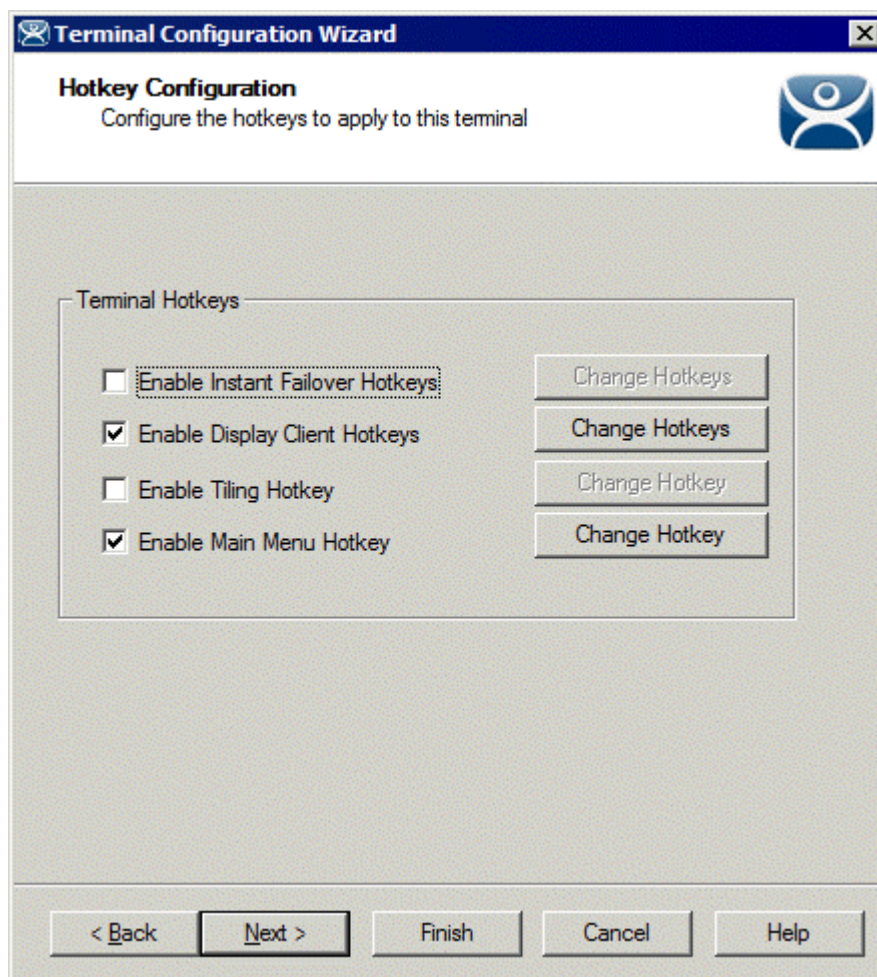
Tiling Options– This button launches the **Tile Options** window that has the settings for tiling sessions when using MultiSession. See Terminal Interface Options Hotkeys for details.

Main Menu Options – This allows configuration of the TermSecure Main Menu. See TermSecure Menu for details.

Why Change from Default Settings: These settings allow you to control how MultiSession is displayed and navigated.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.4.4 Hotkey Configuration Page



Hotkey Configuration Page

Importance of Page: Used to configure hotkeys to make it easier to access sessions and functions.

Settings:

- **Enable Instant Failover Hotkeys** - This checkbox, if selected, allows the hot key switching between the two active sessions of an Terminal Services Display Client that is using Instant Failover.
- **Enable Group Hotkeys** - This checkbox, if selected, allows the hot key switching between different sessions of a terminal using MultiSession.
- **Enable Tiling Hotkey** – This checkbox, if selected, allows SessionTiling to be activated by a hotkey combination.

- **Enable Main Menu Hotkey** – This checkbox, if selected, allows the TermSecure Main Menu to be activated by a hotkey combination.

Buttons:

- **Change Hotkeys (Enable Instant Failover Hotkeys)**– This button launches the **Select Hotkeys** window that has the settings for hotkeys when using Instant Failover. See Hotkey Configuration for details.
- **Change Hotkeys (Enable Group Hotkeys)**– This button launches the **Select Hotkeys** window that has the settings for hotkeys when using MultiSession. See Hotkey Configuration for details.
- **Change Hotkeys (Enable Tiling Hotkeys)**– This button launches the **Select Hotkeys** window that has the settings for hotkeys when using Tiling. See Hotkey Configuration for details.
- **Change Hotkeys (Enable Main Menu Hotkeys)**– This button launches the **Select Hotkeys** window that has the settings for hotkeys when using TermSecure. See Hotkey Configuration for details.

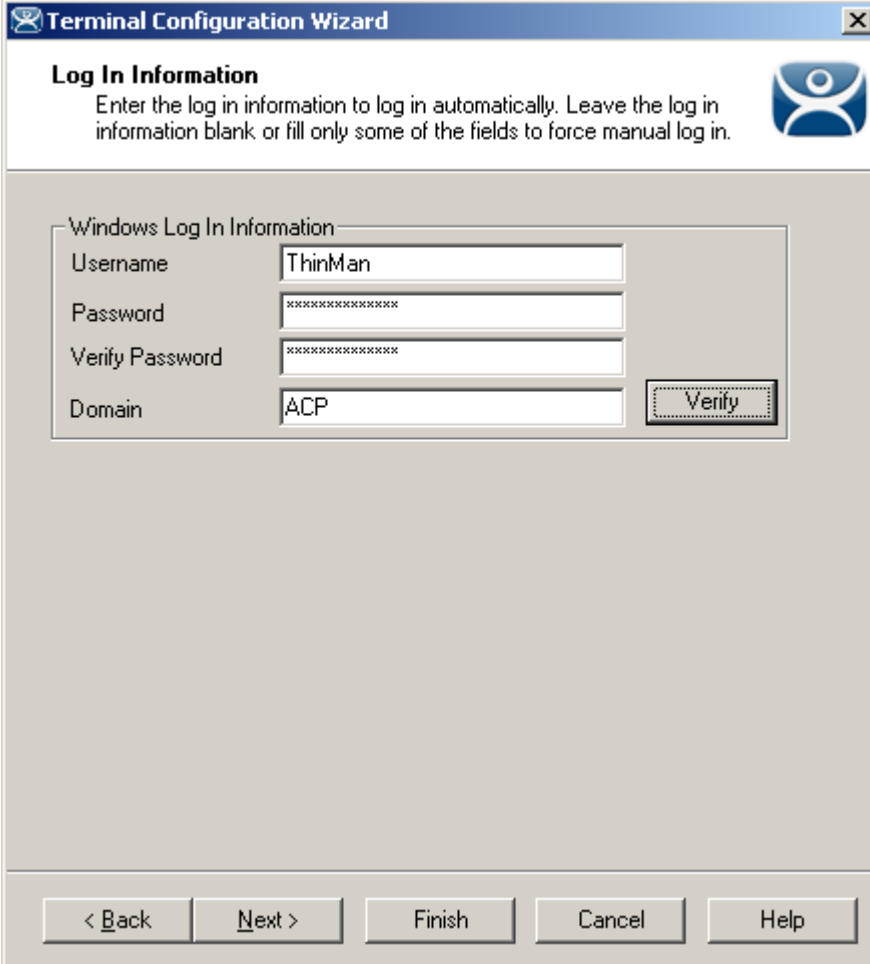
Why Change from Default Settings: These settings allow you to control sessions with hotkeys.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.5 Continuation of the Terminal Configuration

The configuration paths (Independent Terminal Servers vs. Display Clients, ICA vs. Device Services and RDP) unite at the Login Configuration. However, the Log In Information page varies depending on it the terminal is using individual Terminal Servers or Display Clients.

10.1.5.1 Login for Display Client Users



The screenshot shows a window titled "Terminal Configuration Wizard" with a close button in the top right corner. Below the title bar, the text "Log In Information" is displayed in bold. Underneath, a paragraph of instructions reads: "Enter the log in information to log in automatically. Leave the log in information blank or fill only some of the fields to force manual log in." To the right of this text is a blue icon of a person's head and shoulders. The main area of the window contains a group box titled "Windows Log In Information". Inside this group box, there are four text input fields: "Username" (containing "ThinMan"), "Password" (filled with asterisks), "Verify Password" (filled with asterisks), and "Domain" (containing "ACP"). To the right of the "Domain" field is a "Verify" button. At the bottom of the window, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Login Information - Use Display Clients

Importance of Page: This page allows a terminal to automatically login without user action.

Settings:

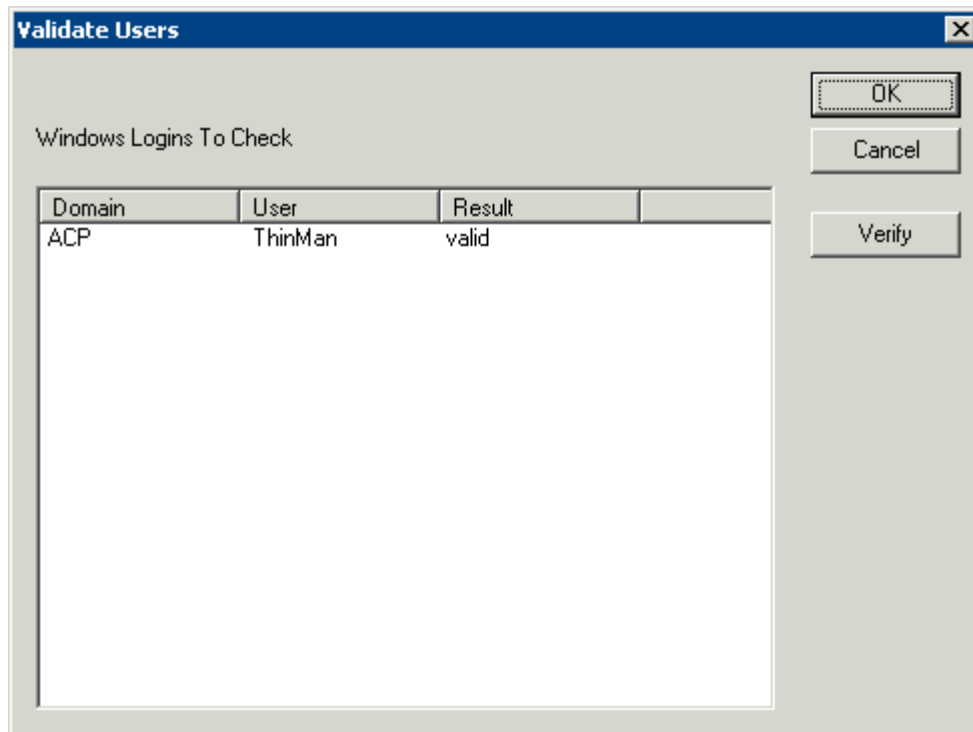
- **Username** – Enter a valid Windows user account.
- **Password** – Enter the password.
- **Verify Password** – Re-enter the password for confirmation.
- **Domain** - Enter the domain, if Domain accounts are being used.
- **Path** - Enter the path to the desired application in the field. This will be the only program to run and the desktop, icons, and start menu will be hidden.

- **Command Line Options** – This field provides a space for command line options and switches. This field may not be required.
- **Initial Folder** - This field is provided in case you need to specify the working directory for the program when using a relative path for the initial program. This field may not be required.

Buttons:

- **Verify** - The **Verify** button will contact the domain controller to validate the accuracy of the domain user account.

Select the **Verify** button to check the user.



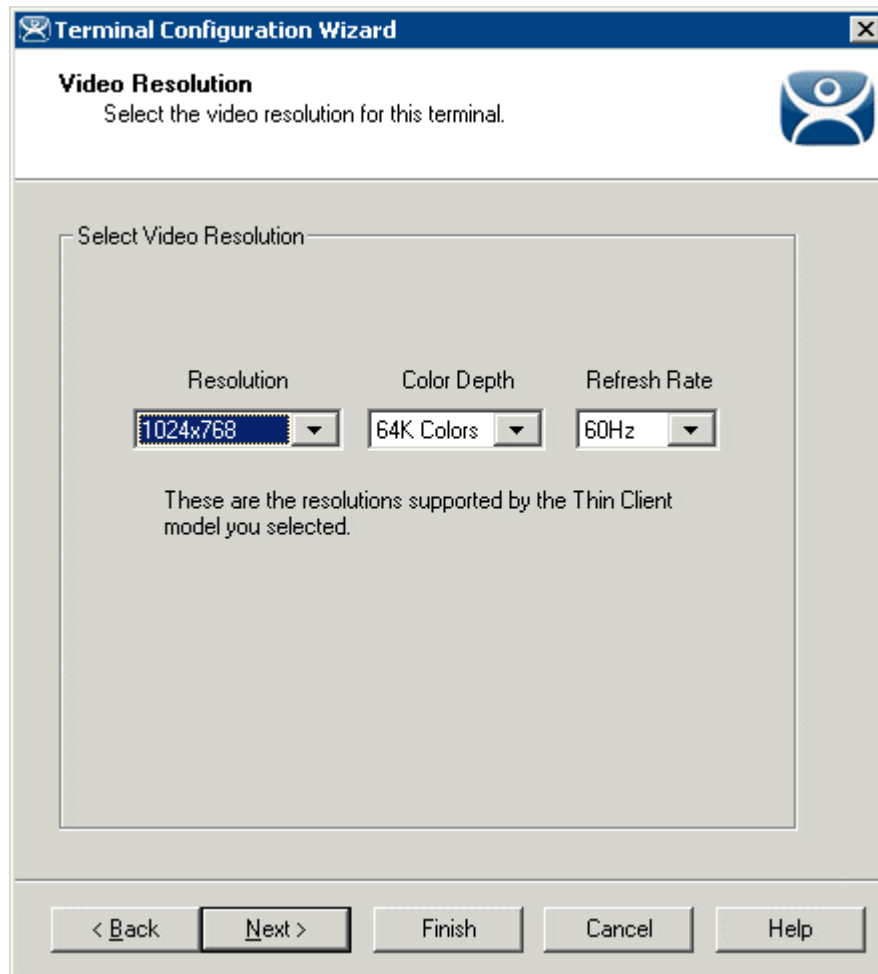
Validate Users Window

A Validate Users window will be displayed with the status of the user. If the user account is a valid domain account, the results will show valid. If the results show invalid, try another account.

Why Change from Default Settings: Using the auto-login feature allows a terminal to connect and load sessions without requiring user input. It also hides the login account so the user doesn't know the account and can't use it for unauthorized access to the network.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.5.2 Video Resolution Page



Terminal Configuration Wizard - Video Configuration

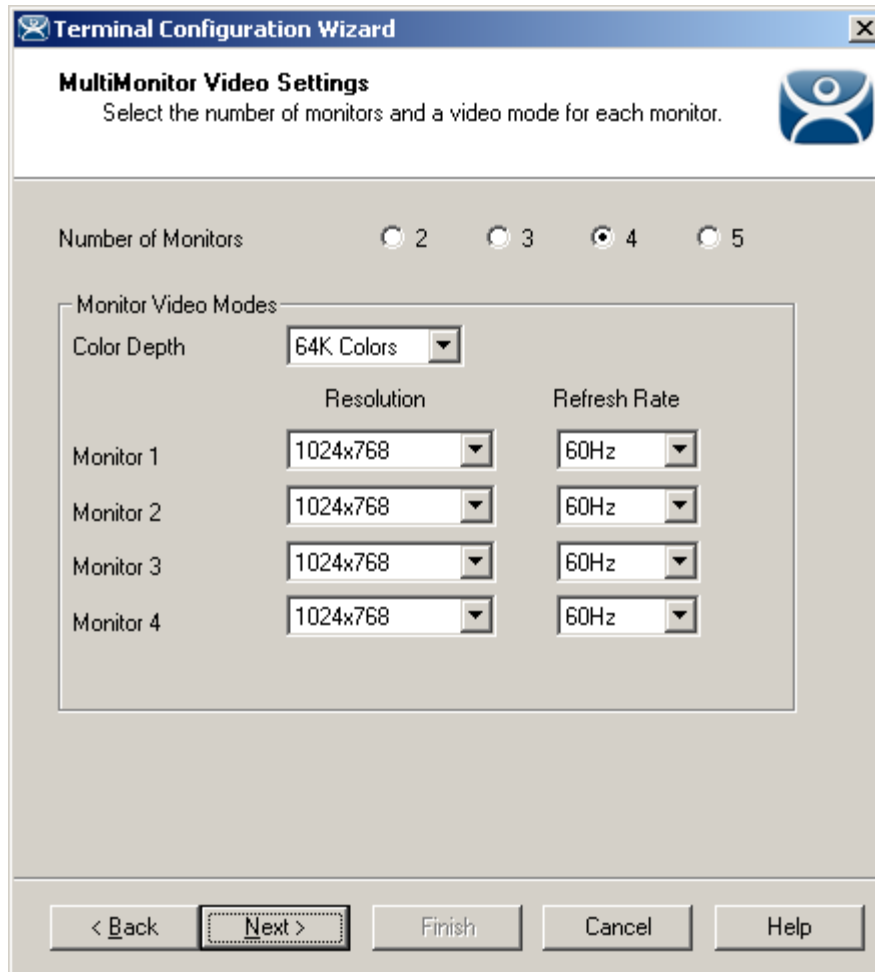
Importance of Page: This page sets the video resolution that the terminal will use.

Settings:

- **Resolution** – Select the desired screen size. The list will contain the sizes available for the hardware that was chosen on the **Terminal Hardware** page. WinTMC configurations show a **Full Screen** option.
- **Color Depth** – Select the desired color depth. The list will contain the values available for the hardware that was chosen on the **Terminal Hardware** page.
- **Refresh Rate** – Select the desired refresh rate for the monitor. The list will contain the values available for the hardware that was chosen on the **Terminal Hardware** page.

Why Change from Default Settings: The monitor that is used may have a different resolution than the default value. A Windows© 2003 or 2008 terminal server can display 16K colors but a Windows© 2000 terminal servers can only display 256 colors.

A terminal that is using MultiMonitor can have the screen resolution of each monitor set. See MultiMonitor for more details.



MultiMonitor Video Settings

Importance of Page: Configures the video resolution of each monitor for a MultiMonitor terminal.

Settings:

- **Number of Monitors** – These radio buttons allow you to define how many monitors the terminal will use..
- **Color Depth** – Select the desired color depth. The color depth will be used for all monitors..
- **Resolution** – Select the desired screen size for each monitor used.
- **Color Depth** – Select the desired color depth for each monitor used.
- **Refresh Rate** – Select the desired refresh rate for each monitor used.

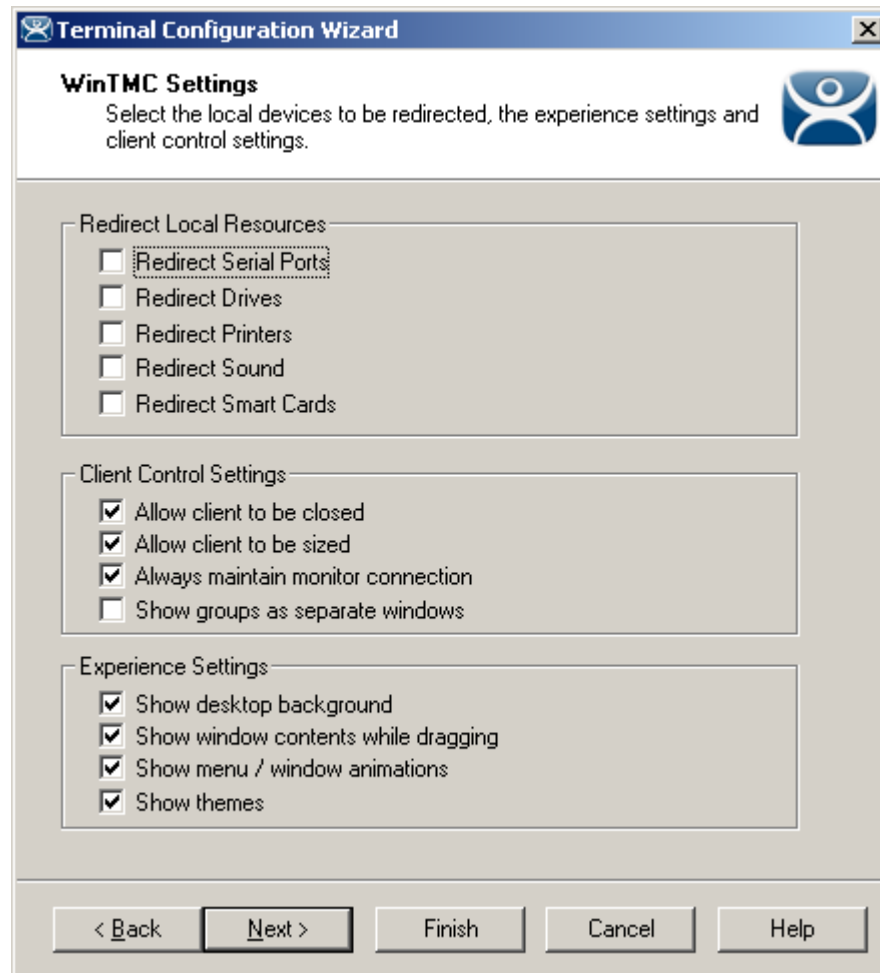
Buttons:

Why Change from Default Settings: MultiMonitor allows you to use different sized monitors instead of requiring that all are the same. This page allows you to adjust the settings to match your configuration.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.5.3 WinTMC Settings Page

A terminal that is set for use as a WinTMC PC client by using **Generic/PersonalComputer** in the **Make** and **Model** field of on the **Terminal Hardware** page will display a page for WinTMC settings. It is not shown for normal terminals.



WinTMC Settings

Importance of Page: Used to configure the WinTMC client that converts a PC into a terminal services client that is controlled and managed through ThinManager.

Settings:

- **Redirect Local Resources:**
 - **Redirect Serial Ports** – Enable this setting to make local serial ports available in a session. Serial Port redirection does not work when you connect to a terminal server running Windows 2000 or earlier.
 - **Redirect Drives** – Enable this setting to make local drives available in a session. Drive redirection does not work when you connect to a terminal server running Windows 2000 or earlier.
 - **Redirect Printers** – Enable this setting to make your local printer available in a session.

- **Redirect Sound** – Enable this setting to allow audio played in your session to play locally. Sound redirection does not work when you connect to a terminal server running Windows 2000 or earlier.
- **Redirect Smart Cards** – Enable this setting to make your smart card available in a session. Smart card redirection does not work when you connect to a terminal server running Windows 2000 or earlier.
- **Client Control Settings:**
 - **Allow client to be closed** – Enable this setting if you want your user to be able to close the client.
 - **Allow client to be sized** – Enable this setting if you want your user to be able to resize the client.
 - **Always maintain monitor connection** – Enable this setting to keep the monitoring connection active when WinTMC is closed to allow shadowing. Unselecting this checkbox will release the WinTMC license when the WinTMC program is closed but will deny shadow access.
 - **Show groups in separate windows** – This checkbox, if selected, will display multiple Display Clients as separate windows rather than in one window shell.
- **Experience Settings:**
 - **Show Desktop Background** – Enable this setting if you want your user to be able to select a Windows Desktop Background. If not set, the background will be a solid color.
 - **Show window contents while dragging** – Enable this setting if you want the window contents of a window to be shown while the window is being dragged.
 - **Show menu/window animations** – Enable this setting if you want menu/window animations to be enabled on the client.
 - **Show Themes** – Enable this setting if you want your user to be able to select a Windows Theme.

Note: These functions may be denied by user policies or terminal server configuration. Check the Microsoft® Local Policy, Group Policy, and Terminal Services Configuration. See Non-ThinManager Components for details.

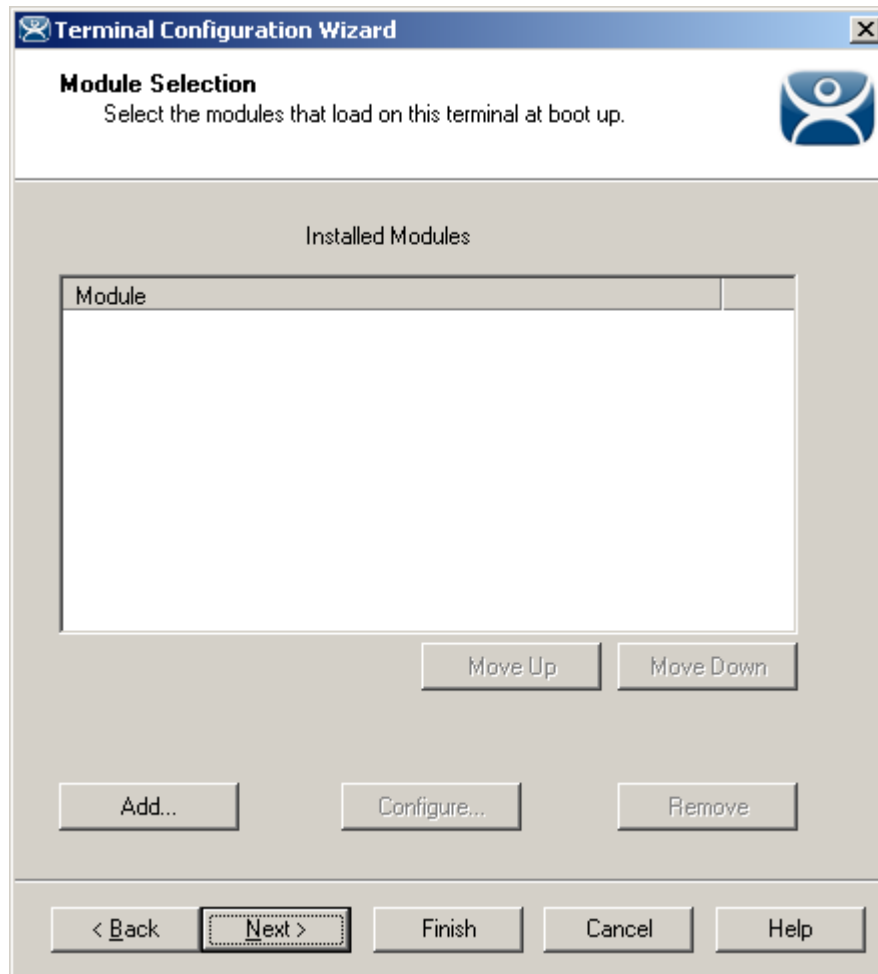
Why Change from Default Settings: The **Redirect Local Resources** settings allow the user to access the resources on the PC.

The **Client Control Settings** can be set to prevent the WinTMC from being closed. If you want to convert a floor PC to a dedicated terminal you can install WinTMC on the PC and have it launch automatically by placing it in the Startup folder (C:\Documents and Settings\%username%\Start Menu\Programs\Startup). The user can't close WinTMC if the **Allow client to be closed** and the **Allow client to be sized** settings are unchecked.

The **Experience Settings** give a PC-like desktop experience but use more resources.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.5.4 Terminal Module Selection Page



Terminal Configuration Wizard - Module Selection

Importance of Page: This page attaches modules to a terminal so that it can use touch screens, sound, USB drives, etc.

Settings:

- **Installed Modules** – This list box displays the modules that are added to the terminal. Modules added to a group will show a group icon.

Buttons:

- **Move Up & Move Down** – These buttons changes the order that the modules load during boot up by rearranging the module list. They are rarely used.
- **Add...** – This opens the **Attach Module to Terminal** window to allow a module to be added to the terminal.
- **Configure...** – Open the Modules Properties window by highlighting the module in the **Module** list box and clicking the **Configure** button.
- **Remove** – Remove a module by highlighting it in the **Module** list box and clicking the **Remove** button.

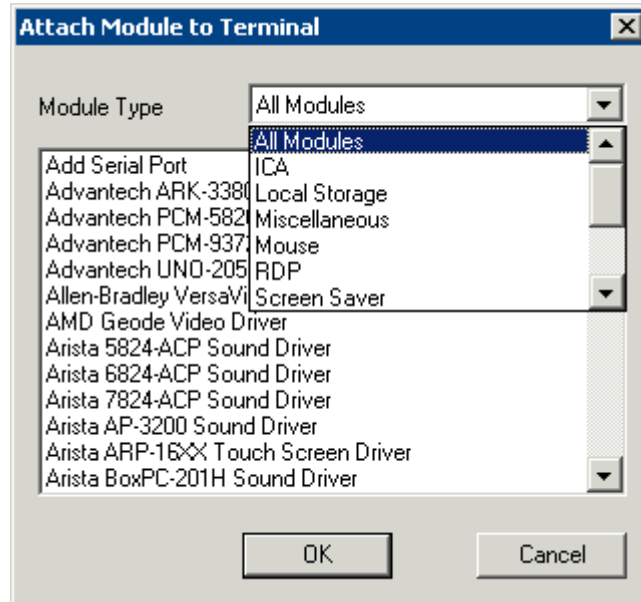
Why Change from Default Settings: Certain features and functions are activated by use of modules.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.5.5 Attaching a Module

A **Module** is a component of the firmware that is not needed for the basic functionality but may be desired for advanced functionality. These features include Touch Screen drivers, serial mouse drivers, High Speed Serial drivers, Shared Keyboard and Mouse, USB Memory Card Reader, and Instant Failover. See Module Overview for details.

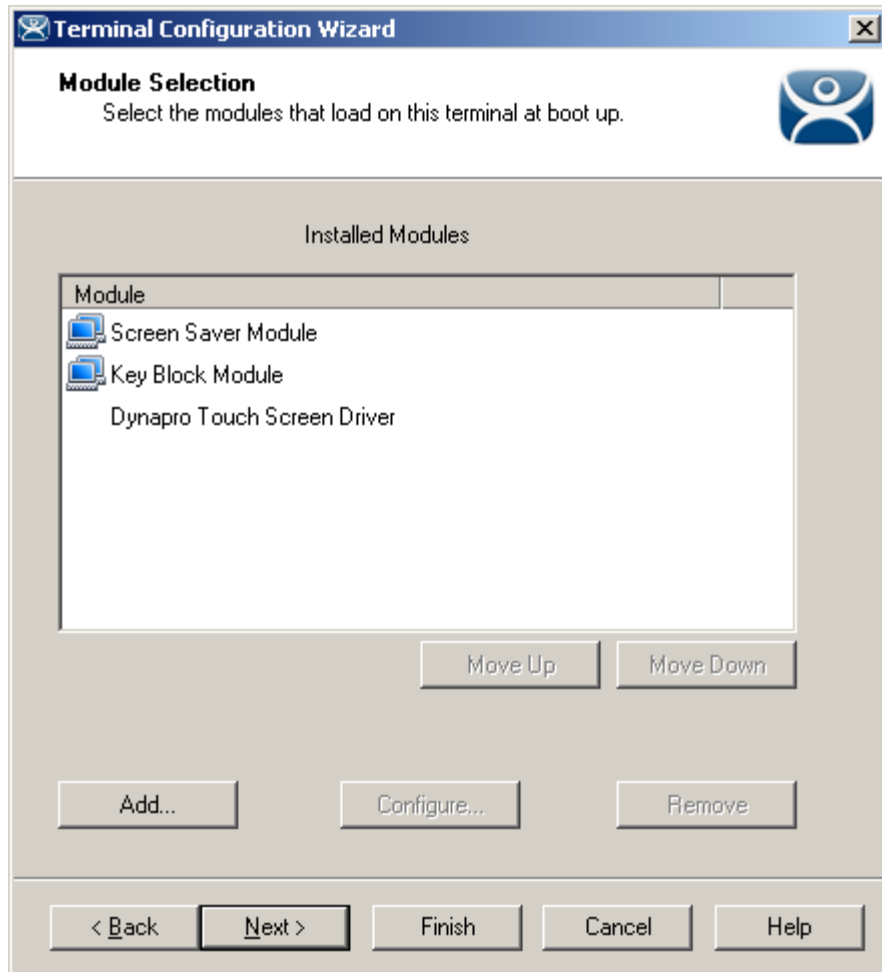
To attach a Module to a Terminal, select the **Add...** button to launch the **Attach Module to Terminal** window.



Attach Module to Terminal


The **Attach Module to Terminal** window will show the modules that are available to the terminal. The **Module Type** drop-down box sorts the modules by categories to make the modules easier to find.

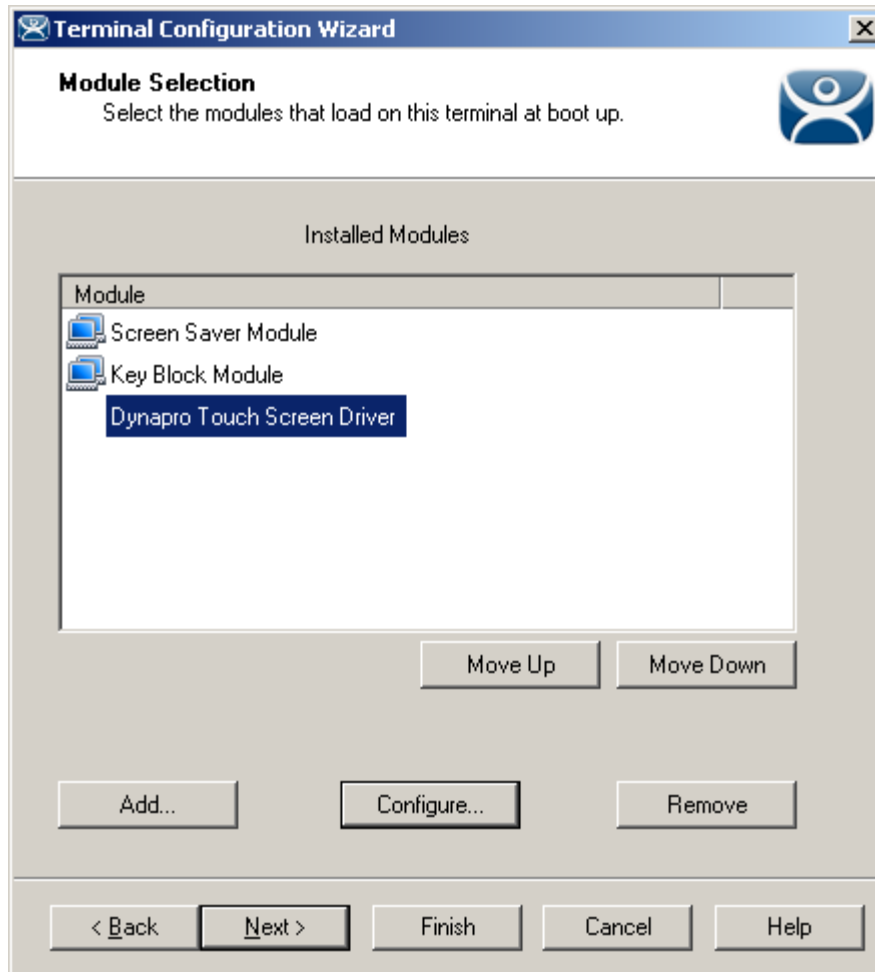
Highlight the desired module and select the **OK** button to add the module to the configuration.



Terminal Configuration Wizard - Module Selection

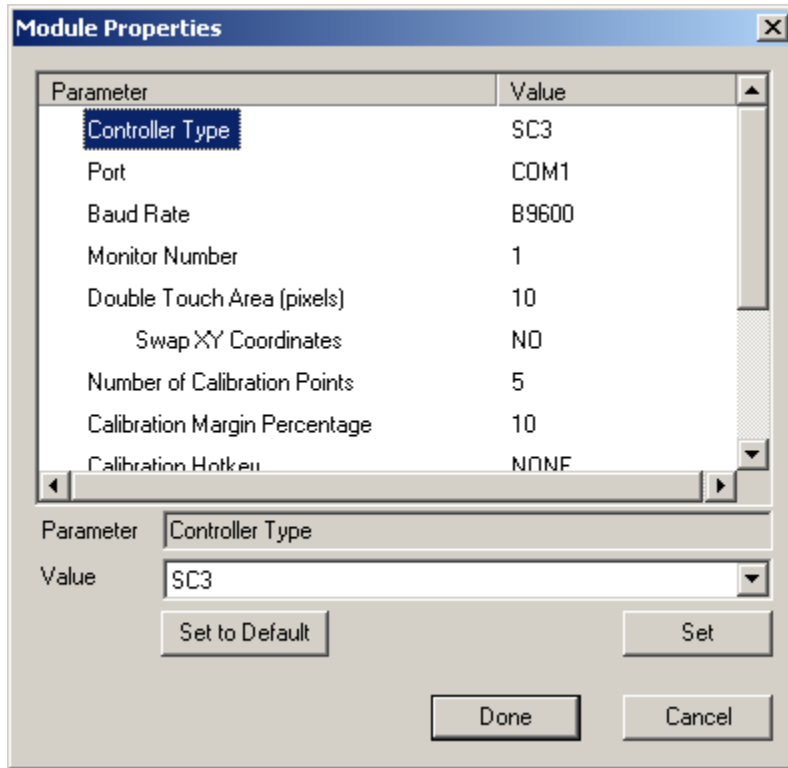
Terminals that are members of a Group may show icons to represent the properties of added modules.

-  The Group icon represents modules assigned to a parent Group.
- No icon indicates that the module was added to that particular Group or Terminal and not a parent Group.



Module Configuration

Highlighting a module and selecting the **Configure** button will open the **Module Properties** window and allow changes to the module configuration.



Module Properties

On the Modules Properties window, select the parameter to change, select the new value in the drop-down list, and click the **Set** button. This will change the setting.

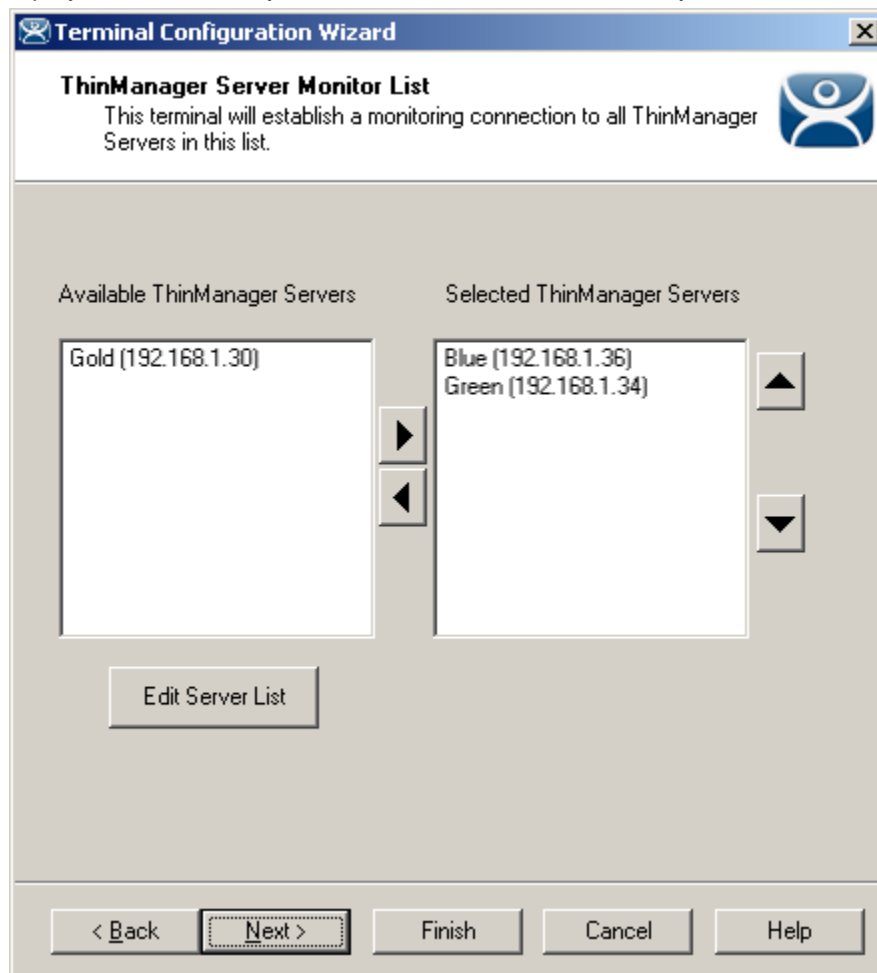
The **Set to Default** button will restore the module to the default settings.

Select the **Done** button to close the **Module Properties** window and to return to the Terminal Configuration Wizard.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.5.6 ThinManager Server Monitor List Page

This page is not displayed when Auto-synchronization is used. See Auto-synchronization.



Terminal Configuration Wizard - ThinManager Server Monitor List

Importance of Page: If you are using two ThinManager Servers without automatic synchronization then the terminal will normally only send its connection status (green light) to the ThinManager Server that it booted from. This page allows you to list multiple ThinManager Servers so that the terminal will send its status information to all the ThinManager Servers

Settings:

- **Available ThinManager Servers** – This is the list of defined ThinManager Servers. Selecting the **Edit Server List** button will launch the ThinManager Server List Wizard to add new ThinManager Servers.
- **Selected ThinManager Server** – This is the list of ThinManager Servers that the terminal will send its connection status to. Move ThinManager Servers from the **Available** list to **Selected** list by double clicking or using the arrow buttons while highlighted.

Buttons:

- **Arrows** – These buttons move highlighted ThinManager Servers from one list to the other or rearrange the order listed.

- **Edit Server List** – This launches the ThinManager Server List Wizard that allows the defining of ThinManager Servers.

Why Change from Default Settings: Adding ThinManager Servers to the **Selected ThinManager Server** allows control, configuration, shadowing, and rebooting of a terminal from a backup ThinManager Server if the primary ThinManager Server fails.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

10.1.5.7 Monitoring Configuration Page

Terminal Configuration Wizard - Monitoring Configuration

Importance of Page: This page sets the speed that failover is detected and initiated. A thin client creates a socket connection to the terminal server. If the socket is disconnected the terminal will try to reconnect and failover based on these settings.

Settings:

- **Monitor Interval**
 - **Monitor Interval (Fast/Medium/Slow)** – These settings have a set rate for the frequency that the terminal server status is checked.

- **Monitor Interval (Custom)** – This setting allows the administrator to change the settings from the defaults.
- **Monitor Interval** – This is the period of time the terminal will wait after losing the socket connection before it tries to reconnect.
- **Monitor Timeout** – This is the period of time the terminal will wait between tries.
- **Monitor Retry** - This is the number of times the terminal will try to reestablish a connection before failing over.
- **Primary Up Delay Multiplier** - This is a constant used to generate the Primary Up Delay time.

Field:

- **Primary Up Delay** - This is a delay added (usually set to 30 or 60 seconds) to allow a Terminal Server to get fully booted before the terminal will try to login. This time period is equal to the Monitoring Interval times the Primary Up Delay Multiplier. This prevents a terminal using Enforce Primary from switching back to its primary terminal server before it is ready.

Why Change from Default Settings: Faster rates will cause a quicker failover but will check on terminal server status more often, causing more network traffic. Slowing down the rate will cause less traffic but will slow the failover speed a little..

Select **Finish** to save and close, or **Cancel** to close without saving.

11 PXE Server Configuration

11.1 Overview

PXE (Preboot Execution Environment; sometimes pronounced "pixie") is an environment that allows a computer to boot over a network. ThinManager provides a complete PXE boot environment that does not require any additional software components. The ThinManager PXE Server conforms to version 2.1 of the Intel PXE boot specification.

11.2 Thin Client Hardware Requirements

The Thin Client computer must be capable of PXE Booting. Most standard BIOS ROMS include a PXE Option ROM. In order to PXE boot, the PXE Option ROM must be enabled in the BIOS. The PXE boot method (boot from network) should be set to first in the boot order. Disabling the other boot devices in the BIOS will ensure that the unit will only boot via PXE.

11.3 Methods of Operation

11.3.1 ThinManager Only Method

Using this method, the Thin Client will acquire an IP address and PXE boot options from the ThinManager PXE Server. No standard DHCP Server is required. You must have the ThinManager PXE Server enabled and the desired network interfaces enabled. Select the "Not using standard DHCP Server" server mode.

11.3.2 ThinManager Proxy Method

Using this method, the Thin Client will acquire an IP address from a standard DHCP server. There is no need to set any PXE related boot options in the DHCP server configuration. These options will be sent to the Thin Client by the ThinManager PXE Server. You must have the ThinManager PXE Server enabled in ThinManager and you must select the "Using standard DHCP server with Boot Options" server mode.

11.3.3 Stand-Alone DHCP Server Method

Using this method, the Thin Client will acquire an IP address from a standard DHCP server including the specified PXE boot options. This method is required if your DHCP server is installed on the same machine as ThinManager. You must set **Option 66 (Boot Server Host Name)** to the IP address of your ThinManager

Server and **Option 67 (Boot File Name)** to “**acpboot.bin**”. You must have the ThinManager PXE Server enabled and you must select the “Using standard DHCP server” server mode.

See Network Interface Configuration for details.

11.4 PXE Server Configuration Wizard

11.4.1 Enabling the ThinManager PXE Server

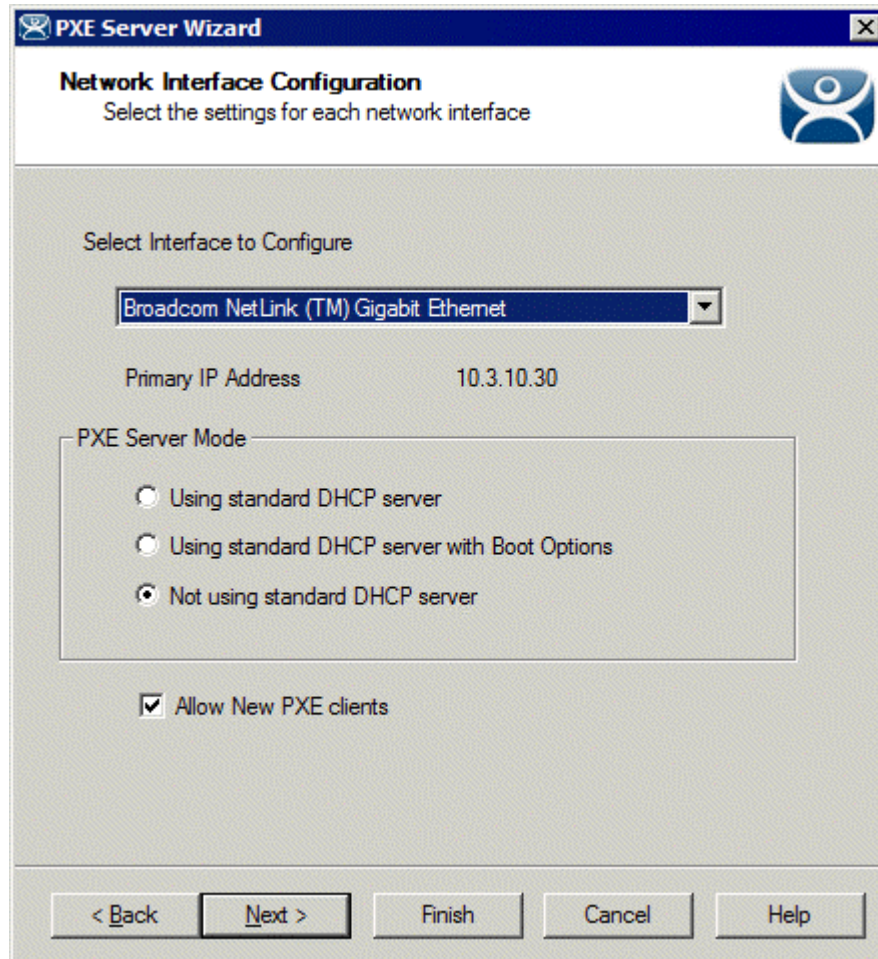
Open the **ThinManager PXE Server Configuration Wizard** by selecting **Manage > PXE Server** from the menu.



PXE Server Configuration

Enable PXE Server must be selected to boot PXE thin clients from ThinManager.

11.4.2 Network Interface Configuration



Network Interface Configuration

Select a network interface from the drop down list to configure from the **Select Interface to Configure** dropdown. This allows each network adapter to be configured individually. The primary IP Address reflects the current IP address for the selected adapter.

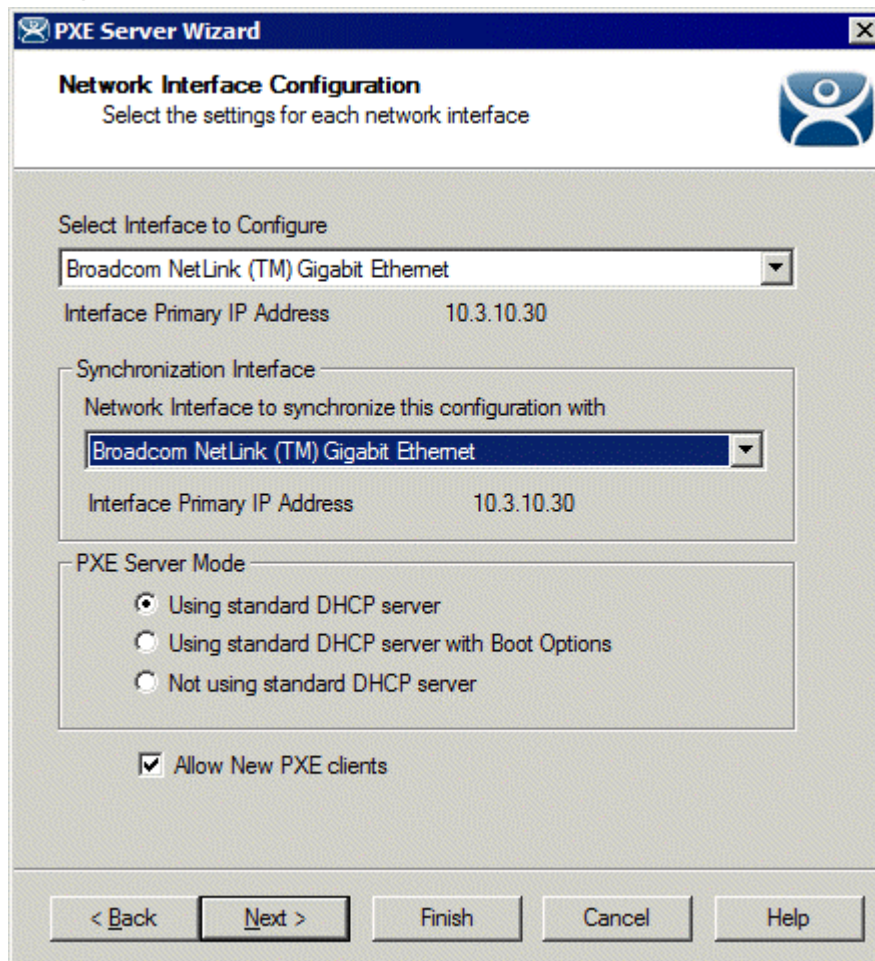
PXE Server Mode

- Select **Using Standard DHCP server** if you want to have a standard DHCP server assign IP addresses to thin clients on the same network as the selected network adapter. The PXE Boot options will be provided by ThinManager automatically. This selection will require no changes to your DHCP server configuration.
- Select **Standard DHCP server with Boot Options** if you want a standard DHCP server to assign IP addresses and PXE boot options to thin clients on the same network as the selected network adapter. Set **Option 66 (Boot Server Host Name)** to the IP address of your ThinManager Server and **Option 67 (Boot File Name)** to "**acpboot.bin**". The PXE boot options will not be provided by ThinManager. You must use this mode if your DHCP server is installed on your ThinManager Server.
- Select **Not using standard DHCP server** if you want ThinManager to assign IP addresses to thin clients without the need for a DHCP server. Using this mode requires that you set up IP address ranges. Use this mode if you want to use static IP assignments (reservations). ThinManager will not assign IP addresses to non-PXE booting devices.

Allow New PXE clients allows unknown PXE thin clients to connect to ThinManager through the selected network interface. Uncheck this option if you only want known clients to connect.

Note: Uncheck this setting if you are planning to have more than one non-synchronized ThinManager Server on your network. You will need to temporarily enable this option to add a new thin client. For proper operation, you can only have this option enabled on one ThinManager Server at a time.

11.4.3 Network Interface Configuration for Synchronized ThinManager Servers



The screenshot shows the 'PXE Server Wizard' dialog box, specifically the 'Network Interface Configuration' step. The title bar reads 'PXE Server Wizard' and the subtitle is 'Network Interface Configuration'. Below the subtitle, it says 'Select the settings for each network interface'. The main area contains three sections: 'Select Interface to Configure' with a dropdown menu set to 'Broadcom NetLink (TM) Gigabit Ethernet' and 'Interface Primary IP Address' set to '10.3.10.30'; 'Synchronization Interface' with a dropdown menu set to 'Broadcom NetLink (TM) Gigabit Ethernet' and 'Interface Primary IP Address' set to '10.3.10.30'; and 'PXE Server Mode' with three radio button options: 'Using standard DHCP server' (selected), 'Using standard DHCP server with Boot Options', and 'Not using standard DHCP server'. At the bottom, there is a checked checkbox for 'Allow New PXE clients'. The bottom of the dialog features five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Network Interface Configuration for Synchronized ThinManager Servers

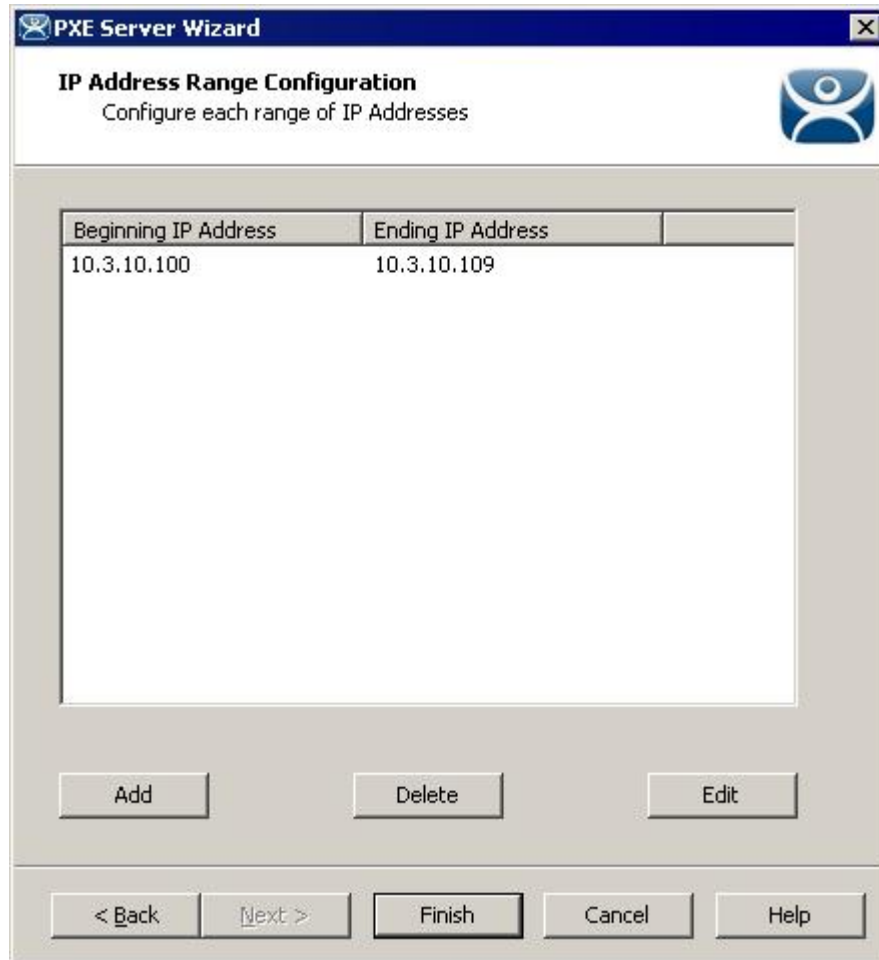
The **Network Interface Configuration** page will display a network interface dropdown for each ThinManager Server if you are using auto-synchronization.

Select a network interface from the **Select Interface to Configure** to configure the primary ThinManager and select a network interface from the **Synchronization Interface** to configure the secondary ThinManager dropdown. This allows a network adapter on each ThinManager Server to be configured individually.

11.4.4 IP Address Range Configuration

The **IP Address Range Configuration** page displays the current ranges of IP Address being used by ThinManager to assign to thin clients. It also gives the ability to edit the IP ranges.

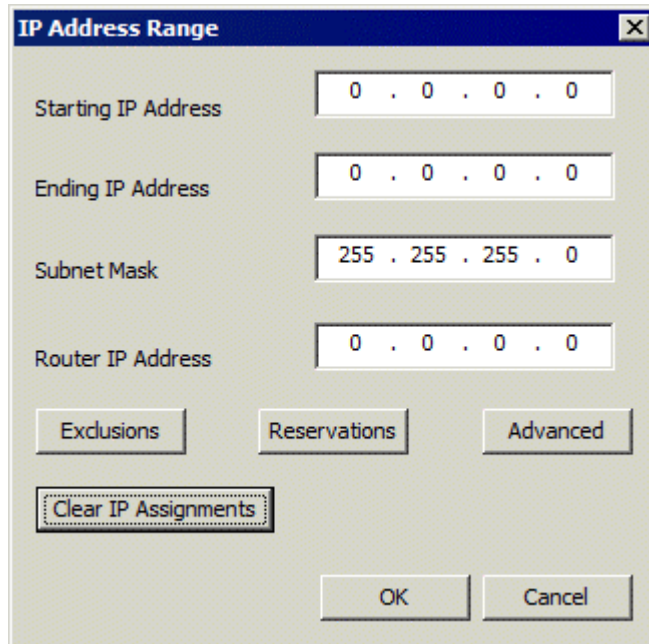
Note: This section of the PXE Server Wizard is only used when the *Not using standard DHCP server* option is selected in the **Network Interface Configuration**.



IP Address Range Configuration

Select the **Add** button to launch the **IP Address Range** window to add a range of IP addresses for the PXE Server.

11.4.4.1 Adding or Editing an IP Address Range



IP Address Range

The IP Address Range window has fields for the IP addresses to be assigned.

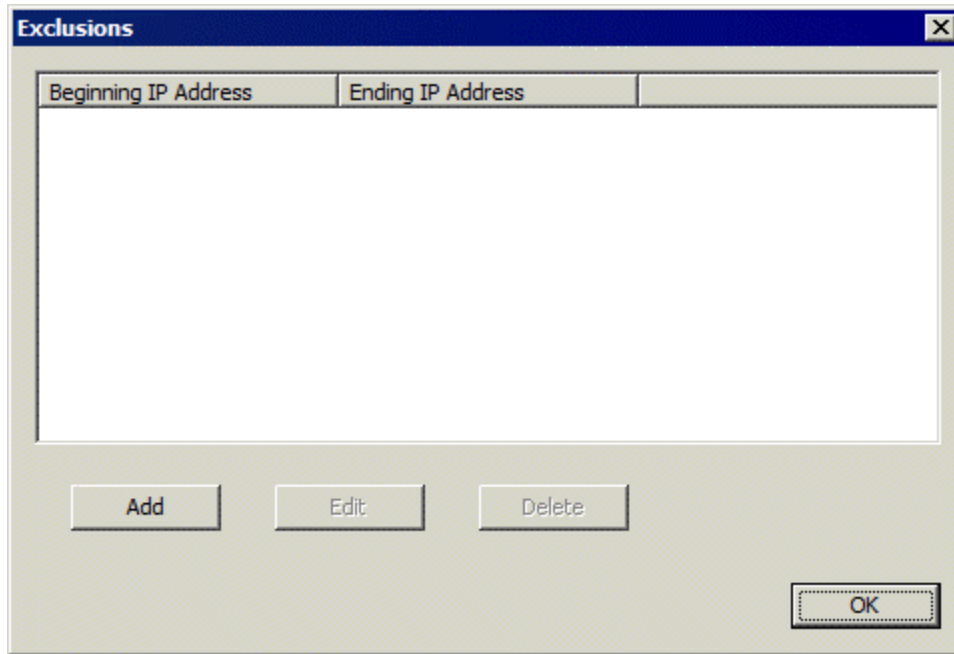
Fields:

- **Starting IP Address:** This is first IP address you want the PXE Server to pass out.
- **Ending IP Address:** This is last IP address you want the PXE Server to pass out.
- **Subnet Mask:** This is the subnet mask of the network.
- **Router IP Address:** This is the IP address of your router, if needed. Leave as 0.0.0.0 if not needed.

Buttons:

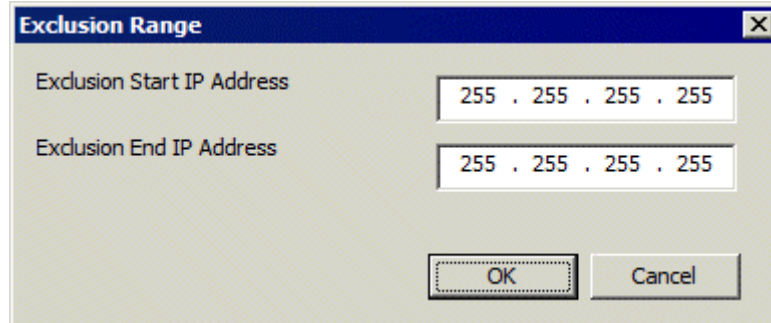
- **Exclusions** launches the **Exclusion** window to exclude a specific IP addresses from the available range.
- **Reservations** launched the **Reservation** window that allows reserve a specific IP address to be assigned to a thin client based on the thin client MAC address.
- **Advanced** launches the **Advanced IP Range Settings** window that allows DHCP options to be added.
- **Clear IP Assignments** will clear the setting from the IP Address Range window.

11.4.5 Exclusions



Exclusion Window

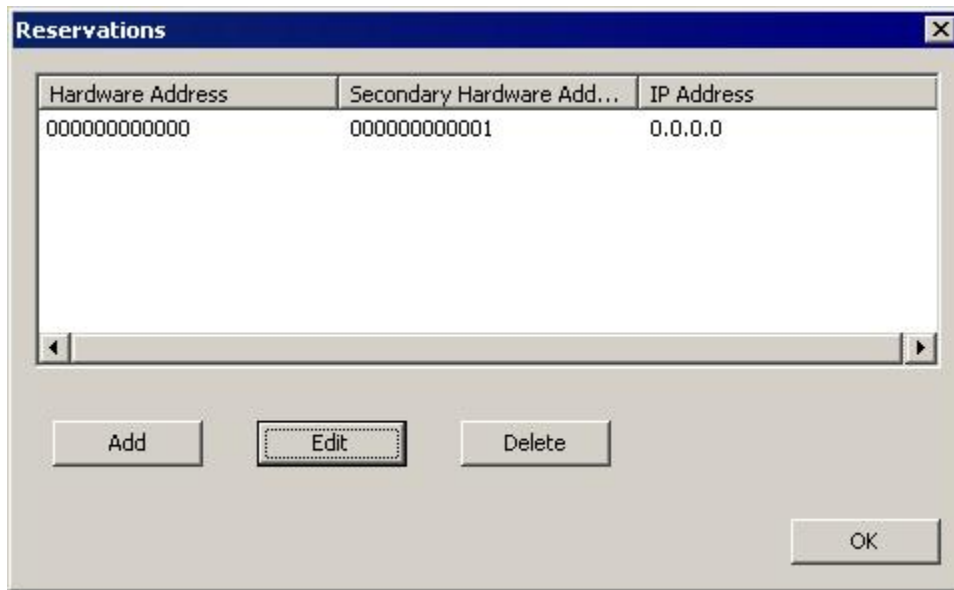
Selecting the **Add** button will launch the Exclusion Range window that allows you to remove one or more IP addresses from the range of IP addresses passed out by the PXE server.



Exclusion Range Window

Enter the first and last IP addresses of the range you want to exclude in the **Exclusion Start IP Address** and the **Exclusion End IP Address**. If you have a single IP address you want to exclude then enter it in both the **Exclusion Start IP Address** and the **Exclusion End IP Address** fields.

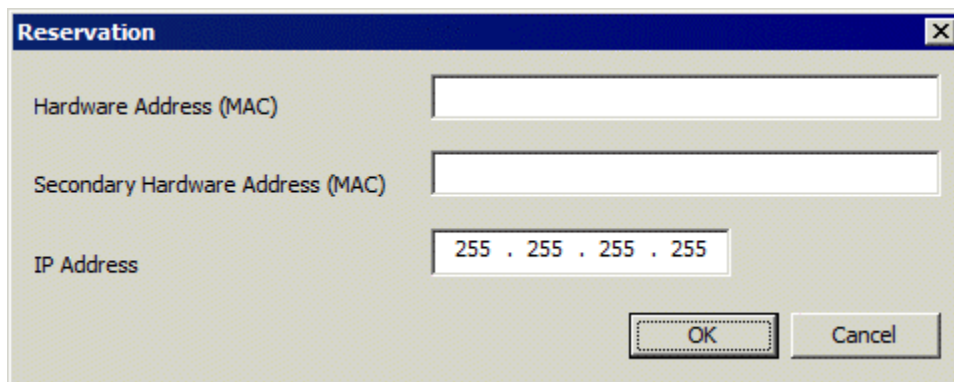
11.4.6 Reservations



Reservation Window

Reservations allow you to associate a specific IP address to a specific thin client by associating the IP address with the MAC address of the thin client.

Select the **Add** button to add a reservation.



Reservation Window

Hardware Address is the primary MAC address of the thin client.

Secondary Hardware Address is the MAC address of the second network interface of the thin client (if present).

IP Address sets the IP address to be reserved for the desired thin client. This will be the address assigned to the thin client when connected through either the primary or the secondary thin client network interface.

11.5 Terminal Group Configuration Wizard

Using **Terminal Groups** allows a configuration to be defined for a group of terminals. Terminals added to a group will inherit the group properties to speed the configuration process. Using Groups can also aid in management because many tasks can be done on the group level instead of repeating them for multiple terminals.

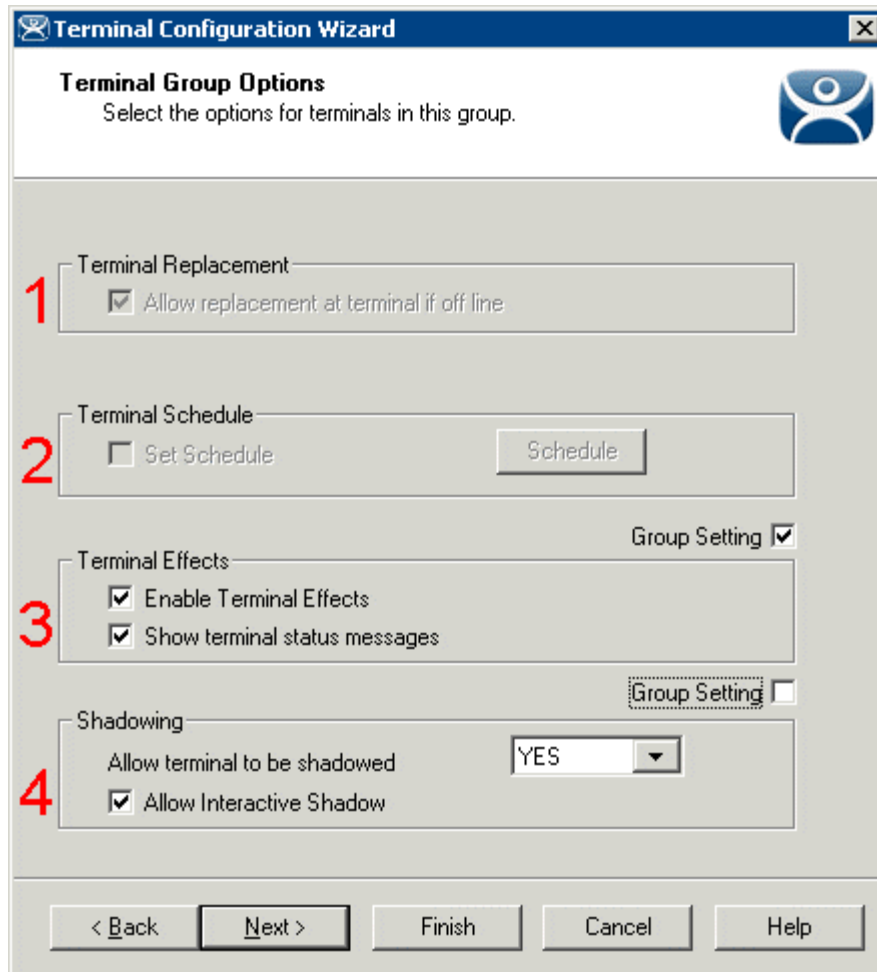
- Groups can be nested within groups, providing deeper levels of organization.
- All Group Settings use a forced inheritance because of the use of nested Groups. Once a setting has been selected as a group property, every terminal group and terminal beneath it will use that setting.
- Group Settings will be designated on the Configuration and Modules tabs with the Group icon of two blue monitors.

11.5.1.1 Group Settings Checkbox

The Terminal Group Configuration Wizard establishes the terminal settings for a group of terminals, while the Terminal Configuration Wizard establishes the terminal settings for the individual terminal. The Terminal Configuration Wizard and the Group Configuration Wizard use the same forms so they are very similar, with a few different settings.

Note: This Help document will only show the differences between the **Group Configuration Wizard** and the **Terminal Configuration Wizard**. See Terminal Configuration Wizard for details.

The Group wizard will have **Group Setting** checkboxes for each setting. Selecting this checkbox will force that setting to be inherited by nested sub-groups and member terminals. The Group Settings of any sub-group or terminal will be grayed out to prevent changes if the group setting is selected on the parent. Changes need to be made at the Group level.



Group Setting Example

This example shows variations in the use of four **Group Settings** on the **Terminal Group Options** page of a nested group.

Terminal Replacement (1) and **Terminal Schedule** (2) were configured in the parent group and cannot be changed in this child group. **Terminal Replacement** (1) was set as checked, while **Terminal Schedule** (2) was set as unchecked.

The **Terminal Effects** (3) Group Setting is selected for this Group. It will be grayed out in child groups and member terminals.

The **Shadowing** (4) Group Setting is unselected, making it available to be set for child groups and member terminals.

11.5.1.2 Group Name Page

The **Group Configuration Wizard** can be launched by selecting **Edit > Add Terminal Group** or by right clicking on the Terminals branch in the tree and selecting **Add Group**.

Terminal Configuration Wizard

Terminal Group Name
Enter the name for the terminal group

Group Name
This must be a unique name using letters, numbers, hyphens (-), and underscores (_) only.

Terminal Group
Change Group

Permissions Group Setting

< Back Next > Finish Cancel Help

Group Configuration Wizard – Terminal Group Name

Importance of Page: This page allows the Group to be named.

Fields:

- **Group Name** – This is the name given to the group. Keep it under 15 characters.
- **Terminal Group** – This is the name of a parent group if this group is a sub-group.

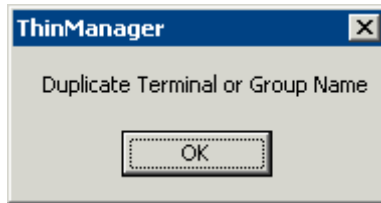
Buttons:

- **Change Group** – This launches a window that allows the group to be added as a sub-group to another group.
- **Permissions** – This allows the Terminal Group to be assigned Access Groups for security. This is a function of TermSecure. See Permissions for details.

Checkbox:

- **Group Setting** – This will make the Permission a group setting that is inherited by all members.

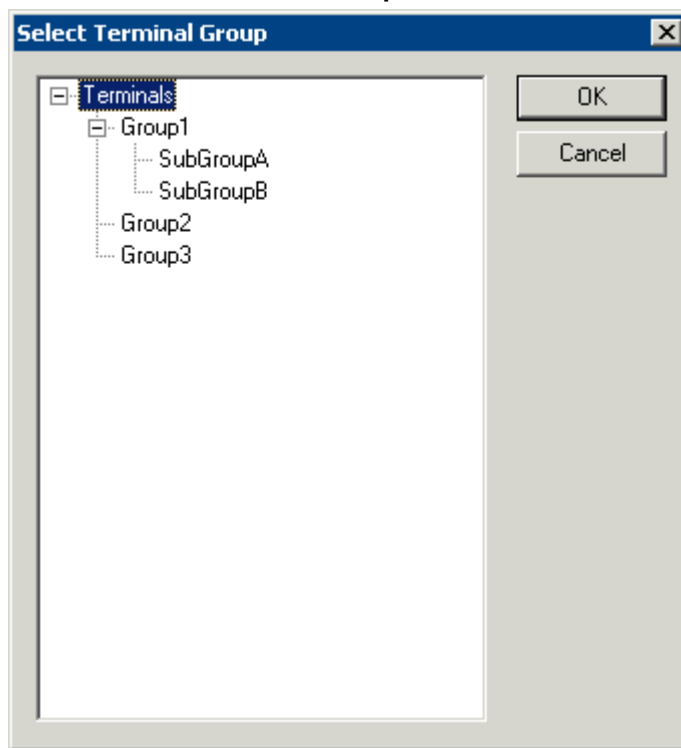
Why Change from Default Settings: A group needs a name at creation. The group can be added to another group using the **Change Group** button.



Duplicate Name Warning

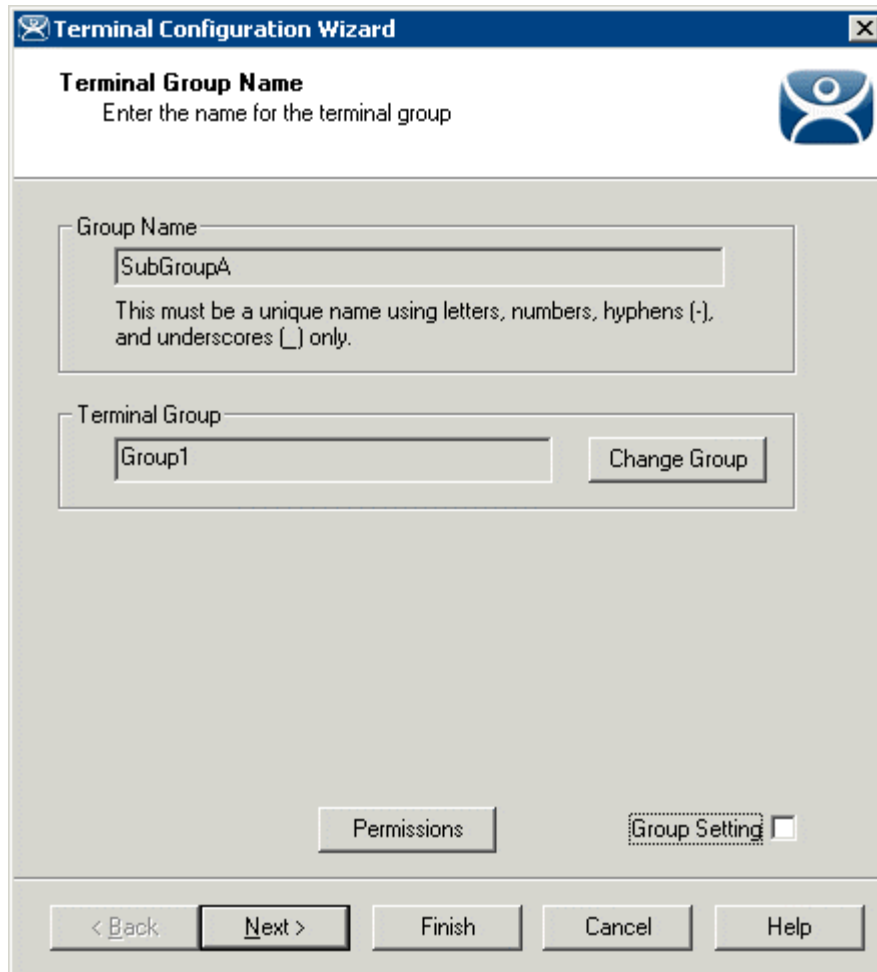
If an existing name is selected, a **Duplicate Name Warning** popup will be displayed when the **Next** button is selected.

Terminal Groups can be added to other Terminal Groups, creating a multi-level hierarchy. This is done with the **Change Group** button that launches the **Select Group** window.



Select Terminal Group Window

The **Select Group** window will show a tree displaying the group hierarchy. Highlight the Terminal Group that you want to join and select the **OK** button to join or select the **Cancel** button to quit without joining.



Terminal Group Configuration Wizard – Terminal Group Name Page

The parent Terminal Group you joined will be displayed in the **Group** field.

Select the **Next** *button* to continue or select the **Cancel** button to close the configuration wizard without saving.

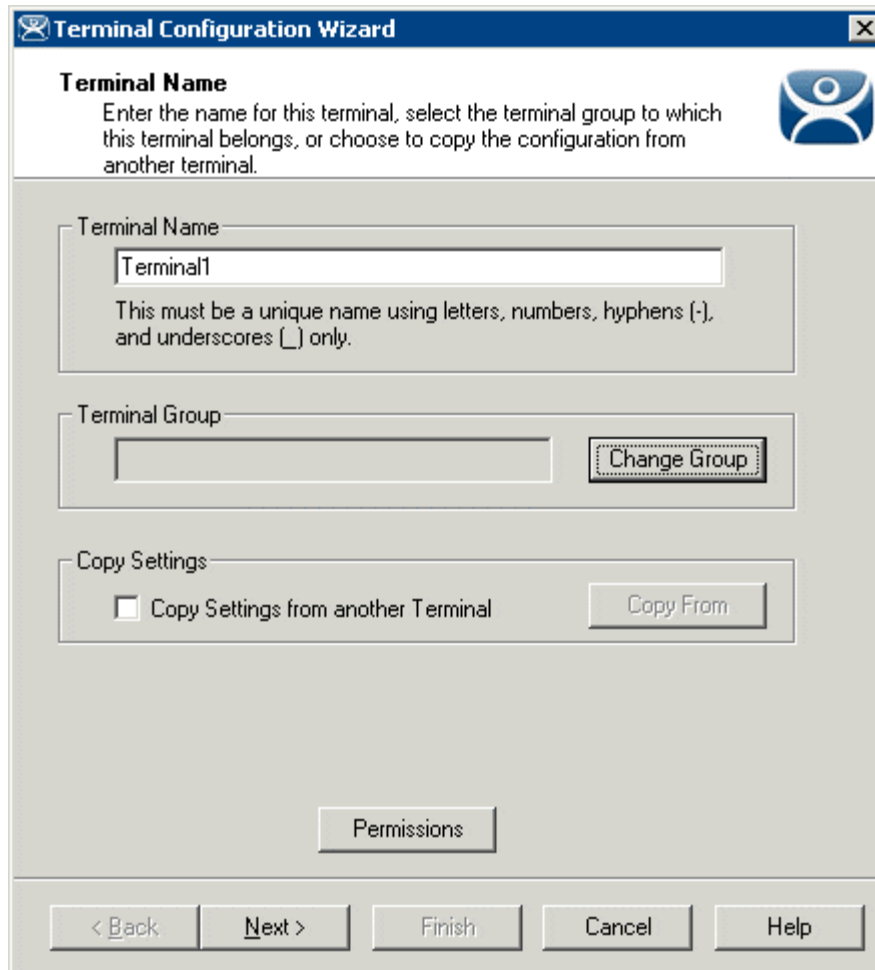
11.5.2 Changing a Terminal's Group

A terminal is added to a group from the **Terminal Name** page of the **Terminal Configuration Wizard**.

Open the **Terminal Configuration Wizard** by either:

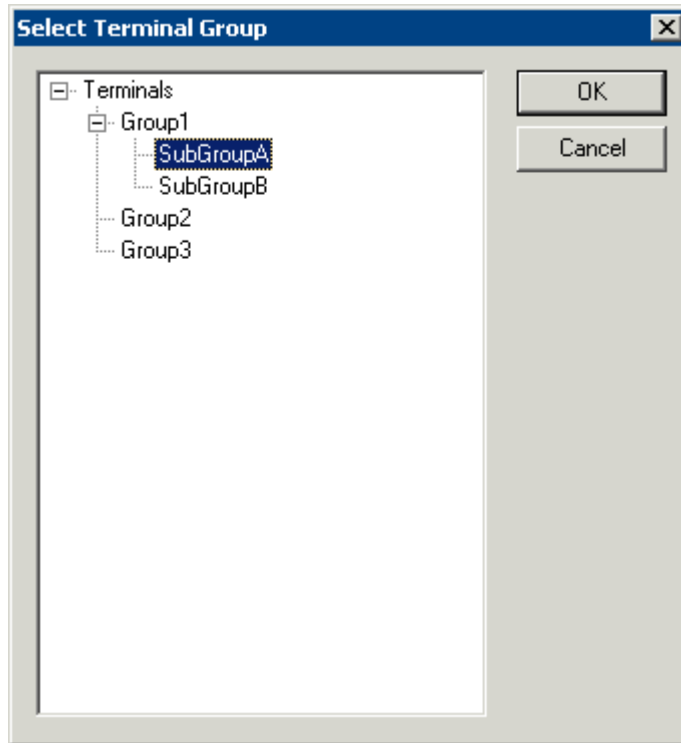
- Highlighting the terminal in the **ThinManager** tree pane by clicking on the terminal name or icon and select **Edi t >Modify** from the **ThinManager** menu bar.
- Right clicking on the terminal icon in the **ThinManager** tree pane and select **Modify**.
- Double clicking on a terminal icon in the **ThinManager** tree pane.

This will launch the **Terminal Configuration Wizard**.



Terminal Configuration Wizard - Terminal Name Page

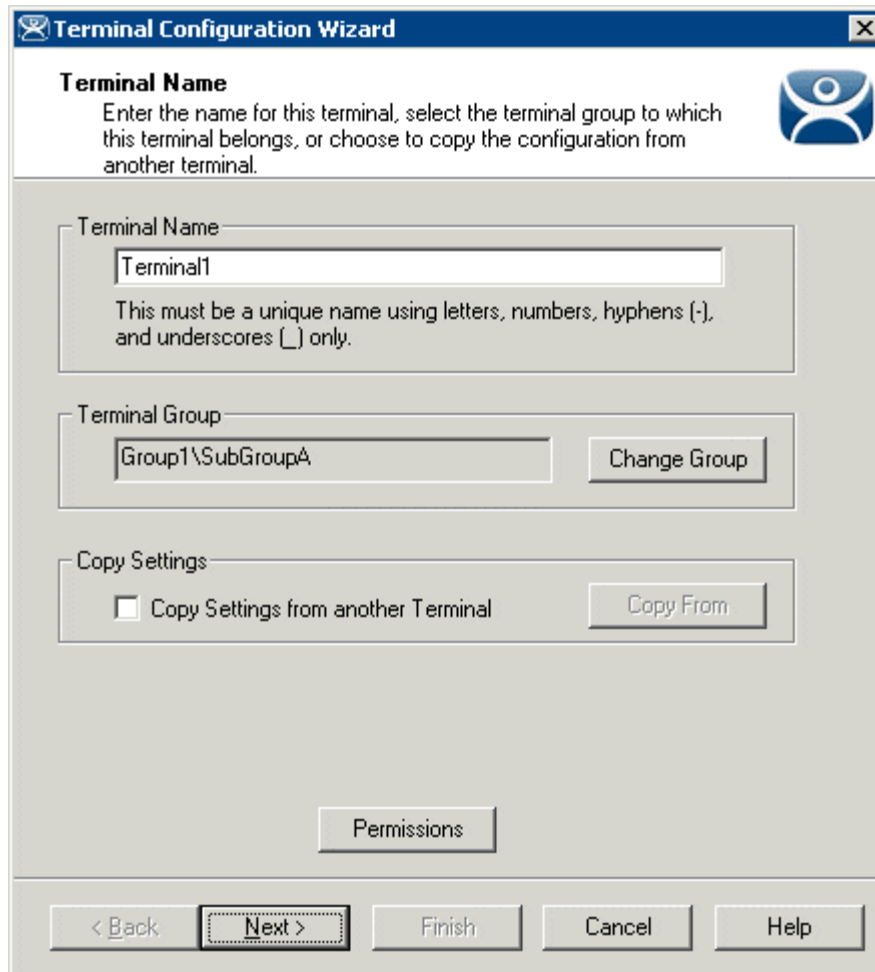
The first page of the wizard, **Terminal Name**, has a **Change Group** button. Select the **Change Group** button to launch the **Select Terminal Group** window.



Select Group Window

The **Select Terminal Group** window has a tree of the Terminal Groups. Highlight the desired Terminal Group and select the **OK** button. Selecting **Terminals** will remove the terminal from group membership.

The **Cancel** button will close the **Select Group** window without making changes.



The image shows a Windows-style dialog box titled "Terminal Configuration Wizard". The main heading is "Terminal Name". Below the heading is a text box containing "Terminal1". A note below the text box states: "This must be a unique name using letters, numbers, hyphens (-), and underscores (_) only." Below this is another text box labeled "Terminal Group" containing "Group1\SubGroupA", with a "Change Group" button to its right. Below that is a "Copy Settings" section with a checkbox labeled "Copy Settings from another Terminal" (which is unchecked) and a "Copy From" button to its right. At the bottom of the main area is a "Permissions" button. The bottom of the dialog features a navigation bar with five buttons: "< Back", "Next >" (which is highlighted with a dashed border), "Finish", "Cancel", and "Help".

Terminal Group Display

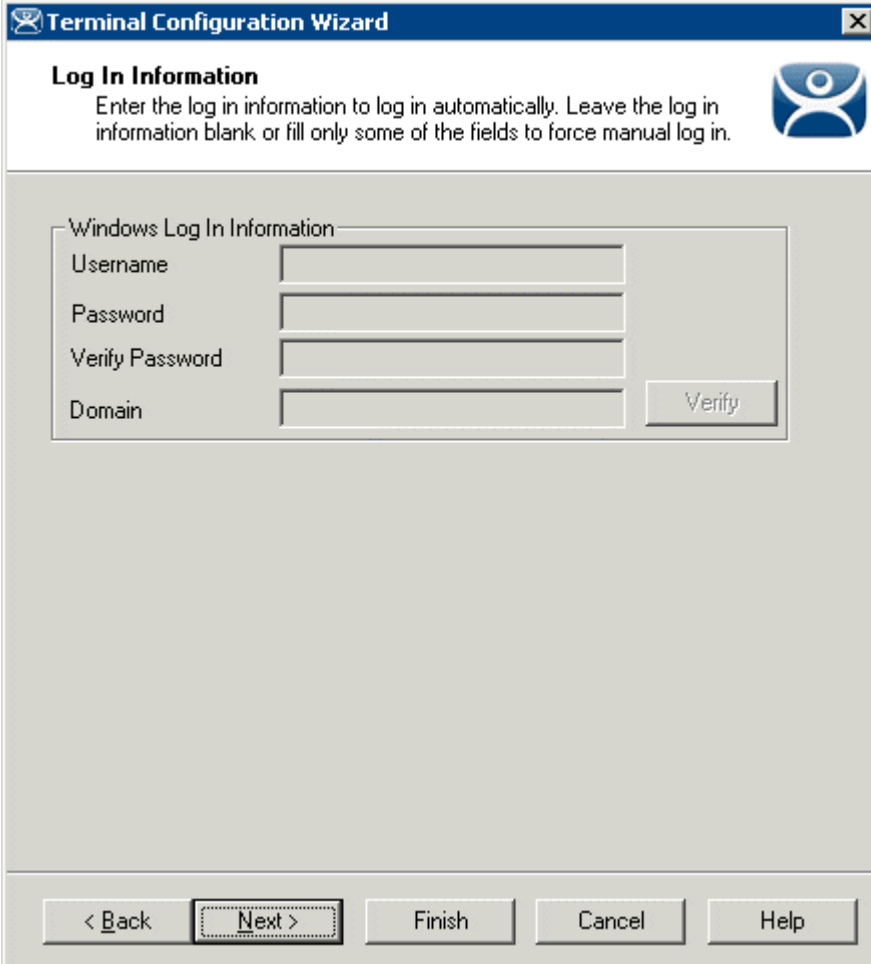
Once a group is selected for the terminal the group will be displayed in the **Terminal Group** field.

Note: The terminal will need to be restarted for the changes to take effect.

11.5.3 Unique Group Configurations

Several pages of the **Group Configuration Wizard** are different than the **Terminal Configuration Wizard**. These include the Log In Information page, the Group Video Resolution, and Module pages.

11.5.3.1 Group Login Information Page



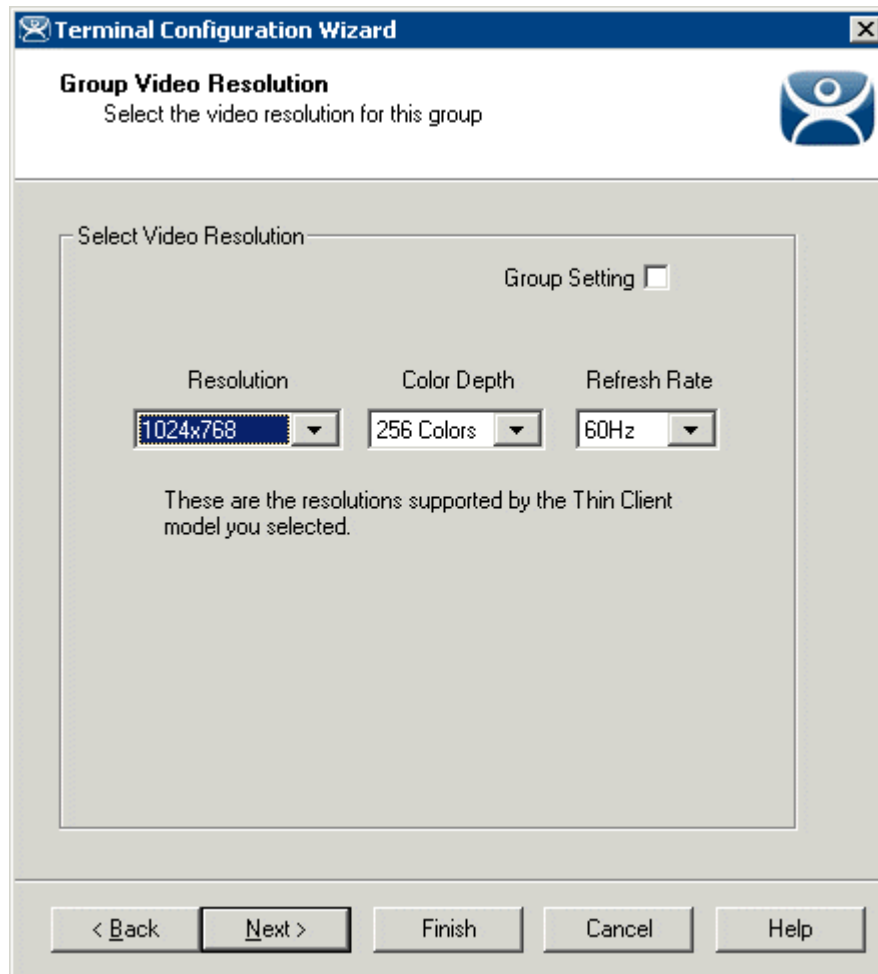
The screenshot shows a window titled "Terminal Configuration Wizard" with a close button in the top right corner. The main heading is "Log In Information" with a blue icon of a person. Below the heading is a text box: "Enter the log in information to log in automatically. Leave the log in information blank or fill only some of the fields to force manual log in." The main area contains a "Windows Log In Information" section with four input fields: "Username", "Password", "Verify Password", and "Domain". A "Verify" button is located to the right of the "Verify Password" field. At the bottom of the window are five buttons: "< Back", "Next >" (which is highlighted with a dashed border), "Finish", "Cancel", and "Help".

Log In Information - Use Application Groups

The **Log In Information** page is different in the **Group Configuration Wizard** than the **Terminal Configuration Wizard**.

It is recommended that each terminal login to a Terminal Server with a unique profile. For this reason, the Group **Username**, **Password**, and **Domain** are inactive in the Terminal Group Configuration. These need to be set individually during the Terminal Configuration.

11.5.3.2 Group Video Resolution Page



Group Configuration Wizard - Video Configuration

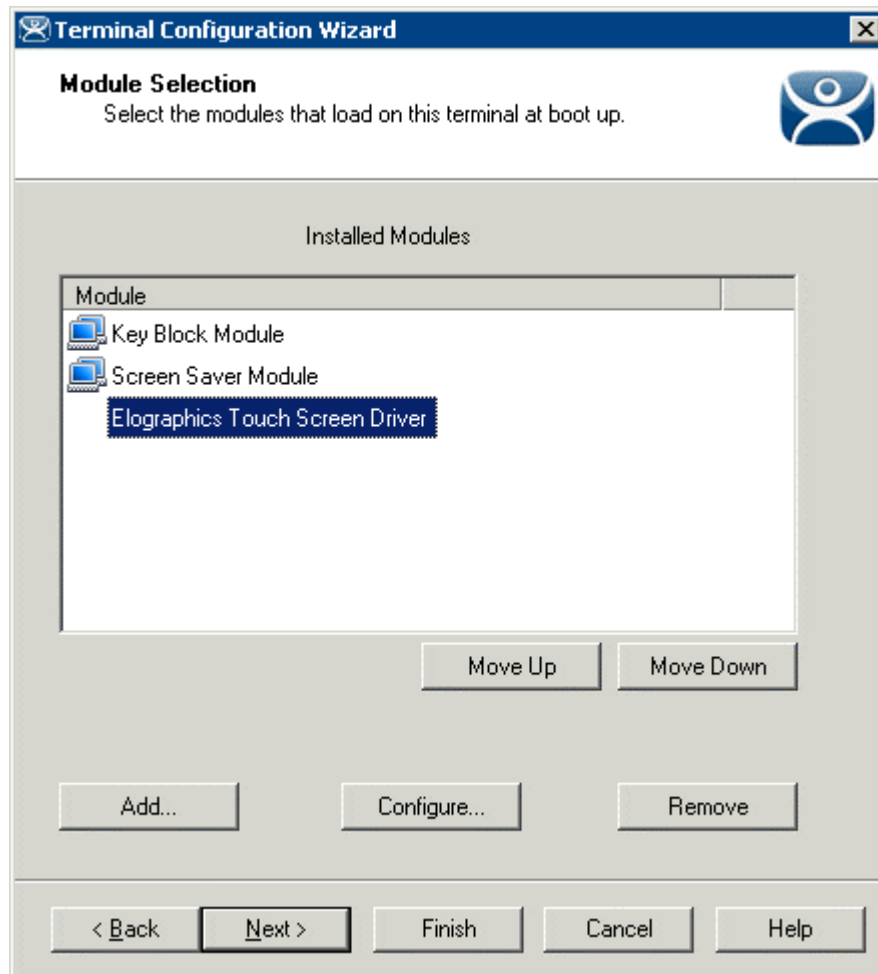
The **Group Video Resolution** page has a drop-down box that allows the video resolution to be set for all members of the Group.

The Windows 2000 terminal connection uses a 256-color depth. The 64K-color depth is available by using RDP connected to a Windows 2003 or 2008 Terminal Server.

The **Group Setting** checkbox will lock the settings for the group and all member terminals.

Note: It is not recommended to set the Video Resolution as a Group Setting because of the variety of monitor sizes and the ease at which they are changed. These settings are better set as an individual terminal setting to provide the flexibility to switch monitors.



11.5.3.3 Group Module Selection Page



Group Configuration Wizard - Module Selection

A **Module** is a component of the firmware that is not needed for the basic functionality but may be desired for advanced functionality. These features include Touch Screen drivers, serial mouse drivers, High Speed Serial drivers, Shared Keyboard and Mouse, USB Memory Card Reader, and Instant Failover. See Module Overview for details.

Terminals that are members of a Group may show icons to represent the properties of added modules.

-  The Group icon represents modules assigned to a parent Group.
-  The Group icon with yellow plus sign represents properties that are changed on the terminal from the Group settings. This is limited to touch screen calibration.
- No icon indicates that the module was added to that particular Group or Terminal and not a parent Group.

If you add a module to a group it will display the group icon and any configuration will need to be made at the group level.

If you add a module to a terminal it will not display an icon and any configuration will need to be made at the terminal level.

See Modules for Details.

The rest of the **Group Configuration Wizard** pages follow the **Terminal Configuration Wizard** pages.

12 Display Servers

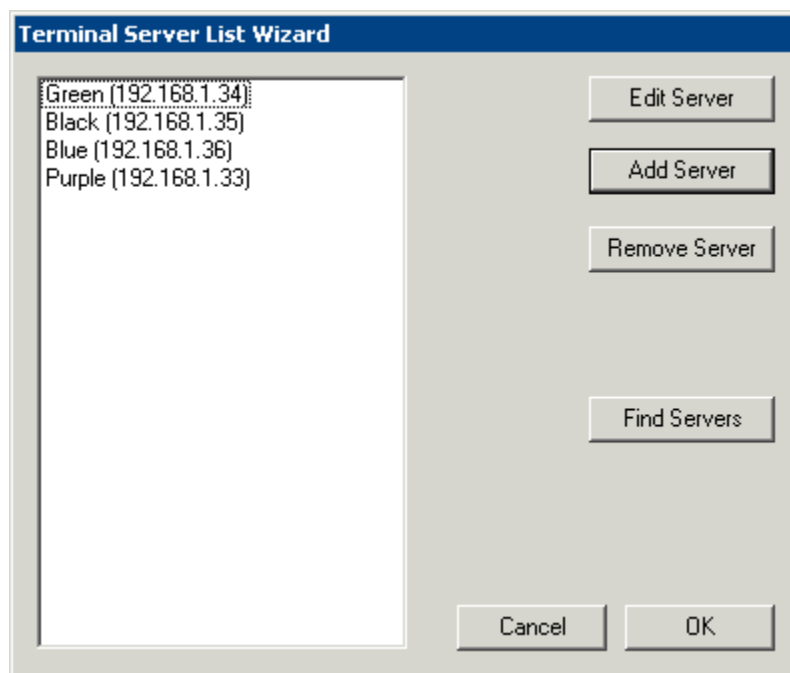
Display Servers are devices that provide content that can be displayed on the client. Examples include the traditional terminal server and IP cameras.

The Terminal Server List Wizard allows configuration of Terminal Services Display Servers. The Camera Configuration Wizard allows configuration of Camera Display Servers

12.1 Terminal Services Display Servers

The **Terminal Server List Wizard** can be launched by:

- Right clicking on the Display Servers Terminal Servers branch and choosing the **Add Terminal Server** command
- Right clicking on the Display Servers Terminal Servers branch and choosing the **Edit Terminal Server** command.



Terminal Server List Wizard

Importance of Page: This allows you to define the terminal servers that will be used within ThinManager.

Fields:

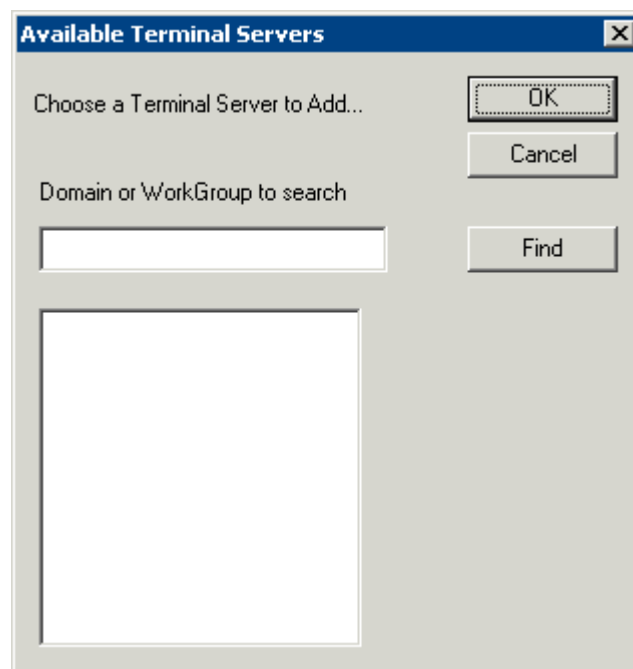
- **{Unnamed}** – The list box will contain the names and IP addresses of defined terminal servers.

Buttons:

- **Edit Server** – This will open the properties for a highlighted terminal server in the list.
- **Add Server** - This will launch the Terminal Server Configuration Wizard to allow a new terminal server to be defined.. See
- **Remove Server** – This will remove a highlighted terminal server from the list.
- **Find Servers** - This will launch the **Available Terminal Servers** window for automated terminal server addition.
- **Cancel** - This will close the wizard without action.
- **OK** – This will close the wizard after accepting changes.

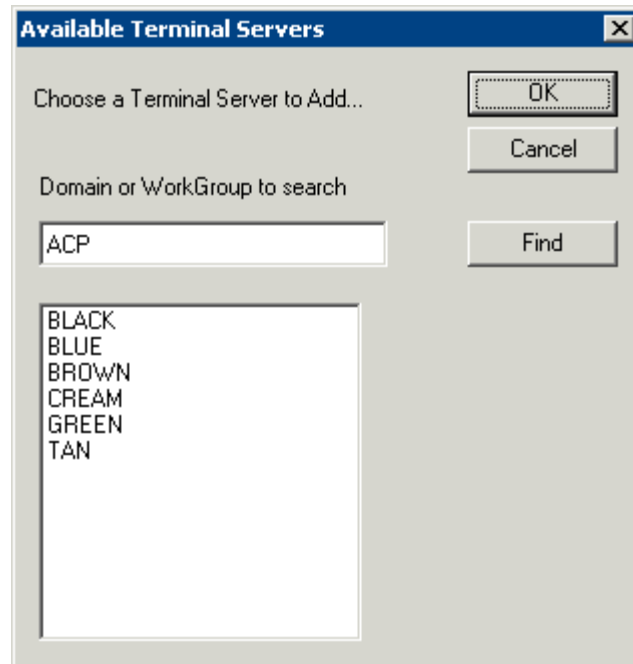
Why Change from Default Settings: The terminals require terminal servers to connect and run sessions on.

12.1.1.1 Available Terminal Servers Search



Available Terminal Server Window

The **Available Terminal Servers** window will display any Microsoft© terminal servers that are a member of the same domain or workgroup as ThinManager. Select the **Find** button to display the member servers.

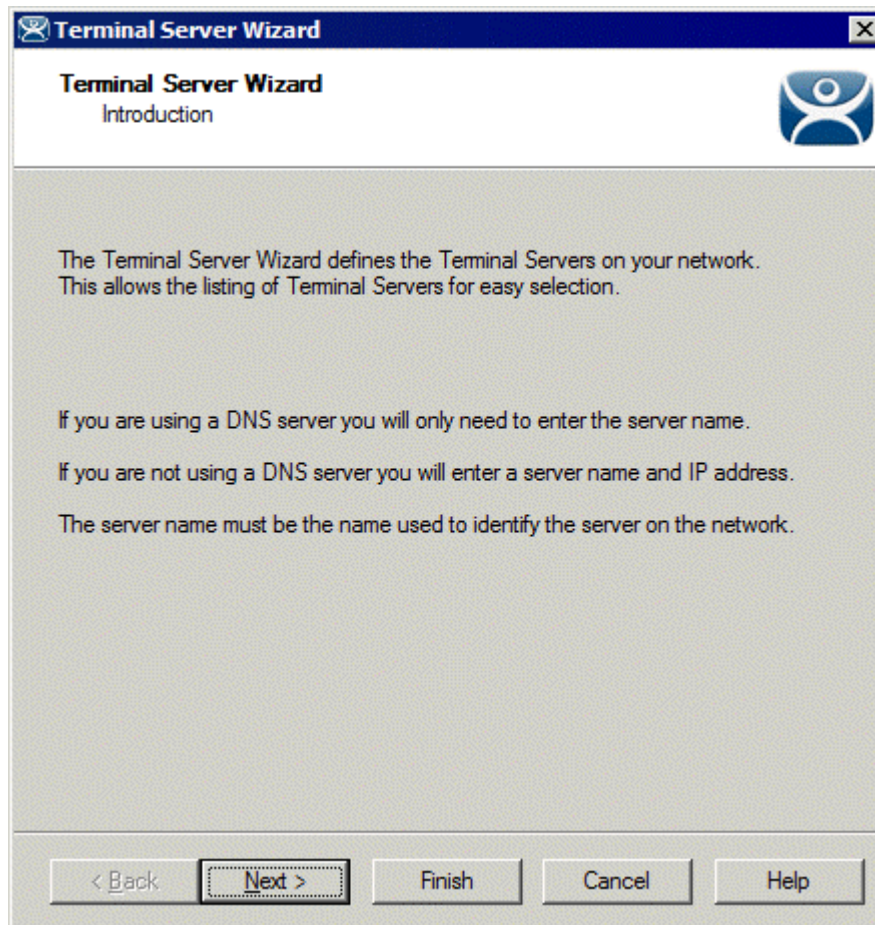


Available Terminal Server Window

The **Domain or WorkGroup to Search** field will allow ThinManager to search a different domain or workgroup. Enter the domain of workgroup to search and select the **Find** button to display the member servers.

Once the terminal servers are listed, highlight one and select the **OK** button to add it to the Terminal Server Configuration Wizard. This will launch the Introduction page of the **Terminal Server Wizard**.

12.1.1.2 Terminal Server Wizard Introduction Page



Terminal Server List Wizard Introduction

Importance of Page: This displays introductory information.

Select **Next** to continue or **Cancel** to close without saving.

12.1.1.3 Terminal Server Name Page

The screenshot shows a window titled "Terminal Server Wizard" with a close button in the top right corner. The main title is "Terminal Server Name" and the subtitle is "Enter the Terminal Server Name and Log In information." There is a blue icon in the top right corner. The form contains the following fields and buttons:

- Terminal Server Name: A text input field.
- Terminal Server IP: A text input field containing "255 . 255 . 255 . 255" and a "Discover" button to its right.
- Log In Information: A group box containing four text input fields:
 - Domain
 - User Name
 - Password
 - Verify Password
- A "Schedule" button is located below the Log In Information group box.
- A message "Please enter a valid IP Address" is displayed below the IP field.
- At the bottom, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Server List Wizard – Terminal Server Name

Importance of Page: This page defines the terminal server and allows the addition of an administrative user account for increased management.

Fields:

- **Terminal Server Name** - Enter the computer name as found in the Microsoft© System Properties (NetBIOS name). The name will already be entered if the **Find** function on the **Available Terminal Servers** window was used.
- **Terminal Server IP** – Entered the IP address of the terminal server.

Login Information – Enter a Windows user account with administrative rights for the terminal server if you wish to display data from the terminal server within ThinManager. This is required to populate the User, Sessions, and Process tabs of the details pane. See Details Pane for details.

- **Domain** - Enter the domain for the computer, if it is a member of a domain.
- **User Name** – Enter the user name of the administrative account here.
- **Password** - Enter the password for the administrative account used in the **User Name** field.
- **Verify Password** – Re-enter the password for the administrative account used in the user name field. Passwords that do not match will be indicated by a warning message on the page.

Buttons:

- **Discover** – The **Discover** button will automatically fill in the IP address for a terminal server listed in the **Terminal Server Name** field.
- **Schedule** – The **Schedule** button will launch the **Event Schedule** for the terminal server. This allows the scheduling of repeated functions like rebooting and disabling. See Scheduling for details.

Why Change from Default Settings: ThinManager uses a connection to the terminal server to pull the process, user, and session information for the detail pane tabs and to determine the load for SmartSession load balancing. Entering a username and password in the **User Name** and **Password** fields allows ThinServer to connect to the server for this data.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

12.1.1.4 Terminal Server Capabilities Page

Terminal Server Capabilities

Importance of Page: This allows a terminal server to be used for SmartSession. It also defines what communication protocols the server can use.

Settings:

- **Supported Connections** – This is a list of client/server communication protocols that the terminal server can use.
 - **Citrix ICA** – Check this checkbox if a Citrix server-side program is installed on the terminal server to provide the ICA protocol.

- **Citrix Device Services** - Check this checkbox if Citrix Device Services is installed and licensed on the terminal server. Citrix Device Services is a legacy deployment of the ICA client but is no longer supported by Citrix. Thin clients can still connect to terminal servers with Device Services, but no new Device Services terminal servers can be licensed.
- **Microsoft Remote Desktop Protocol** - RDP is installed by default on Windows Terminal Servers. Uncheck the **Microsoft Remote Desktop Protocol** checkbox if you don't want to access to the terminal server with the protocol.
- **Available for Smart Session Server** – This checkbox makes the terminal server available for Application Groups that use SmartSession to provide load balancing. See Display Client SmartSession Settings Page for more details.

Why Change from Default Settings: Add SmartSession if you want to use SmartSession. Add Citrix ICA if that is being used.

Note: Configuring a terminal server to use SmartSession uses a SmartSession license.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

12.1.1.5 Data Gathering Page

Terminal Server Wizard

Data Gathering
Enter the Data Gathering intervals.

Data Gathering Intervals

Fast
 Medium
 Slow
 Custom

SmartSession Data Update Interval: 8 seconds

Process Update Interval: 5 seconds

Session Update Interval: 8 seconds

Data Gathering

Importance of Page: This page sets the frequency that ThinManager polls the terminal servers for user, session, and process information.

Settings:

- **Data Gathering Intervals (Fast/Medium/Slow)** - These settings set the rate of the frequency that ThinManager polls the terminal server for data.
- **Data Gathering Intervals (Custom)**- This setting allows the polling speeds to be set.
 - **Smart Session Data Update Interval** is the amount of time between the retrieval of SmartSession data, CPU usage, memory usage, and session count, from the terminal server. This setting affects the update speed of the Server Rankings used in SmartSession load balancing.
 - **Process Update Interval** is the amount of time between the retrieval of the process information on the terminal server. This setting affects the speed of the update of the process information on the Processes tab for the terminal server.
 - **Session Update Interval** is the amount of time between the retrieval of session data from the terminal server. This setting affects the speed of the update of the user information for the sessions on the Users and Sessions tabs for the terminal server.

Why Change from Default Settings: Faster rates will lead to quicker updates but will add more network traffic. Slowing down the rate will cause less traffic but will slow the update rate a little.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

If this terminal server is used as a SmartSession server, the **Next** button will go to a SmartSession Configuration page. If this terminal server is not configured as a SmartSession server, the **Next** button will be grayed out and the **Finish** button will close the wizard.

12.1.1.6 SmartSession Configuration Page

Terminal Server Wizard
SmartSession Configuration
Enter the SmartSession limits for this Terminal Server.

CPU Utilization

Minimum %
Maximum %

Memory Utilization

Minimum %
Maximum %

Sessions

Minimum
Maximum

< Back Next > Finish Cancel Help

Terminal Server List Wizard - SmartSession Configuration

Importance of Page: This allows SmartSession data to be tweaked.

ThinManager uses the **CPU utilization**, **Memory utilization**, and **number of sessions** on the terminal server to define the SmartSession terminal server's available resources. ThinManager uses these resource values to rank the load of the SmartSession servers. ThinManager supplies this load data to the terminals to allow the terminals to connect to the terminal server with the lightest load and greatest available resources.

The **SmartSession Configuration** page allows the configuration of the three parameters that ThinManager uses to determine availability for SmartSession. ThinManager will scale the range between the Minimum field and Maximum field as 100%.

Settings - The three values used in SmartSession are:

- **CPU Utilization** – The percentage of CPU usage on the terminal server.
- **Memory Utilization** - The percentage of CPU usage on the terminal server.
- **Sessions** – The number of sessions on a terminal server.

Fields:

- **Minimum** – the value that ThinManager will use as the starting point of the load. A value below the **Minimum** is considered to be unused.

- **Maximum** – the value that ThinManager will consider the parameter as reaching 100% utilized and is unavailable.

Why Change from Default Settings: Changing the Minimum and Maximum values will change the range used to calculate SmartSession loads and can influence SmartSession behavior.

Select **Finish** to save and close or **Cancel** to close without saving.

12.2 Camera Configuration Wizard

The **Camera Configuration Wizard** allows an IP Camera to be configured as a Display Server within ThinManager.

Launch the **Camera Configuration Wizard** by right clicking on **Cameras** in the Display Servers branch and selecting **Add Camera**.

12.2.1.1 Camera Name Page

Camera Configuration Wizard

Camera Name
Enter the camera name and network location

Camera Name
Camera Name

Camera Model
Make
Model

Camera Network Setup
IP Address
Port

Please enter a Camera name

< Back Next > Finish Cancel Help

Camera Configuration Wizard

Importance of Page: This page names and addresses the IP Camera.

Fields and Settings:

- **Camera Name and Group**
 - **Camera Name** – Enter a name for the camera.
 - **Change Group** – This button allows the camera to be added to a **Camera Group**.
- **Camera Model**
 - **Make** – Use the drop-down to select a manufacturer.
 - **Model** – Use the drop-down to select a model.
- **Camera Network Setup**
 - **IP Address** – Enter the IP address of the IP camera.
 - **Port** – Enter the port used.

Why Change from Default Settings: Each camera needs to be defined.

The first page of the camera configuration wizard requires that a camera name be entered. Select the make and model of the camera you are configuring and the IP address and Port that has been previously assigned to the camera. The IP address and port are set by using the camera manufacturers configuration software or through the use of the camera's web browser interface.

12.2.1.2 Camera Authentication Page

The screenshot shows a window titled "Camera Configuration Wizard" with a sub-header "Camera Authentication" and the instruction "Enter the camera username and password". The main area contains three text input fields labeled "Username", "Password", and "Verify Password". At the bottom of the window, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Camera Authentication

Importance of Page: This page provides authentication, if needed.

Fields:

- **Username** – Enter a username, if needed.
- **Password** – Enter a password, if needed
- **Verify Password** – Re-enter the password for accuracy.

Why Change from Default Settings: If your camera requires authentication enter it on this page. If the camera has been configured to allow anonymous connections, leave the information blank.

The terminal uses the authentication information when connecting to the camera. Authentication information is setup in the camera by using the camera manufacturers configuration software or through the use of the camera's web browser interface.

12.2.1.3 Camera Model Options

The screenshot shows a 'Camera Configuration Wizard' window with the following settings:

Option	Value
Resolution	640x480
Frames per second	5
Compression (0-100)	30
Show Clock	NO
Show Date	NO
Show Text	NO
Text Position	TOP
Text	

Camera Model Options

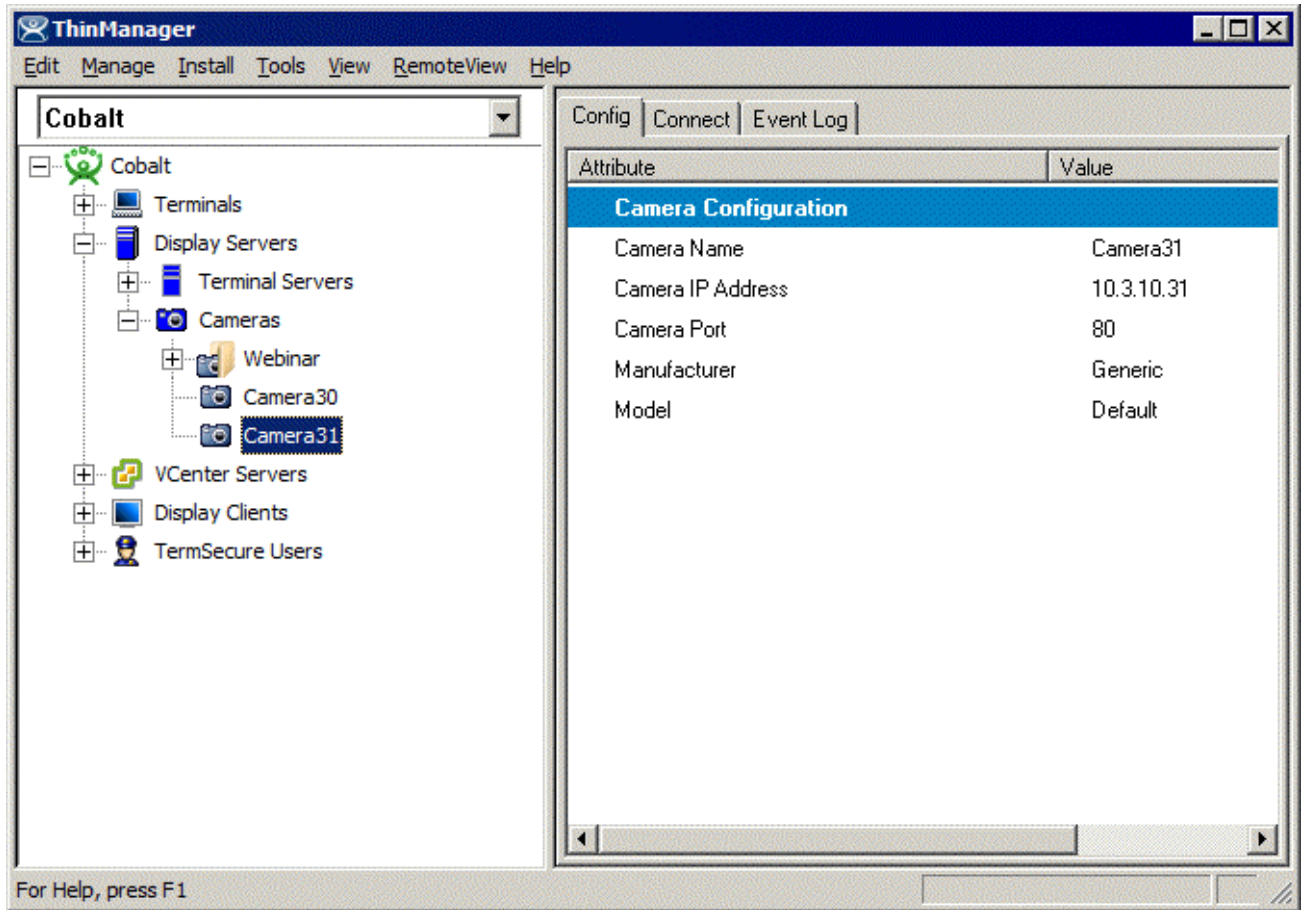
Importance of Page: This page allows additional camera configuration.

Fields:

- **Include Camera Options** – This checkbox shows addition options when checked.
- **Options** – The options shown vary by make and model of the camera hardware. Please see camera documentation for their help.

Why Change from Default Settings: The camera can be controlled in finer detail.

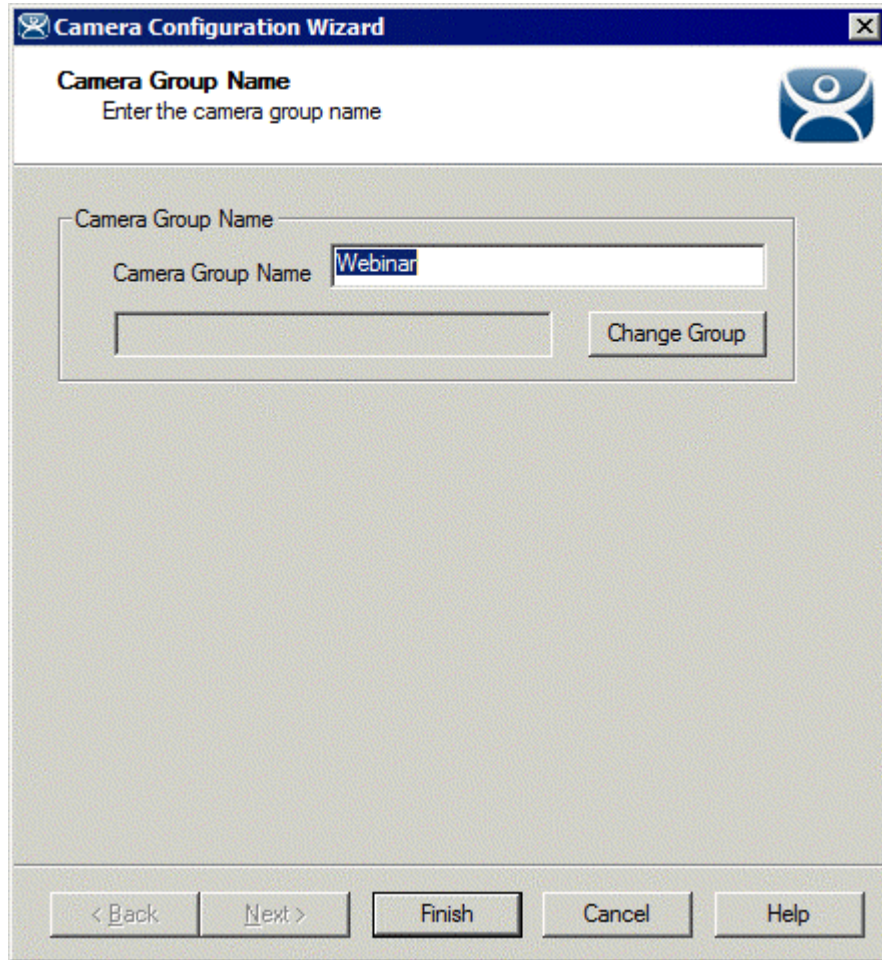
Some cameras support additional configuration options. These options can be configured on this page. If you wish to use the default options then leave the **Include Camera Options** unchecked. The newly created camera will appear in the ThinManager tree as follows.



Camera Tree View

12.2.2 IP Camera Group Configuration

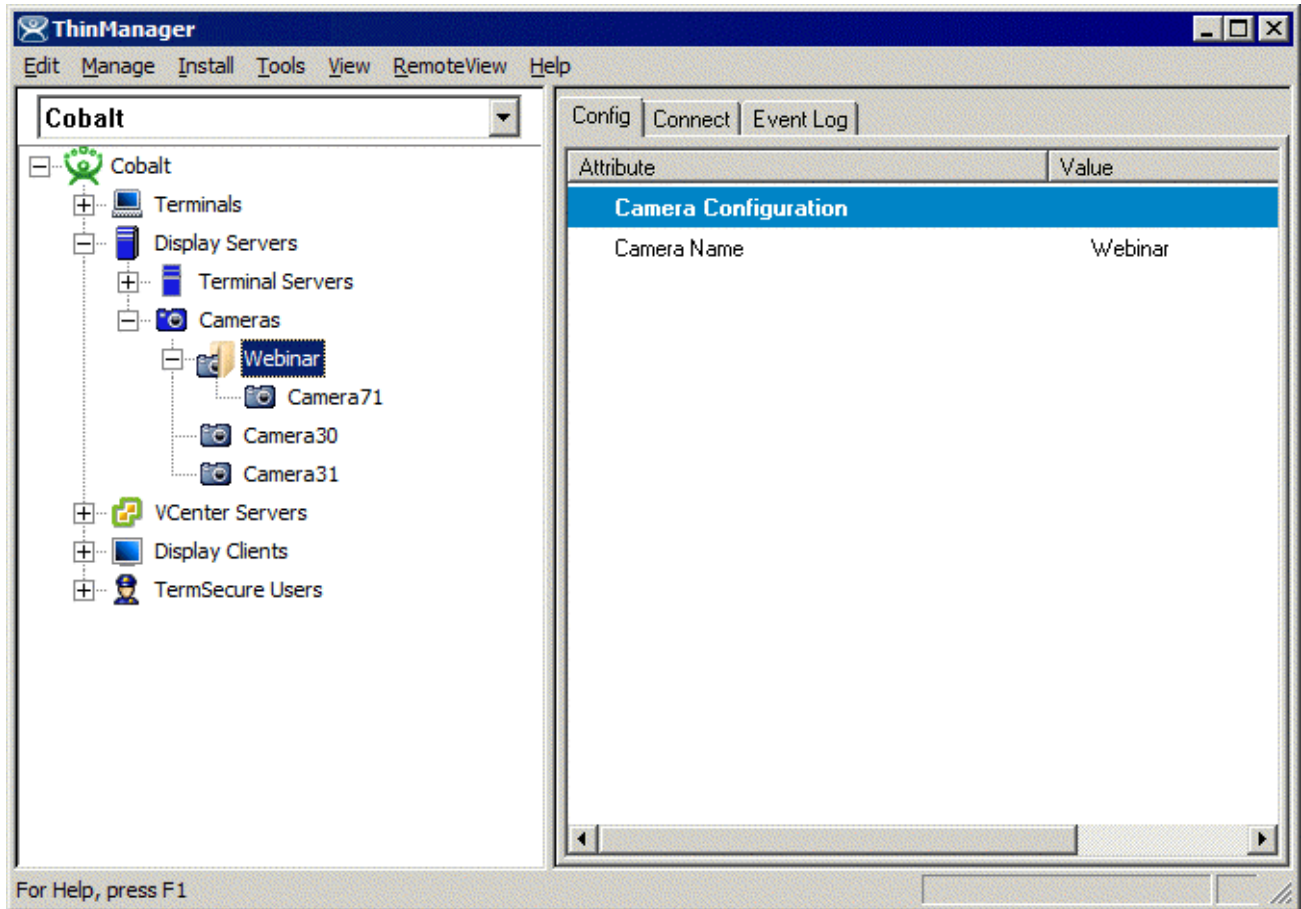
The camera group configuration wizard can be launched by right clicking on the **Cameras** branch of the ThinManager tree and selecting the **Add Camera Group** option.



The screenshot shows a Windows-style dialog box titled "Camera Configuration Wizard". The main heading is "Camera Group Name" with the instruction "Enter the camera group name". A text input field contains the word "Webinar". Below the input field is a "Change Group" button. At the bottom of the dialog are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Add Camera Group Wizard

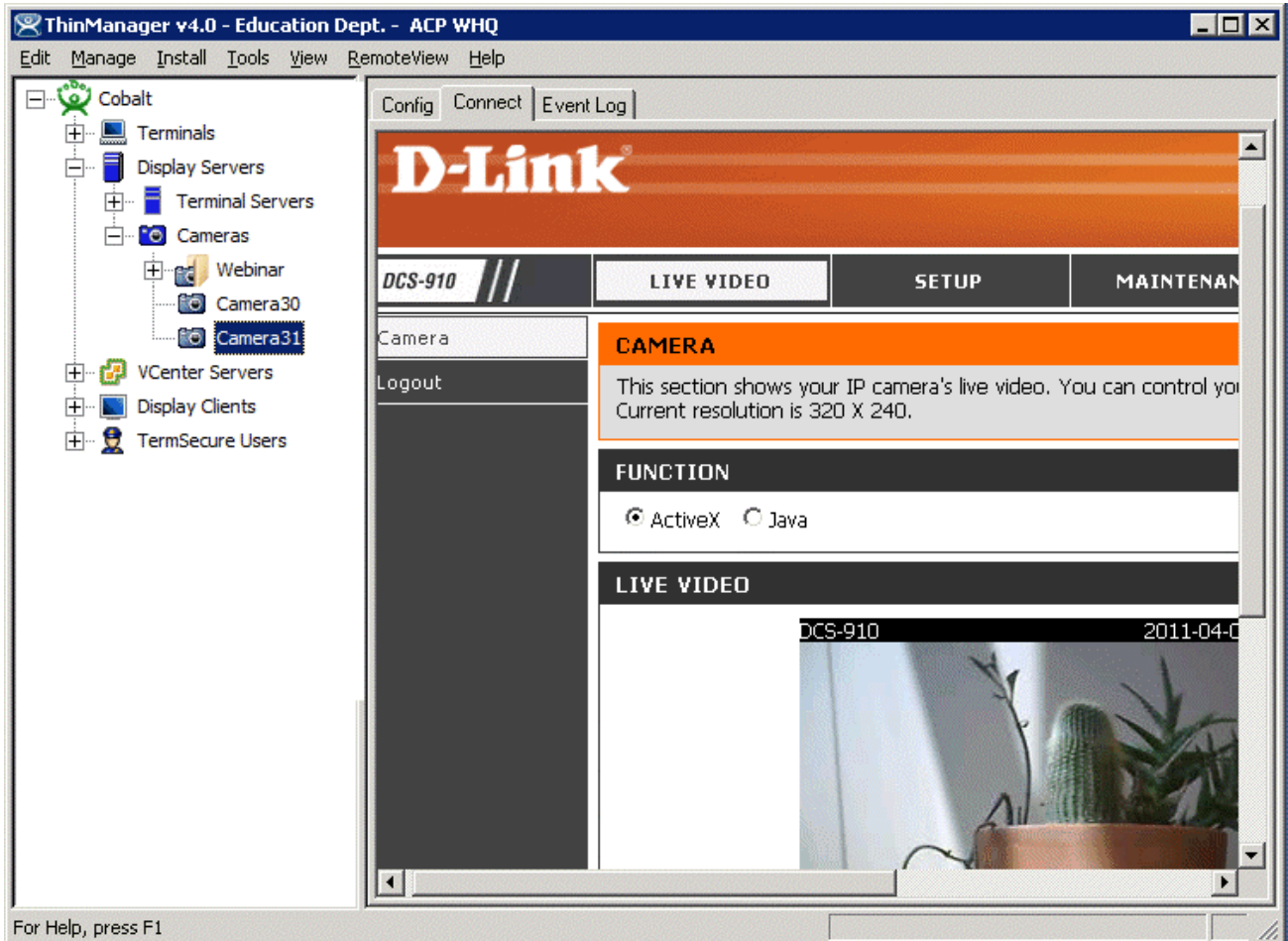
Enter the Camera Group Name and select **Finish**. The Camera group will be shown in the ThinManager tree as follows.



Camera Group Tree View

12.2.3 IP Camera Administration

Once a camera is configured in ThinManager, the **Connect** tab can be used to connect to the camera and perform camera administration from ThinManager.



Camera Connect Tab

Camera log in information may be requested when using the connect tab. The authentication information entered during the camera configuration is not used when using the connect tab.

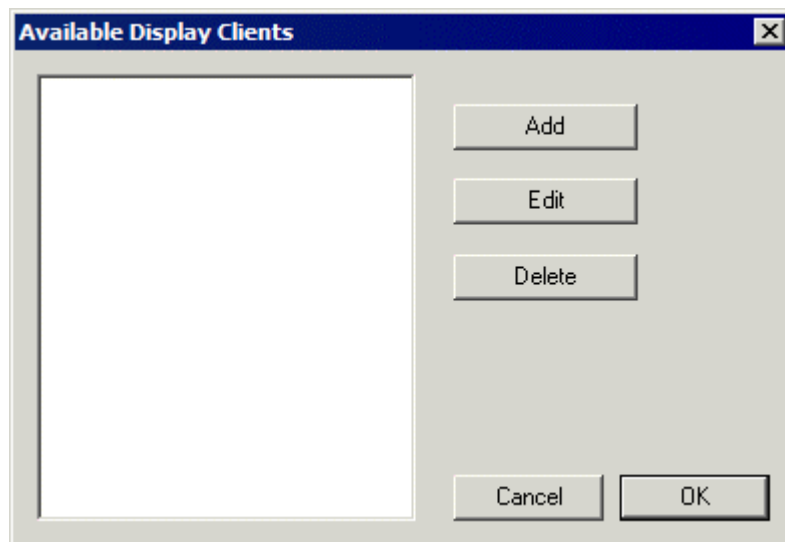
13 Display Clients

Display Client is the term used to denote the graphic rendering of the output from a Display Server. This could be a traditional Terminal Server session, IP Camera display, a Terminal-to-Terminal Shadow session or a workstation session.

13.1 Display Client List

The **Display Client List Wizard** can be launched by either:

- Right clicking on the Display Client branch and choosing the **Add Display Client** command
- Right clicking on the Display Client branch and choosing the **Edit Display Client** command.



Display Client List Wizard

The opening window of the **Display Client List Wizard** will show any Display Clients that are defined or will be blank if none have been defined.

Fields:

- **(Unnamed)** – The list box shows Display Clients that are created.

Buttons:

- **Add Group** – This will launch the Display Client Wizard to create a new Display Client.
- **Edit Group** – This will open the properties for a highlighted Display Client.
- **Delete Group** – This will remove a highlighted Display Client from the list.
- **Cancel** – This will close the wizard without action.
- **OK** - This will close the wizard after accepting changes.

13.1.1.1 Display Client Name Page

The screenshot shows a Windows-style dialog box titled "Display Client Wizard". The main content area has a header "Client Name" with a sub-instruction "Enter the Display Client name." and a blue icon of a person. Below this is a text input field labeled "Client Name". Underneath is a "Type of Display Client" section with a dropdown menu currently set to "Terminal Services". A "Permissions" button is located to the right. At the bottom, there is a message "Please enter a Display Client name" and a row of five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Display Client Name Page

Importance of Page: This page starts the configuration wizard, sets the name, and the type of Display Client.

Fields:

- **Group Name** – This field is used to name the Display Client.

Settings:

- **Type of Display Client** drop-down box selects the function of the Display Client.
 - **Terminal Services** – This creates a Display Client that allows a terminal to connect to a terminal server, login, and run a session.

- **Terminal Shadow** – creates a Display Client that allows a terminal to be shadowed by another terminal.
- **Camera** – creates a Display Client that allows the use of IP Cameras.
- **Workstation** – creates a template for workstation deployment. The Workstation Display Client gets assigned to a specific workstation when it is applied to a terminal. See Virtual Workstations for details.

Buttons:

- **Permissions** - The button will launch the **Permissions** window that allows Permissions to be set for TermSecure. This is discussed in Permissions.

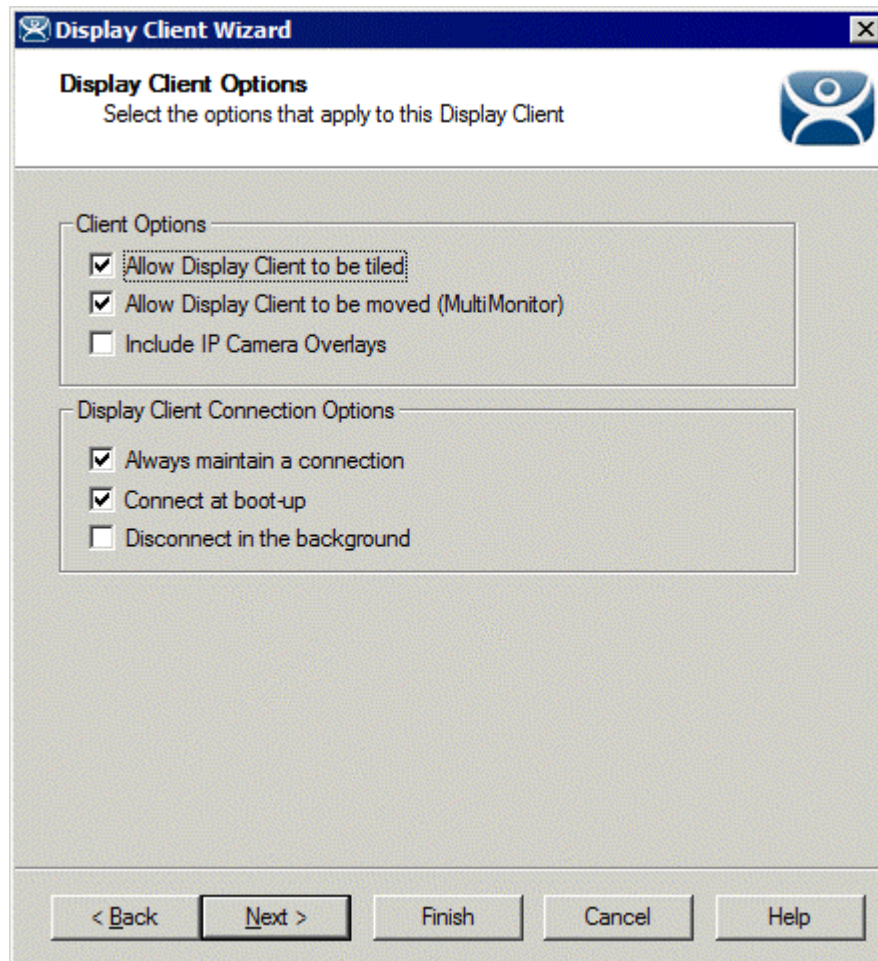
Why Change from Default Settings: The group needs a name and a type assigned to it.

This section covers Terminal Services Display Clients. Once the **Type of Display Client** is set to Terminal Services select **Next** to configure the group options.

13.2 Terminal Services Display Clients

The Terminal Services Display Clients of ThinManager have the same function as the Terminal Server Groups from pre-3.2 versions of ThinManager and the Application Groups of ThinManager 3.2 and 3.3. They allow a terminal to connect to a terminal server, login, and run a session. The specific terminal server that the terminal connects to is based on the Display Client configuration and options.

13.2.1.1 Display Client Options Page



Display Client Options

Importance of Page: This page allows the configuration of Display Client parameters

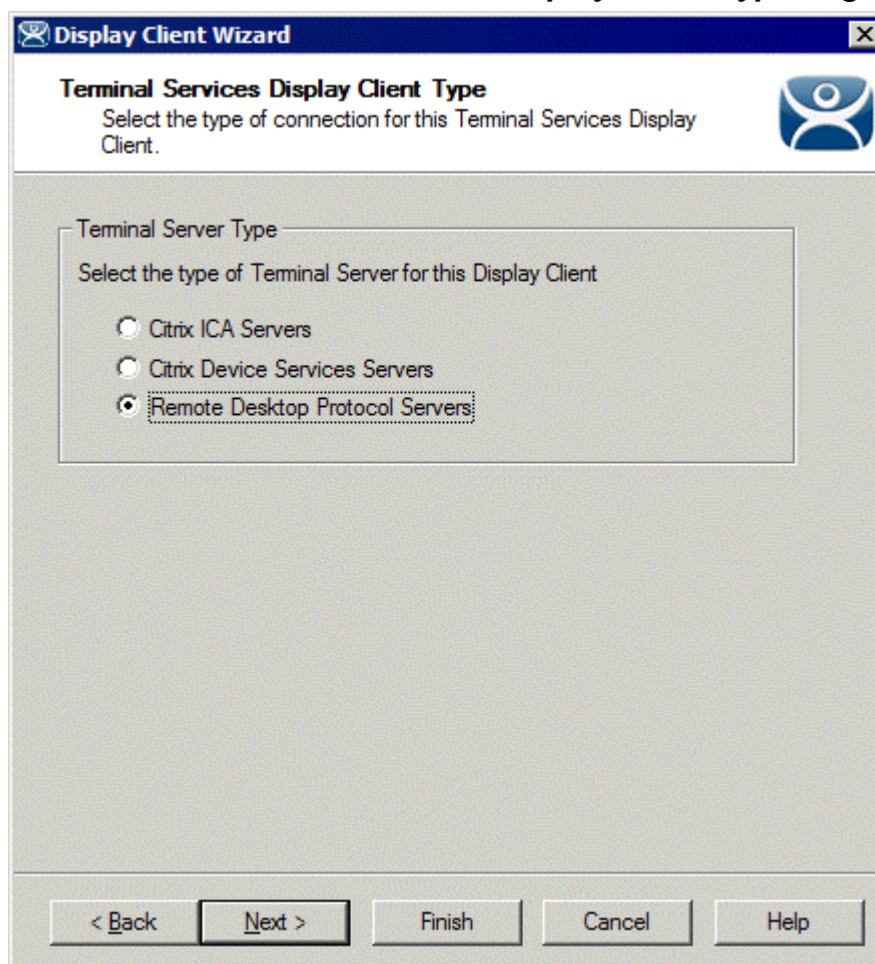
Checkbox:

- **Allow group to be tiled** – If checked, this allows the Display Client to be tiled in SessionTiling. See SessionTiling Options for details.
- **Allow Group to be moved (MultiMonitor)** – If checked, this allows an Display Client to be moved from one MultiMonitor screen to another. See MultiMonitor for details.
- **Include IP Camera Overlays** –This will allow IP Camera overlays to be added to this Display Client.
- **Always maintain a connection** – This keeps a session active, reconnecting and restarting if it is closed. If unchecked, the user can close a session and another session won't start automatically.
- **Connect at boot-up** – If checked, the terminal will start a session for this Display Client at boot up. If unchecked, a user action is required to start the session.
- **Disconnect in background** – If checked, an Display Client being used in a MultiSession configuration will disconnect once it is moved into the background. This could be done to require fewer resources.

Why Change from Default Settings: The *Always maintain a connection* and *Connect at boot up* checkboxes, if unselected, will lower the demand on the terminal servers by allowing sessions to be closed until needed.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

13.2.1.2 Terminal Services Display Client Type Page



Terminal Services Display Client Type

Importance of Page: Each Terminal Services Display Client can use a single protocol to connect to the terminal servers.

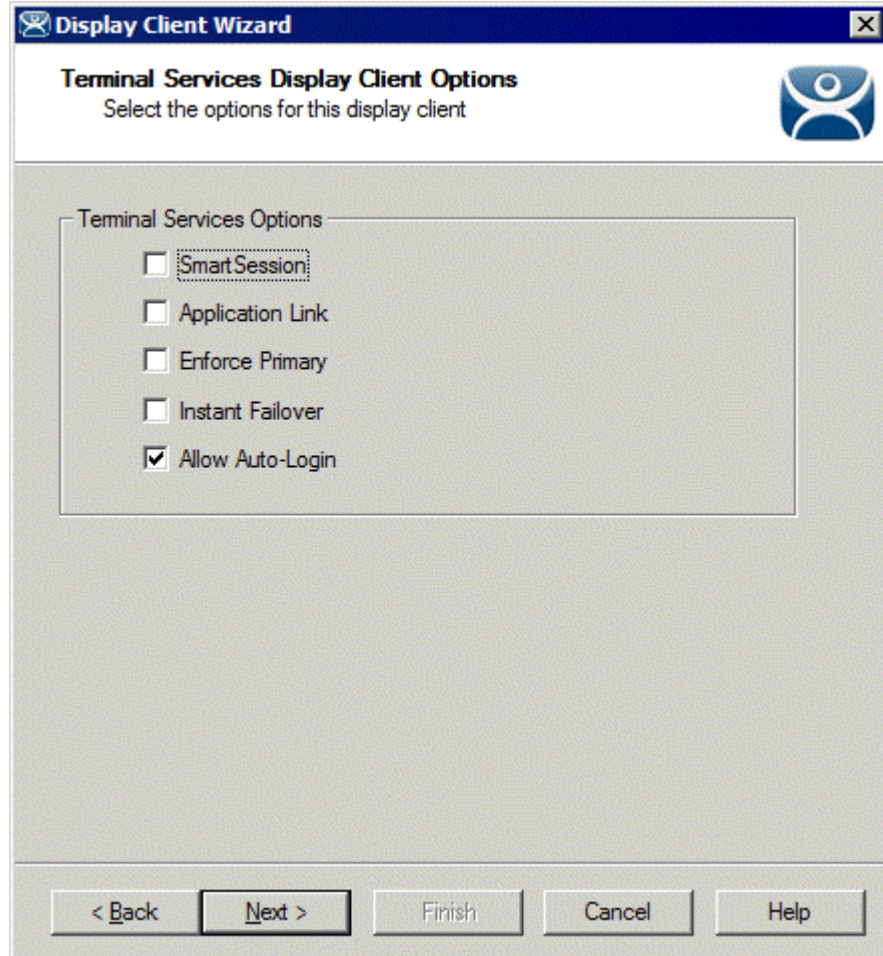
Settings:

- **Citrix ICA** – This allows the use of the Citrix© ICA protocol in client to server communications.
- **Citrix Device Services** – This is a legacy version of the ICA protocol used on Windows NT and Windows 2000 terminal servers.
- **Remote Desktop Protocol (RDP)** – This is the default protocol from Microsoft©. It is automatically installed on Microsoft© terminal servers.

Why Change from Default Settings: Change to the Citrix© ICA protocol if the Citrix© ICA protocol is going to be used instead of the default RDP.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

13.2.1.3 Terminal Services Display Client Options Page



Terminal Services Display Client Options

Importance of Page: This page sets the roles of the Display Client.

Checkbox:

- **SmartSession Group** – - This adds SmartSession to the Display Client which provides load balancing between member terminal servers. SmartSession uses CPU availability, memory, and the number of sessions on the member terminal servers to determine the load on the servers. Thin clients connect to the terminal server in the Display Client with the most available resources. See SmartSession Option for details.
- **Application Link Group (AppLink)** – - AppLink, provides the Initial Program function to thin clients that connect to members of the Display Client. The Initial Program function launches a program instead of the desktop. Closing the program will end the connection and force a reconnection to a session running the application. See AppLink Option for details.
- **Enforce Primary** - This allows a thin client to connect to its original terminal server if that terminal server has failed and recovered. This is not available if SmartSession is selected.

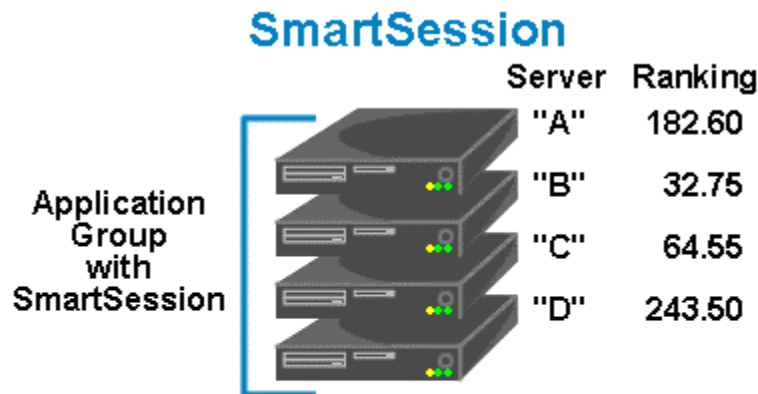
- **Instant Failover (requires license)** - This provides Instant Failover where the terminal will connect to two terminal servers in the Display Client. The terminal will have an active session on two terminal servers but will only display one session. If the first terminal server fails, the session of the second terminal server session is immediately displayed, eliminating any downtime due to terminal server failure.
- **Allow Auto-Login** - If checked, the terminal will use the login information supplied in the terminal configuration to automatically logon to the terminal server. If unchecked, the user will be required to manually login to the terminal server.

Why Change from Default Settings: Display Client features like SmartSession and Instant Failover are added on this page. You can force users to manually login to a session by deselecting the **Allow Auto-Login** checkbox.

Note: Enforce Primary is not available with SmartSession.

13.2.1.4 SmartSession Option

SmartSession is a load balancing strategy that allows terminals to connect to the member of an Terminal Services Display Client that has the most available resources. ThinManager monitors the **CPU load, memory availability, and number of sessions** on the terminal servers and ranks them by availability. When a thin client connects to a member of an Terminal Services Display Client with SmartSession, the terminal connects to the terminal server with the lightest load.



ThinManager polls the terminal servers for resource availability and assigns a ranking to pass to the terminals.

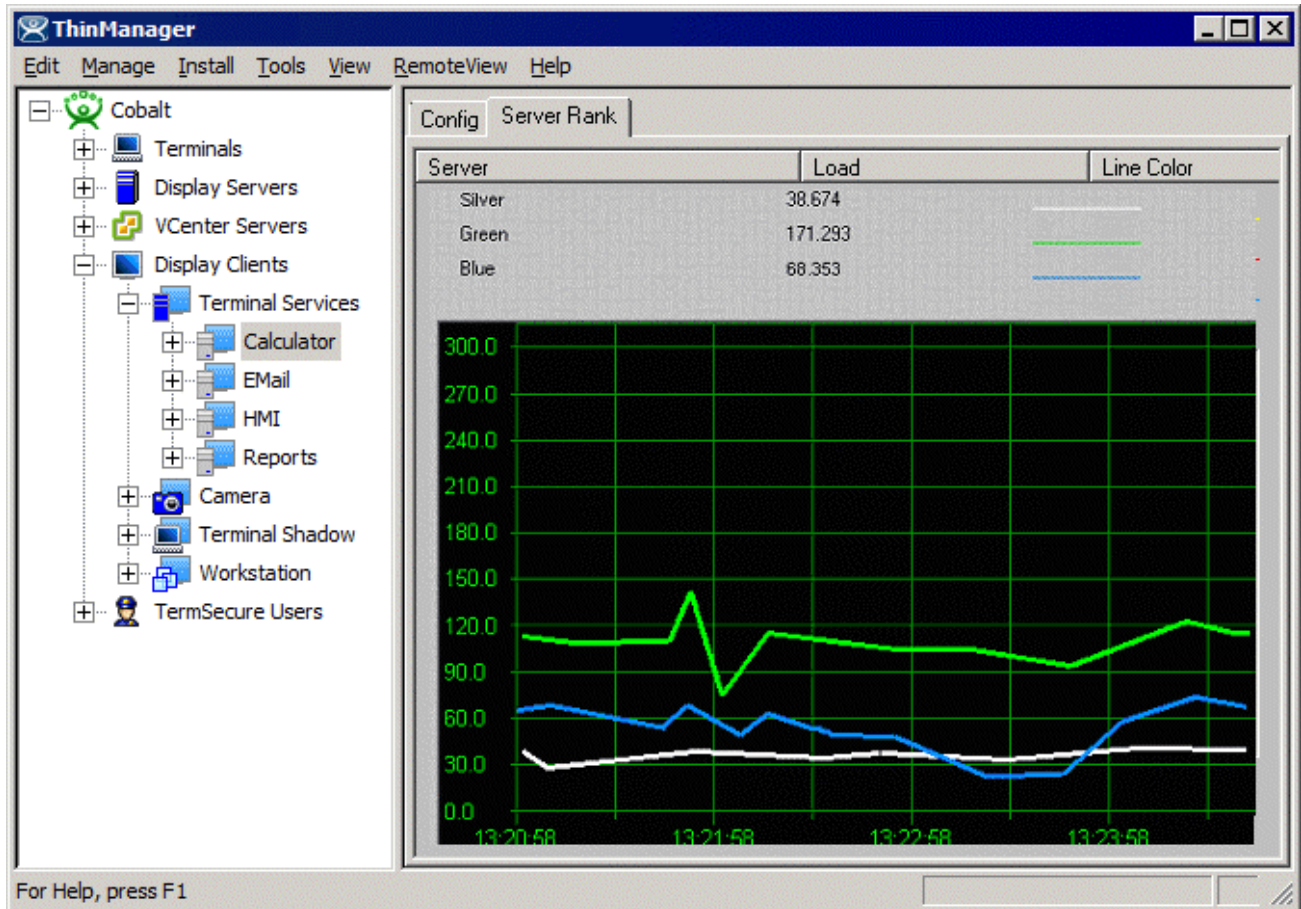
Terminals connect to the terminal server with the lowest ranking. Lower numbers mean a lighter load.

This example is ranked B-C-A-D

SmartSession

Each member terminal server needs **SmartSession** configured in the **Terminal Server Display Server Wizard**. See Terminal Server Capabilities Page for details.

Once ThinManager has polled the terminal servers and established the availability of their resources, ThinManager passes the **Server Ranking** to the thin clients for its connection instructions.



ThinManager Interface – Server Rank Tab

The Server Rankings are displayed on the Server Rank tab when a Terminal Services Display Client is highlighted in the ThinManager tree. In the example above a thin client would connect to Green because it has the lowest load.

13.2.1.5 AppLink Option

AppLink provides the **Initial Program** functionality to a Terminal Services Display Client. If AppLink is enabled, the path to an Initial Program is entered into the **AppLink Page** of **Terminal Services Display Client Wizard**. This program will be the only program to run in that session.

Note: If the AppLink option is not used then the terminal services session will display a desktop.

Note: If a Terminal Services Display Client contains several terminal servers, the path must be valid on all terminal servers. If different terminal servers have different paths to the desired program, write a batch file to open the program.

13.2.1.6 Instant Failover Option

Terminal Services Display Clients can provide **Instant Failover** without using the **Instant Failover Module**. With Instant Failover a terminal will connect to a session on two terminal servers. Both sessions are active but

only one is displayed. If the first terminal server fails, the second session is immediately displayed, eliminating any downtime due to terminal server failure.

Note: AppLink and Auto-Login is normally used with Instant Failover to provide instant access to an application.

Instant Failover is configured by selecting the *Instant Failover* checkbox on the **Terminal Services Display Client Options** page of the **Terminal Services Display Client Wizard**,

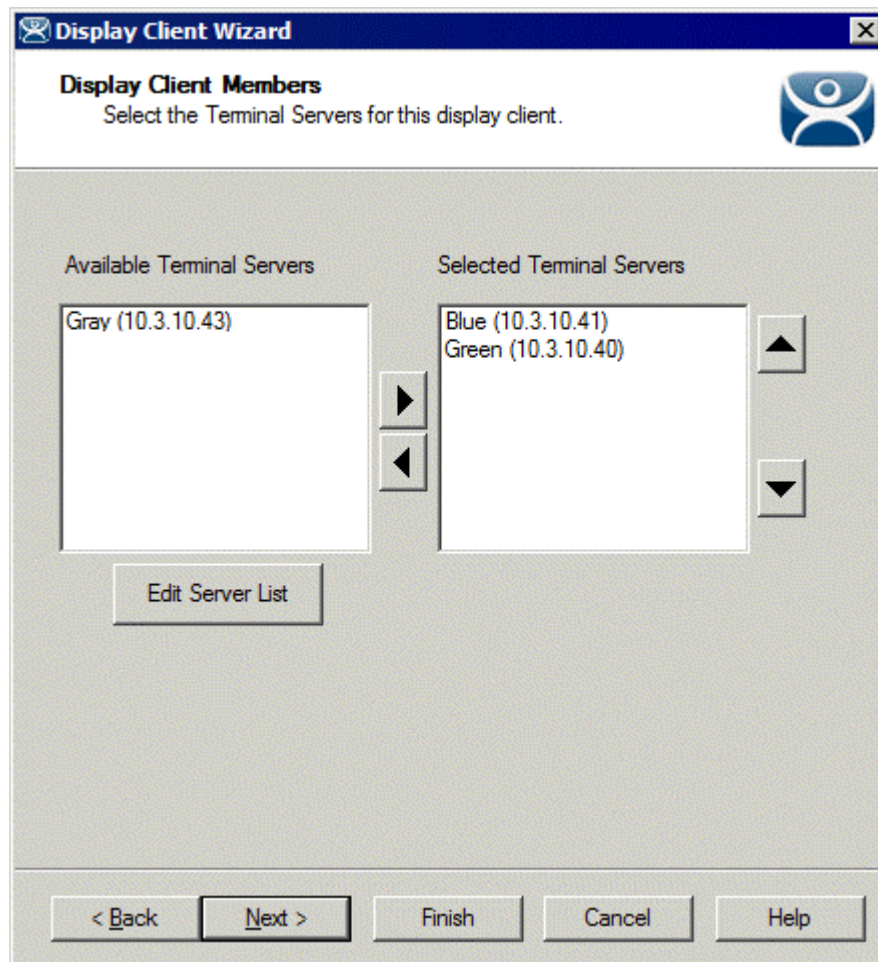
Instant Failover works with the terminal servers of a Display Client, not between different Display Clients.

Note: Do not use the Instant Failover Module when using Instant Failover in Display Client.

In a standard **Terminal Services Display Client**, the terminal will use the first listed terminal server as the primary server and will use the second listed terminal server as the secondary server.

If using **SmartSession**, the primary session will be on the server with the lightest load and the backup session will be on the terminal server with the second lightest load.

13.2.1.7 *Display Client Members Page*



Display Client Members

Importance of Page: This allows the selection of the terminal servers that will be members of the Display Client. Adding multiple terminal servers to the **Selected Terminal Server** list will establish failover.

List Box:

- **Available Terminal Servers** – This is the list of the terminals configured in the Terminal Server Configuration Wizard and available to the terminal.
If the Available Terminal Server list box is empty the Terminal Server Configuration Wizard can be launched with the **Edit Server List** button to define the terminal servers.
- **Selected Terminal Servers** – This is the list of terminal servers that the Display Client will use. Move the terminal servers to this list with the left and right arrow or by double clicking on the name. Listing two or more terminal servers configures Failover.
The terminal will connect to the terminal servers in the order listed unless SmartSession is used. The terminal will connect to the terminal server with the lightest load if SmartSession is being used.

Buttons:

- **Arrows** – The left and right arrows move the terminal servers between list boxes. The up and down arrow change the order that the terminal servers are used. The top terminal server is considered the primary terminal server.
- **Edit Server List** – This launches the **Terminal Server Configuration Wizard** that allows terminal servers to be defined within ThinManager. Selecting **Manage > Terminal Server List** from the ThinManager menu will also launch the Terminal Server Configuration Wizard.

Why Change from Default Settings: It is critical to list the terminal servers that the Display Client will use. The wizard will not advance without a terminal server selected.

If the **Available Terminal Servers** column is empty, the **Terminal Server List Wizard** needs to be run to define the terminal servers. Select the **Edit Server List** to launch the Terminal Server Configuration Wizard and define the terminal servers.

If the Display Client is using the SmartSession option, the **Next** button will launch the **SmartSession Settings** page.

If the Display Client is not SmartSession Group the **Finish** button will complete the Display Client configuration.

13.2.1.8 Display Client SmartSession Settings Page

SmartSession Settings
Enter the SmartSession weights for this display client

Smart Session Weights

CPU Utilization Weight	<input type="text" value="1.0"/>	<input type="button" value="▲"/> <input type="button" value="▼"/>
Memory Utilization Weight	<input type="text" value="1.0"/>	<input type="button" value="▲"/> <input type="button" value="▼"/>
Sessions Weight	<input type="text" value="1.0"/>	<input type="button" value="▲"/> <input type="button" value="▼"/>

Queuing

Queue Time Min Sec Max Sec
 Infinite

< Back Next > Finish Cancel Help

Smart Session Settings

Importance of Page: This allows tweaking of SmartSession values by adjusting the weights of the SmartSession settings.

ThinManager multiplies the CPU utilization, Memory utilization, and number of sessions on the terminal server by the **Weight** shown to define the SmartSession terminal server's available resources.

The higher the **Weight**, relative to the others, the greater the importance that parameter has in determining the load for SmartSession.

The SmartSession load = (CPU weight * CPU Utilization %) + (Memory weight * Memory Utilization %) + (Session weight * Session Utilization %)

Settings:

- **CPU Utilization Weight** – This is the CPU multiplier.
- **Memory Utilization Weight** – This is the Memory multiplier.
- **Session Weight** – This is the Session multiplier.

Queuing controls the rate that terminals connect to the terminal servers in the Display Client to allow processor intensive applications to load one at a time instead of many sessions forming at once, bringing the server to a halt. As terminals that use SmartSession Queuing boot, they request their terminal server from ThinManager. ThinManager will send the first terminal to the terminal server with the lightest load and will put

the other terminals in a queue for the interval defined in the **Min _ Sec** field. This allows the terminal server load to stabilize and allows ThinManager to re-sample the loads and send the terminal to the terminal server with the lowest current load.

Fields:

- **Min _ Sec** – This is the amount of seconds that a terminal will wait in the queue before being sent to a terminal server that has another terminal connecting. The terminal may wait longer than this value to connect if the CPU of the terminal server exceeds the **Maximum CPU Utilization** defined on the **SmartSession Configuration** page of the **Terminal Server Configuration** wizard. See **SmartSession Configuration Page** for details.
- **Max _ Sec** – This is the maximum amount of seconds that a terminal will wait in the queue before being sent to the terminal server to login, regardless of the load.

Checkbox:

- **Infinite** - If the **Infinite** checkbox is selected, ThinManager will wait until the CPU utilization of the terminal server has regained an acceptable range before sending other terminals to it to login.

Why Change from Default Settings: The values can be tweaked to alter performance, if needed.

Note: The **Weights** are relative. Increasing all three **Weights** from “1” to “10” doesn’t change the relative values.

If the Display Client uses the AppLink option, an **AppLink** page will be displayed by selecting the **Next** button.

13.2.1.9 Display Client Linked Application Page

AppLink
Enter the linked application path.

AppLink Path

Program Path and Filename

Browse

Command Line Options

Start in the following folder

Browse

< Back Next > Finish Cancel Help

AppLink Path

Importance of Page: This page configures the Display Client as an AppLink group where it will launch a single application in the session. If this application is closed the terminal will reconnect and re-launch the application.

Fields:

- **Program Path and Filename** - Enter the path to the desired application in the field.

Note: Quotation marks may be needed when there is a space in the path.

- **Command Line Options** – This field provides a space for command line options and switches. This field may not be required.
- **Start in the following folder** - This field is provided in case you need to specify the working directory for the program when using a relative path for the initial program. This field may not be required.

Buttons:

- **Browse** – The Browse button will allow you to select the executable file using a file browser. Make sure the path is correct on all terminal servers.

Note: If a Terminal Services Display Client contains several terminal servers, the path must be valid on all terminal servers. If different terminal servers have different paths to the desired program, write a batch file to open the program.

Why Change from Default Settings: This allows you to control a users access. If the Display Client uses AppLink the user will not get a desktop or icons but will be limited to the application specified. Closing it will re-launch the program, assuring that it is always running.

Selecting the **Finish** button will close the Display Client List wizard and display the created terminal server groups.

13.3 Camera Display Clients

The Camera Display Client configuration wizard can be launched by right clicking on the **Camera** branch of the ThinManager tree and selecting the **Add Display Client** option.

The screenshot shows the 'Display Client Wizard' dialog box. The title bar is blue with the text 'Display Client Wizard' and a close button. The main window has a light gray background. At the top, there's a section titled 'Client Name' with a blue icon of a person and the text 'Enter the Display Client name.'. Below this is a text input field containing 'Camera LoadingDock'. Underneath is a 'Type of Display Client' section with a dropdown menu set to 'Camera'. A 'Permissions' button is located to the right. At the bottom are navigation buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Camera Display Client Wizard – Name

Importance of Page: Allows naming and selection of Display Client type.

Fields:

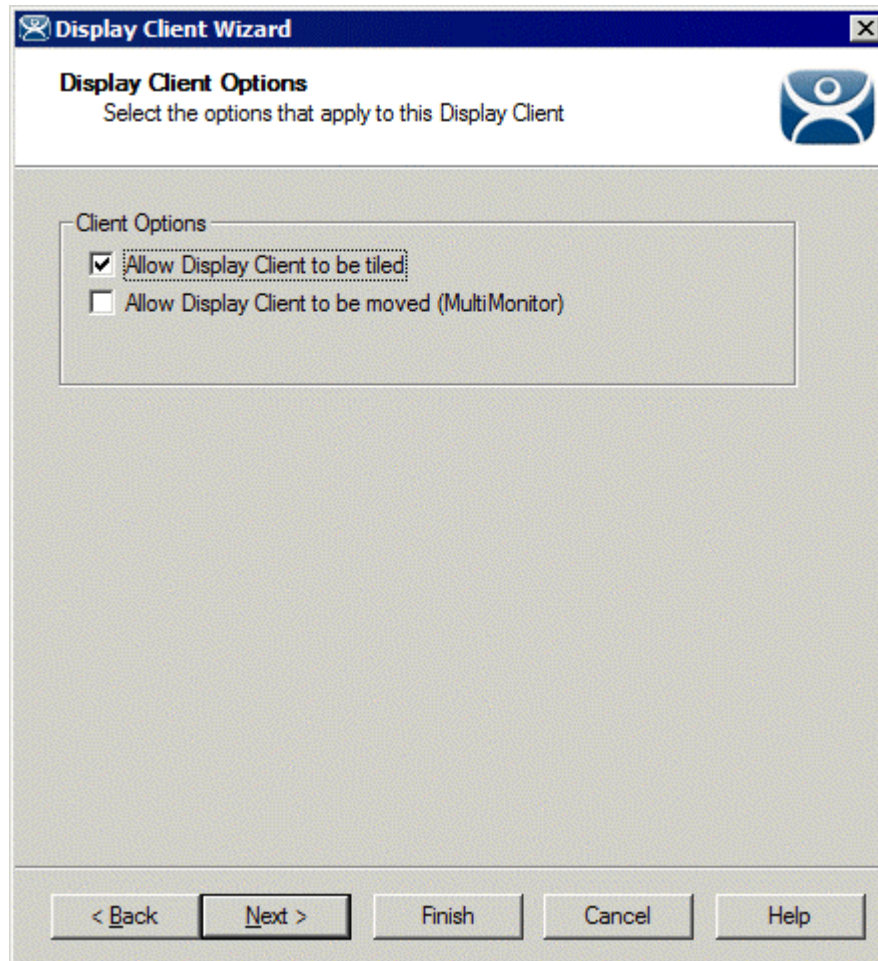
- **Client Name** – Name for Display Client.
- **Type of Display Client** – Drop-down to select type of Display Client.

Button:

- **Permissions** – Sets TermSecure permissions. See Permissions for details.

Why Change from Default Settings: The display client needs a name.

Enter the name of the Display Client and any TermSecure permissions on this page.



Camera Display Client Options

Importance of Page: Sets Display Client options.

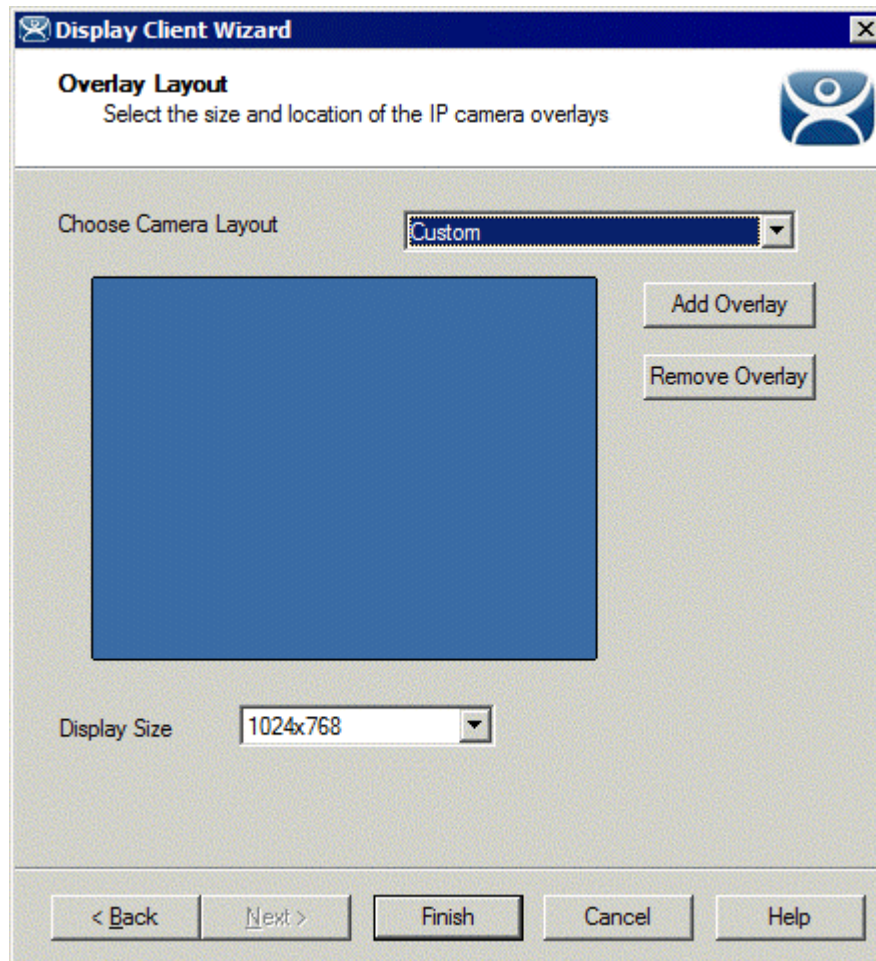
Checkbox:

- **Allow Display Client to be tiled** – Allows tiling of the client.
- **Allow Display Client to be moved (MultiMonitor)**– Allows the Display Client to be opened in any MultiMonitor window.

Why Change from Default Settings: Provides additional options.

Select if this Display Client can be tiled and if when using MultiMonitor it can be moved to a different screen.

13.3.1.1 Overlay Layout Page



Camera Display Client Overlay Layout

Importance of Page: Sets camera layout

Settings:

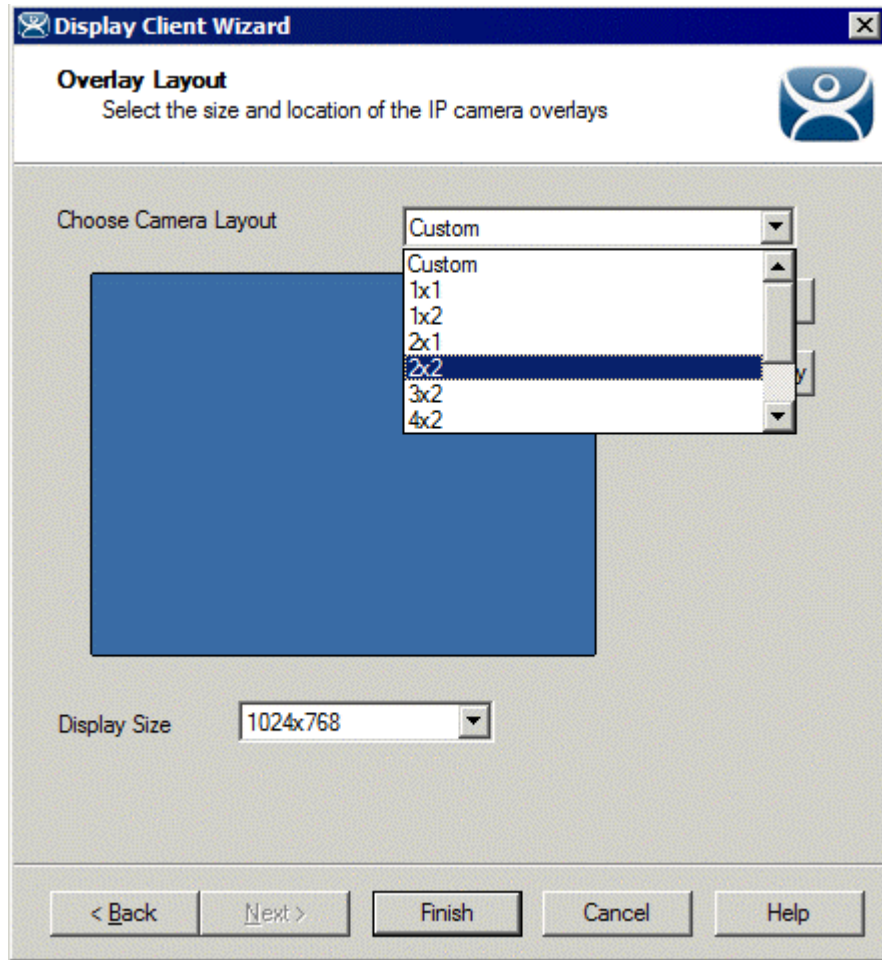
- **Choose Camera Overlay** – Allows you to set the layout of the displays. You may have a single overlay or multiple overlays on the Display Client.
- **Display Size** – Sets the size (resolution) of the display to be shown.

Buttons:

- **Add Overlay** – Adds an overlay to the Display Client.
- **Remove Overlay** – Removes a highlighted overlay from the Display Client.

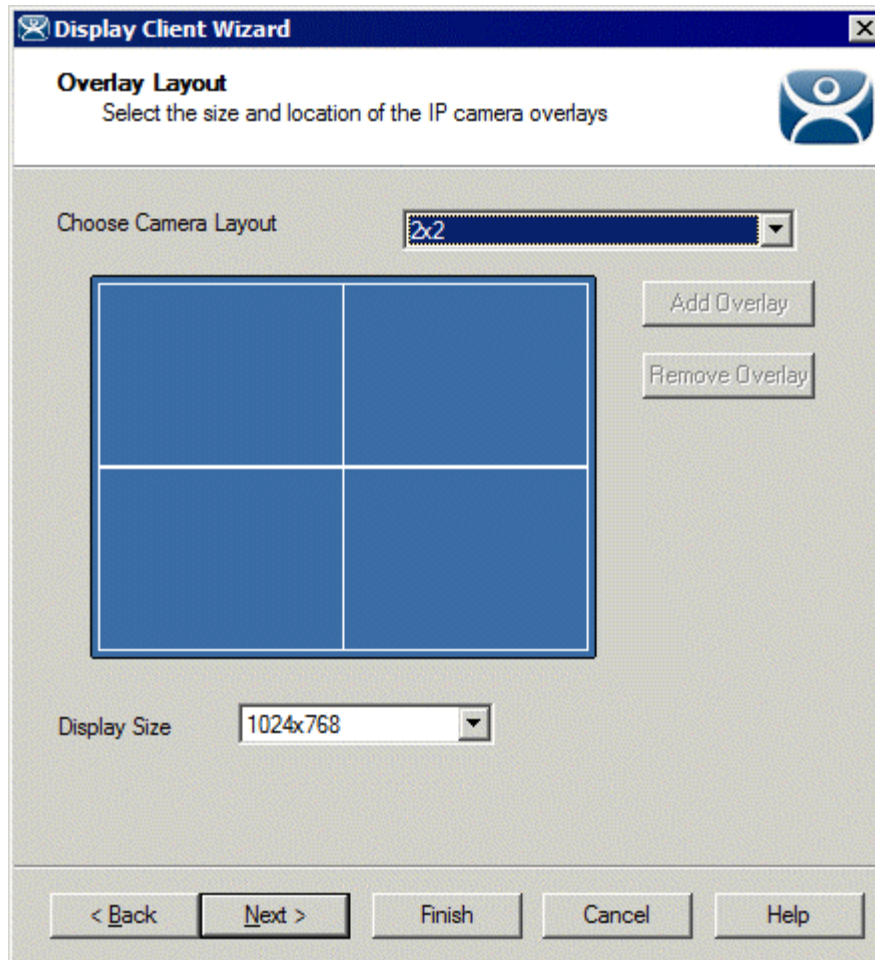
Why Change from Default Settings: You need at least one overlay in the Display Client.

This page determines the layout of the camera overlays. You can define your own custom layout or choose from predefined layouts. The **Display Size** selection should be set to the resolution of the terminal screen to which the Display Client will be added. The picture on this page represents the overlay layout.



Camera Display Client Layout Selection

Use the layout drop down to select the desired layout.



Camera Display Client 2x2 Layout Selection

Once a layout has been selected, it will be represented graphically. Select **Next** to configure the overlays.

13.3.1.2 Overlay Cameras Page

Display Client Wizard

Overlay Cameras
Select the cameras available in the overlay

Overlay Name:

Position / Size

Left	Top	Width	Height
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="512"/>	<input type="text" value="384"/>

Cameras to show

All Cameras Available

< Back Next > Finish Cancel Help

Camera Display Client Overlay definition

Importance of Page: Configures the overlays.

Fields:

- **Overlay Name** – Name for the overlay (filled in by default).

Settings:

- **Left** – Sets the left side of the overlay in pixels.
- **Top** – Sets the top of the overlay in pixels.
- **Width** – Sets the overlay width in pixels.
- **Height** – Sets the overlay height in pixels.

Buttons:

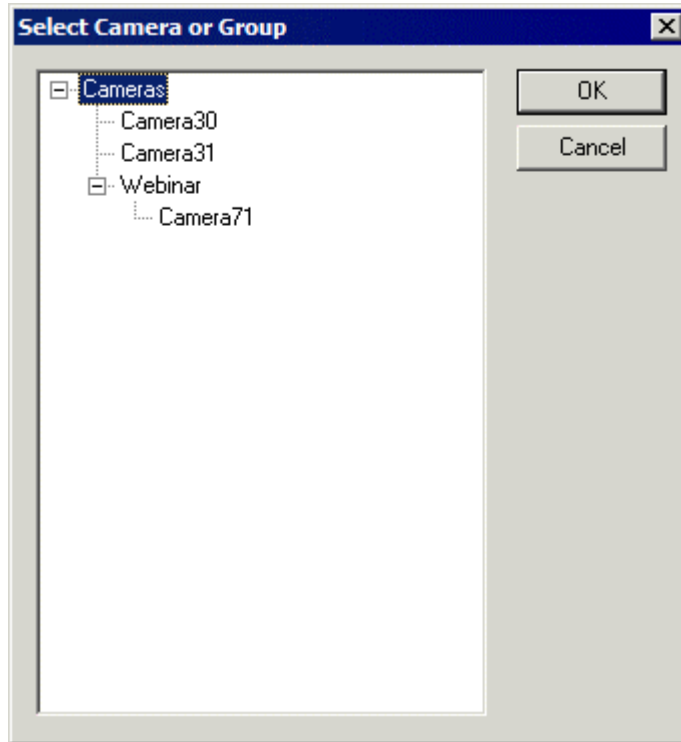
- **Add** – Adds a camera to the overlay.
- **Delete** – Removes a highlighted camera from the overlay.
- **Set Initial Camera** – Sets the initial camera from a series of cameras.
- **Overlay Options** – Launches the **Overlay Options** page.

Checkbox:

- **All Cameras Available** – This makes all cameras available if checked. If unchecked the **Add** button allows specific cameras to be added.

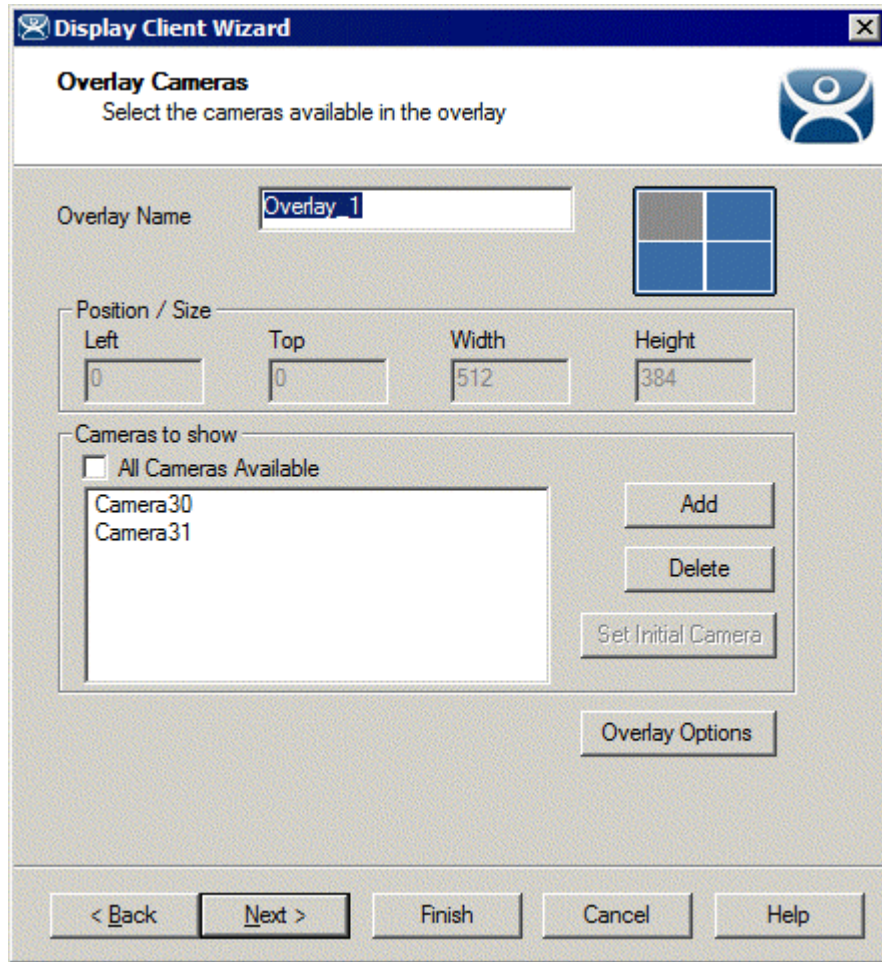
Why Change from Default Settings: Each Camera Display Client needs overlays.

Each overlay will be given a default name. The grey region of the screen representation is the overlay which is currently being configured. If the **All Cameras Available** checkbox is checked, all of the cameras will be available to be selected by the user at the terminal.



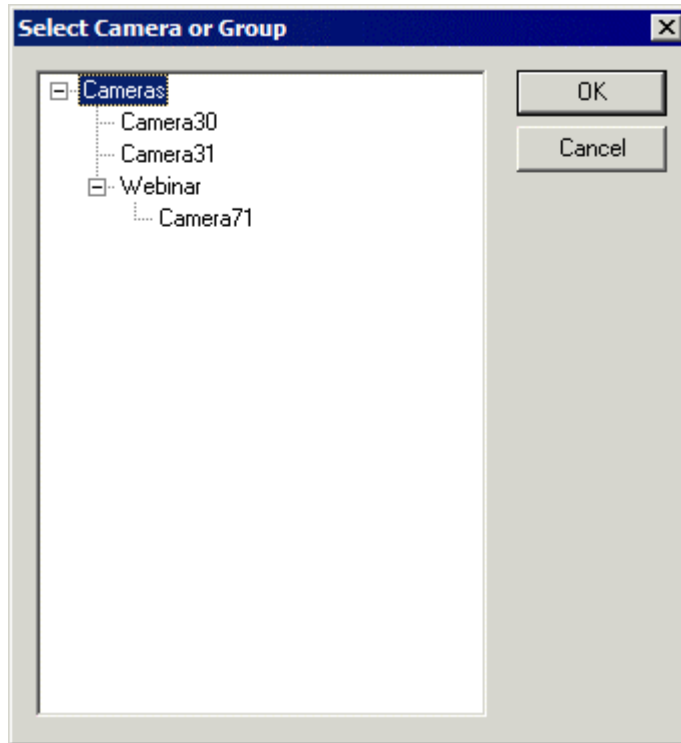
Set Initial Camera Dialog

Selecting the **Set Initial Camera** button allows the camera the overlay will start on at boot up to be selected.

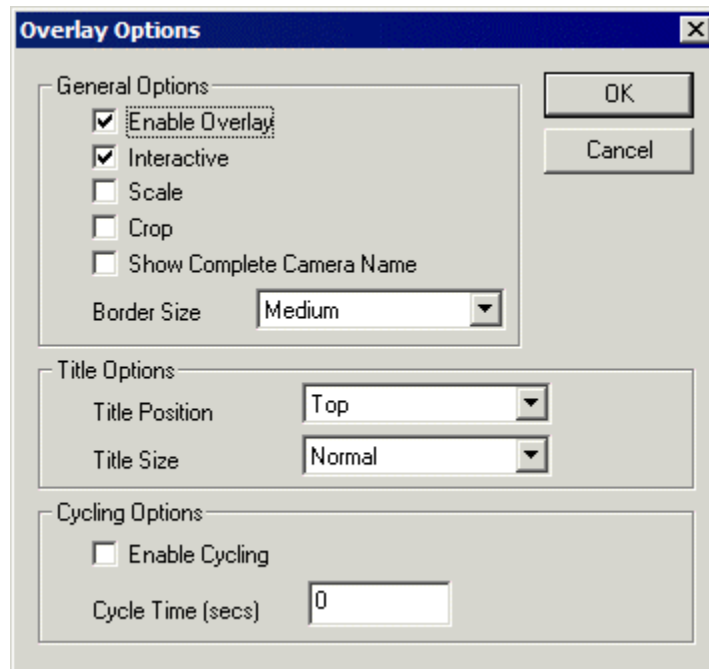


Overlay Camera Selection

If the **All Cameras Available** checkbox is unchecked, cameras must be added manually. Use the **Add** button to add cameras to the list. Adding more than one camera allows the user to select from these cameras at the terminal and allows the cycling between the listed cameras.



Camera Selection



Overlay Options

Clicking the **Overlay Options** button will allow the setting of additional overlay options.

General Options:

- **Enable Overlay** – This option allows the overlay to be started in a disabled non-visible state. The TermMon ActiveX Control can be used by an application to enable the overlay.

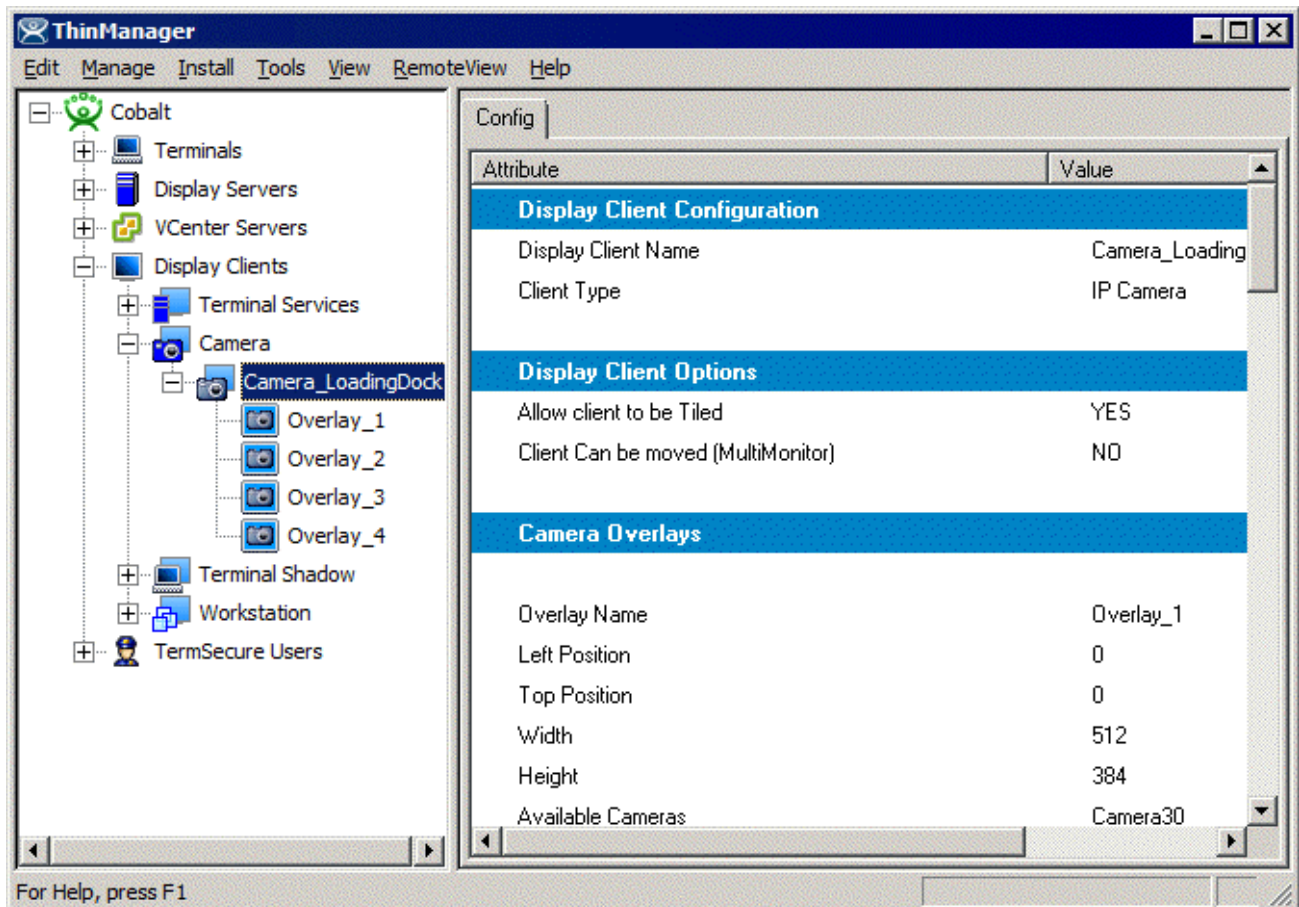
- **Interactive** – This option allows the user on the terminal to interact with the overlay. If the user clicks in the overlay area, he can perform functions such as switching cameras and making the overlay full screen.
- **Scale** – This option will scale camera frames to be to the size of the overlay window. Aspect ratio will be maintained.
- **Crop** – This option will crop the camera frame if it is larger than the camera overlay. This option when combined with the **Scale** option will always fill the entire overlay area.
- **Show Complete Camera Name** – Using this option allows the entire path of the camera to be displayed. The path includes any groups of which the camera is a member.
- **Border Size** – This setting determines the size of the overlay outside border.

Title Options:

- **Title Position** – This is the position of the camera name within the overlay.
- **Title Size** – This is the size of the camera name when displayed within the overlay. Set this to *Don't Show Title* if you do not want the camera name displayed.

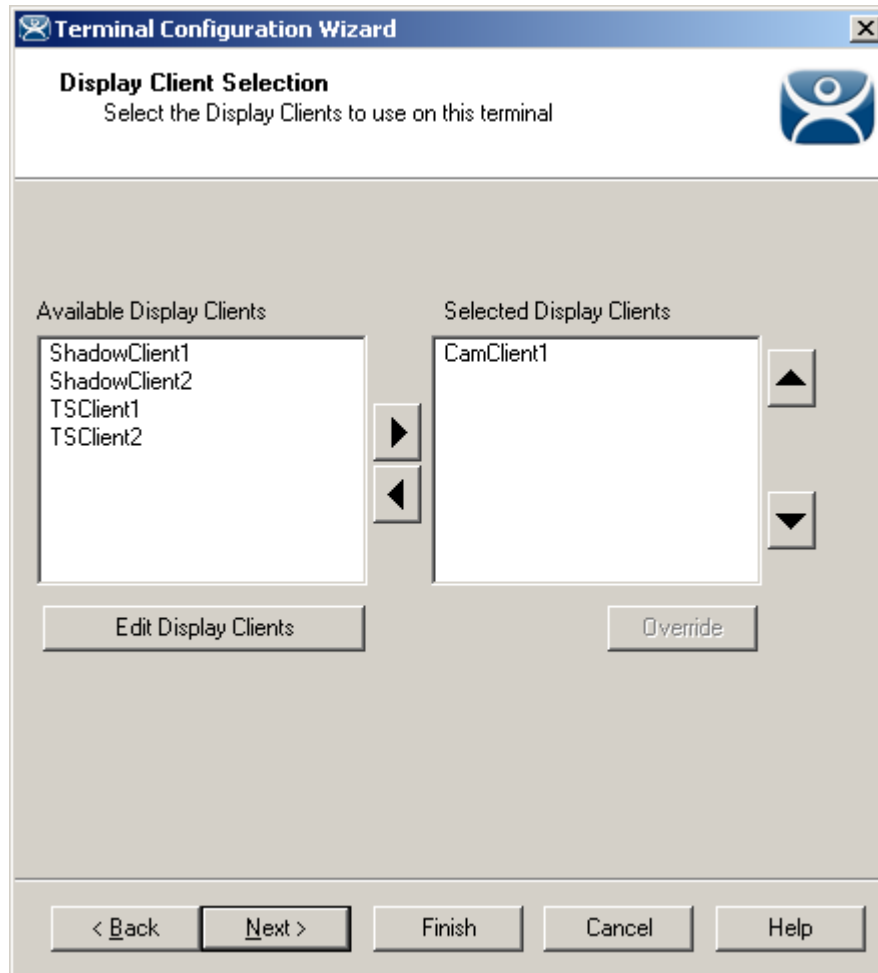
Cycling Options:

- **Enable Cycling** – Check this setting to cycle between the cameras assigned to the overly.
- **Cycle Time** – This is the time in seconds that the overlay will display each camera before switching to the next camera.



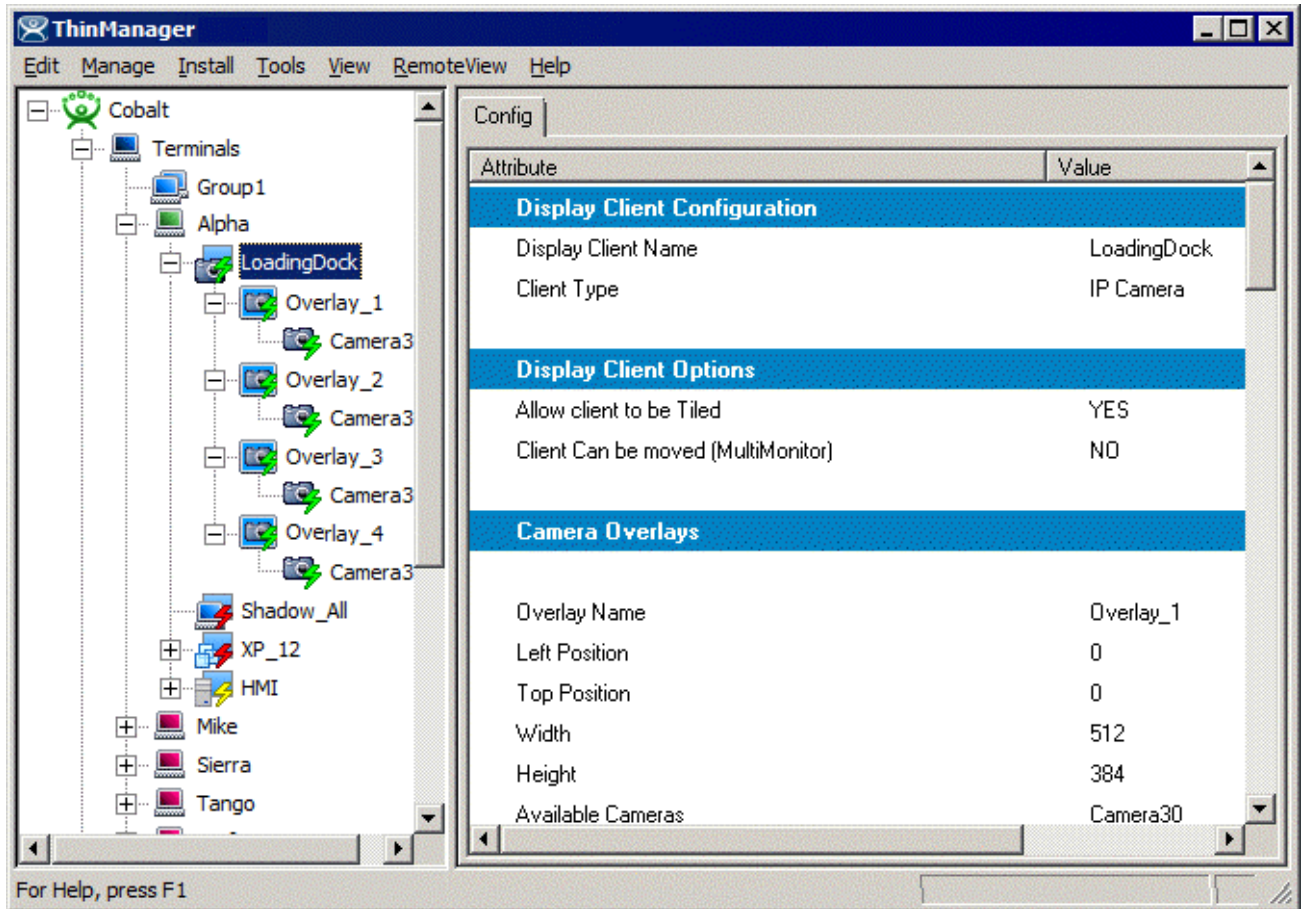
Camera Display Client Tree View

Once a Camera Display Client has been configured it will be reflected in the ThinManager tree under **Display Clients->Camera**.



Terminal Configuration Display Client Selection

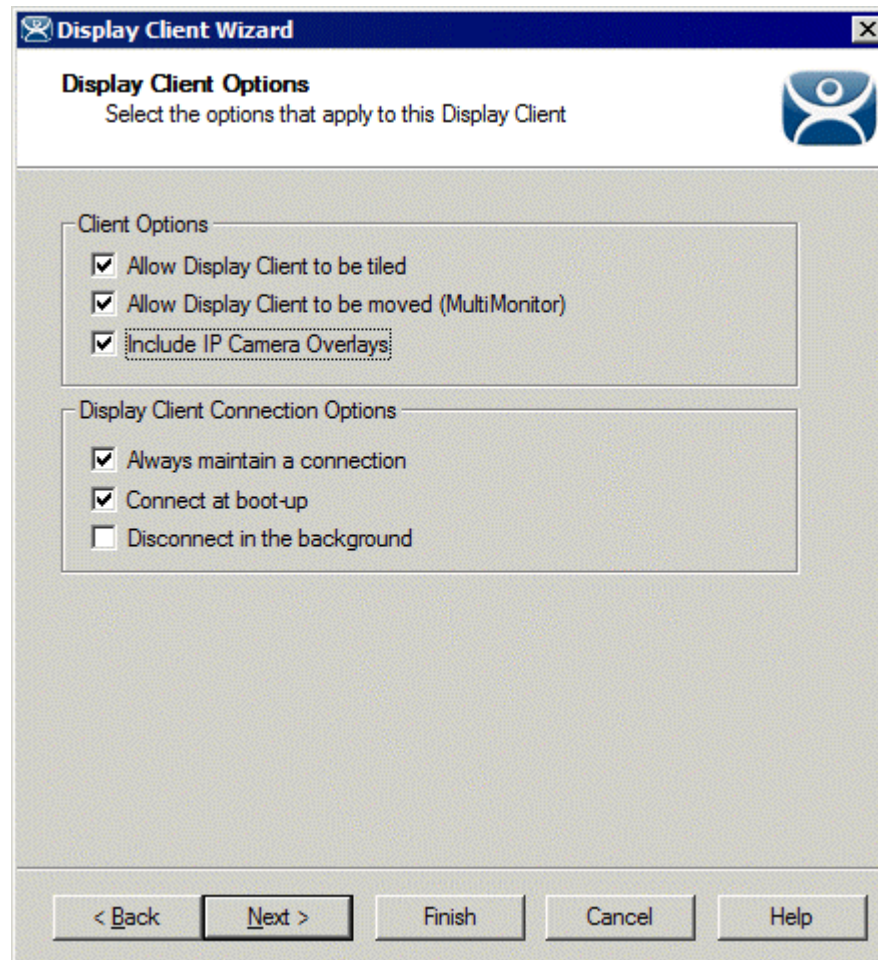
During the terminal configuration, select the desired Display Clients for the terminal. Multiple Display Clients can be added to the configuration for a MultiSession configuration.



Camera Display Client Terminal Tree View

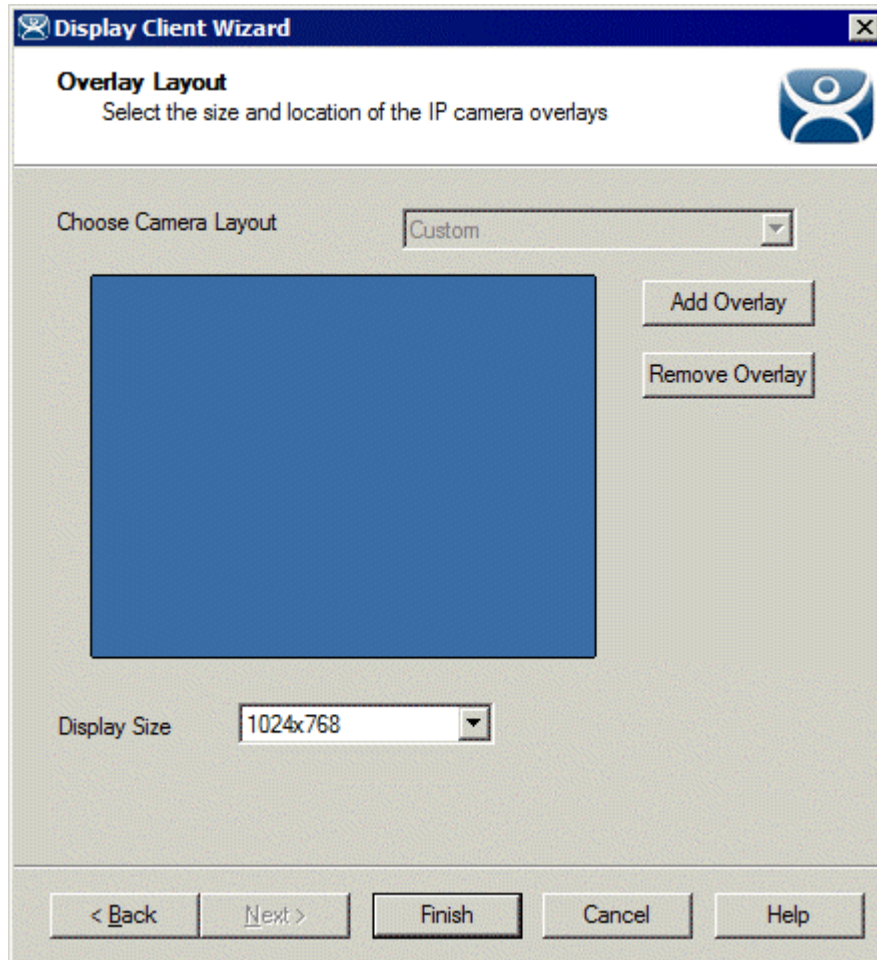
When the terminal is running, the Camera Display Client status will be reflected in the ThinManager terminal tree view. The status of each Camera Overlay and Camera will be displayed. A green lightning bolt on the Display Client icon represents that Display Client is in the foreground. A yellow lightning bolt on the Display Client icon represents that the Display Client is in the background. A green lightning bolt on the overlay icon represents an active overlay. A green lightning bolt on the camera icon represents an active connection to the camera.

13.3.2 Adding a Camera Overlay to a Display Client



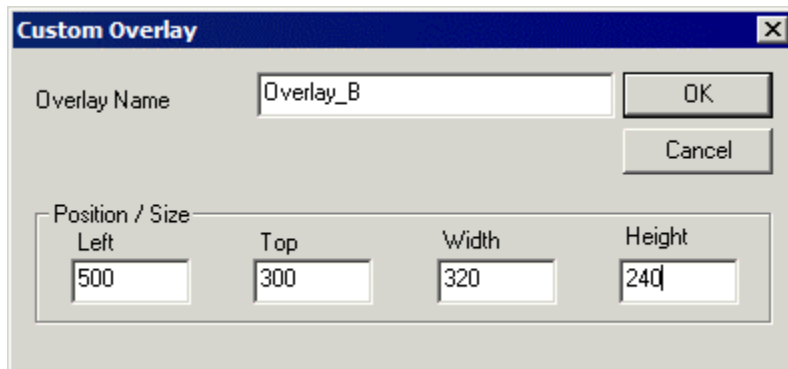
Terminal Configuration Display Client Options

During the terminal configuration check the **Include IP Camera Overlays** option to add camera overlays to a Display Client.



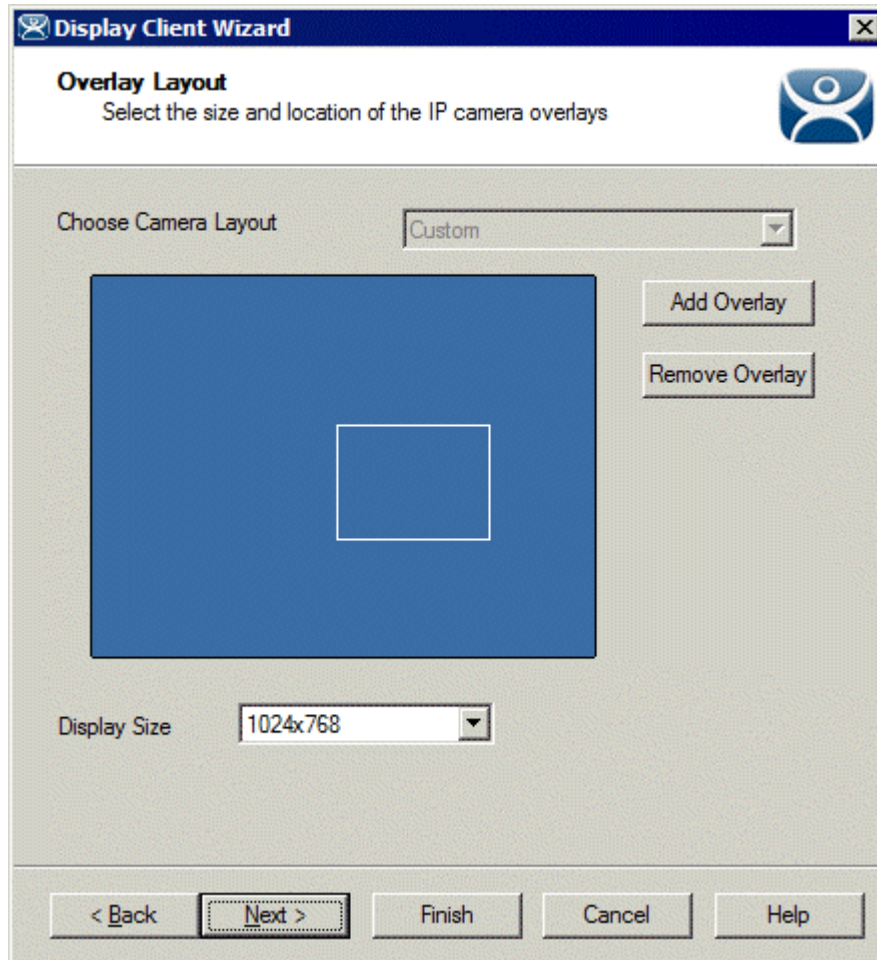
Terminal Configuration Overlay Layout

Camera Overlays can be configured before completing the Terminal Configuration wizard,



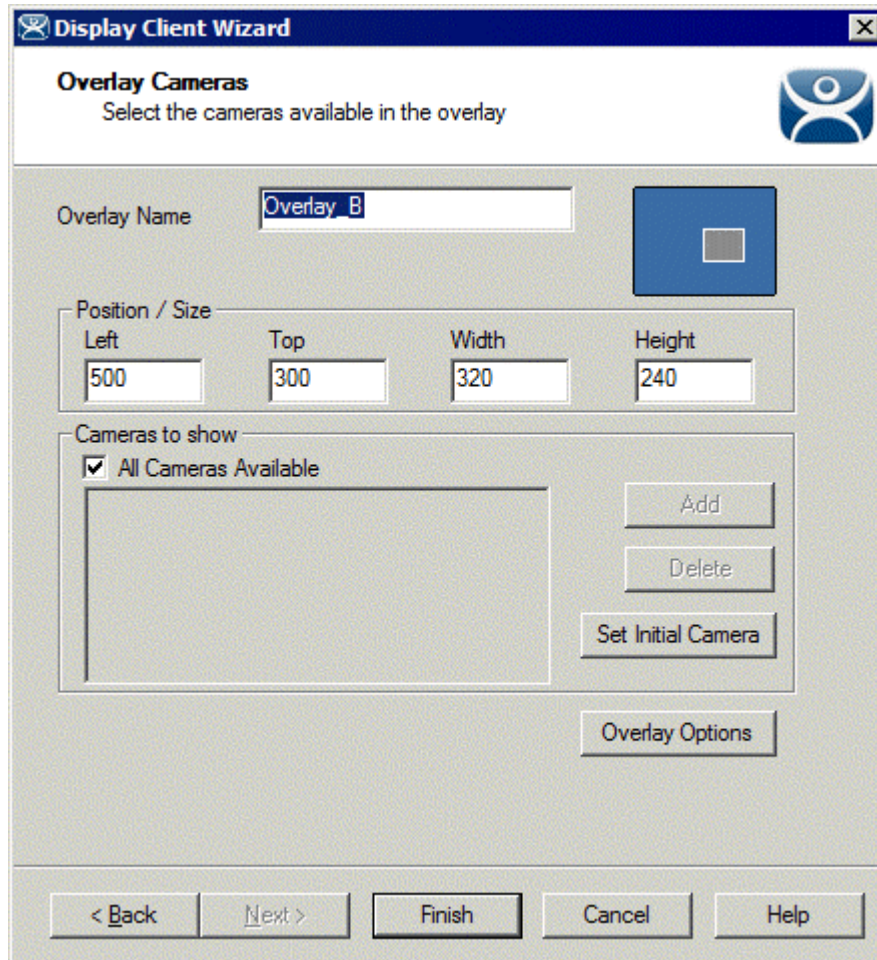
Terminal Configuration Add Camera Overlay

Clicking the **Add Overlay** button will allow the creation of the overlay. Enter the name position and size of the desired overlay.



Camera Overlay Layout

Once an overlay has been added, it will be represented as a white outlined square on the layout page. Selecting the **Next** button will allow the completion of the configuration camera overlays



Overlay Camera Selection

The camera overlay configuration can be completed as described in the **IP Camera Display Server Configuration Wizard** section.

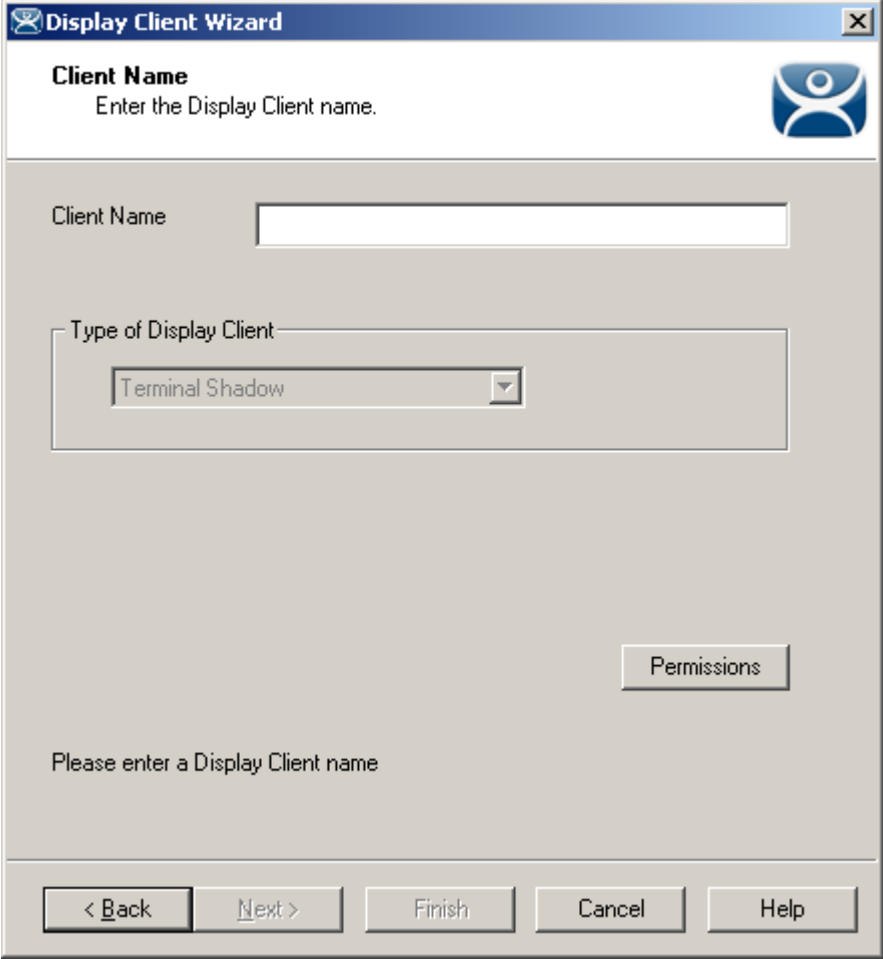
13.3.3 Camera Overlays and TermMon ActiveX Control

Camera Overlays can be controlled by an application by using the TermMon ActiveX Control. The Control can be used to perform operations such as switching cameras and changing the overlay size and position. See TermMon ActiveX for details.

13.4 Terminal Shadow Display Clients

Terminal Shadow Display Clients allow a terminal to shadow another terminal. The Shadow Display Client can contain a specific terminal or several terminals.

13.4.1.1 Group Name Page



The screenshot shows a window titled "Display Client Wizard" with a close button in the top right corner. The main area is divided into sections. The top section is labeled "Client Name" and includes the instruction "Enter the Display Client name." followed by an empty text input field. Below this is a section labeled "Type of Display Client" with a dropdown menu currently set to "Terminal Shadow". To the right of the dropdown is a button labeled "Permissions". At the bottom of the window, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help". A message at the bottom of the window reads "Please enter a Display Client name".

Terminal Shadow Display Client - Group Name Page

Importance of Page: This page starts the configuration wizard, sets the name, and the type of Display Client.

Fields:

- **Group Name** – This field is used to name the Display Client.

Settings:

- **Type of Display Client** drop-down box selects the function of the Display Client.
 - **Terminal Services** – This creates an Display Client that allows a terminal to connect to a terminal server, login, and run a session.
 - **Terminal Shadow** – creates an Display Client that allows a terminal to be shadowed by another terminal.

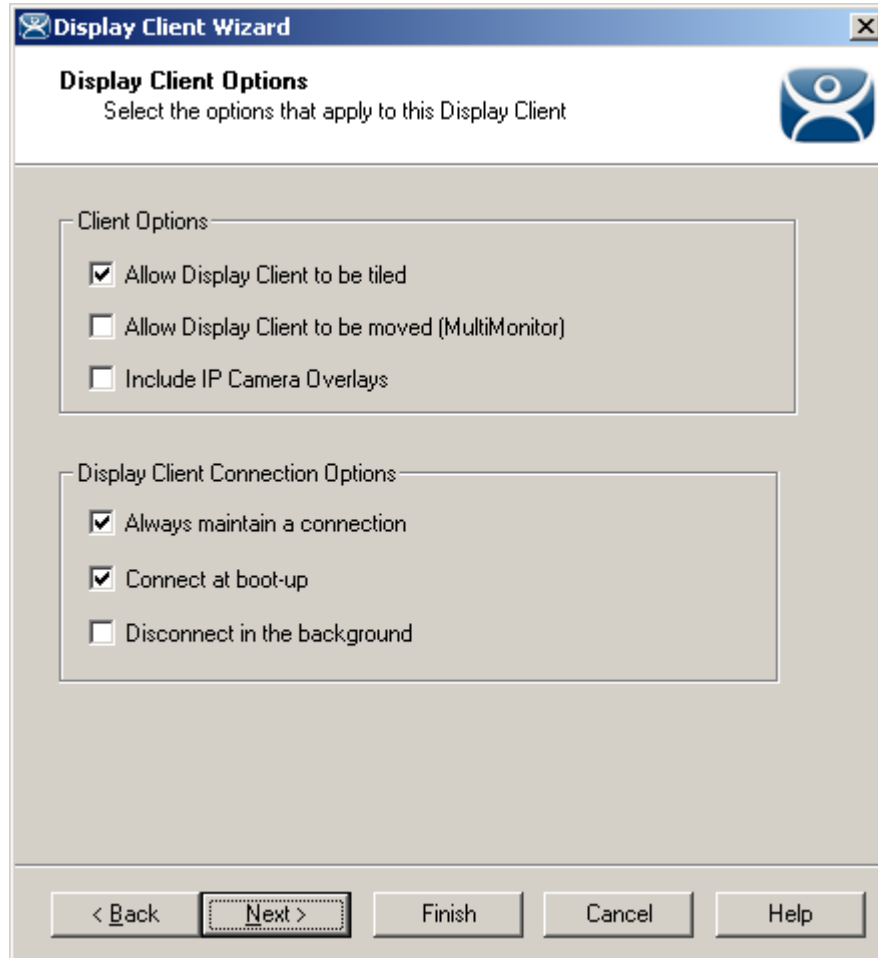
Buttons:

- **Permissions** - The button will launch the **Permissions** window that allows Permissions to be set for TermSecure. This is discussed in Permissions.

Why Change from Default Settings: The group needs a name and a type assigned to it.

This section covers **Terminal Shadow** Display Clients. Configure the Display Client by selecting **Terminal Shadow** from the **Type of Display Client** drop-down after naming the group.

Select the **Next** button to continue.



Terminal Shadow Display Client –Display Client Options

Importance of Page: This page allows the configuration of Display Client parameters

Checkbox:

- **Allow group to be tiled** – If checked, this allows the Display Client to be tiled in SessionTiling. See SessionTiling Options for details.
- **Allow Group to be moved (MultiMonitor)** – If checked, this allows a Display Client to be moved from one MultiMonitor screen to another. See MultiMonitor for details.
- **Include IP Camera Overlays** –This will allow IP Camera overlays to be added to this Display Client.
- **Always maintain a connection** – This keeps a session active, reconnecting and restarting if it is closed. If unchecked, the user can close a session and another session won't start automatically.

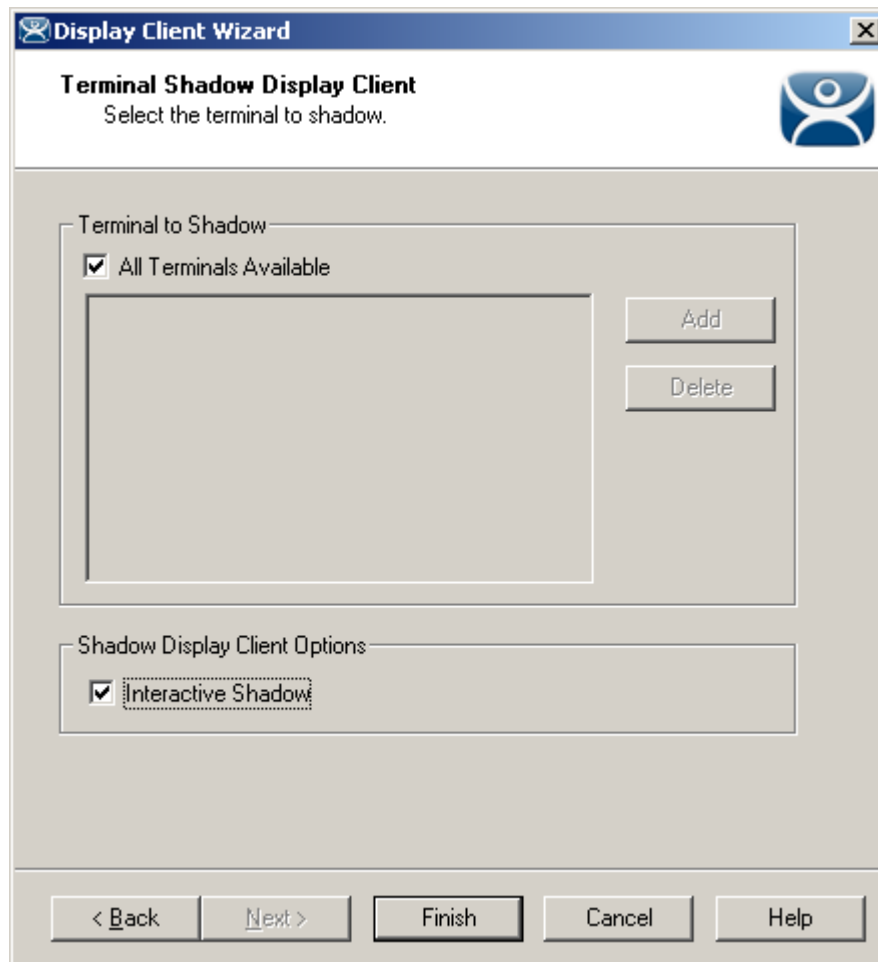
- **Connect at boot-up** – If checked, the terminal will start a session for this Display Client at boot up. If unchecked, a user action is required to start the session.
- **Disconnect in background** – If checked, a Display Client being used in a MultiSession configuration will disconnect once it is moved into the background. This could be done to require fewer resources.

Why Change from Default Settings: The *Always maintain a session for this group* and *Start a session at boot-up for this group* checkboxes, if unselected, will lower the demand on the terminal servers by allowing sessions to be closed until needed.

Select **Next** to continue, **Finish** to save and close, or **Cancel** to close without saving.

13.4.1.2 Terminal Shadow Display Client Page

The Terminal Shadow Display Client page allows the selection of the terminal or terminals to be shadowed.



Terminal Shadow Display Client – All Terminals Available

Importance of Page: This page selects what terminals are available to be shadowed using Terminal-to-Terminal Shadowing.

Checkbox:

- **All Terminals Available** – This checkbox allows all terminals to be shadowed. Unselect it to limit Terminal-to-Terminal Shadowing to specific terminals.
- **Interactive Shadowing** – This checkbox allows interactive shadowing of the terminals.

Fields:

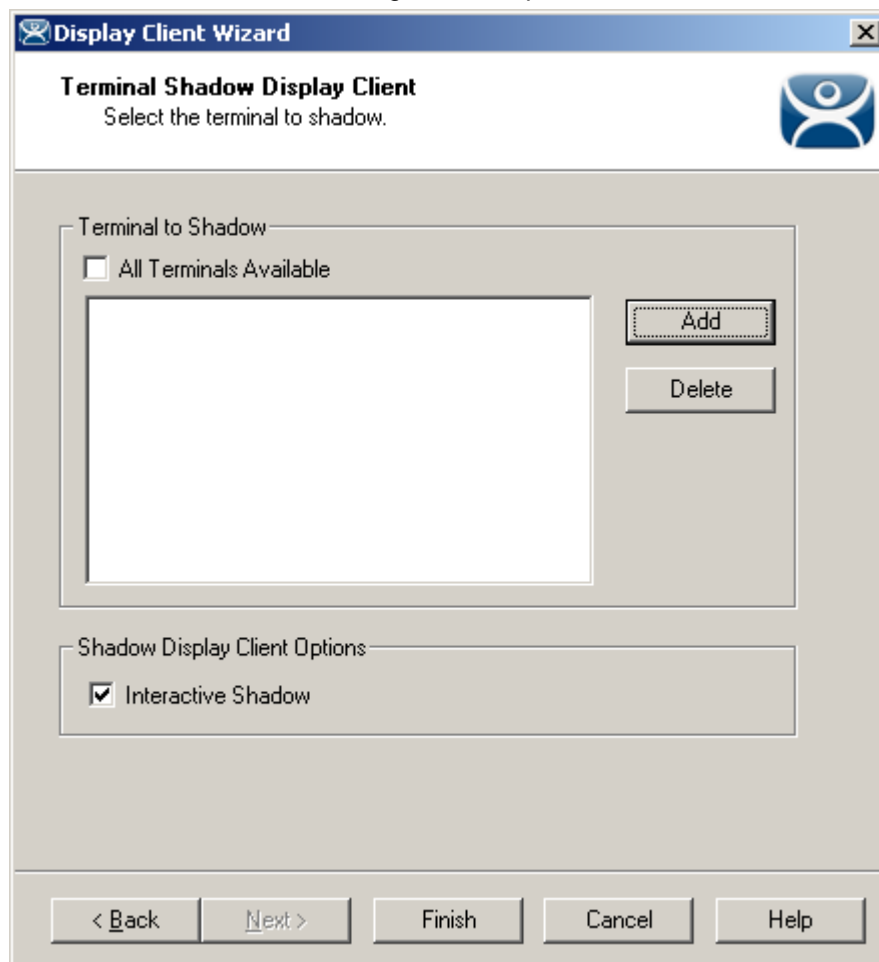
- **Terminal to Shadow** – This list box shows the terminals available to shadow.

Buttons:

- **Add** – This button adds terminals to the Terminal to Shadow list box when **All Terminals Available** is unselected.
- **Delete** – This button deletes a highlighted terminal from the Terminal to Shadow list box **when All Terminals Available** is unselected.

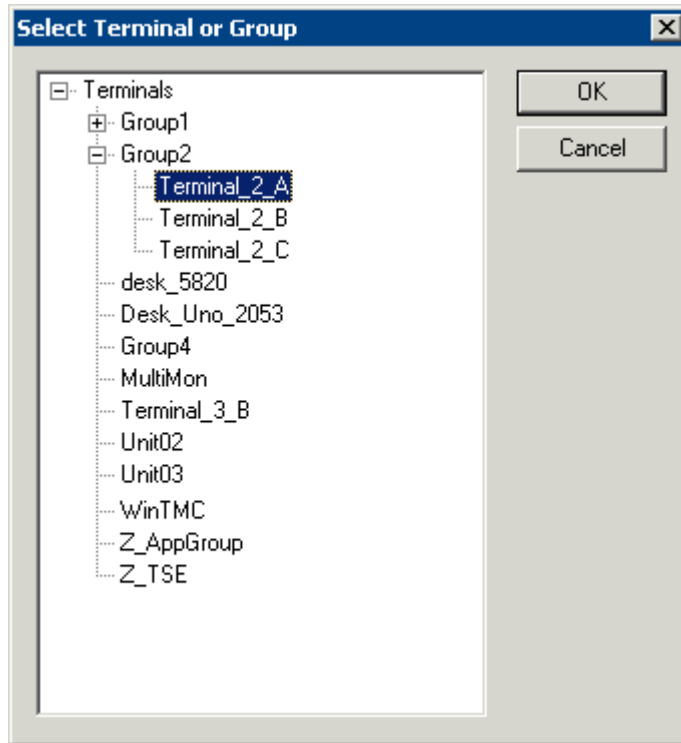
Why Change from Default Settings: The default setting grants permission to shadow all of the terminals. Unselecting the **All Terminals Available** checkbox allows specific terminals to be added. Additionally, multiple shadow groups can be created, each with a specific terminal or group of terminals.

By default the Shadow Group is configured to allow all terminals to be shadowed. Unselecting the **All Terminals Available** checkbox will allow the designation of specific terminals.



Terminal Shadow Display Client –Select Terminals

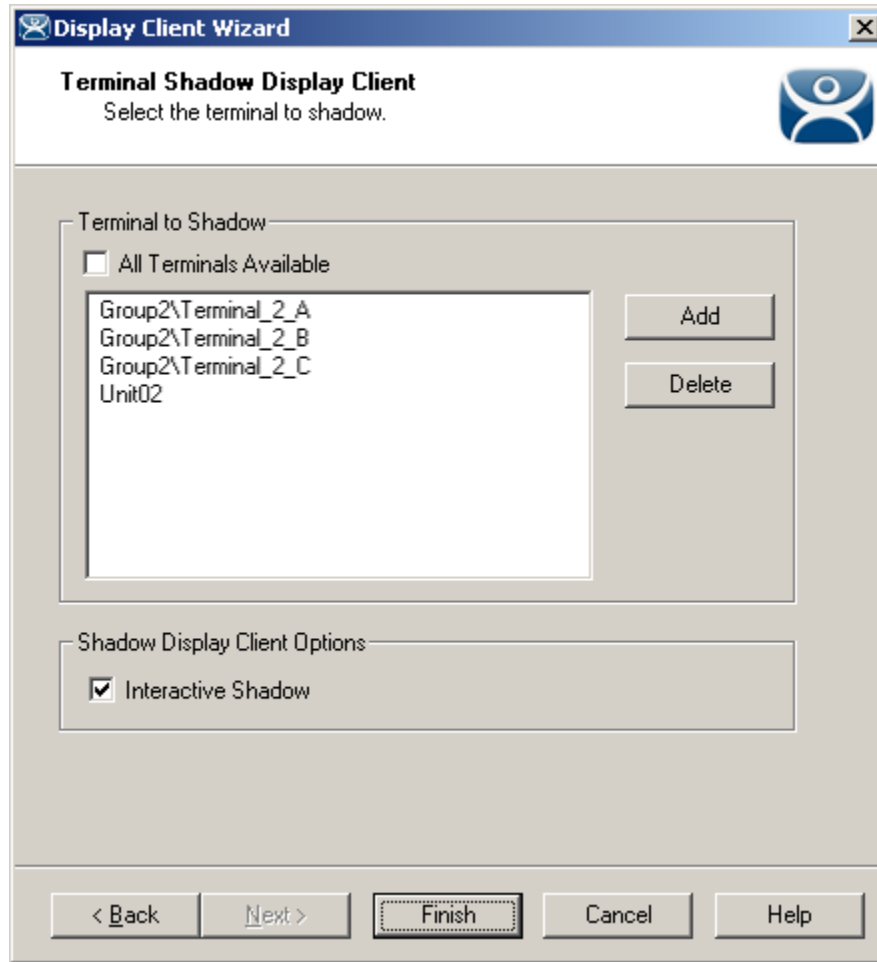
Select the **Add** button to launch the terminal selection window.



Select Terminal or Group Window

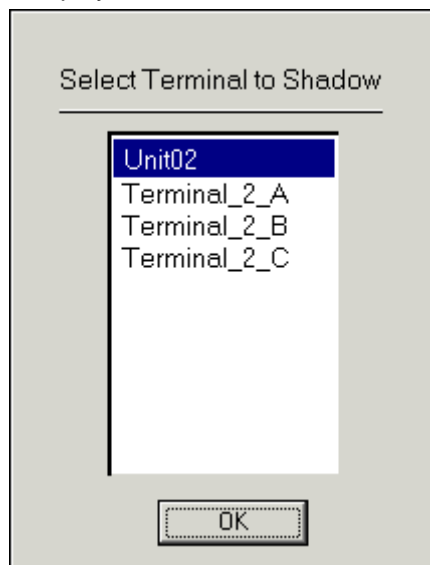
Select a terminal for shadowing by highlighting it in the **Select Terminal or Group** window and selecting the **OK** button. The window will close after each selection.

To add multiple terminals repeat the process by selecting the **Add** button on the **Terminal Shadow Display Client** page.



Terminal Shadow Display Client – Selected Terminals

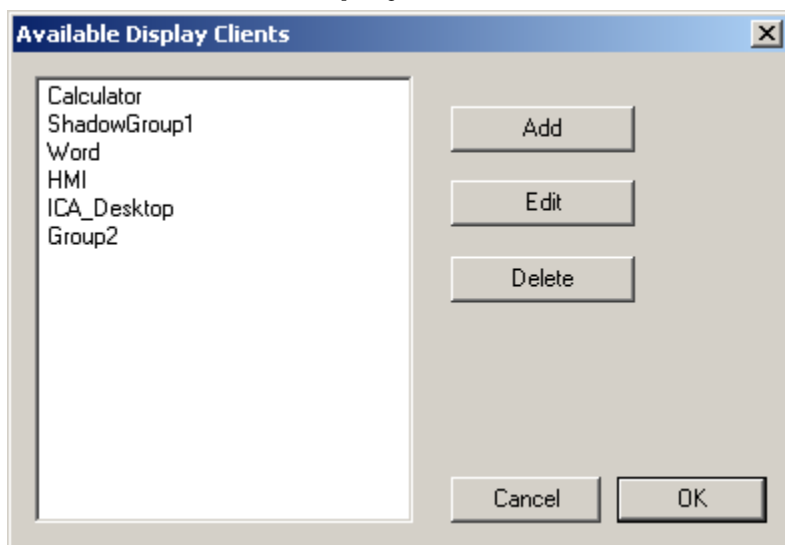
The Terminals to Shadow textbox will display the terminals added to the list.



Terminal Selector

When a terminal launches a Shadow Display Client that has multiple members a **Select Terminal to Shadow** window will be displayed to allow the selection of the terminal to shadow. Highlight the desired terminal and select the **OK** button.

13.4.1.3 *Display Client List Window*



Available Display Clients

After an Display Client is configured the Display Client List will show configured Display Clients. Additional groups can be configured by selecting the **New Group** button. The **Display Client List** wizard can be closed by selecting **OK**.

14 Failover and Instant Failover

14.1 Failover Introduction

ACP uses specific terms to cover different topics that are concerned with keeping data viable during computer failure.

Replacement: If a terminal fails or is destroyed, the session stays active on the terminal server while the thin client is replaced. This is covered in Adding Thin Client Hardware.

Failover: Failover is the ability to switch between multiple terminal servers if a terminal server fails. This is built in to every ThinManager System and thin client. This is covered in Failover.

Instant Failover: Instant Failover is the ability of thin clients to connect and login to two terminal servers simultaneously. This allows applications to be pre-loaded so that a failure to one terminal server causes minimal impact because the terminal will quickly switch to an existing session. This is covered in Instant Failover.

Redundancy: Redundancy refers to multiple ThinManager Servers. Thin clients are not dependent on ThinManager after booting and will continue to run if the ThinManager Server fails. However, rebooted terminal will wait until the ThinManager Server is restored until it boots and receives its configuration. For this reason many people use a backup, or Redundant ThinManager Server. This is covered in Redundancy Overview.

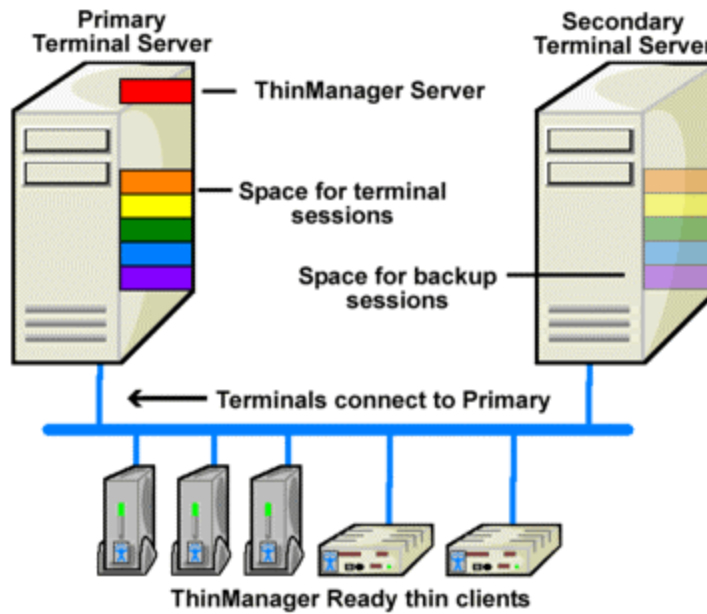
14.2 Failover

Every thin client has the ability to switch between multiple terminal servers if a terminal server fails. Each thin client has a program that monitors its terminal server. If the terminal server fails to respond to the terminal, it will drop the broken connection and connect to a backup terminal server, allowing it to continue to function.

Failover requires:

- Two or more terminal servers
- Identical Microsoft user accounts on each, or domain permissions on both
- Identical applications on each, with the same path, to make life easier

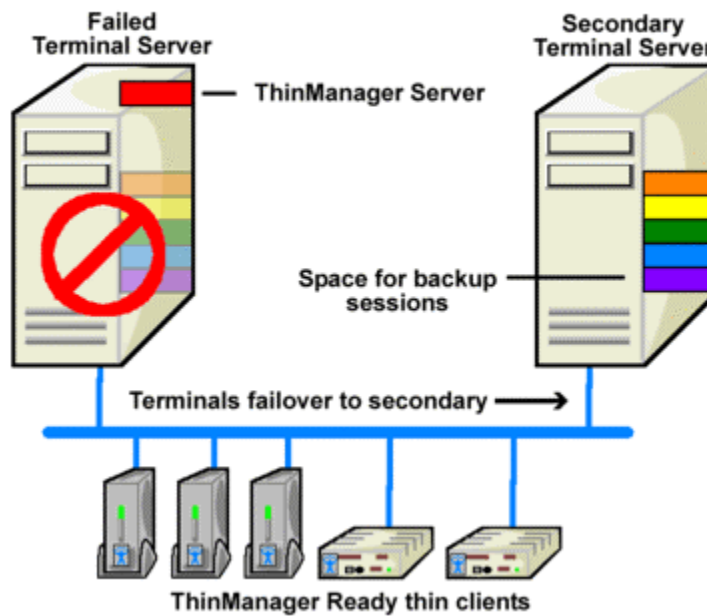
Failover without Redundancy



Simple Failover - Before Failure

This shows a pair of terminal servers, one used as the primary with the terminals connected and running sessions, and a second terminal server as the backup, or secondary terminal server.

Failover without Redundancy



Simple Failover, After Failure

This shows the results of a failure of the primary terminal server. The thin clients would detect the failure and switch to the secondary terminal server where they would login and continue running.

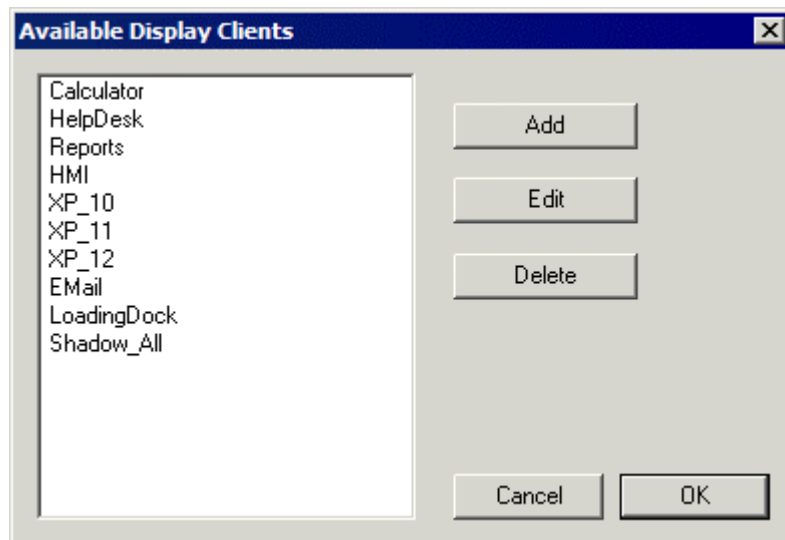
Note: This does not synchronize the hard drives. Failover gives you the ability to continue to run the thin client by connecting to a backup. Data pulled from an outside source like a PLC or file server would be the same on either terminal server.

14.2.1 Failover Setup For a Terminal Using Terminal Services Display Clients

Failover is configured in the Terminal Configuration Wizard. It is configured differently when using individual terminal servers and Display Clients.

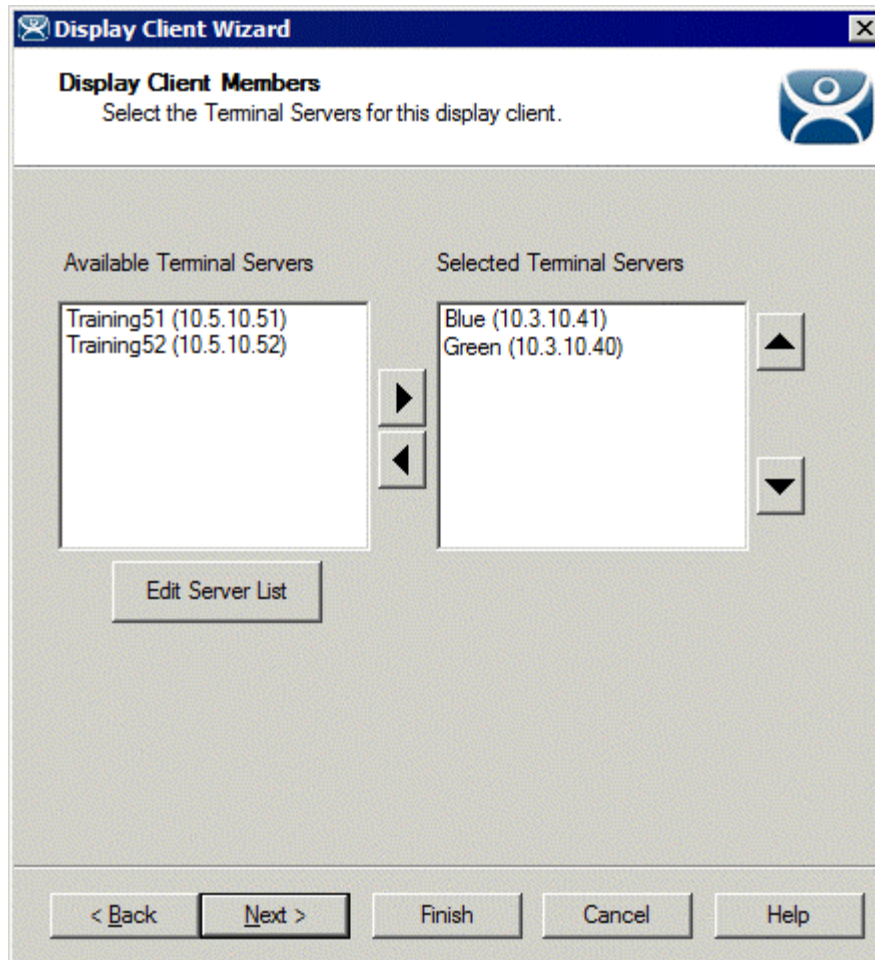
Terminal Services Display Clients allow a terminal to run a session from a list of terminal servers. The Display Client will have Failover capability if two or more terminal servers added to it. This is configured in the Terminal Services Display Client Wizard.

Launch the Display Client Wizard by right clicking on the Display Clients branch in the tree. Alternatively, you can right click on an existing Terminal Services Display client in the tree and select **Modify**.



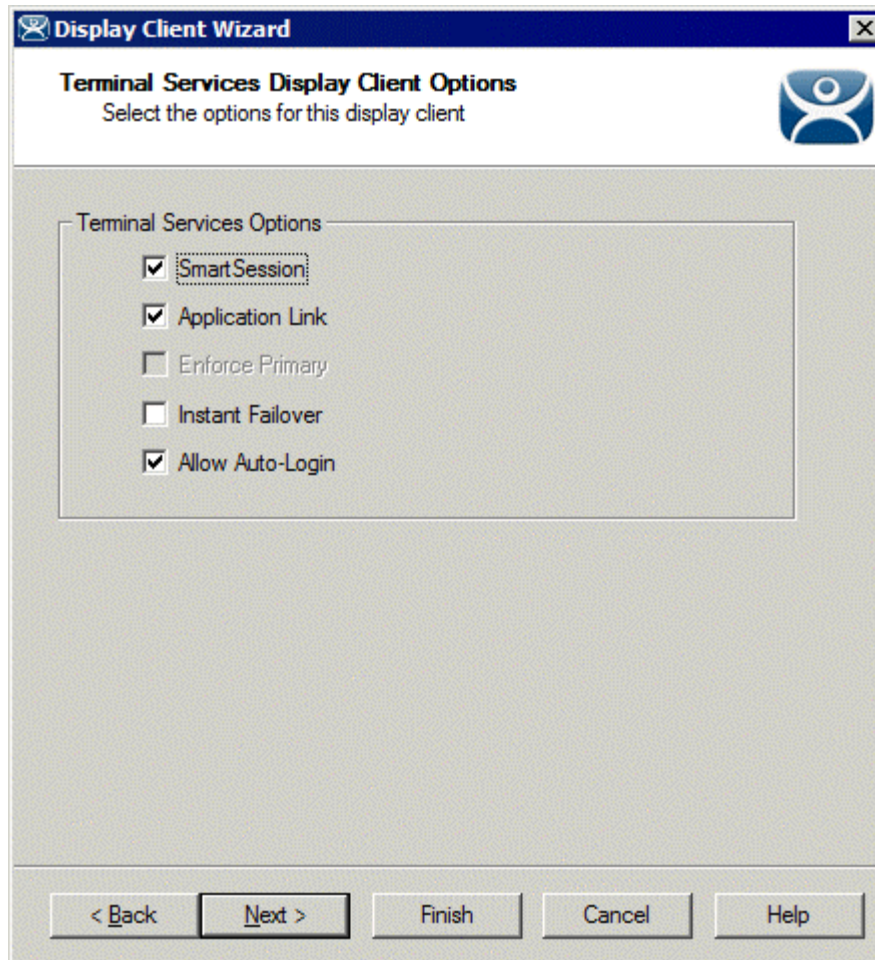
Display Client List

Select the **Add** button to add a new Display Client, or highlight an existing Terminal Services Display Client and select the **Edit** button to edit an existing Display Client.



Application Group Wizard - Application Group Members

Member terminal servers are added on the Display Clients Members page. Adding two or more terminal servers to the **Selected Terminal Servers** field will enable failover. The terminal will connect to the terminal servers in the order given, unless the Display Client is using SmartSession.



Terminal Services Display Client Options

SmartSession uses the CPU usage, Memory usage, and the number of sessions on a terminal server to determine its load. Terminals using Terminal Services Display Clients with SmartSession will start a session on the server with the lightest load, instead of the order listed.

Selecting the **SmartSession** checkbox on the **Display Client Options** page of the **Display Client Wizard** configures SmartSession. When SmartSession is used the **Enforce Primary** checkbox is no longer relevant.

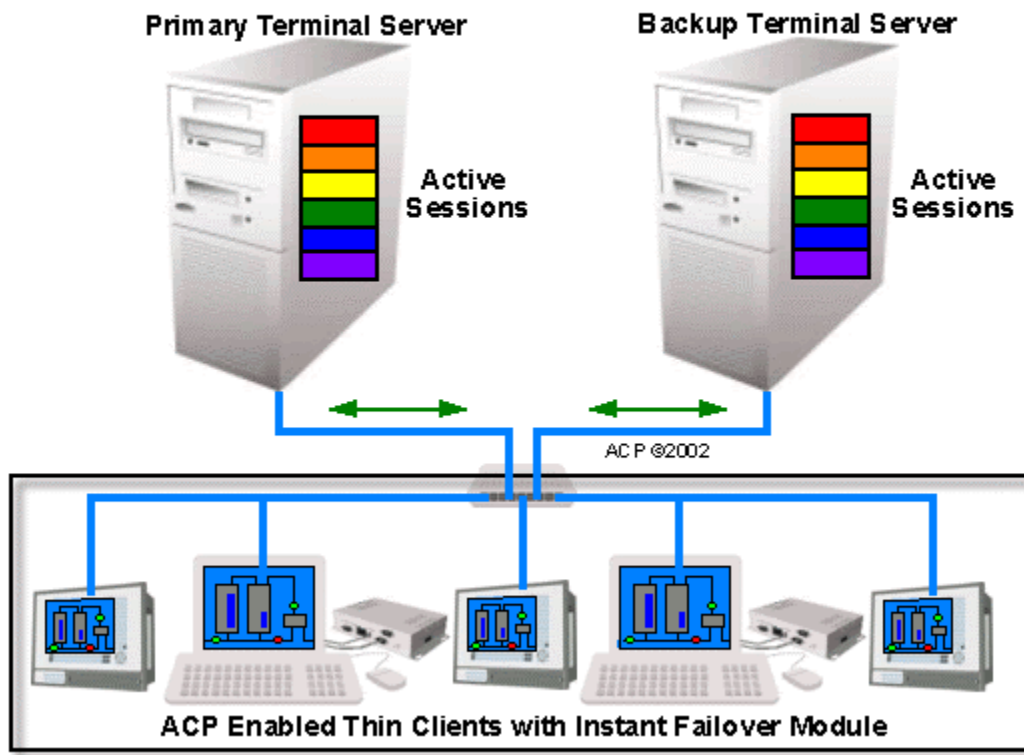
14.3 Instant Failover

Basic failover is built into every ThinManager thin client. Detecting that the primary server is down and connecting to a backup server is usually achieved in 10 to 20 seconds, depending on the monitoring configuration. Some applications will need additional time to launch and initialize the programs. Instant Failover was developed for people who need the session to switch to another terminal server and start running immediately, without any delays for starting the applications.

When using Instant Failover, the thin client starts sessions on two servers at once. The sessions are cascaded on the thin client, with the primary session on top. If the primary terminal server fails, the preexisting secondary session is switched to the forefront.

Instant Failover - Part 1

Terminals with Instant Failover module login to two terminal servers at once



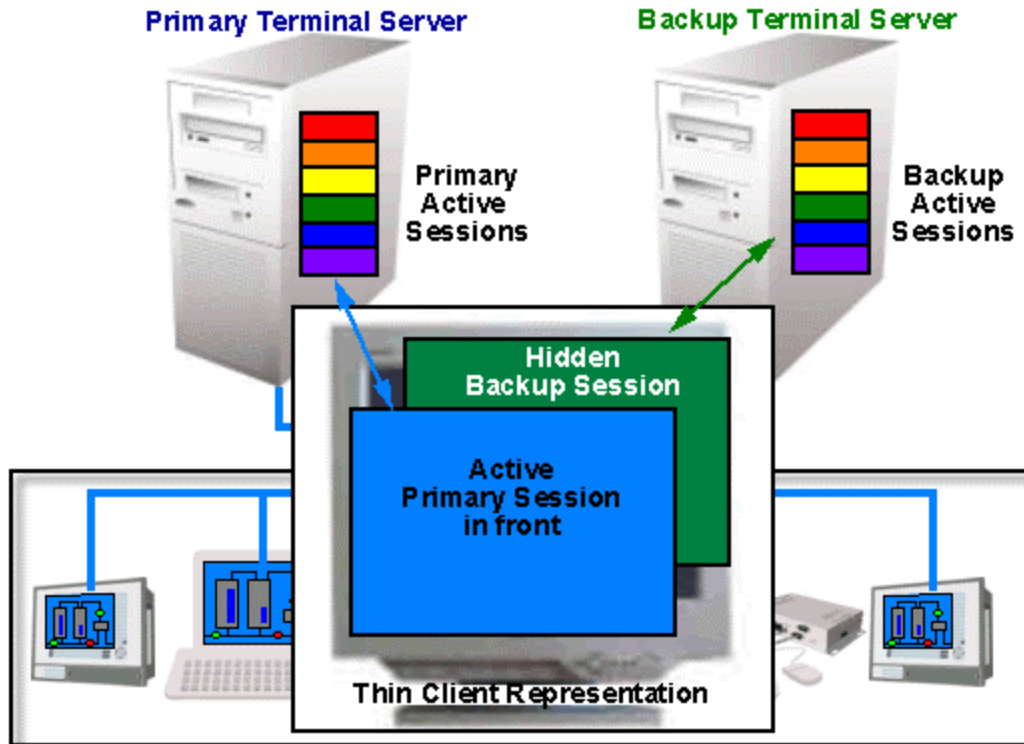
Instant Failover, Part 1

When a thin client using Instant Failover boots, it connects to two terminal servers, logs in, and starts two sessions.

Instant Failover - Part 2

Terminals run both sessions

The active Primary session is cascaded to hide Backup session

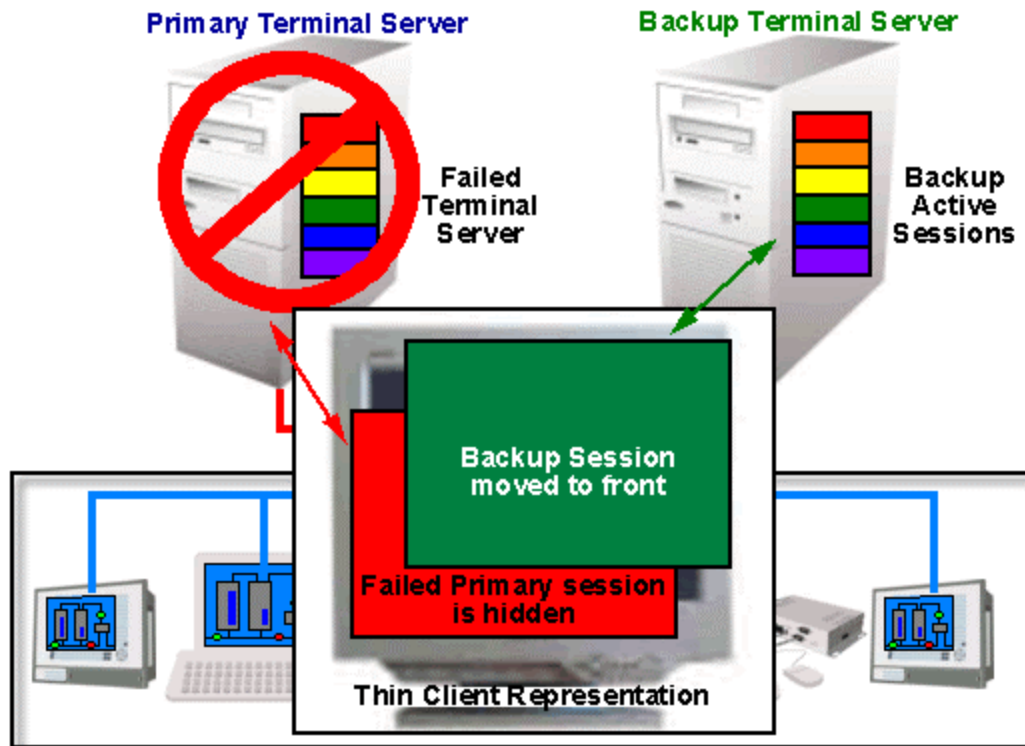


Instant Failover, Part 2

The thin client cascades both sessions and displays the primary session in front. You cannot see the secondary session as it is hidden in back. There is an optional hot key toggle available to allow toggling between sessions. See Hotkey Configuration for details.

Instant Failover - Part 3

If the Primary fails, the terminal will toggle the cascaded windows, displaying the Backup session in front



Instant Failover, Part 3

If the primary server fails, the thin client will detect its failure. The thin client will then switch the focus of the window, showing the secondary session. This session is already initialized so the user is able to proceed at once.

Note: Use a *Username*, *Password*, and *Initial Program* to allow the thin client to login automatically and start a program so that the background session is immediately ready and not needing a login and program launch.

If the **Enforce Primary** feature is used, the thin client will switch back to the primary once it is back online.

Note: thin clients that use instant failover may require 64 MB of memory.

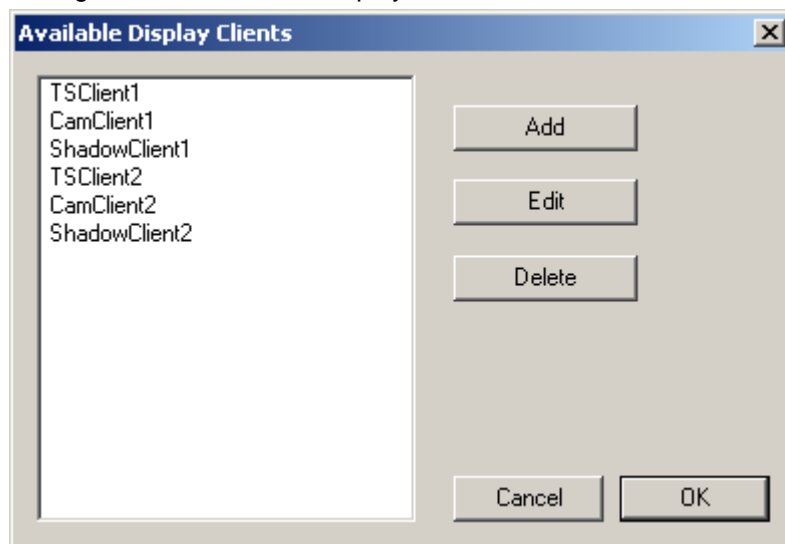
14.4 Instant Failover Configuration

Instant Failover is configured as part of Terminal Services Display Clients if Display Clients are used or added as a module if the thin client is using individual terminal servers.

14.4.1 Instant Failover Setup using Terminal Services Display Clients

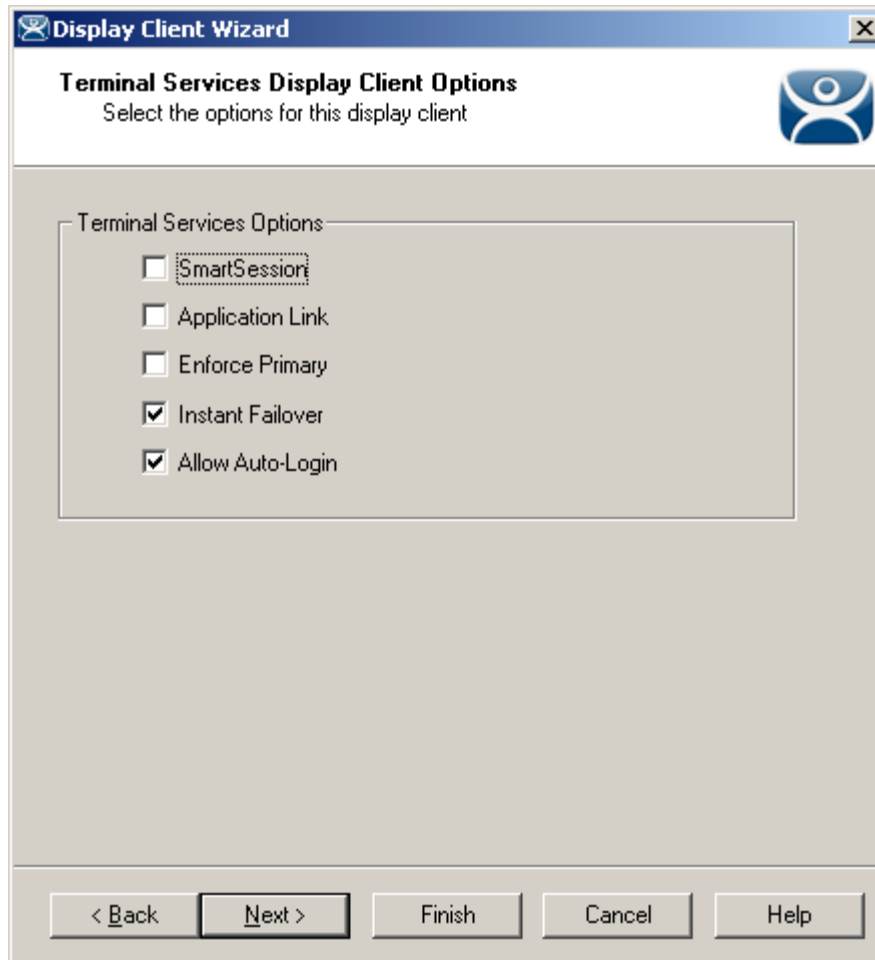
Terminal Services Display Clients allow a terminal to run a session from a list of terminal servers. The Display Client will have Instant Failover capability if two or more terminal servers are added to it and the Instant Failover option is selected. This is configured in the Terminal Services Display Client Wizard.

Launch the Display Client Wizard by right-clicking on the Display Clients branch in the tree. Alternatively, you can right-click on an existing Terminal Services Display client in the tree and select **Modify**.



Display Client List

Select the **Add** button to add a new Display Client, or highlight an existing Terminal Services Display Client and select the **Edit** button to edit an existing Display Client.



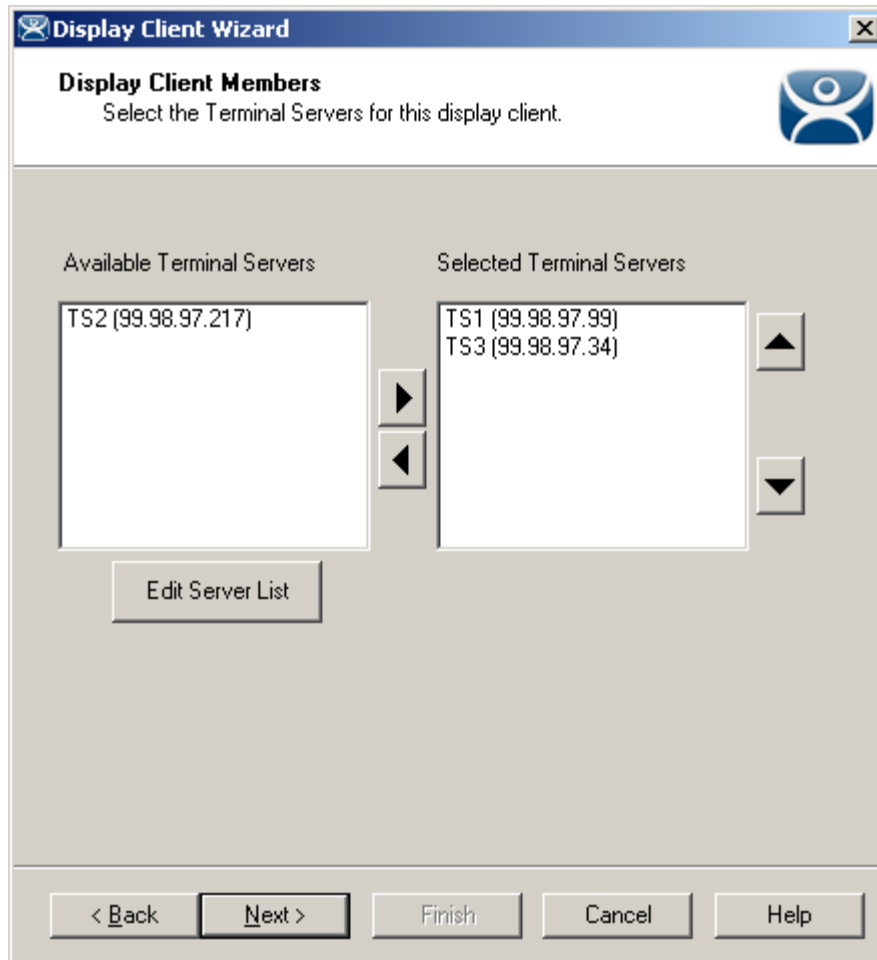
Display Client Wizard – Terminal Services Options Page

Select the **Instant Failover** check box on the **Display Client Options** page to enable instant failover for the Display Client.

Note: Do not use the Instant Failover Module when using Instant Failover within a Display Client

The Terminal Services Options page allows the configuration of other parameters in addition to the Instant Failover such as SmartSession and Applink. See the Terminal Services Display Client Options for details.

Each Terminal Services Display Client needs two or more terminal servers to get Instant Failover to function. This is done on the **Display Clients Members** page of the Display Client Wizard.



Display Client Wizard – Display Client Members Page

Select two or more terminal servers from the **Available Terminal Servers** list and move them to the **Selected Terminal Servers** list by highlighting and double clicking, or by using the **Arrow** button.

The thin client will start sessions on the top two terminal servers in the **Select Terminal Server** list, with the top terminal server as the primary and the second terminal server as the backup, unless SmartSession was chosen on the Group Options page.

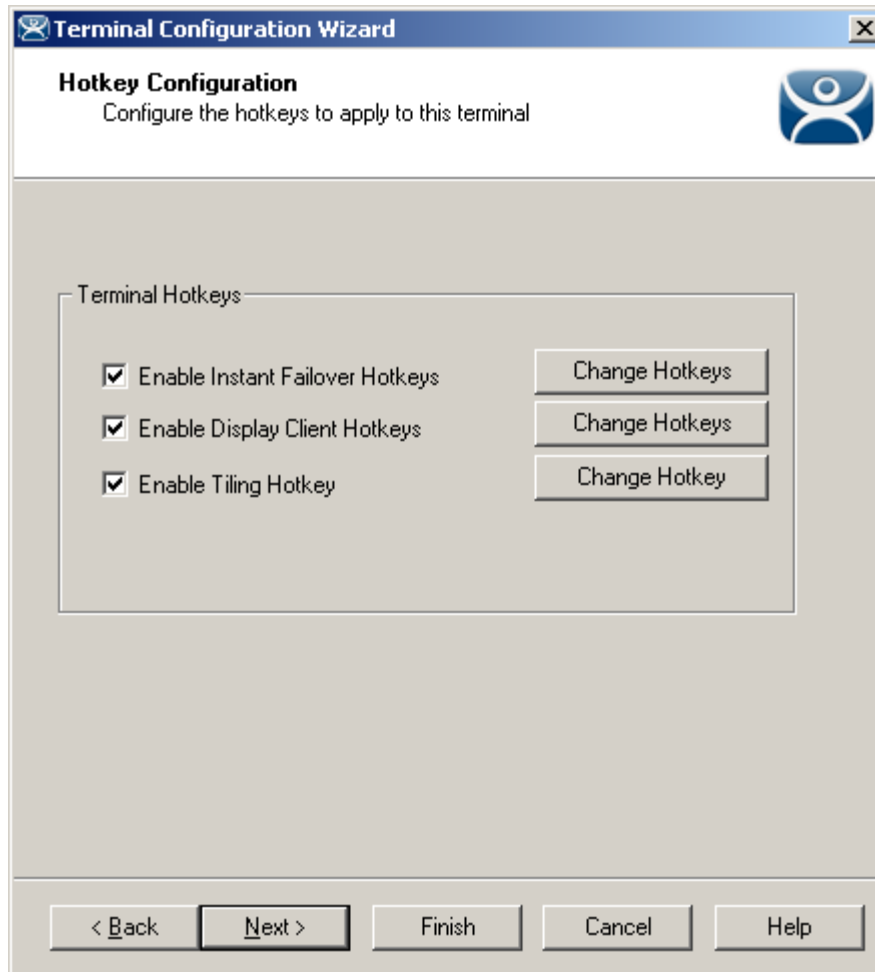
If more than two terminal servers are selected, the thin client will connect to the other terminal servers if one of the other terminal servers fails.

14.4.2 Switching Between Instant Failover Sessions

Instant Failover can be configured to allow a user to toggle between the two instant failover sessions. This is done differently when using individual terminal servers and Display Clients.

14.4.3 Switching Between Sessions with Display Clients

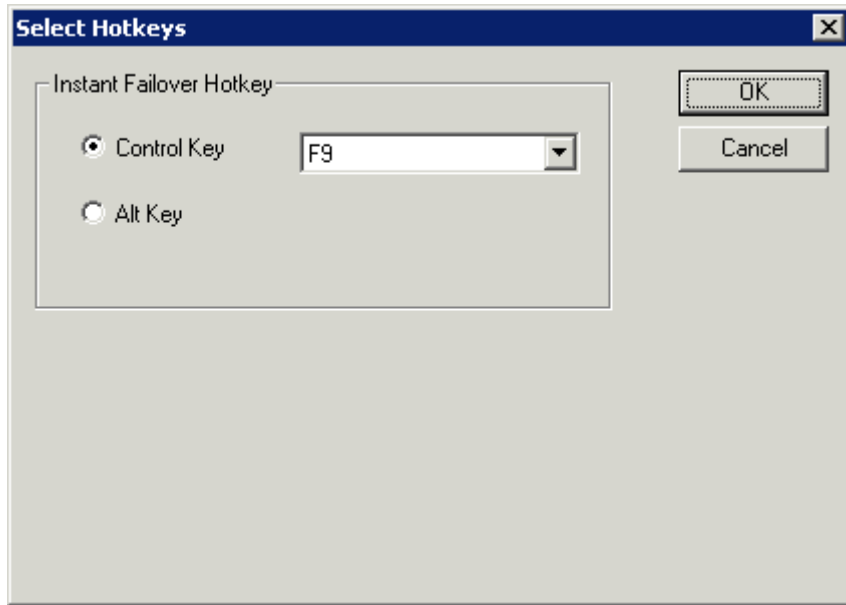
Instant Failover can be configured to allow a user to toggle between the two instant failover sessions when the thin client is using Display Clients by using a hotkey. To configure the hotkey run the Terminal Configuration Wizard for the terminal or terminal group that is using a Terminal Services Display Client with Instant Failover and proceed to the **Hotkey Configuration** page.



Terminal Configuration Wizard – Hotkey Configuration Page

When a thin client is using Terminal Services Display Clients, selecting the **Enable Instant Failover Hotkeys** check box will allow the user to switch between instant failover sessions using the default **CTL + F9** hot key.

The default hotkey can be changed by selecting the upper **Change Hotkeys** button and launching the **Select Hotkeys** windows.

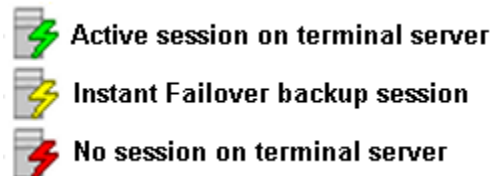


Select Hotkeys Windows

The hot keys needed to switch between instant failover sessions can be changed on the **Select Hotkeys** window. Select the **Control Key** or **Alt Key** radio button and a **function key** from the drop down box and select the **OK** button to accept the changes.

14.4.4 Instant Failover Tree Icons

Under each Terminal are icons representing the Terminal Servers that they connect to. The lightning bolt color indicated the connection status.

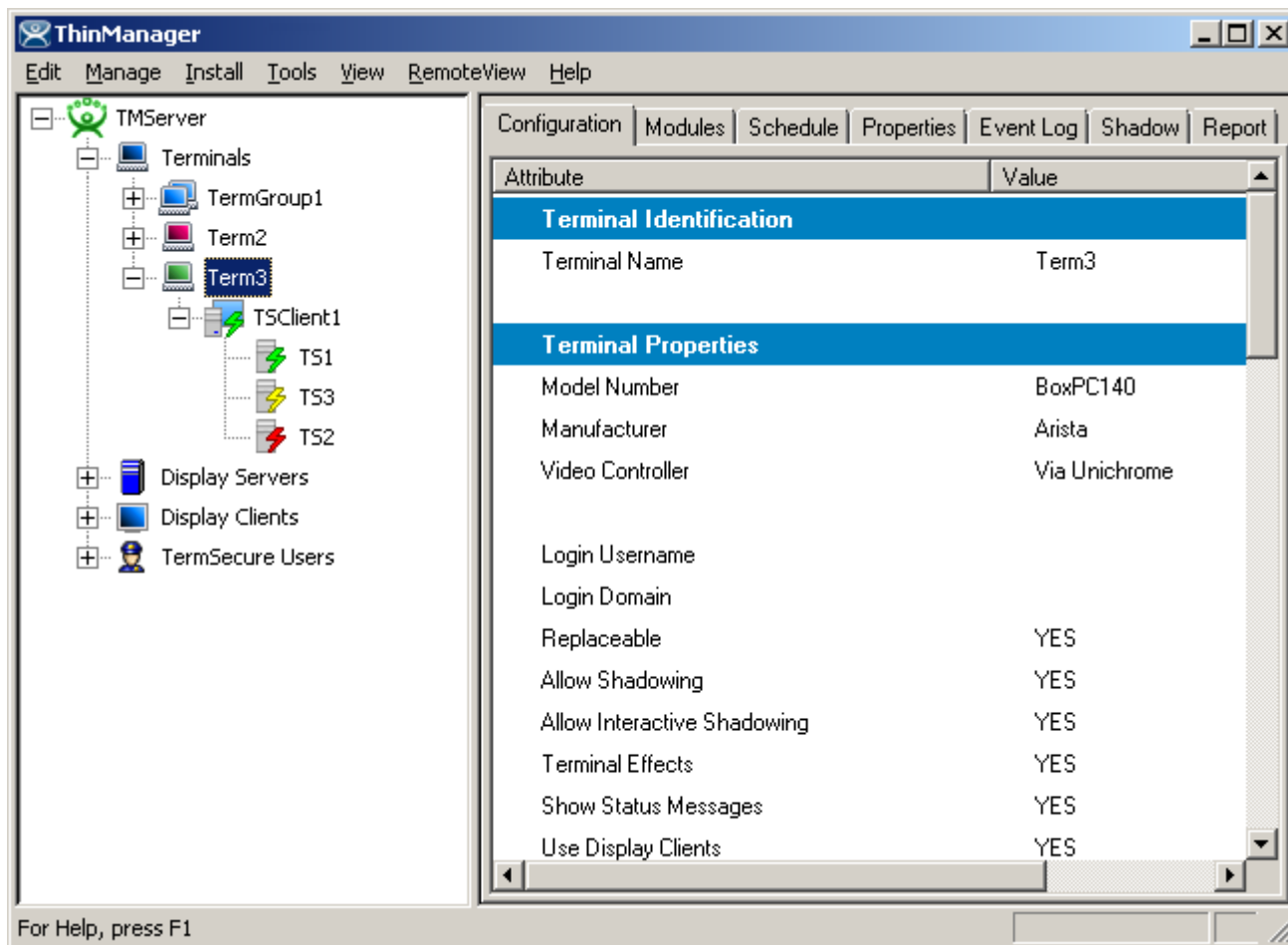


Terminal Server Connection Icons

A **Red lightning bolt** represents a lack of connection to the terminal server.

A **Green lightning bolt** represents a connection to the terminal server with an active session.

A **Yellow lightning bolt** represents a connection to the terminal server with an active session that is the backup in Instant Failover mode.



Instant Failover

If a terminal that is configured for Instant Failover is expanded in the ThinManager tree, the Primary Terminal Server should have a green lightning bolt, while the Secondary Terminal Server should have a yellow lightning bolt, as shown in the example.

15 Modules

15.1 Module Overview

Modules are software components that can be loaded to increase the functionality of the terminal. Modules include touch screen drivers, sound drivers, and special device drivers. Modules are included with ThinManager and are registered automatically during ThinManager installation. Updates to modules (primarily touch screens) are posted on the ThinManager website for download and installation.

Note: “Installing a module” refers to the registration of the module with the ThinManager Server, while “Adding a module” refers to attaching the module to a particular group or terminal.

This section includes:

- A list of available Modules.
- Instructions on installing and adding Modules.
- Details on specific modules.

Note: Certain modules, like the video modules, do not need to be added to specific terminals but will be downloaded automatically in ThinManager. These modules do have to be installed in ThinManager to be available for the download to happen.

These modules may need to be added to the terminal in older versions of ThinManager that are using new firmware.

15.1.1 Module List

ThinManager divides the modules into a number of categories or types to make navigation of the module list easier. Although details on the specific modules will follow, the types and modules include:

Note: Certain modules are used in limited, specific cases and are considered advanced modules. These are marked with a (*). See Advanced Modules for details.

ICA - See ICA Modules

- Citrix ICA UseAlternateAddress Module
- Citrix ICA wfclient.ini Extension Module
- ICA Client Version 6.0 (*)

- ICA Client Version 8.0 (*)

Keyboard – See Keyboard Modules

- Key Block Module
- Key Block Single Key Module
- Keyboard Configuration Module
- Share Keyboard and Mouse Master Module
- Share Keyboard and Mouse Slave Module

Local Storage - See Local Storage Modules

- USB Flash Drive Module
- USB Memory Card Reader Module

Miscellaneous - See Miscellaneous Modules

- Add Serial Port
- Firmware Update Module (formerly the Disk On Chip / Compact Flash Update Module)
- Instant Failover Module (* no longer used)
- Local Printer Module
- MultiMonitor Module
- MultiMonitor2 Module
- Redundant Ethernet Module
- Second Network Module
- Serial to TCP Module
- Terminal Shadow Module
- TermMon ActiveX Configuration
- Time Zone Redirection Module

Mouse - See Mouse Modules

- Mouse Configuration
- PS/2 Mouse Configuration
- Serial Mouse Driver
- Share Keyboard and Mouse Master Module
- Share Keyboard and Mouse Slave Module

RDP - See RDP Modules

- RDP Experience Module
- RDP Module for ThinManager v2.4 and Older
- RDP Port Module
- RDP Serial Port Redirection Module
- RDP Session IP Module

Screen Saver - See Screen Saver Modules

- MultiSession Screen Saver Module
- Screen Saver Module

Sound - See Sound Modules

- AMD cs553x Sound Driver
- Advantech ARK-1382 Sound Driver
- Advantech ARK-3380 Sound Driver
- Advantech PCM-5820 Sound Driver
- Advantech PCM-9372 Sound Driver
- Advantech UNO-1150 Sound Driver
- Advantech UNO--1170 Sound Driver
- Advantech UNO-2053E Sound Driver
- Advantech UNO--2173 Sound Driver
- Allen-Bradley VersaView 200R Sound Driver
- Arista 5824-ACP Sound Driver
- Arista 6824-ACP Sound Driver
- Arista 7824-ACP Sound Driver
- Arista AP-3200 Sound Driver
- Arista AP-3300 Sound Driver
- Arista BoxPC-201H Sound Driver
- Arista BoxPC-240 Sound Driver
- DC_30_100 Sound Driver
- DC_40_100 Sound Driver
- Gigabyte TA3LB Sound Driver
- Intel 8x0 Sound Driver
- Intel HAD Sound Driver
- NTA-6020 Sound Driver
- TC3000 Sound Driver
- TC3500 Sound Driver
- TeleVideo TC7X30 Sound Driver
- Universal Sound Driver
- VIA 82xx Sound Driver
- Xycom XA1300 Sound Driver

TermSecure - See TermSecure Modules

- RF Ideas pcProx Module
- RF Ideas pcProx USB Module
- TermMon ActiveX Configuration Module

- USB Flash Drive Module
- Wavetrend Tag Reader Module

Touch Screen - See Touch Screen Modules

- Arista ARP-16XXXAP-ACP Touch Screen Driver
- CarrollTouch Touch Screen Driver
- Contec Touch Screen Driver
- DMC TSC Series Touch Screen Driver
- DMC Touch Screen Driver
- Dynapro Touch Screen Driver
- Elographics Touch Screen Driver
- Gunze AHL Touch Screen Driver
- Hampshire TSHARC Touch Screen Driver
- MicroTouch Touch Screen Driver
- Panjit TouchSet Touch Screen Driver
- PenMount Touch Screen Driver
- Ronics Touch Screen Driver
- Touch Control Touch Screen Driver
- Touch International IR Touch Screen Driver
- USB Touch Screen Driver
- Xycom 33XX Touch Screen Driver
- Zytronic Touch Screen Driver

Video Driver - See Video Driver Modules.

- Custom Video Mode Module

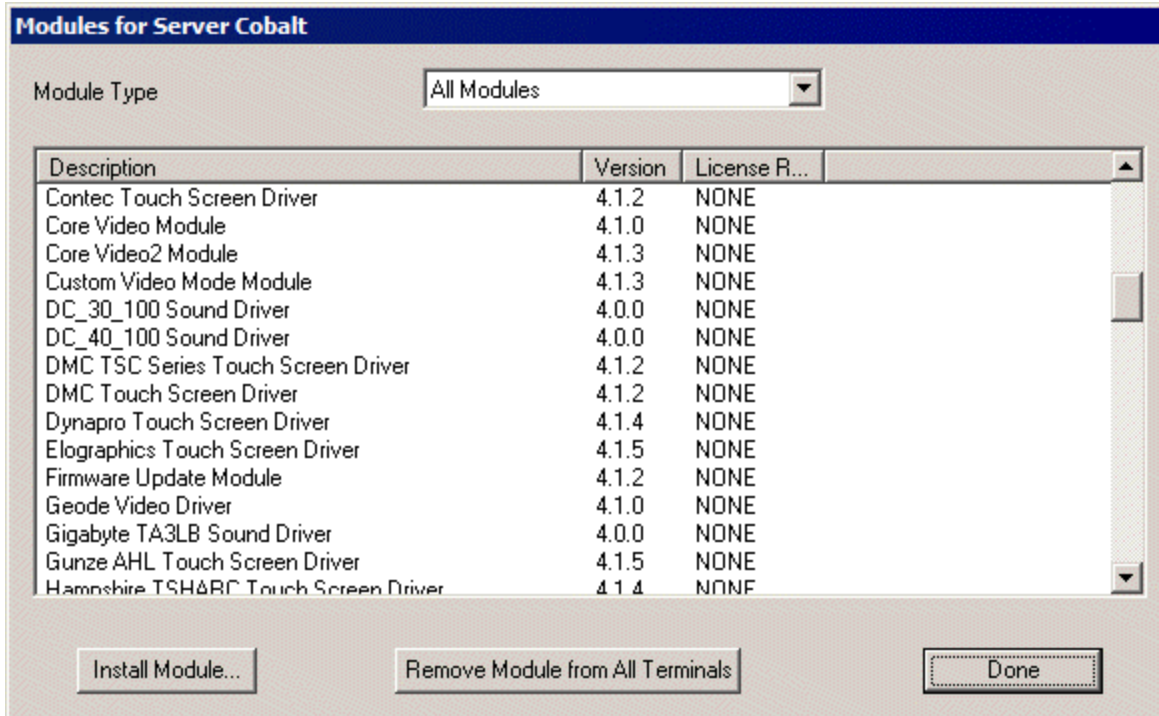
Video2 Driver - See Video Driver Modules.

- Custom Video Mode Module

(*) Denotes an advanced module See Advanced Modules for details.

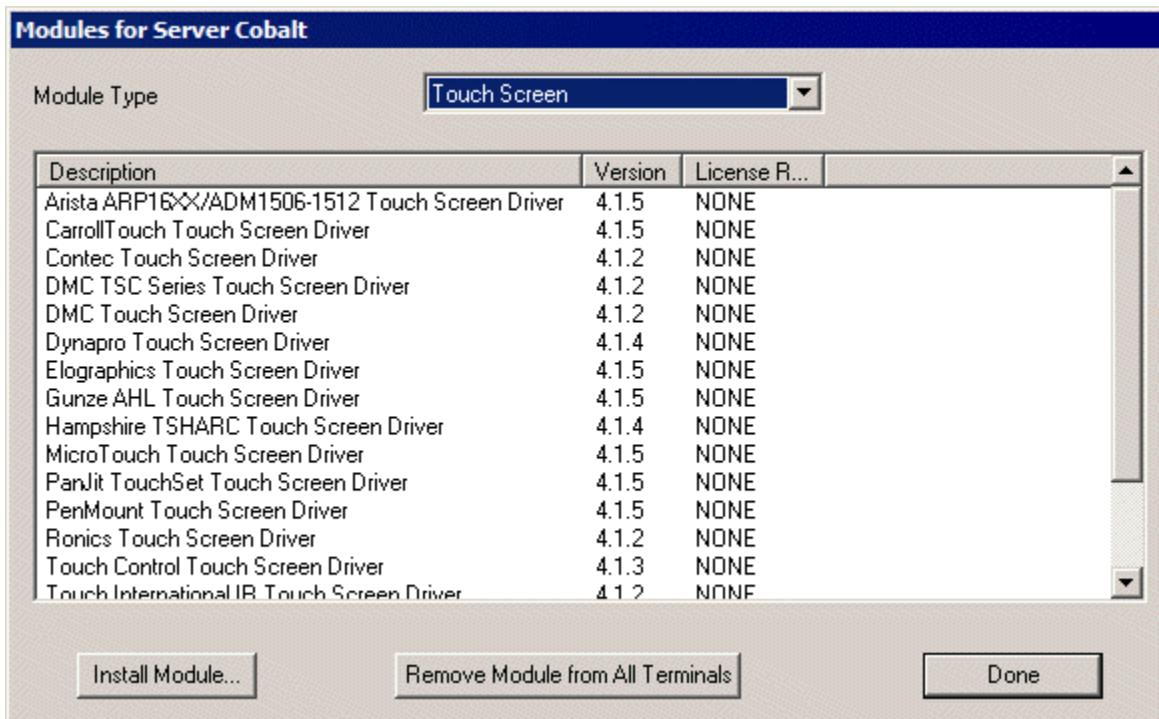
15.2 Installing a Module

Installing a Module adds a new module to ThinManager so that it is available to Terminal Groups and Terminals. To install a module, open the Modules window by selecting **Install > Modules** from the ThinManager menu bar to launch the **Modules** window.



Modules Window

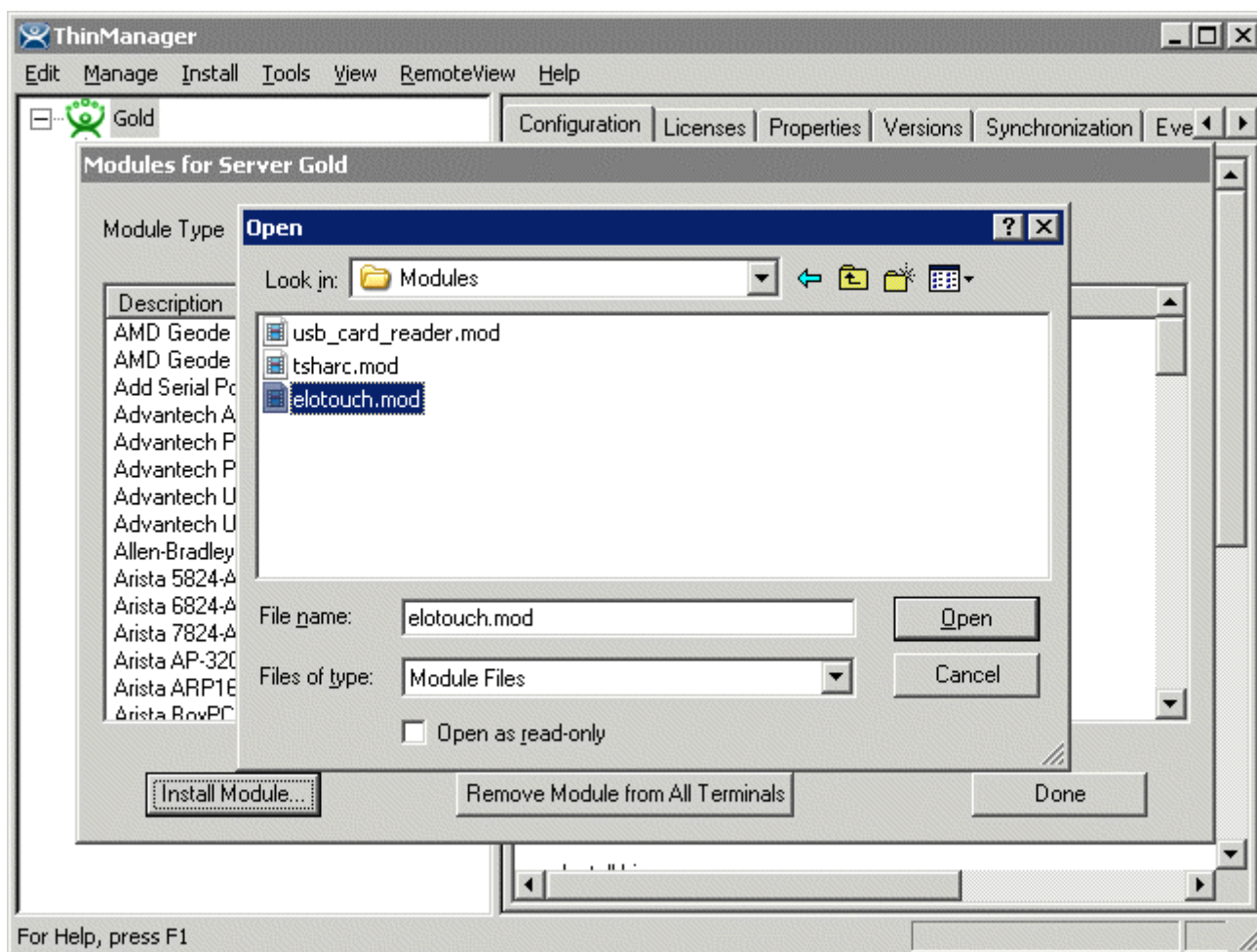
The **Module** window shows all of the modules installed on the ThinManager Server.



Sorted Modules

The installed modules can be sorted by using the **Module Type** dropdown list.

To install additional modules select the **Install Module** button. This will launch a file browser window.



Module File Browser Window

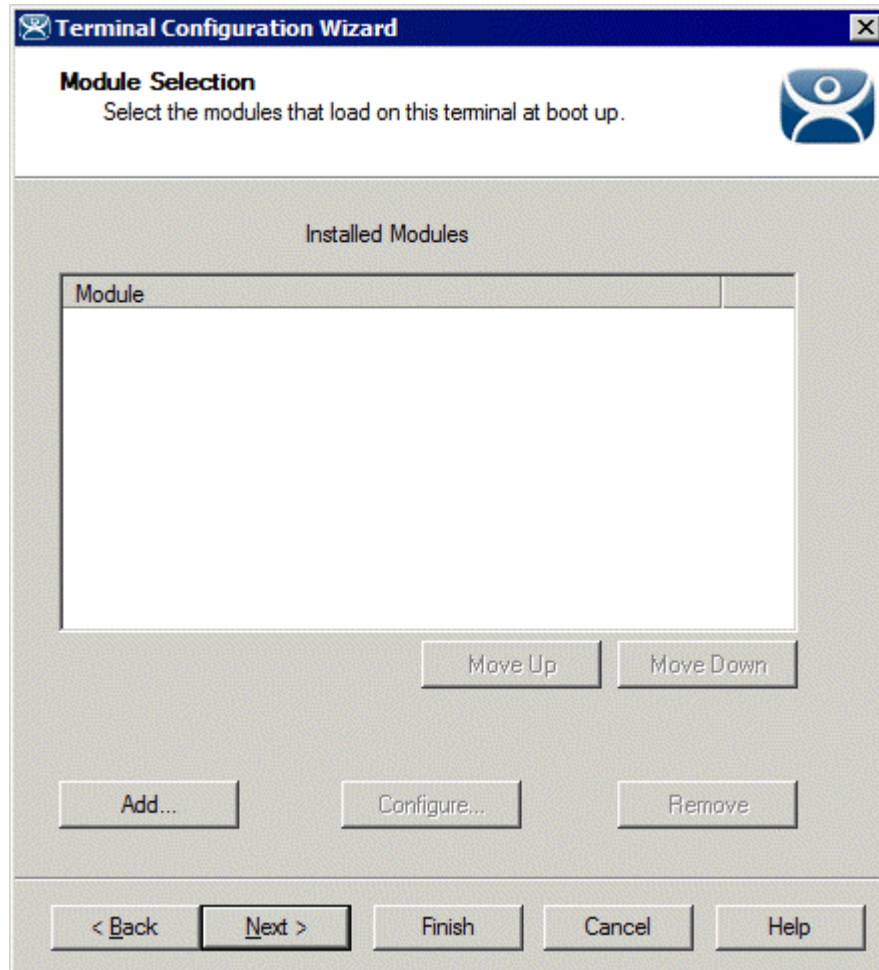
Browse to the new module, usually downloaded from the ThinManager web site (www.thinmanager.com). Highlight the new module, and select the **Open** button. This will add the new module to the list of modules.

Selecting the **Remove Module from All Terminals** button will remove the highlighted module from all terminals. It does not uninstall the module from the ThinManager Server; it just removes its use by all groups and terminals.

Select the **Done** button to close the **Modules** window.

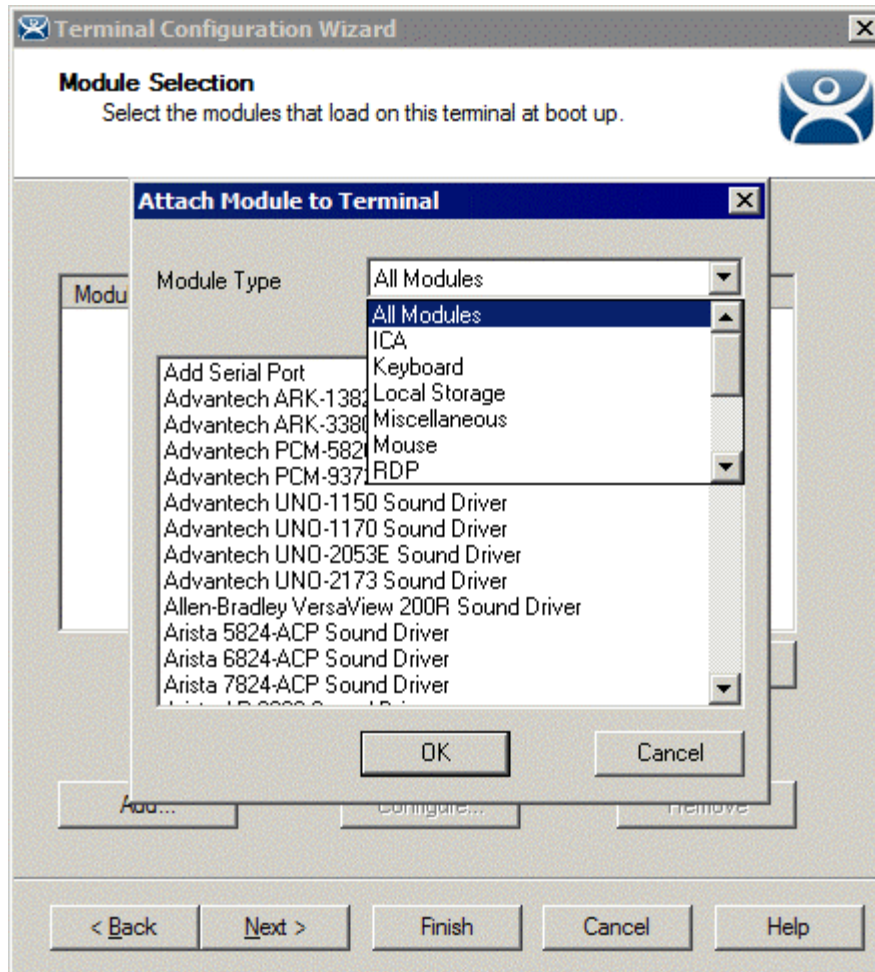
15.3 Adding a Module to a Group or Terminal

Modules are added to terminals or groups of terminals on the Module Selection page of the Terminal Configuration Wizard or the Terminal Group Configuration Wizard.



Terminal Configuration Wizard - Module Selection

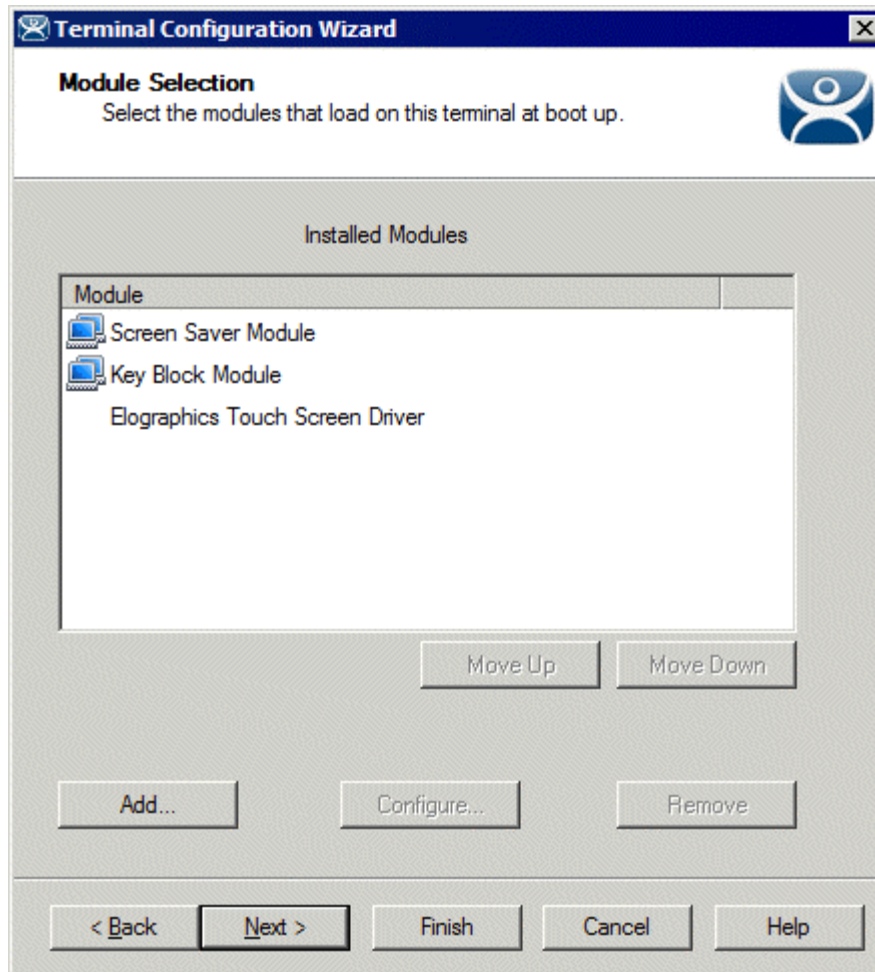
To add a Module to a Terminal, select the **Add...** button to launch the **Attach Module to Terminal** window.



Attach Module to Terminal


The **Attach Module to Terminal** window will show the modules that are available to the terminal. The **Module Type** drop-down box sorts the modules by categories to make the modules easier to find.

Highlight the desired module and select the **OK** button to add the module to the configuration.



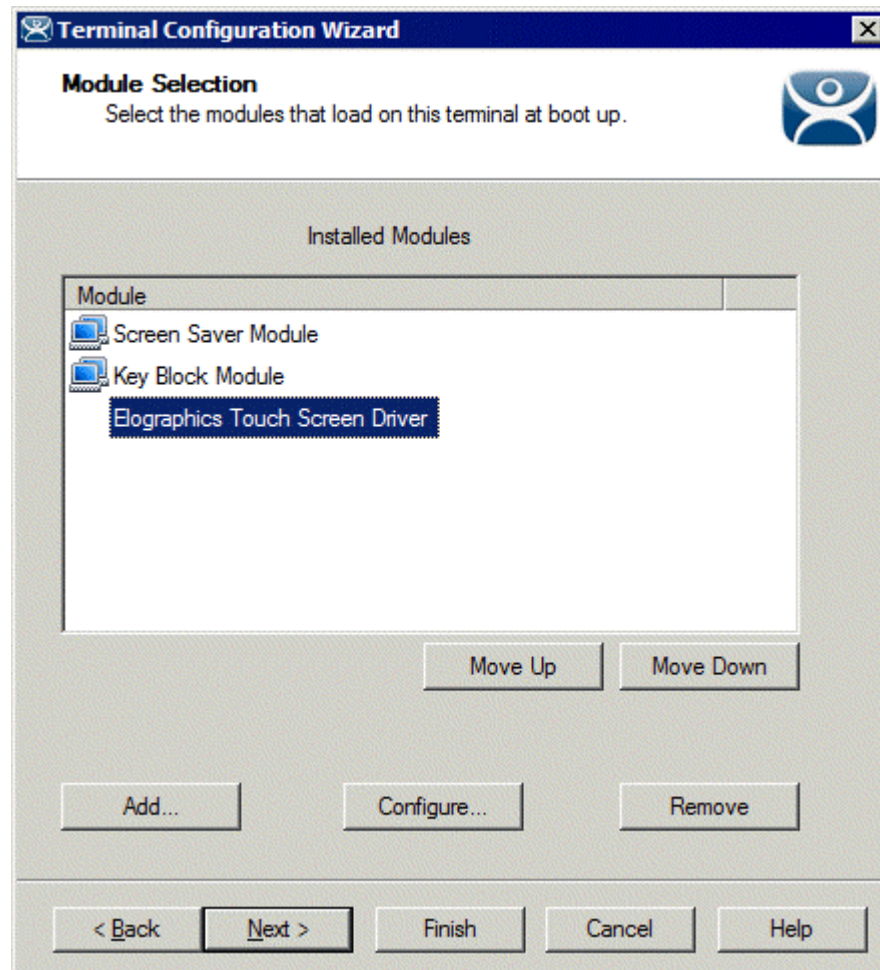
Terminal Configuration Wizard - Module Selection

Terminals that are members of a Group may show icons to represent the properties of added modules.

-  The Group icon represents modules assigned to a parent Group.
- No icon indicates that the module was added to that particular Group or Terminal and not a parent Group.

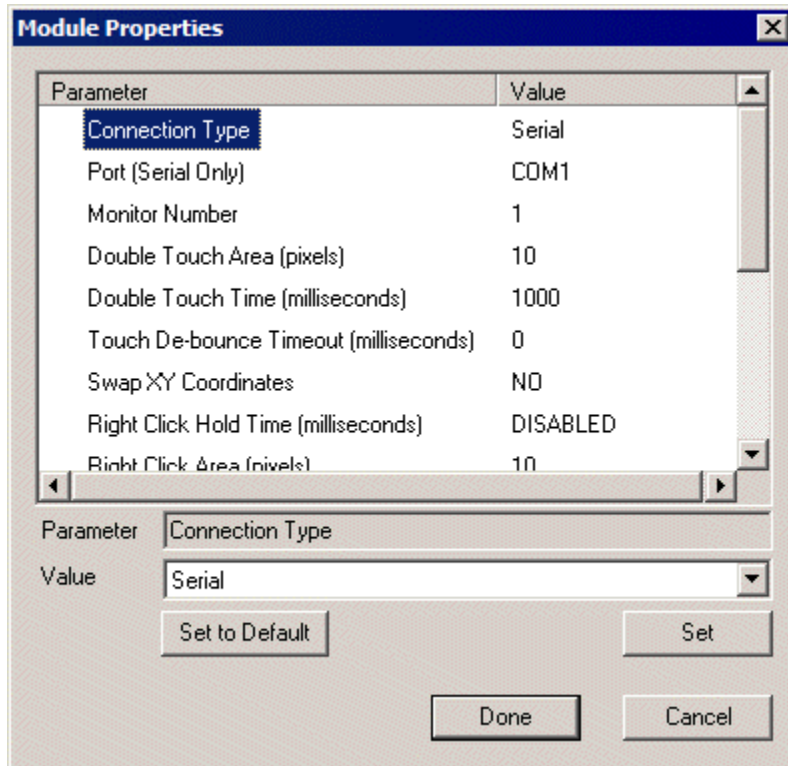
15.4 Changing Module Parameters

Many modules have parameters that can be changed. With the new inheritance rules from ThinManager 3.0 module parameters can't be changed for modules that are inherited from a parent group. Changes must be made at the level that the module was added.



Module Configuration

Highlighting a module on the **Module Selection** page and selecting the **Configure** button will open the **Module Properties** window and allow changes to the module configuration.



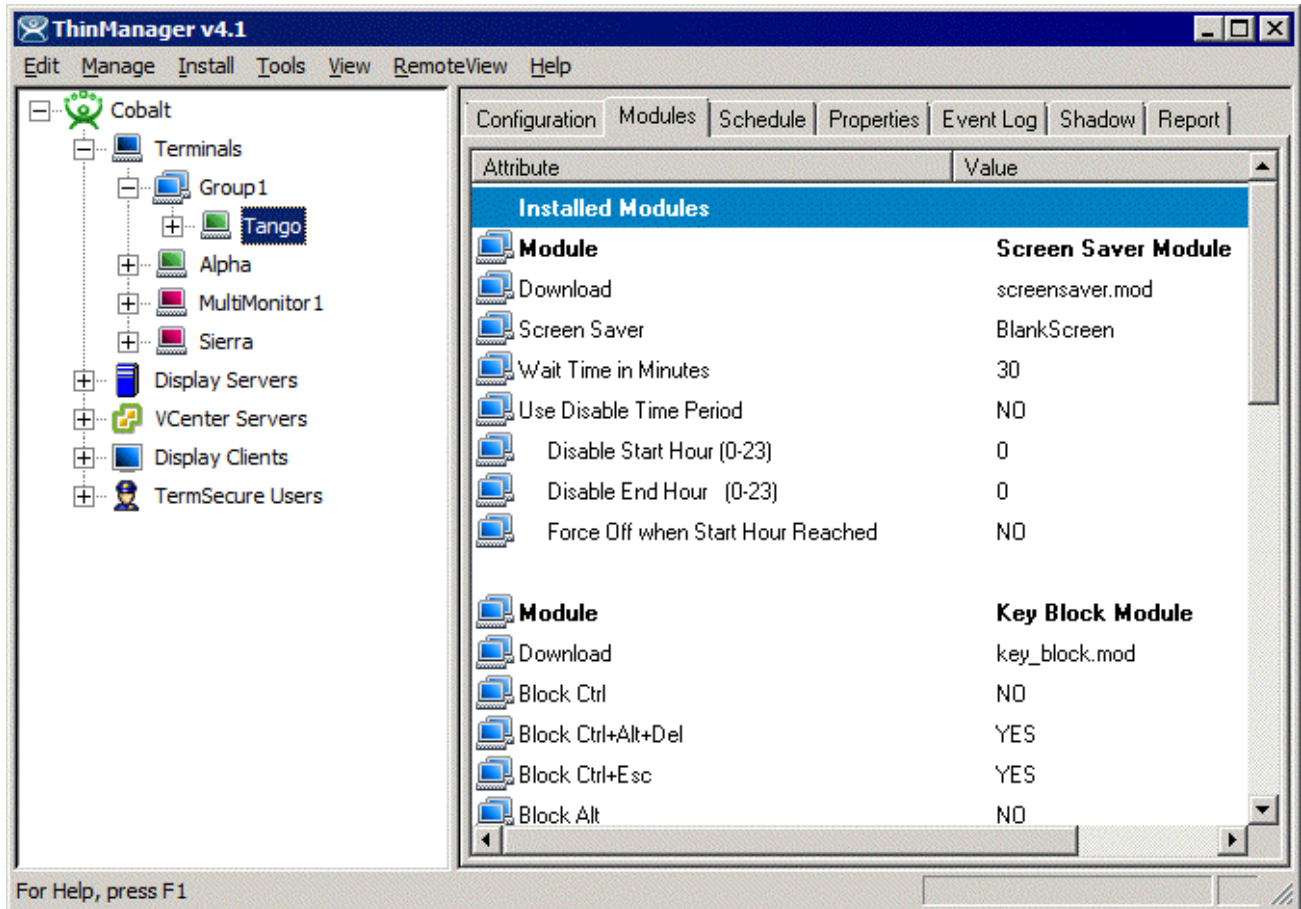
Module Properties

On the **Modules Properties** window, select the parameter to change, select the new value in the drop-down list, and click the **Set** button. This will change the setting.

The **Set to Default** button will restore the module to the default settings.

Note: The **Set** button must be selected to apply the change.

Select the **Done** button to close the **Module Properties** window and to return to the Group or Terminal Configuration Wizard.

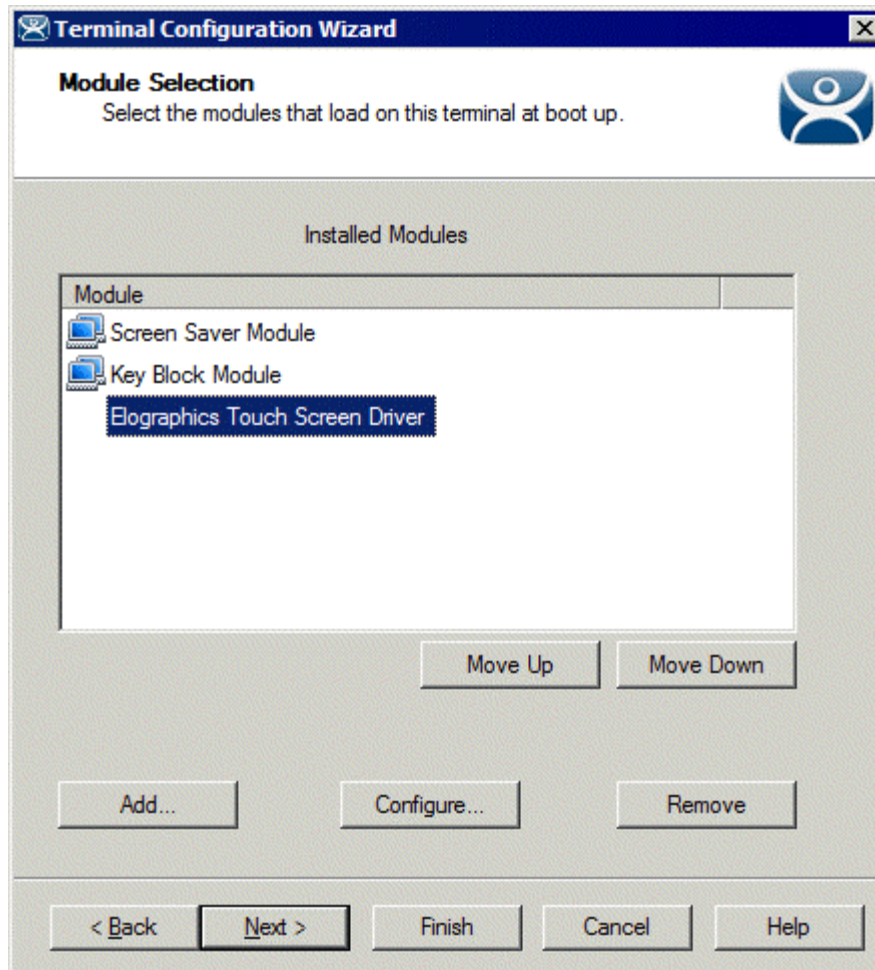


Module Icons in ThinManager

The status of the modules is displayed on the **Modules** tab of the **Details** pane of ThinManager.

15.4.1.1 Module Loading Order

Highlighting a module and selecting the **Move Up** or **Move Down** button can change the order that the modules load.



Module Loading Order

The loading order of modules rarely needs to be adjusted.

15.5 Individual Module Details

ThinManager divides the modules into a number of categories or types to make navigation of the module list easier. The types and modules include **ICA**, **Local Storage**, **Miscellaneous**, **Mouse**, **RDP**, **Screen Saver**, **Sound**, **TermSecure**, **Touch Screen**, and **Video**.

15.6 ICA Modules

The ICA Modules are advanced modules for advanced users of the ICA client communication protocol.

15.6.1 Citrix ICA UseAlternateAddress Module

The **Citrix ICA UseAlternateAddress Module** is used by advance Citrix users to specify connections to Citrix Servers.

Configuration includes **UseAlternate Address**, **Browser Protocol**, and **HttpBrowser Addresses**.

15.6.2 Citrix ICA wfclient.ini Extension Module

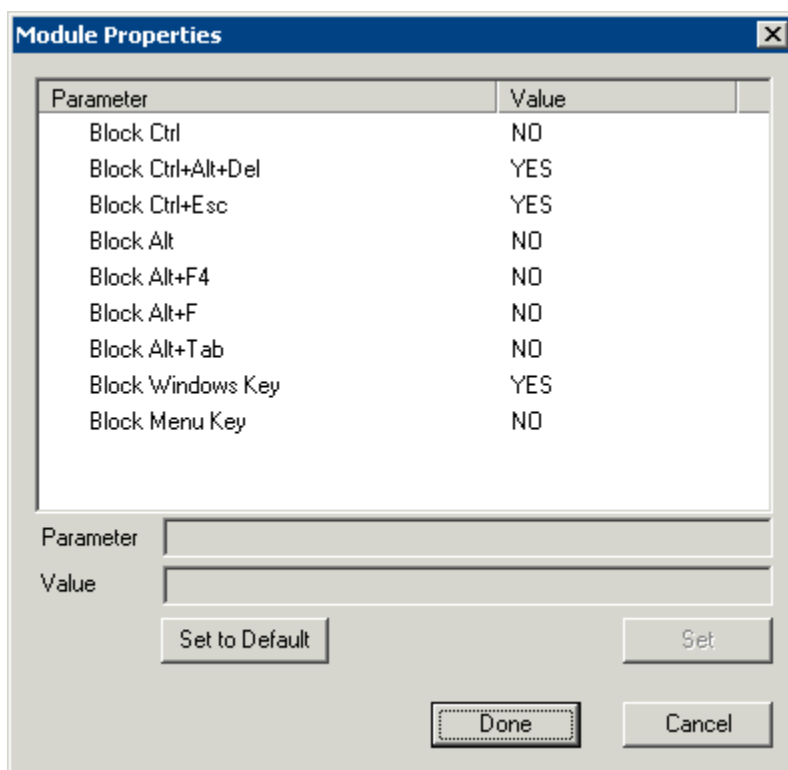
The **Citrix ICA wfclient.ini Extension Module** is used by advance Citrix users. This module allows up to 8 strings of text to be added to the wfclient.exe for passing Citrix parameters.

15.7 Keyboard Modules

The Keyboard Modules are modules used to control or alter keyboard behavior.

15.7.1 Key Block Module

The Key Block module traps certain keystrokes and prevents them from being sent to the terminal server for processing.



Key Block Module

The key combinations to be blocked can be configured by in the Module Properties. To launch this, highlight the module on the Module Selection page and select the **Configure** button. A **Module Properties** dialog box will be displayed. Select the parameter to change in the Module Properties window, select the **Value** in the dropdown box and click the **Set** button.

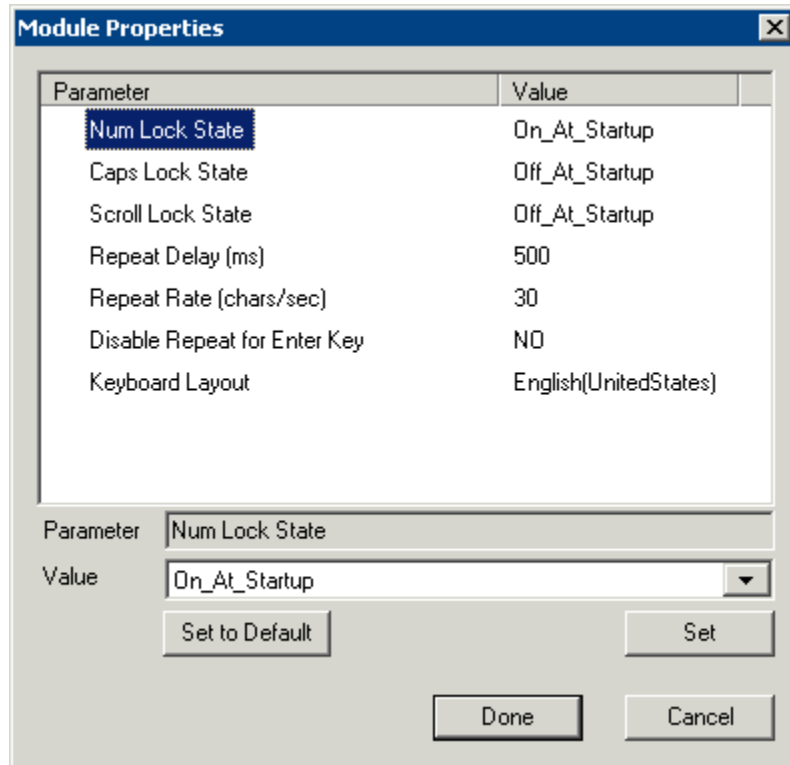
The key combinations that have a value of **YES** will be blocked from reaching the terminal server.

15.7.2 Key Block Single Key Module

The Key Block Single Key module traps specific individual keystrokes and prevents them from being sent to the terminal server for processing.

15.7.3 Keyboard Configuration Module

The Keyboard Configuration Module allows key settings on a keyboard attached to a thin client to be set.



Keyboard Configuration Module Parameters

The Keyboard Configuration parameters include:

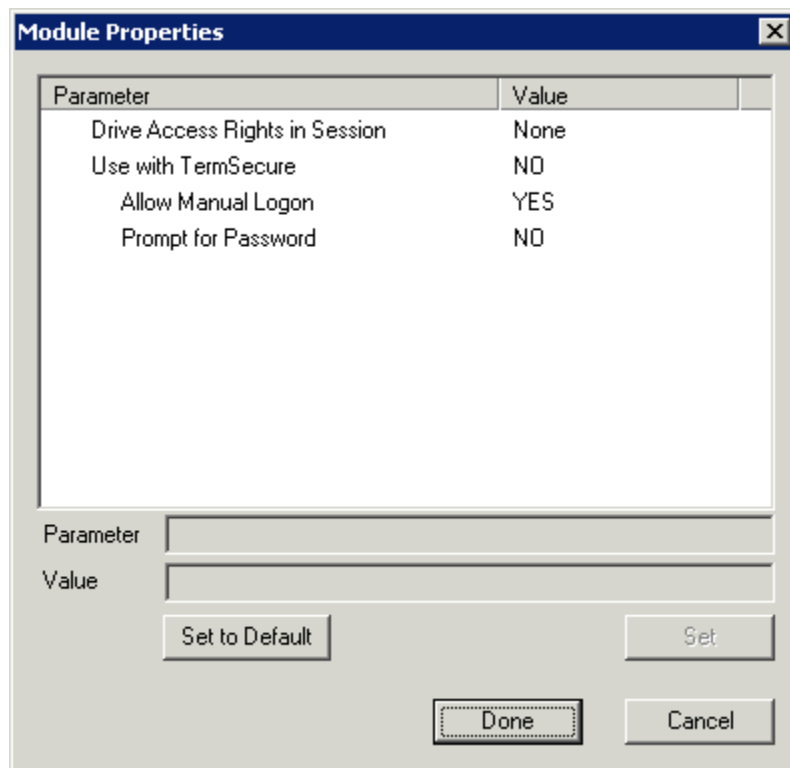
- **Num Lock State** – This allows the Number Lock to be set to **On** at startup, **Off** at startup, always **On**, or always **Off**.
- **Cap Lock State** – This allows the Caps Lock to be set to **On** at startup, **Off** at startup, always **On**, or always **Off**.
- **Scroll Lock State** – This allows the Scroll Lock to be set to **On** at startup, **Off** at startup, always **On**, or always **Off**.
- **Repeat Delay (ms)** – This parameter sets the amount of time that a key needs to be held down before it starts repeating the keystroke. If this parameter is set to **Disable** a key will only send one keystroke even if the key is held down.
- **Repeat Rate (char/sec)** – This parameter sets the number of characters per second that a held down key will send.
- **Disable Repeat for Enter Key** – This parameter, when set to **Yes**, will prevent the **Enter** key from repeating if it is held down.
- **Keyboard Layout** – This parameter allows the thin client to use keyboards other than the default English (United States) keyboard map.

15.8 Local Storage Modules

The Local Storage modules allow the use of USB ports on thin clients. The USB ports are not active by default for security.

15.8.1 USB Flash Drive Module

The USB Flash Drive Module allows USB flash drives to connect to a terminal. The parameters include:



USB Flash Drive Module Properties

The **USB Flash Drive Module** has several parameters.

- **Drive Access Rights in Session - ReadWrite** allows the user to read and write to the flash drive. **ReadOnly** allows the user to read data but not write data, and **None** sets the flash drive to access only the unique serial number to make it usable as a TermSecure ID device.
- **Use with TermSecure** - This needs to be set to **YES** to allow the device to be a TermSecure identifier. A **NO** setting, in conjunction with a **ReadWrite Access Rights** setting, will allow the device to be used as a remote storage drive
- **Allow Manual Login** - This value, when set to **Yes**, will allow a TermSecure user to log into a terminal without a TermSecure ID device. If set to No, TermSecure users must use a TermSecure ID device to log in.
- **Prompt for Password** - This value, when set to **Yes**, will require a TermSecure User to enter their password for access, even if the password is configured in ThinManager.

15.8.2 USB Memory Card Reader Module

The **USB Memory Card Reader Module** allows USB card readers to connect to a terminal. The parameters include:

- **Number of Slots in Reader** - This value sets the number of slots that the card reader uses.
- **Read Only Access** - This value, when set to **Yes**, will limit the user to reading the card. This value, when set to **No**, will allow the user to read and write to the card.

15.9 Miscellaneous Modules

These are modules that don't fit in other categories.

15.9.1 Add Serial Port

The **Add Serial Port Module** is only used to configure the serial ports of daughter boards that add additional serial ports to terminals. Add a module for each additional serial port. Each module will let the user configure one additional port.

- **Port Number** - This value is to be set to the port number of the new port.
- **Port Address** - This value is to be set to the port address of the new port.
- **IRQ** - This value is to be set to the IRQ of the new port.
- **UART** - This value is set to the chipset type for the new port.

15.9.2 Firmware Update (Disk On Chip / Compact Flash) Update Module

The **Firmware Update** is the new name for the **Disk On Chip/Compact Flash Update** module in ThinManager 3.1.

ACP enables some models of terminals to store the firmware with Disk On Chip or Compact Flash storage so that the unit doesn't have to download the entire firmware at boot but can boot locally and download just the configuration to save bandwidth. This is most commonly used with units that will connect over low bandwidth networks, like wireless networks or WANs. These units can use the Firmware Update module to download and flash new firmware when the firmware is updated in ThinManager.

The ability to update stored firmware terminals eliminates the need to send the terminal back to the manufacturer to update the firmware.

Note: The firmware download can vary, depending on the bandwidth of the connection and the size of the firmware update.

It is recommended that updates be done over a wired LAN instead of over a wireless connection, when possible.

The **Firmware Update** module has two configurable parameters.

- **Confirm at Terminal** - This setting, if set to **Yes**, will prompt the operator to choose between immediately updating firmware or waiting until the next boot up. If **Confirm at Terminal** is set to **No**, the firmware download will take place immediately.
- **Force Update** - Normally a stored firmware terminal with the Firmware Update module will check firmware version numbers at boot and only download a new firmware if the versions are different. This setting, if set to **Yes**, will force the terminal to always download the firmware for re-flashing.

Note: The module will download firmware when it detects a different firmware. Since this will only happen at the first reboot after updating the ThinManager firmware, it is safe to leave this module added to terminals permanently when **Force Update** is set to **No**. It does not need to be added and removed each time the firmware is updated. However, since it will update when the firmware is different, it will try to update the firmware if you boot it from a ThinManager server with older firmware.

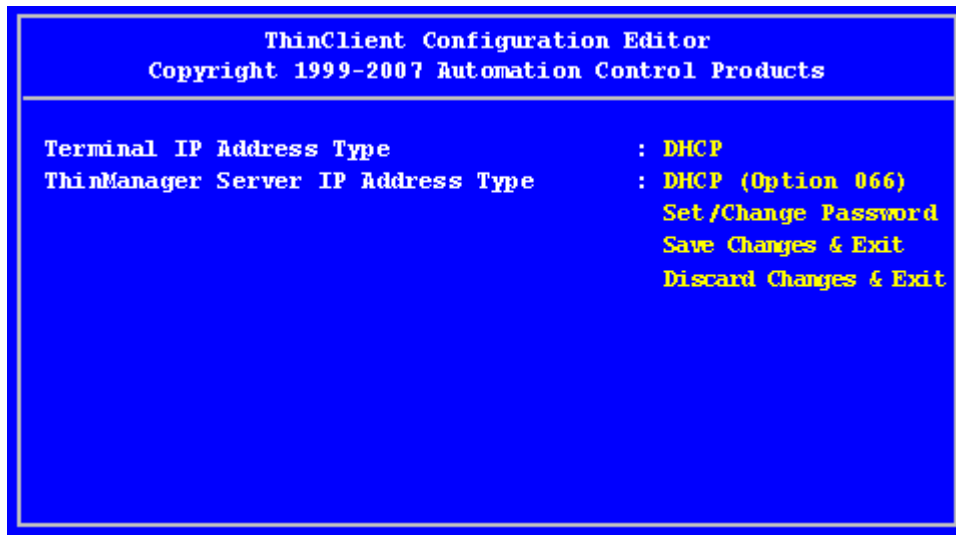
15.9.2.1 **Firmware Update Program**

Once the new firmware has downloaded, an update program will run on the terminal to rewrite the new firmware to the storage. The program will display a warning stating that the terminal must not be reset or powered off during the process, usually around 30 seconds. Ignoring the warning can corrupt the stored firmware, so it is important to leave the terminal alone for that period of time.

Note: Heed the warning. The terminal must not be reset or powered off during the brief period that the update program is writing the firmware to the firmware storage device. It is recommended that updates be done over a wired LAN instead of over a wireless connection, when possible.

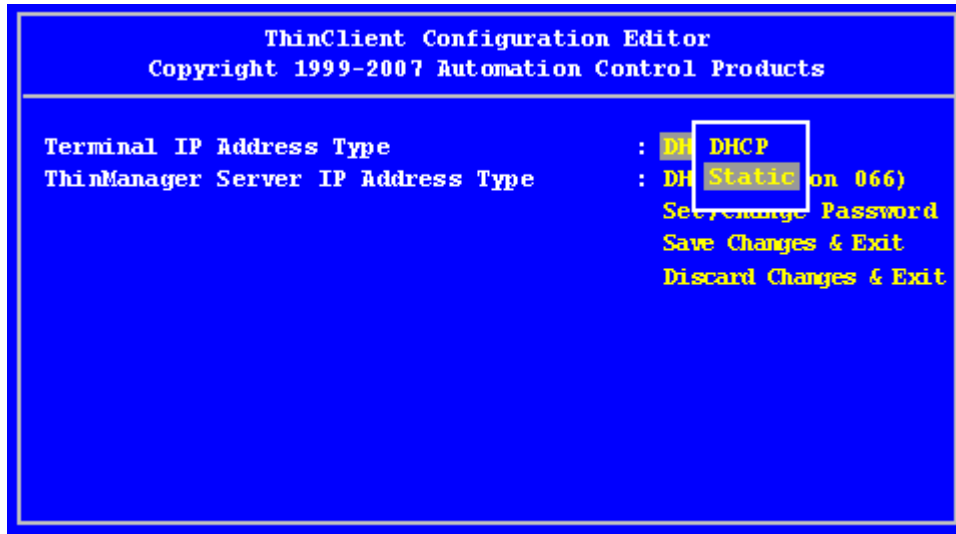
15.9.2.2 **Stored Firmware Terminal Configuration**

A stored firmware terminal loads the firmware locally before connecting to the ThinManager server. The stored firmware terminals have a setup program that allows configuration of the connection. Enter the program by selecting any key when **Select any key** to configure is displayed during the boot process. A setup screen will be displayed.



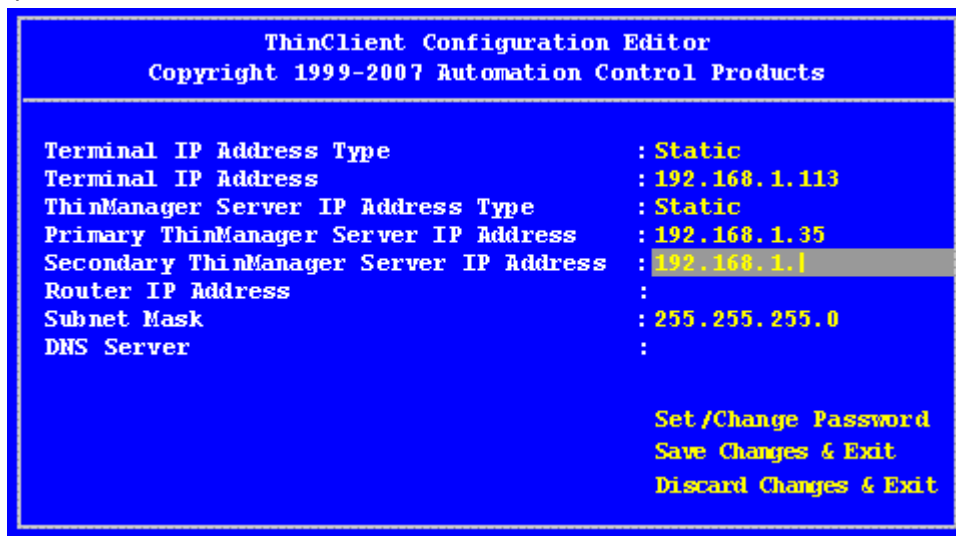
ThinClient Configuration Editor – Default Values

The IP Addressing method is set to **DHCP by default**.



ThinClient Configuration Editor – Changing Values

To change a value, navigate with arrow keys to the desired property. Pressing the **Enter** key will allow the input and acceptance of new values.



ThinClient Configuration Editor – Static IP Addresses

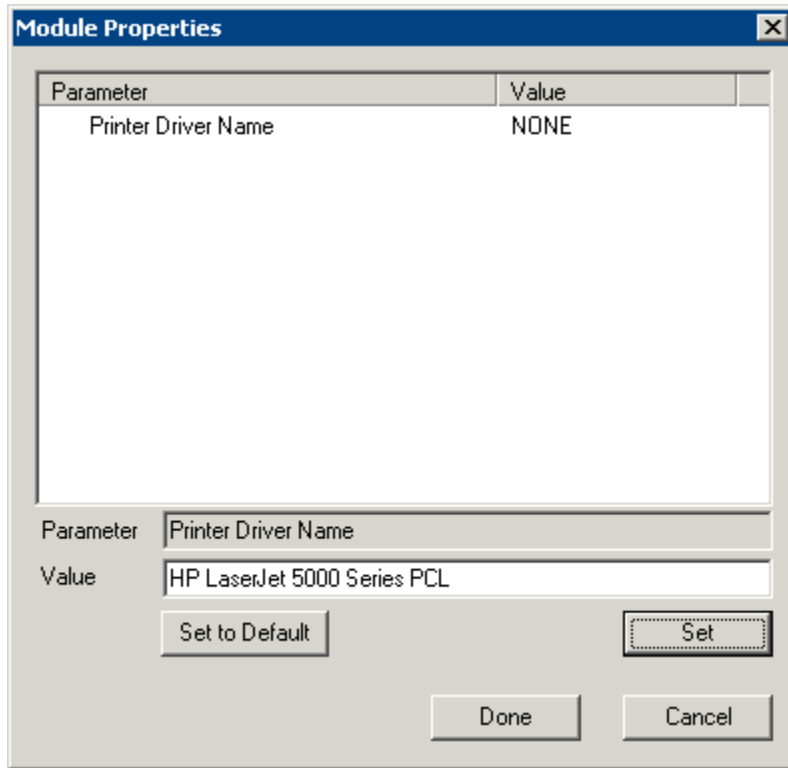
The changes may be saved or discarded before the boot process is resumed.

15.9.3 Local Print Module

The Local Print Module simplifies printing through the parallel port on thin clients.

There are three steps:

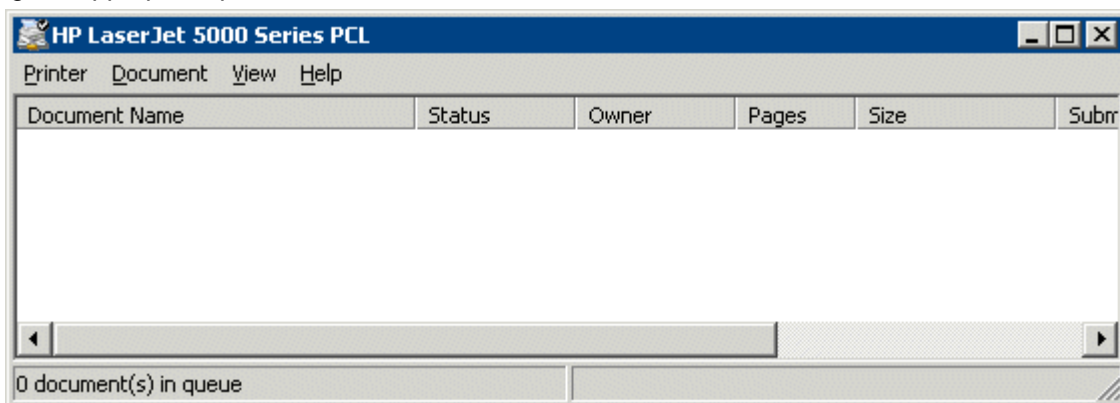
1. Install the print driver on the terminal servers that the client will connect to.
2. Add the **Local Print Module** to the thin client as described in Adding a Module to a Group or Terminal.
3. Configure the **Print Driver Name** parameter in the module to contain the print driver's name.



Local Print Module Properties

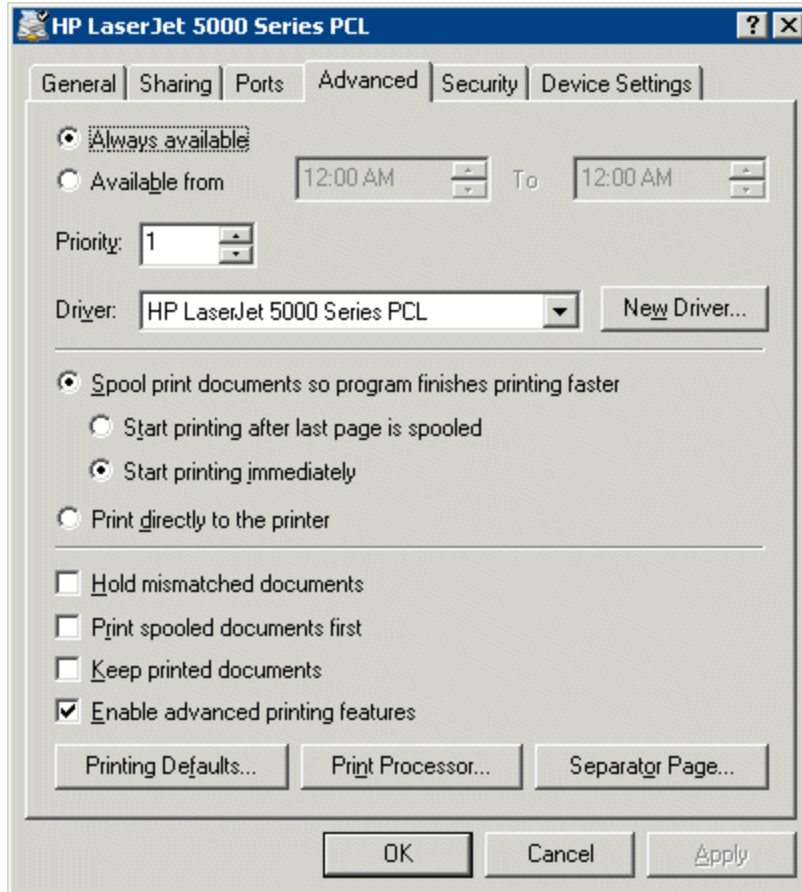
- **Printer Driver Name** - The Local Print module works when the name of the print driver is entered in the **Value** field for the **Printer Driver Name**. The Print Driver name is provided by the properties page for the printer.

The **Printer Property** page for a printer can be launched by selecting **Start > Settings > Printers** and selecting the appropriate printer. This will launch the **Printer Queue** window.



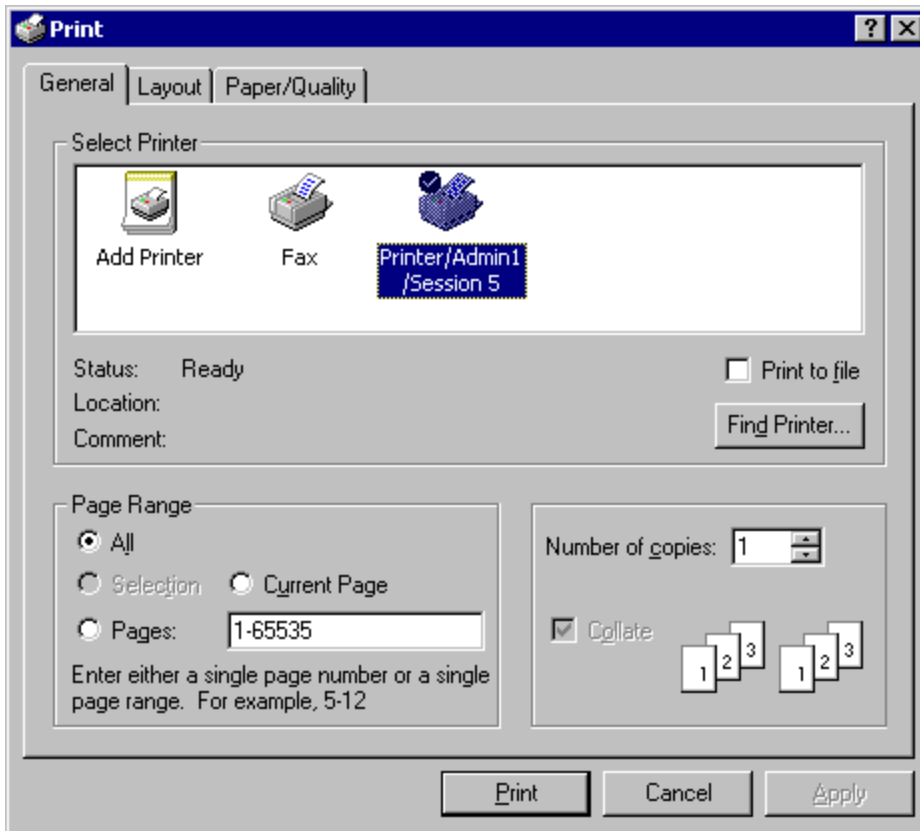
Printer Queue window

Select **Printer > Properties** to launch the **Printer Properties** page.



Advanced Printer Properties

The **Printer Property** page shows the Print Driver name on the **Advanced** tab. This is the name that needs to be entered into the Local Print Module.



Client Print Window

When printing from the client, the printer will be displayed as **Printer/username/session number** as shown in the example.

15.9.4 MultiMonitor Module



One Thin Client, Multiple Monitors, Multiple Desktops with MultiMonitor

MultiMonitor

The **MultiMonitor Module** was introduced to allow MultiMonitor capable thin clients to be configured for use with MultiMonitor before MultiMonitor was integrated into ThinManager 3.1.

Note: This module provides primitive functionality compared to the integrated settings of ThinManager 3.1+ and is no longer used.

See MultiMonitor for details.

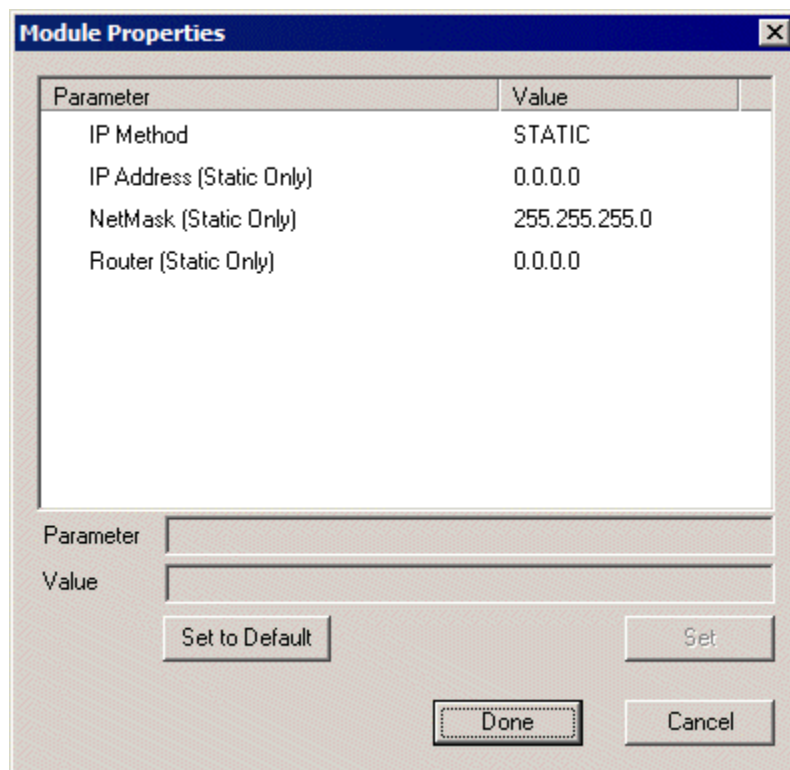
15.9.5 Redundant Ethernet Module

Some thin clients have two network ports. The Redundant Ethernet module allows the thin client to use both ports with a single IP address and a single MAC address.

The thin client will use the primary (LAN1) port under normal conditions. If this port, cable, or switch fails, the Redundant Ethernet module will allow the thin client to activate and switch to the backup (LAN2) port in a seamless fashion.

15.9.6 Second Network Module

Some thin clients have two network ports. The Second Network module allows the thin client to use both ports on different networks.



Second Network Module

- **IP Method** – This allows the second port to use DHCP or a static IP.
- **IP Address (Static Only)** – This allows the second port to be assigned a static IP address.
- **NetMask (Static Only)** – This allows the second port to be assigned a subnet mask.
- **Router (Static Only)** - This allows the second port to be assigned a router.

15.9.7 Terminal Shadow Module

This module needs to be installed in ThinManager but is not applied to a terminal. A terminal will automatically download this module if it is needed.

15.9.8 TermMon ActiveX Configuration Module

This configures the TermMon ActiveX control that collects terminal information and can perform terminal functions. It is listed as both a Miscellaneous Module and a TermSecure Module but is described in the TermSecure section.

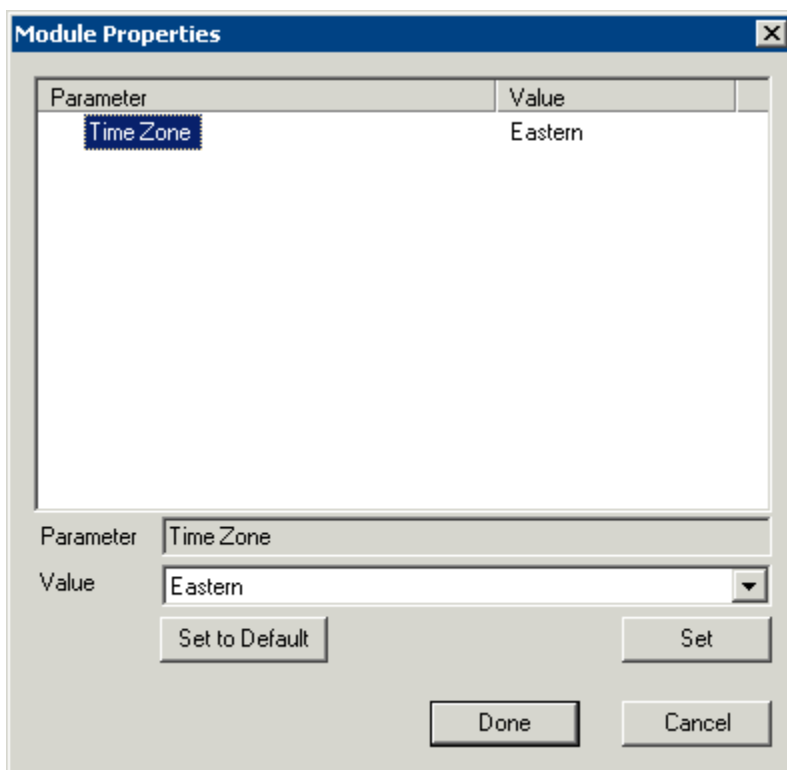
See TermMon ActiveX Control for details.

15.9.9 Terminal Shadow Module

The Terminal Shadow module enables the Terminal-to-Terminal shadowing feature that was added in ThinManager 3.2. This module isn't added to a terminal but is automatically downloaded to terminals using terminal-to-terminal shadowing. This terminal needs to be available on ThinManager and is installed automatically to ThinManager when ThinManager 3.2+ is installed or ThinManager is updated to v3.2+.

15.9.10 Time Zone Redirection Module

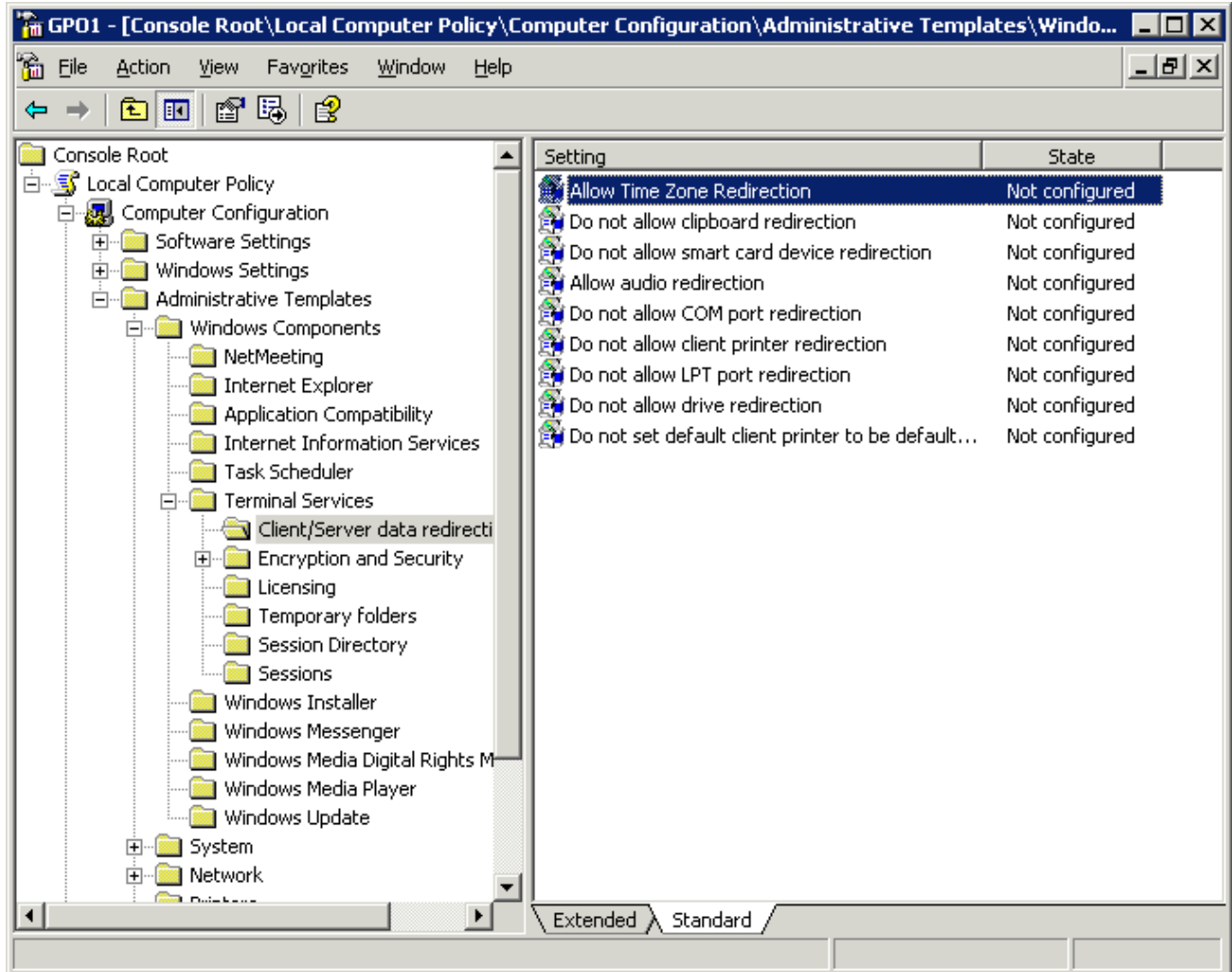
The Time Zone Redirection Module allows a terminal to display local time when it is connected to a terminal server in another time zone.



Time Zone Module Properties

- **Time Zone** - This parameter can be highlighted to activate the **Value** drop-down that contains time zones. Select the **Set** button to accept the changes.

Windows 2003 terminal servers need to have time zone redirection allowed in the Group Policy Console.



Group Policy Console

The Allow Time Zone Redirection policy is found under **Local Computer Policy\Computer Configuration\Administrative Templates\Windows Components\Terminal Services\Client/Server data redirection** folder of the Group Policy.

Please see Microsoft documentation for information on Group Policy.

15.9.11 User Override Module

The User Override Module is a temporary module that allowed users of ThinManager 3.1 to use the User Override function in Application Groups. It is no longer needed in ThinManager 3.2+.

See Display Client Override for the current method of User Override.

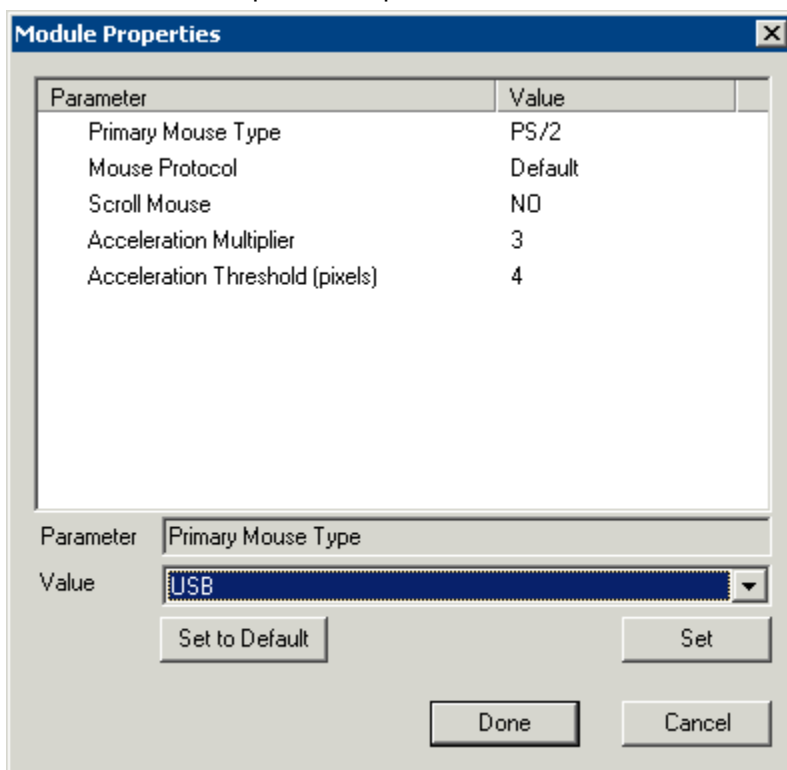
15.10 Mouse Modules

15.10.1 Mouse Configuration Module

The Mouse Configuration Module allows USB or PS/2 mice to be configured and allows the use of two mice. Configuration of mouse settings include:

- **Primary Mouse Type** - This setting allows both a PS/2 mouse and USB mouse to be used on a terminal. This setting will define which mouse is considered the primary mouse.
- **Mouse Protocol** - This value allows the selection of different protocols used by the mouse.
- **Scroll Mouse** - The value, when set to **Yes**, allows a scroll mouse to function on a terminal.
- **Acceleration Multiplier** - This value allows the mouse movement to be slowed down or sped up.
- **Acceleration Threshold (pixels)** - This value is the number of pixels a mouse must move before the acceleration multiplier takes effect.

These parameters can be changed by highlighting the parameter and choosing a new value in the **Value** dropdown box. Use the **Set** button to accept the new parameter value.



Mouse Configuration Module

ThinManager supports USB mice with the latest firmware. The **Mouse Configuration Module** allows configuration of USB mice.

A thin client can have both a USB and a PS/2 mouse installed. This module allows the selection of the primary mouse when using two mice.

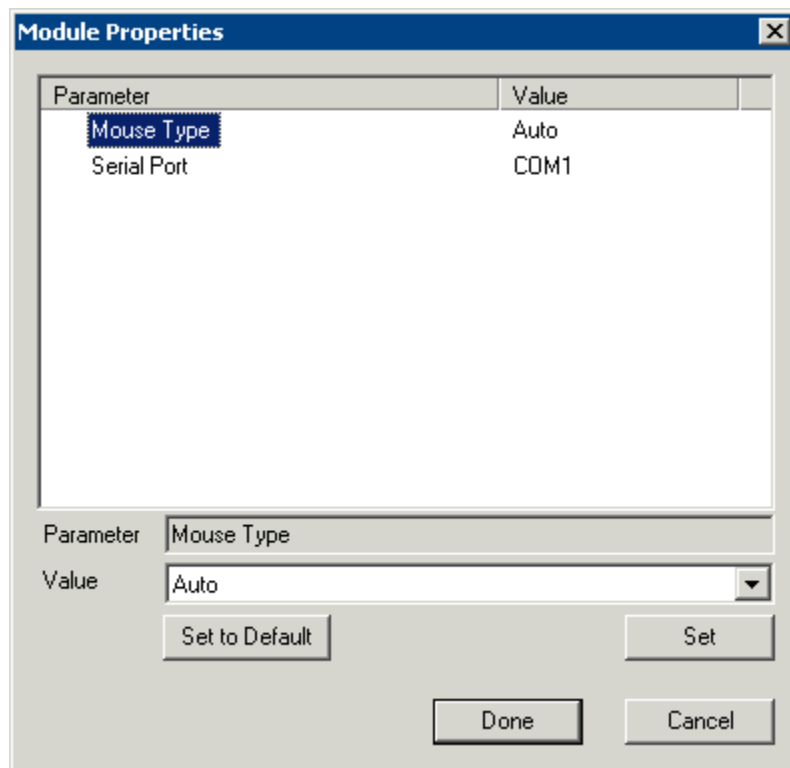
15.10.2 PS/2 Mouse Module

The PS/2 Mouse Module is the forerunner of the Mouse Configuration Module. It allows the changing of PS/2 settings like mouse type, acceleration and threshold. All of these features are now available in the Mouse Configuration Module.

- **Mouse Type** - This value allows the selection of PS/2 or USB mouse type.
- **Scroll Mouse** - The value, when set to **Yes**, allows a scroll mouse to function on a terminal.
- **Acceleration Multiplier** - This value allows the mouse movement to be slowed down or sped up.
- **Acceleration Threshold (pixels)** - This value is the number of pixels a mouse must move before the acceleration multiplier takes effect.

15.10.3 Serial Mouse Driver

The Serial Mouse Driver allows a serial mouse to be used with thin clients.



Serial Mouse Module

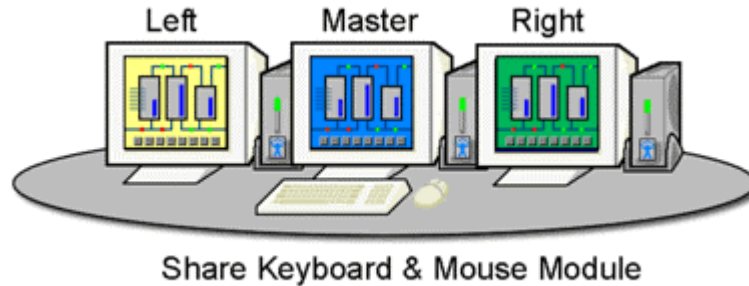
Mouse Type - This value defines what type of mouse is used.

Serial Port – Set this value to the serial port number used for the mouse.

15.10.4 Share Keyboard and Mouse Modules

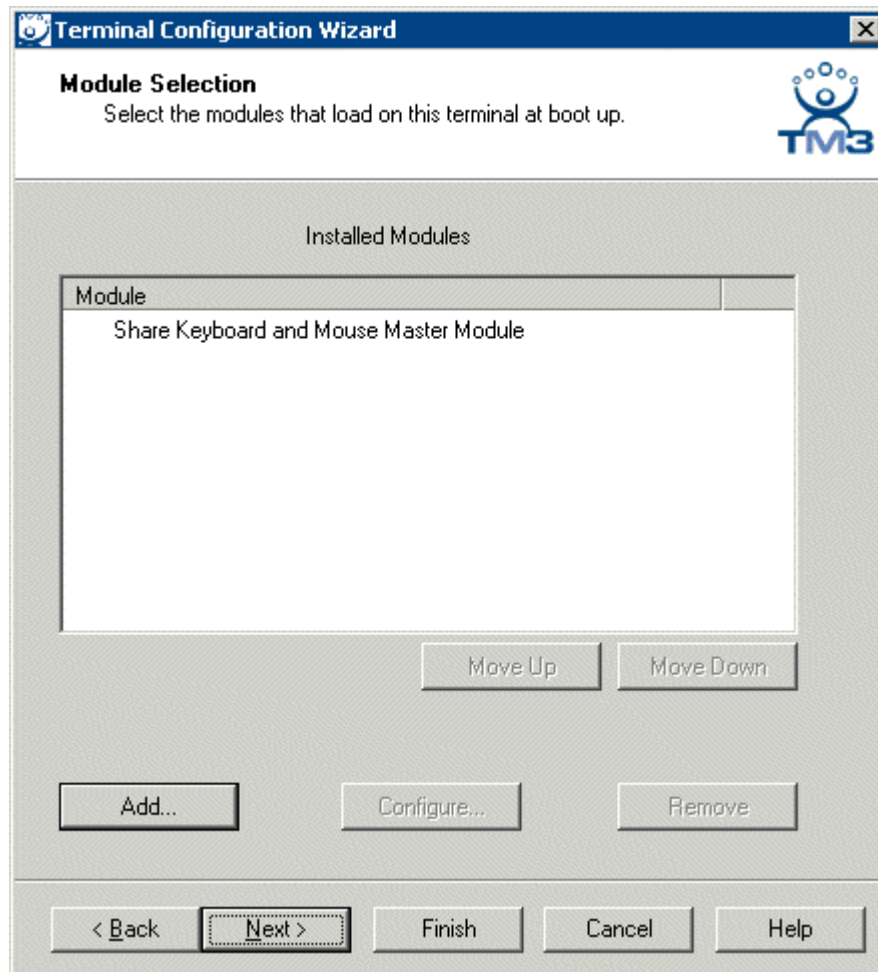
The **Share Keyboard and Mouse** module allows several thin clients to be controlled with a single keyboard and mouse without the need of a KVM switch (Keyboard/Video/Mouse).

The **Share Keyboard and Mouse** has a **Master** module that is added to the controlling terminal, and a **Slave** module that is added to the dependent terminals.



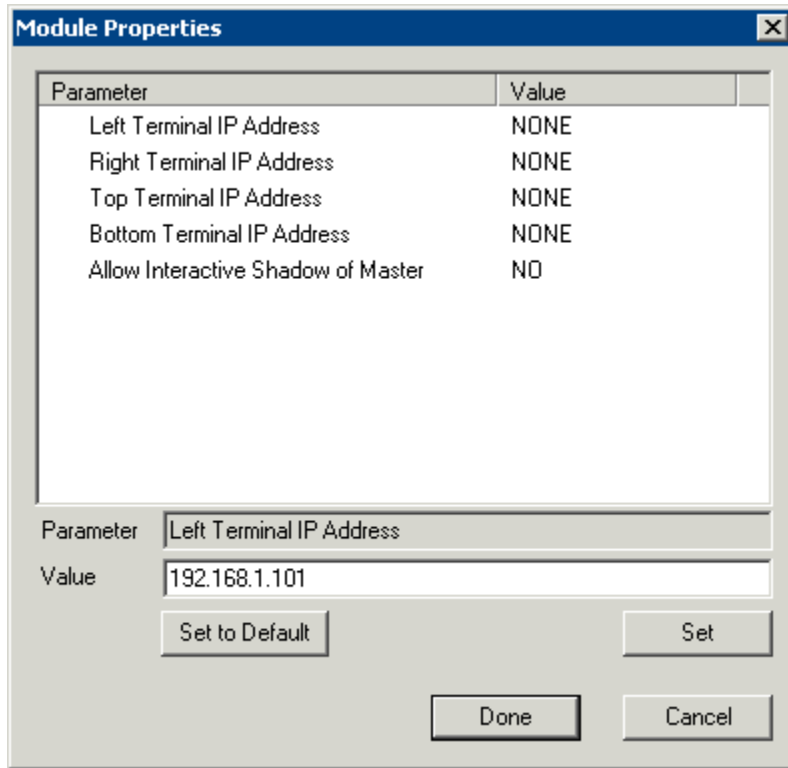
Shared Keyboard and Mouse Layout

The Share Keyboard and Mouse can be used by placing several monitors connected to thin clients side-by-side or top-to-bottom. The **Share Keyboard and Mouse Master module** is loaded on the center thin client. This module is configured by adding the IP addresses of the secondary slave thin clients. The other terminals receive the **Share Keyboard and Mouse Slave module**.



Share Keyboard and Mouse Master Module

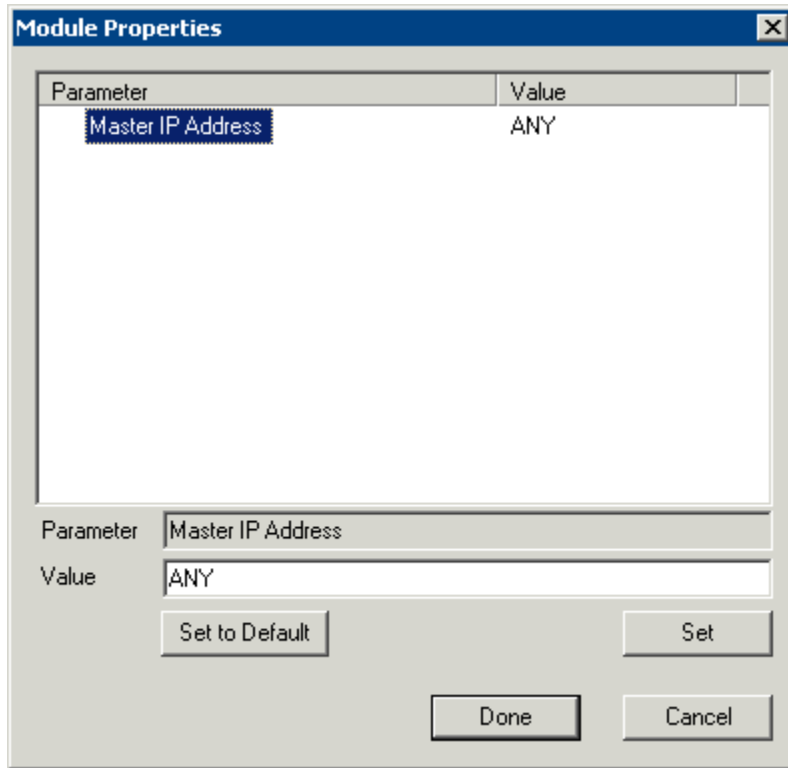
Once the **Share Keyboard and Mouse Master Module** is added to a terminal, it can be configured by highlighting it in the **Installed Module** window and selecting the **Configure** button.



Share Keyboard and Mouse Master Module Properties

- **Left Terminal IP Address** - Enter the correct IP address for the Slave terminal on the left of the master terminal, if used, and select the **Set** button.
- **Right Terminal IP Address** - Enter the correct IP address for the Slave terminal on the right of the master terminal, if used, and select the **Set** button.
- **Top Terminal IP Address** - Enter the correct IP address for the Slave terminal on the top of the master terminal, if used, and select the **Set** button.
- **Bottom Terminal IP Address** - Enter the correct IP address for the Slave terminal on the bottom of the master terminal, if used, and select the **Set** button.
- **Allow Interactive Shadow of Master** - Normally a terminal with the master module loaded is blocked from interactive shadow. If you want to allow interactive shadowing on the master, highlight the **Allow Interactive Shadow of Master** parameter, select **Yes** from the **Value** drop-down, and select the **Set** button.

The **Share Keyboard and Mouse Slave module** is loaded on the secondary thin clients using the same methods as other modules are loaded.



Share Keyboard and Mouse Slave Module Properties

- **Master IP Address** - This setting allows the slave module to be configured to connect to a specified master by entering the IP address of the master terminal and selecting the **Set** button.

Select the **Done** button when finished.

Once the ACP Enabled thin clients are booted, the mouse on the master thin client can be moved seamlessly into the other desktops. The keyboard will be active in whatever screen the mouse pointer is on.

This allows an operator to have control of several displays with only one keyboard and mouse. The mouse movement is seamless, allowing access to displays without switching.

Note: A Master Share Keyboard and Mouse session cannot be interactively shadowed in ThinManager unless it is configured to allow it.

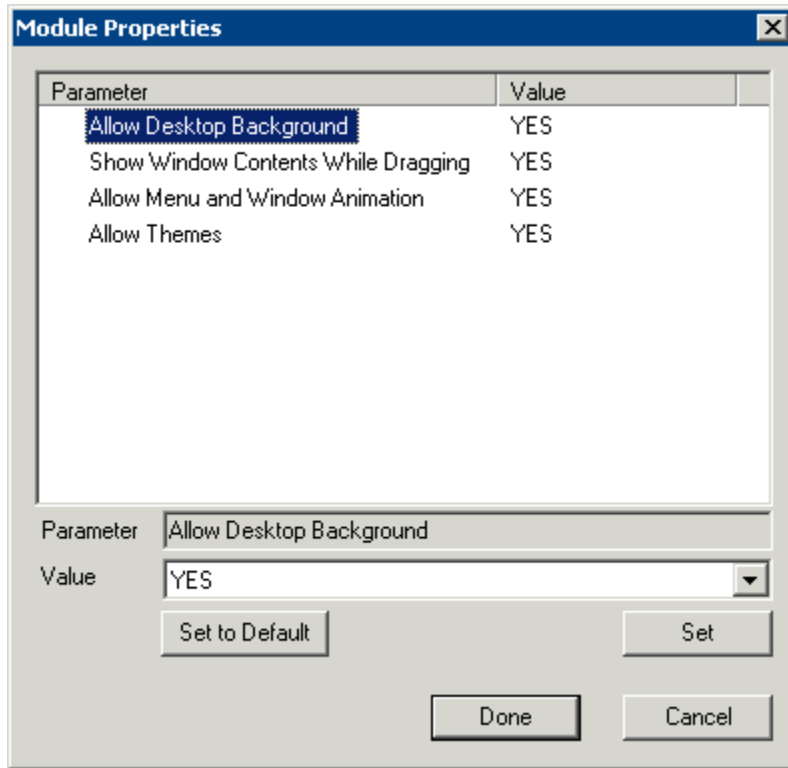
The keyboards and mice for the slave thin clients can be left attached but stowed away until a multi-user configuration is needed.

The **Share Keyboard and Mouse Master module** is licensed for each master thin client. The **Share Keyboard and Mouse Slave module** is free. Each master module can have 1 to 4 slave units. Future releases will expand the number of slaves that the master can control.

15.11 RDP Modules

15.11.1 RDP Experience Module

The RDP Experience Module allows a session connected to a Windows 2003 terminal server with RDP to add features to the session.

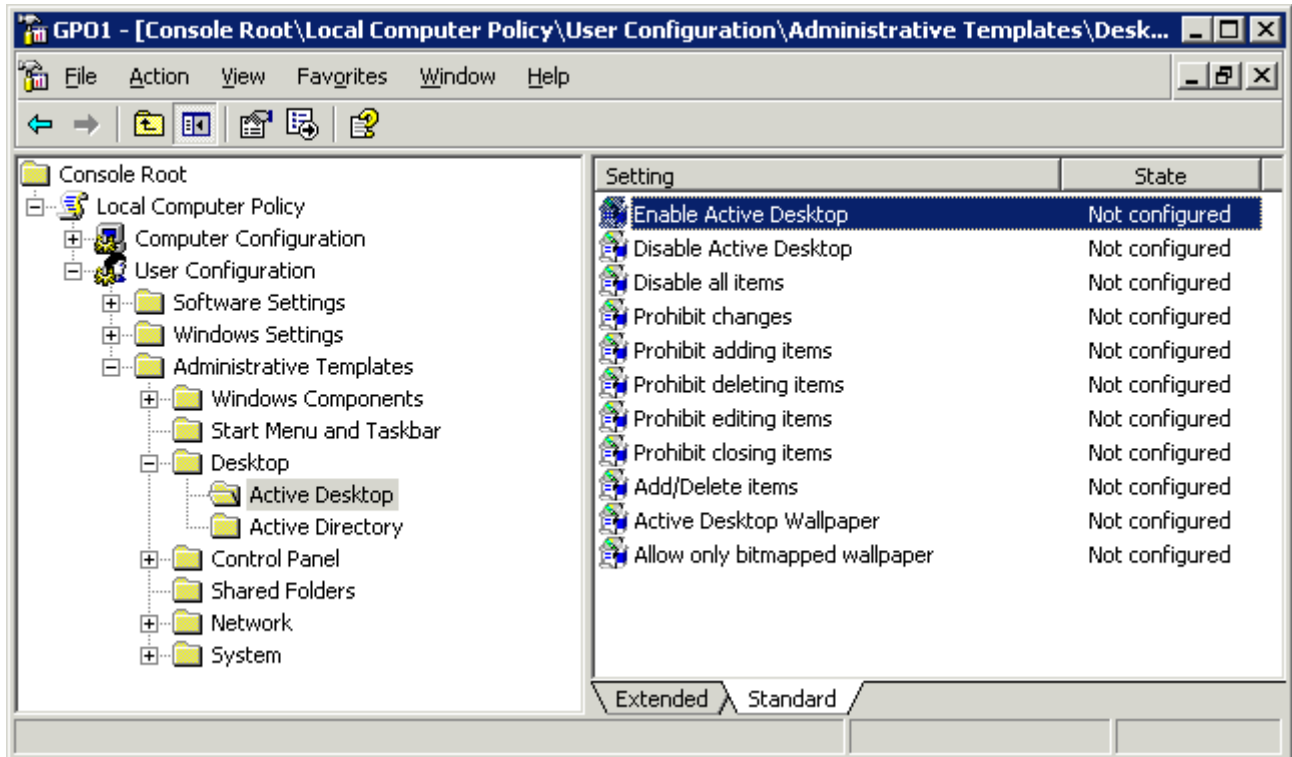


RDP Experience Module Parameters

The **RDP Experience Module** parameters are:

- **Allow Desktop Background** - This setting, if set to **Yes**, will allow a terminal to show a desktop background.
- **Show Window Contents While Dragging** - This setting, if set to **Yes**, will allow a terminal to show window contents while dragging.
- **Allow Menu and Window Animation** - This setting, if set to **Yes**, will allow a terminal to show window and menu animations.
- **Allow Themes** - This setting, if set to **Yes**, will allow a terminal to show a desktop Theme.

These features are only available with Windows 2003 Server. In order to use these features, they must be enabled by using the **Windows Group Policy Editor**. See Microsoft documentation for details.



Group Policy Console

Windows 2003 adds a variety of features that can be accessed or denied by Windows Group Policies as shown in the example. Please consult Microsoft documentation for assistance with these features.

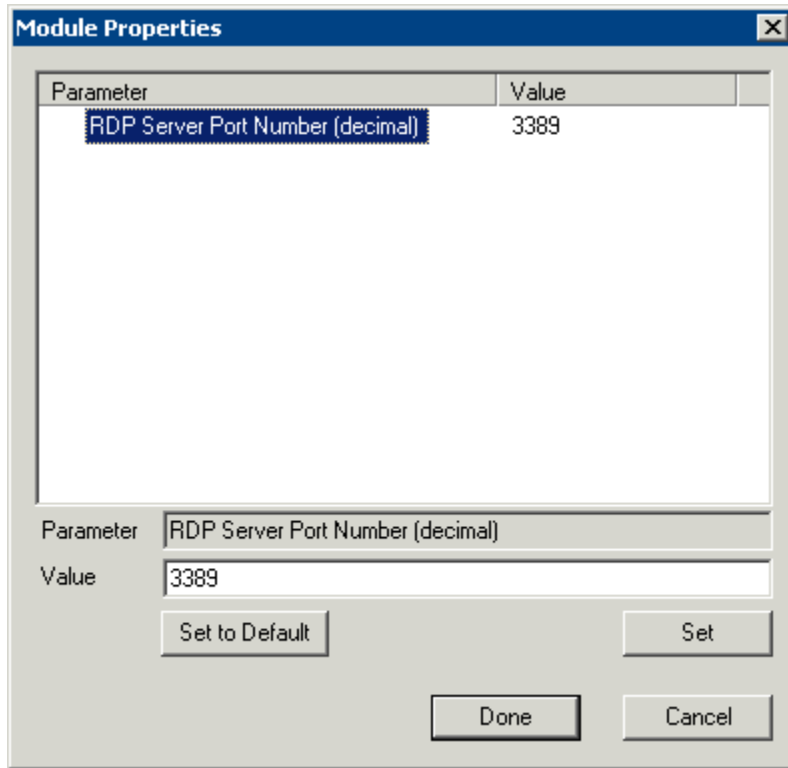
15.11.2 RDP Module for ThinManager v2.4 and Older

The **RDP Module for ThinManager v2.4 and Older** module is used to allow older versions of ThinManager to use RDP.

ThinManager didn't support RDP until the v2.4.1 release. Users with older versions of ThinManager can use the RDP client communication protocol with older versions of ThinManager by adding the RDP Module for ThinManager v2.4 and Older to the terminal and installing a ThinManager firmware that is v02.05.00 or later.

15.11.3 RDP Port Module

The **RDP Port Module** allows that port that RDP communicates to the terminal server to be changed from the default 3389 to another port.



RDP Port Module Parameters

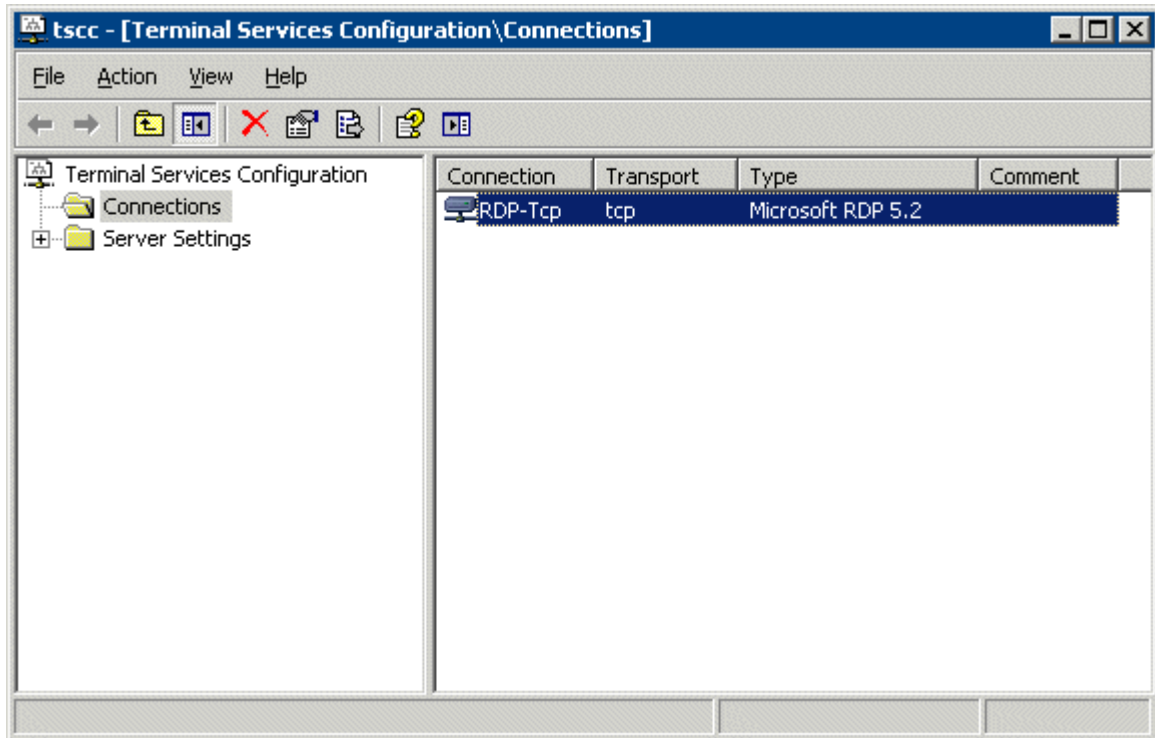
The RDP Port Module allows the port that RDP uses to be changed from the default 3389.

- **RDP Server Port Number (decimal)** - Enter the new port number for RDP in this value.

15.11.4 RDP Serial Port Redirection Module

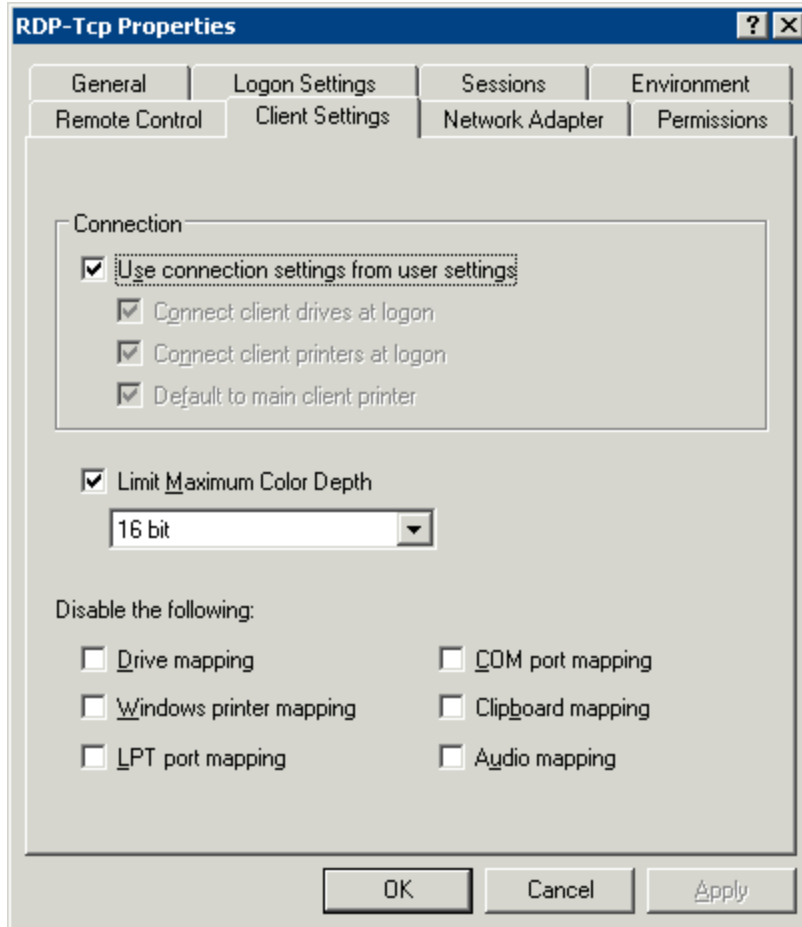
The serial ports on a thin client can be remapped by adding the **RDP Serial Port Redirection module** to the thin client without additional configuration. Once the thin client is booted, the COM1 in the session will refer to the COM1 on the terminal, while the COM2 in the session will refer to the COM2 on the terminal. This function requires Windows 2003 to work.

Additionally the **COM Port Mapping** needs to be allowed. This is done on the **Terminal Services Configuration Console**. To open the Terminal Services Configuration Console in Windows 2003 select **Start > Administrative Tools > Terminal Services Configuration**.



Terminal Services Configuration Console

Launch the **RDP-tcp Properties** page by highlighting the **Connections** folder in the tree pane and double-clicking the **RDP-tcp** in the right pane. This will launch the **RDP-tcp Properties** page.

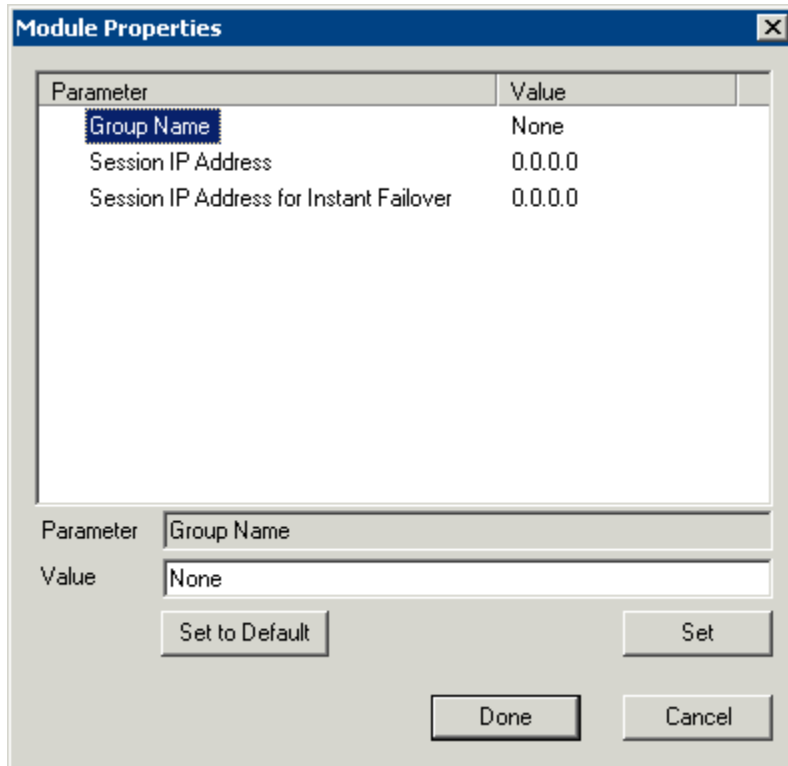


COM Port Mapping Allowed

The **Com port mapping** checkbox must be unselected to allow the **RDP Serial Port module** to function on the Windows 2003 terminal server.

15.11.5 RDP Session IP Module

The **RDP Session IP Module** allows a terminal to use an alias IP address for a specific Application Group session.



RDP Session IP Module

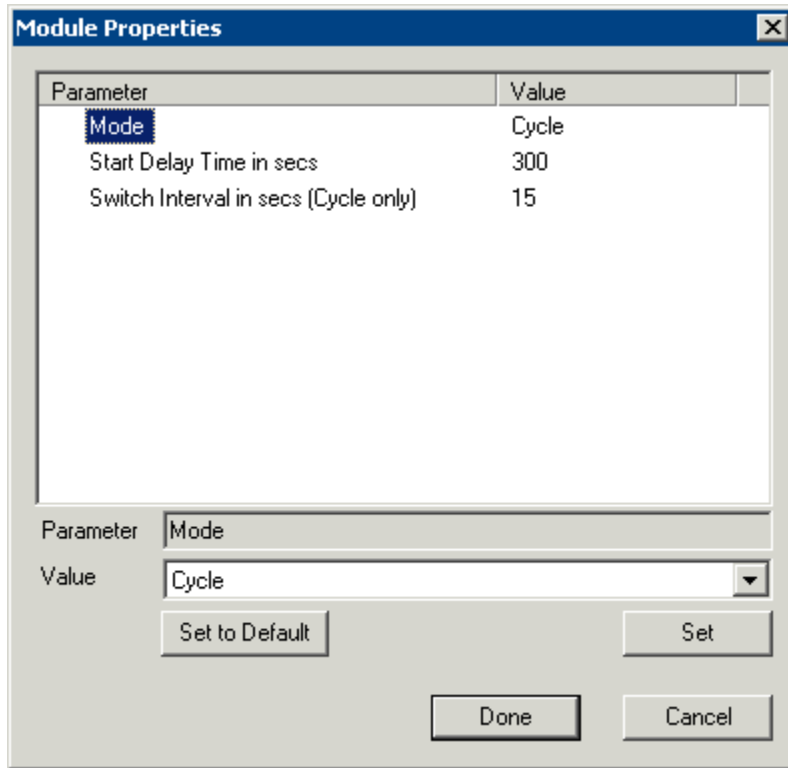
The RDP Session IP module has three settings:

- **Group Name** – This specifies the Application Group to use.
- **Session IP Address** – This is the IP address to use as the alias.
- **Session IP Address for Instant Failover** – This is the IP address to use for a backup session if the Application Group is configured to use Instant Failover.

15.12 Screen Saver Modules

15.12.1 MultiSession Screen Saver Module

The **MultiSession Screen Saver Module** is a screen saver for use on terminals configured with MultiSession. See MultiSession Overview for details.



MultiSession Screen Saver Module Parameters

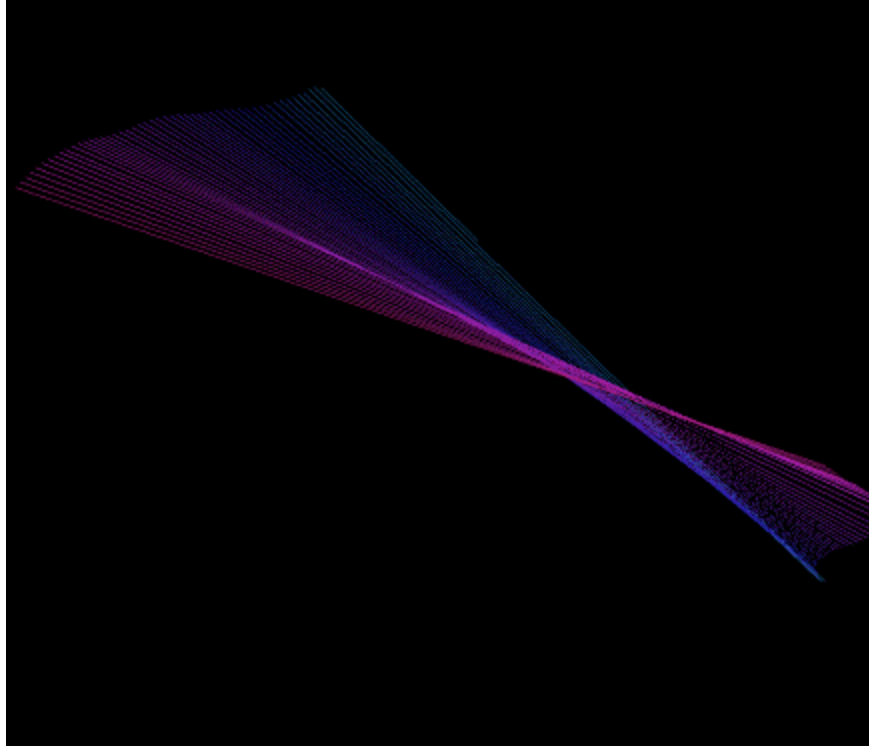
The **MultiSession Screen Saver Module** has two modes. It can be set to cycle through the MultiSession windows when the terminal is inactive, or it can be set to return to the main MultiSession screen when the terminal is inactive.

The parameters are:

- **Mode** - The **Cyclic** mode will switch between all active sessions on the terminal. The **GotoFirstGroup** mode will switch the terminal to the main session when it is inactive.
- **Start Delay Time in secs** - This is the number of seconds of inactivity that the terminal will allow before starting the screen saver.
- **Switch Interval in secs (Cyclic only)** - This is the number of seconds that the terminal will display each session when using the Cyclic mode.

15.12.2 Screen Saver Module

Screen Saver Module is a module that loads a screen saver on the client. The screen saver will run when the terminal is idle to protect the monitor. Since the screen saver runs on the client, it saves CPU resources on the terminal server.



Screen Saver on Thin Client

Module Properties [X]

Parameter	Value
Screen Saver	BlankScreen
Wait Time in Minutes	30
Use Disable Time Period	NO
Disable Start Hour (0-23)	0
Disable End Hour (0-23)	0
Force Off when Start Hour Reached	NO

Parameter:

Value:

MultiSession Screen Saver Module Parameters

The Screen Saver Module configuration includes:

- **Screen Saver** - the graphic that is displayed when the screen saver is active.
- **Wait Time in Minutes** - the length of time that the terminal needs to be idle before the screen saver starts.
- **Use Disable Time Period** - the screen saver can be set to be disabled, or unavailable during a time block. This could be used to prevent the screen saver from running during normal business hours.
 - **Disable Start Time (0-23)** - This sets the start of the disabled time block. 0 is Midnight and 23 is 11:00 p.m.
 - **Disable End Time (0-23)** - This sets the end of the disabled time block. 0 is Midnight and 23 is 11:00 p.m.
 - **Force Off when Start Hour is Reached** - If set to **Yes**, this will turn the screen saver off when the **Disable End Time** is reached.

15.13 Sound Modules

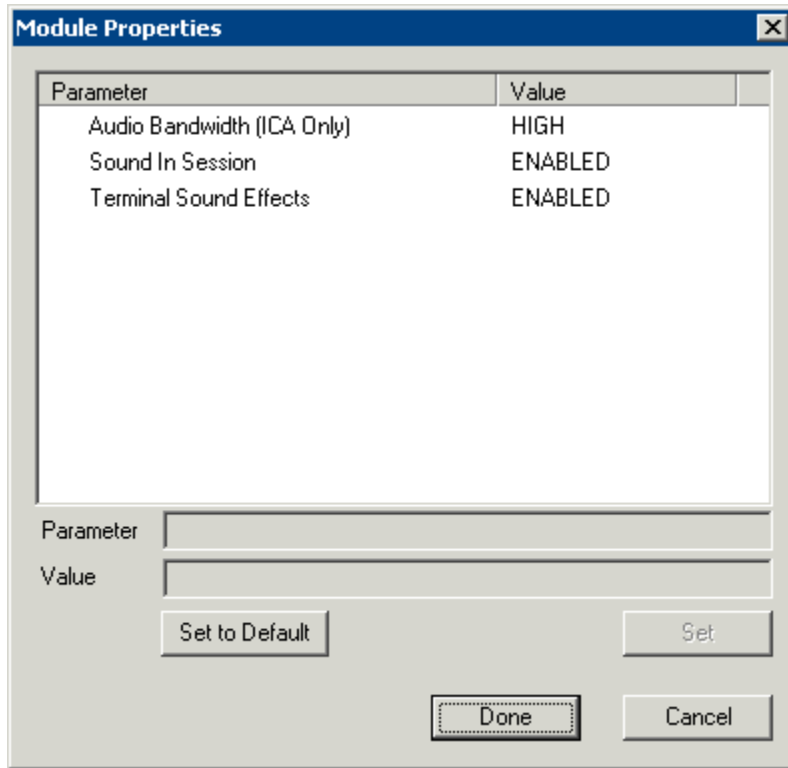
The use of sound from a thin client requires four things:

- hardware with a Line Out plug
- An amplified speaker
- The Universal Sound Driver Module
- Either a Windows 2003 Server terminal server or Citrix server-side software.

Plug the speaker(s) into the Line Out plug on the terminal, add the module, and connect to the terminal server.

ThinManager 4.1 simplifies sound by providing a **Universal Sound Driver Module**. This module can be added to any thin client that has an audio jack to enable sound.

Note: Some thin clients, like the Advantech PCM-5820, may require that a sound harness be plugged into the motherboard.



Universal Sound Driver Parameters

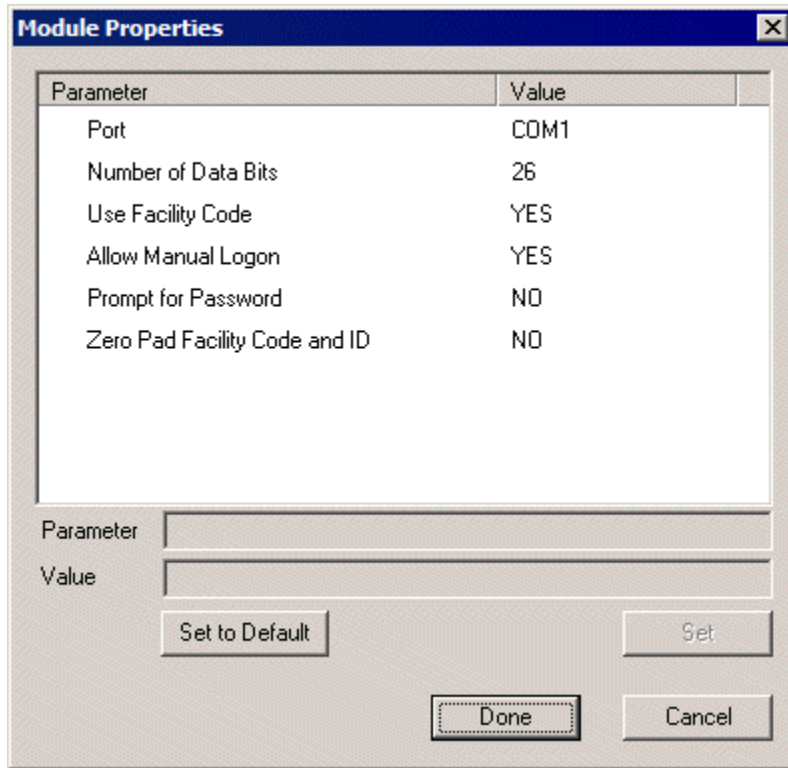
These Sound modules have several settings:

- **Audio Bandwidth (ICA Only)** - This parameter can be set to *Low*, *Medium*, or *High* bandwidth when using Citrix ICA.
- **Sound in Session** - This setting, when set to **Enabled**, will allow sound generated within the session to be played through the terminal. When this is set to **Disabled** the session sounds will be turned off but system sounds will still be generated during TermSecure login for audio feedback during the login process.
- **Terminal Sound Effects** - This setting, when set to **Enabled**, will allow terminal sound effects like TermSecure login sounds on the terminal.

15.14 TermSecure Modules

15.14.1 RF Ideas pcProx Module

The **RF Ideas pcProx Module** uses a serial device that allows a terminal to use RF Ideas pcProx cards as TermSecure ID cards



RF Ideas pcProx Module Parameters

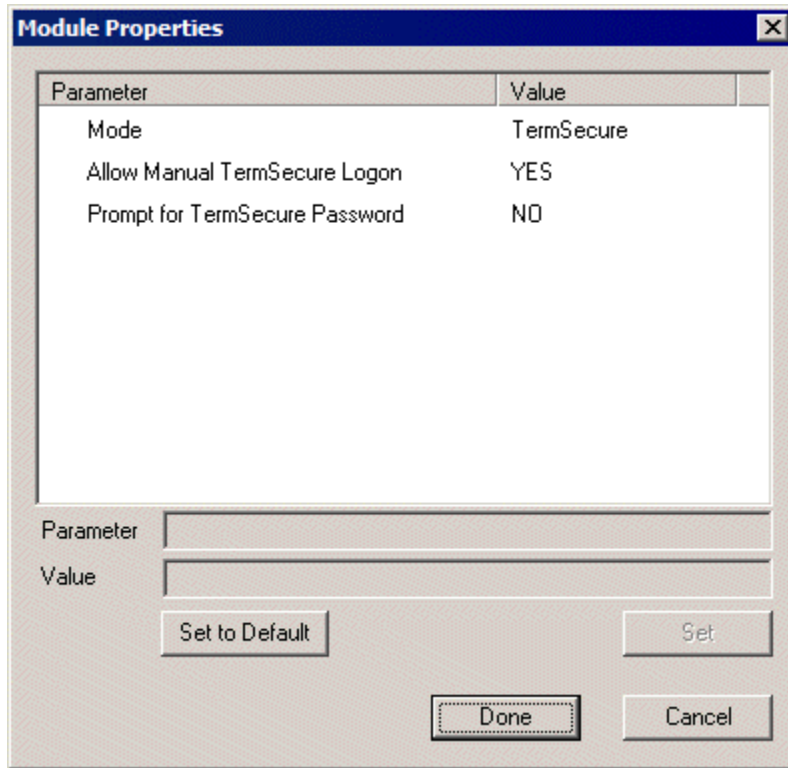
. The parameters are:

- **Port** - This selects the port that the RF Ideas pcProx card reader is installed.
- **Number of Data Bits** – Different cards use different numbers of data bits in their format. This sets the number of data bits to match that used by the card as an identifier. The choices are **26**, **37**, or **Raw**.
- **Use Facility Code** - This value, when set to **Yes**, will require the addition of the card's Facility Code to the Card / Badge ID number.
- **Allow Manual Login** - This, when set to **Yes**, will allow a TermSecure user to log into a terminal without a TermSecure ID device. If set to **No**, TermSecure users must use a TermSecure ID device to log in.
- **Prompt for Password** - This, when set to **Yes**, will require a TermSecure to enter their password for access, even if the password is configured in ThinManager.
- **Zero Pad Facility Code and ID** – This will add a zero to the number string. This is rarely needed.

See Card and Badge Configuration for a TermSecure User for details.

15.14.2 RF Ideas pcProx USB Module

The **RF Ideas pcProx USB Module** uses a USB device that allows a terminal to use RF Ideas pcProx cards as TermSecure ID cards



RF Ideas pcProx Module Parameters

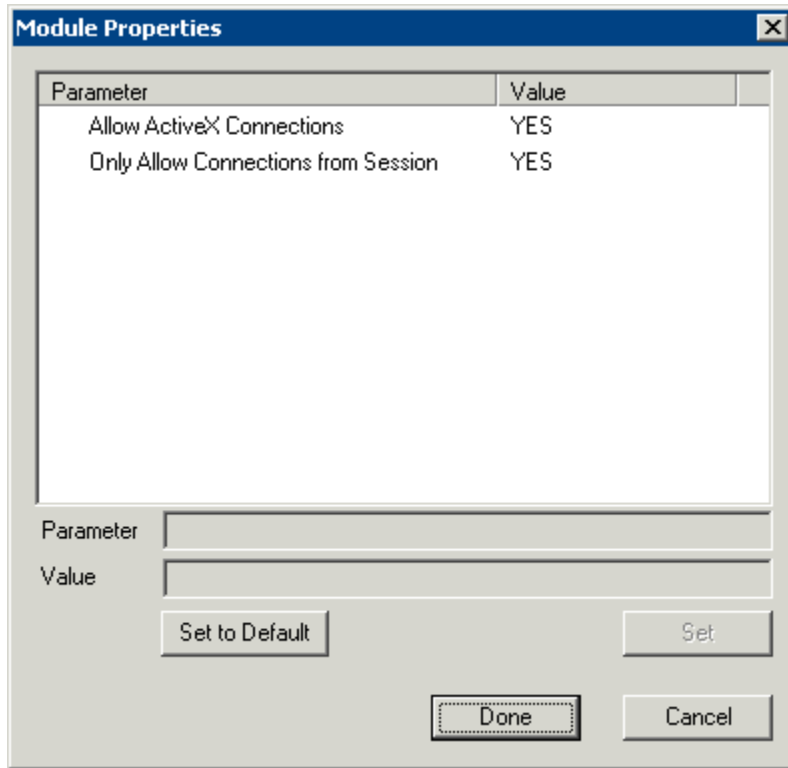
. The parameters are:

- **Mode** – This allows the device to be used in TermSecure Mode or Wedge mode. The Wedge mode sends data straight to the session as a keyboard wedge.
- **Allow Manual TermSecure Login** - This, when set to **Yes**, will allow a TermSecure user to log into a terminal without a TermSecure ID device. If set to **No**, TermSecure users must use a TermSecure ID device to log in.
- **Prompt for TermSecure Password** - This, when set to Yes, will require a TermSecure to enter their password for access, even if the password is configured in ThinManager.

See Card and Badge Configuration for a TermSecure User for details.

15.14.3 TermMon ActiveX Configuration

This configures the TermMon ActiveX control that collects terminal information and can perform terminal functions.



TermMon ActiveX Module Parameters

Normally the TermMon ActiveX, when registered on a terminal server, allows a terminal server session to communicate with its terminal and act upon it without the need of the TermMon ActiveX module. The TermMon ActiveX module can be added to the terminal configuration to either deny the default terminal server to terminal access or to allow access to other sessions and PCs.

- **Allow ActiveX Connections** - This value, when set to **Yes**, will allow the ActiveX control to function. Setting this value to **No** will prevent any ActiveX communication to the terminal, including the default terminal server to terminal access.
- **Only Allow Connections from Session** - This value, when set to **Yes**, will allow other terminal server sessions and PCs to communicate to the terminal with the ActiveX functions. If set to **No**, the only communication allowed is between the terminal and a session on the terminal server belonging to the terminal, providing that the **Allow ActiveX Connections** is set to **Yes**.

See TermMon ActiveX Control for details.

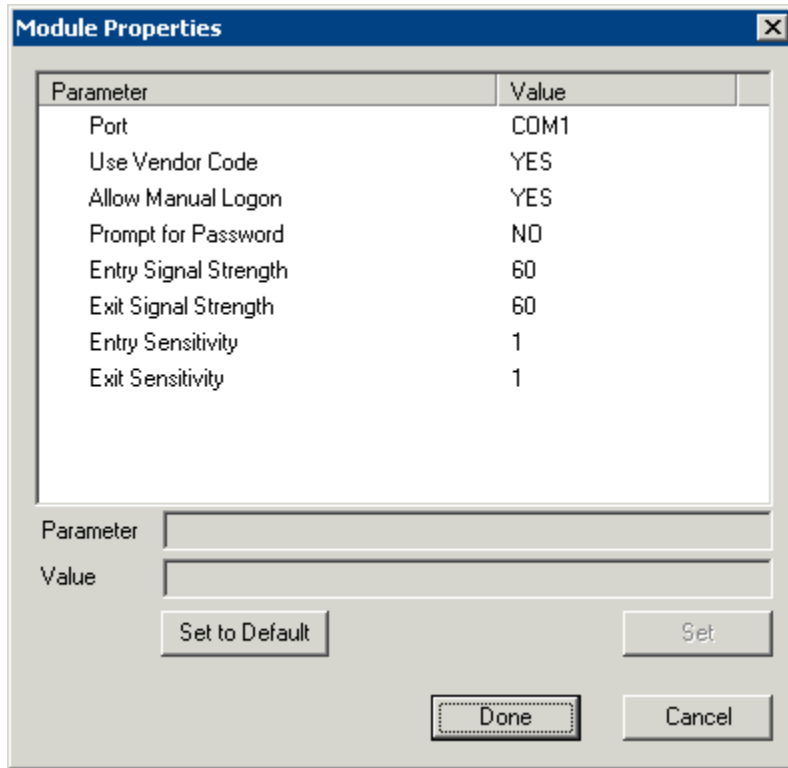
15.14.4 USB Flash Drive Module

The USB Flash Drive Module can be used to allow USB flash drives to be used as TermSecure ID devices. It is also listed under Local Storage modules.

See USB Flash Drive Module in the Local Storage Modules for details.

15.14.5 Wavetrend Tag Reader

The **Wavetrend Tag Reader Module** allows a terminal to use Wavetrend RFID cards as TermSecure ID cards. This allows a user to login through TermSecure when they approach the terminal and logs them out when they leave the area. The distance required to login and log out are configurable in the module.



Wavetrend Tag Reader Module Parameters

The parameters are:

Port - The WaveTrend Tag Reader Module connects to a thin client through the serial port. The **Port** setting specifies which COM Port the reader is attached to.

Use Vendor Code - This, if set to **YES**, includes the vendor code as part of the identifier number.

Allow Manual Login - If set to **YES**, this allows a TermSecure User to use the hotkey to initiate logins, or the device. If set to **NO**, it will force a TermSecure User to use a device to login.

Prompt for Password - **NO** allows the device to login without a password. **YES** forces every TermSecure User to enter a password after using the device.

Entry Signal Strength - The signal strength required to register the card as in range.

Exit Signal Strength - The signal strength required to register the card as out of range.

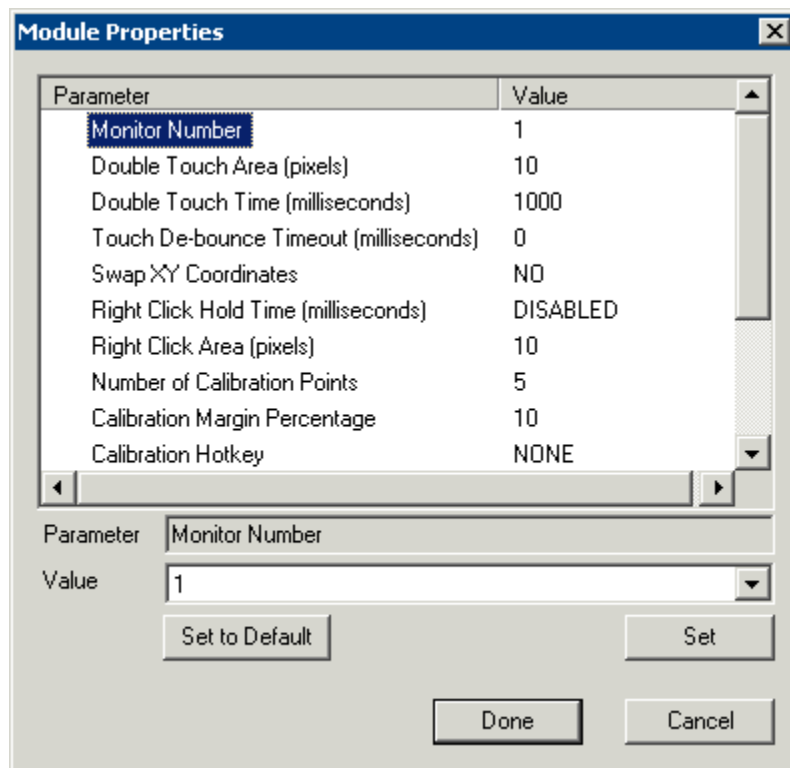
Entry Sensitivity - The number of reads above the Entry Signal Strength reads that are required to register as "Entered".

Exit Sensitivity - The number of reads below the Exit Signal Strength that are required to register as "Exited".

15.15 Touch Screen Modules

- Arista ARP-16XXXAP-ACP Touch Screen Driver
- CarrollTouch Touch Screen Driver
- Contec Touch Screen Driver
- DMC TSC Series Touch Screen Driver

- DMC Touch Screen Driver
- Dynapro Touch Screen Driver
- Elographics Touch Screen Driver
- Gunze AHL Touch Screen Driver
- Hampshire TSHARC Touch Screen Driver
- MicroTouch Touch Screen Driver
- Panjit TouchSet Touch Screen Driver
- PenMount Touch Screen Driver
- Ronics Touch Screen Driver
- Touch Control Touch Screen Driver
- Touch International IR Touch Screen Driver
- USB Touch Screen Driver
- Xycom 33XX Touch Screen Driver



Touch Screen Parameters

Some, but not all, touch screen modules have parameters that can be modified. These may include:

Connection

- **Connection Type** – Sets whether the touch screen uses Serial or USB to connect.
- **Port** or **Port (Serial Only)** – Sets the COM port that a serial touch screen is connected to.
- **Baud Rate** - Sets the speed used for communication between the terminal and the touch screen on some serial touch screens.

- **Monitor Number** – Used to specify which monitor in a MultiMonitor scheme will use for the touch screen. MultiMonitor thin clients with multiple touch screens will need a module loaded for each touch screen used.
- **Controller Type** - Sets the model of touch screen controller on some touch screens.

Calibration

- **Number of Calibration Points** – This sets the number of calibration points that the calibration program uses during the calibration process.
- **Calibration Margin Percentage** – This sets the distance from the edge of the screen that the calibration points are displayed.
- **Calibration Hotkey** – This allows a function key to be set as a hotkey so that the calibration can be launched from a keyboard.
- **Calibration Hotkey Modifier**– This setting adds **CTL or ALT** to the hotkey to launch the calibration from the keyboard, if desired.
- **Calibration Touch Down Time (seconds)** – This setting, when enabled, will launch the calibration program when the screen is touched and held for the assigned number of seconds. This cannot be used with the **Right Click Hold Time**.
- **Calibration (entered automatically)** – This is set automatically by machine. These are the values set during the calibration process.
- **Orientation (entered automatically)** - This is set automatically by machine. Used at the direction of Tech Support in error correction.
- **Swap XY Coordinates** – If X and Y are reversed, this setting will correct the orientation.

Touch Settings

- **Double Touch Area (pixels)** – This sets the size of the area that a second touch will register as a double touch.
- **Double Touch Time (milliseconds)** - The amount of time between touches that qualifies as a double touch.
- **Touch De-Bounce Timeout** - a time interval used to prevent a single touch from being registered as multiple touches.

Right Click

- **Right Click Hold Time (milliseconds)** - This setting, when enabled, will treat a touch that is held for the assigned number of seconds as a **Right Click** of the mouse. This cannot be used with the **Calibration Touch Down Time**.
- **Right Click Area (pixels)** - This sets the size of the area that a second touch will register as a right click.

15.15.1 USB Touch Screen Driver Module

The USB Touch Screen Driver Module is designed to be used by any touch screen that uses a USB connection to the thin client.

15.16 Video Driver Modules

The method of downloading video drivers was changed in ThinManager 3.0. In previous versions all of the video drivers were contained in the firmware and were downloaded at boot. In v3.0 the video was split out of the firmware and each thin client will only download the video driver that it needs.

One does not need to add the video module to the terminal but only needs to have the video module installed in ThinManager to make it available. As each terminal connects to ThinManager it will download the correct module.

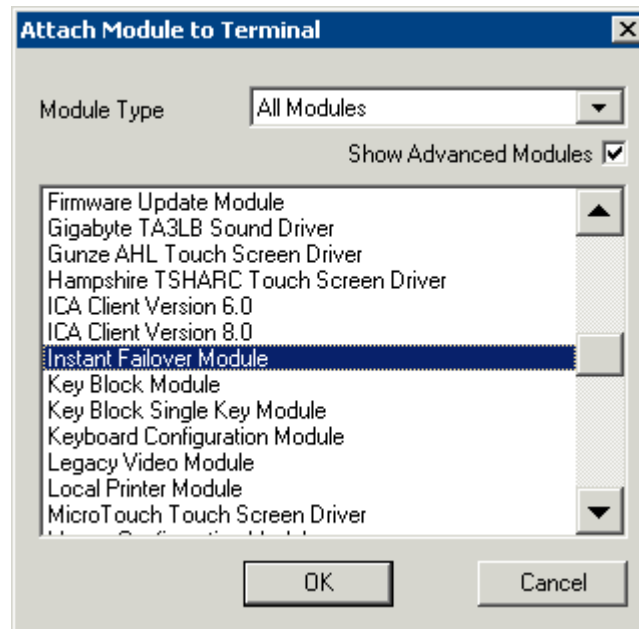
These modules are normally installed with ThinManager. See [Installing a Module](#) to see how to update or add new modules.

Note: Users with ThinManager 2.6 and earlier may need to add the individual video module to the terminal if using certain models of thin clients. This doesn't apply to ThinManager 3.0 and later. See <http://www.thinmanager.com/support/downloads.shtml> for details.

15.17 Advanced Modules

Advanced Modules are modules that are rarely used because they address a limited specific issue and are not needed in normal configurations. These include the Core Video Modules, Legacy Video Module, ICA Client Modules, and Instant Failover Module.

These modules are hidden unless the **Show Advanced Module** checkbox is selected on the **Attach Modules to Terminals** window.



Advanced Module -Instant Failover

15.17.1 ICA Client Version 6.0/ ICA Client Version 8.0

The **ICA Client Module Client Version 8.0** is a module is not added to terminals but needs to be installed in ThinManager for terminals using the ICA protocol. If a terminal is configured to use the ICA client

communication protocol on the **Terminal Server Specification** page of the **Terminal Configuration Wizard**, the terminal will automatically download the v8.0 module to enable ICA functionality.

If a user wants to use the 6.0 version of the ICA protocol they will need to add the **ICA Client Module Client Version 6.0** to the terminal.

15.17.2 Instant Failover Module

The **Instant Failover Module** is to be used only with terminal configurations that use the legacy “Individual Terminal Servers” method instead of the preferred Display Clients method.

Since the use of Display Clients is a preferred method of getting terminal services sessions over using the legacy “Individual Terminal Servers” the module is hidden from view unless the Show Advanced Modules checkbox is selected.

Instant Failover allows a terminal to connect to a session on two terminal servers. Both sessions are active but only one is displayed. If the first terminal server fails, the second session is immediately displayed, eliminating any downtime due to terminal server failure. See Instant Failover for details.

Note: The Instant Failover Module is only used with terminals using Individual Terminal Servers. (See Terminal Server Specification Page).

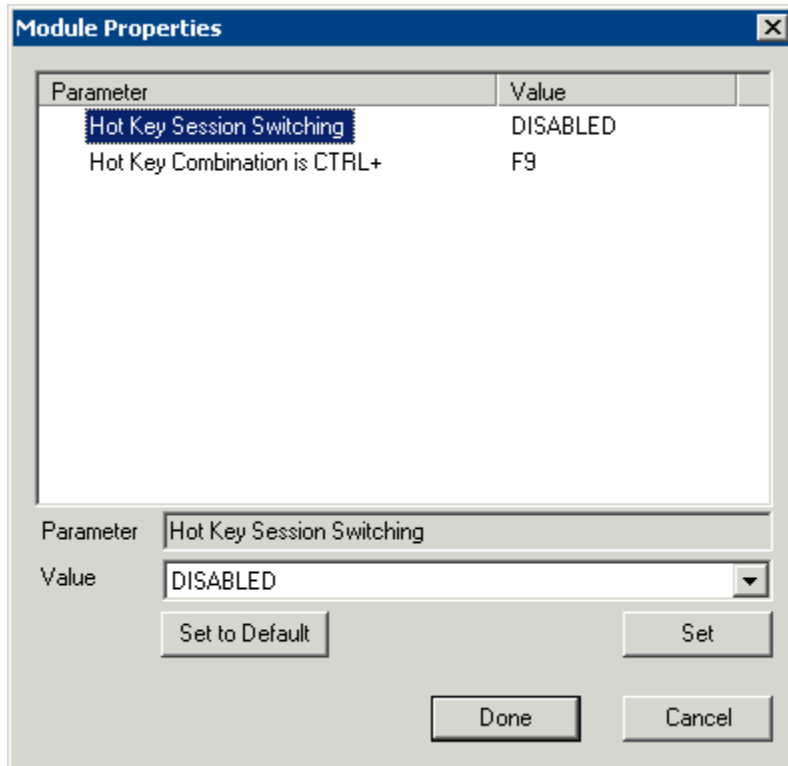
Terminals using Application Groups use a checkbox to enable Instant Failover. (See Instant Failover with Terminal Services Display Clients).

Do not use this module while using Application Groups.

The Instant Failover function requires an Instant Failover license for each terminal that uses it.

15.17.2.1 Instant Failover Configuration When Using Individual Terminal Servers

The thin client cascades both sessions, with the primary in front. You cannot see the secondary session as it is hidden in back. There is an option that allows one to switch between sessions with a hot key.



Instant Failover Module Properties

- **Hot Key Session Switching** - If this parameter is set to **Enabled**, the hot key combination will allow the toggling between sessions.
- **Hotkey Combination is CTRL+** - The value of the hot key is defaulted to **CTRL+F9** but can be assigned to any function key.

15.17.2.2 Advanced Video Modules

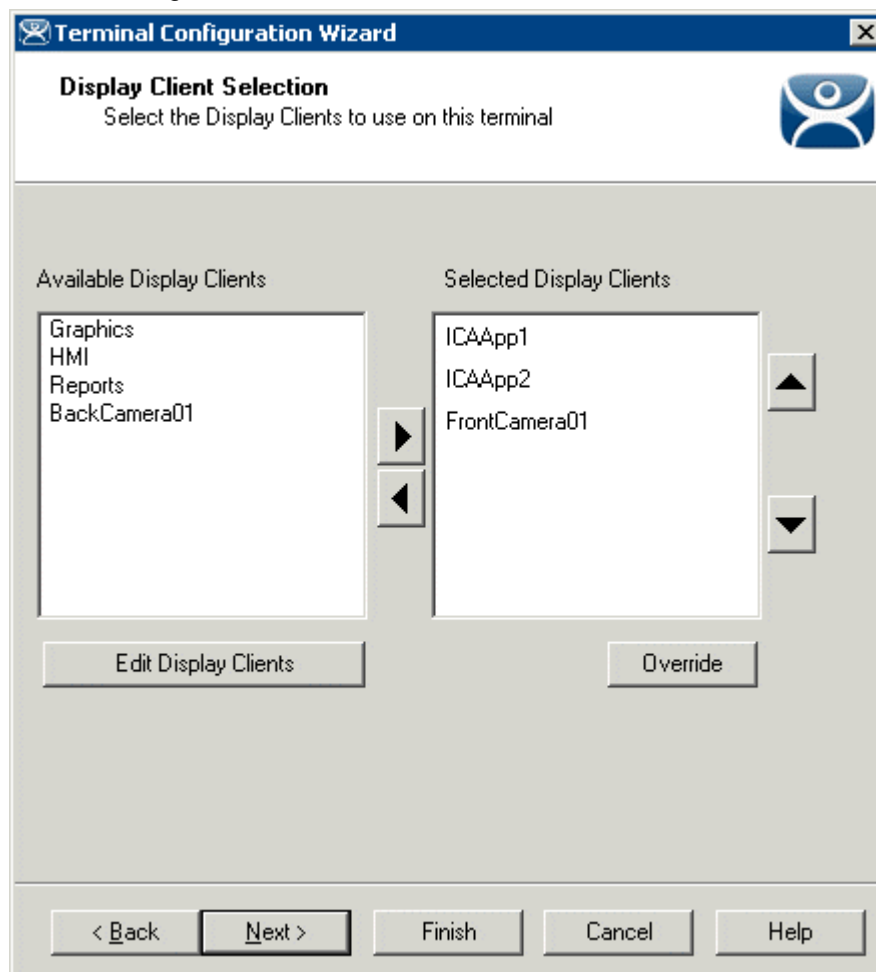
The Core Video Module, Core Video2 Module, and Legacy Video Module do not need to be added to a terminal but need to be installed in ThinManager. The terminal will download it if needed. These modules are installed during ThinManager installation so should not be a concern.

16 Citrix ICA

ACP ThinManager supports two client/server communication protocols, the Microsoft® RDP and the Citrix ICA. Terminals and Display Clients can be configured to use one or the other with a simple radio button.

16.1 Terminals Using Display Clients with ICA

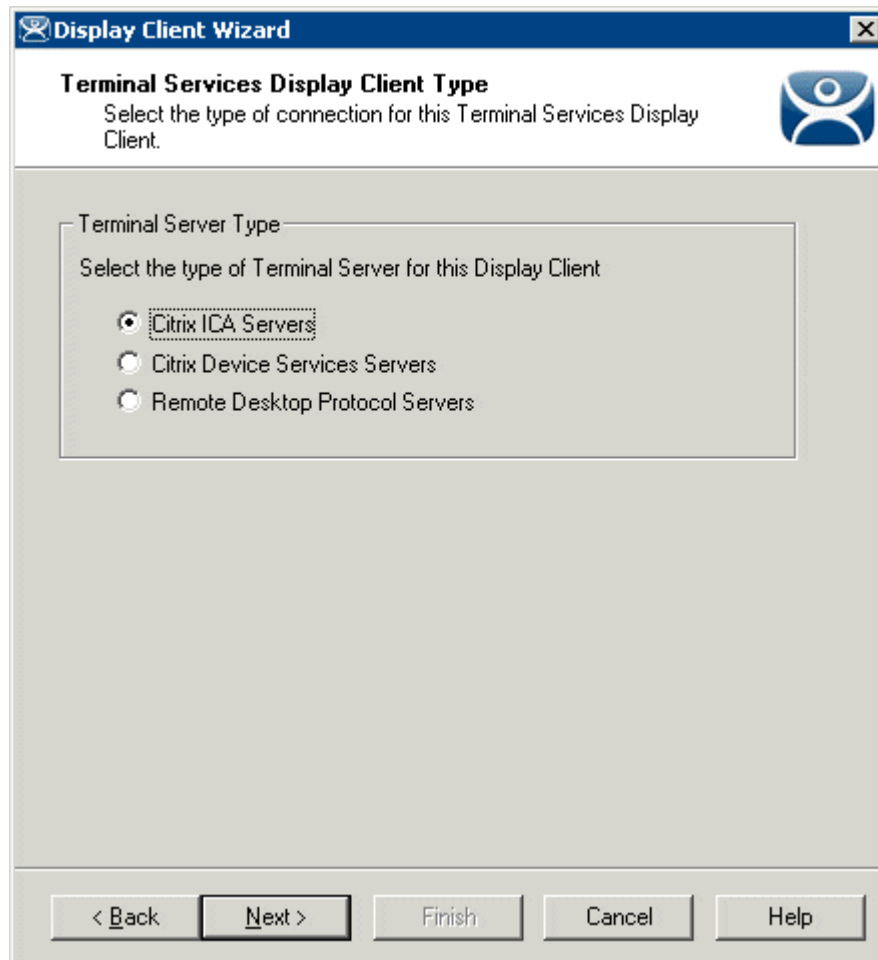
If a terminal is using the display clients to receive applications then Terminal Services Display Clients can be configured to use the ICA protocol. These display clients will show up in the Available Display Clients list on the Display Client Selection Page.



Select the desired Display Clients from the Available Display Clients list and move them to the Selected Display Clients list. The terminal will use the Display Clients selected, both RDP and ICA.

16.2 Display Client Configuration Wizard

A Display Client can be configured to use the ICA protocol on the **Terminal Services Display Client Type** page of the **Display Client Configuration Wizard**.



Terminal Services Display Client Type Page

Importance of Page: Configures the Display Client to use the Citrix ICA Protocol

Settings:

- **Citrix ICA Servers** – This allows the Display Client to use the Citrix ICA as its protocol.
- **Citrix Device Services Servers** – This allows the Display Client to use archaic Device Services Servers.
- **Remote Desktop Protocol Servers** – This uses the default Microsoft © RDP as its protocol.

Why Change from Default Settings: You need to select the **Citrix ICA Servers** to use the ICA protocol. Select **Next** to continue.

16.2.1.1 Citrix ICA Page

The screenshot shows a window titled "Display Client Wizard" with a sub-header "Citrix ICA". Below the sub-header is the instruction "Enter the ICA options for this display client". The main area contains three input fields: a dropdown menu labeled "Select Encryption Level" with "Basic" selected, a text box labeled "Enter the ICA Browser Address", and a checkbox labeled "Use a Citrix Published Application" which is unchecked. Below the checkbox is another text box labeled "Enter the name of the Published Application". At the bottom of the window are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Citrix ICA Page

Importance of Page: Configures the Citrix Settings

Settings:

- **Encryption Level** – This drop-down sets the Citrix encryption level.

Fields:

- **ICA Browser Address** – Entering the ICA browser address aids in connection across routers, subnets, and domains.
- **Enter the name of a Published Application** - This field allows the desired published application to be designated when the **Use a Citrix Published Application** checkbox is selected.

Checkbox:

- **Use a Citrix Published Application** – This checkbox, if selected, will allow usage of Citrix Published Applications to deploy programs to the thin client.

Why Change from Default Settings: Check the **Use a Citrix Published Application** checkbox and enter the published application in the **Enter the name of a Published Application** field to use an ICA published app..

This finishes the wizard, graying out the **Next** button and activating the **Finish** button.

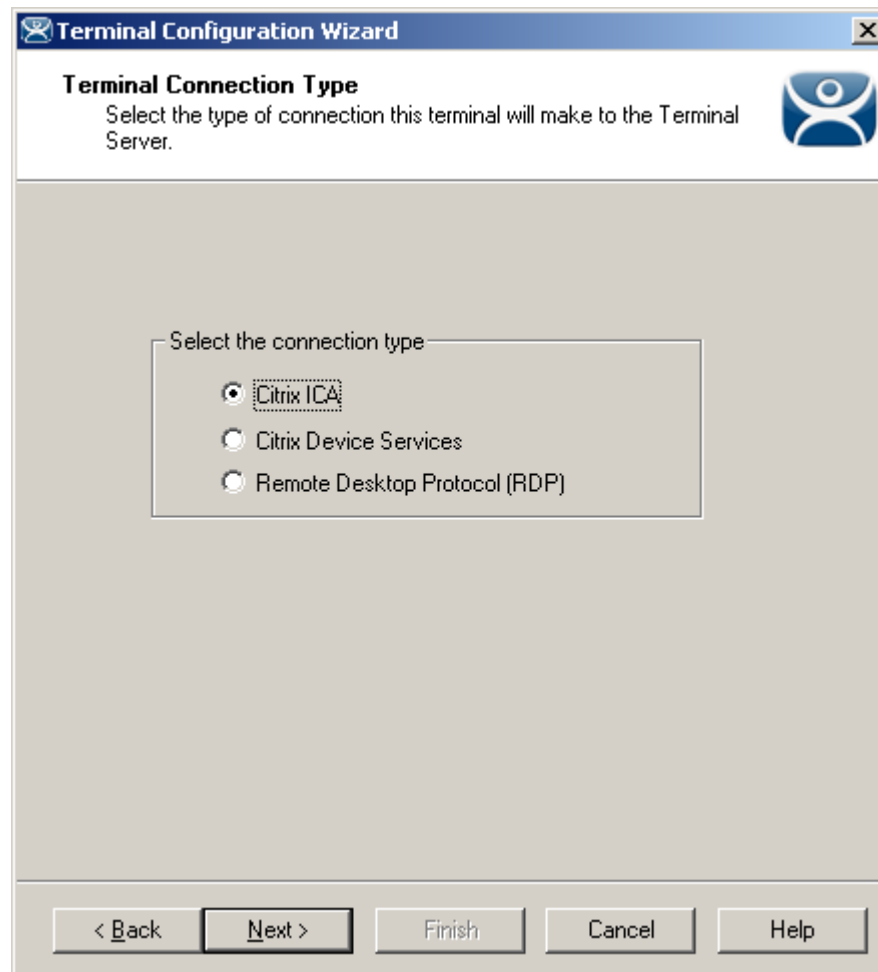
Note: Published Application should have a continuous name and not contain spaces.

If the Display Client is using a Citrix Published Application the wizard will finish with this page.

If the Display Client is not using Citrix Published Application the wizard will continue to allow the selection of Terminal Servers that are configured to use the ICA protocol. See the Terminal Server Capabilities Page for details.

16.2.2 Terminal Using Citrix and Individual Terminal Servers

The **Terminal Connection Type** page of the **Terminal Configuration Wizard** allows the selection of the desired Client Communication Protocol on terminals is using the legacy “Individual Terminal Servers” instead of the preferred Display Client method.



Terminal Configuration Wizard - Connection Type

Select the **Citrix ICA** radio button to use the ICA protocol.

Once the **Citrix ICA** protocol is selected the wizard will display the **Citrix ICA Configuration** page.

16.2.2.1 Citrix ICA Configuration Page

Terminal Configuration Wizard

Citrix ICA Configuration
Choose the settings for Citrix ICA.

Encryption

Basic

Are you using Published Applications?

Yes

No

< Back Next > Finish Cancel Help

Terminal Configuration Wizard - Citrix ICA Configuration

Importance of Page: Sets the ICA encryption Level and enables use of Published Applications.

Fields:

Encryption - The Encryption drop-down box sets the level of Citrix encryption.

Buttons:

- **Are you using Published Applications** – This allows the usage of Citrix Published Applications for deploying programs.

Why Change from Default Settings: Citrix ICA has a feature called **Published Applications**. If you are using Published Applications, select the **Yes** radio button, then select the **Next** button to continue to the **Citrix Published Application** dialog.

If you are not using Published Applications, select the **No** radio button, then select the **Next** button to continue to the **Terminal Server Selection** page.

16.2.2.2 Citrix Published Applications Page

Citrix Published Applications

Enter the published application this terminal should run. Enter the ICA browser if necessary to help the terminal find the published application.

Published Application Name

ICA Browser

< Back Next > Finish Cancel Help

Terminal Configuration Wizard - Citrix Published Applications

Importance of Page: Defines what Citrix published application to have the terminal

Fields:

- **Published Application Name** – Enter the name of the desired published app you wish to run.
- **ICA Browser** – Enter the ICA master browser name, if needed.

Why Change from Default Settings: Allows use of a published application.

Enter the name of the desired Published Applications in the **Published Applications Name** field. Do not use spaces in the name when creating a Published Application for Terminal Services.

Citrix uses ICA Browsers as part of the system. Because the ICA client may have problems detecting an ICA browser across a router or switch, an **ICA Browser** field is provided for entering the name of an ICA browser.

Select the **Finish** button to create the Terminal, or select the **Next** button to rejoin the main configuration path to configure more options.

Terminals using the **Select Individual Terminal Servers** will be shown the Terminal Server Selection page where the desired terminal servers can be selected.

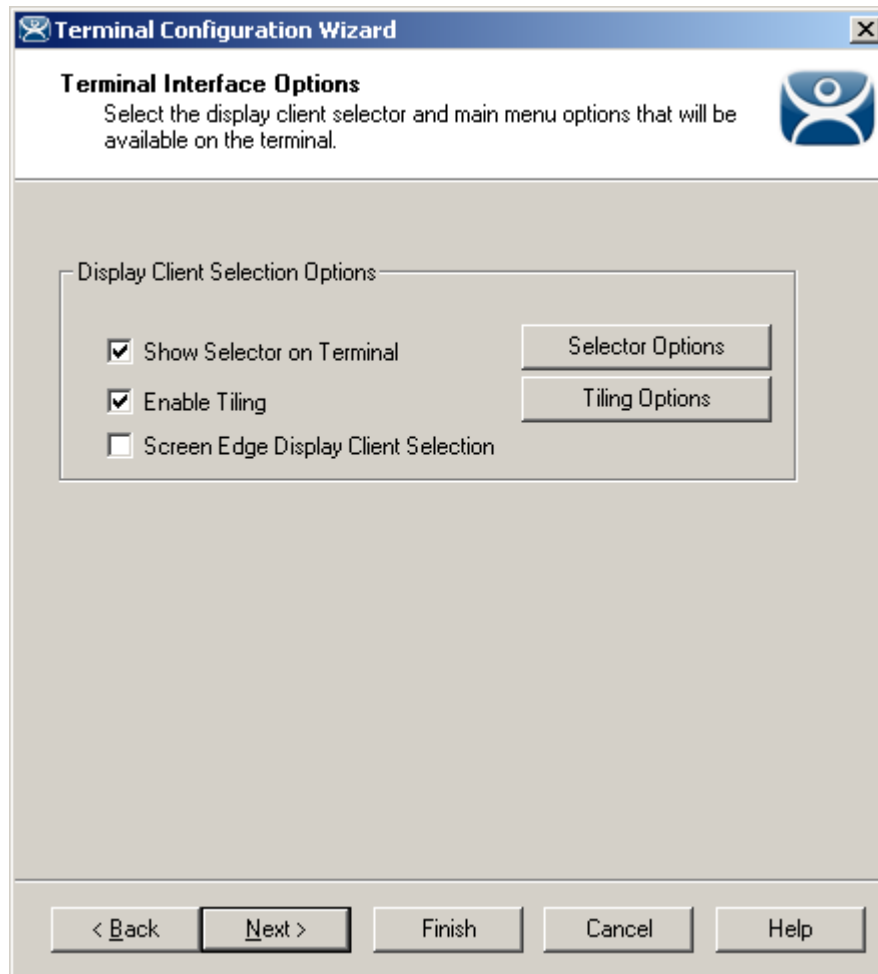
17 Hotkeys

ThinManager provides hotkeys for switching between Display Clients, initiating SessionTiling, and other functions.

17.1 Terminal Configuration Wizard Hotkeys Display Clients

The Terminal Configuration Wizard has several hotkeys that can be configured

17.1.1.1 Terminal Interface Options Hotkeys



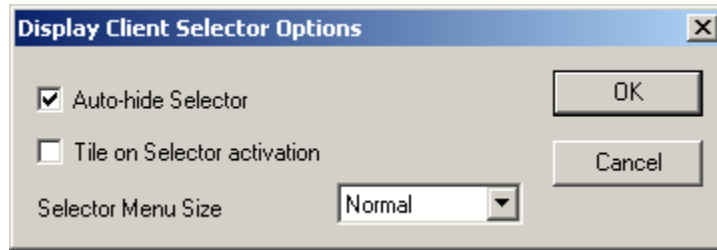
Terminal Interface Options Page

A terminal using multiple Display Clients will need to have a method to switch between sessions. This is configured on the Terminal Interface Options page.

Group Selector Options allow on-screen switching of sessions.

- **Show Group Selector on Terminal** - This checkbox, if selected, will display an on-screen drop-down menu that can be activated by mouse.
- **Enable Tiling** – This checkbox, when selected, allows the Display Clients to be tiled on the monitor to provide an overview of all the sessions at once. See SessionTiling Options for details.
- **Screen Edge Group Selection** - This checkbox, if selected, will activate a feature that will switch windows if the mouse is moved off screen.

The **Selector Options** button will launch the **Group Selector Options** window that allows configuration of the on-screen Group Selector bar.



Group Selector Options Window

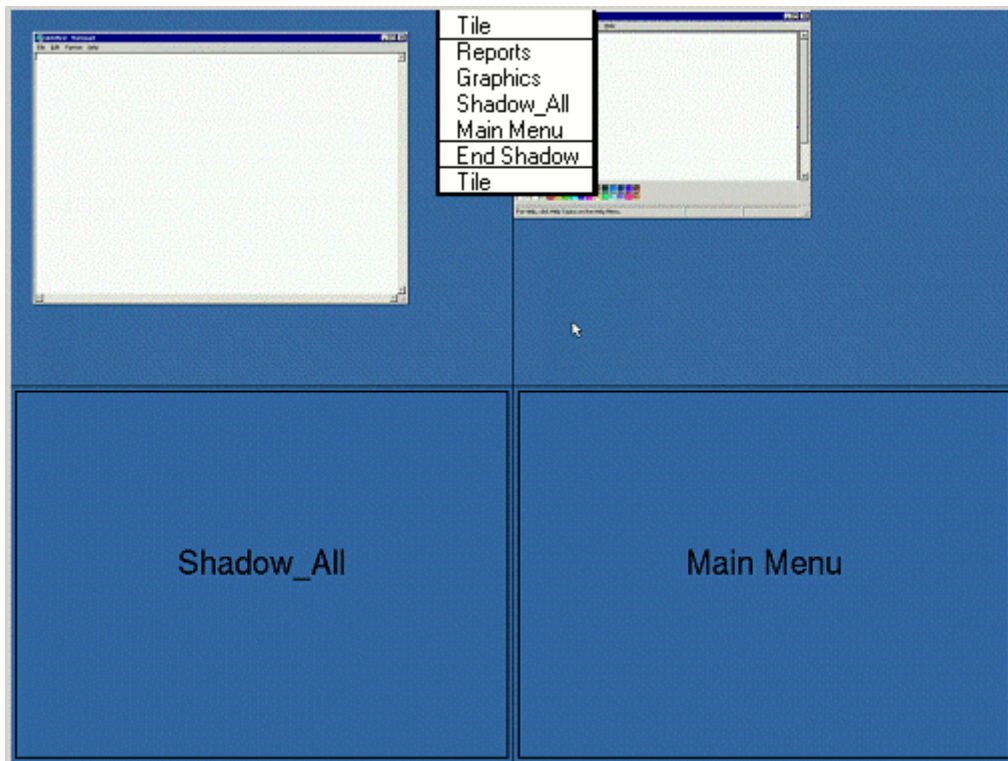
The Group Selector Options window has several settings.

- The **Auto-hide Group Selector** checkbox will hide the Group Selector until the mouse is moved to that space.
- The **Tile on Group Selector activation** checkbox, when selected, will tile the Display Clients when the auto-hid selector is chosen. This allows the user to select from the available sessions.
- The **Group Selector Menu Size** drop-down box allows the setting of the size of the Group Selector font.

Select the **OK** button to accept changes or the **Cancel** button to close.

17.1.1.2 Session Tiling Options

Selecting the **Enable Tiling** checkbox on the **Terminal Interface Options** page of the **Terminal Configuration** wizard will allow the sessions to be tiled for selection.

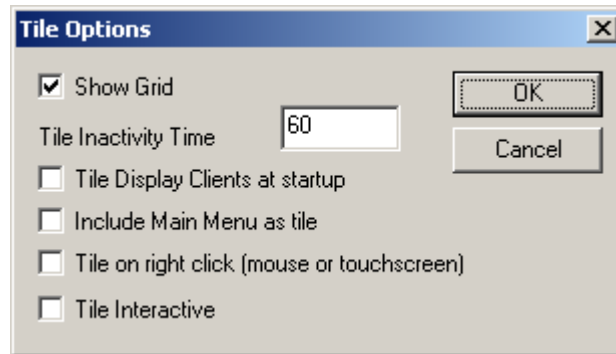


Tiled Sessions on a Terminal

Once the sessions are tiled the session selection can be made by:

- Using the Group Selector, if selected on the **Terminal Interface Options** page.
- Clicking on the desired session if the **Tile Interactive** checkbox is unselected on the **Tile Options** page.
- Right clicking on the desired session if the **Tile on right click (mouse or touchscreen)** checkbox is unselected on the **Tile Options** page.

The **Tiling Options** button will launch the **Group Selector Options** window that allows configuration of the on-screen Group Selector bar.



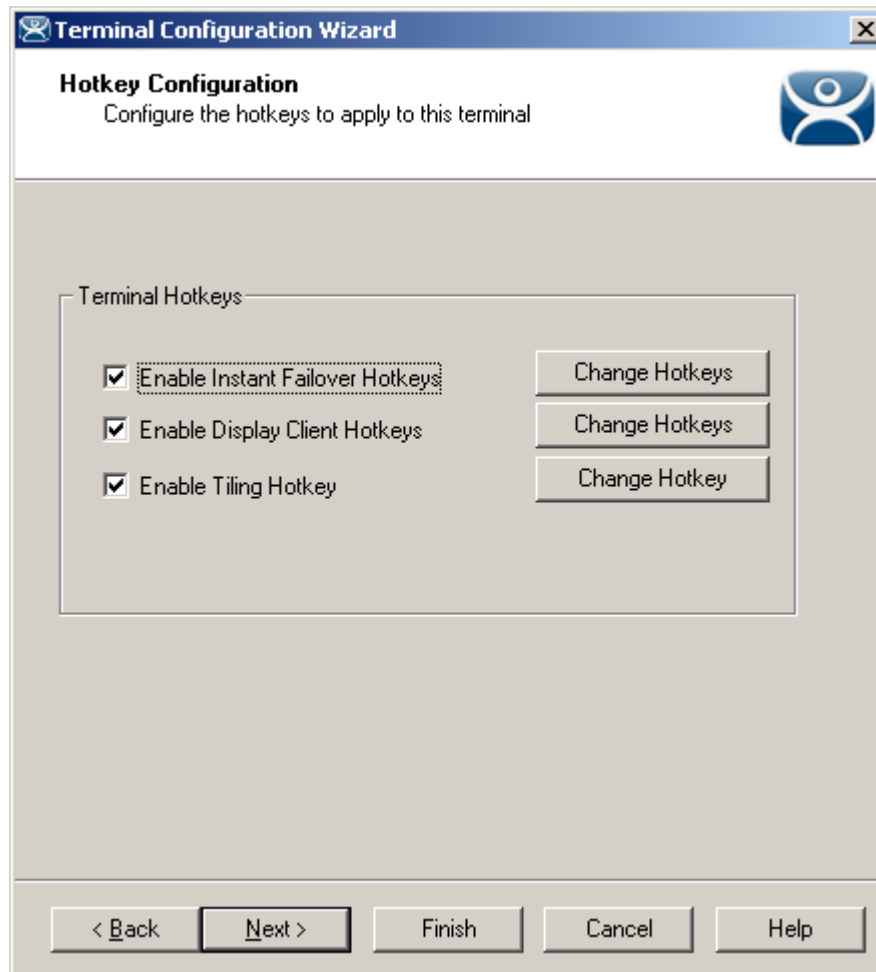
Tile Options

The **Tile Options** window has several settings.

- **Show Grid** – This checkbox, when selected, will show the tiled sessions in a grid with each grid labeled with the session name as while the session is loading.
- **Tile Inactivity Time** – This field sets the length of time that the terminal screen will stay focused on a selected session before reverting back to a tiled state due to inactivity.
- **Tile Display Clients at startup** – This checkbox, when selected, will show the sessions tiled when the terminal first connects to its sessions.
- **Include Main Menu as tile** – This checkbox, when selected, will include a session displaying the TermSecure Main Menu.
- **Tile on Right click (mouse or touchscreen)** - This checkbox, when selected, will initiate tiling when a session is right clicked.
- **Tile Interactive** – This checkbox, when selected, will allow a user to click into a tiled session and control it interactively without switching focus to a single session. To focus on a single session use the Group Selector Dropdown or the tiling hotkey (**CTL + T**), if enabled.

Select the **OK** button to accept changes or the **Cancel** button to close.

17.1.1.3 Hotkey Configuration

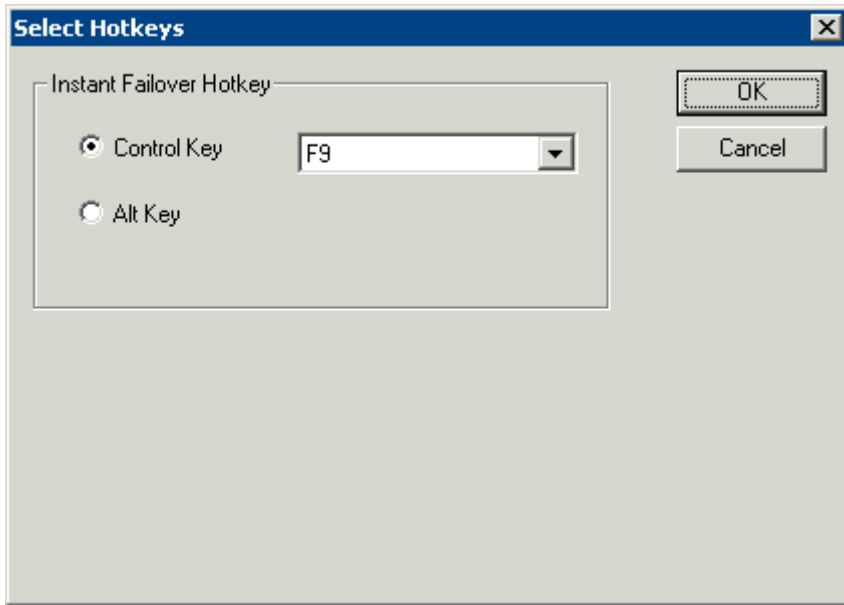


Hotkey Configuration Page

Terminal Hotkeys on the **Hotkey Configuration** page allows the selection of keyboard combinations that allow switching between sessions.

- **Enable Instant Failover Hotkeys** - This checkbox, if selected, allows the hot key switching between the two active sessions of a Display Client that is using Instant Failover.
- **Enable Group Hotkeys** - This checkbox, if selected, allows the hot key switching between different sessions of a terminal using MultiSession.
- **Enable Tiling Hotkey** – This checkbox, if selected, allows SessionTiling to be activated by a hotkey combination.

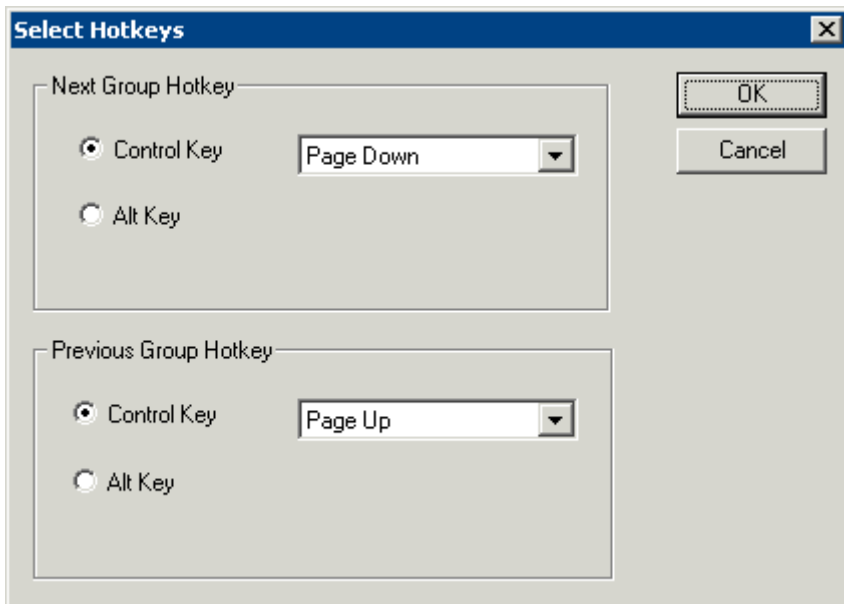
Selecting the **Change Hotkeys** button when **Enable Instant Failover Hotkeys** is selected will allow the hotkeys to be changed from the default.



Select Instant Failover Hotkeys

The default hotkey for Instant Failover switching is set to **Control+F9**. This can be changed by selecting the **Alt Key** radio button or using the drop-down to select another function key.

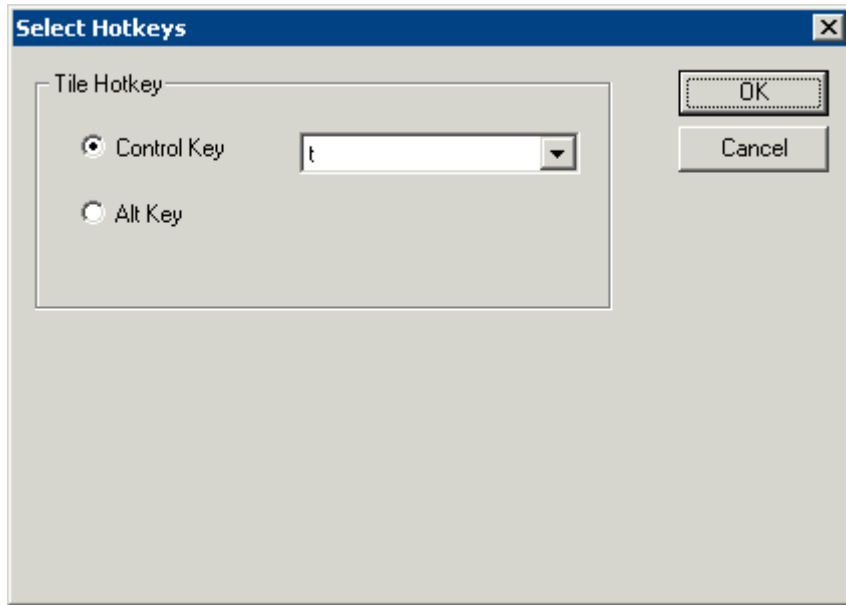
Selecting the **Change Hotkeys** button when **Enable Group Hotkeys** is selected will allow the MultiSession switching hotkeys to be changed from the default.



Select MultiSession Switching Hotkeys

The default hotkey for MultiSession switching is set to **Control+Page Up** and **Control+Page Down**. This can be changed by selecting the **Alt Key** radio button or using the drop-down to select another hot key.

Selecting the **Change Hotkeys** button when **Enable Tiling Hotkeys** is selected will allow the hotkeys to be changed from the default.



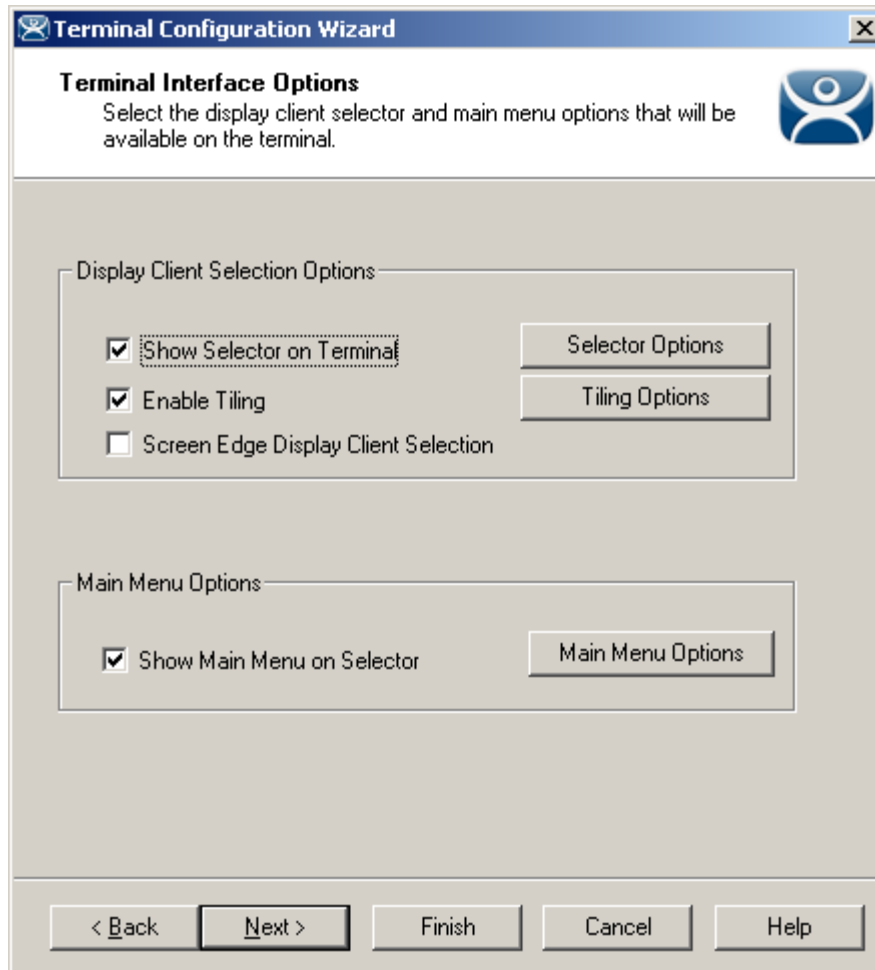
Select SessionTiling Hotkeys

The default hotkey for SessionTiling activation is set to **Control+t**. This can be changed by selecting the **Alt Key** radio button or using the drop-down to select another hot key.

Select the **OK button** to continue or the **Cancel** button to close without accepting changes.

17.1.1.4 TermSecure Hotkeys

When the **Enable TermSecure** checkbox is checked on the **Terminal Server Specification** page additional TermSecure functionality is enabled to access to the main menu for logging into TermSecure.

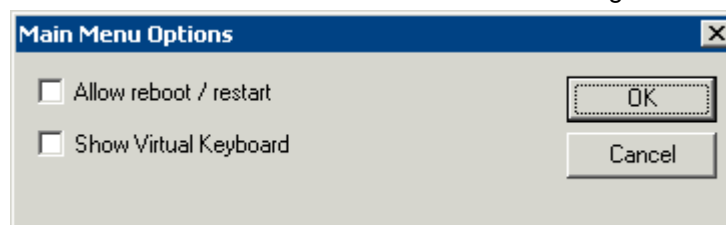


Terminal Interface Options – TermSecure Enabled

The Terminal Interface Options page will display the **Show Main Menu on Group Selector** checkbox.

The **Show Main Menu on Group Selector**, when selected, will add the main TermSecure menu as an option on the Group Selector dropdown.

The **Main Menu Options** button will launch a window for Main Menu settings.



Main Menu Options

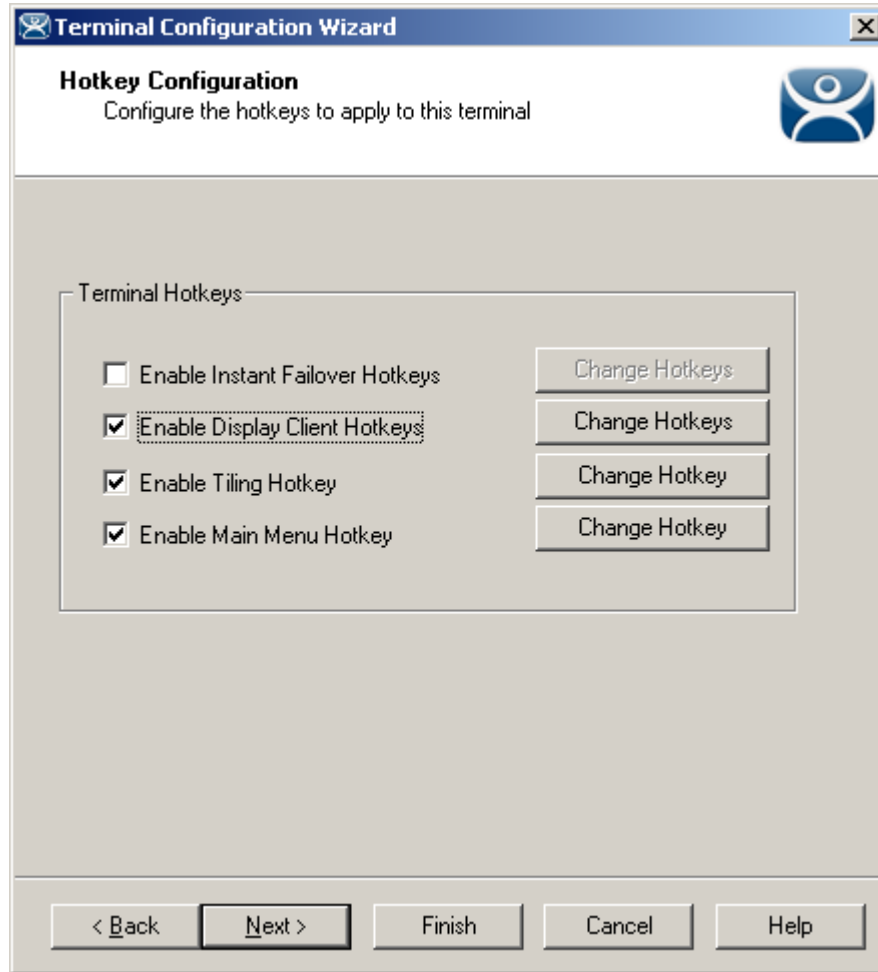
The **Main Menu Options** window has several settings.

- **Allow reboot/restart** – This checkbox, if selected, will add a **Reboot** and a **Restart** button on the main TermSecure login window.

- **Show Virtual Keyboard** – This checkbox, if selected, will prompt the display of a virtual keyboard for TermSecure logins. This is helpful for thin clients with touch screens.

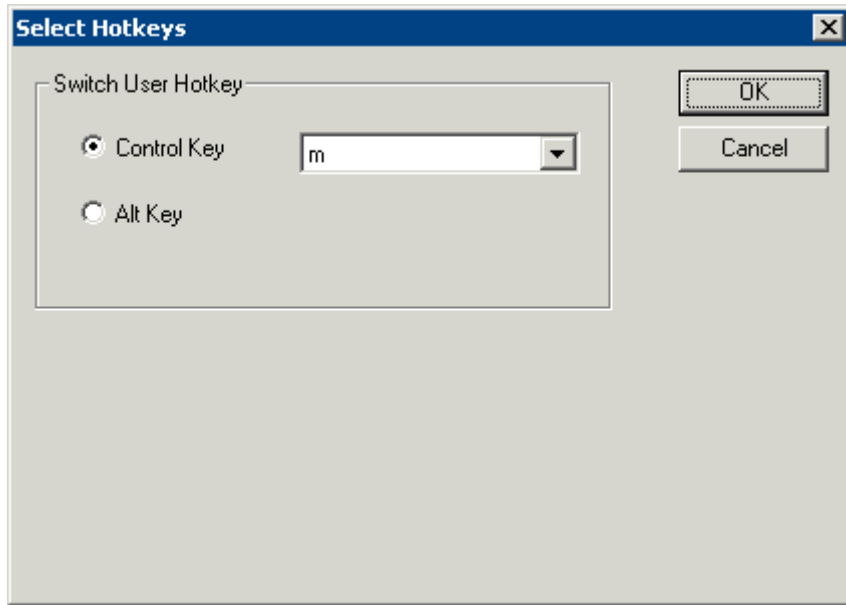
Select **OK** to save setting or **Cancel** to close without saving.

The **Hotkey Configuration** page has an additional TermSecure setting when the **Enable TermSecure** checkbox is checked on the **Terminal Server Specification** page.



Hotkey Configuration – TermSecure Enabled

The **Enable Main Menu Hotkey** checkbox, when selected, will allow the TermSecure Main Menu to be launched with a hotkey combination. The **Change Hotkey** button allows the default **CTL+m** combination to be changed.



Select HotKeys Window for Main Menu

The default hotkey for the Main Menu is set to **Control+m**. This can be changed by selecting the **Alt Key** radio button or using the drop-down to select another hot key.

Select the **OK button** to continue or the **Cancel** button to close without accepting changes.

TermSecure is covered more thoroughly at TermSecure User Configuration Wizard.

18 Multiple Monitors

18.1 Introduction to Multiple Monitors

ACP ThinManager has two methods of providing multiple monitors in a thin client system - the **Share Keyboard and Mouse** method and the **MultiMonitor** method.

The **Share Keyboard and Mouse** module allows several thin clients, each with a single video port, to be controlled with a single keyboard and mouse without the need of a KVM switch (Keyboard/Video/Mouse). The Share Keyboard and Mouse system ties several desktops together with a common mouse and keyboard so that the user has increased real estate under their control. Because each screen is still an independent desktop, programs don't need to be rewritten in a new resolution for a larger desktop. Instead, one would run the normal sized application on each of the desktops, allowing the operator to view different windows on different monitors.

See Share Keyboard and Mouse Modules for details on deployment.

The **MultiMonitor** method uses specific thin clients that have multiple video ports built into the hardware. Each MultiMonitor thin client can have from two to five monitors attached. These monitors can be configured to merge into an expanded desktop (called "spanned" by ACP) or can display individual desktops (called "screened" by ACP), or combinations of "spanned" and "screened" sessions.

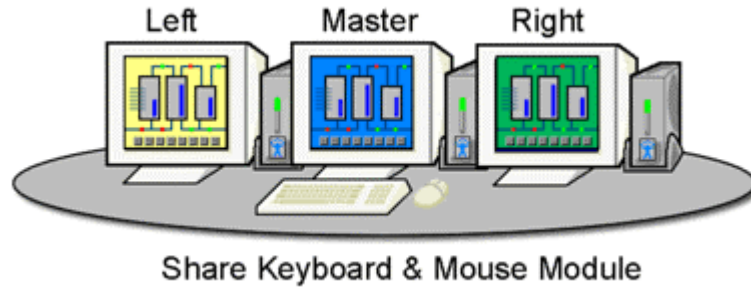
WinTMC now supports MultiMonitor if the PC has Windows running on multiple video cards.

See MultiMonitor for details on deployment.

18.2 Share Keyboard and Mouse Modules

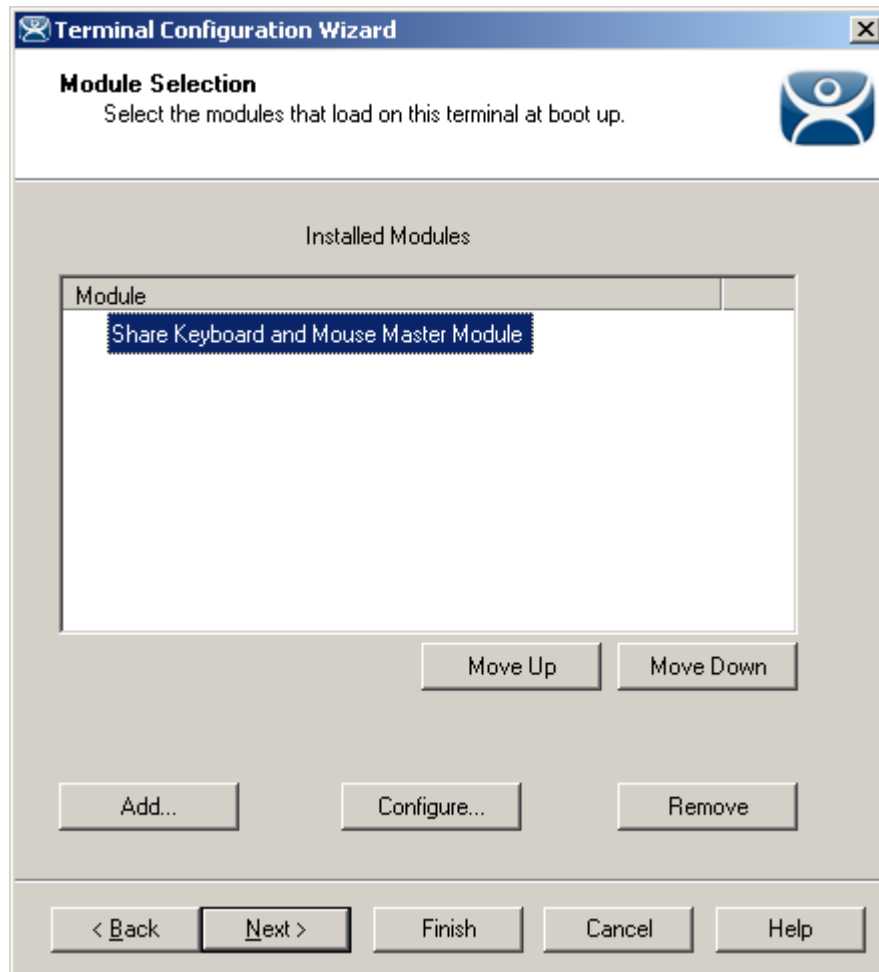
The **Share Keyboard and Mouse** module allows several thin clients to be controlled with a single keyboard and mouse without the need of a KVM switch (Keyboard/Video/Mouse).

The **Share Keyboard and Mouse** has a **Master** module that is added to the controlling terminal, and a **Slave** module that is added to the dependent terminals.



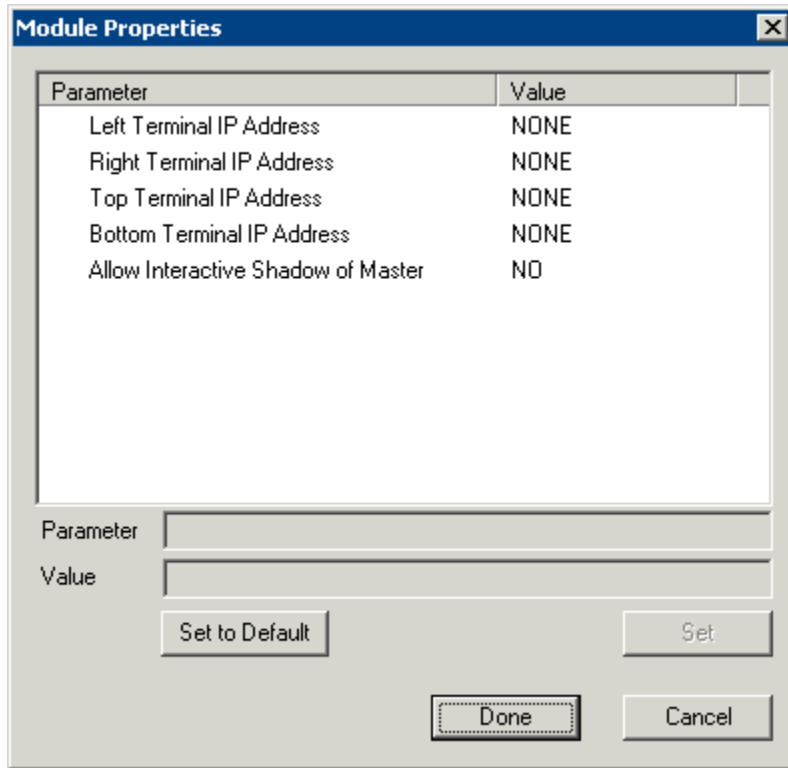
Shared Keyboard and Mouse Layout

The Share Keyboard and Mouse can be used by placing several monitors connected to thin clients side-by-side or top-to-bottom. The **Share Keyboard and Mouse Master module** is loaded on the center thin client. This module is configured by adding the IP addresses of the secondary slave thin clients. The other terminals receive the **Share Keyboard and Mouse Slave module**.



Share Keyboard and Mouse Master Module

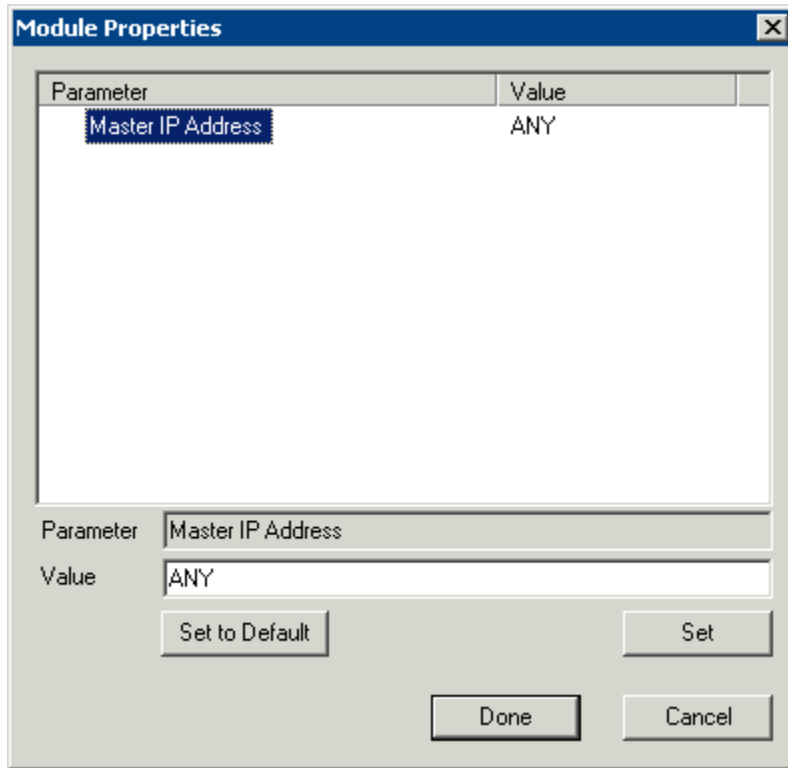
Once the **Share Keyboard and Mouse Master Module** is added to a terminal, it can be configured by highlighting it in the **Installed Module** window and selecting the **Configure** button.



Share Keyboard and Mouse Master Module Properties

- **Left Terminal IP Address** - Enter the correct IP address for the Slave terminal on the left of the master terminal, if used, and select the **Set** button.
- **Right Terminal IP Address** - Enter the correct IP address for the Slave terminal on the right of the master terminal, if used, and select the **Set** button.
- **Top Terminal IP Address** - Enter the correct IP address for the Slave terminal on the top of the master terminal, if used, and select the **Set** button.
- **Bottom Terminal IP Address** - Enter the correct IP address for the Slave terminal on the bottom of the master terminal, if used, and select the **Set** button.
- **Allow Interactive Shadow of Master** - Normally a terminal with the master module loaded is blocked from interactive shadow. If you want to allow interactive shadowing on the master, highlight the **Allow Interactive Shadow of Master** parameter, select **Yes** from the **Value** drop-down, and select the **Set** button.

The **Share Keyboard and Mouse Slave module** is loaded on the secondary thin clients using the same methods as other modules are loaded.



Share Keyboard and Mouse Slave Module Properties

- **Master IP Address** - This setting allows the slave module to be configured to connect to a specified master by entering the IP address of the master terminal, and selecting the **Set** button.

Select the **Done** button when finished.

Once the ACP Enabled thin clients are booted, the mouse on the master thin client can be moved seamlessly into the other desktops. The keyboard will be active in whatever screen the mouse pointer is on.

This allows an operator to have control of several displays with only one keyboard and mouse. The mouse movement is seamless, allowing access to displays without switching.

Note: A Master Share Keyboard and Mouse session cannot be interactively shadowed in ThinManager unless it is configured to allow it.

The keyboards and mice for the slave thin clients can be left attached, but stowed away until a multi-user configuration is needed.

The **Share Keyboard and Mouse Master module** is licensed for each master thin client. The **Share Keyboard and Mouse Slave module** is free. Each master module can have 1 to 4 slave units.

18.3 MultiMonitor

MultiMonitor is configured in the **Terminal Configuration Wizard** or the **Group Configuration Wizard**.

18.3.1.1 MultiMonitor Hardware Specification

Terminal Configuration Wizard

Terminal Hardware
Select the manufacturer and model of this terminal.

Use this to configure the type of hardware for this terminal.

Make / OEM: Arista

Model: BoxPC140

DEM Model: BoxPC140-ACP

Video Chipset: Via Unichrome

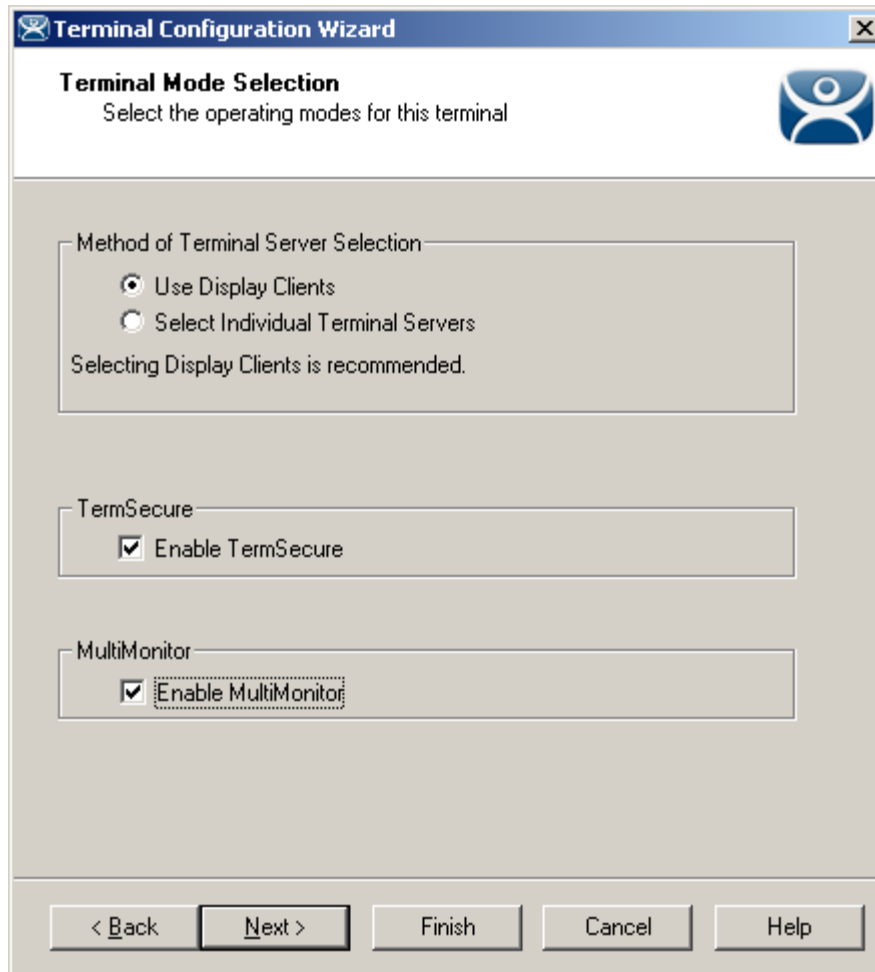
Terminal ID: 0020EFB704C2 [Clear]

< Back Next > Finish Cancel Help

MultiMonitor – Terminal Hardware

MultiMonitor configuration is initiated in the **Terminal Configuration Wizard** when a MultiMonitor-capable thin client is selected on the **Terminal Hardware** page.

Select the **Next** button to continue.



MultiMonitor – Enable MultiMonitor

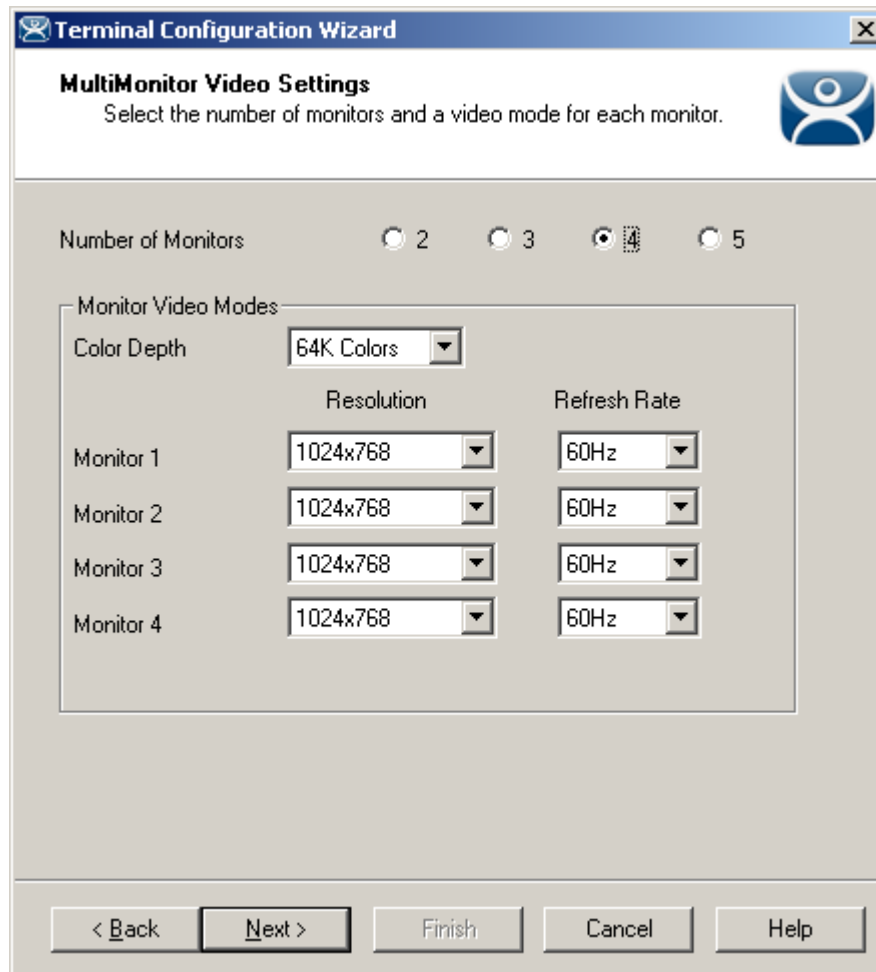
MultiMonitor requires the use of Display Clients. Once the **Use Display Clients** checkbox is selected on the **Terminal Server Specification** page the **Enable MultiMonitor** checkbox becomes visible.

Select the **Use Display Clients** and the **Enable MultiMonitor** checkboxes, and then select the **Next** button.

Note: WinTMC now supports MultiMonitor if the PC has Windows running on multiple video cards. Selecting the **Enable MultiMonitor** checkbox will allow you to configure a WinTMC client for MultiMonitor use.

Select the **Next** button to continue.

18.3.1.2 MultiMonitor Monitor Configuration

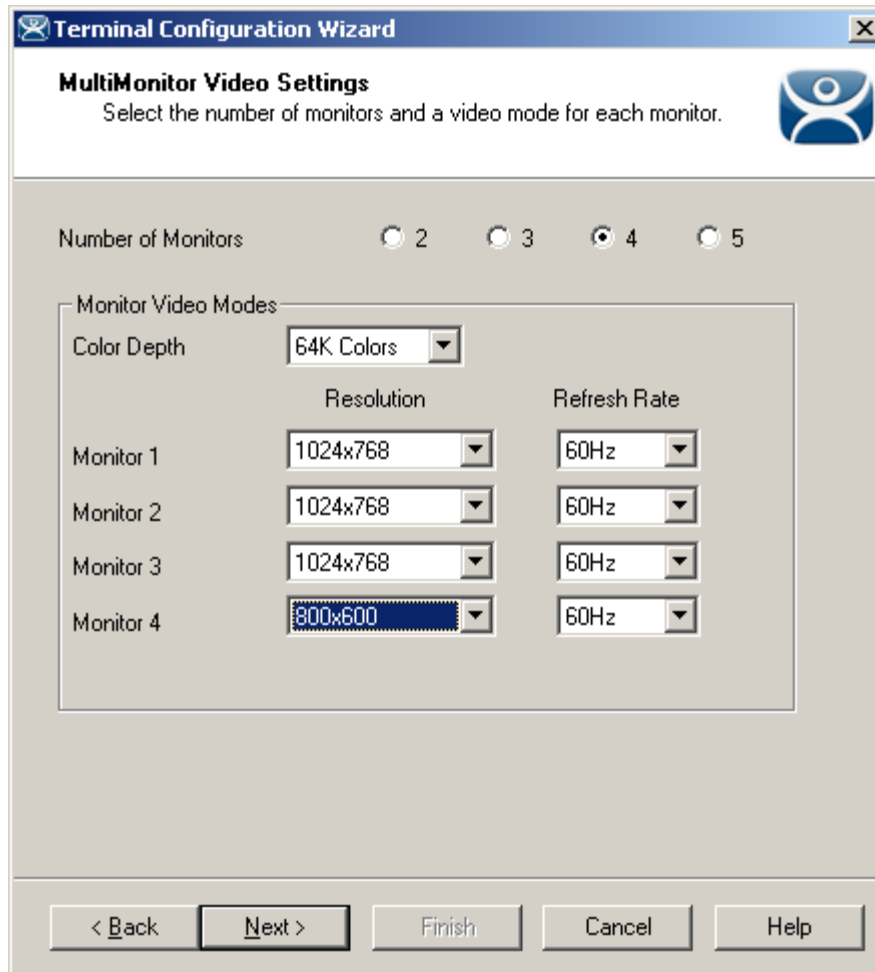


MultiMonitor – Video Settings

The MultiMonitor Video Setting allows the user to choose how many monitors will be connected to the MultiMonitor thin client using the **Number of Monitors** radio button.

The **Color Depth** dropdown allows the color depth to be set for all the monitors.

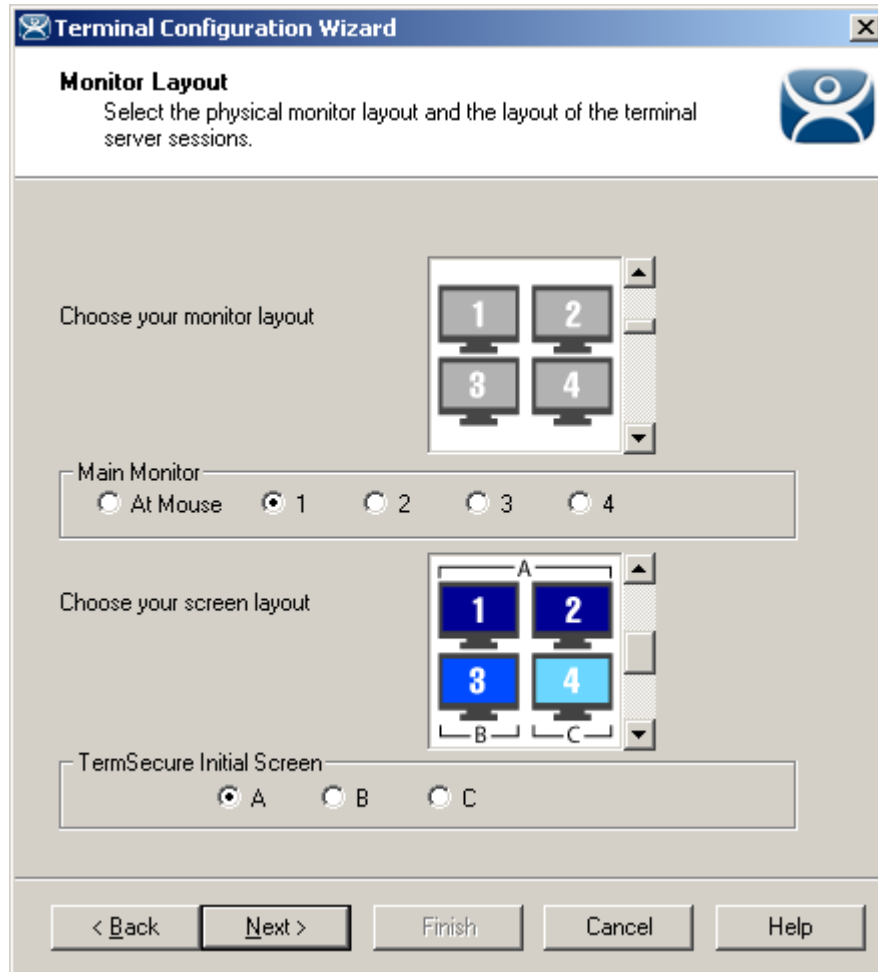
The **Resolution** and **Refresh Rate** can be set for each monitor using the dropdowns.



MultiMonitor – Video Settings

The monitors do not need to use the same resolutions but can be individually configured. Select the **Next** button to continue.

18.3.1.3 MultiMonitor Monitor Layout Page



MultiMonitor – Monitor Layout

The Monitor Layout page allows the configuration of the MultiMonitors.

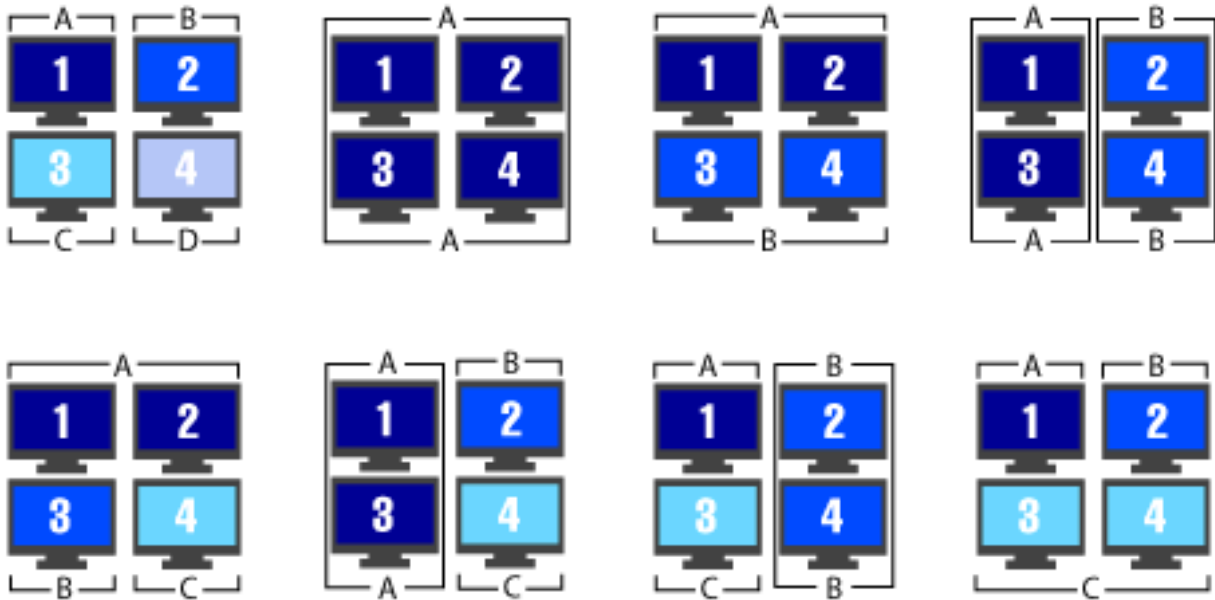
The **Choose your monitor layout** dropdown will display the various physical arrangements that the monitors can be placed in. Select the layout that matches your layout.



Sample Monitor Layouts

The **Main Monitor** radio button determines which screen is considered the main monitor. This monitor will display the TermSecure login window, Main Menu, and ThinManager messages.

The **Choose your screen layout** dropdown will allow the assignment of sessions to the monitors. The monitors can be combined into a “**Spanned**” session that contains two or more monitors or they can be configured to hold an individual session per monitor, called “**Screened**”, or a combination of the two.



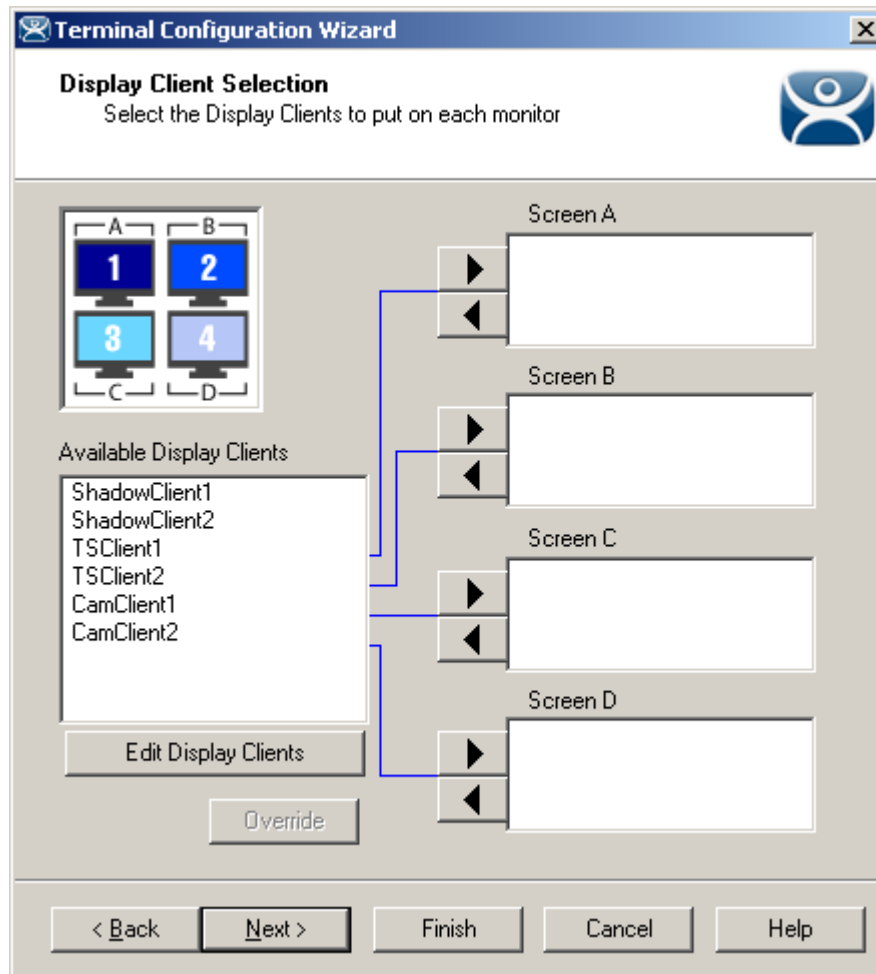
Samples of Four-Monitor Configurations

Note: The desktop of a spanned session is limited to **4096x2048**. The selection of monitor resolution on the **MultiMonitor Video Settings** page can affect the number of monitors that you can add to a spanned session.

The **TermSecure Initial Screen** radio button determines which screen is considered the main monitor for TermSecure. This monitor will display the TermSecure Main Menu window and messages.

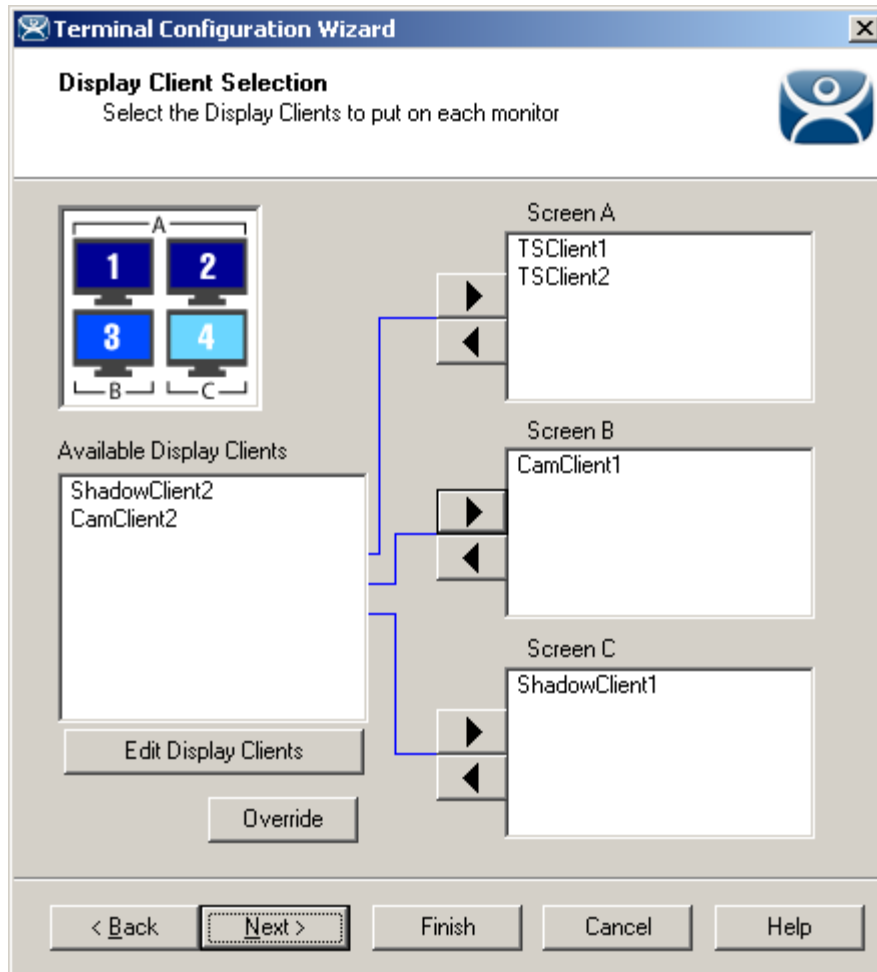
Select the **Next** button to continue.

18.3.1.4 MultiMonitor Display Client Selection Page



MultiMonitor – Display Client Selection

The **Display Client Selection** page allows Display Clients to be assigned to each screen.

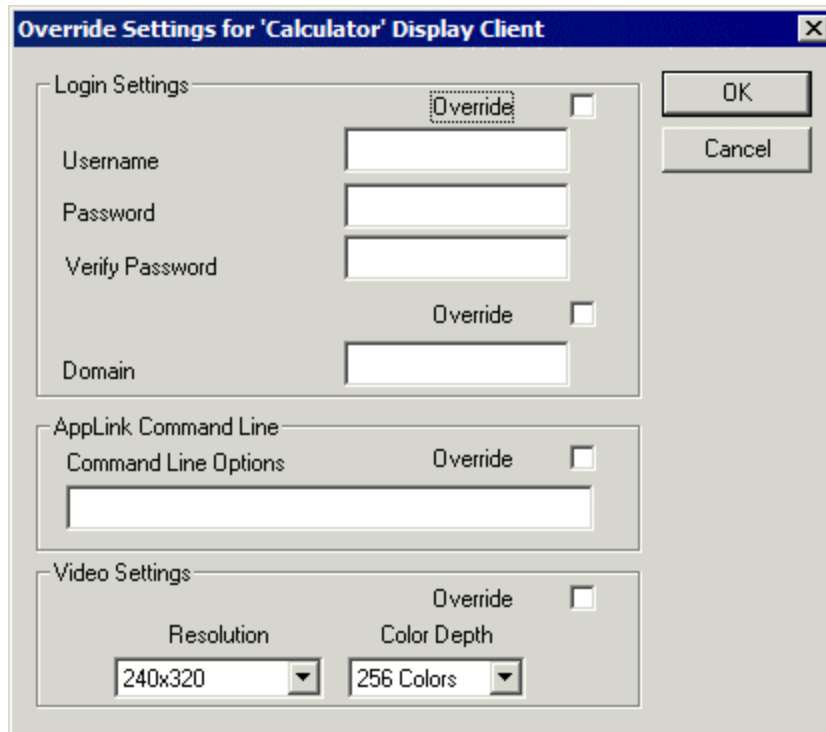


MultiMonitor – Display Client Selection

Highlight the desired group and select the arrow to move it to the desired screen.

The number of available screens is based on the combination of screened and spanned sessions selected on the **Monitor Layout** page. Each screen can have more than one Application Group.

The **Override** button allows you to assign a different user account or video resolution to a Display Client. Highlight a Display Client and select the **Override** button to launch the **Override Setting** window.



Override Setting Window

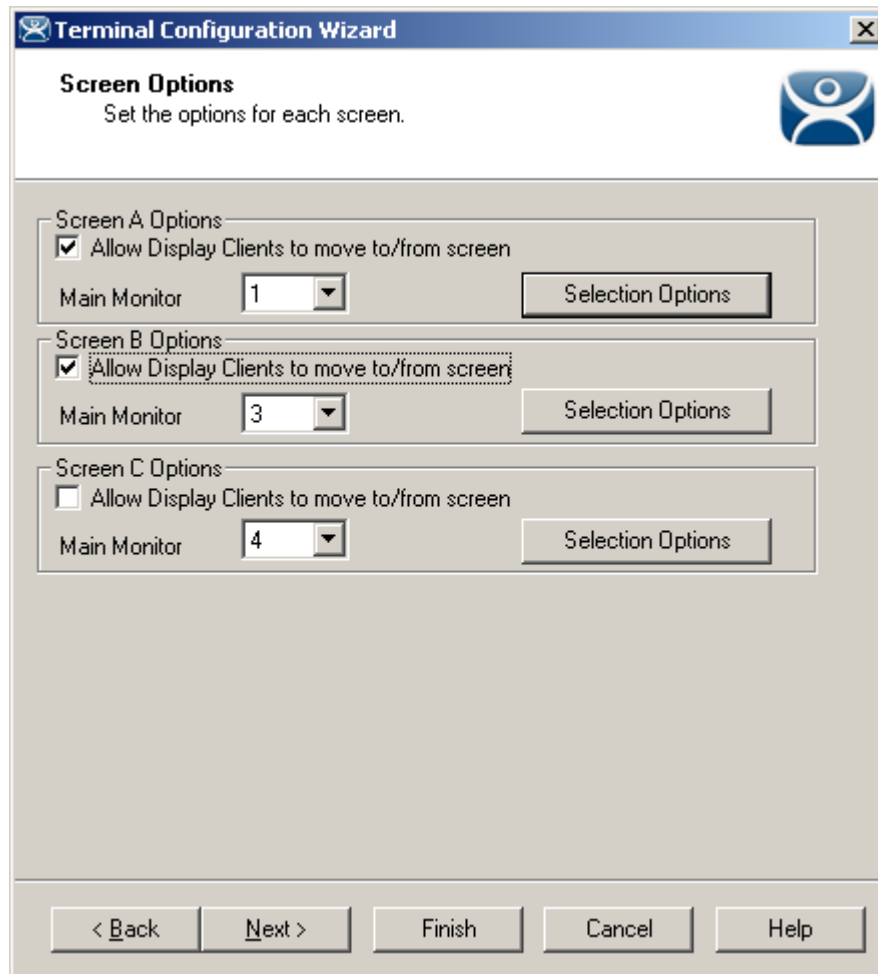
The override function is important when you want to run several copies of the same application on the MultiMonitor terminal because Microsoft limits each user to a single instance of an application by default. Without the override function you will get a single application that bounces from window to window.

Check the **Override** checkbox of the setting you desire to override and fill in the appropriate fields.

Select **OK** to accept the changes and select **Cancel** to cancel the changes.

Select the **Next** button to continue.

18.3.1.5 MultiMonitor Selection Configuration



MultiMonitor - Screen Options

Terminals using MultiSession can be configured to allow sessions to be moved from monitor to monitor for user preference. This is configured by selecting the **Allow groups to move to/from screen** checkbox. If left unselected the sessions will stay in the assigned monitor.

The Screen Options settings are:

- **Allow groups to move to/from screen** – This checkbox, if selected, will allow a session from a MultiSession group to be moved to or from the monitor to suit a user's preference.
- **Main Monitor** – This drop-down sets what monitor in a spanned set will display the Display Client Selector menu.
- **Selector Options** – This button launches the **Group Selector Options** window to allow configuration of the Display Client selector.

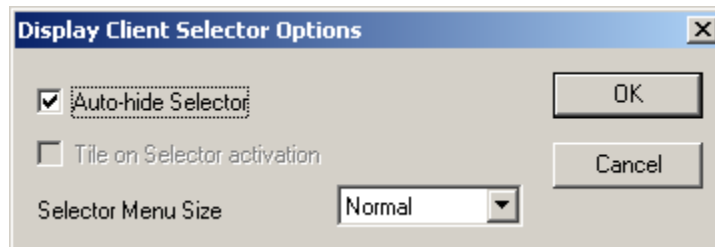


Group Selector Options Window

The Group Selector Options allows configuration of the Display Client selection when using MultiSession.

- **Show Group Selector** – This checkbox, if selected, will display the Display Client Selector to allow the user to switch between MultiSession groups.
- **Enable Tiling** – This checkbox, if selected, allows multiple sessions to be tiled to allow a visual selection.

The **Selector Options** button launches the **Group Selector Options** window.

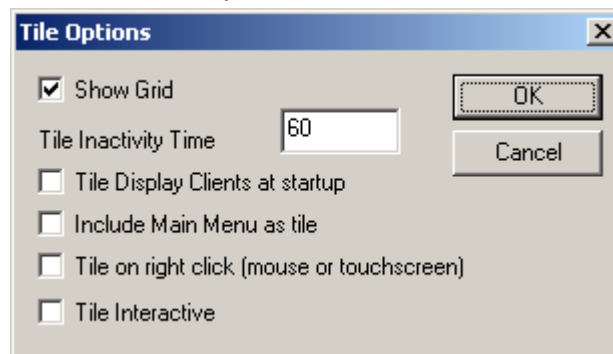


Group Selector Options Window

The **Group Selector Options** Window has three settings.

- **Auto-hide Group Selector** – This checkbox, if selected, will hide the drop-down Display Client selector unless the mouse is hovering over the top center of the screen. This checkbox, if unselected, will show the drop-down Display Client selector at the top center of the screen.
- **Tile on Group Selector activation** – This checkbox, if selected, will tile the sessions when an auto-hid group selector is activated.
- **Group Selector Menu Size** – This drop-down sets the size of the text in the group selector.

The **Tiling Options** button launches the Tile Options window.



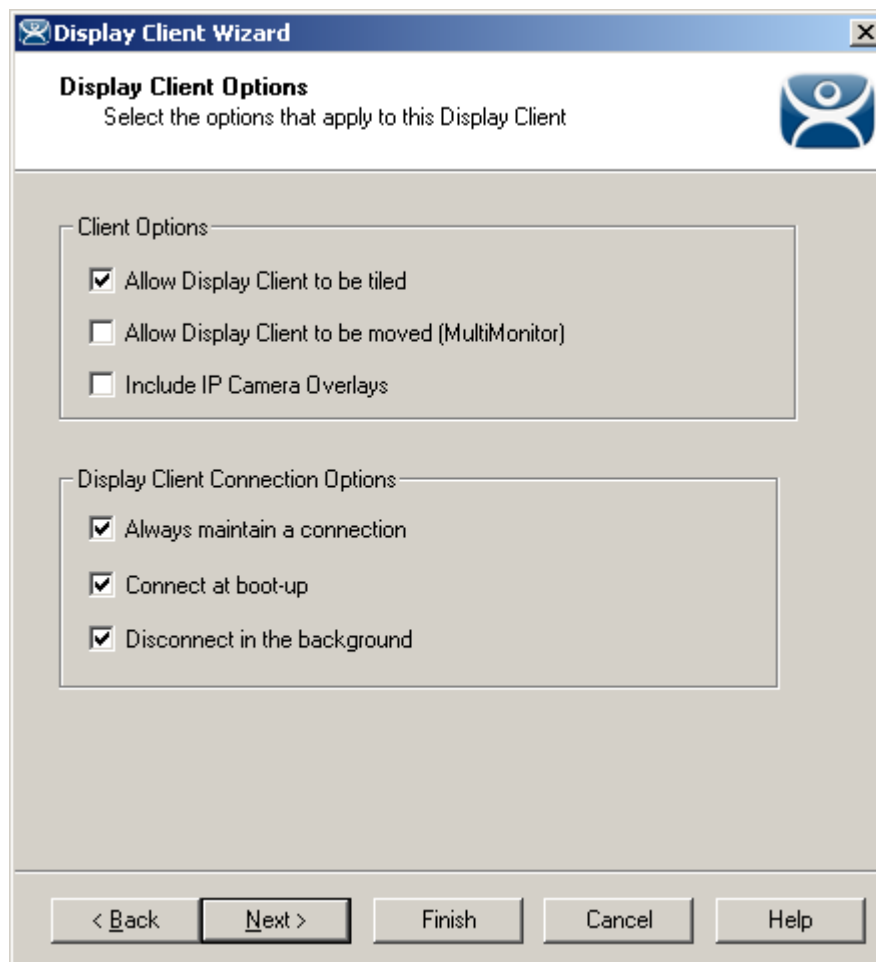
Tile Options Window

The **Tile Options** Window has five settings.

- **Show Grid** – This checkbox, when selected, will separate tiled sessions with black lines.
- **Tile Inactivity Time** – This is the amount of time in seconds that will elapse before an inactive session will revert to a tiled mode.
- **Tile Display clients at startup** – This checkbox, when selected, will tile the display clients when the terminal first connects.
- **Include Main Menu as tile** – This checkbox, when selected, will display the TermSecure Main Menu as a tiled group.
- **Tile on Right click (mouse or touch screen)** - This checkbox, when selected, will allow a right click in a session to activate tiling. Holding a finger on a touch screen will trigger tiling if the **Right Click Hold Time (milliseconds)** is used in the touch screen module.
- **Tile Interactive** – This checkbox, if selected, will allow a user to select a tiled session and interact with it without un-tiling the sessions.

18.3.1.6 Allow Group to Move Configuration

Each Display Client that is to be allowed to move needs to have this property configured in the **Display Client Wizard**. Open the **Display Client Wizard** for the desired Display Client and navigate to the **Display Client Options** page.



Display Client Wizard – Display Client Options

To configure a Display Client to be moved from one MultiMonitor screen to another, select the ***Allow Group to be moved (MultiMonitor)*** checkbox and select the ***Finish*** button to accept the change.

See Display Client List for details on the Display Client Wizard.

19 Virtualization in ThinManager

19.1 Virtualization Overview

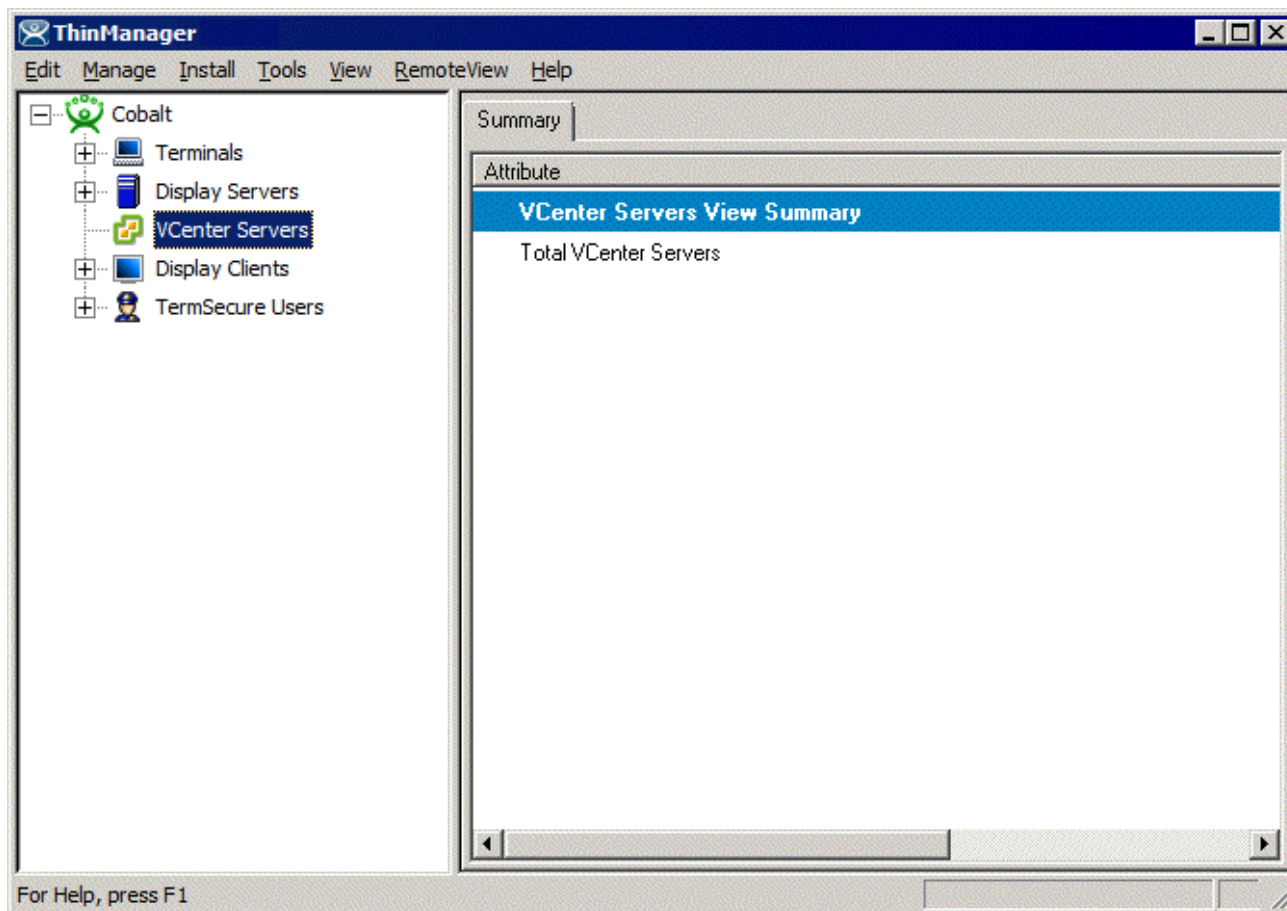
A virtual machine is an isolated and independent install of an operating system within a host operating system. It allows one computer to run several virtual computers on one physical device. Virtualization, the use of virtual machines, allows the quick deployment and repetition of computers, often by duplicating a folder with a few files.

ThinManager 4.1 includes virtualization tools to help manage virtual servers and virtual workstations in a thin client system.

19.2 VCenter Servers

VCenter is a virtual machine management tool from VMWare. It allows IT administrators to control and manage multiple ESX servers and their virtual machines in a single console.

ThinManager can connect to a VCenter Server and allow the control and management of the virtual machines.



VCenter Servers Branch in the ThinManager Tree

The ThinManager tree has a **VCenter Servers** branch.

Right-click on the **VCenter Servers** branch to add a VCenter Server. It will launch a **VCenter Server Property Wizard**.

19.2.1.1 Virtual Machine Host Name

Virtual Machine Host Name
Enter VM Host name and IP Address

VCenter Server Name

VCenter IP Address

Log In Information

User Name

Password

Verify Password

Please enter a VM Server name

< Back Next > Finish Cancel Help

Virtual Machine Host Name Page

Importance of Page: Virtual Machine Host Name Page allows a VCenter Server to be defined for use within ThinManager.

Settings:

- **VCenter Server Name** – Enter the name of the VCenter Server you wish to connect to.
- **VCenter IP Address** – Enter the IP address of the VCenter Server.
- **User Name** – Enter an administrative account on the VCenter Server to allow a connection.
- **Password** – Enter the password of the administrative account.
- **Verify Password** – Re-enter the password of the administrative account for verification.

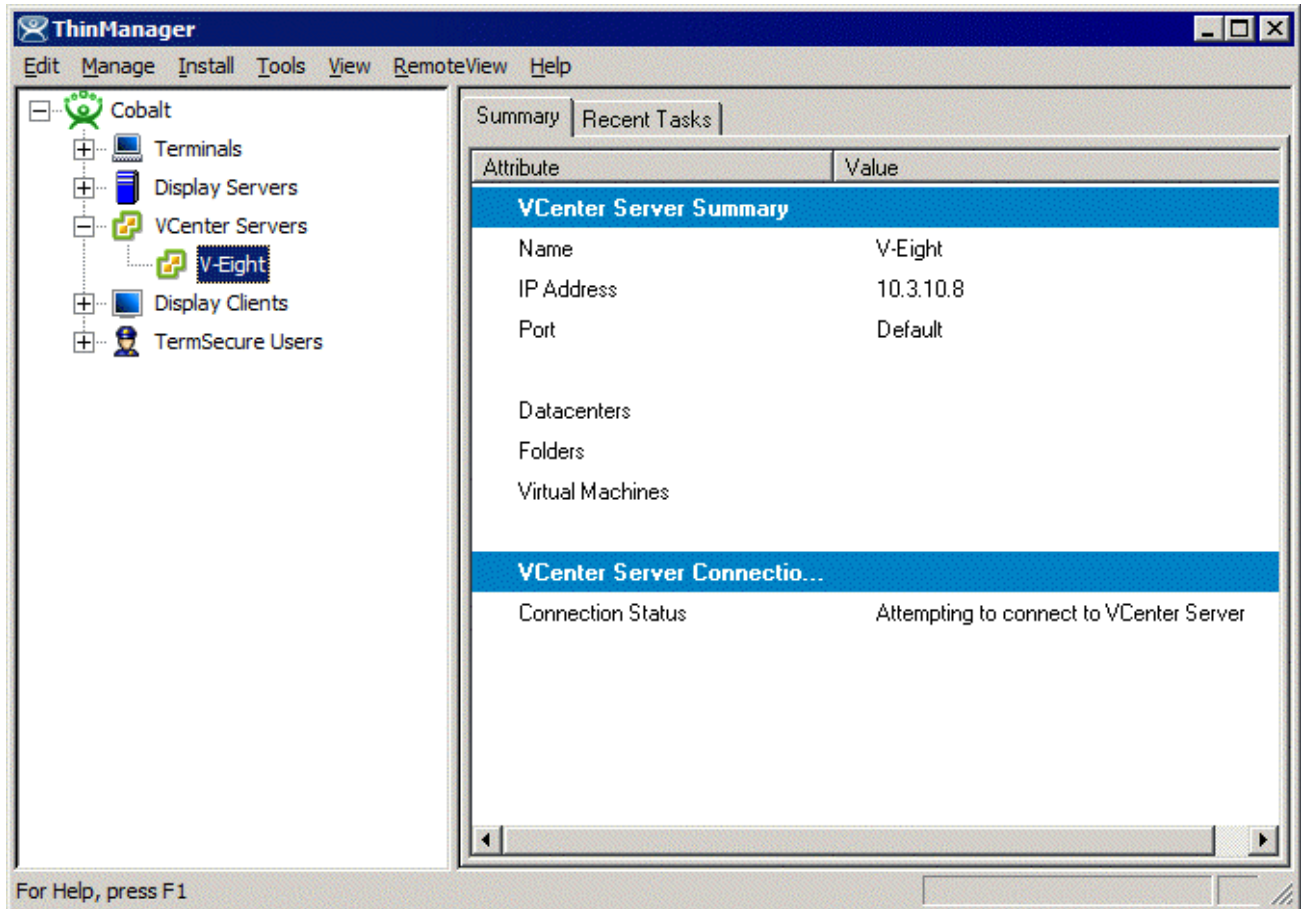
Buttons:

- **Discover** – This button will fill in the IP address of the listed VCenter Server.

Why Change from Default Settings:

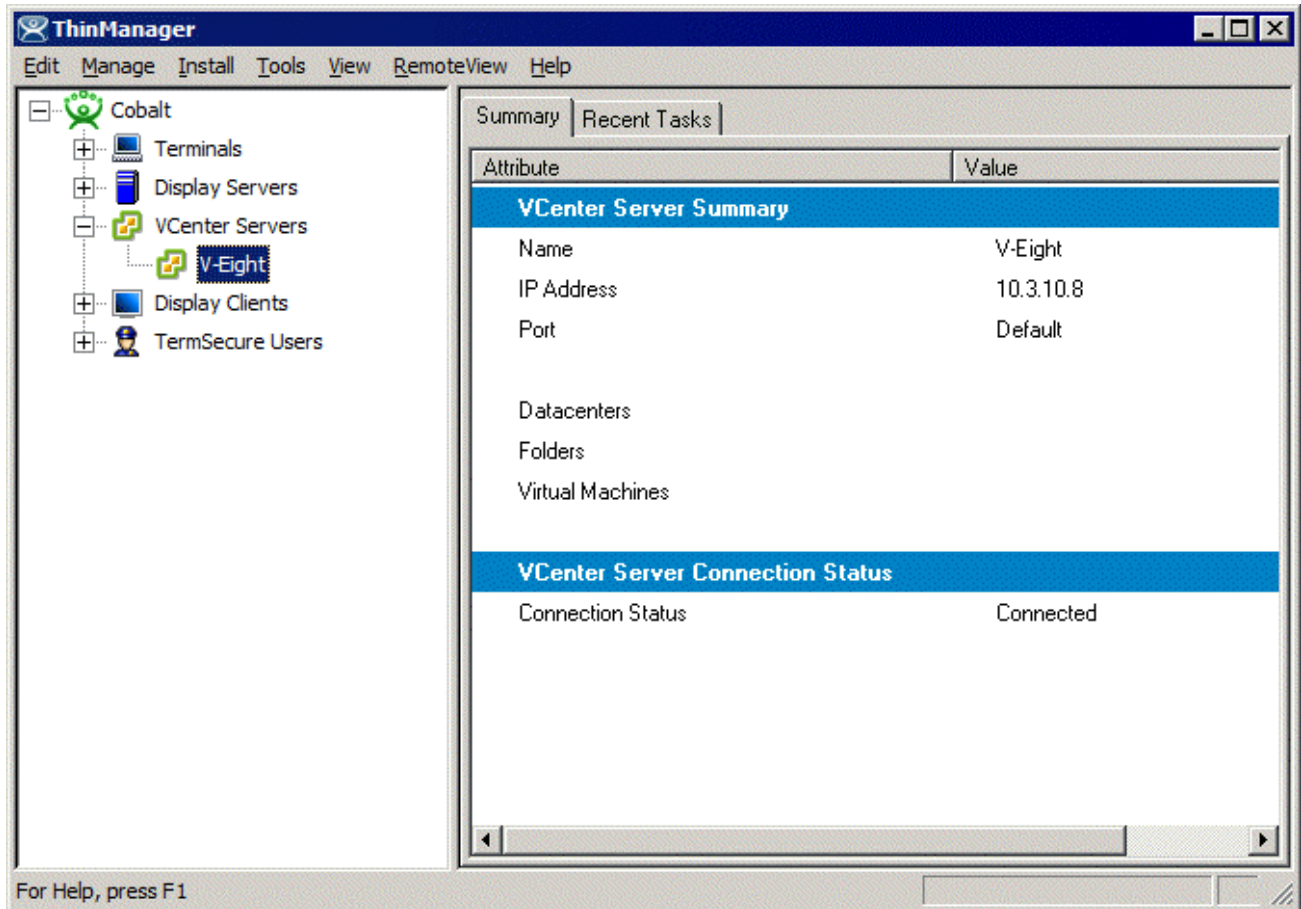
ThinManager won't connect to a VCenter Server unless you tell it to.

Select **Finish** to complete the configuration.



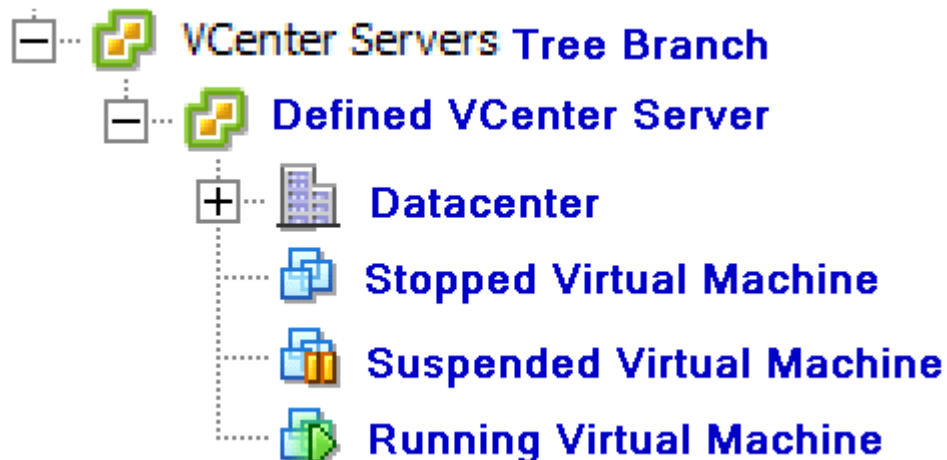
Connecting to VCenter Server

Once the VCenter Server is defined and the **VCenter Server Property Wizard** is closed, ThinManager will connect to the VCenter Server.



Connected VCenter Server

Once the VCenter Server has connected the VCenter Servers branch can be expanded to see the virtual machine information imported from the VCenter Server.



VCenter Server Tree Icons

The tree will show the defined VCenter Servers, datacenters in the VCenter Server, and virtual machines. The virtual machine icons show the state they are in; stopped, suspended, or running.

19.2.2 VCenter Server Right-Click Menus

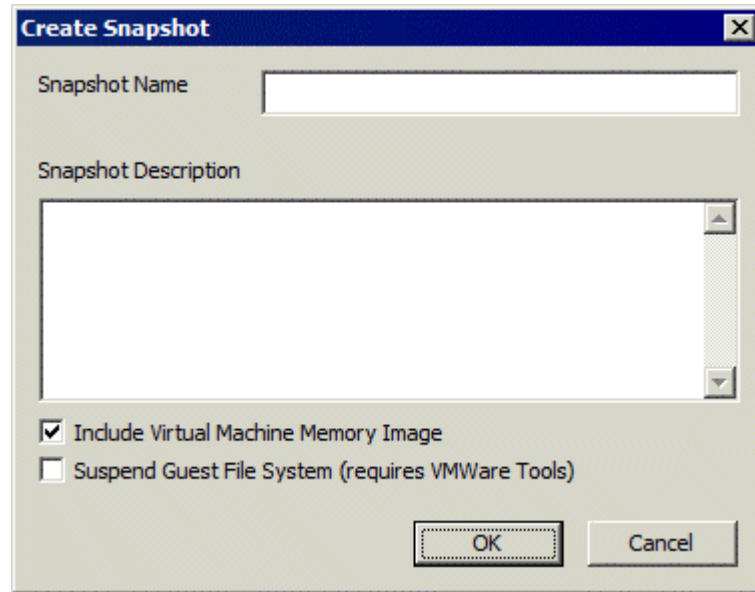
The branches of the VCenter Server tree have various right-click menus:

- **VCenter Servers:**
 - **Add vCenter Server** – Launches the **VCenter Server Property Wizard** to allow a VCenter Server to be defined.
- **Defined VCenter Servers:**
 - **Remove** – Removes the defined VCenter Server from ThinManager.
- **Datacenter:**
 - **Rename** – Allows you to rename the datacenter.
 - **Delete** – Allows you to delete the datacenter.
- **Virtual Machine:**
 - **Power Operations:**
 - **Power On** – Turns on a stopped or suspended virtual machine.
 - **Power Off** – Turns off a stopped or suspended virtual machine.
 - **Suspend** – Suspends a running virtual machine and stores the state.
 - **Reset** – Cycles power to the virtual machine to restart the virtual machine.
 - **Snapshot:**
 - **Take Snapshot** – Captures and stores the state of the virtual machine.
 - **Revert to Current Snapshot** – Reapplies the stored state of a previously saved virtual machine.
 - **Snapshot Manager** – Launches the Snapshot management tool.
 - **Rename** – Allows the virtual machine to be renamed.
 - **Remove from Inventory** – Removes the virtual machine from the tree without deleting the files.
 - **Delete** – Removes the virtual machine from the tree AND deletes the file system.

19.2.2.1 Snapshots

Snapshots save the state of the virtual machine in a file. Snapshots allow you to preserve a working status before applying new applications, programs or updates. If the changes fail or are undesired, then the snapshot can be restored allowing the virtual machine to return to the pre-change state.

Right-clicking on the virtual machine and selecting **Snapshot>Take Snapshot** will launch the **Create Snapshot** window.



Create Snapshot Window

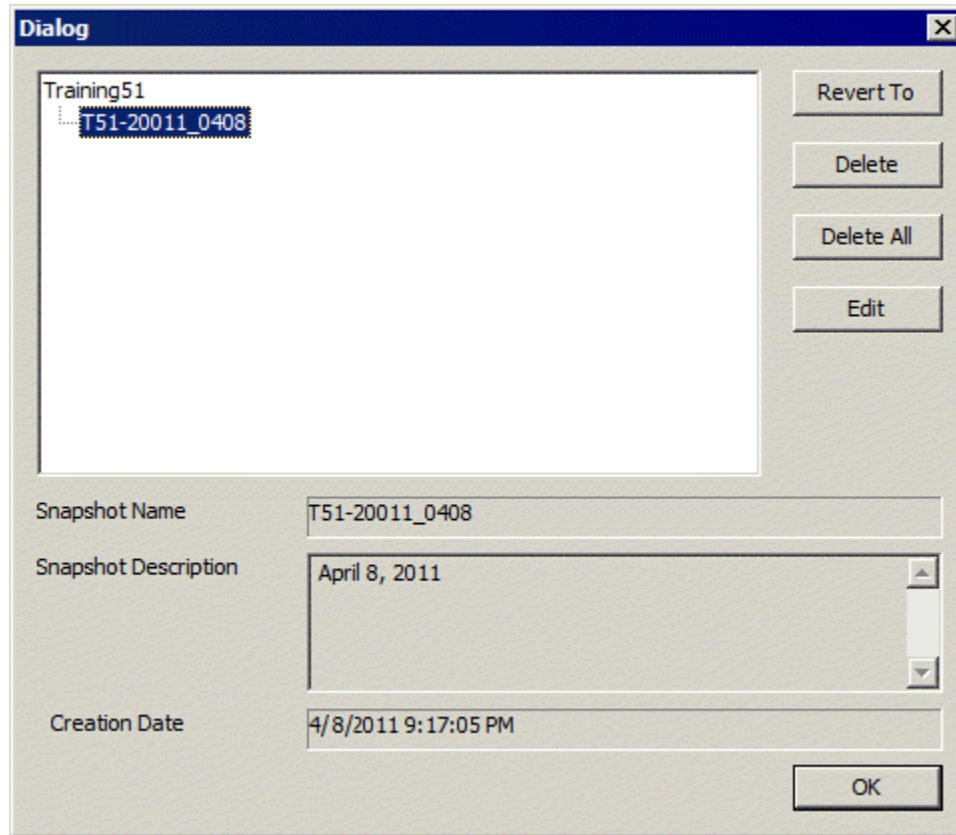
The **Create Snapshot** window allows you to name the snapshot and enter a description.

Select **OK** to save the snapshot or **Cancel** to close without saving.

Multiple snapshots of a virtual machine can be taken.

Right-clicking on the virtual machine and selecting **Snapshot>Revert to Current Snapshot** will apply the last snapshot taken.

Right-clicking on the virtual machine and selecting **Snapshot>Snapshot Manager** will launch the **Snapshot Manager** window.



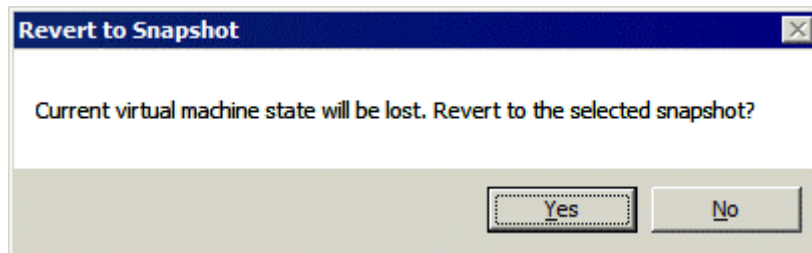
Snapshot Manager

The **Snapshot Manager** window shows all saved snapshots for the selected virtual machine. The **Snapshot Manager** window shows the name, description, and creation date of a highlighted snapshot.

Buttons:

- **Revert To** – This applies the selected saved snapshot.
- **Delete** – This deletes a highlighted snapshot.
- **Delete All** – This deletes all saved snapshots.
- **Edit** – Opens the **Create Snapshot** window to allow changes to the name and description.
- **OK** – Closes the **Snapshot Manager**.

A dialog box will require confirmation before changes are made.



Revert to Snapshot Warning

19.3 Virtual Terminal Servers

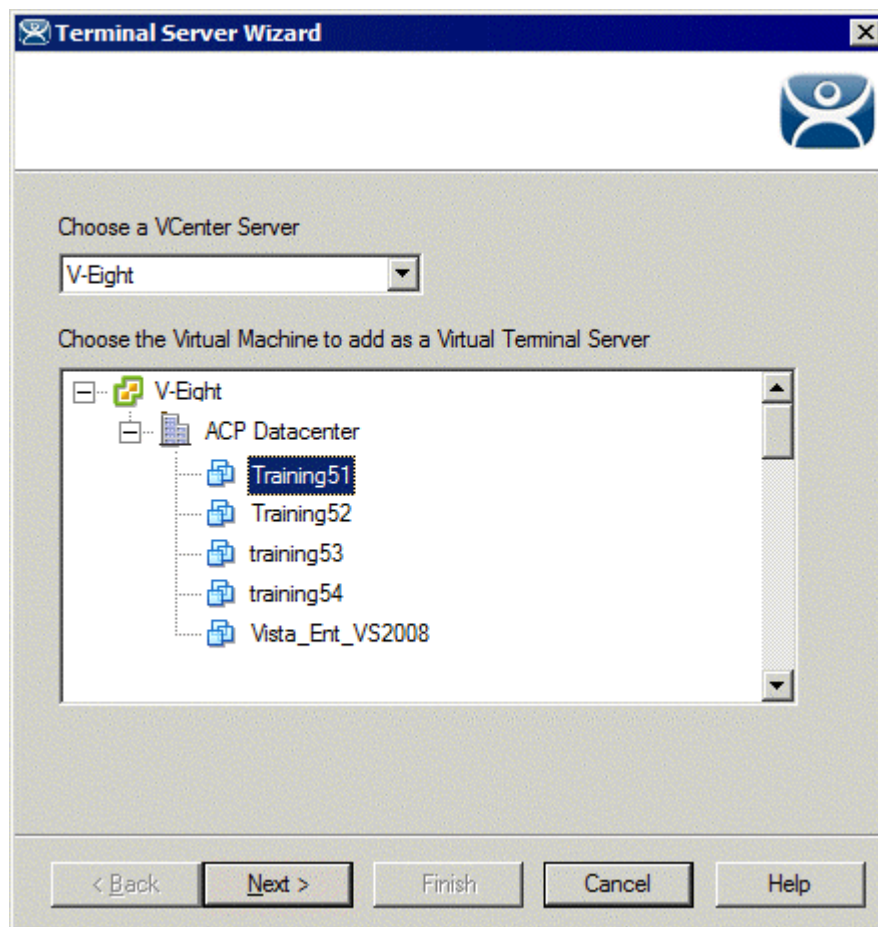
Virtual terminal servers can be added to ThinManager using two methods, **Add Terminal Server** and **Add Virtual Terminal Server**.

Add Terminal Server – You can define a virtual terminal server as a regular terminal server in the Terminal Server Wizard.

Right-click on the Terminal Server branch and select **Add Terminal Server** to launch the Terminal Server Wizard. Add the virtual terminal server as you would a regular terminal server. This doesn't give you any special configuration or tools.

Add Virtual Terminal Server – You can define a virtual terminal server as a virtual terminal server in the Terminal Server Wizard.

Right-click on the Terminal Server branch and select **Add Virtual Terminal Server** to launch the **Terminal Server Wizard**.



VCenter Server Virtual Machine Selection List

The second page of the **Terminal Server Wizard** will display a **Virtual Machine Selection Page**.

Highlight the desired virtual machine and select the **Next** button.

The screenshot shows a window titled "Terminal Server Wizard" with a close button in the top right corner. Below the title bar, the text "Terminal Server Name" is displayed in bold, followed by the instruction "Enter the Terminal Server Name and Log In information." and a blue icon of a person. The main area contains several input fields and buttons:

- "Terminal Server Name" field with the text "Training51" entered.
- "Terminal Server IP" field with the text "10 . 5 . 10 . 51" entered, and a "Discover" button to its right.
- A "Log In Information" section containing four stacked text boxes labeled "Domain", "User Name", "Password", and "Verify Password".
- A "Schedule" button located below the log-in information fields.

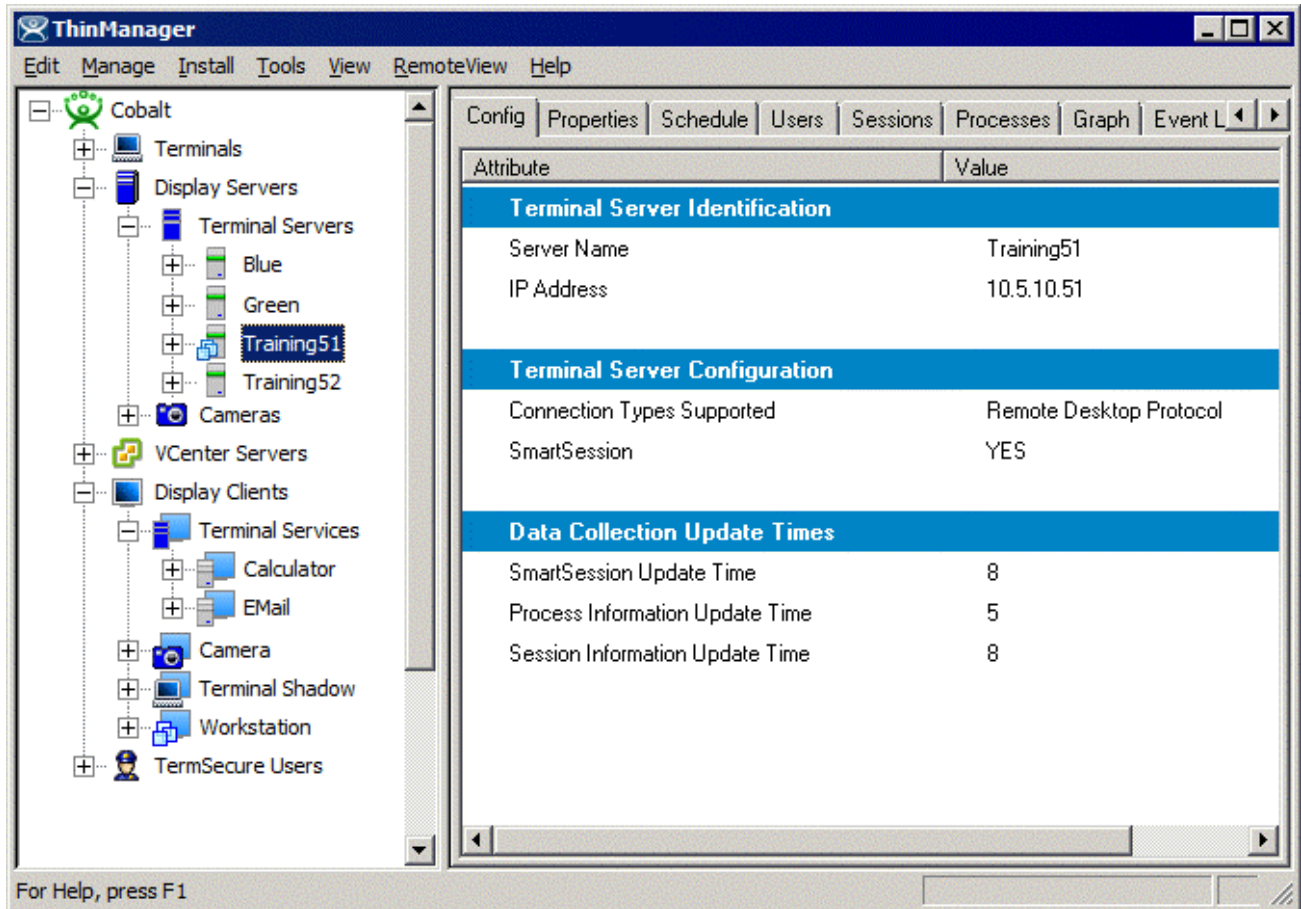
At the bottom of the window, there is a row of five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Server Name Page

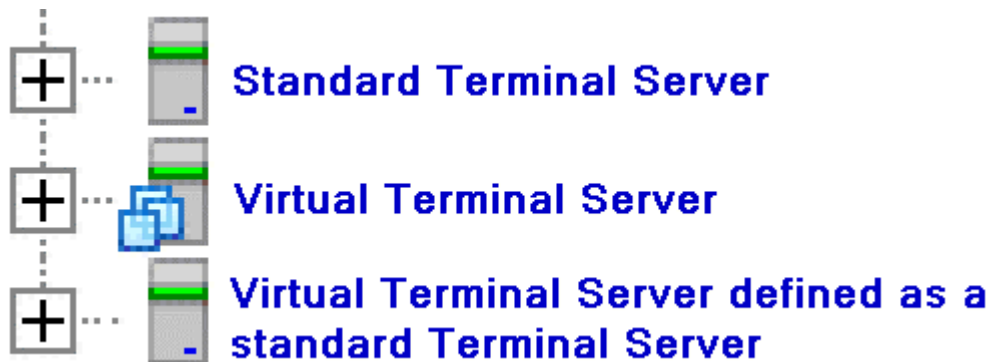
The **Terminal Server Wizard** will continue with the virtual terminal server filling in the fields.

These fields, and the schedule button, are the same as on the normal Terminal Server Wizard. See Terminal Services Display Servers for details.

Select **Next** to continue configuring the virtual terminal server, select **Finish** to save the configuration and close the wizard, or select **Cancel** to close the wizard without saving the changes.



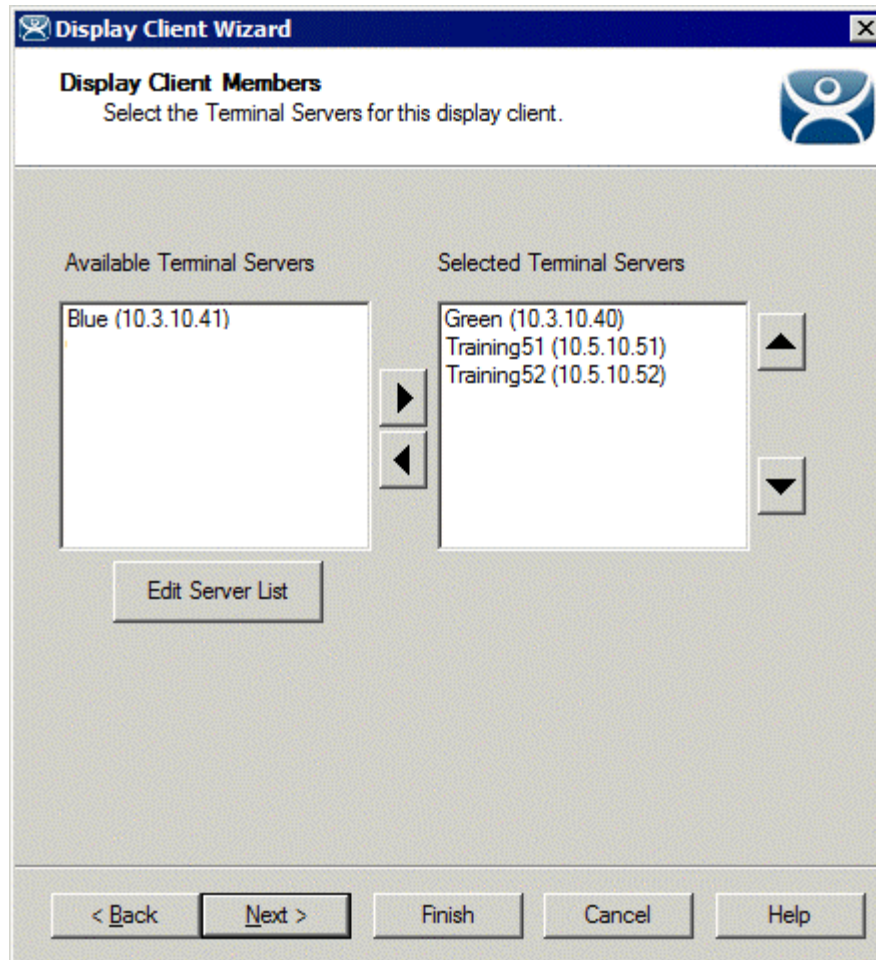
Virtual Terminal Servers in the ThinManager Tree



Terminal Server Tree Icons

Virtual Terminal Servers will show a different icon than a standard terminal server.

A virtual terminal server that is defined as a standard terminal server will show the standard terminal server icon.



Selected Terminal Servers in a Display Client

Virtual and standard terminal servers are treated identically when choosing display clients.

19.4 Virtual Workstations

Windows workstations, XP Pro, Vista Business, or Windows 7 Pro, can be virtualized for deployment as a desktop. ThinManager can deploy these virtual desktops to thin clients to limit the upkeep and management of the operator's workstation.

19.4.1 Workstation Display Clients

First a **Workstation Display Client** needs to be created. This will act as a template for the workstation deployment. Later when the Workstation Display Client is added to a terminal you will need to assign which virtual workstation.

Launch the **Workstation Display Client Wizard** by right-clicking on the Display Client branch of the ThinManager tree or by right-clicking on the Workstation Display Client branch of the ThinManager tree.

Display Client Wizard

Client Name
Enter the Display Client name.

Client Name: SalesDesktop

Type of Display Client: Workstation

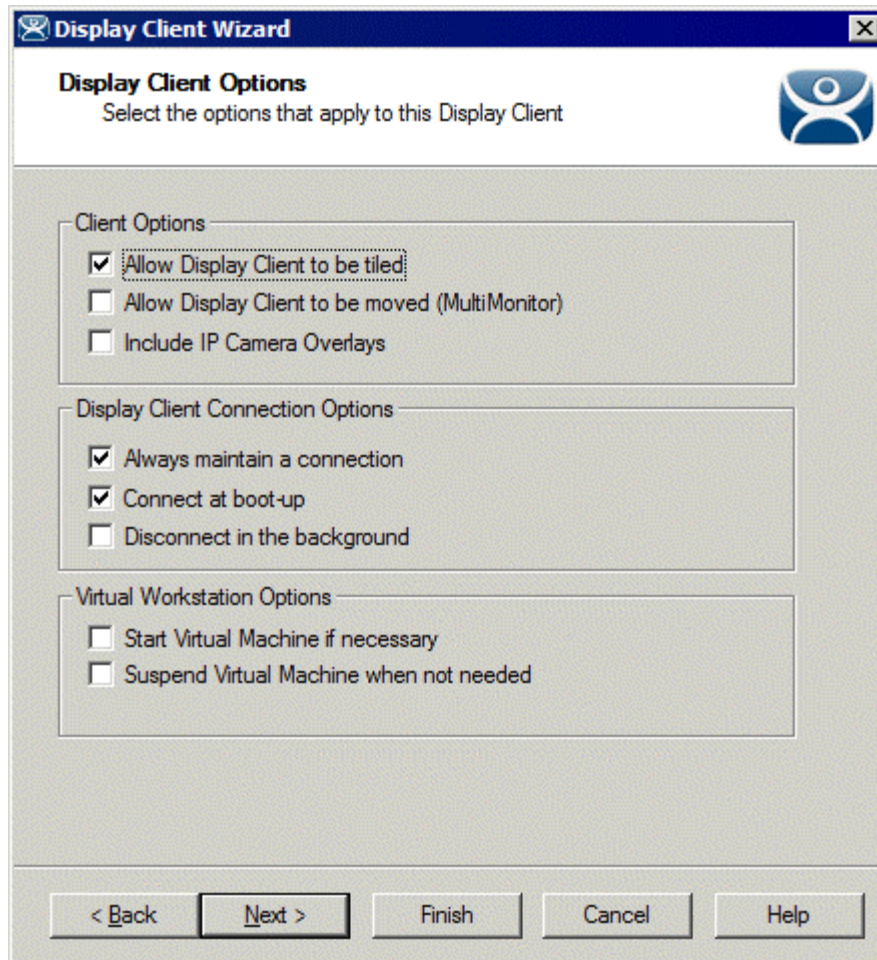
Permissions

< Back Next > Finish Cancel Help

Client Name Page of Display Client Wizard

Enter a name for the Workstation Display Client. Select **Workstation** from the **Type of Display Client** dropdown if you launched the wizard from the Display Client branch.

Select **Next** to continue with the wizard.



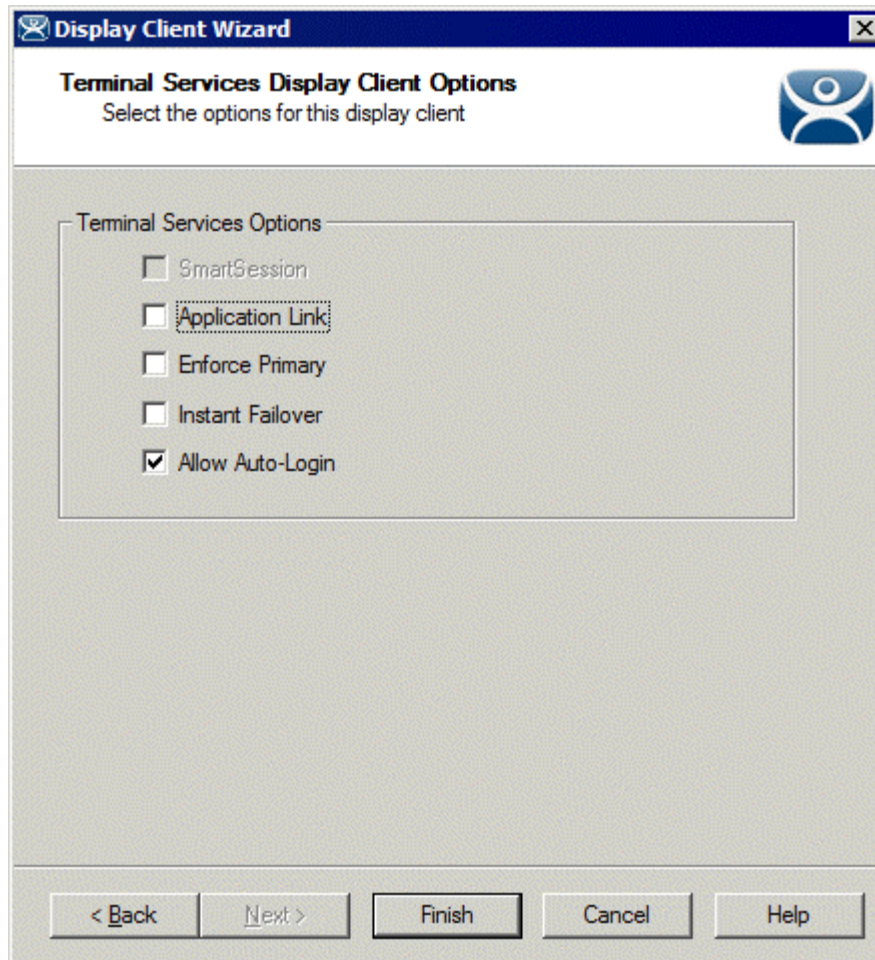
Display Client Option Page of Display Client Wizard

The Workstation Display Client adds **Virtual Workstation Options** to the **Display Client Options** page of the Display Client Wizard. The **Client Options** and **Display Client Connection Options** are the same as other Display Clients. See Terminal Services Display Clients for details.

Virtual Workstation Options:

- **Start Virtual Machine if necessary:** This checkbox, if selected, will automatically start a suspended or stopped virtual machine when it connects.
- **Suspend Virtual Machine when not needed:** This checkbox, if selected, will suspend the virtual machine when the terminal is powered off.

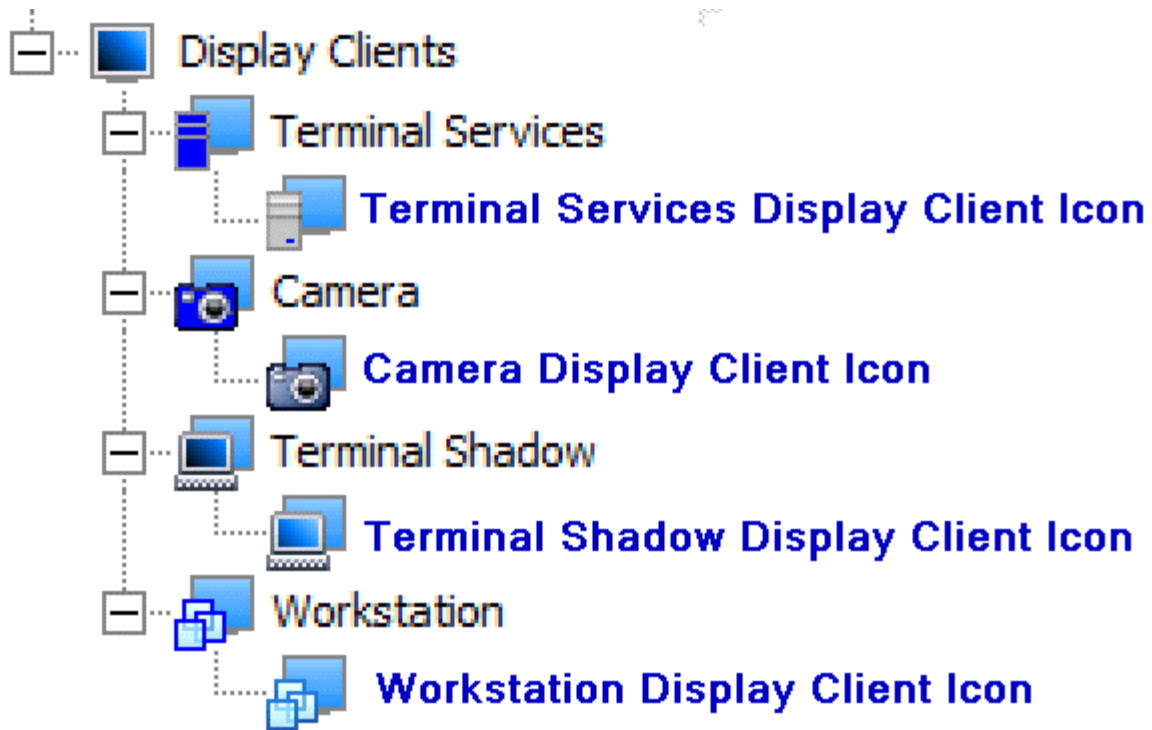
Select **Next** to continue with the wizard.



Terminal Services Display Client Options Page of Display Client Wizard

The Display Client presents the Display Client Wizard similar to the Terminal Services Display Client Wizard, with the exception of omitting the addition of terminal servers. Since workstations have a one-to-one relationship to the terminals the workstations are assigned when the terminal is configured.

Select **Finish** to accept the changes and close the wizard.



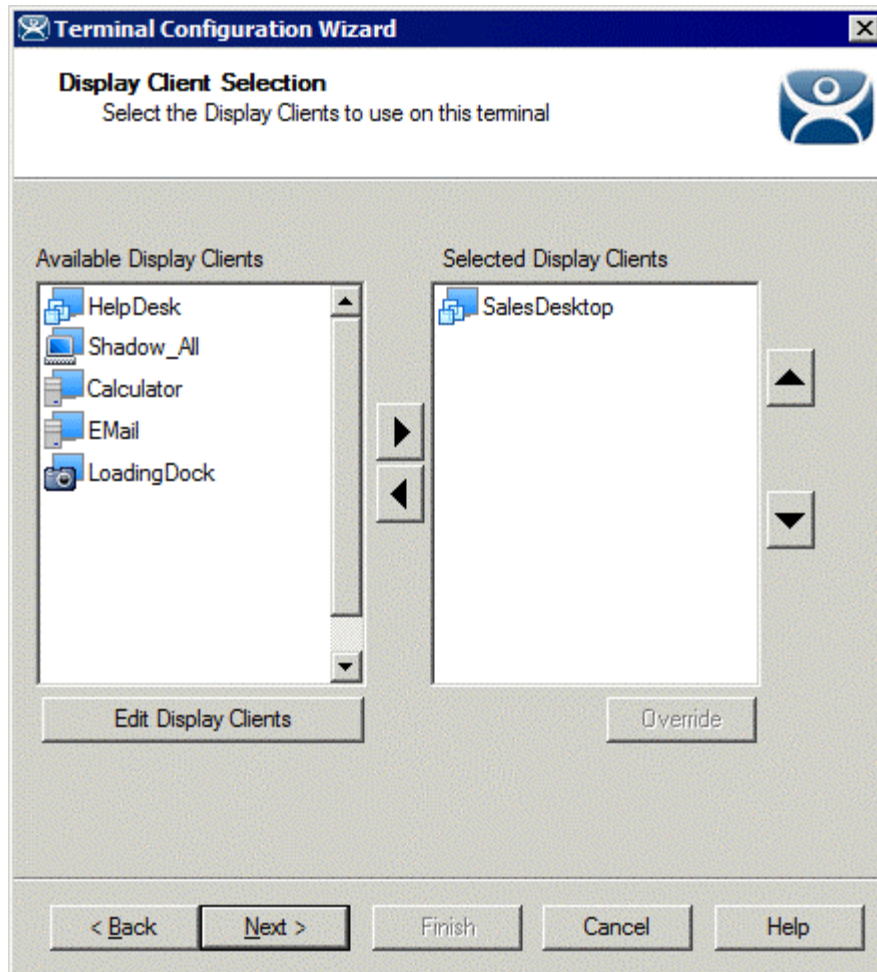
Display Client Icons

When the Workstation Display Client is created it will be added to the tree with the Workstation Display Client icon.

19.4.2 Terminals and Virtual Workstations

Workstations can only deploy their session once to a remote user so the workstation is assigned to its remote connection when the Workstation Display Client is applied to a terminal.

Open the **Terminal Configuration Wizard** for the terminal that you want to assign a workstation to.



Display Client Selection of the Terminal Configuration Wizard

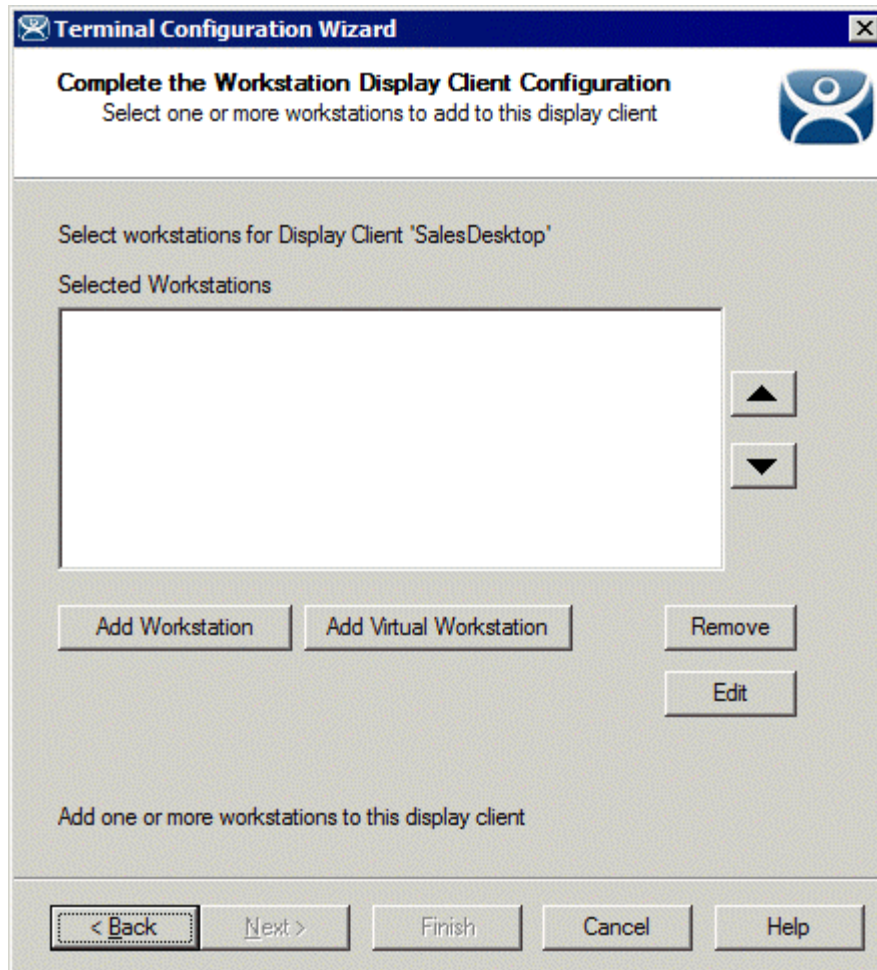
The Workstation Display Clients will show up in the **Available Display Clients** list on the **Display Client Selection** page of the Terminal Configuration Wizard. Move the desired Workstation Display Client to the **Selected Display Client** list for deployment.



Workstation Display Client Icon

Workstation Display Clients have their own icon.

Select **Next** to continue the wizard.



Complete the Workstation Display Client Configuration Page

The next page of the wizard is the **Complete the Workstation Display Client Configuration Page**.

Importance of Page: Each deployment of a Workstation Display Client needs to be tied to an available workstation.

Buttons:

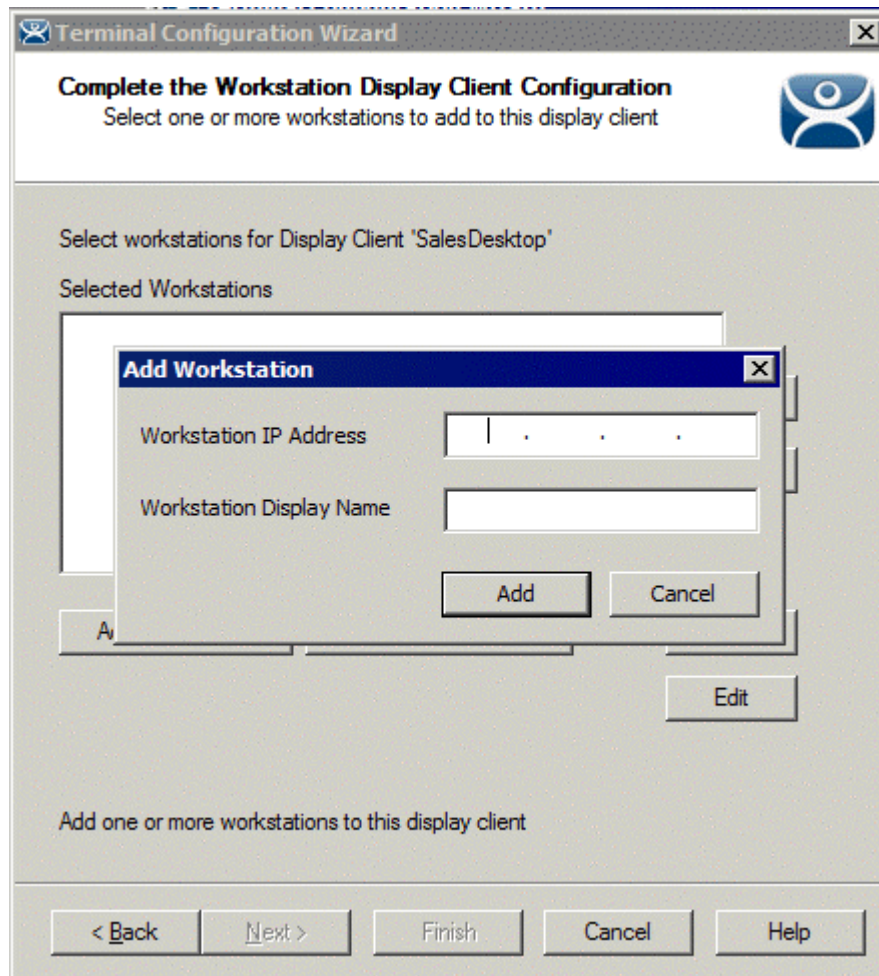
- **Add Workstation** – This button will launch a window that allows a workstation to be designated for use by this terminal.
- **Add Virtual Workstation** – This button will launch a window that allows a virtual workstation to be designated for use by this terminal.
- **Remove** – This button remove a highlighted workstation from the **Selected Workstation** list.
- **Edit** – This button will re-open the window that allowed a workstation to be added to the **Selected Workstation** list.
- **Arrows** – This button will change the loading order of the assigned workstations.

Fields:

- **Selected Workstations** – This textbox will display the workstations assigned to the terminal.

Why Change from Default Settings:

ThinManager won't connect to workstation unless you tell it to.

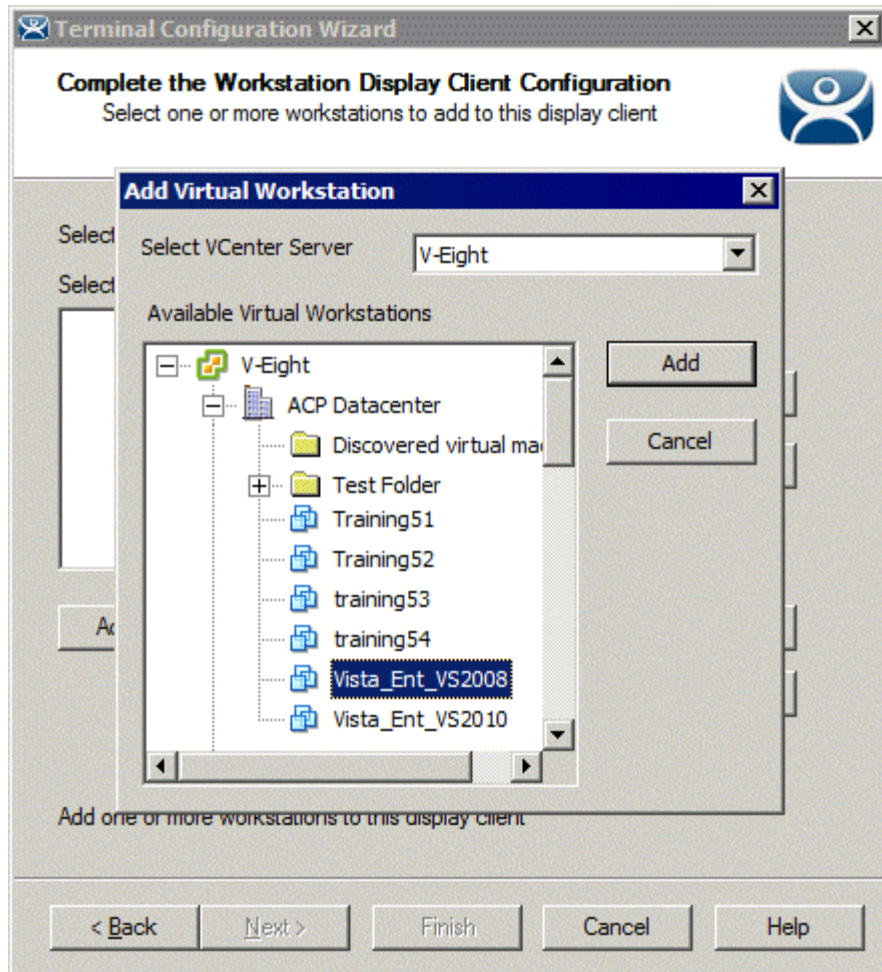


Add Workstation Window

Selecting the **Add Workstation** button on the **Complete the Workstation Display Client Configuration Page** will launch the **Add Workstation** window.

Enter the name and address of the workstation in the appropriate fields.

Select **Add** to accept the configuration or select **Cancel** to close the window.

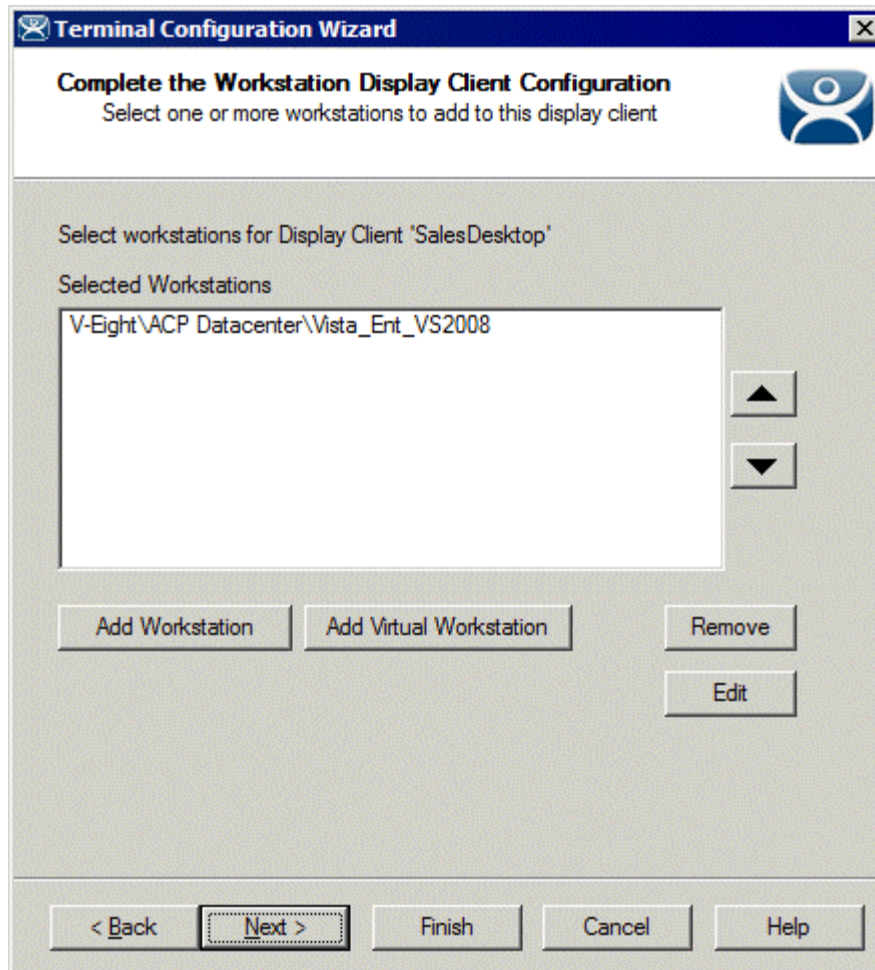


Add Virtual Workstation Window

Selecting the **Add Virtual Workstation** button on the **Complete the Workstation Display Client Configuration Page** will launch the **Add Virtual Workstation** window.

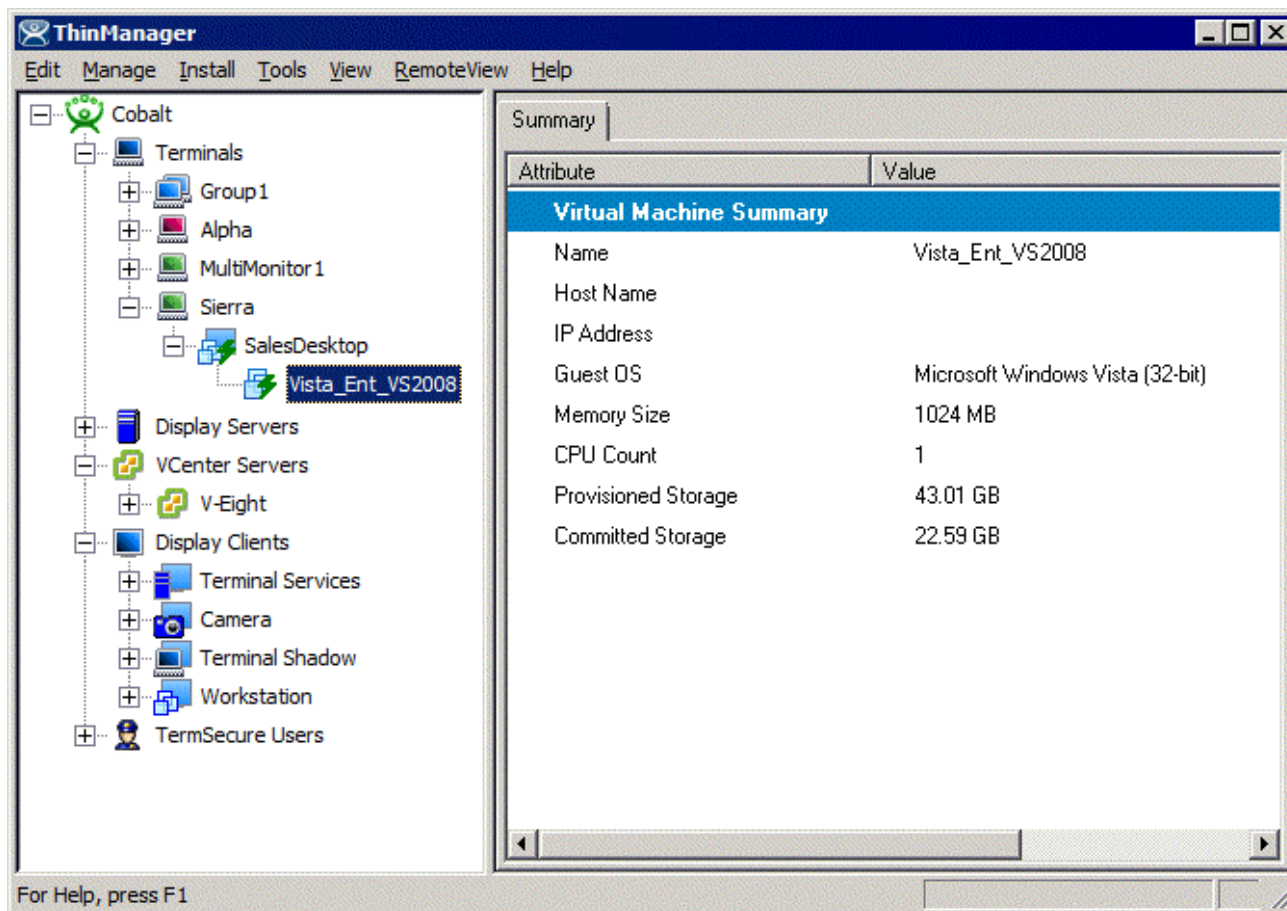
The VCenter Server tree will be displayed in the **Available Virtual Workstation** pane. Highlight the desired virtual workstation and select the **Add** button to apply the virtual workstation to the terminal.

Select **Cancel** to close the window without accepting the configuration.



Complete the Workstation Display Client Configuration Page

Once a workstation or virtual workstation is assigned to the terminal it will be displayed in the **Selected Workstations** window.



Workstation in ThinManager Tree

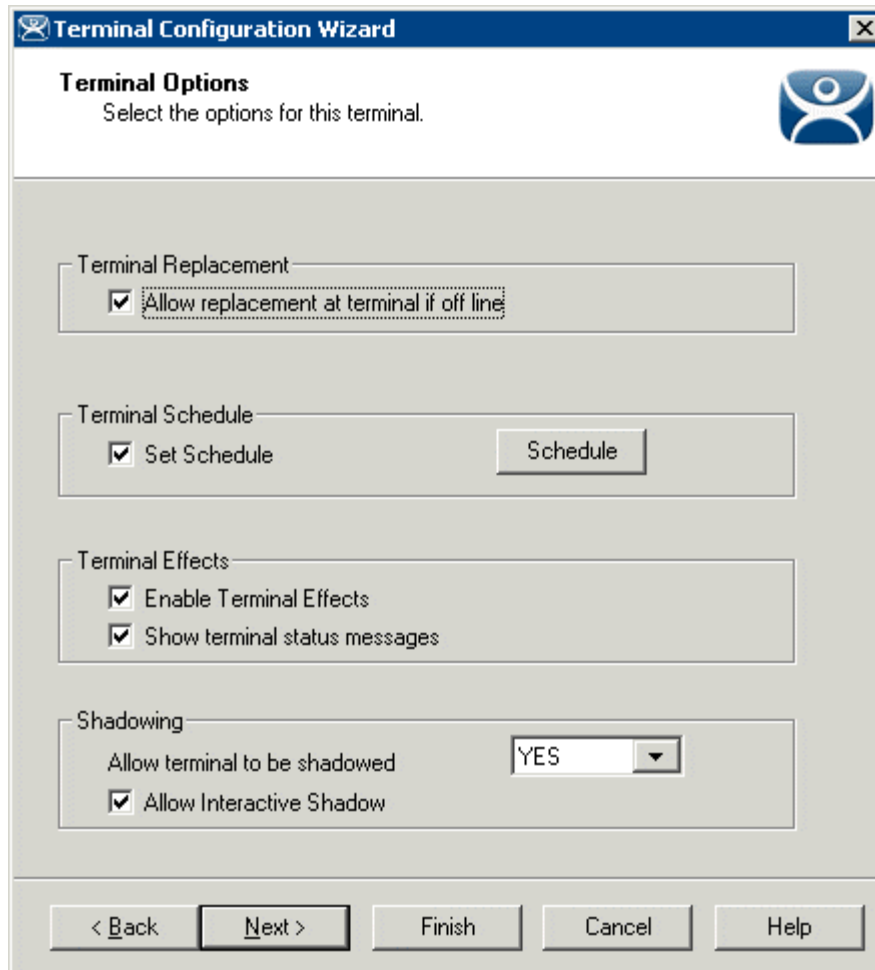
The ThinManager tree will display the workstation icons for the terminal once the terminal is restarted to apply the configuration changes.

20 Scheduling

ThinManager allows tasks to be automated with the Schedule function. This applies to Terminals, Terminal Groups, Terminal Servers, TermSecure Users, and the ThinManager Server.

20.1 Terminal Schedule

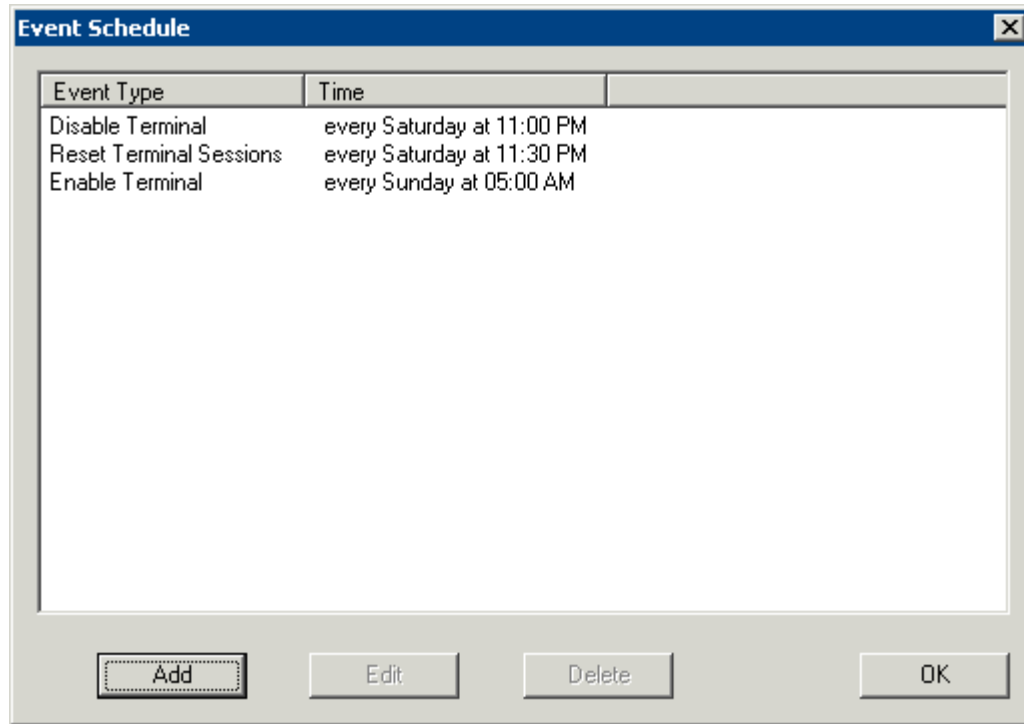
Selecting the ***Schedule*** button on the **Terminal Options** page will launch the **Event Schedule** window and allow a schedule to be created for terminal events.



Terminal Configuration Wizard - Terminal Options Page

Check the **Set Schedule** checkbox and select the **Schedule** button to launch the **Event Schedule** window.

Note: The Schedule for Terminal Groups is the same as for individual terminals. It has an advantage of applying the scheduled events to a whole group of terminals instead of requiring a configuration for each event on each terminal.

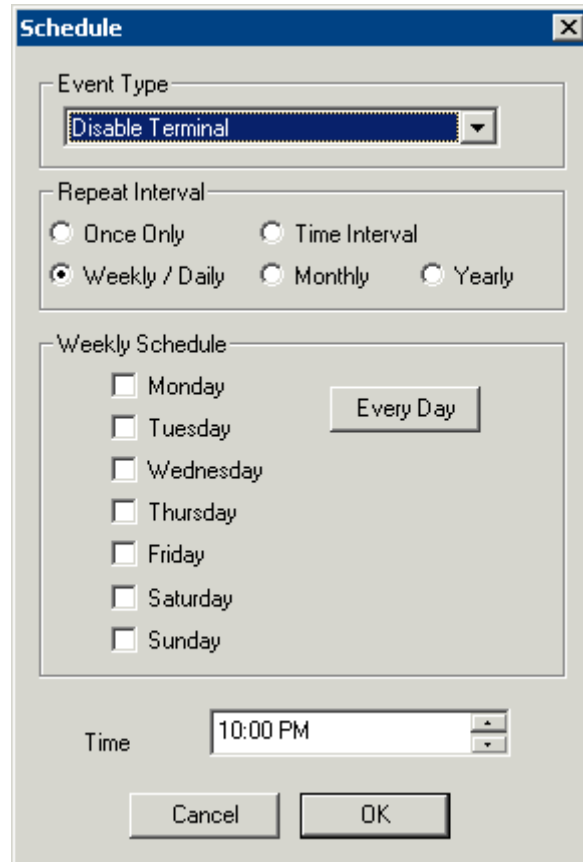


Event Schedule

The Event Schedule will list events for the terminal or group. It has four buttons:

- The **Add** button will launch a **Schedule** window to allow an event to be configured.
- The **Edit** button will allow a highlighted event to be changed.
- The **Delete** button will remove a highlighted event.
- The **OK** button will accept changes and close the **Event Schedule** window.

Events can be added by selecting the **Add** button to launch the **Schedule** window.



Schedule Window

The **Schedule** window has several configuration settings.

Event Type is a drop-down box that allows event selection:

- **Disable Terminal** - This will prevent a terminal from being used, although its terminal server sessions will still be running on the terminal servers.
- **Enable Terminal** - This will allow a disabled terminal to become active again.
- **Reboot Terminal** - This will cycle power on the terminal and reload its configuration.
- **Reset Terminal Sessions** - This will logoff the sessions that the terminal has open on terminal servers.

The **Repeat Interval** radio buttons allow the event in the **Event Type** drop-down to be run **Once Only**, **Weekly/Daily**, **Monthly**, or **Yearly**.

- Selecting **Once Only** will show a **Select Date** field for the event.
- Selecting **Weekly/Daily** will show a **Weekly Schedule** list for the event to run. The **Every Day** button will select all the days in the list.
- Selecting **Monthly** will show a **Select Day of Month** field for the event.
- Selecting **Yearly** will show a **Select Date** field for the event.

The **Time** field allows the selection of the time that the event should occur.

Select the **OK** button to close the **Schedule** window.

Select **Add** to add another event to the **Event Schedule** or select **OK** to close the **Event Schedule** window and return to the terminal configuration.

20.2 Terminal Server Schedule

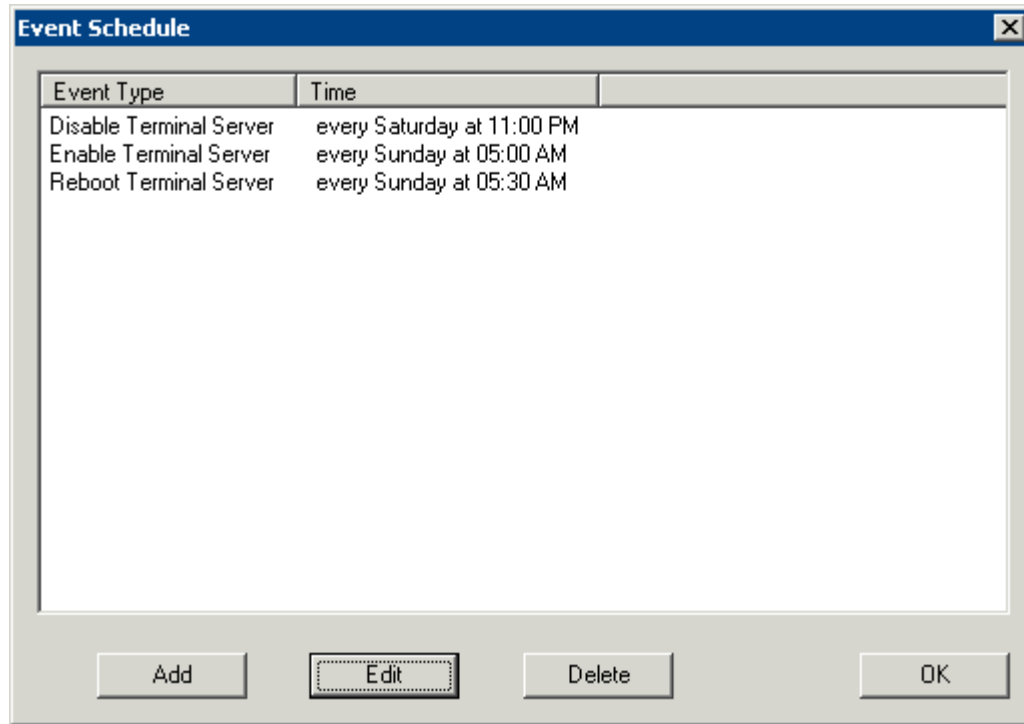
The **Terminal Server Name** page of the Terminal Server Wizard has a **Schedule** button to configure a schedule for terminal server events.

The screenshot shows the 'Terminal Server Wizard' window. The title bar reads 'Terminal Server Wizard'. The main heading is 'Terminal Server Name' with the instruction 'Enter the Terminal Server Name and Log In information.' The form contains the following fields and buttons:

- Terminal Server Name:
- Terminal Server IP:
- Log In Information section:
 - Domain:
 - User Name:
 - Password:
 - Verify Password:
-
- Navigation buttons at the bottom: , , , ,

Terminal Server Wizard – Terminal Server Name Page

Select the **Schedule** button on the **Terminal Server Name** page of the Terminal Server Wizard to launch the **Event Schedule** window.

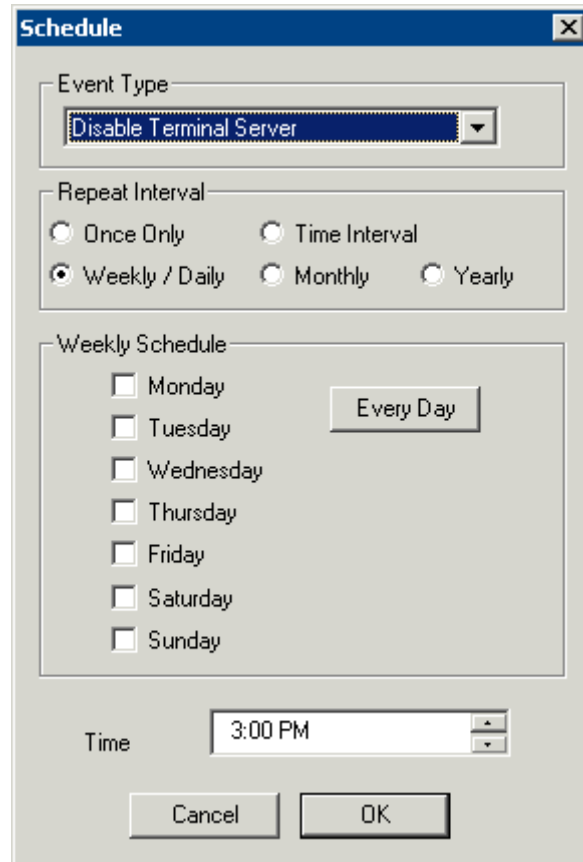


Event Schedule

The **Event Schedule** will list events for the terminal or group. It has four buttons.

- The **Add** button will launch a **Schedule** window to allow an event to be configured.
- The **Edit** button will allow a highlighted event to be changed.
- The **Delete** button will remove a highlighted event.
- The **OK** button will accept changes and close the **Event Schedule** window.

Events can be added by selecting the **Add** button to launch the **Schedule** window.



Schedule Window

The **Schedule** window has several configuration settings.

Event Type is a drop-down box that allows event selection:

- **Disable Terminal Server** - This will disconnect all the thin clients connected to the terminal server. The sessions will remain idle on the terminal server unless they are set to disconnect in the Terminal Services Configuration console. See [Disable Terminal Server](#) for details.
- **Enable Terminal Server** - This will allow a disabled terminal server to accept thin client connections again.
- **Reboot Terminal Server** - This will cycle power on the terminal server and restart it.

The **Repeat Interval** radio buttons allow the event in the **Event Type** drop-down to be run **Once Only**, **Weekly/Daily**, **Monthly**, or **Yearly**.

- Selecting **Once Only** will show a **Select Date** field for the event.
- Selecting **Weekly/Daily** will show a **Weekly Schedule** list for the event to run. The **Every Day** button will select all the days in the list.
- Selecting **Monthly** will show a **Select Day of Month** field for the event.
- Selecting **Yearly** will show a **Select Date** field for the event.

The **Time** field allows the selection of the time that the event should occur.

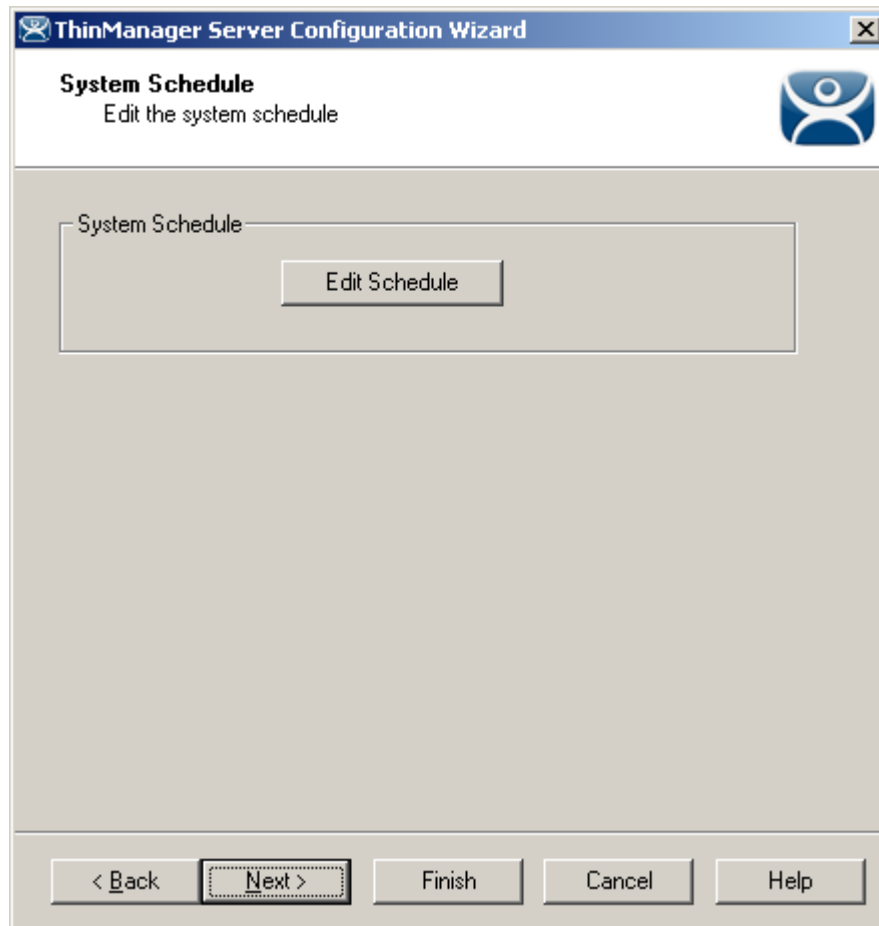
Select the **OK** button to close the **Schedule** window.

Select **Add** to add another event to the **Event Schedule** or select **OK** to close the **Event Schedule** window and return to the terminal server configuration.

20.3 ThinManager Server Schedule

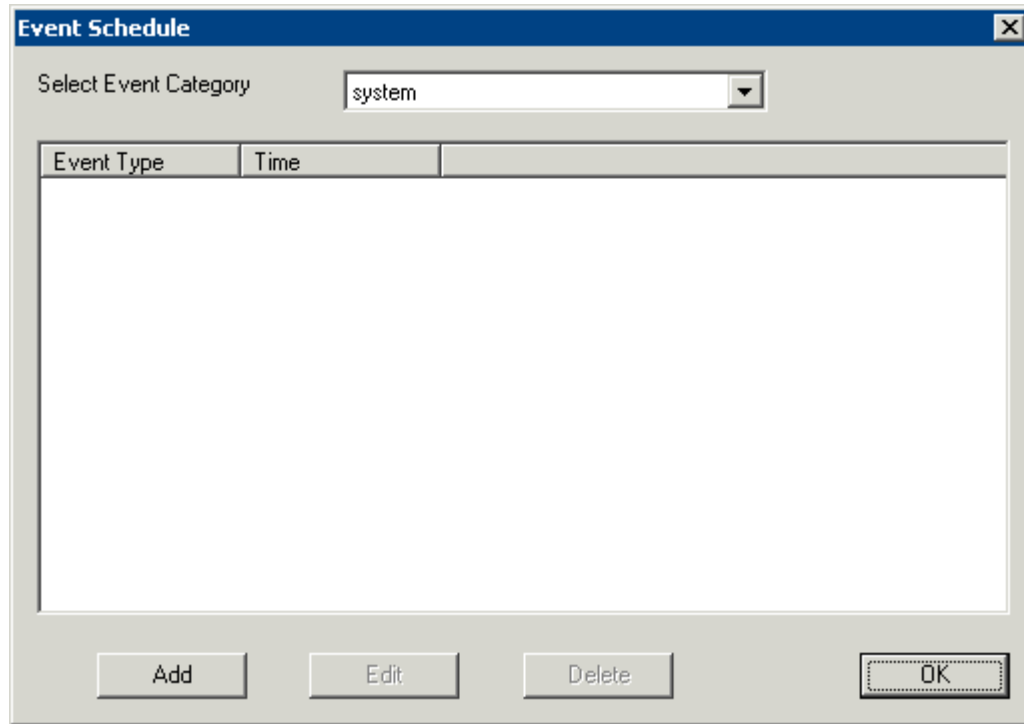
The **ThinManager Server Configuration Wizard** has a **System Schedule** page that allows the Scheduler to be launched. This allows tasks to be scheduled for the ThinManager Server.

20.3.1.1 System Schedule



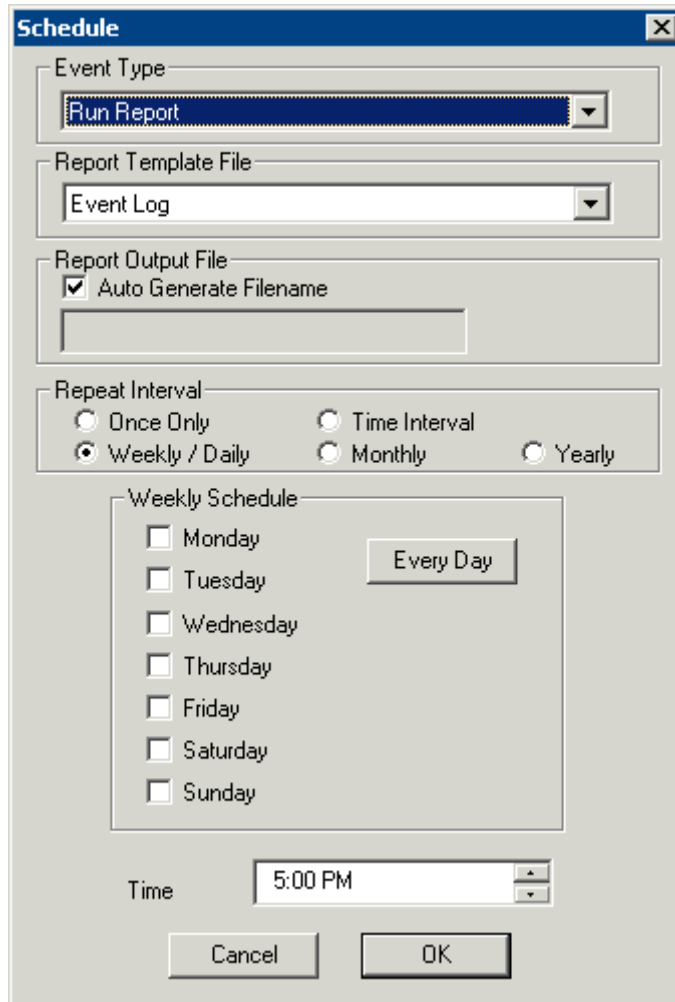
System Schedule

Select the **Edit Schedule** button to launch the **Event Schedule** window.



Event Schedule Window

The **Event Schedule** window allows events to be scheduled by selecting the **Add** button when **system** is displayed in the **Select Event Category** drop-down box.



Schedule for Weekly Event

The **Schedule** dialog allows events to be scheduled for the ThinManager. The two main events are **Run Report** and **Backup Configuration Database**.

Select the desired event in the **Event Type** drop-down.

If **Run Report** is chosen, select the desired report in the **Report Template File** drop-down.

If **Backup Configuration Database** is chosen the backup file will be automatically chosen if the **Auto Generate Filename** checkbox is selected. To use a different filename, uncheck the **Auto Generate Filename** checkbox and enter the desired name in the **Report Output Filename**. A **Browse** button will appear to allow selection of the file.

The **Repeat Interval** radio buttons control the frequency of the event. The time selection varies with the **Repeat Interval** chosen.

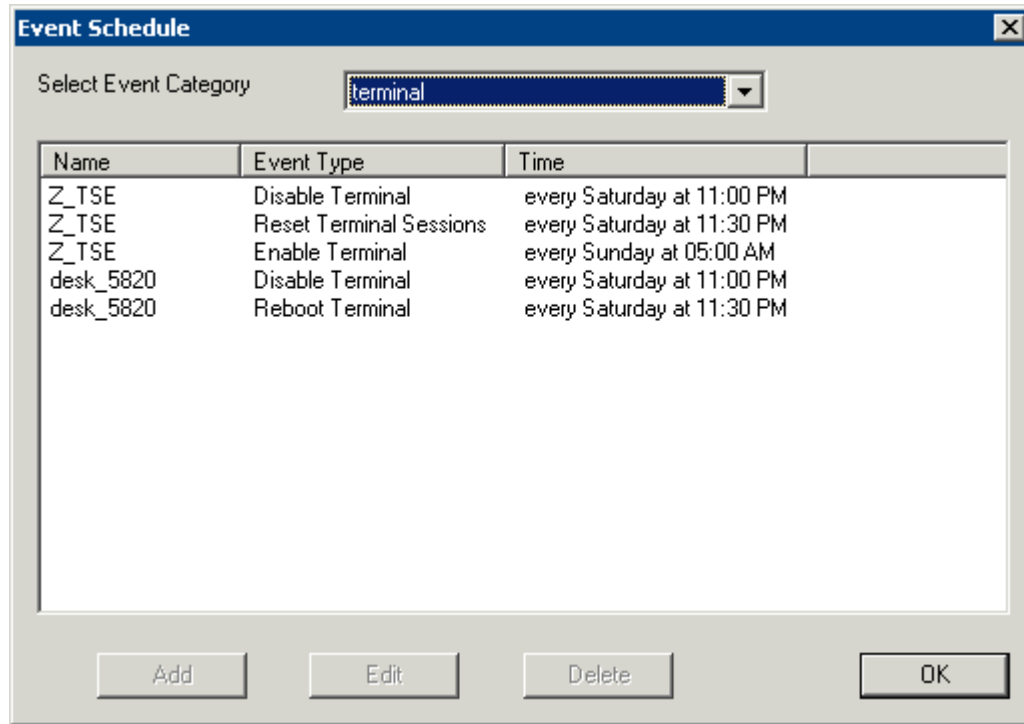
The screenshot shows a 'Schedule' dialog box with the following configuration:

- Event Type:** Backup Configuration Database
- Backup File:** Auto Generate Filename
- Repeat Interval:**
 - Once Only
 - Time Interval
 - Monthly
 - Weekly / Daily
 - Yearly
- Select Day of Month:** 15
- Time:** 8:00 PM

Schedule for Monthly Event

Select the appropriate time for the event and select **OK** to accept the configuration and **Cancel** to cancel the changes.

While the **Event Schedule** window is open, other scheduled events can be viewed by selecting the event type in the **Select Events Category** drop-down. The event categories are **system** (ThinManager Server), **terminal** (Terminals), **terminalserver** (Terminal Servers) and **user** (TermSecure Users).



Events Schedule

New events cannot be added for the non-system categories, but existing events can be changed by highlighting an event and selecting the **Edit** button. Events can be deleted by selecting the **Delete** button.

The **OK** button accepts the changes and closes the window.

20.4 TermSecure User Schedule

TermSecure Users and TermSecure User Groups have a schedule on the **User Options** page of the TermSecure User Configuration Wizard.

TermSecure User Configuration Wizard

User Options
Select options for this user.

Log In / Log Out Options

Inactivity Timeout: 120 seconds

Reset Sessions at Logout:

Activate User Group at Log In:

User Schedule

Set Schedule Schedule

Terminal Effects

Enable Terminal Effects

Shadowing

Allow terminal to be shadowed: YES

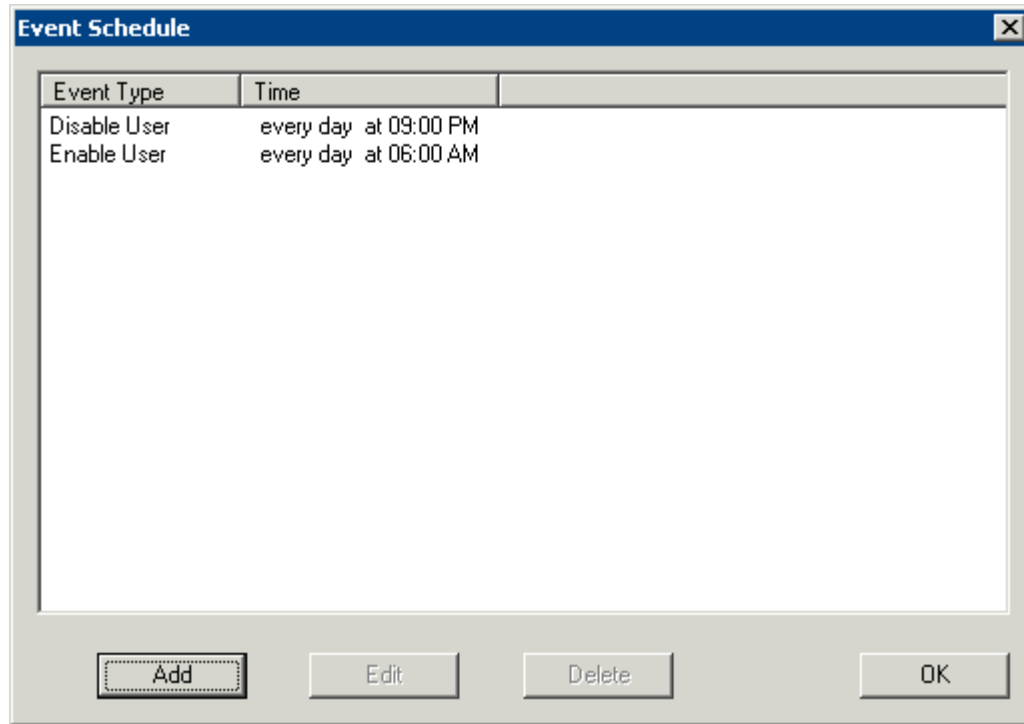
Allow Interactive Shadow

< Back Next > Finish Cancel Help

TermSecure User Terminal Configuration Wizard – User Options Page

Check the **Set Schedule** checkbox and select the **Schedule** button to launch the **Event Schedule** window.

Note: The Schedule for TermSecure User Groups is the same as for individual TermSecure Users. It has an advantage of applying the scheduled events to a whole group of users instead of requiring a configuration for each event on each user.

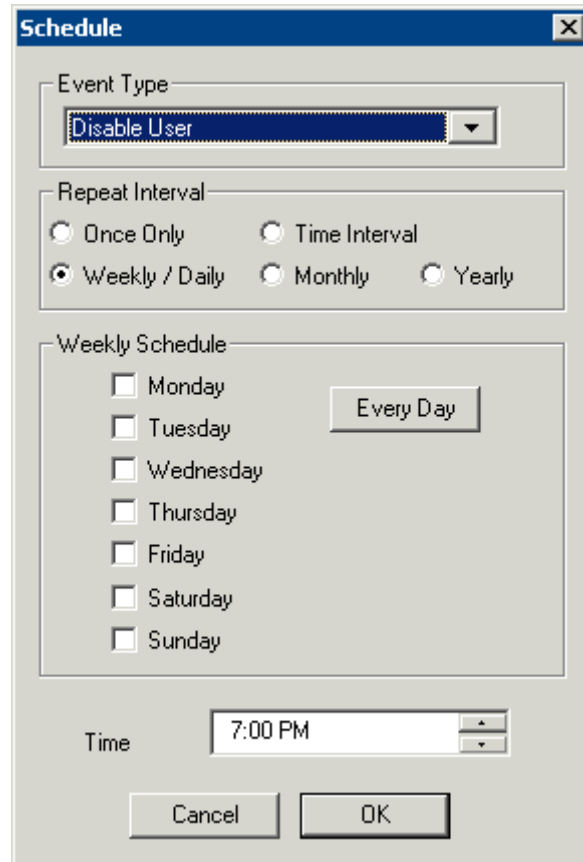


Event Schedule

The Event Schedule will list events for the TermSecure User or TermSecure User group. It has four buttons:

- The **Add** button will launch a **Schedule** window to allow an event to be configured.
- The **Edit** button will allow a highlighted event to be changed.
- The **Delete** button will remove a highlighted event.
- The **OK** button will accept changes and close the **Event Schedule** window.

Events can be added by selecting the **Add** button to launch the **Schedule** window.



Schedule Window

The **Schedule** window has several configuration settings.

Event Type is a drop-down box that allows event selection:

- **Disable User** - This will prevent a user from logging in through TermSecure or will disconnect and existing session.
- **Enable User** - This will allow a user to become active again.

The **Repeat Interval** radio buttons allow the event in the **Event Type** drop-down to be run **Once Only**, **Weekly/Daily**, **Monthly**, or **Yearly**.

- Selecting **Once Only** will show a **Select Date** field for the event.
- Selecting **Weekly/Daily** will show a **Weekly Schedule** list for the event to run. The **Every Day** button will select all the days in the list.
- Selecting **Monthly** will show a **Select Day of Month** field for the event.
- Selecting **Yearly** will show a **Select Date** field for the event.

The **Time** field allows the selection of the time that the event should occur.

Select the **OK** button to close the **Schedule** window.

Select **Add** to add another event to the **Event Schedule** or select **OK** to close the **Event Schedule** window and return to the terminal configuration.

21 Reports

21.1 Reports

ThinManager has the ability to run reports to show and collect data on the ThinManager system. These reports can show the event log, configurations, uptimes, and other data.

A **Reports** tab on the Details pane will show a report for a highlighted ThinManager Server, terminal, terminal group, terminal server, TermSecure user, or TermSecure user group.

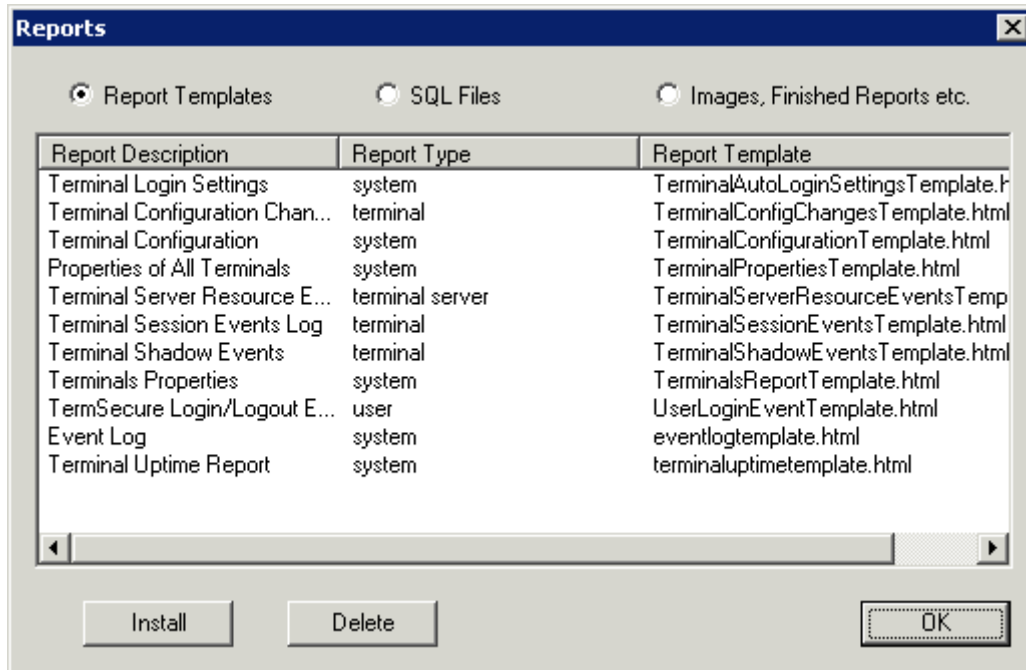
Reports can be scheduled to be run and saved as ***.html** files for storage or further analysis.

21.2 Report Template Installation

ThinManager will install a number of reports into the ThinManager folder (C:\Program Files\Automation Control Products\ThinManager\ReportTemplates) during installation.

Additional report templates can be downloaded from www.thinmanager.com/support/downloads.shtml as they become available.

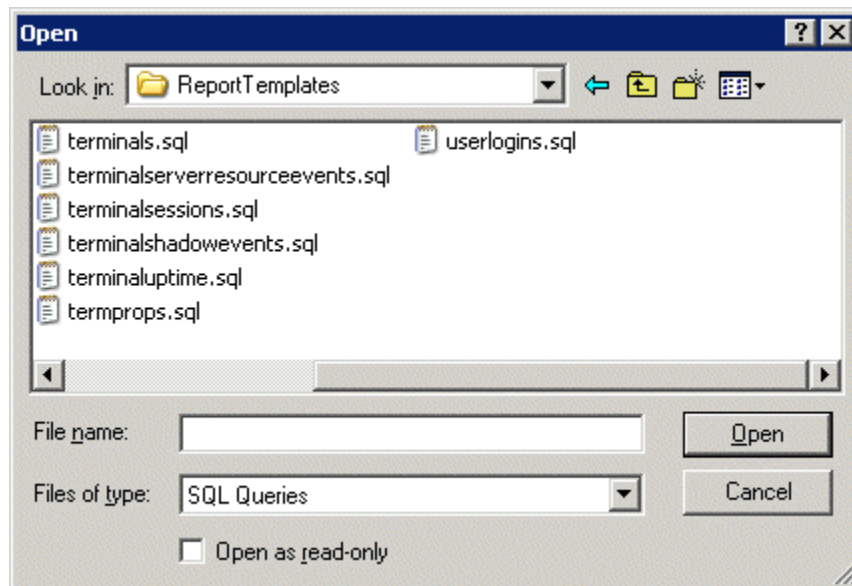
New reports are installed by selecting **Install > Reports** from the ThinManager menu. This launches the **Reports** window.



Reports Window

Select the **Install** button to launch a file browser.

- **Report Templates** – If this radio button is selected the file browser will browse for ***.html** files.
- **SQL Files** – If this radio button is selected the file browser will browse for ***.sql** files.
- **Images, Finished Reports, etc.** – If this radio button is selected the file browser will browse for assorted files.

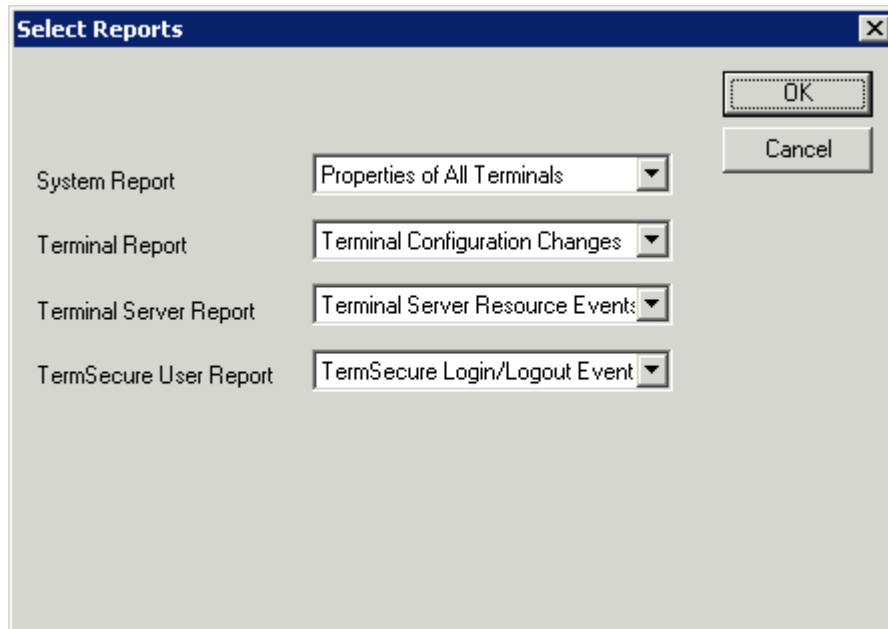


File Browser

Each report has a ***.html** component and a ***.sql** component. Select the **Report Templates** radio button, browse to the new ***.html** file, and select **Open** to install. Select the **SQL Files** radio button, browse to the new ***.sql** file and select **Open** to install. Once these two components are added the report will be available.

21.3 Selecting Reports

The reports are displayed on a **Report** tab in ThinManager. To select which report will be displayed on the Report tab select **View > Reports** from the ThinManager menu to launch the **Select Reports** window.



Select Reports Window

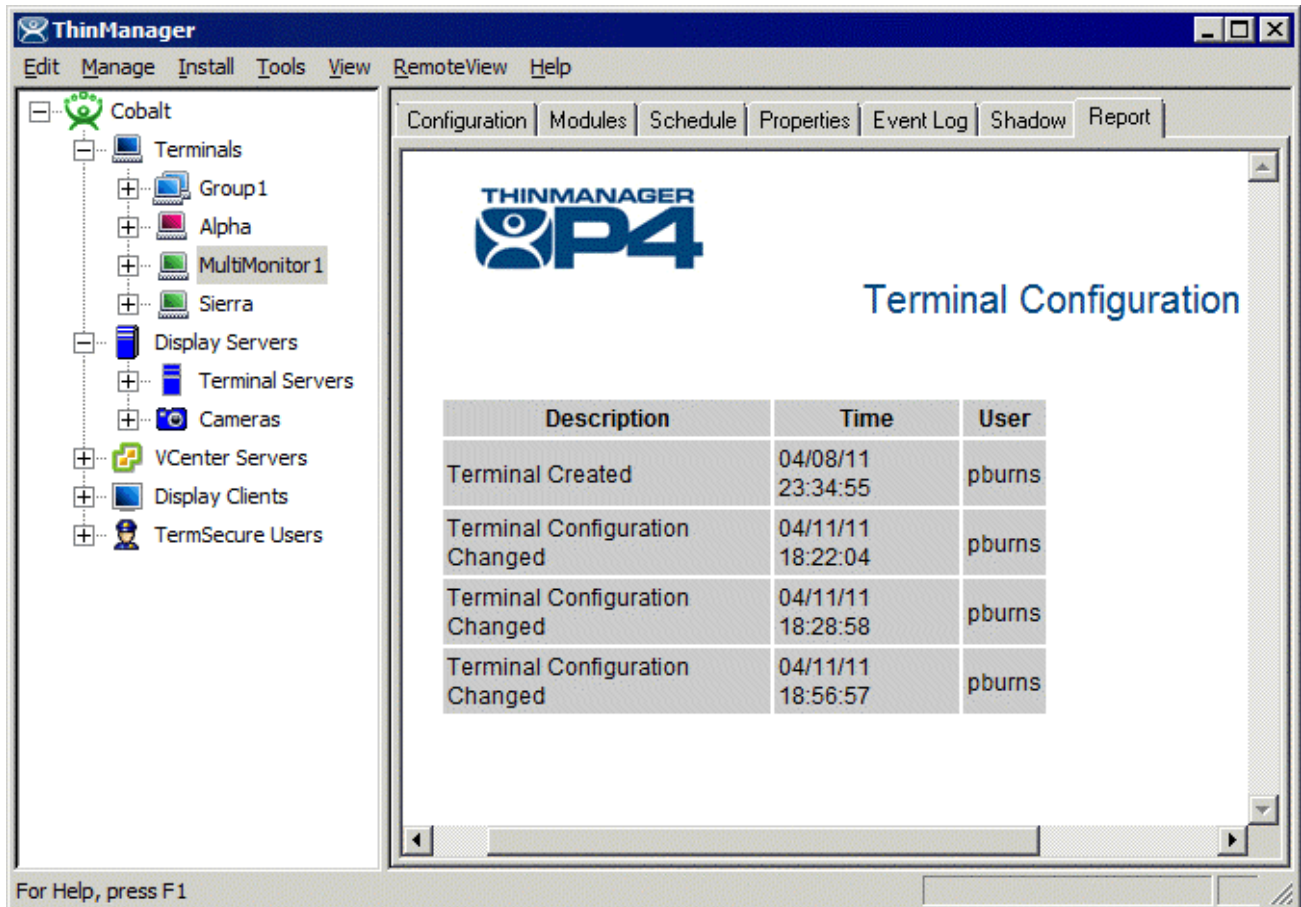
The **Select Reports** window has four fields that determine which report is displayed on the report tab.

- **System Report** – This selects the report to display on the report tab when the ThinManager Server is highlighted.
- **Terminal Report** – This selects the report to display on the report tab when a terminal or terminal group is highlighted.
- **Terminal Server Report** – This select the report to display on the report tab when a terminal server is highlighted.
- **TermSecure User Report** – This selects the report to display on the report tab when a TermSecure User or TermSecure User Group is highlighted.

Use the drop-down list to select the desired report.

21.4 Report Tab

The reports selected in the **Select Reports** window will be displayed on the **Report** tab in ThinManager.

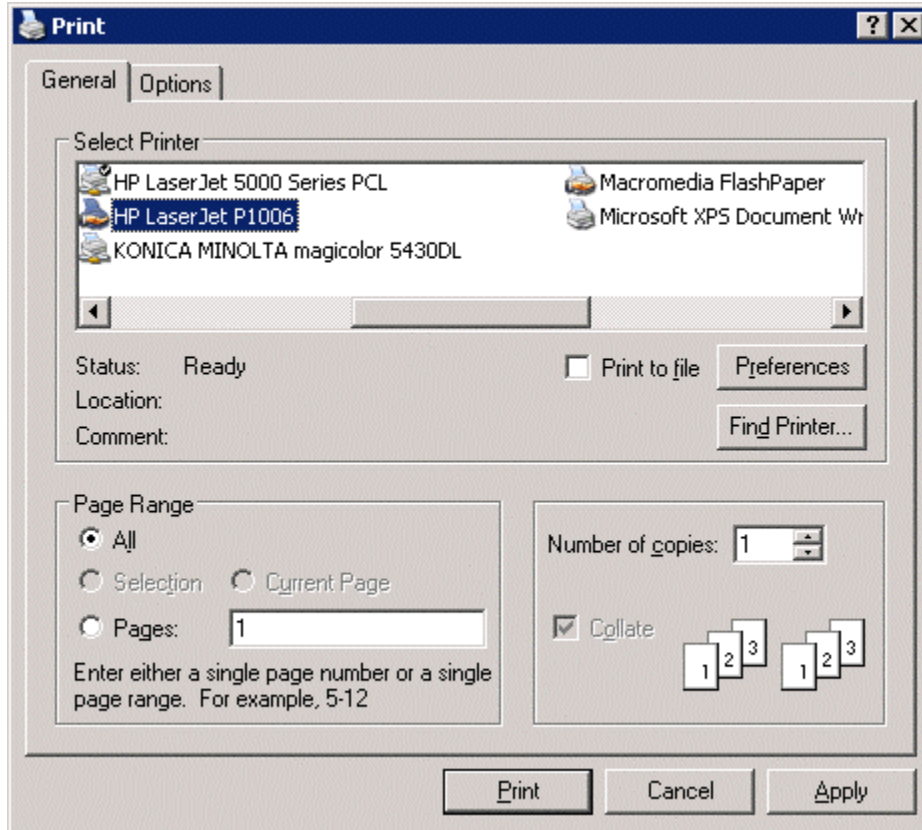


Report Tab

Highlight the desired ThinManager Server, terminal, terminal group, terminal server, TermSecure user, or TermSecure group, and then select the **Report** tab to display the report.

21.5 Print Report

A Report can be printed by selecting the Report tab then selecting **View > Print** from the ThinManager menu. A **Print** window will be displayed to allow the selection of the printer.



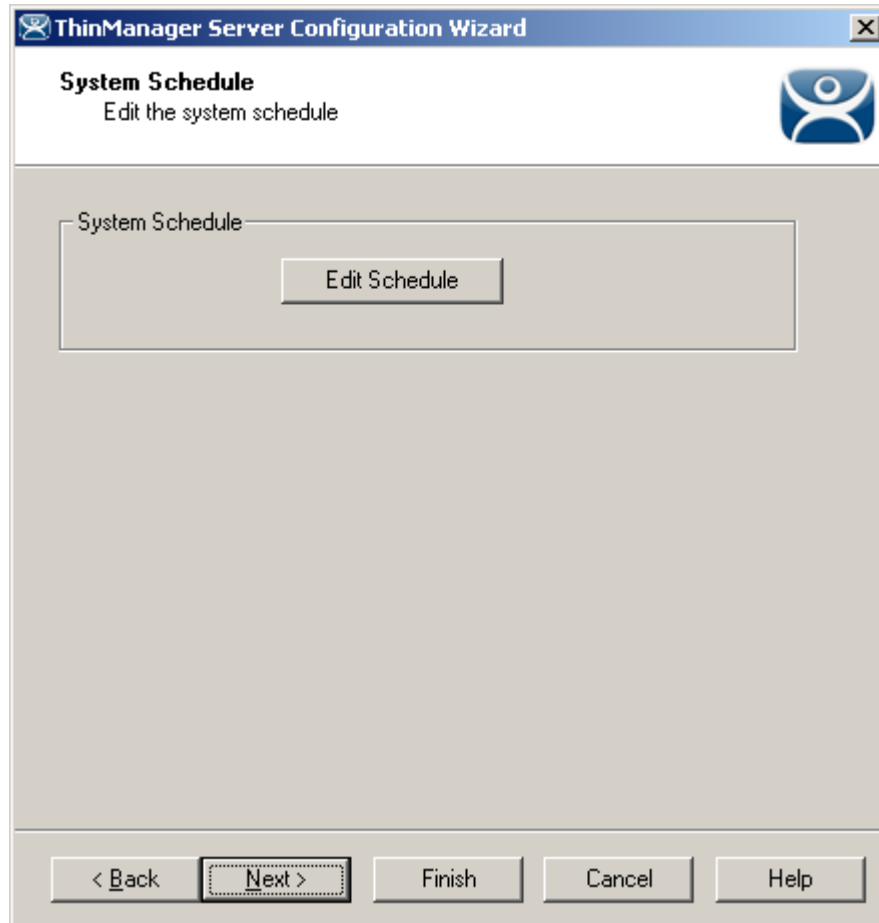
Print Window

Highlight the desired printer and select the **Print** button to print the report.

21.6 Scheduling Reports

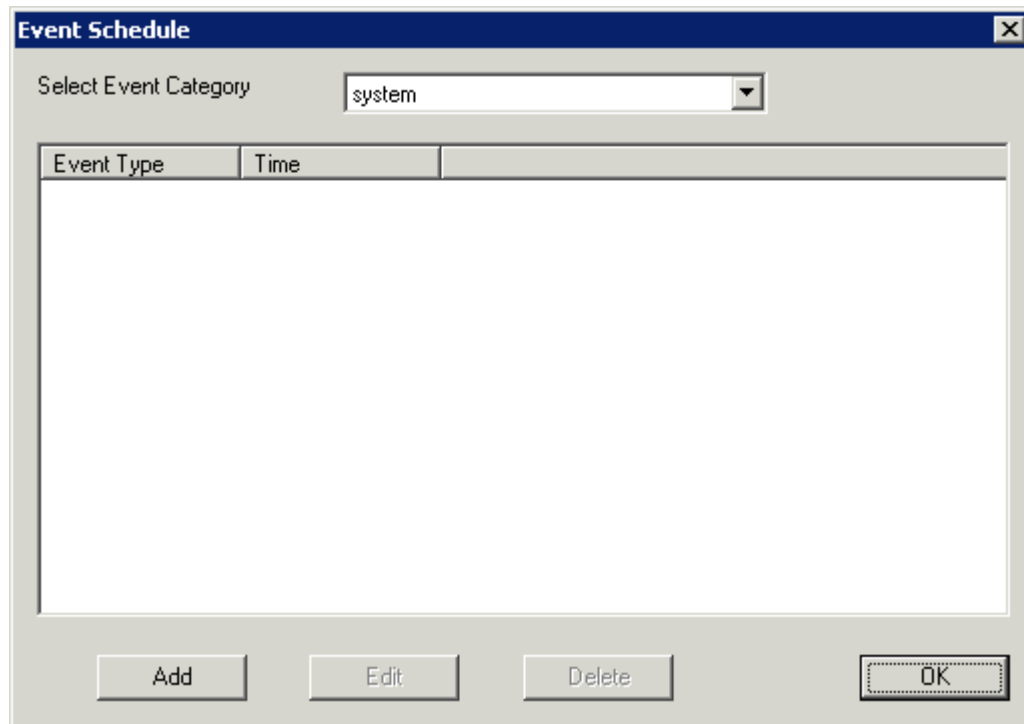
Reports can be scheduled to be run once at a specified time or to be run regularly at a specific time. The reports are saved as *.html files for storage or further analysis.

To schedule report generation open the **ThinManager Server Configuration Wizard** by highlighting the ThinManager Server and selecting **File > Modify**.



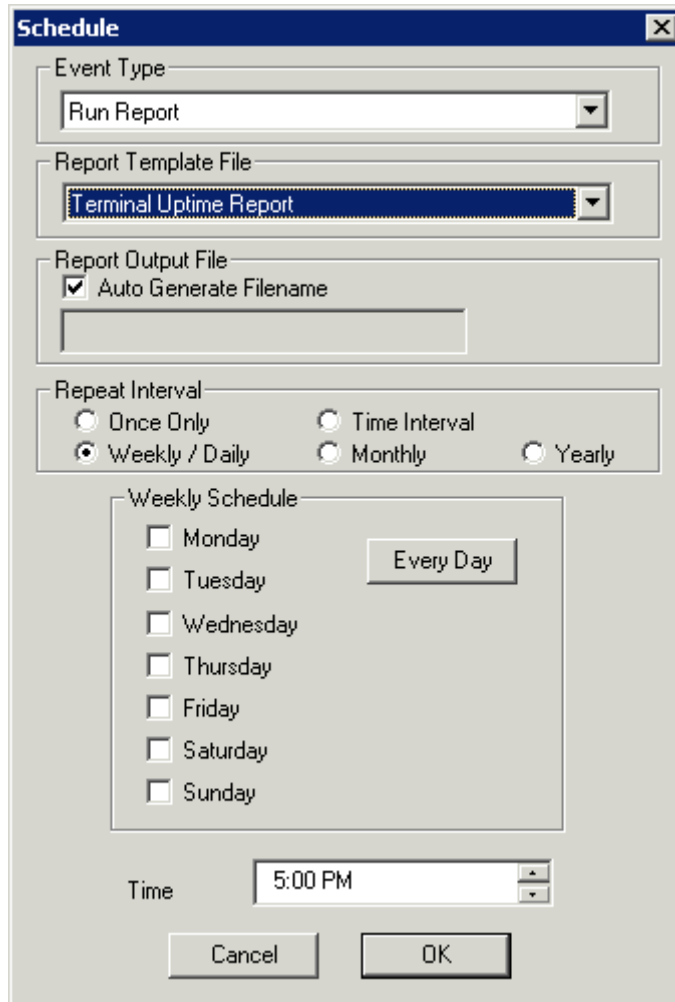
ThinManager Server Configuration Wizard – System Schedule

Navigate to the **System Schedule** page and select the **Edit Schedule** button to launch the **Event Schedule** window.



Event Schedule Window

Select the **Add** button to open the **Schedule** window.



Schedule Window

The Schedule window allows system events to be configured.

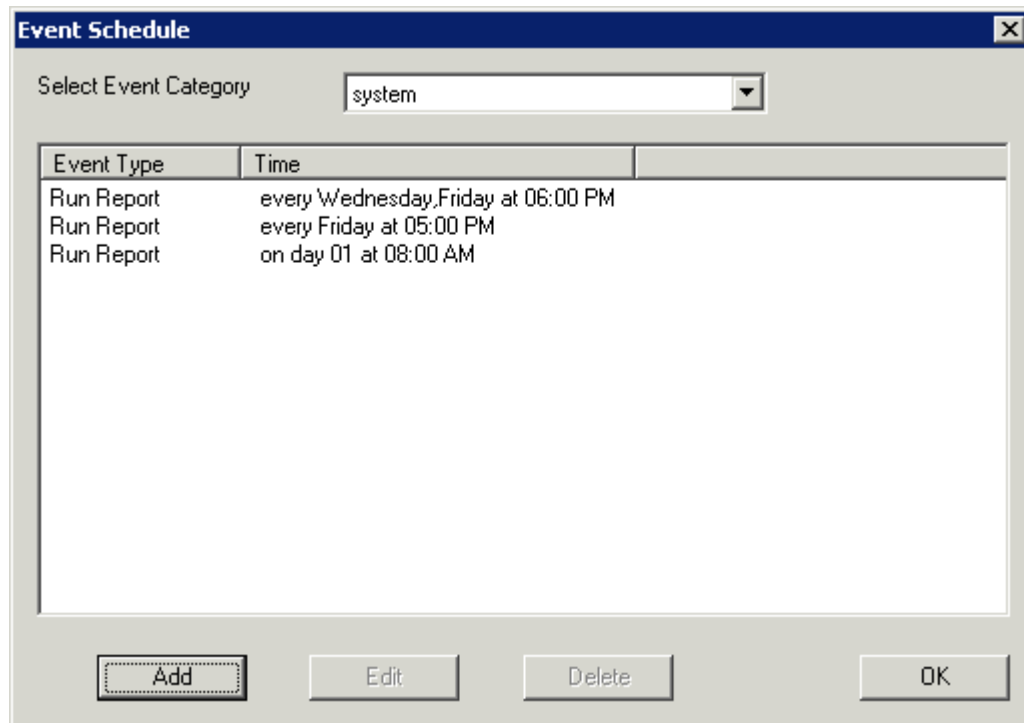
- **Event Type** – This drop-down allows the event to be chosen. There are two types:
 - **Backup Configuration Database** – This allows a scheduling of automatic configuration backups.
 - **Run Report** – This allows a report to be run and saved as a ***.html** file on a regular basis.
- **Report Template File** - This drop-down allows the selection of the report to run.
- **Report Output File** – This applies the naming convention to the saved reports.
 - **Auto Generate Filename** – This checkbox, if selected, will save the file to the ThinManager folder with the report name and a time stamp as its title.
 - If the **Auto Generate Filename** is unselected, the field allows entry of the desired filename. The filename needs to end in **.html**.

There are a few switches that allow the file name to be modified with a timestamp for identification purposes. If you do not use a timestamp, the file will be overwritten each time the report is run.

- **%c** – Adds date and time

- **%h** – adds hour (0-24)
 - **%M** – adds minute (0-59)
 - **%x** – adds date
 - **%X** – adds time
- **Repeat Interval** – These radio buttons allow the frequency of the report generation to be set.
 - **Time** – The fields to set the time of the report generation changes to match the **Report Interval** selected by the radio button. The **Time** field may allow dates, days, hours, or intervals to be set for the report.

Once the report is configured, select **OK** to accept the report schedule.

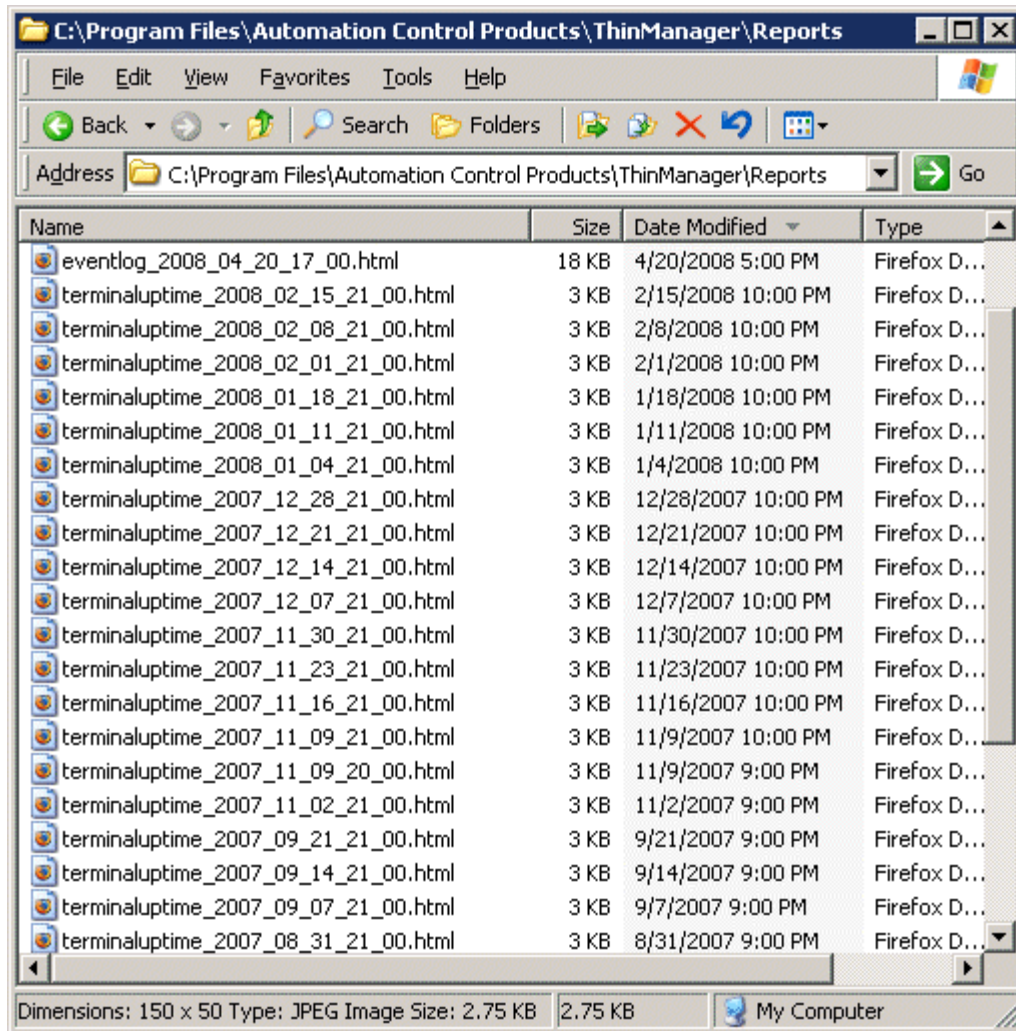


Event Schedule

The scheduled report will be displayed in the Event Schedule window.

- Select **Add** to add another report schedule.
- Select **Edit** to edit the schedule of a highlighted report.
- Select **Delete** to delete the schedule of a highlighted report.
- Select **OK** to accept the schedules and close the window.

When a report is run the files are saved for viewing.



Saved Reports

Once the report has run it can be opened in a web browser.

THINMANAGER P4

Event Log

10/08/09

Event Type	Type	Name	Description	Time	User
Synchronization	system	system	Not Synchronized	10/08/09 07:20:41	
Firmware	system	system	Firmware firmware.acp.v04.00.999.release installed	10/08/09 07:23:26	system
TermCap	system	system	Terminal Capabilities Database 'termcap.db.4.0.0.release' installed	10/08/09 07:23:38	system
Synchronization	system	system	Not Synchronized	10/08/09 07:26:01	
Configuration	system	system	Configuration database restored from Gold_backup.db	10/08/09 07:35:19	system
Connection	terminalserver	Green	Data collection failed	10/08/09 07:35:19	
Connection	terminalserver	Green	Data collection established	10/08/09 07:35:20	

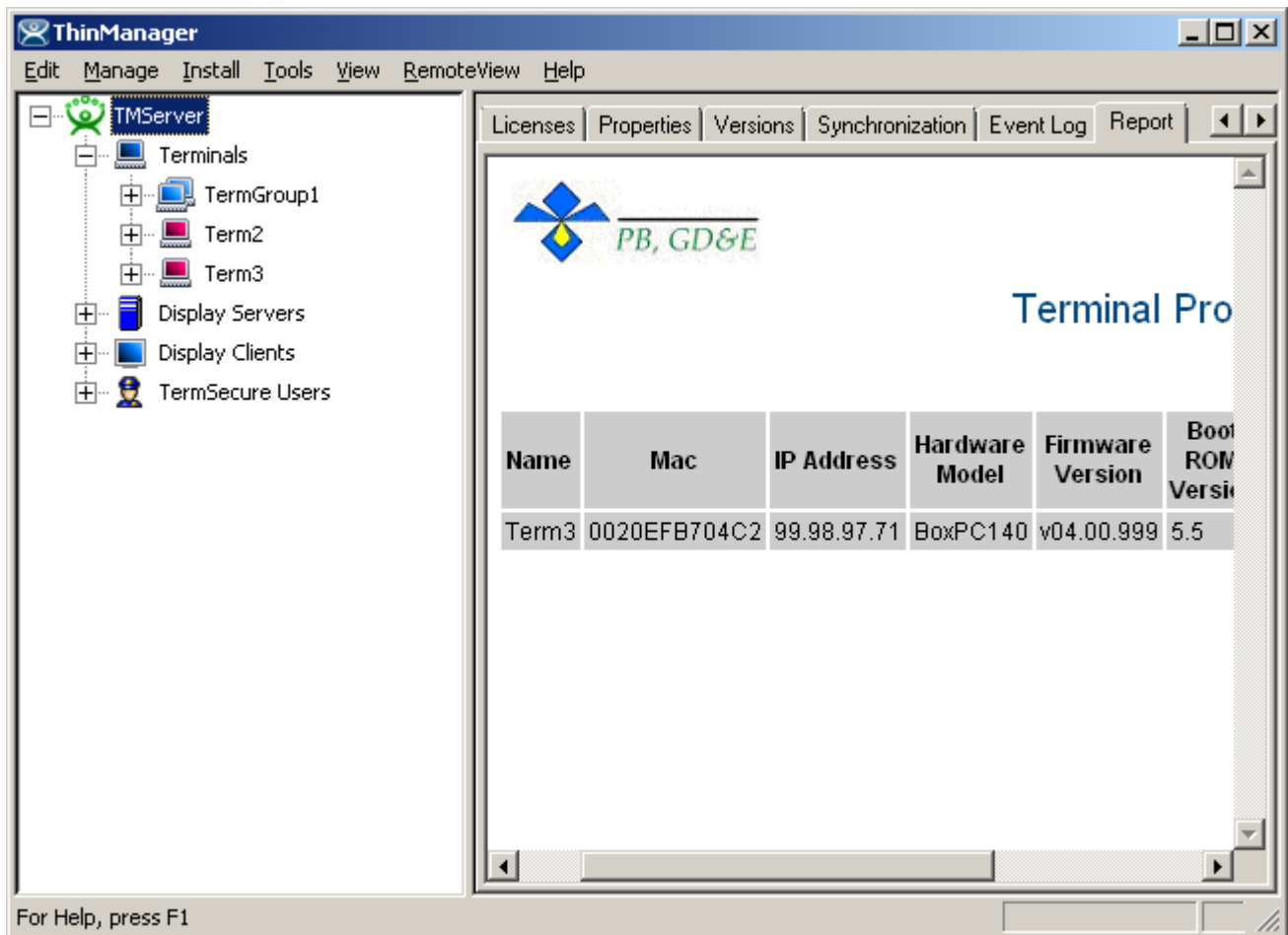
Report Shown in Internet Explorer

Once the report is generated the data can be saved or reformatted as desired using standard HTML tools.

21.7 Changing the Report Logo

Each report template has a ThinManager TM3 logo as part of the report header. This can be changed to your company logo.

1. Create a copy of the desired logo in *.jpg format with a size of 150x50 pixels. A white background is helpful if the logo is irregularly shaped.
2. Name the file logo150x50.jpg.
3. Copy the logo150x50.jpg into the ThinManager folder (**C:\Program Files\Automation Control Products\ThinManager\Reports** by default).
4. Open the report to see the change.



Report with New Company Logo

The new logo will be displayed on all reports.

22 WinTMC Fat Client

22.1 WinTMC Overview

WinTMC is a ThinManager Client for PCs running Windows NT/2000/XP/Vista/Windows 7 operating systems. WinTMC provides similar functionality to that of a Terminal. The WinTMC client can use failover, Instant Failover, SmartSession, MultiSession, and AppLink, among others. Once the WinTMC client is installed the client can be managed remotely through ThinManager instead of locally.

Note: WinTMC should not be installed on a computer that is running ThinManager. A port conflict will prevent either from running properly. WinTMC is meant for PCs and not servers.

WinTMC must use Display clients.

WinTMC supports MultiMonitor if the PC has Windows running on multiple video cards.

WinTMC does not support Tiling.

See WinTMC Installation for details on installation.

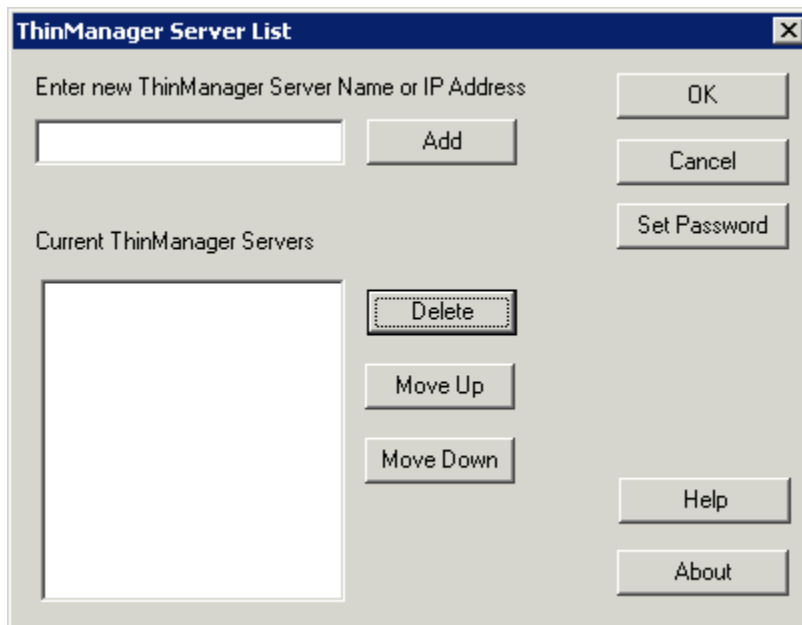
22.2 Local WinTMC Configuration

When WinTMC starts, a **Configure** button will be displayed on the splash screen.



WinTMC Splash Screen

Click on the **Configure** button to specify the ThinManager Server(s) to use.



WinTMC ThinManager Server List Configuration

The ThinManager Server List allows the WinTMC to be pointed to one or more ThinManager Servers to retrieve its configuration.

Enter the IP address or name of your ThinManager Servers in the **Enter new ThinManager Server Name or IP Address** field and click the **Add** button to add them to the Current ThinManager Servers list.

The WinTMC will try to connect to the ThinManager Servers in the order listed, so the order can be changed with the **Move Up** and **Move Down** buttons.

Unneeded ThinManager Servers can be removed with the **Delete** button.

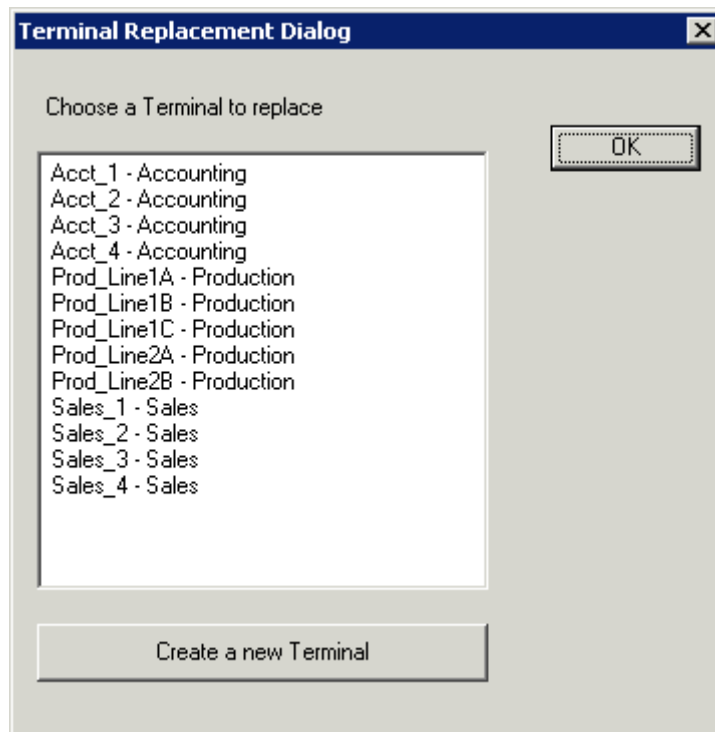
This configuration menu can be password protected by selecting the **Set Password** button. Once the password is set, when WinTMC is started and the Configure button is clicked, a password will be required to change the configuration.



No ThinManager Server Specified

If the **OK** button is selected without entering a ThinManager Server, an error window will remind you to enter a ThinManager Server address.

Once the local configuration is set, WinTMC will connect to a ThinManager Server and attempt to retrieve its configuration.



Terminal Replacement Dialog

If the WinTMC PC has not been defined, the user will be prompted with a dialog box to allow for the creating a new configuration or replacing an existing terminal configuration on the ThinManager Server.

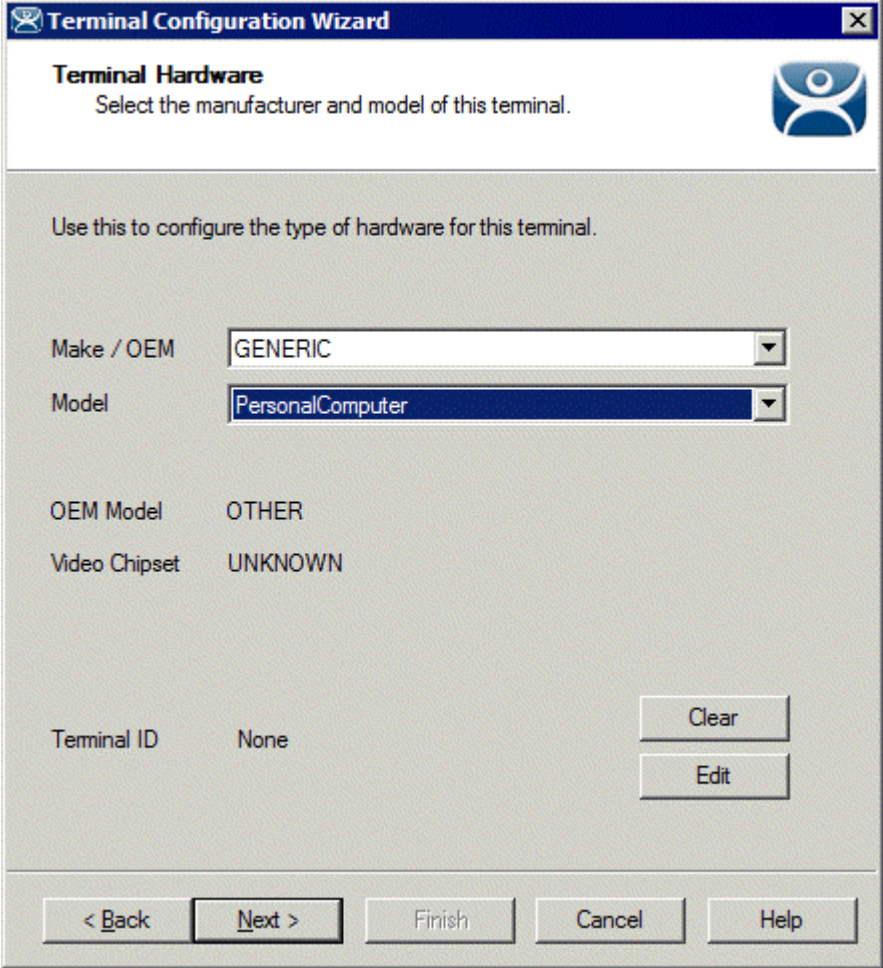
This functionality is similar to that of the create/replacement menu on a Thin Client. See Replace or Create New Mode for details on that method.

Once the WinTMC has been assigned a configuration you will not need to make a selection again.

If you want to run WinTMC without the configure button, you can run it from a command line with the ThinManager Servers separated by semi-colons (i.e. **WinTMC TMS1; TMS2; TMS3**). This will eliminate the configure button when WinTMC is started.

22.3 WinTMC Configuration in ThinManager

If you want to pre-create a WinTMC client in ThinManager using the Terminal Configuration Wizard, select **GENERIC** for the **Make/OEM** and **PersonalComputer** for the **Model** on the **Terminal Hardware** page of the Terminal Configuration Wizard.



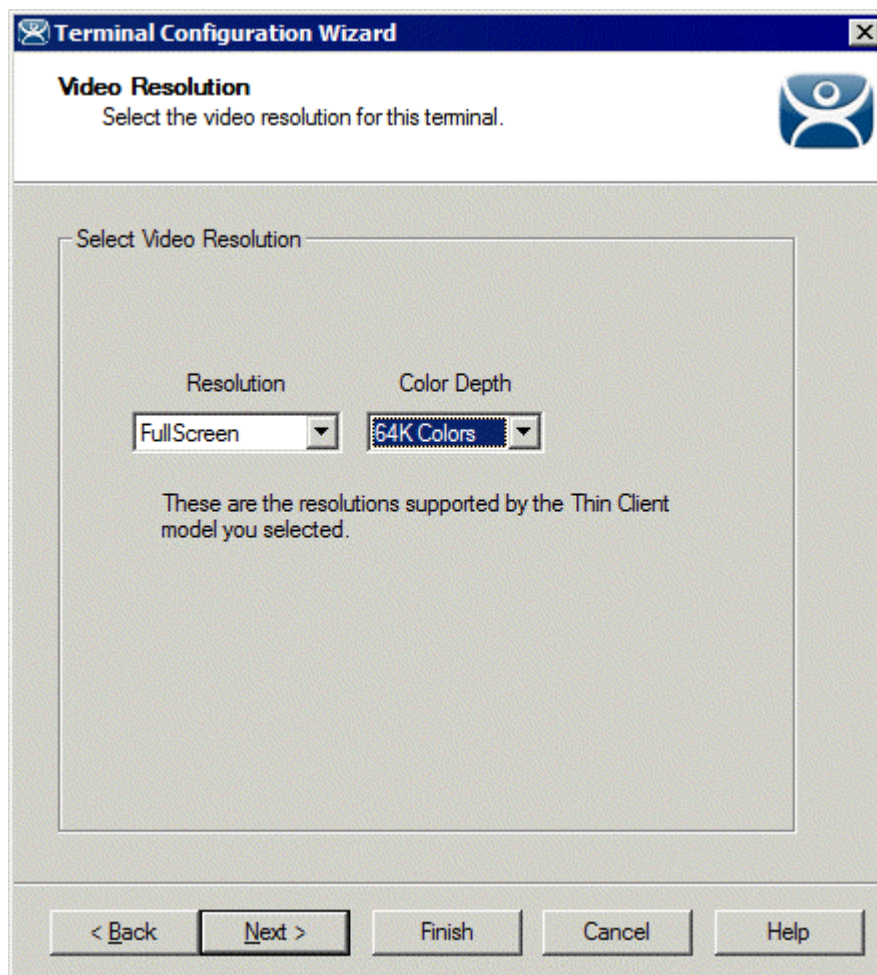
The screenshot shows the 'Terminal Configuration Wizard' dialog box, specifically the 'Terminal Hardware' page. The title bar reads 'Terminal Configuration Wizard'. Below the title bar, the text 'Terminal Hardware' is displayed, followed by the instruction 'Select the manufacturer and model of this terminal.' and a small icon of a person. The main area contains the text 'Use this to configure the type of hardware for this terminal.' Below this, there are two dropdown menus: 'Make / OEM' with 'GENERIC' selected, and 'Model' with 'PersonalComputer' selected. Below the dropdowns, there are two text labels: 'OEM Model' with the value 'OTHER' and 'Video Chipset' with the value 'UNKNOWN'. At the bottom left, there is a 'Terminal ID' label with the value 'None'. To the right of 'Terminal ID' are two buttons: 'Clear' and 'Edit'. At the very bottom of the dialog box, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

WinTMC Settings in Terminal Hardware

The Terminal ID will fill in with the name of the PC.

The Terminal Configuration Wizard for a WinTMC client is the same as for a thin client with a few exceptions. These include:

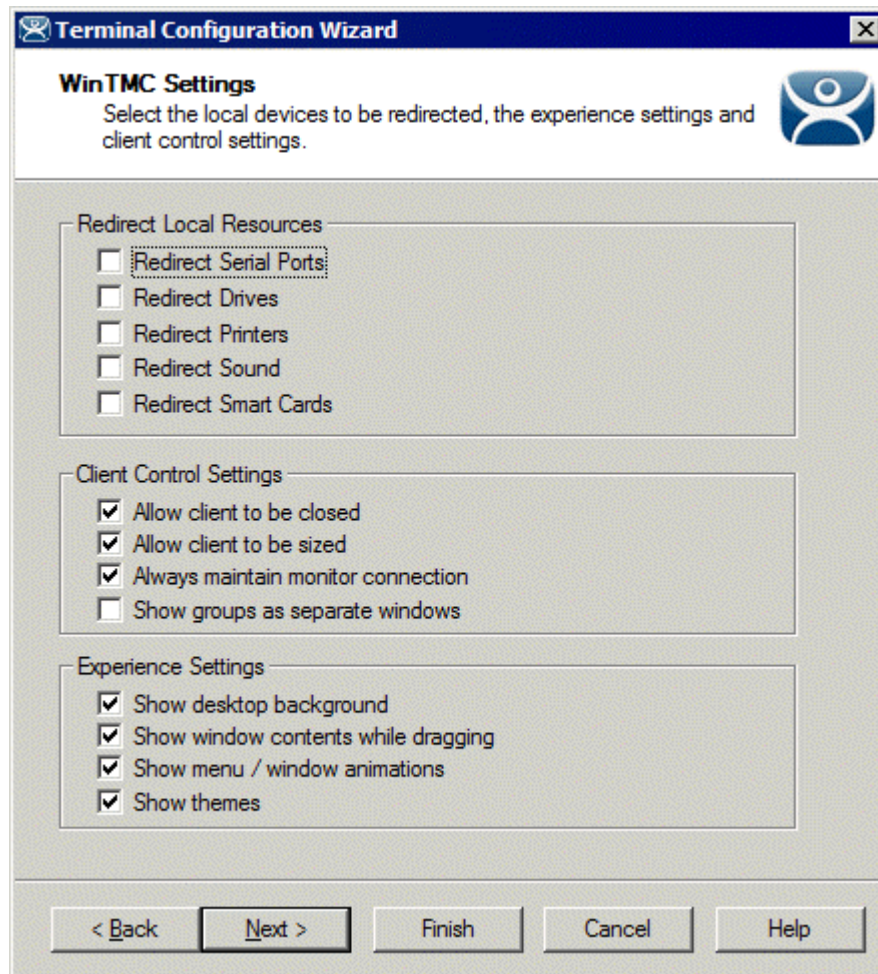
22.3.1.1 WinTMC Video Mode Page



Video Resolution for WinTMC

The Video Mode for WinTMC includes a setting for **FullScreen**.

22.3.1.2 WinTMC Settings Page



WinTMC Settings

The **Terminal Configuration Wizard** includes a **WinTMC Settings** page.

WinTMC clients can also be configured on the WinTMC Settings page. These only apply to connections made by the WinTMC fat client.

The settings include:

Redirect Local Resources:

- **Redirect Serial Ports** - This checkbox, if selected, will make local serial ports available in a session. Serial Port redirection does not work when you connect to a terminal server running Windows 2000 or earlier.
- **Redirect Drives** - This checkbox, if selected, will make local drives available in a session. Drive redirection does not work when you connect to a terminal server running Windows 2000 or earlier.
- **Redirect Printers** - This checkbox, if selected, will make your local printer available in a session.
- **Redirect Sound** - This checkbox, if selected, will allow audio played in your session to play locally. Sound redirection does not work when you connect to a terminal server running Windows 2000 or earlier.

- **Redirect Smart Cards** - This checkbox, if selected, will make your smart card available in a session. Smart card redirection does not work when you connect to a terminal server running Windows 2000 or earlier.

Client Control Settings:

- **Allow Client to be closed** - This checkbox, if selected, will enable your user to close the client (WinTMC program).
- **Allow client to be sized** - This checkbox, if selected, will enable your user to resize the client.
- **Always maintain monitor connection** – Enable this setting to keep the monitoring connection active when WinTMC is closed to allow shadowing. Unselecting this checkbox will release the WinTMC license when the WinTMC program is closed but will deny shadow access.
- **Show groups in separate windows** – This checkbox, if selected, will display multiple Application Groups as separate windows rather than in one window shell.

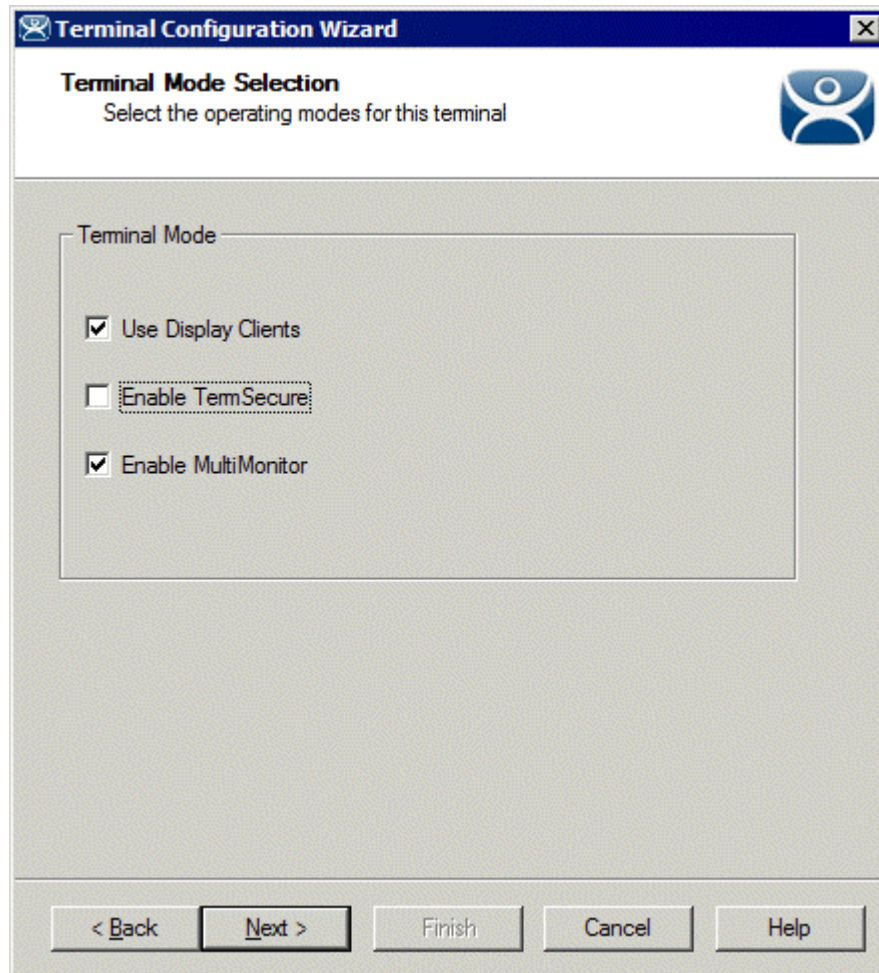
Experience Settings:

- **Show Desktop Background** - This checkbox, if selected, will enable your user to select a Windows Desktop Background. If not selected, the background will be a solid color.
- **Show window contents while dragging** - This checkbox, if selected, will show the window contents to be shown while the window is being dragged.
- **Show menu/window animations** - This checkbox, if selected, will enable menu/window animations on the client.
- **Show Themes** - This checkbox, if selected, will enable your user to select a Windows Theme.

Note: These functions may be denied by user policies or terminal server configuration. Check the Microsoft Local Policy, Group Policy, and Terminal Services Configuration. See Non-ThinManager Components for details.

22.3.2 MultiMonitor WinTMC

ThinManager now supports MultiMonitor for WinTMC if the PC has Windows running on multiple video cards. Selecting the **Enable MultiMonitor** checkbox will allow you to configure a WinTMC client for MultiMonitor use.



MultiMonitor – Enable MultiMonitor

MultiMonitor requires the use of Display Clients. Once the **Use Display Clients** checkbox is selected on the **Terminal Mode Selection** page the **Enable MultiMonitor** checkbox becomes visible.

Select the **Use Display Clients** and the **Enable MultiMonitor** checkboxes, and then select the **Next** button.

The Terminal Configuration Wizard will display the **MultiMonitor Video Settings** page, **Monitor Layout** page, and **Display Client Selection** page like it does for thin clients. See MultiMonitor for details.

22.3.3 WinTMC Modules

WinTMC clients cannot use the ThinManager modules because they are running Windows locally. One must install touch drivers, sound drivers, printers, and etc. through the local Windows operating system instead of relying on ThinManager modules.

22.3.4 WinTMC Licensing

A PC running as a WinTMC terminal requires a WinTMC license in addition to the Terminal Connection license.

WinTMC licenses are sold with out redundancy and inherit the redundancy of the Terminal Connection licenses in the Master License.

See Licensing ThinManager for details.

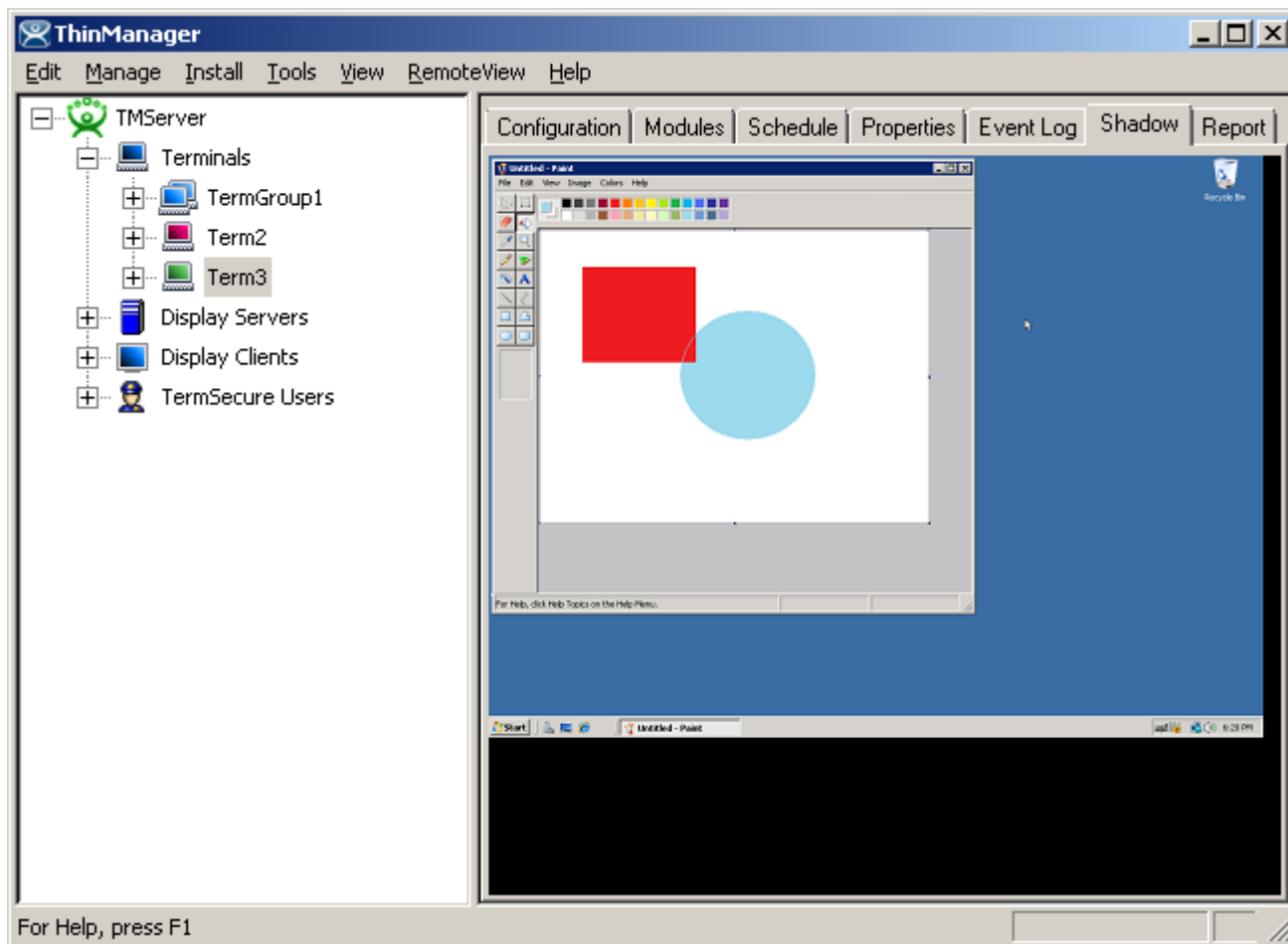
23 Shadowing

Shadowing is a popular management tool that allows an authorized user to view what is running on a remote client. There are two methods:

- ThinManager Shadow
- Terminal-to-Terminal Shadow

23.1 ThinManager Shadow

Shadowing of a terminal can be initiated from within ThinManager by using the **Shadow** tab in the Detail pane of ThinManager. To shadow, **highlight the desired terminal** in the ThinManager tree and select the **Shadow** tab.



Shadow – Shadow Scaled to Window

The shadowed terminal can be viewed full-sized or scaled to fit in the Details pane. Select **RemoteView > Shadow scaled to Window** to scale the session and unselect the option to view it life sized.

23.1.1 Shadow Access

Access to the shadow function is controlled by membership in ThinManager User Groups. By default only administrators are allowed to shadow.

Shadowing privileges can be established through the use of ThinManager Security Groups. The

- **ThinManager Administrators** and **Administrators** can shadow terminals and interactively control the terminal session.
- **ThinManager Power Users** can shadow terminals from within ThinManager but cannot interact with the session. They are in View-only mode.
- **ThinManager Interactive Shadow Users** can shadow terminals from within ThinManager and can interact with the session.
- **ThinManager Shadow Users** can shadow terminals from within ThinManager but cannot interact with the session. They are in View-only mode.
- **ThinManager Users** cannot shadow a terminal.

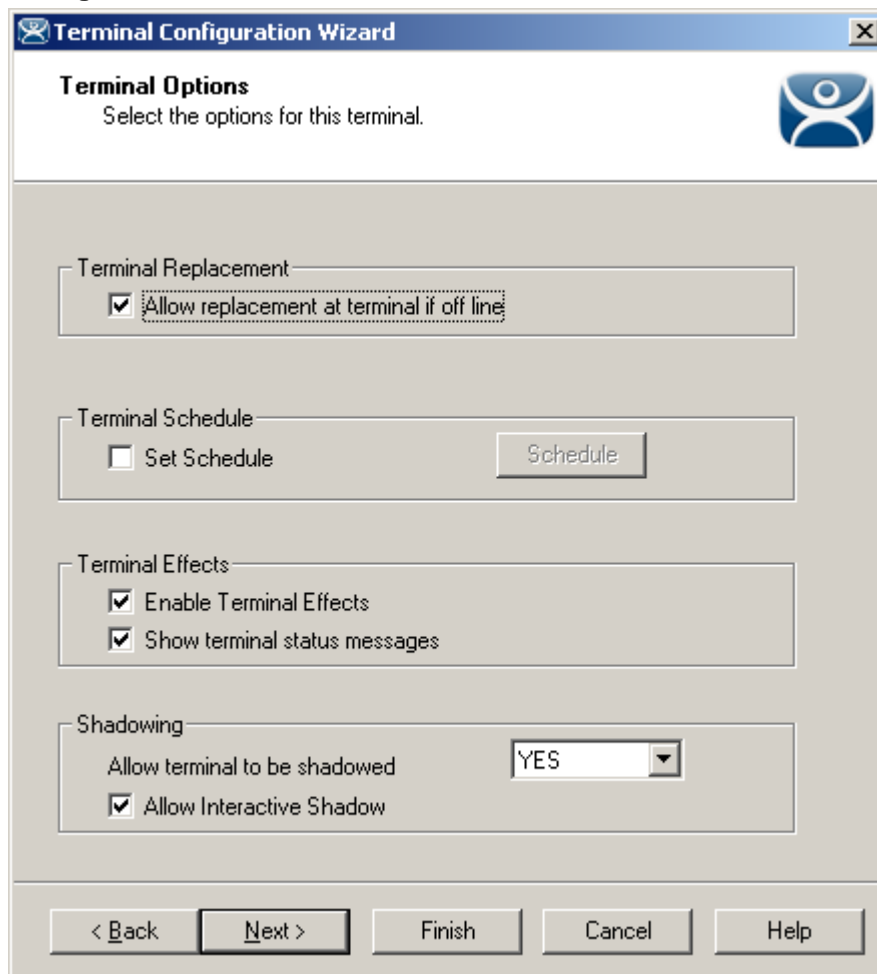
. See ThinManager Security Groups for details.

RemoteView > Interactive Shadow on the menu bar prevents the interaction with the shadowed session if unselected.

RemoteView > Scaled to Window on the menu bar, if selected, will display the entire session in the Shadow tab. If unselected, it will display the session at normal size with scroll bars, if needed.

23.1.2 Configure Shadowing

Shadowing can be configured on the **Terminal Options** page of the **Terminal Configuration Wizard** or **Terminal Group Configuration Wizard**.



Terminal Configuration Wizard - Shadow Configuration

The **Allow terminal to be shadowed** drop-down box allows the configuration of Shadowing Options.

- **No** - Prevents members of the Group from being shadowed.
- **Ask** - Will display a message window that will prompt for a positive response before the shadowing is allowed.
- **Warn** - Will display a message window alerting the terminal that it is to be shadowed, but doesn't require a positive response before the shadowing is allowed.
- **Yes** - Allows shadowing to occur without warning or recipient input.

Allow Interactive Shadow will allow members with Interactive Shadow privileges to shadow the terminal. The Interactive Shadow privileges are configured in the ThinManager Server Configuration Wizard. See ThinManager Server Configuration Wizard or ThinManager Security Groups for details.

Shadowing is initiated from the Shadow tab on the **Details** pane of the ThinManager program. Unselecting the **Allow Interactive Shadow** checkbox will prevent shadowing from within ThinManager.

23.1.3 Shadow Keystrokes

Because the **CTL+ALT+DEL** and the **CTL+ESC** keystrokes can't be sent to the local machine to the shadowed thin client, there is a menu item to send these commands. Select **RemoteView > Send Key > Send Ctl+Alt+Del** or **RemoteView > Send Key > Send Ctl+Esc** to send these commands.

Note: The Key Block Module will block these commands from being sent to a shadowed session.

Changing the tab or selecting another tree icon will break the shadow connection.

23.1.4 Terminal-to-Terminal Shadowing

Terminal-to-Terminal shadowing is made possible with Terminal Shadow application groups. A Terminal Shadow application groups allow a terminal to shadow another terminal without needed to run the ThinManager interface or to be logged in as an administrator. This Shadow Group can contain a specific terminal or several terminals.

See Terminal Shadow Display Clients for details on configuring Terminal Shadow application groups

23.1.4.1 Terminal Shadow Application Group

Client Name
Enter the Display Client name.

Client Name

Type of Display Client
Terminal Shadow

Permissions

Please enter a Display Client name

< Back Next > Finish Cancel Help

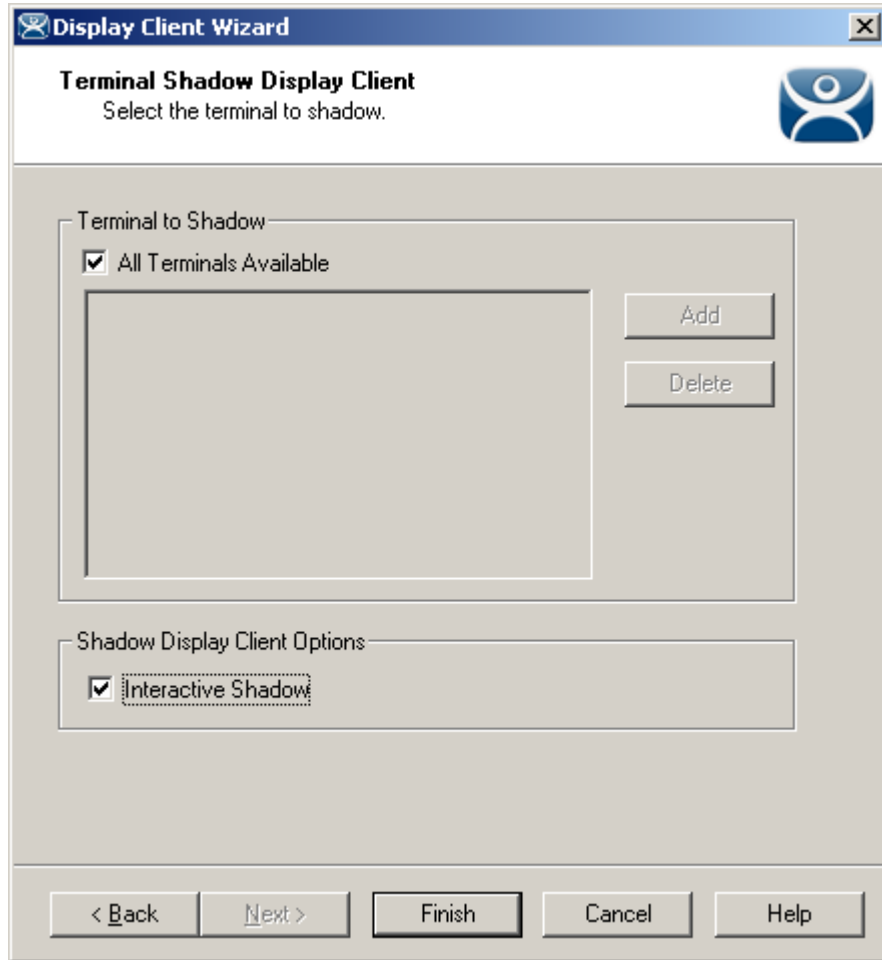
Terminal Shadow Application Group - Group Name Page

Configure the Terminal Shadow Application Group by selecting **Terminal Shadow** from the **Type of Application Group** drop-down after naming the group.

Select the **Next** button to continue.

23.1.4.2 Terminal Shadow Configuration

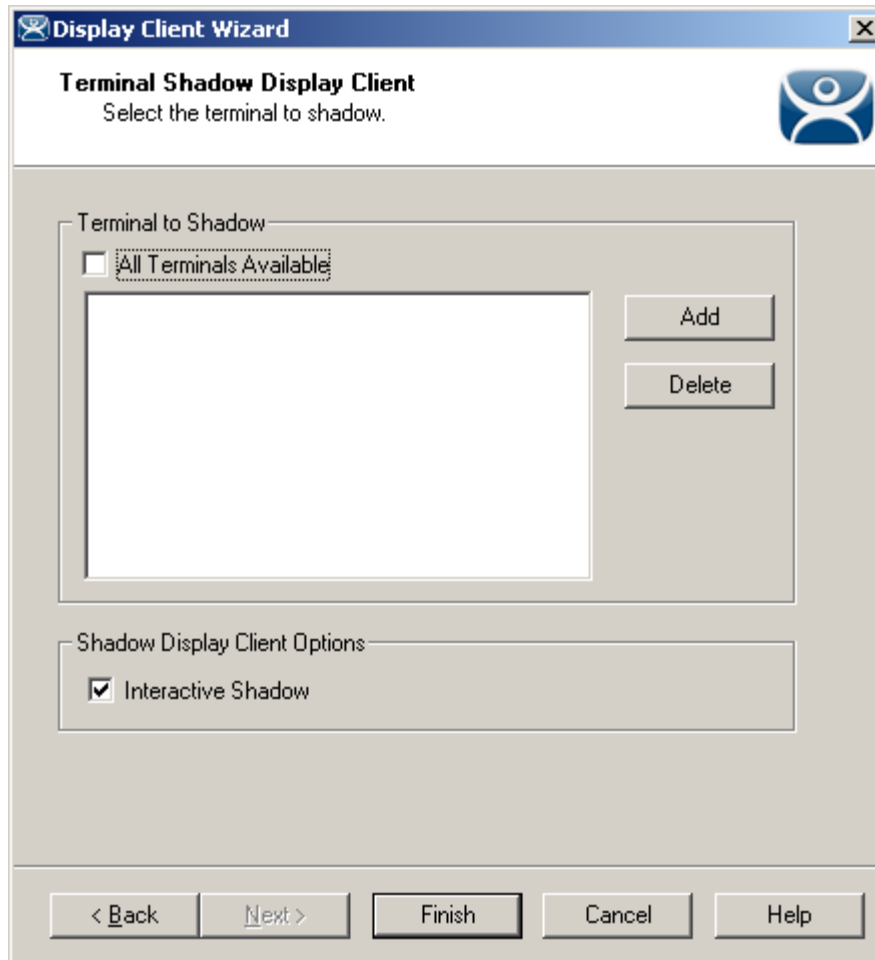
The Terminal Shadow Application Group page allows the selection of the terminal or terminals to be shadowed.



Terminal Shadow Application Group – All Terminals Available

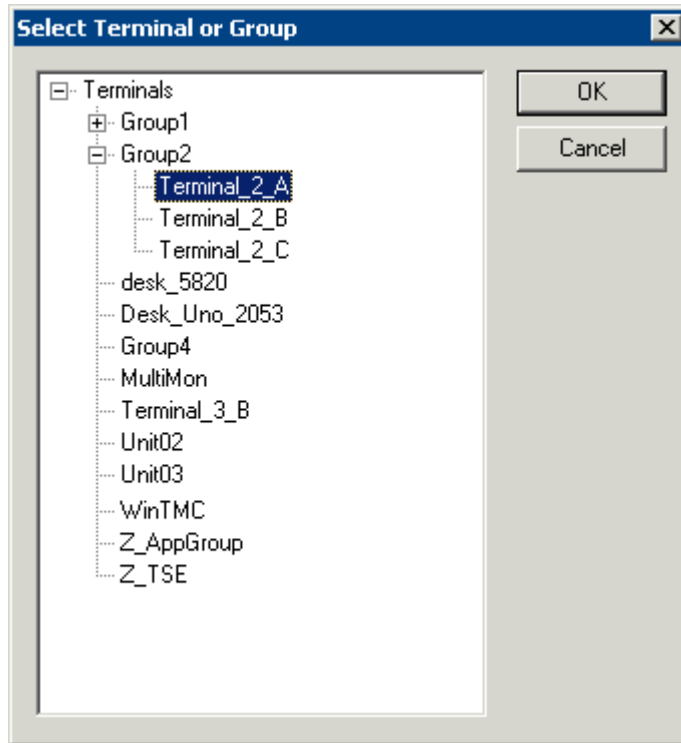
By default the Shadow Group is configured to allow all terminals to be shadowed.

Unselecting the **All Terminals Available** checkbox will allow the designation of specific terminals.



Terminal Shadow Application Group –Select Terminals

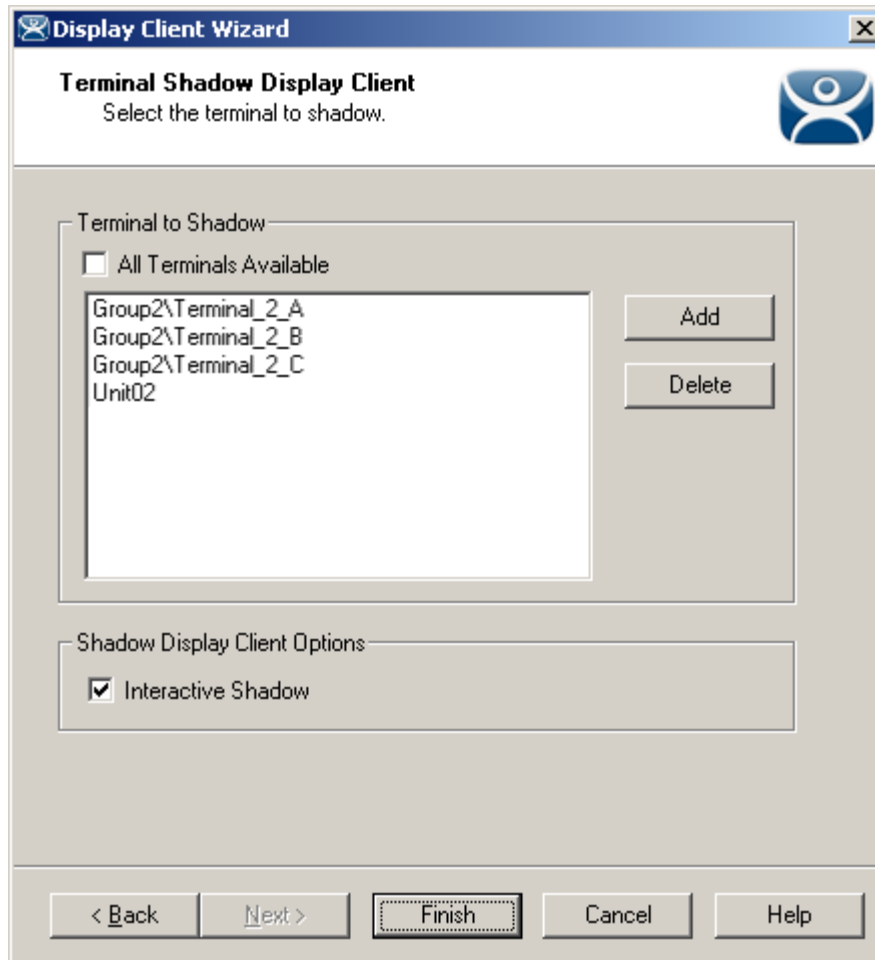
Select the **Add** button to launch the terminal selection window.



Select Terminal or Group Window

Select a terminal for shadowing by highlighting it in the **Select Terminal or Group** window and selecting the **OK** button. The window will close after each selection.

To add multiple terminals repeat the process by selecting the **Add** button on the **Terminal Shadow Application Group** page.

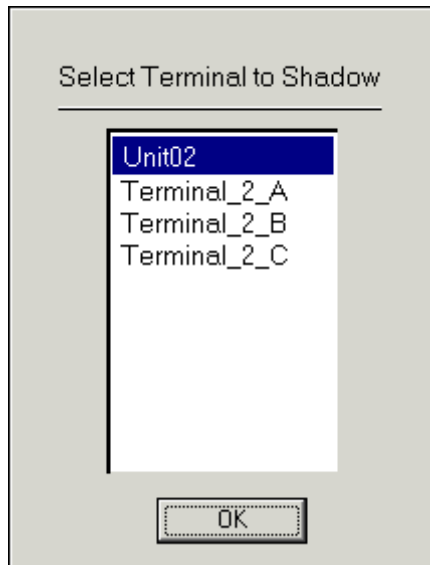


Terminal Shadow Application Group – Selected Terminals

The Terminals to Shadow textbox will display the terminals added to the list.

23.1.4.3 Shadow Selection Screen

When a terminal launches a Shadow Application Group that has multiple members a **Select Terminal to Shadow** window will be displayed to allow the selection of the terminal to shadow.



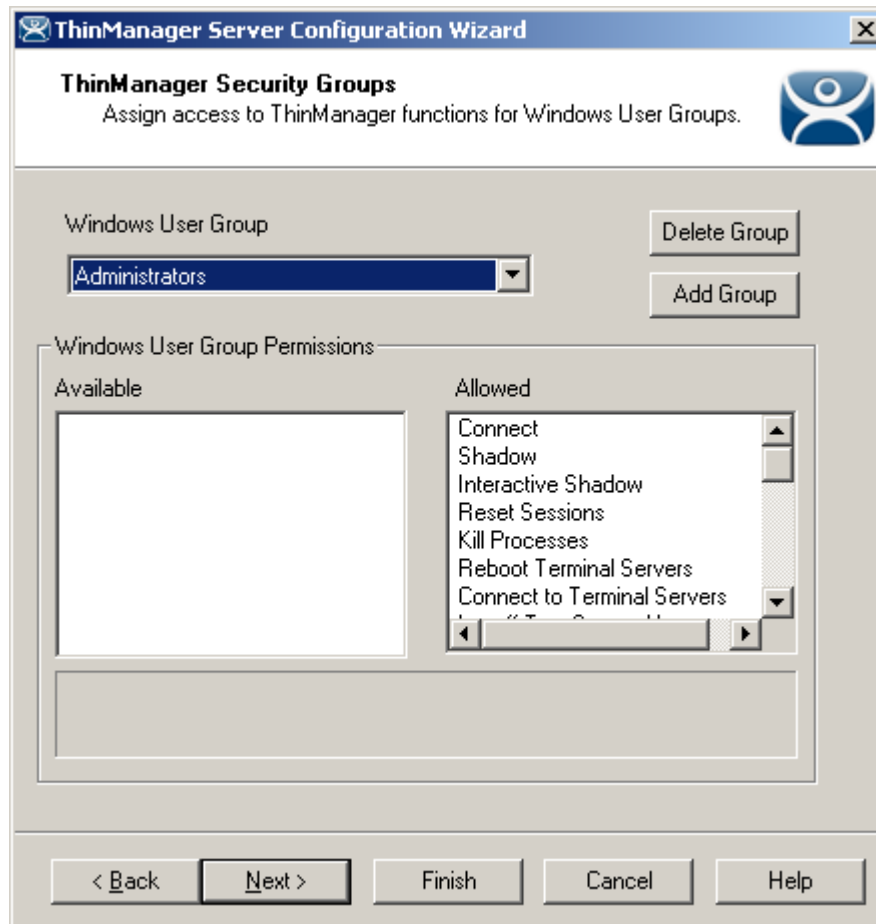
Terminal Selector

Highlight the desired terminal and select the **OK** button.

24 ThinManager Security

24.1 ThinManager Security Groups

Access to ThinManager can be assigned to Windows User Groups on the **ThinManager Security Groups** page.



ThinManager Security Groups

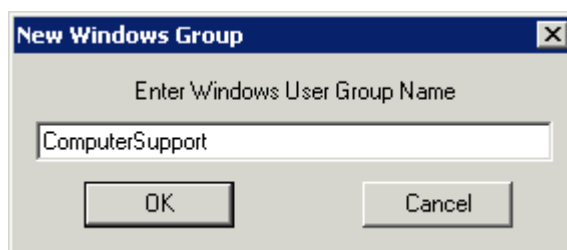
ThinManager allows different levels of access and functionality based on standard Windows groups.

Standard Windows Groups can be created in the Computer Management console and given different privileges in ThinManager.

ThinManager comes with privileges pre-defined for six groups:

- **Administrators** - The Microsoft defined Administrator group is given all privileges by default in ThinManager. This may be denied by unselecting the various **Windows User Group Permissions**.
- **ThinManager Administrators** have full permission to do anything within ThinManager including the power to logoff sessions, kill processes, send messages, restart terminals, calibrate touch screens, change terminal configurations, update firmware, update the TermCap, and restore configurations. Administrators and members of ThinManager Administrators can shadow terminals and interactively control the terminal session. **These privileges may not be removed** and will be grayed out.
- **ThinManager Interactive Shadow Users** - Members of this group may shadow a terminal interactively.
- **ThinManager Power Users** can logoff sessions, kill processes, send messages, restart terminals, and calibrate touch screens. They cannot change terminal configurations, update firmware, update the TermCap, and restore configurations. ThinManager Power Users can shadow terminals from within ThinManager but cannot interact with the session.
- **ThinManager Shadow Users** - Members of this group may shadow a terminal but not interactively.
- **ThinManager Users** can view only. They cannot logoff sessions, kill processes, send messages, restart terminals, or calibrate touch screens. ThinManager Users cannot shadow a terminal.

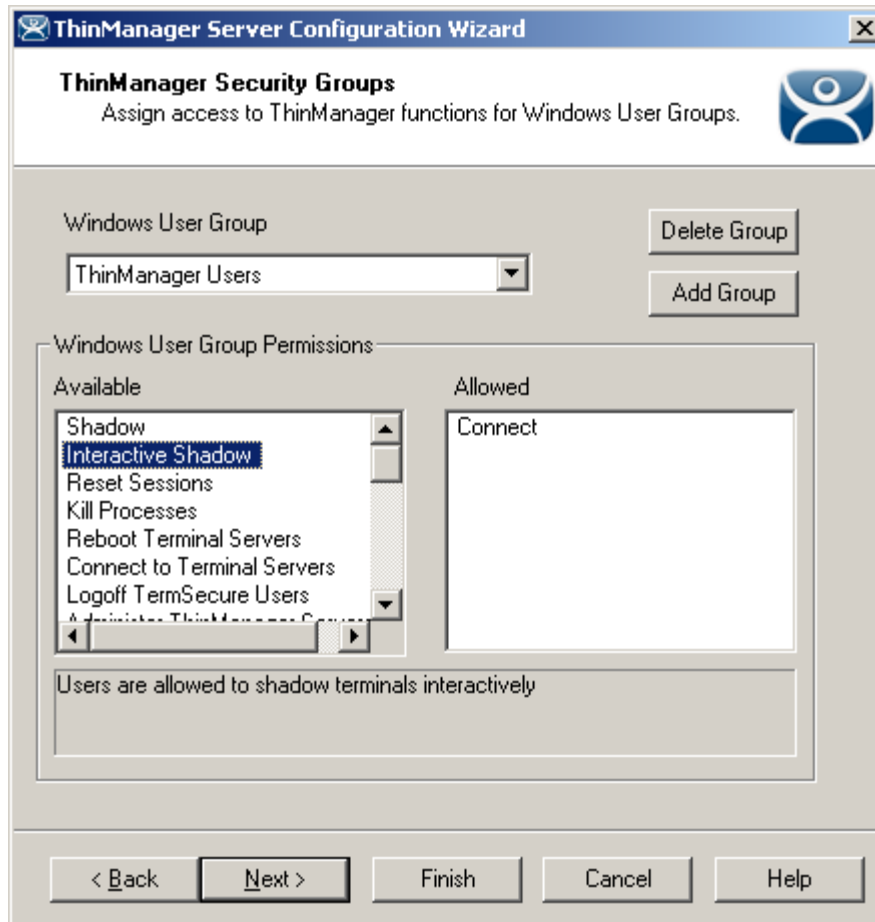
Additional **Windows User Groups** can be configured by selecting the **Add Group** button to launch the **New Windows Group** window.



New Window User Group Window

Adding a Windows Group name in the field of the New Window Group window and selecting the **OK** button will add the Windows User Group to the drop-down list.

Note: This doesn't create the user group on any servers. This just adds the name of an existing group to the list that ThinManager is maintaining.

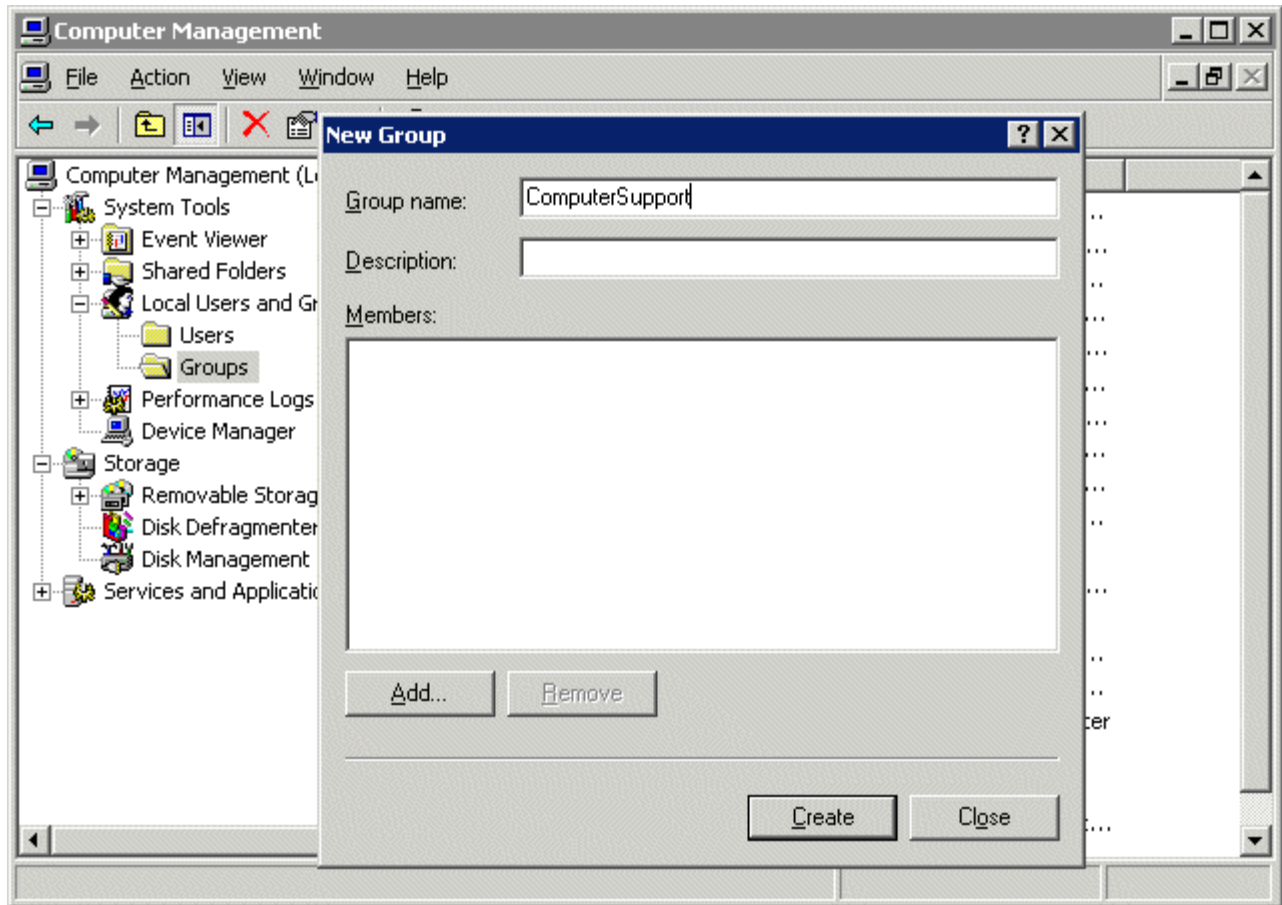


New ThinManager Security Group

Select the group from the **Windows Users Group** drop-down. Choose the permissions you want to grant to the group by double clicking on the function in the Available Windows User Group Permissions list. Members of the Windows User Group will have the selected permissions the next time they login.

Although ThinManager has Windows User Groups pre-configured with privileges, these groups have not been created on the terminal servers.

To Create A Windows User Group Open the **Computer Management Console** by selecting **Start > Settings > Control Panel > Administrative Tools > Computer Management**.



Created ThinManager Security Groups

Highlight **Groups** in the tree and select **Action > New Group**.

Name the group and select the **Create** button.

Add **Users** to the Windows User Group.

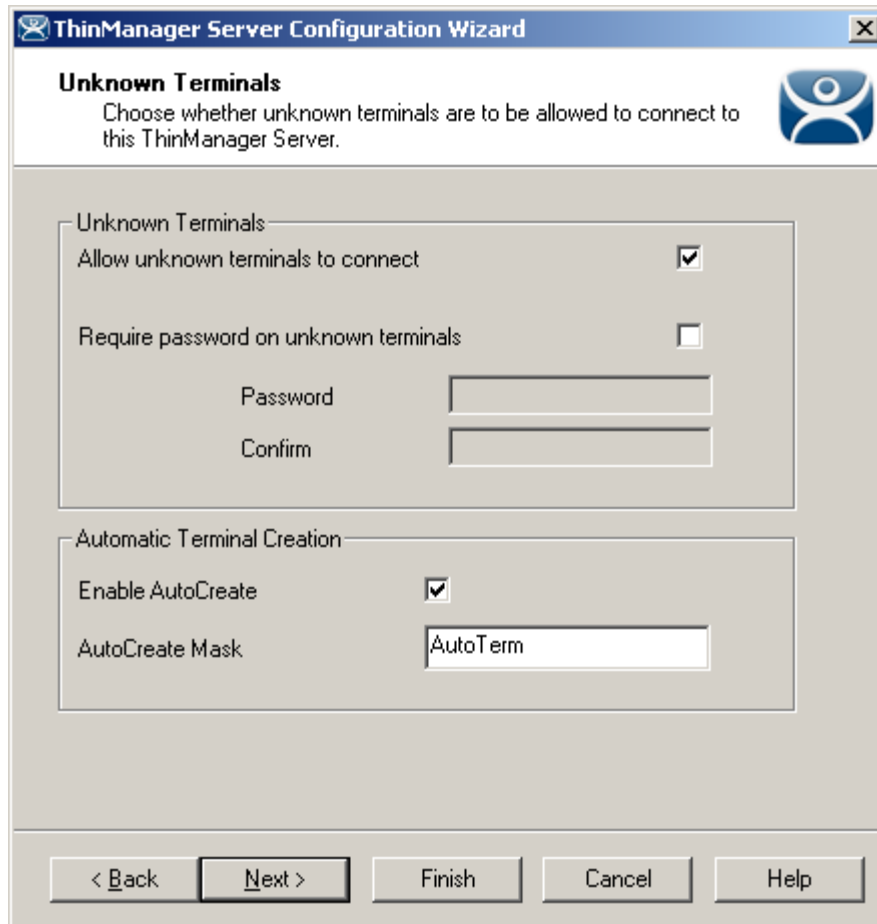
Members of the Windows User Group will have the selected permissions the next time they login.

If groups are not created, members of the standard Windows Administrator group have full privileges in ThinManager while members of the standard Windows User group will be denied access.

Note: The **thinserver** service will need to be stopped and restarted and the users will need to re-login for the changes to take effect.

24.2 ThinManager Server Security

ThinManager has a number of security settings for the ThinManager Server. Open the **ThinManager Server Configuration Wizard** by right clicking on the ThinManager Server in the tree and selecting **Modify**, or highlight the ThinManager Server and select **Edit > Modify** from the menu.

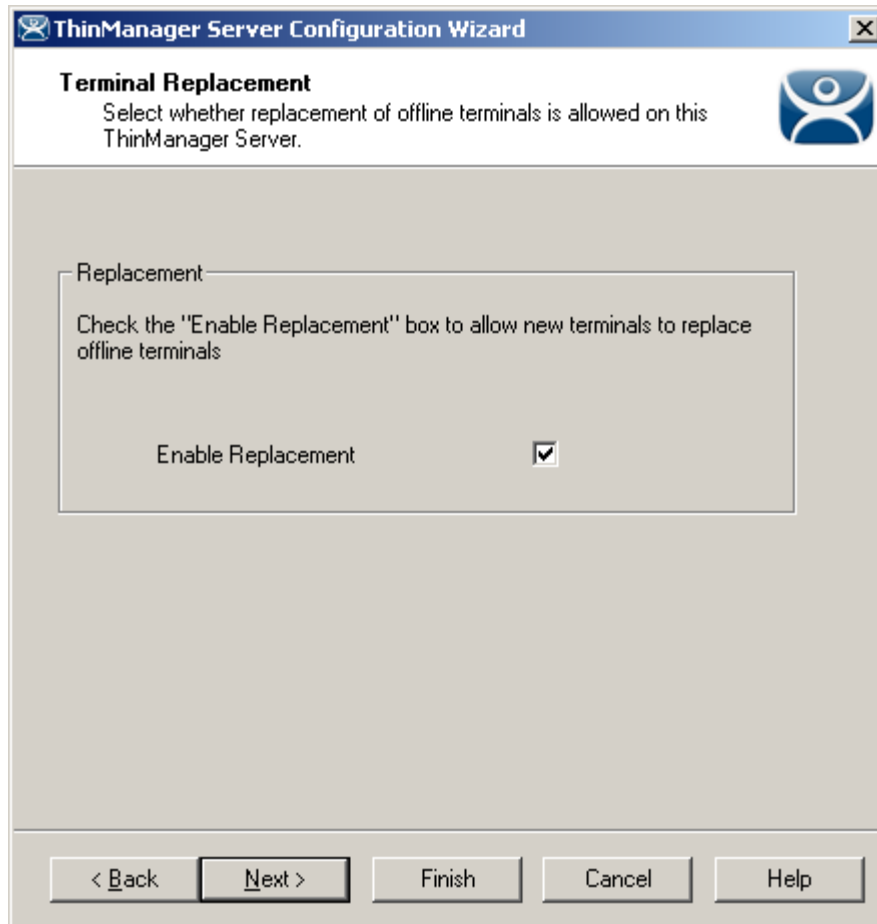


ThinManager Server Configuration Wizard

The second page of the wizard has two settings related to security:

- **Allow unknown terminals to connect** - This, when unchecked, will prevent any new terminals connecting to the system.
- **Require passwords on unknown terminals** - This checkbox, if checked, allows new terminals to be added, but only if the installer has the password.

Note: The use of this password setting in ThinManager is an effective way to limit hardware addition to authorized users. DO NOT use the password setting in the BIOS of the hardware. Forgetting the BIOS password can make the unit inoperable.



Terminal Replacement

On the **Terminal Replacement** page of the **ThinManager Server Configuration Wizard** is the **Enable replacement** checkbox. This allows failed terminals to be replaced. If this is unchecked, terminals can still be added, but only by using the **Create New Terminal** process.

This is a global setting that affects all terminals connected to this ThinManager Server. The **Enable replacement** checkbox is also found on the **Terminal Configuration Wizard** of each terminal and the **Terminal Group Configuration Wizard** of each Terminal Group so that the setting can be applied to individual terminals and Terminal Groups.

24.2.1 Windows Security

The ACP ThinManager system delivers a Windows 2000/2003/2008 desktop to each thin client by default. Each thin client has full access to the server resources, as if it is the server. However, just because the thin client has the ability to have full access to the server resources doesn't mean that the user should be granted full access to the server. To prevent unauthorized changes to the server, it is recommended that each user profile have security policies applied through the System Policy Editor to limit access to the needed functions. Windows 2000/2003/2008 Security procedures are discussed in the Windows on-line help and in many books and articles.

Administrators usually require that each user login to a terminal with their personal account and have the Microsoft policy determine the user's access rights.

Note: Task Manager has a feature that allows the launching of applications. If using an Initial Application, access to Task Manager should be denied in the security policy or with the Key Block Module to prevent a user from launching unauthorized programs.

25 TermSecure

25.1 TermSecure Overview

TermSecure is a ThinManager feature that allows users to logon to a thin client and access user-specific or terminal-specific Display Clients. This does not replace the Windows logon, but adds an additional layer of security and control.

TermSecure has two main strategies:

- **SecureAccess or Terminal-specific Applications:** You can assign a display client to a terminal and keep it hidden from operators with Permissions. A user with the proper TermSecure credentials will be able to reveal and access the hidden application.

An example would be a recipe program that would allow a supervisor to initiate a product change. This belongs to the station on the floor but you want to prevent users from initiating the change.

- **SmartContext or User-specific Applications:** You can assign Display Clients to a TermSecure user and they can get access to it from any terminal in the plant. This can be initiated by either manual login or the use of an authentication device. This allows a user to leave one terminal, logon to a different terminal, and reconnect to their session, essentially having the session follow him from terminal to terminal.

An example would assign a session with reports to a quality control worker who could login anywhere and retrieve their reports.

SecureAccess or Terminal-specific Applications are controlled with **Permissions**.

SmartContext or User-specific Applications are controlled by adding the Display Client to the TermSecure User configuration.

Note: TermSecure requires the usage of Display Clients instead of using individual terminal servers.

Five licenses of TermSecure are included with each Master License activation. Additional TermSecure licenses can be purchased to add to the Master License.

25.2 Users Types

There are three types of users in a ThinManager system. **Windows Users** and **TermSecure Users** are important to TermSecure.

25.2.1 Windows Users

Windows Users are the Microsoft accounts created in Windows that allow access to the Windows terminal servers. These are configured within Windows and authenticated by Windows. They can be given varying levels of access and power using Windows User Groups and Group Policies.

25.2.2 TermSecure Users

TermSecure Users are users who can go to a thin client and receive access to specific Display Clients due to their membership in a TermSecure Access Group. The login and authentication is done by ThinManager a level above the Windows login.

TermSecure grants and limits access to terminals and Display Clients but a Windows User login is still required to actually logon to the terminal server.

25.2.3 ThinManager Security Group Users

ThinManager Security Group Users are Windows User Group members who have been configured in the ThinManager Server Configuration Wizard to have varying levels of access and control within the ThinManager program.

These groups are configured on the **ThinManager Security Groups** page of the **ThinManager Server Configuration wizard**. See ThinManager Security Groups for details.

25.3 Deploying TermSecure

TermSecure may require a number of steps to configure and deploy TermSecure:

1. TermSecure Access Groups can be created to use Permissions (optional).
See Creating Permissions Groups for details.
2. Terminals can be assigned TermSecure Access Groups to limit access to specific users (optional).
See Permission Groups for Terminals for details.
3. Display Clients can be assigned TermSecure Access Groups to limit access to specific users (optional).
See Permission Groups for Display Clients for details.
4. TermSecure Users need to be created.
5. TermSecure Users can be assigned to TermSecure Access Groups (optional).
See TermSecure User Configuration Wizard for details.
6. A Login strategy needs to be put in place. The TermSecure User can use the Terminal Login, their TermSecure login, or a Windows login to access the terminal servers.
See Windows Login Information for details.
7. USB drives and ProxCards, if used, need to have the identification number entered in their configuration (optional).
See Card/Badge Information for details.
8. The TermSecure User can then login to a thin client using TermSecure
TermSecure prompts the TermSecure User to login to the terminal servers using a Windows User account, or it will pass the pre-configured Windows User account information to the terminal server for auto-login, based on the login strategy selected.
9. The TermSecure User is granted access to all Display Clients that share the same TermSecure Access as the TermSecure User, and is denied access to Display Clients that they don't share a TermSecure Access Group membership.

26 Permissions

Permissions restrict access to applications unless a person has been given a TermSecure login and the matching permission set.

26.1 Creating Permissions Groups

Permissions grant or limit access through the TermSecure Access Groups. Select the **Permissions** button in the **Terminal Configuration Wizard**, the **Terminal Group Configuration Wizard**, the **Display Client Wizard**, the **TermSecure User Wizard**, or the **TermSecure Users Group Wizard** to set these up.

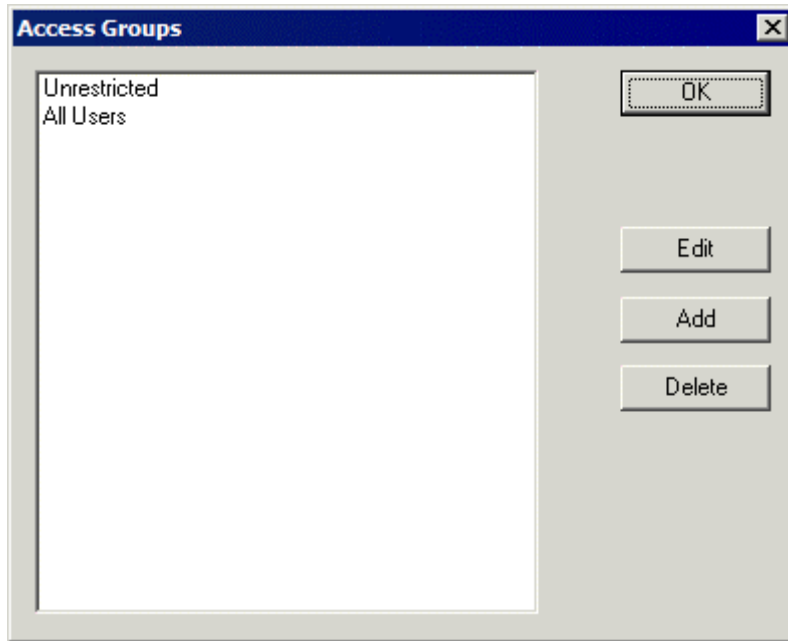
- **Terminal Permissions** is the list of named permission groups whose members may access a terminal. The **Unrestricted** group does not require a membership to access.
- **Terminal Group Permissions** is the list of named permission groups whose members may access a terminal belonging to the Terminal group. The **Unrestricted** group does not require membership to access.
- **Display Client Permissions** is a list of named permission groups whose members may access and view a Display Client. The **Unrestricted** group does not require a login.
- **TermSecure User Permissions** is a list of named permission groups to which a TermSecure User belongs.
- **TermSecure User Group Permissions** is a list of named permission groups to which members of a TermSecure User Group belong.

A TermSecure User can use a terminal when they share membership in a TermSecure Access Group.

A TermSecure User can use a Display Client when they share membership in a TermSecure Access Group.

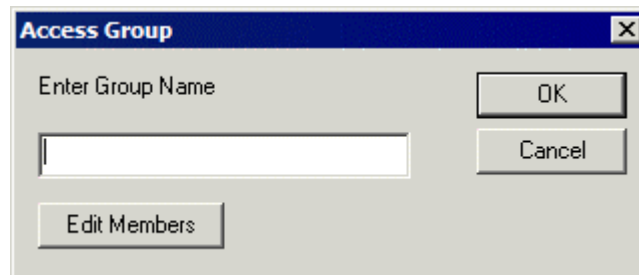
26.1.1.1 Creating a TermSecure Access Group

Selecting **Manage > TermSecure Access Groups** from the ThinManager menu will launch the **Access Groups** window.



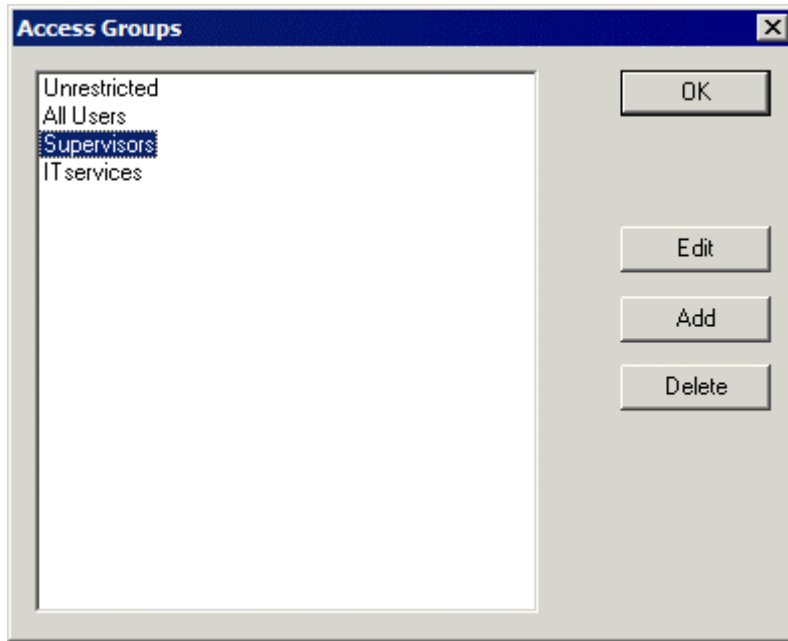
Access Groups Window with Default Groups

Select the **Add** button to add an Access Group. The **Add** button launches an Access Group window.



Permission Group Creation Window

Enter a name for the new TermSecure Access Group and select **OK** to create the group.



Additional TermSecure Access Groups Created

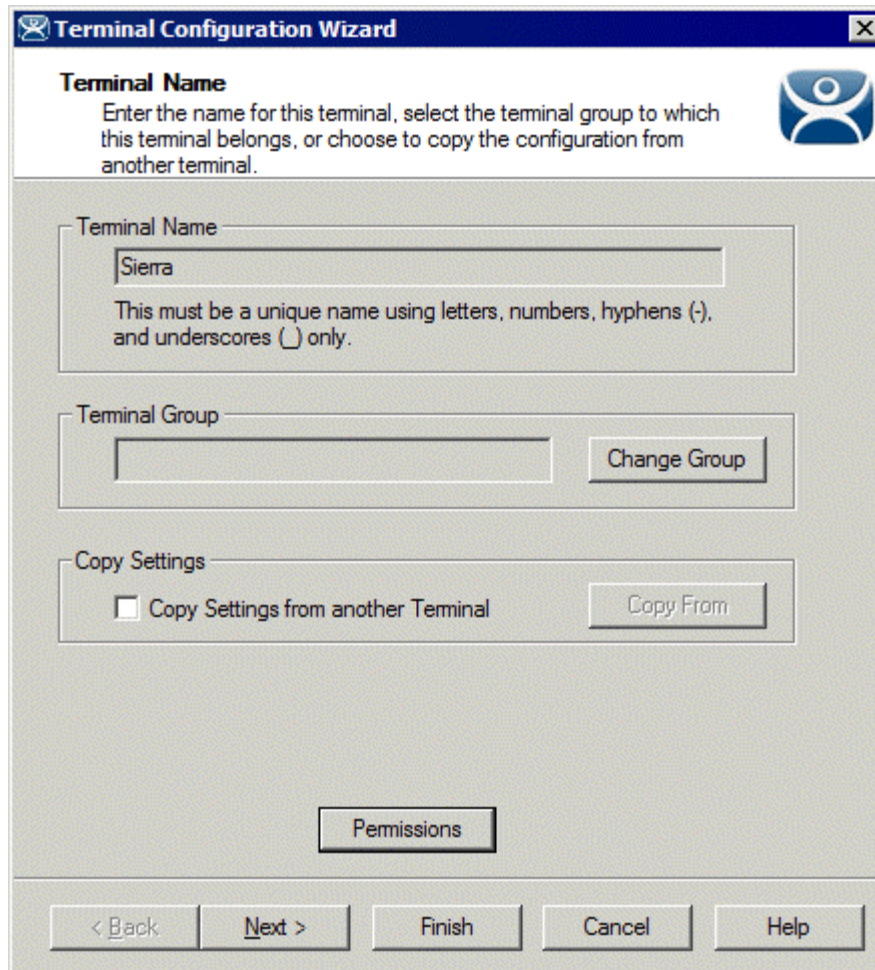
The created Access Groups will be displayed in the **Access Group** window. These TermSecure Access Groups, like Microsoft User Groups, do not have settings and parameters, but instead get their usefulness by adding members to them or applying restrictions to them.

26.2 Permission Groups for Terminals

TermSecure Access Groups are assigned to a terminal with the **Permissions** button on the first page of the **Terminal Configuration Wizard**.

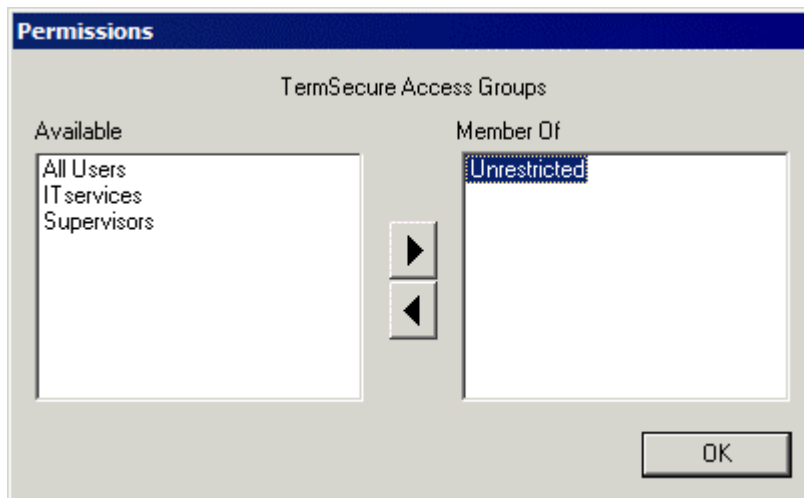
Note: Removing the Unrestricted group from a terminal and replacing it with a TermSecure Access group will render the terminal functionless until a member of the group logs in.

Open the Terminal Configuration Wizard for an existing terminal by double clicking on it in the tree. Start the Terminal Configuration Wizard for a new terminal by selecting **Edit > Add Terminal**.



Terminal Configuration Wizard

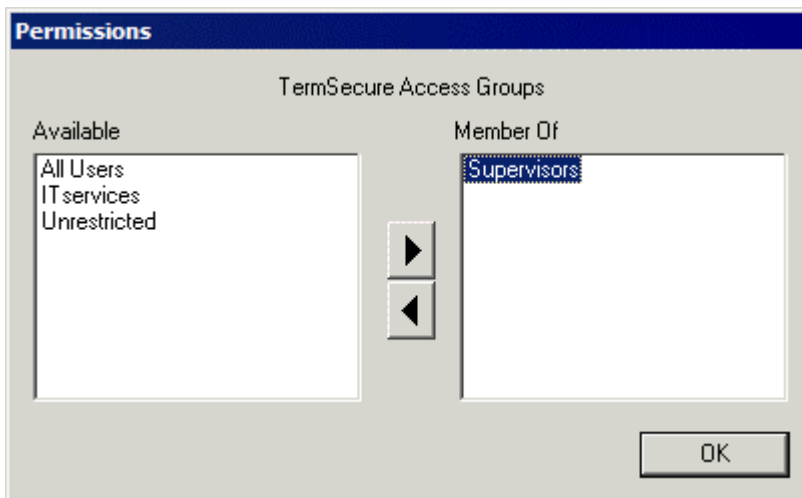
Select the **Permissions** button on the first page of the Terminal Configuration Wizard to launch the **Permissions** window to apply the TermSecure Access Groups to the terminal.



Permissions Window

By default, the terminal uses the **Unrestricted** access group, allowing anyone access to the Display Clients that are assigned to the terminal.

If Additional Permission Groups are configured, they will be displayed in the **Available** list. Access can be granted or denied by moving the Access Groups into or out of the **Member Of** list by double clicking or highlighting the desired group and selecting an arrow.



Object Permissions

If the terminal has the **Unrestricted** access group removed from **Member Of** list and is replaced by other Access Groups, TermSecure will deny access to the terminal except for members of the selected access groups.

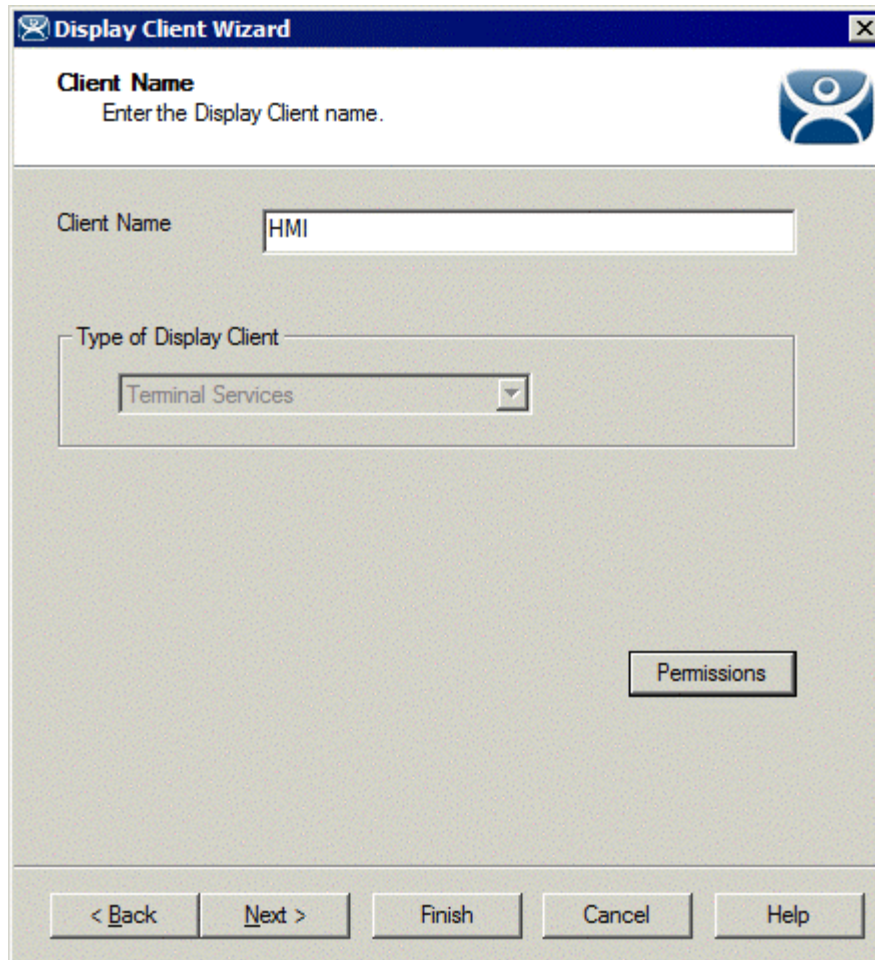
Note: Removing the Unrestricted group from a terminal and adding a different group will render the terminal functionless until a member of the group logs in.

Select **OK** to close the Permissions window.

26.3 Permission Groups for Display Clients

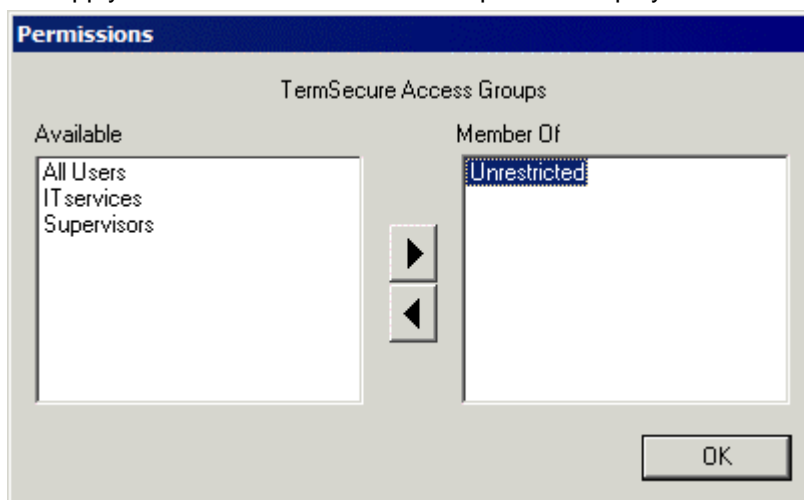
TermSecure Access Groups are assigned to a Display Client with the **Permissions** button on the first page of the **Display Client Wizard**.

Open the Display Client Wizard for an existing Display Client by double clicking on it in the tree. Start the Display Client Configuration Wizard for a new Display Client by right clicking on the Display Client branch icon and selecting **Add Display Client**.



Display Client Configuration Wizard

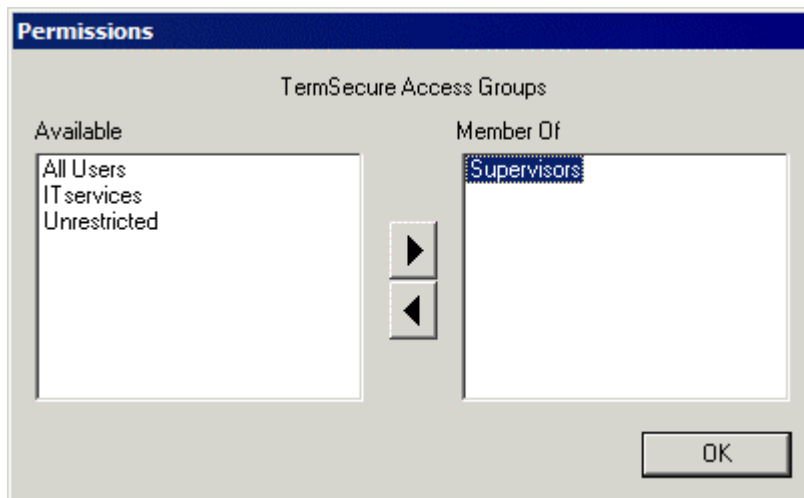
Select the **Permissions** button on the first page of the Display Client Configuration Wizard to launch the **Permissions** window to apply the TermSecure Access Group to the Display Client.



Permissions

By default, the Display Client uses the **Unrestricted** access group, allowing anyone access to the Terminal Server.

If Additional Permission Groups are configured, they will be displayed in the **Available** list. Access can be granted or denied by moving the Access Groups into or out of the **Member Of** list by double clicking or highlighting the desired group and selecting an arrow.



Permissions Changed

If the Display Client has the **Unrestricted** access group removed from **Member Of** list and is replaced by other Access Groups, TermSecure will deny access to the terminal except for members of the selected access groups.

Note: Removing the Unrestricted group from a terminal and adding a different group will hide the Display Client until a member of the group logs in.

Select **OK** to close the Permissions window.

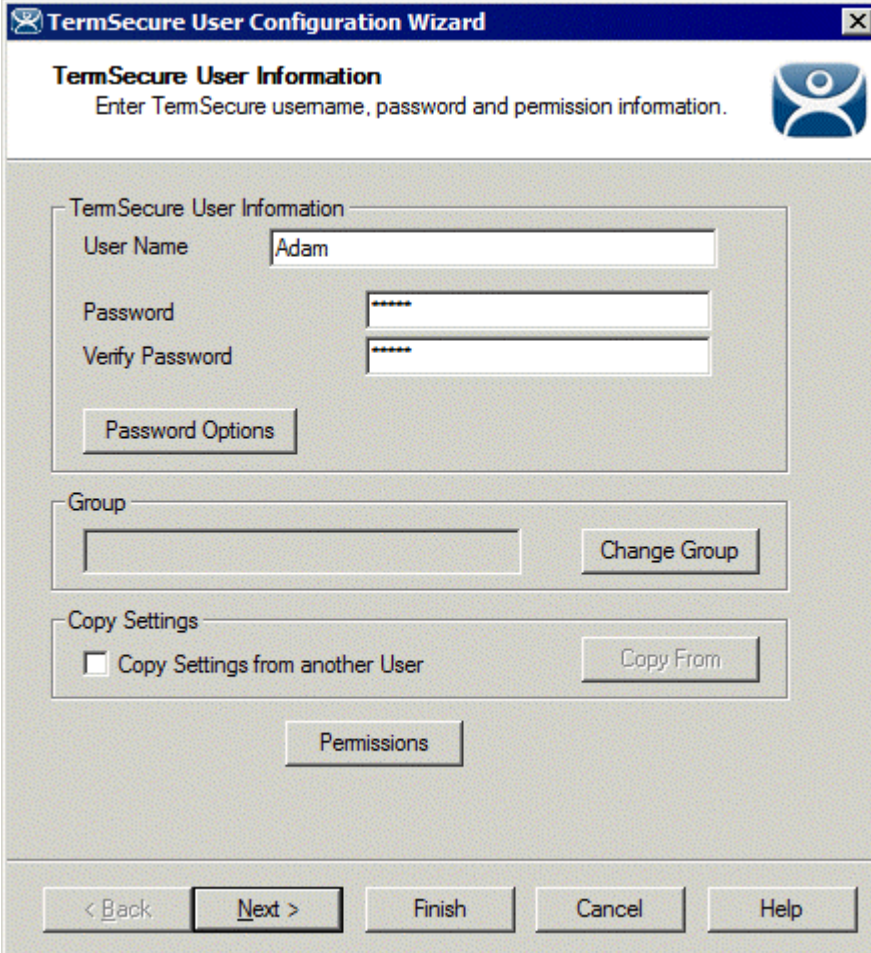
26.4 Permission Groups for TermSecure Users

TermSecure Access Group permissions can be applied to TermSecure Users. This is useful for SecureAccess or Terminal-specific Applications.

Create a TermSecure User to apply the permissions by right clicking on the TermSecure User branch of the ThinManager tree and selecting **Add TermSecure User**.

TermSecure Access Groups are configured on the first page of the wizard by selecting the **Permissions** button.

26.4.1.1 TermSecure User Information



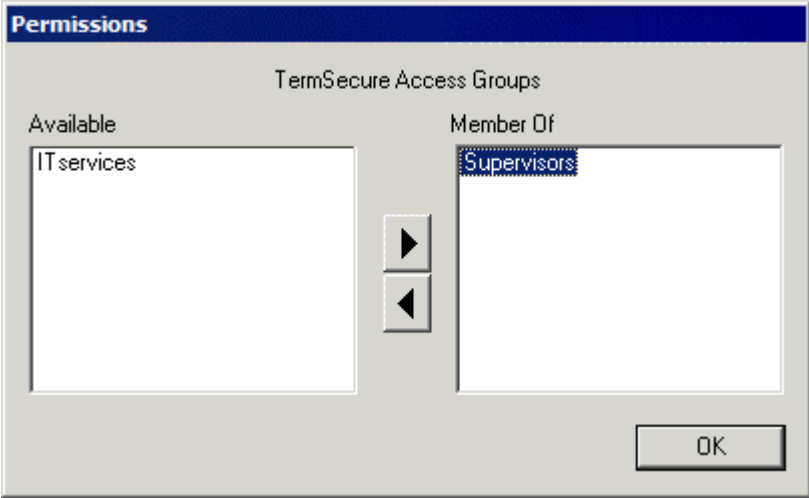
The image shows a screenshot of the 'TermSecure User Configuration Wizard' window. The title bar reads 'TermSecure User Configuration Wizard'. The main window title is 'TermSecure User Information' with a subtitle 'Enter TermSecure username, password and permission information.' and a logo on the right. The window is divided into several sections:

- TermSecure User Information:** Contains three text input fields: 'User Name' (with 'Adam' entered), 'Password' (with masked characters), and 'Verify Password' (with masked characters). Below these is a 'Password Options' button.
- Group:** Contains a text input field and a 'Change Group' button.
- Copy Settings:** Contains a checkbox labeled 'Copy Settings from another User' and a 'Copy From' button.
- Permissions:** A button located below the 'Copy Settings' section.

At the bottom of the window, there are five navigation buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

TermSecure User Information

Selecting the **Permissions** button will open the **Permissions** window that allows the assignment of a TermSecure Access Groups.



The image shows a screenshot of the 'Permissions' window. The title bar reads 'Permissions'. The main window title is 'TermSecure Access Groups'. The window is divided into two columns:

- Available:** A list box containing 'ITservices'.
- Member Of:** A list box containing 'Supervisors'.

Between the two list boxes are two arrow buttons: a right-pointing arrow (to move an item from Available to Member Of) and a left-pointing arrow (to move an item from Member Of to Available). An 'OK' button is located at the bottom right of the window.

Permissions

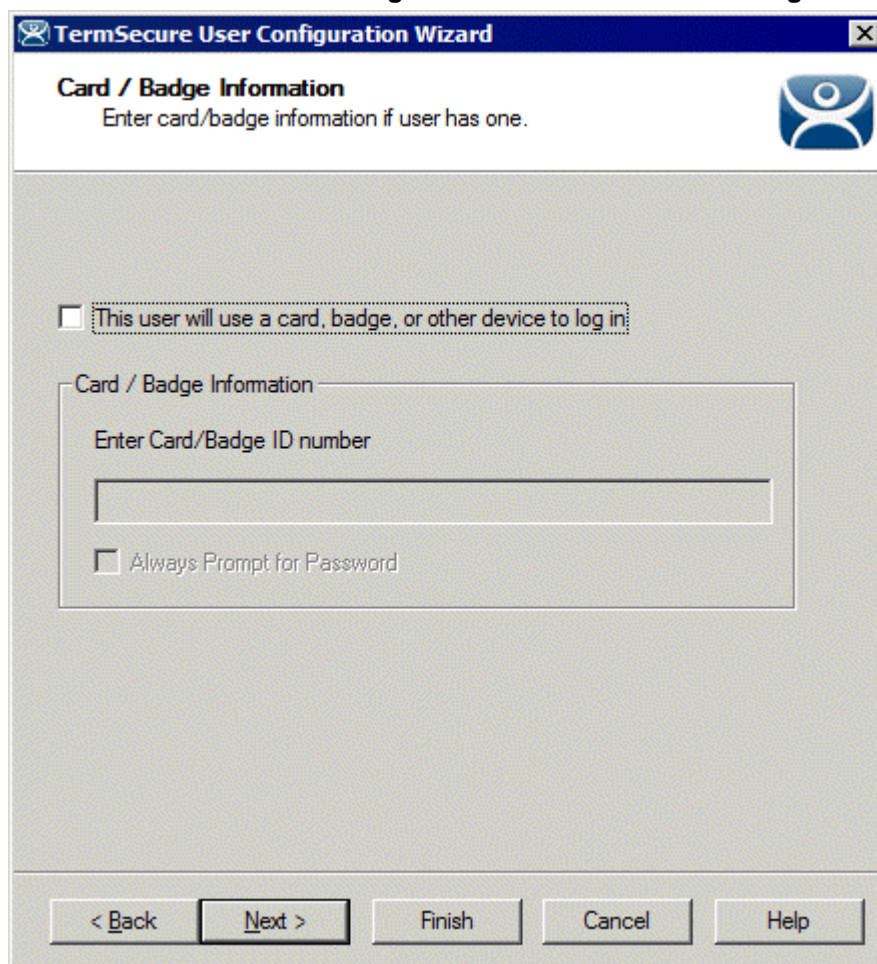
The **Permissions** window for TermSecure Users does not show the **Unrestricted** or the **All Users** groups, just the created groups. Access can be granted or denied by moving the Access Groups into or out of the **Member Of** list by double clicking or highlighting the desired group and selecting an arrow.

Select **OK** to close the Permissions window.

Select **Next** to continue with the **TermSecure User Configuration Wizard**.

26.4.1.2 Card / Badge Information

The second page of the **TermSecure User Configuration Wizard** is the **Card/Badge Information** page.



The screenshot shows a window titled "TermSecure User Configuration Wizard" with a sub-header "Card / Badge Information". Below the sub-header is the instruction "Enter card/badge information if user has one." and a blue icon of a person. A checkbox is labeled "This user will use a card, badge, or other device to log in:". Below this is a section titled "Card / Badge Information" containing a text box labeled "Enter Card/Badge ID number" and another checkbox labeled "Always Prompt for Password". At the bottom of the window are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Card / Badge Information Page

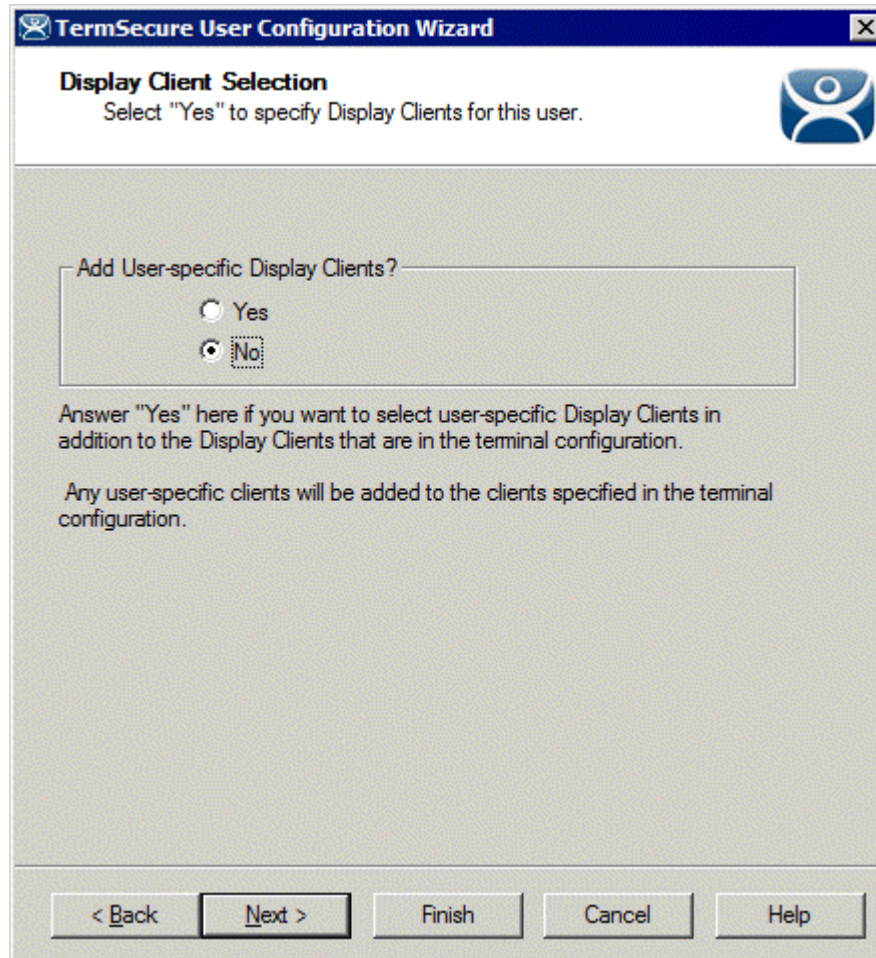
The **Card / Badge Information Page** enables the use of Identification devices such as USB flash drives, HID ProxCards, and WaveTrend Radio Frequency IDs (RFIDs) as login devices. This will be covered later. See Card and Badge Configuration for a TermSecure User for details

Note: Terminals using the USB flash drives, HID ProxCards, and WaveTrend RFIDs, as login devices will need the appropriate module added. See TermSecure Modules for details.

Select the **Next** button to continue with the configuration.

26.4.1.3 Display Client Selection

The next page of the **TermSecure User Configuration Wizard** is the **Display Client Selection** page.



Display Client Selection

The **Display Client Selection** page allows Display Clients to be assigned to the TermSecure User.

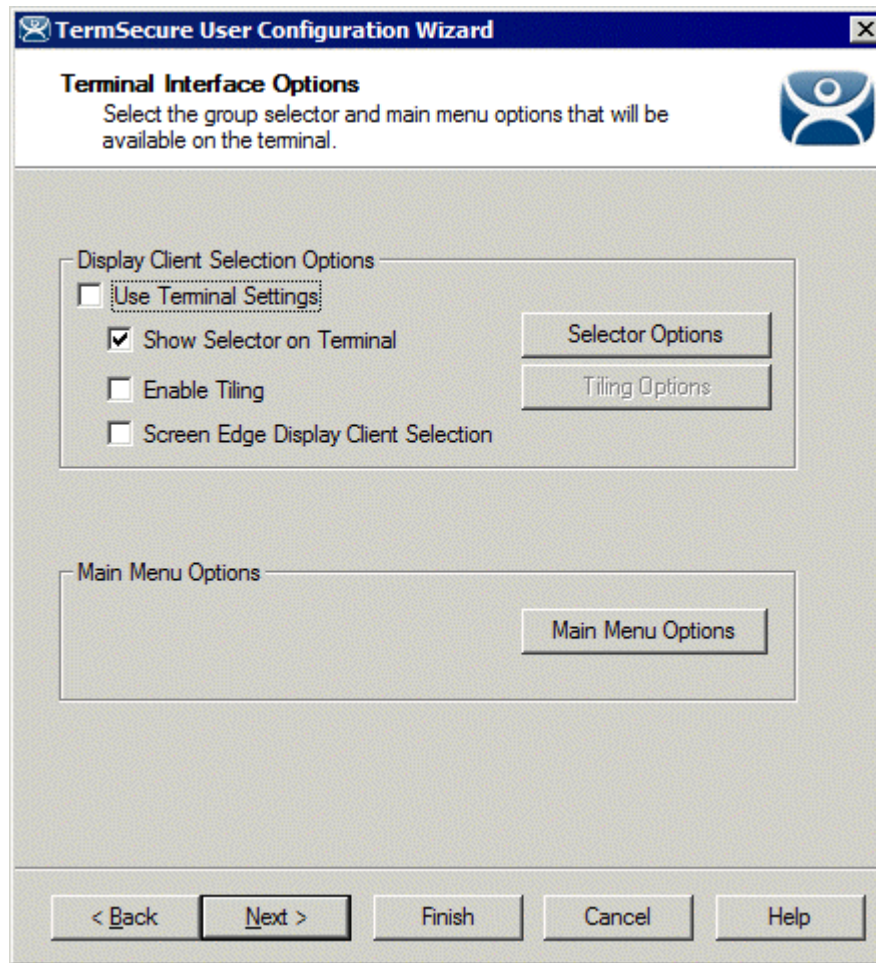
Add User specific Display Clients? - This setting, if set to **No**, will allow the TermSecure User to access the display client hidden on a terminal with the TermSecure Access Group permissions. This is used with SecureAccess or Terminal-specific Applications.

This setting, if set to **Yes**, will allow the selection of Display Clients for the TermSecure User that will be added to the terminal when the TermSecure User logs in top the terminal. This is used with SmartContext or User-specific Applications.

Select the **Next** button to continue with the configuration.

26.4.1.4 Terminal Interface Options

The next page of the **TermSecure User Configuration Wizard** is the **Terminal Interface Options** page.



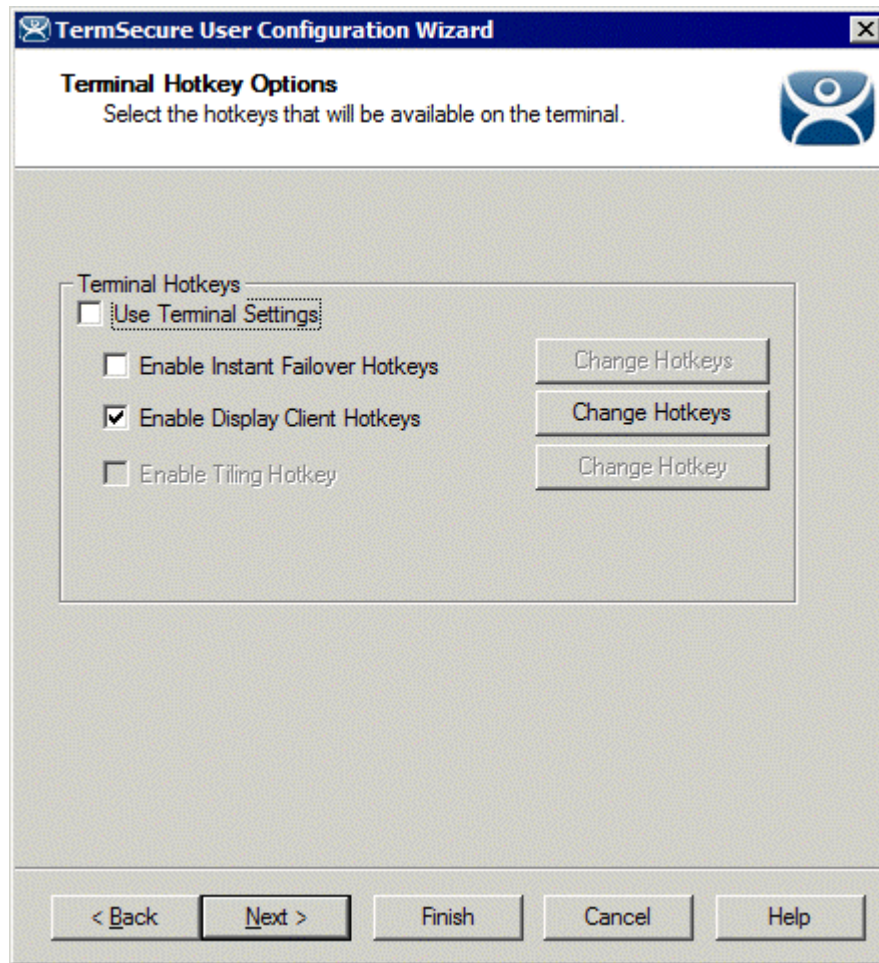
Terminal Interface Options

The **Terminal Interface Options** page sets the menus and hotkeys for the TermSecure User so a terminal using MultiSession will need to have a method to switch between sessions.

See Terminal Interface Options for details.

26.4.1.5 Terminal Hotkey Options

The next page of the **TermSecure User Configuration Wizard** is the **Terminal Hotkey Options** page.



Terminal Hotkey Options

Terminal Hotkeys on the **Hotkey Configuration** page allows the selection of keyboard combinations that allow switching between sessions.

See Terminal Hotkeys for details.

26.4.1.6 User Options

The final page of the **TermSecure User Configuration Wizard** is the **User Options** page.

TermSecure User Configuration Wizard

User Options
Select options for this user.

Log In / Log Out Options

Inactivity Timeout: 120 seconds

Reset Sessions at Logout:

Activate User Group at Log In:

User Schedule

Set Schedule

Terminal Effects

Enable Terminal Effects

Shadowing

Allow terminal to be shadowed: YES

Allow Interactive Shadow

< Back Next > Finish Cancel Help

User Options

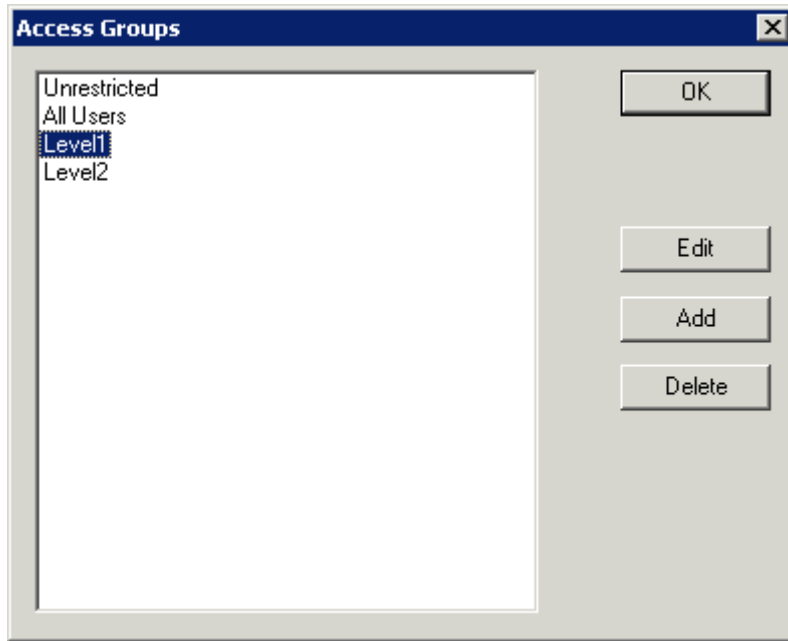
See User Options for details.

Select **Finish** to finish the configuration.

26.5 Shortcut Method of Adding TermSecure Access Groups

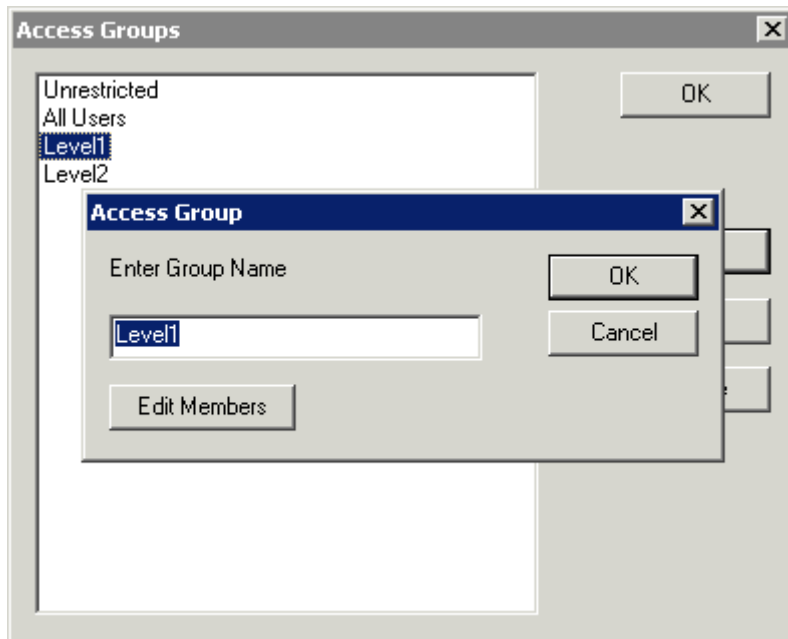
Members can be added to TermSecure Access Groups quickly through the TermSecure Access Group Wizard.

Open the TermSecure Access Group Wizard by selecting **Manage > TermSecure Access Groups** from the ThinManager menu. This will launch the Access Groups window.



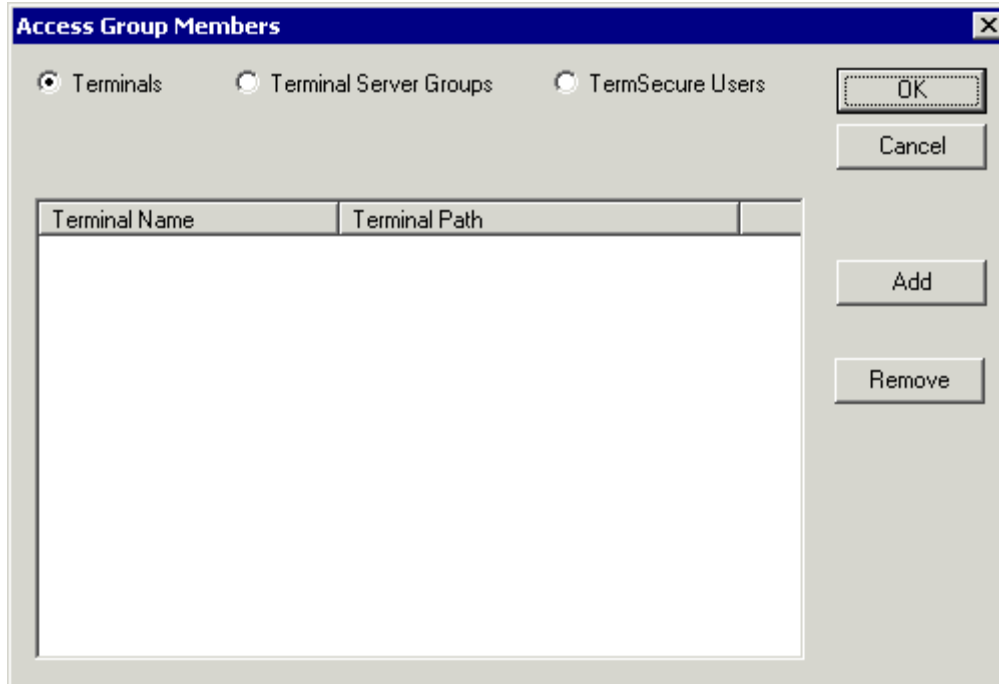
Access Groups Window

Highlight the desired TermSecure Access Group and select the **Edit** button.



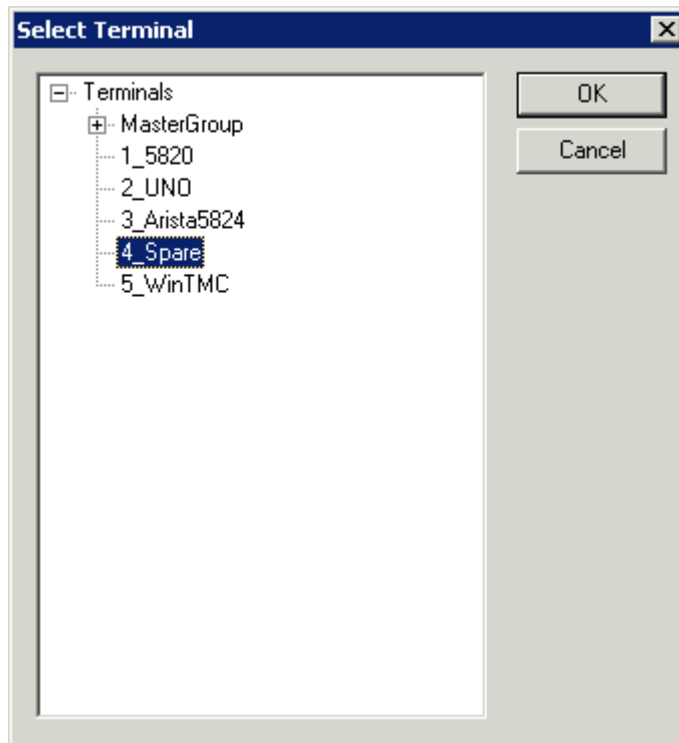
Access Group Window

Select the **Edit Members** button to launch the **Access Group Members** window.



Access Group Members Window

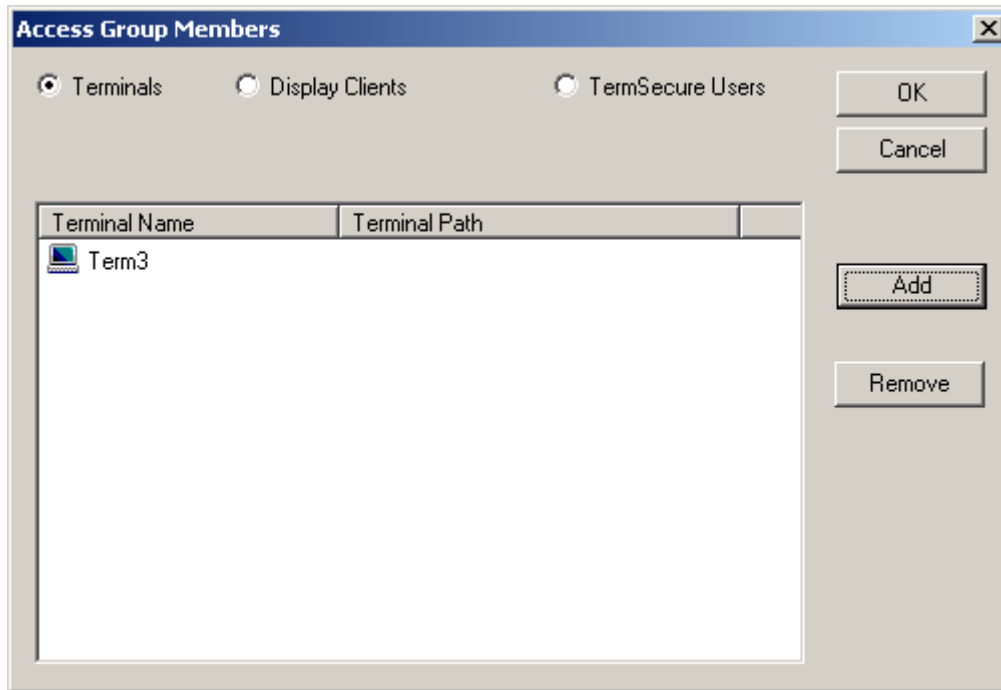
Select the **Terminals**, **Display Clients**, or **TermSecure Users** radio button to configure that category and select the **Add** button.



Select Terminal Window

A **Select Terminal** window will be displayed with a tree of the configured terminals and terminal groups.

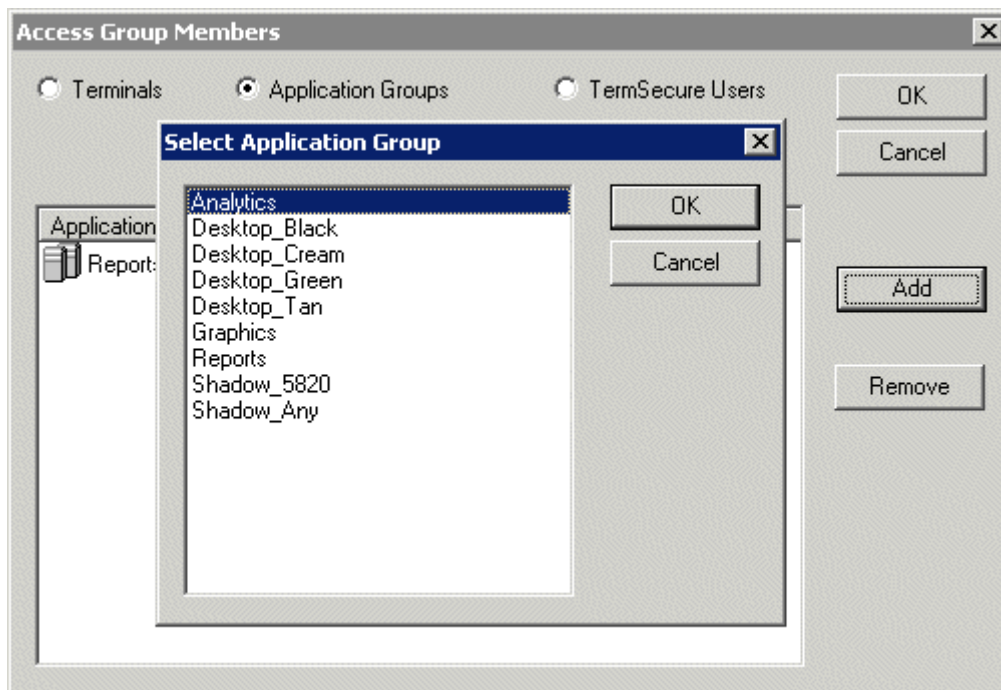
Select the desired terminals and terminal groups and select **OK** for each addition.



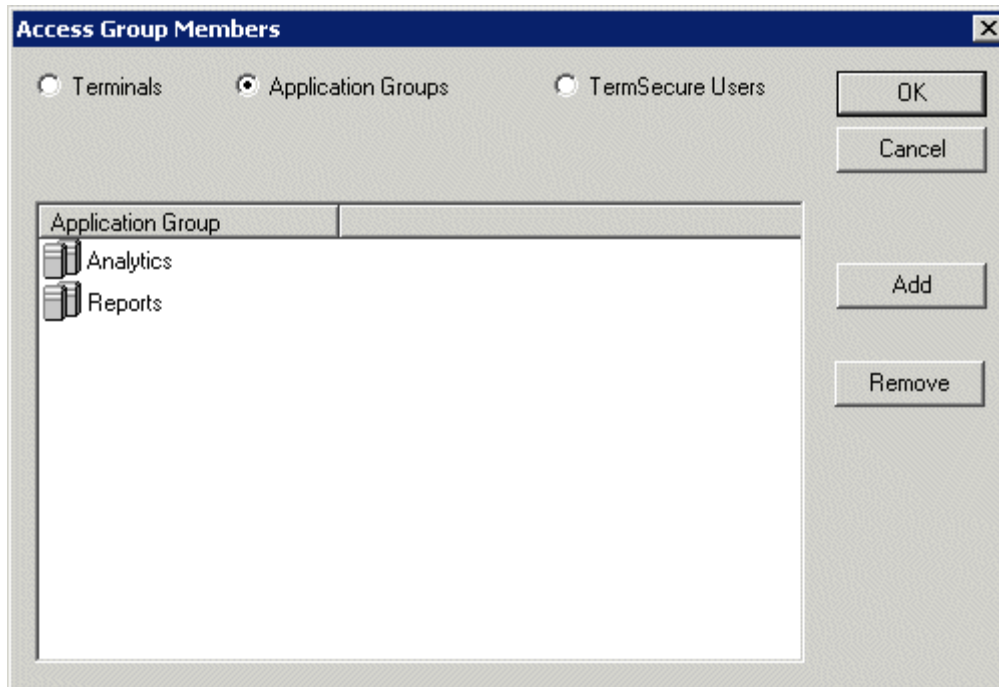
Access Group Members

The Access Group Members window will show the members of the TermSecure Access Group. These can be removed by highlighting and selecting the **Remove** button.

Display Clients and **TermSecure Users** can be added by the same process of adding by selecting the appropriate radio button.



Display Client Selection



Member Display Clients

Members can be removed by highlighting them and selecting the **Remove** button.

26.6 TermSecure User Configuration Wizard

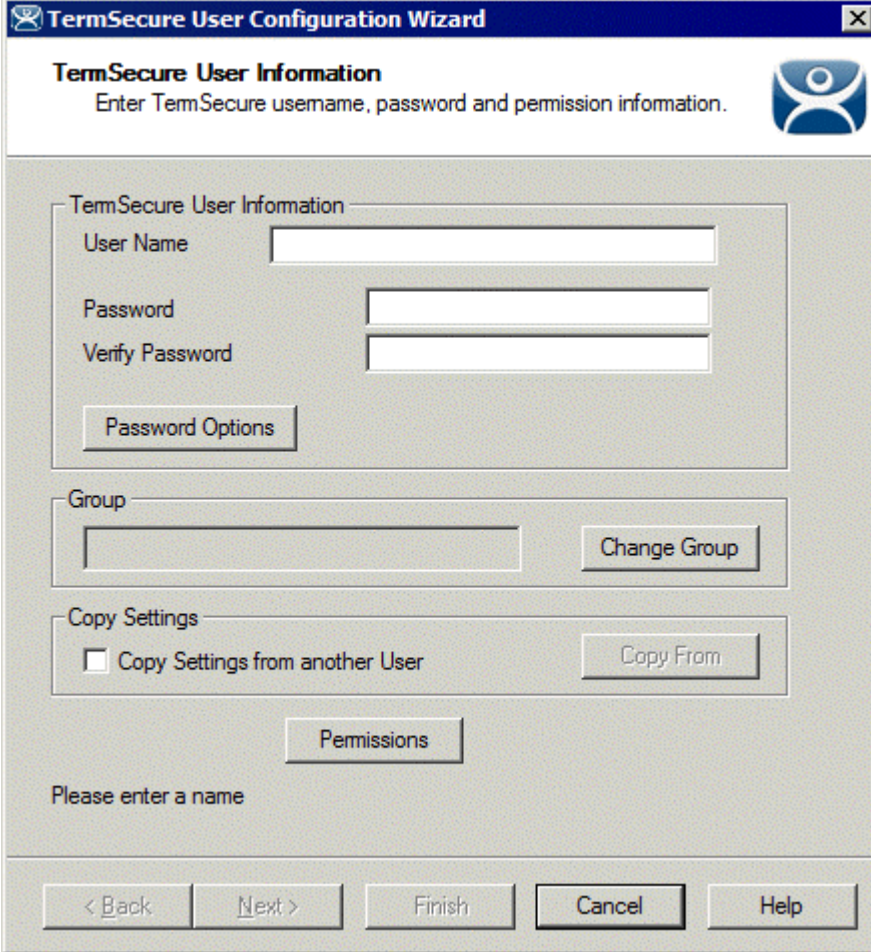
A TermSecure User can be configured with a user name, password, and user-specific Display Clients. When the user logs into a terminal with that identity, TermSecure will allow the user access to the personalized Display Clients for that user in addition to the Display Clients already assigned to the terminal.

Note: The TermSecure Users branch of the ThinManager tree will not be visible unless a Master License is installed on the ThinManager Server.

The **TermSecure User Configuration Wizard** is launched by right clicking on the TermSecure Users branch of the ThinManager tree and select **Add TermSecure User**.

26.6.1.1 TermSecure User Information

The first page of the **TermSecure User Configuration Wizard** is the **TermSecure User Information** page.



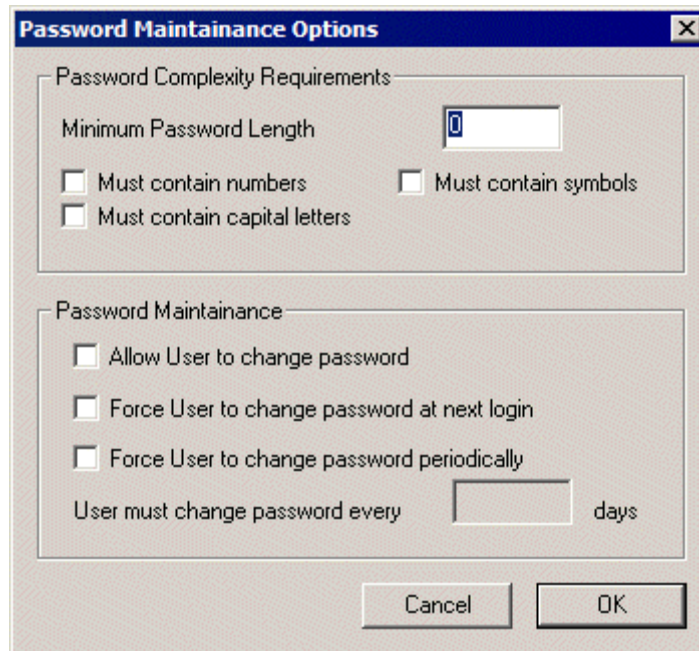
The screenshot shows a Windows-style dialog box titled "TermSecure User Configuration Wizard". The main heading is "TermSecure User Information" with the instruction "Enter TermSecure username, password and permission information." and a blue icon of a person. The form contains several sections: "TermSecure User Information" with fields for "User Name", "Password", and "Verify Password", and a "Password Options" button; "Group" with a text box and a "Change Group" button; "Copy Settings" with a checkbox "Copy Settings from another User" and a "Copy From" button; and a "Permissions" button. At the bottom, there is a prompt "Please enter a name" and a row of navigation buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

ThinManager User Information

The **TermSecure User Information** has fields for the user name and password that will be used by the TermSecure User to log into ThinManager security to access TermSecure functions.

The **TermSecure User Information** is for account information:

- **User Name** - Enter the user name that the user will use to log into the TermSecure system. Although this can be the same as the Windows user name, the TermSecure user name is independent of the Microsoft Windows login. This TermSecure user name can be tied to a Windows login later in the wizard on the **Windows Login Page**.
- **Password** - Enter the password for the TermSecure User in this field.
- **Verify Password** - Re- enter the password for the ThinManager User in this field.
- The **Password Options** button launches the **Password Maintenance Options** window that regulates rules for the ThinManager User password.



Password Maintenance Options

Password Complexity Requirements:

- **Minimum Password Length** - Sets the amount of characters that the password must contain to be valid.
- **Must contain numbers** - This checkbox, if checked, will require that the password contain at least one number in it.
- **Must contain symbols** - This checkbox, if checked, will require that the password contain at least one symbol in it.
- **Must contain capital letters** - This checkbox, if checked, will require that the password contain at least one capital letter in it.

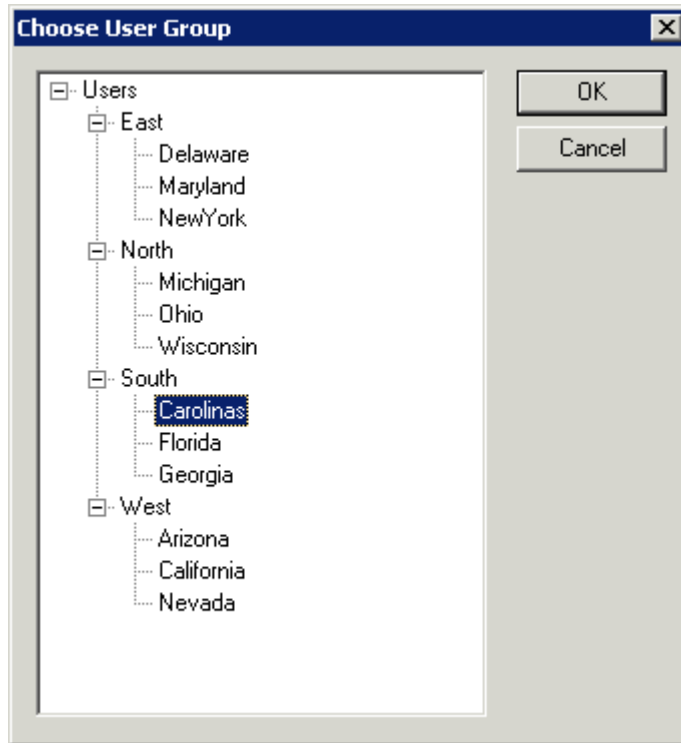
Password Maintenance:

- **Allow User to change password** - This checkbox, if checked, will allow the user to change the password at the TermSecure menu.
- **Force User to change password at next login** - This checkbox, if checked, will require the user to change the password at the TermSecure menu when they login the next time.
- **Force User to change password periodically** - This checkbox, if checked, will require the user to change the password at the TermSecure menu on the schedule set by the **User must change password every X days** field.
- **User must change password every X days** - This field sets the time period between the scheduled password changes caused by the **Force User to change password periodically** checkbox.

The **OK** button closes the window with any changes. The **Cancel** button closes the window without changes.

Group:

- The **Change Group** button opens the **Choose User Group** window that allows a User to be placed in an existing TermSecure Users Group.



Choose User Group

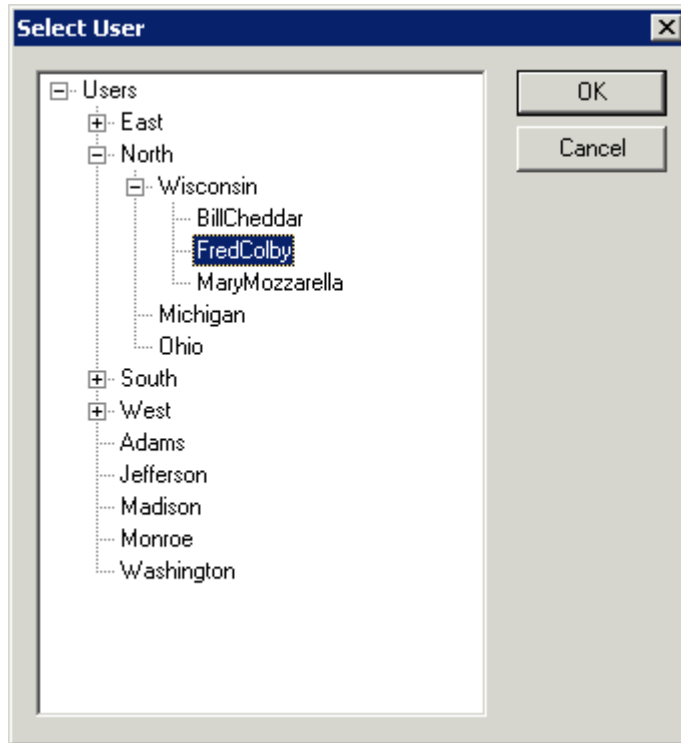
If TermSecure User Groups have been created, the **Choose User Group** window will display the TermSecure User Group branch of the ThinManager tree.

- To add the TermSecure User to a TermSecure Users Group, highlight the desired TermSecure Users Group and select the **OK** button.
- To change the TermSecure User to a different TermSecure Users Group, highlight the desired TermSecure Users Group and select the **OK** button.
- To remove the TermSecure User from all TermSecure Users Groups, highlight the top-level Users branch and select the **OK** button.

The **OK** button closes the window with any changes. The **Cancel** button closes the window without changes.

Copy Settings:

- The **Copy Settings from another User** checkbox, if selected, activates the **Copy From** button that allows the configuration of an existing TermSecure User to be applied to the current TermSecure User.
- The **Copy From** button opens the **Select User** window that allows the selection of the desired TermSecure User configuration.



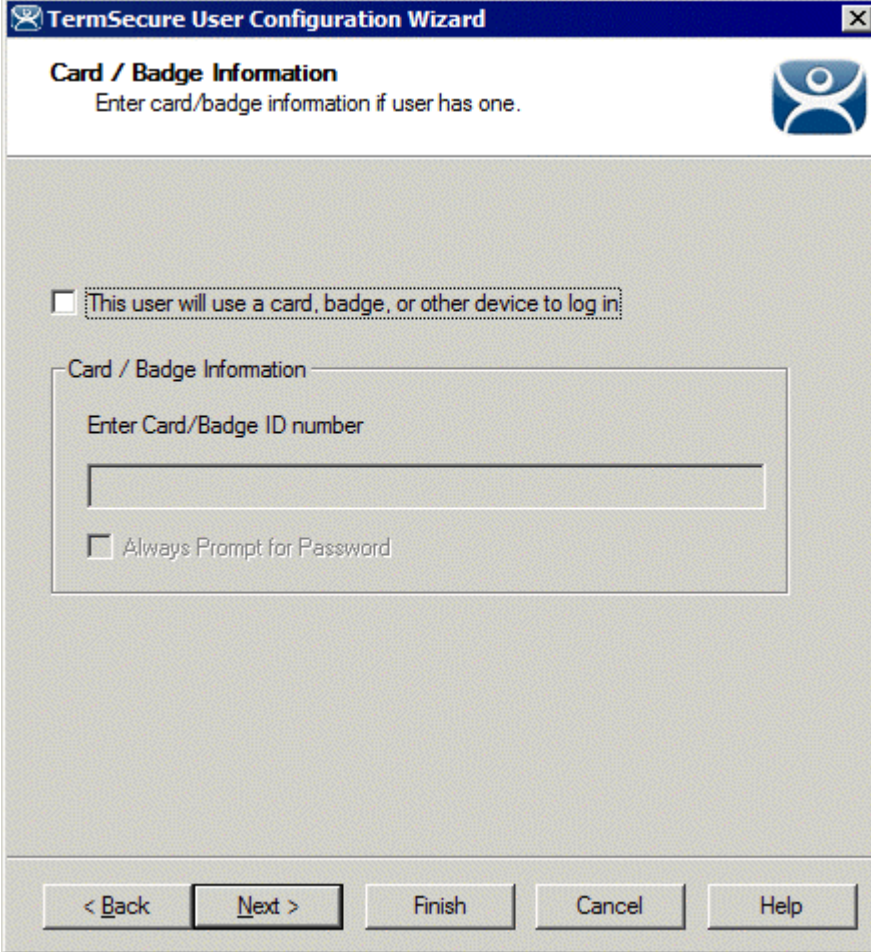
Select User Window

The **Select User** window will show a tree with the existing TermSecure User Groups and the TermSecure Users.

Highlight the TermSecure User whose configuration you want to copy and select the **OK** button. The **OK** button closes the window with any changes. The **Cancel** button closes the window without changes.

26.6.1.2 Card / Badge Information

The next page of the **TermSecure User Configuration Wizard** is the **Card/Badge Information** page.



The screenshot shows a window titled "TermSecure User Configuration Wizard" with a sub-header "Card / Badge Information". Below the sub-header is the instruction "Enter card/badge information if user has one." and a blue icon of a person. A checkbox is labeled "This user will use a card, badge, or other device to log in:". Below this is a section titled "Card / Badge Information" containing a text box labeled "Enter Card/Badge ID number" and another checkbox labeled "Always Prompt for Password". At the bottom of the window are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Card / Badge Information Page

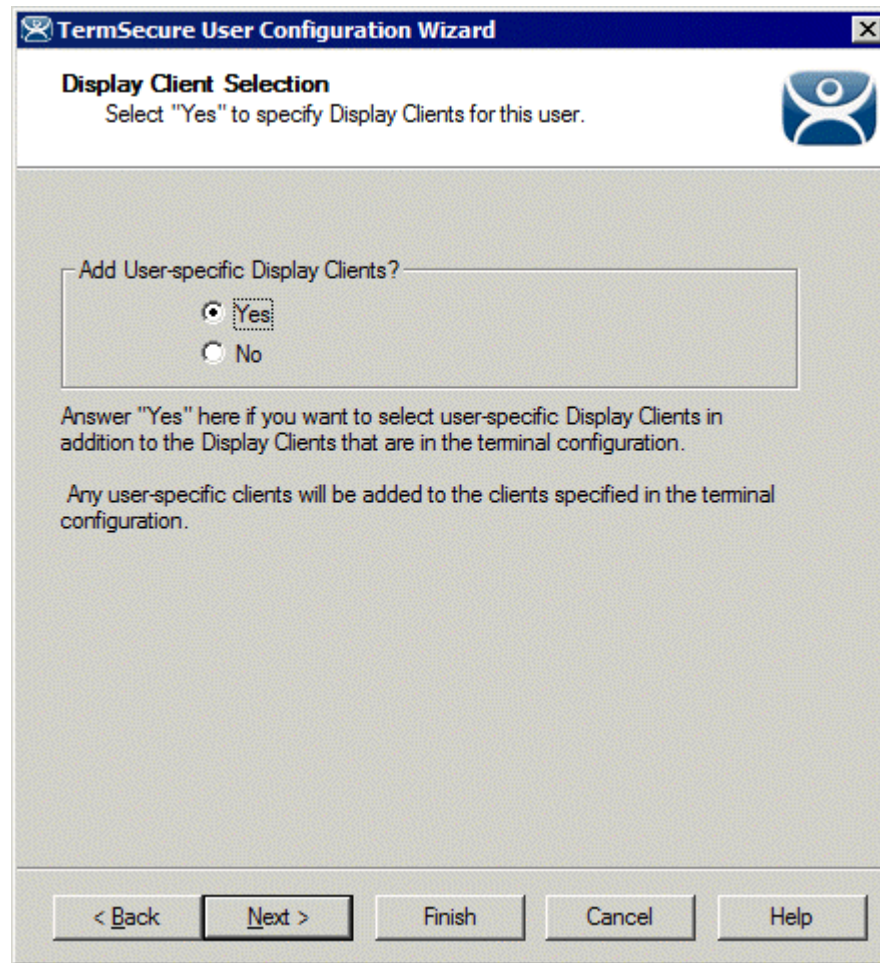
The **Card / Badge Information Page** enables the use of Identification devices such as USB flash drives, HID ProxCards, and WaveTrend Radio Frequency IDs (RFIDs) as login devices. This will be covered later. See Card and Badge Configuration for a TermSecure User for details

Note: Terminals using the USB flash drives, HID ProxCards, and WaveTrend RFIDs, as login devices will need the appropriate module added. See TermSecure Modules for details.

Select the **Next** button to continue with the configuration.

26.6.1.3 *Display Client Selection*

The next page of the **TermSecure User Configuration Wizard** is the **Display Client Selection** page.



Display Client Selection

The **Display Client Selection** page allows Display Clients to be assigned to the TermSecure User. When the TermSecure User logs onto a terminal, these Display Clients will be available on the terminal for him.

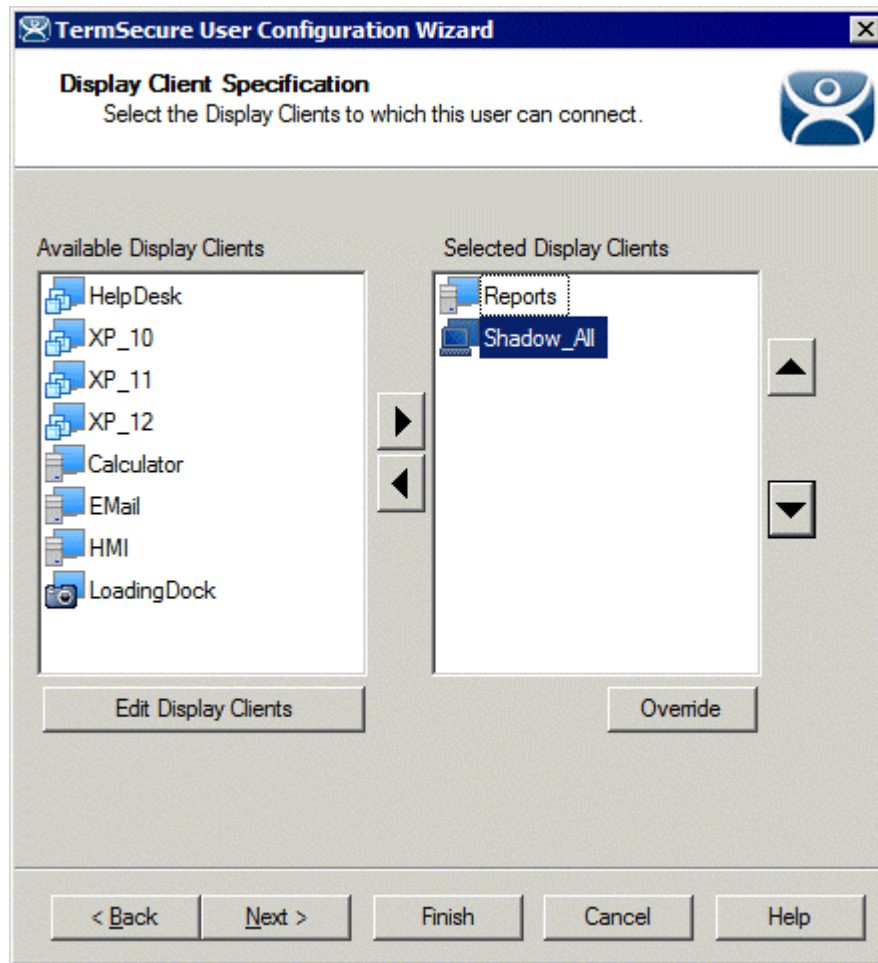
Add User specific Display Clients? - This setting, if set to **Yes**, will allow the selection of Display Clients for the TermSecure User that will be added to the terminal when the TermSecure User logs in top the terminal. This provides the user-specific Display Clients.

This setting, if set to **No**, will rely on Permissions to grant access to terminal-specific Display Clients.

Select the **Next** button to continue with the configuration.

26.6.1.4 Display Client Specification

The next page of the **TermSecure User Configuration Wizard** is the **Display Client Specification** page.



Display Client Specification Page

The **Display Client Specification** page allows Display Clients to be assigned to the TermSecure User if the **Add User specific Display Clients?** radio button is set to **Yes**.

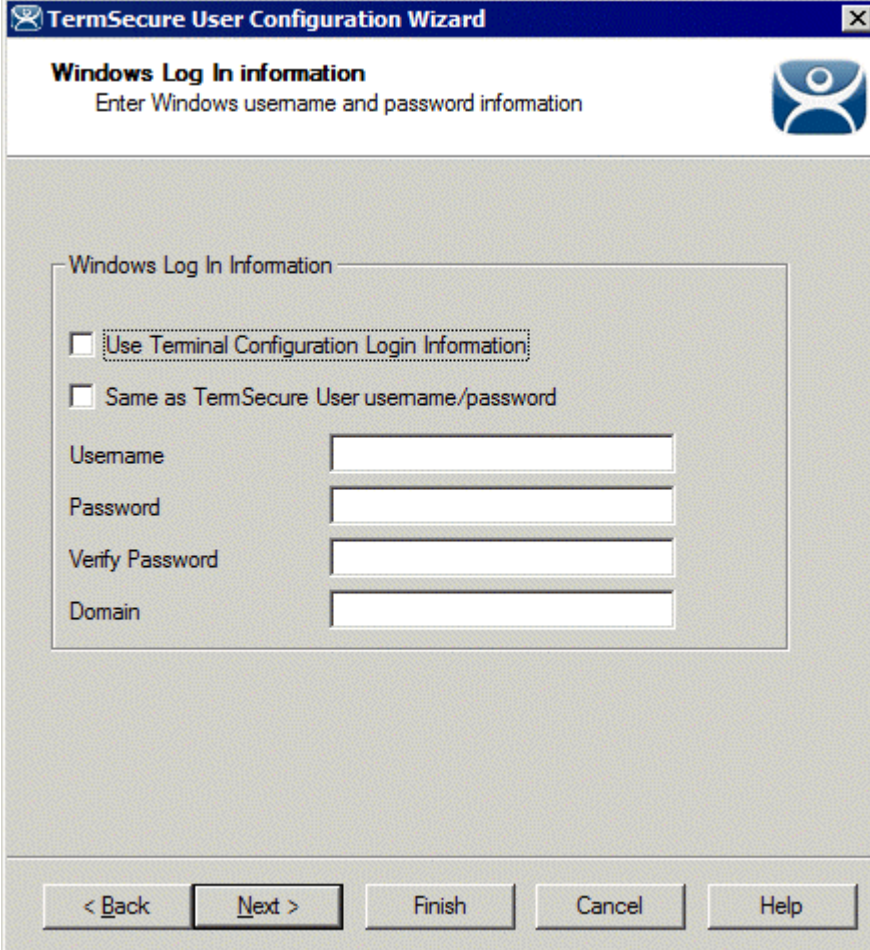
Move a Display Client you want the TermSecure User to use into the **Selected Display Clients** list by double-clicking on it in the **Available Display Clients** list or by highlighting it and clicking the **Right Arrow** button.

To add a new Display Client, select the **Edit Display Clients** button to launch the Display Client Wizard. See Display Client List for details.

Select the **Next** button to continue with the configuration.

26.6.1.5 Windows Login Information

The next page of the **TermSecure User Configuration Wizard** is the **Windows Log In Information** page.



The screenshot shows a window titled "TermSecure User Configuration Wizard" with a sub-header "Windows Log In information" and the instruction "Enter Windows username and password information". The main area contains a group box "Windows Log In Information" with two checkboxes: "Use Terminal Configuration Login Information" and "Same as TermSecure User username/password". Below these are four text input fields labeled "Username", "Password", "Verify Password", and "Domain". At the bottom, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Windows Login Information

The **Windows Log In Information** page allows the configuration of how the TermSecure User will log on to the Windows terminal servers.

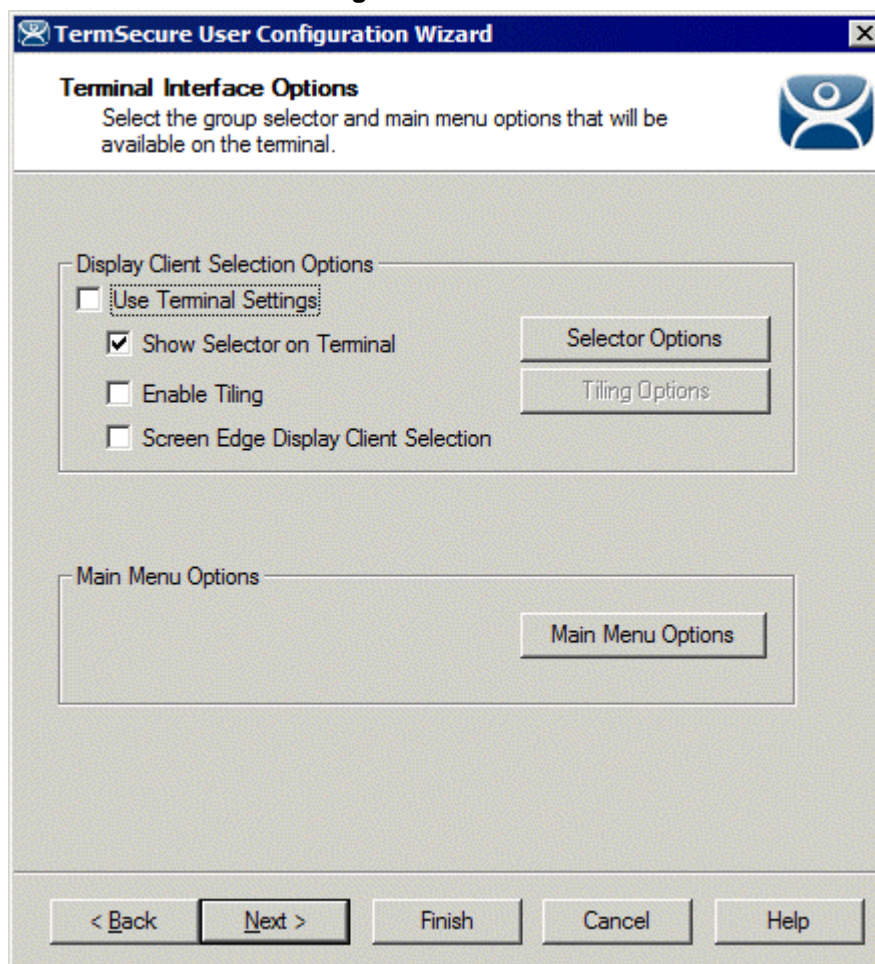
There are several Windows login options for the TermSecure User.

1. The TermSecure User can use the terminal's username and password to auto-log on to the terminal server. To do this, check the **Use Terminal Configuration Login Information** checkbox
2. The TermSecure User can use the TermSecure User username and password to auto-log on to the terminal server. To do this, check the **Same as TermSecure User username/password** checkbox. The TermSecure User username and password must match a **Windows User** username and password to get authenticated by Windows.
3. The TermSecure User can use a separate username and password to auto-log on to the terminal server. To do this, use the fields for the **Username**, **Password**, and **Domain** that are provided.
4. The TermSecure User can be required to manually log onto the terminal servers. To do this, leave the checkboxes unchecked and the **Username**, **Password**, and **Domain** empty.

Select the **Next** button to continue with the configuration.

26.6.1.6 Terminal Interface Options

The next page of the **TermSecure User Configuration Wizard** is the **Terminal Interface Options** page.



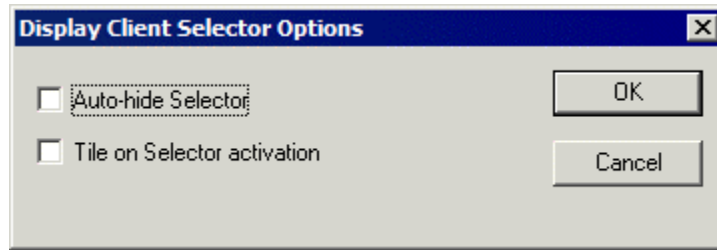
Terminal Interface Options

The **Terminal Interface Options** page sets the menus and hotkeys for the TermSecure User so a terminal using MultiSession will need to have a method to switch between sessions.

Group Selector Options allow on-screen switching of sessions.

Use Terminal Settings - This checkbox, when selected, will let the TermSecure User inherit the properties that were configured for use with the terminal.

- **Show Group Selector on Terminal** - This checkbox, if selected, will display an on-screen drop-down menu that can be activated by mouse.
- **Enable Tiling** - This checkbox, if selected, allows the sessions to be tiled so that the user can make a visual selection of the desired selection.
- **Screen Edge Group Selection** - This checkbox, if selected, will activate a feature that will switch windows if the mouse is moved off screen.
- **Selector Options** - This button, if selected, will launch the **Group Selector Options** window.
- **Tiling Options** - This button, if selected, will launch the **Tile Options** window.



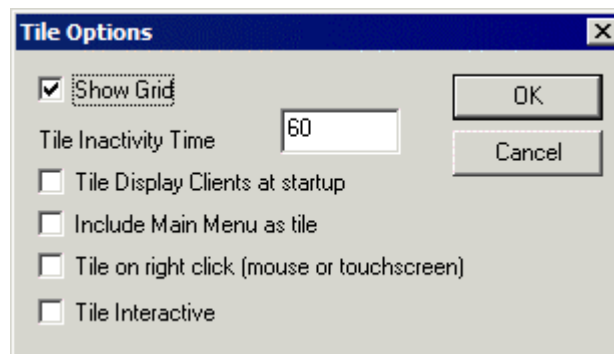
Group Selector Options Window

The **Group Selector Options** window has several settings.

- The **Auto-hide Group Selector** checkbox will hide the Group Selector until the mouse is moved to that space.
- The **Tile on Group Selector** checkbox, when selected, will tile the Display Clients when the auto-hide selector is chosen. This allows the user to select from the available sessions.

Select the **OK** button to accept changes or the **Cancel** button to close.

The **Tiling Options** button will launch the **Group Selector Options** window that allows configuration of the on-screen Group Selector bar.



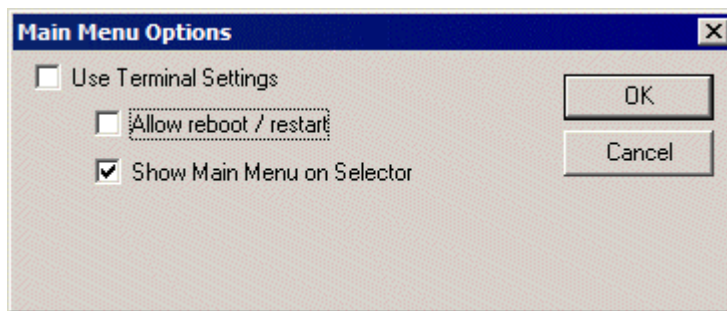
Tile Options

The **Tile Options** window has several settings.

- **Show Grid** – This checkbox, when selected, will show the tiled sessions in a grid with each grid labeled with the session name as while the session is loading.
- **Tile Inactivity Time** – This field sets the length of time that the terminal screen will stay focused on a selected session before reverting back to a tiled state due to inactivity.
- **Tile Display Clients at startup** – This checkbox, when selected, will show the sessions tiled when the terminal first connects to its sessions.
- **Include Main Menu as tile** – This checkbox, when selected, will include a session displaying the TermSecure Main Menu.
- **Tile on Right click (mouse or touchscreen)** - This checkbox, when selected, will initiate tiling when a session is right clicked.
- **Tile Interactive** – This checkbox, when selected, will allow a user to click into a tiled session and control it interactively without switching focus to a single session. To focus on a single session use the Group Selector Dropdown or the tiling hotkey (**CTL + T**), if enabled.

Select the **OK** button to accept changes or the **Cancel** button to close.

The **Main Menu Options** button will launch the **Main Menu Options** window that allows configuration of the TermSecure Main Menu.

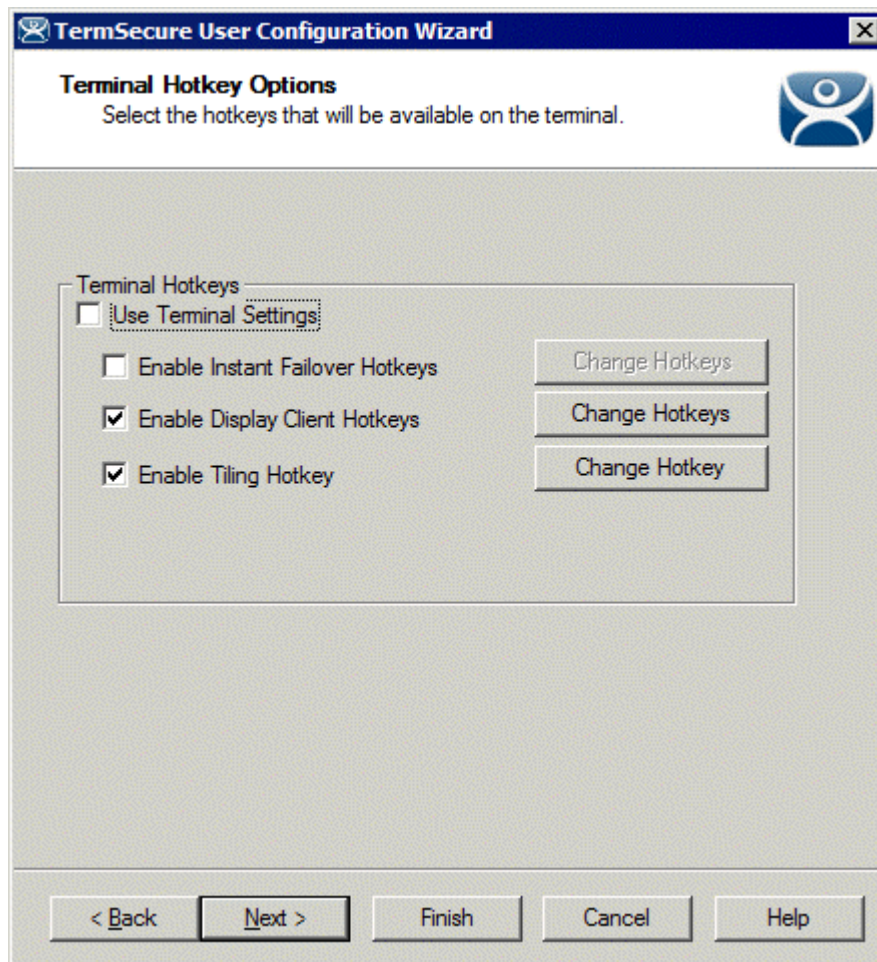


Main Menu Options Window

The Allow Reboot/Restart checkbox, if selected, will add a Reboot and Restart button to the main menu.

26.6.1.7 Terminal Hotkey Options

The next page of the **TermSecure User Configuration Wizard** is the **Terminal Hotkey Options** page.



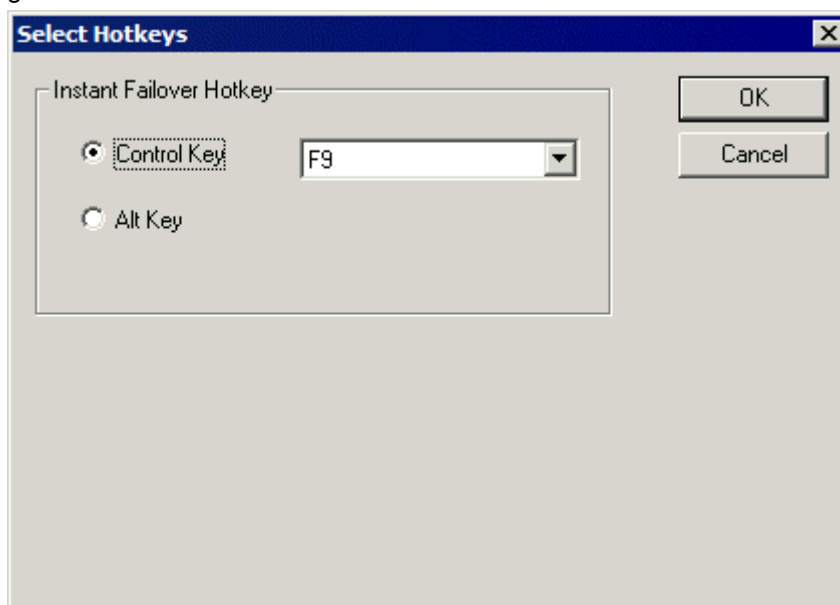
Terminal Hotkey Options

Terminal Hotkeys on the **Hotkey Configuration** page allows the selection of keyboard combinations that allow switching between sessions.

Use Terminal Settings - This checkbox, when selected, will let the TermSecure User inherit the properties that were configured for use with the terminal.

- **Enable Instant Failover Hotkeys** - This checkbox, if selected, allows the hot key switching between the two active sessions of a Display Client that is using Instant Failover.
- **Enable Group Hotkeys** - This checkbox, if selected, allows the hot key switching between different sessions of a terminal using MultiSession.
- **Enable Tiling Hotkey** – This checkbox, if selected, allows SessionTiling to be activated by a hotkey combination.

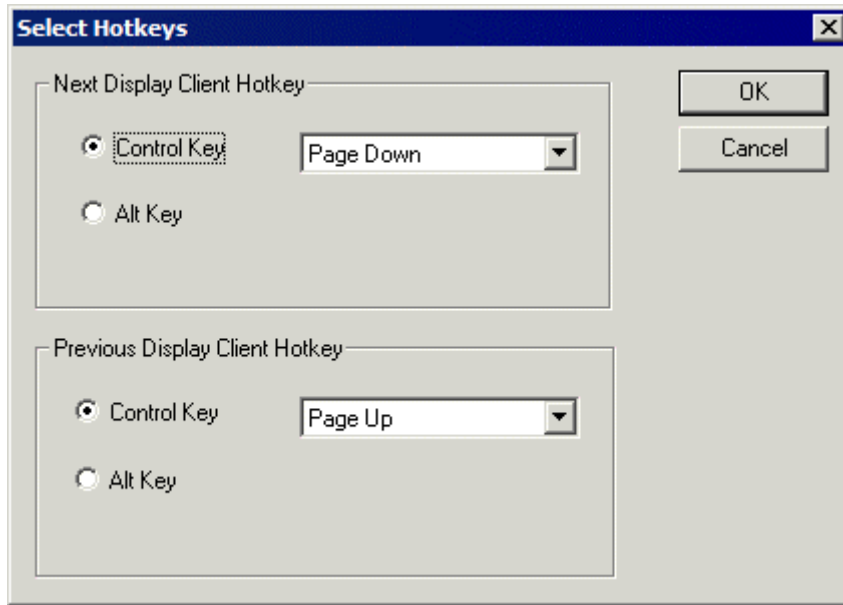
Selecting the **Change Hotkeys** button when **Enable Instant Failover Hotkeys** is selected will allow the hotkeys to be changed from the default.



Select Instant Failover Hotkeys

The default hotkey for Instant Failover switching is set to **Control+F9**. This can be changed by selecting the **Alt Key** radio button or using the drop-down to select another function key.

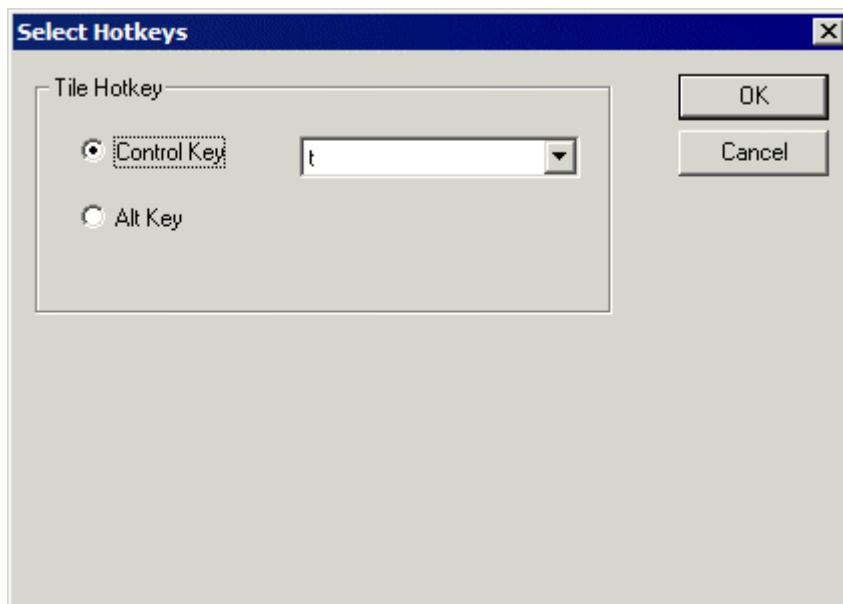
Selecting the **Change Hotkeys** button when **Enable Group Hotkeys** is selected will allow the MultiSession switching hotkeys to be changed from the default.



Select MultiSession Switching Hotkeys

The default hotkey for MultiSession switching is set to **Control+Page Up** and **Control+Page Down**. This can be changed by selecting the **Alt Key** radio button or using the drop-down to select another hot key.

Selecting the **Change Hotkeys** button when **Enable Tiling Hotkeys** is selected will allow the hotkeys to be changed from the default.



Select Session Tiling Hotkeys

The default hotkey for Session Tiling activation is set to **Control+t**. This can be changed by selecting the **Alt Key** radio button or using the drop-down to select another hot key.

Select the **OK button** to continue or the **Cancel** button to close without accepting changes.

26.6.1.8 User Options

The final page of the **TermSecure User Configuration Wizard** is the **User Options** page.

TermSecure User Configuration Wizard

User Options
Select options for this user.

Log In / Log Out Options

Inactivity Timeout: 120 seconds

Reset Sessions at Logout:

Activate User Group at Log In:

User Schedule

Set Schedule: Schedule

Terminal Effects

Enable Terminal Effects:

Shadowing

Allow terminal to be shadowed: YES

Allow Interactive Shadow:

< Back Next > Finish Cancel Help

User Options

Log In / Log Out Options

- **Inactivity Timeout** - TermSecure will log a TermSecure Users off the terminal after this much inactive time has passed.
- **Reset Sessions at Logout** - This checkbox, if selected, will logoff a session when the TermSecure User logs off.
- **Activate User Group at Log In** - This checkbox, if selected, will display the TermSecure User's first Display Client when the user logs in to the terminal.

User Schedule

- **Set Schedule** -

Selecting the **Schedule** button on the **User Options** page will launch the **Event Schedule** window and allow a schedule to be created for terminal events.

See Terminal Schedule for details.

Terminal Effects

- **Enable Terminal Effects** - This allows the use of Terminal Effects. This currently includes sliding Windows and message rollups.

Shadowing

- **Allow terminal to be shadowed** - This drop-down box allows the configuration of Shadowing Options.
 - **No** - Prevents the TermSecure Users from being shadowed.
 - **Ask** - Will display a message window that will prompt for a positive response before the shadowing is allowed.
 - **Warn** - Will display a message window alerting the terminal that it is to be shadowed, but doesn't require a positive response before the shadowing is allowed.
 - **Yes** - Allows shadowing to occur without warning or recipient input.
- **Allow Interactive Shadow** - This checkbox, if selected, will allow members with Interactive Shadow privileges to shadow this TermSecure User.

Shadowing is initiated from the Shadow tab on the Details pane of the ThinManager program. Unselecting this will prevent shadowing from within ThinManager.

Select **Finish** to finish the configuration.

26.7 TermSecure Users Group Configuration Wizard

TermSecure Users can be organized into TermSecure User Groups, just as Terminals can be organized into Terminal Groups. Each setting of the TermSecure Group has a Group Setting checkbox. If this box is selected then that setting will be applied to each member of the TermSecure Group.

The **TermSecure Users Group Configuration Wizard** can be launched by right clicking on the **TermSecure Users** branch of the tree and selecting **Add TermSecure User Group**.

26.7.1.1 TermSecure User Group Information

The first page of the **TermSecure Group Configuration Wizard** is the **TermSecure User Group Information** page.

The screenshot shows a Windows-style dialog box titled "TermSecure User Configuration Wizard". The main heading is "TermSecure User Group Information" with a sub-instruction "Enter the TermSecure User Group name." and a blue icon of a person. The form is divided into two main sections. The first section, "Group Name", includes text boxes for "User Name", "Password", and "Verify Password", a "Password Options" button, and a "Group Setting" checkbox. The second section, "Group", features a dropdown menu and a "Change Group" button. At the bottom of the form area, there is a "Permissions" button and another "Group Setting" checkbox. A message "Please enter a name" is located at the bottom left. The dialog's footer contains five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

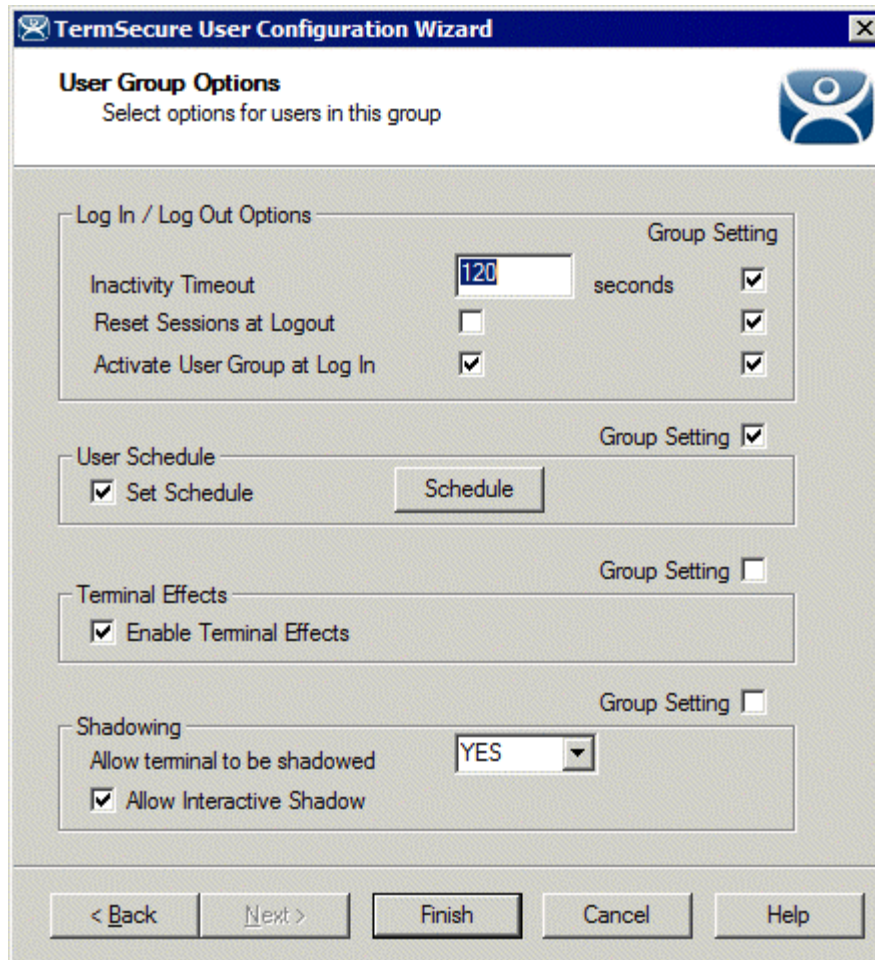
ThinManager User Group Information

The **TermSecure User Group Information** has fields for the group name and membership.

- **User Name** - This field names the TermSecure User Group.

Group Setting - This checkbox, if selected, applies this configuration to all members of the group.

The rest of the TermSecure Group Configuration continues as the TermSecure User Configuration, with the addition of the **Group Setting** checkboxes.



TermSecure Group Configuration Wizard

Group Settings that are selected will be grayed out for members of the group. **Group Settings** that aren't selected will be available for configuration on the individual TermSecure User configuration page.

TermSecure User Configuration Wizard

User Options
Select options for this user.

Log In / Log Out Options

Inactivity Timeout: 120 seconds
Reset Sessions at Logout:
Activate User Group at Log In:

User Schedule

Set Schedule

Terminal Effects

Enable Terminal Effects

Shadowing

Allow terminal to be shadowed: YES
 Allow Interactive Shadow

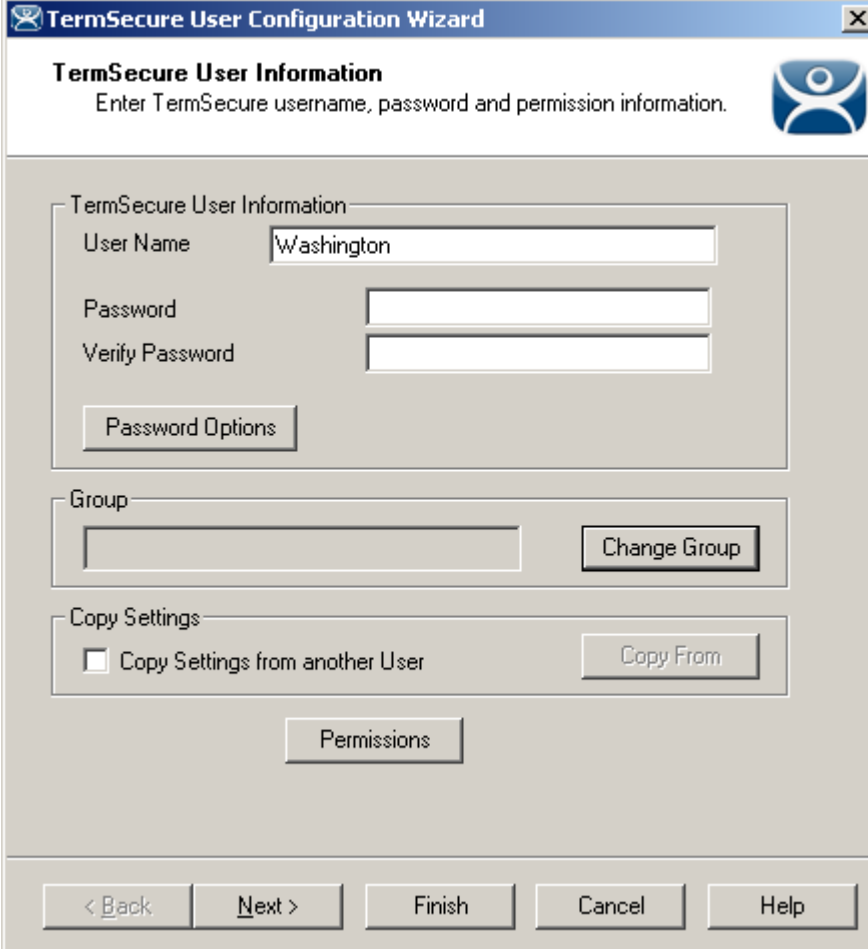
< Back Next > **Finish** Cancel Help

TermSecure Group Member

Select **Finish** to complete the configuration.

26.8 Adding a TermSecure User to the TermSecure User Group

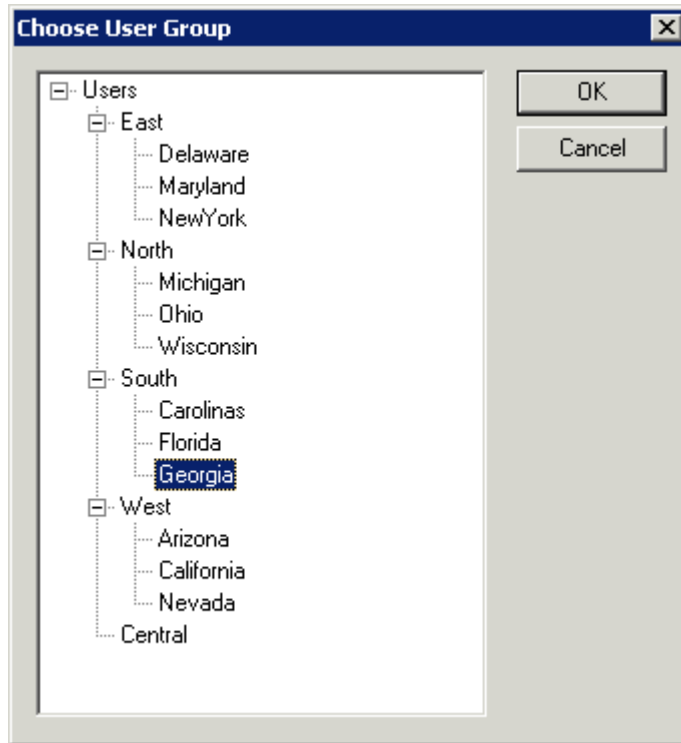
To add a TermSecure User to a TermSecure User Group, create a new TermSecure User by right clicking on the **TermSecure Users** branch in the ThinManager tree and select the **Add TermSecure User** option or double click on an existing user to launch the wizard.



The screenshot shows the 'TermSecure User Configuration Wizard' dialog box. The title bar reads 'TermSecure User Configuration Wizard'. The main heading is 'TermSecure User Information' with a sub-instruction: 'Enter TermSecure username, password and permission information.' There is a blue icon of a person in the top right corner. The dialog is divided into several sections: 1. 'TermSecure User Information' section containing 'User Name' (with 'Washington' entered), 'Password', and 'Verify Password' fields, and a 'Password Options' button. 2. 'Group' section containing an empty text box and a 'Change Group' button. 3. 'Copy Settings' section containing a checkbox labeled 'Copy Settings from another User' and a 'Copy From' button. 4. A 'Permissions' button. At the bottom, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

TermSecure User Information Page

Select the **Change Group** button. This will launch the **Choose User Group** window.



Choose User Group Window

Highlight your TermSecure Users Group and select **OK**. This will accept the changes and close the window.

TermSecure User Configuration Wizard

TermSecure User Information
Enter TermSecure username, password and permission information.

TermSecure User Information

User Name

Password

Verify Password

Password Options

Group

Change Group

Copy Settings

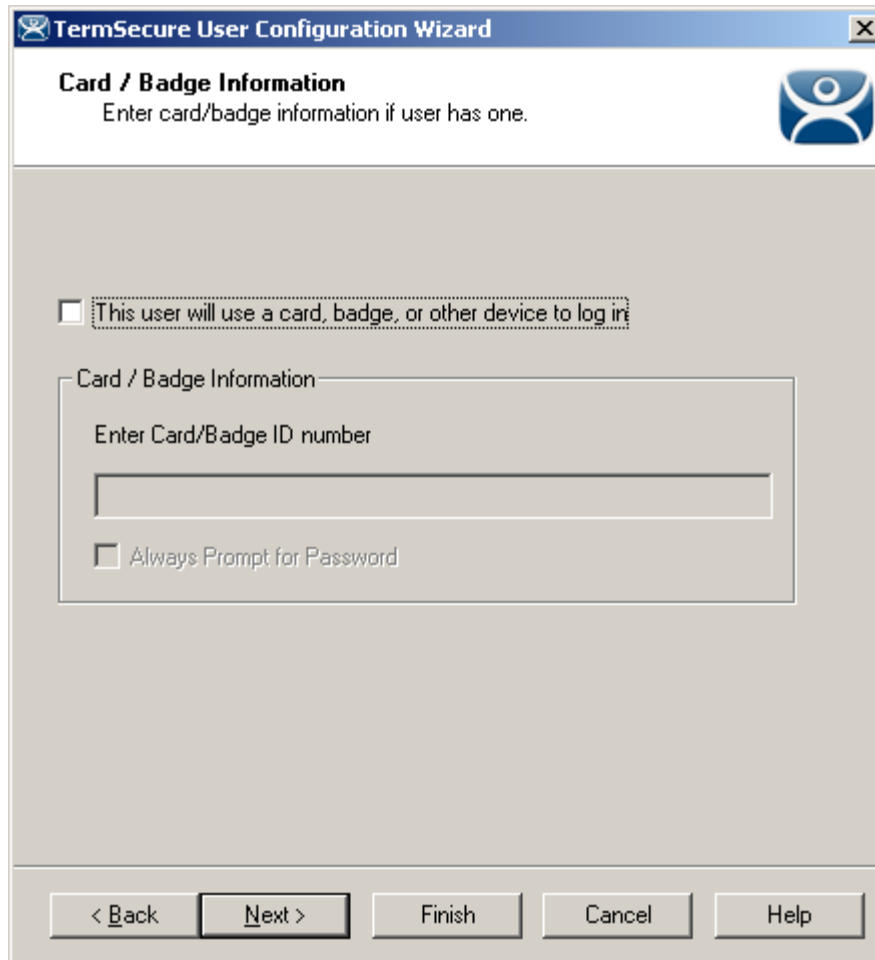
Copy Settings from another User Copy From

Permissions

< Back Next > Finish Cancel Help

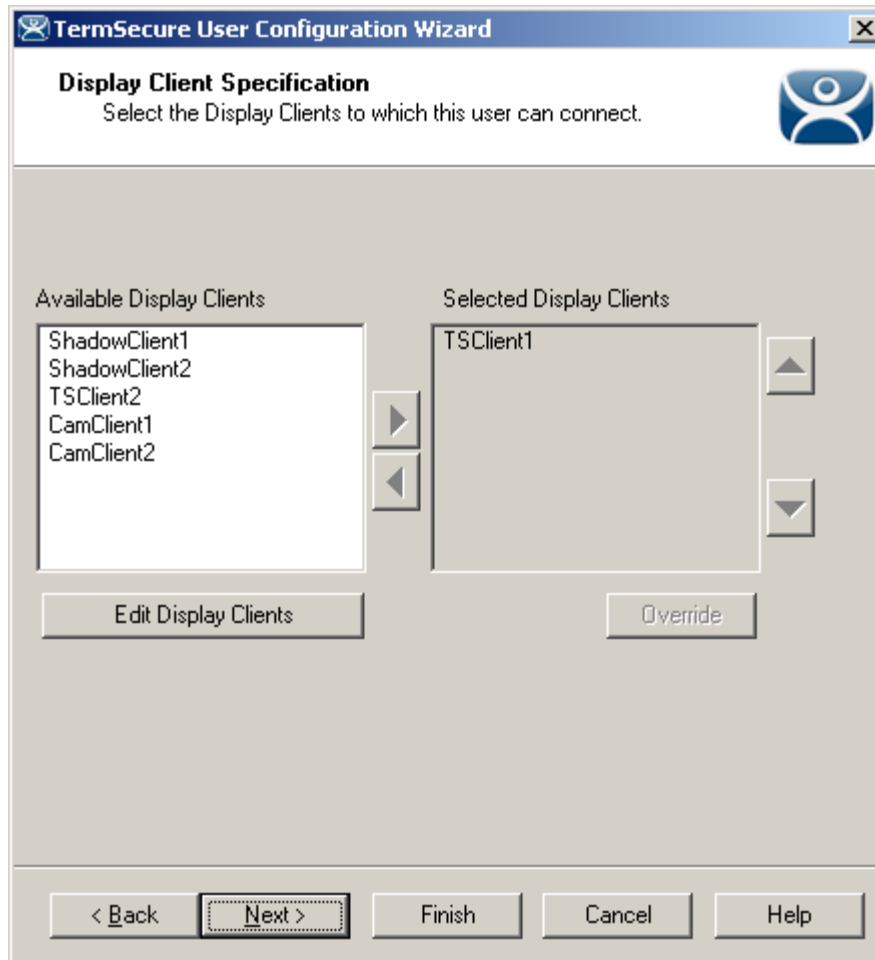
TermSecure User Information Page

The **TermSecure User Group** will now be displayed in the **Group** field.
Select **Next** to continue.



Card/Badge Information

The Card/Badge Information options are available because these are individual settings, not group settings. Select **Next** to continue.



Display Client Specification

Each of the settings that have the **Group Setting** checkbox selected in the **TermSecure User Group wizard** will be grayed out because the **Group Setting** enforces the configuration of each chosen parameter.

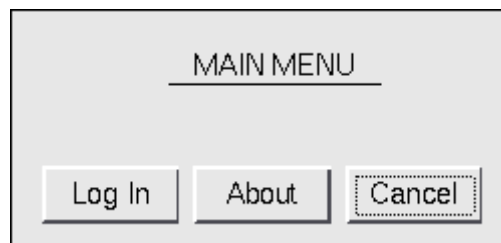
Select the **Finish** button to accept the configuration.

26.9 TermSecure Login

To log in a TermSecure User on a terminal, go to a terminal that has the **Enable TermSecure** checkbox selected on the **Terminal Server Specification** page.

Type the default **CTL+m** or other designated hotkey at the keyboard or select from group selector

The Main Menu will be displayed on the terminal.



TermSecure Main Menu

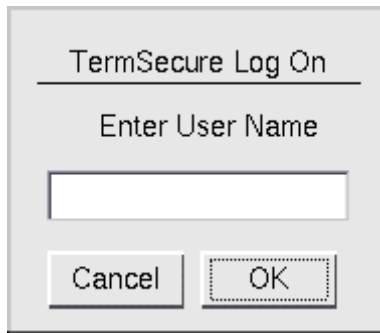
The **About** button to see details about the terminal.



About Menu

Select **OK** to close the **About** window.

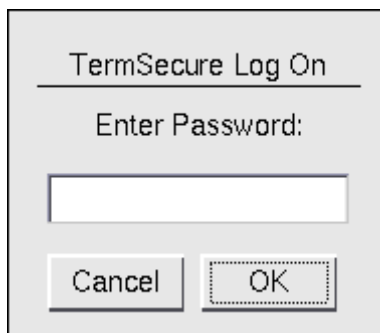
Select the **Log In** button to login.



TermSecure Log On Screen

Enter your TermSecure User user name in the **Enter User Name** field.

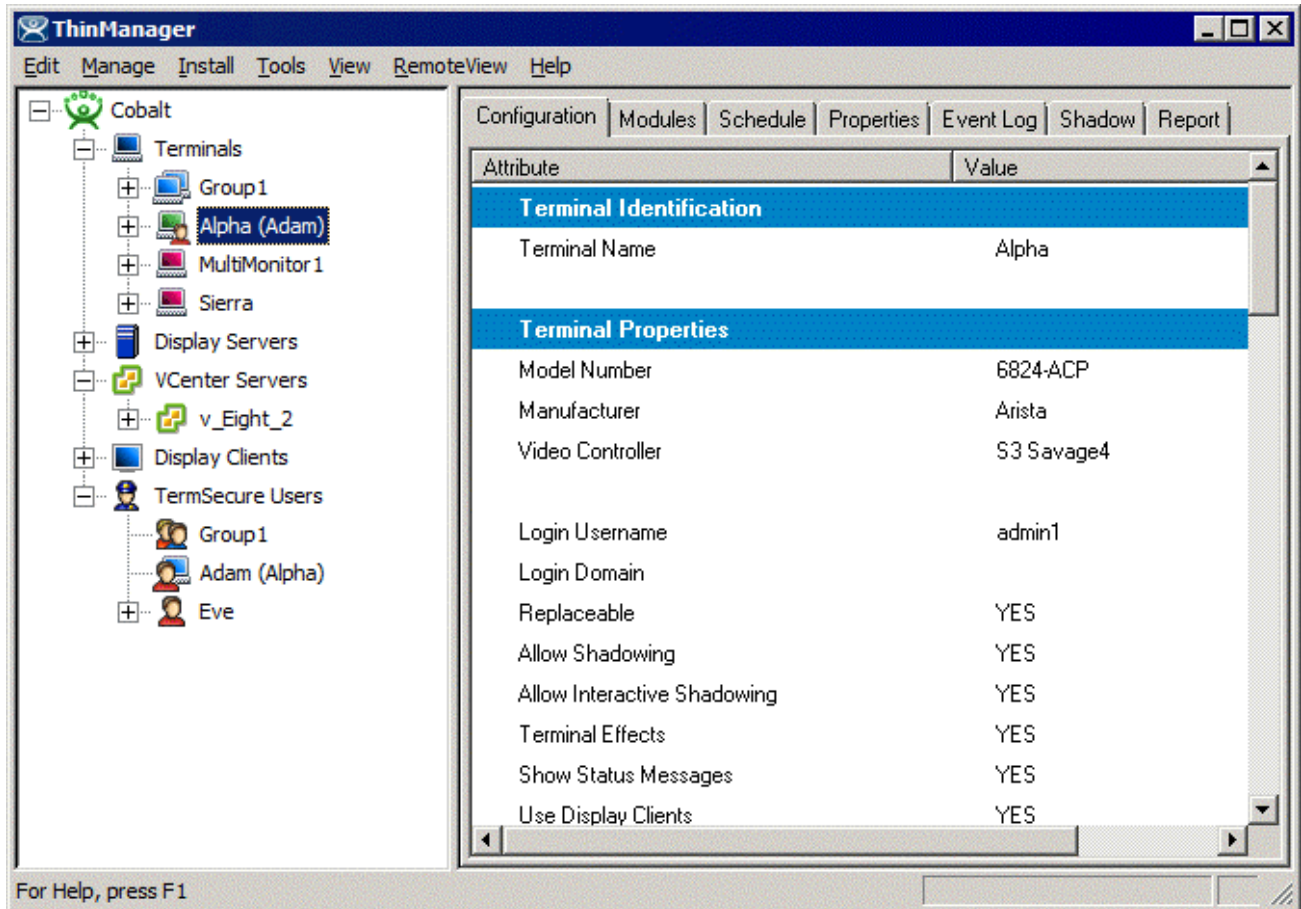
Select **OK**.



Password Screen

Enter the password in the field.

Select the **OK** button. If the user name and password are correct, ThinManager will allow the login.



ThinManager With TermSecure Log On

Once a TermSecure User is logged into a terminal, ThinManager will display the TermSecure User's name after the terminal name in the tree.

ThinManager will add the name of the terminal after the TermSecure User name in the tree.

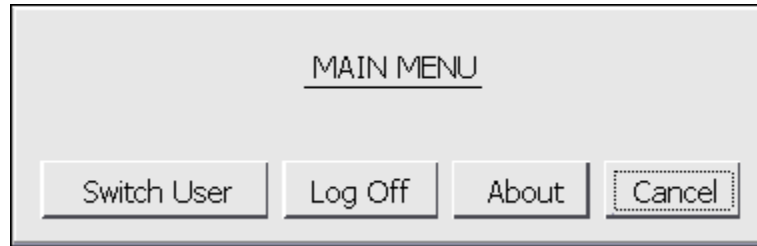
Right-clicking on a terminal and selecting **Go to TermSecure User** will move the focus to the TermSecure user that is logged into the terminal.

Right-clicking on a TermSecure user and selecting **Go to Terminal** will move the focus to the terminal that the TermSecure user is logged into.

26.9.1 Logging Out

The TermSecure User can be logged out by:

- Opening the **TermSecure Main Menu** (type **CTL+m**) on the terminal and selecting the **Log Off** button.
- Right clicking on the TermSecure User in the ThinManager tree and selecting **Logoff User**.
- Restarting or Rebooting the terminal that has a TermSecure User logged in.



Main Menu

The **Switch User** button will log off the TermSecure User and open the Login screen for another TermSecure User. The **Log Off** button will log off the TermSecure User and return to the terminal's display.

26.10 TermSecure Menu

The **TermSecure Menu** that is displayed on a terminal that allows TermSecure Users to manually log on to a terminal is configurable for use with TermSecure. This menu is generated from the terminal and not the terminal server session.



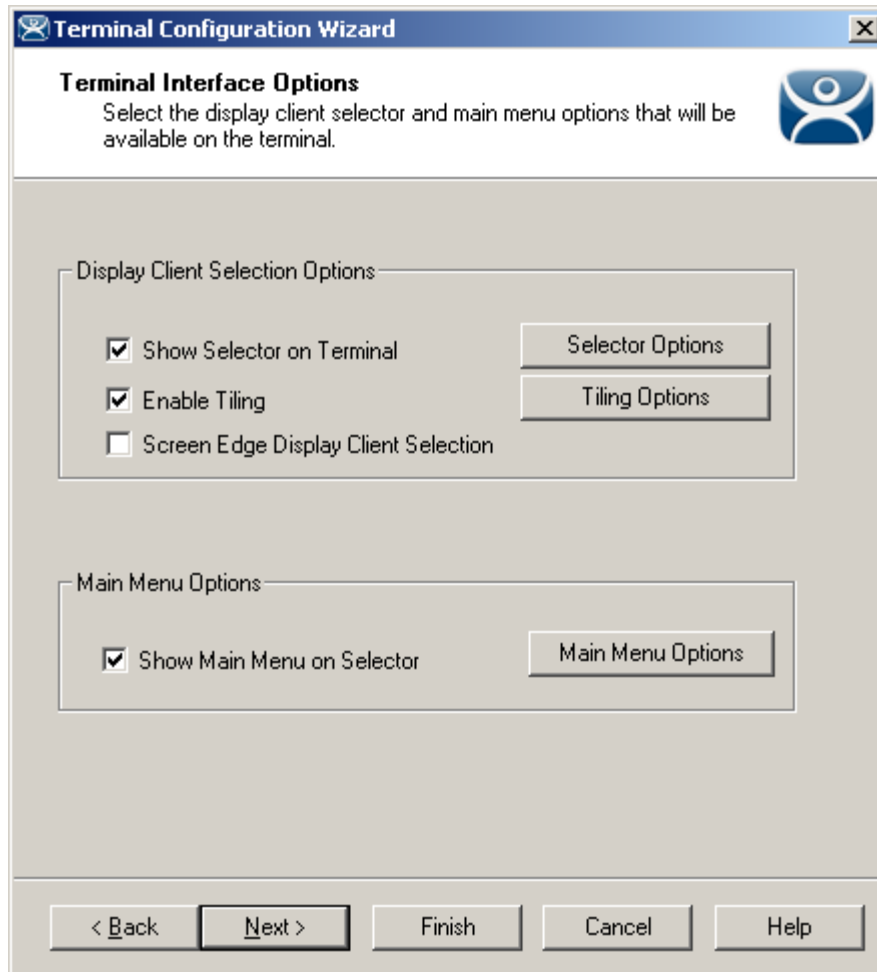
Basic TermSecure Menu

The TermSecure Menu can be configured by a number of settings in the **Terminal Configuration Wizard** and **TermSecure User Wizard**.

The **Main Menu** is activated on the **Terminal Interface Options** page of the **Terminal Configuration Wizard** and/or **TermSecure User Configuration Wizard**.

26.10.1.1 Main Menu Configuration - Terminal Configuration Wizard

Open the **Terminal Configuration Wizard** by double clicking on the desired terminal in the ThinManager tree. Terminals using Display Clients will display the **Terminal Interface Options** page. This page will display Main Menu options when TermSecure is enabled for the terminal.

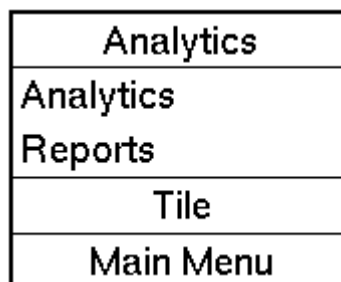


Terminal Interface Options Page

A terminal using MultiSession will need to have a method to switch between sessions. This is configured on the Terminal Interface Options page. For terminals using TermSecure, additional Main Menu options are available, as shown. See Terminal Interface Options for a terminal for a comparison.

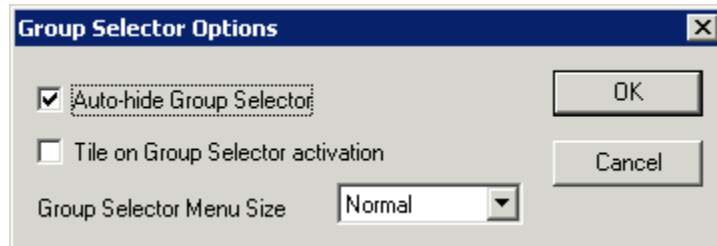
Group Selector Options allow on-screen switching of sessions.

- **Show Group Selector on Terminal** - This checkbox, if selected, will display an on-screen drop-down menu that can be activated by mouse.



On-Screen Group Selector

- **Screen Edge Group Selection** - This checkbox, if selected, will activate a feature that will switch windows if the mouse is moved off screen.
- **Selector Options** button will launch the **Group Selector Options** window that allows configuration of the on-screen Group Selector.



Group Selector Options Window

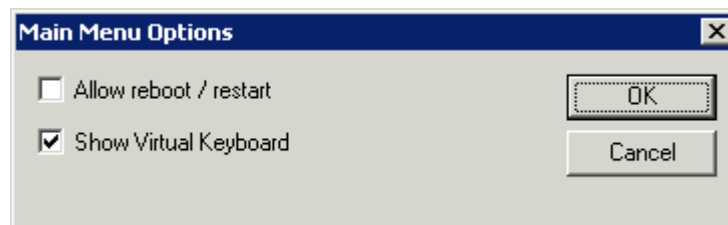
The **Auto-hide Group Selector** checkbox, if selected, will hide the Group Selector until the mouse is move to that space.

The **Tile on Group Selector activation** checkbox, when selected, will tile the Display Clients when the auto-hid selector is chosen. This allows the user to select from the available sessions.

The **Group Selector Menu Size** drop-down box allows the setting of the size of the Group Selector font.

Main Menu Options allow on-screen switching of sessions.

- **Show Main Menu on Group Selector** - This checkbox, if selected, will display the TermSecure Main Menu as an option on the Group Selector drop-down.
- The **Main Menu Options** button will launch a window for Main Menu settings.

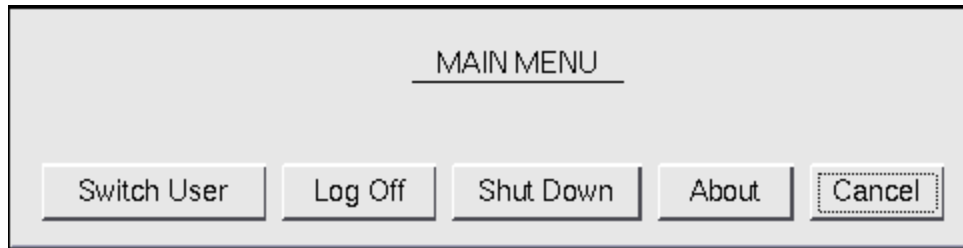


Main Menu Options

The Main Menu Options window has several settings.

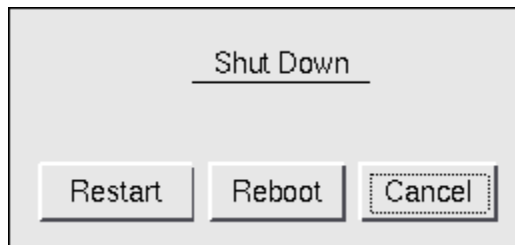
- **Allow reboot/restart** – This checkbox, if selected, will add a **Reboot** and a **Restart** button on the main TermSecure login window.
- **Show Virtual Keyboard** – This checkbox, if selected, will prompt the display of a virtual keyboard for TermSecure logins. This is helpful for thin clients with touch screens.

The **Allow reboot/restart** checkbox, if selected, will add a **Shut Down** button to the TermSecure Main Menu. The **Shut Down** button leads to a menu with a **Restart** and **Reboot** button.



Main Menu with Shut Down Button

Once the user logs out, a **Shut Down** button will appear on the Main Menu. Selecting the **Shut Down** button will launch the **Shut Down Menu**.



Shut Down Menu

The **Shut Down** window has two buttons.

- **Restart**, when selected, will log off the TermSecure User, reload the configuration and load any changes.
- **Reboot**, when selected, will log off the TermSecure User, power off the terminal and reload firmware and configuration.



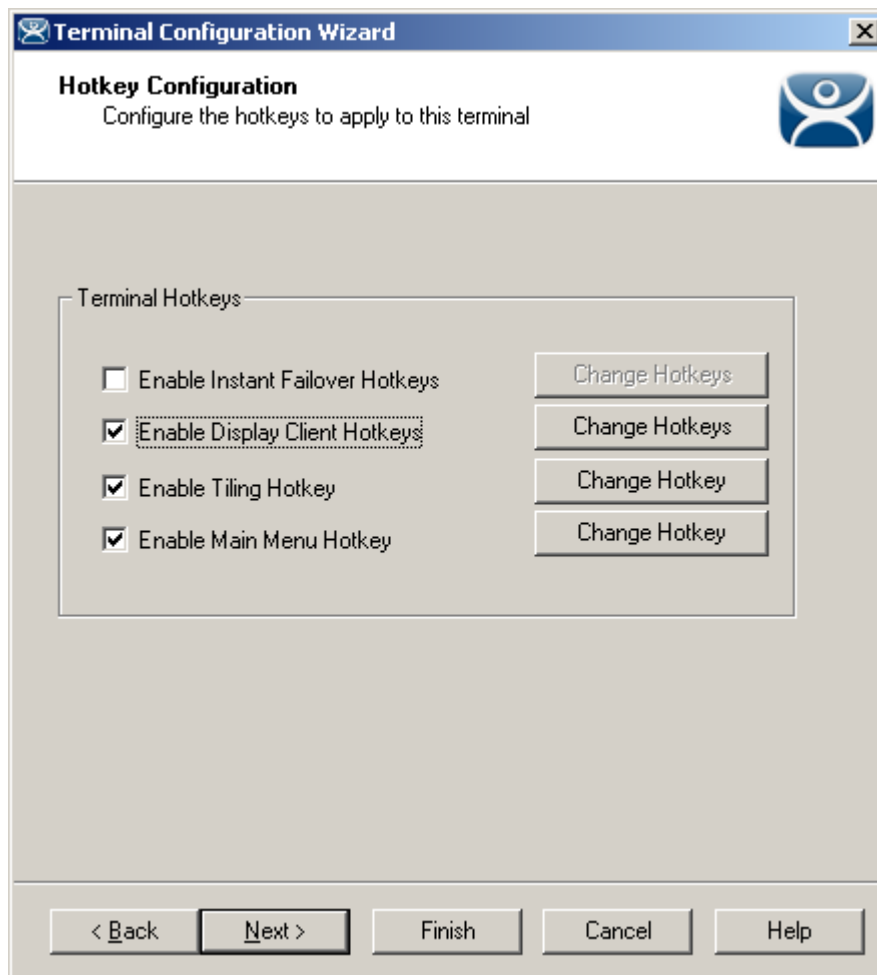
Terminal Virtual Keyboard

If the **Show Virtual Keyboard** checkbox is selected a virtual keyboard will be displayed on the terminal. This is helpful for touch screen users.

Select **OK** to save setting or **Cancel** to close without saving.

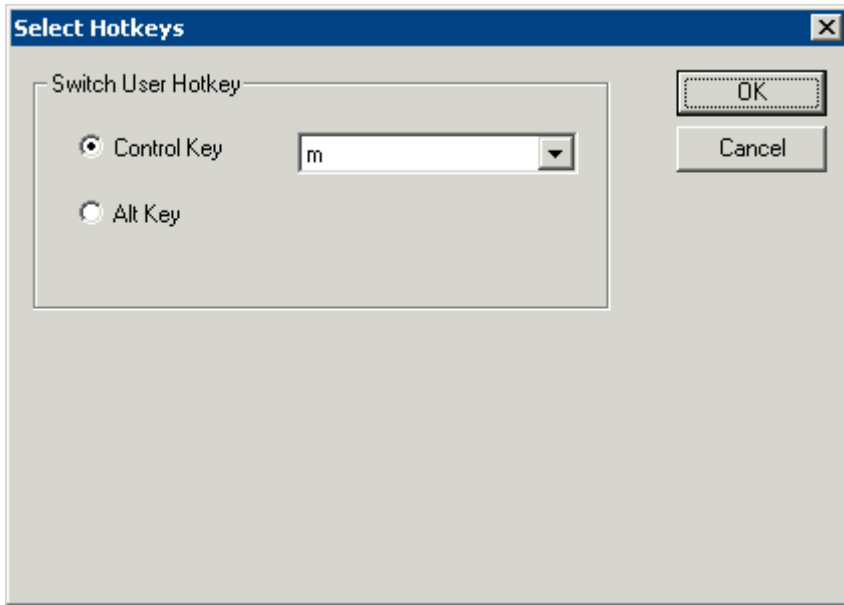
26.10.1.2 Main Menu Hotkey - Terminal Configuration Wizard

The **Hotkey Configuration** page has an additional TermSecure setting when the **Enable TermSecure** checkbox is checked on the **Terminal Server Specification** page.



Hotkey Configuration – TermSecure Enabled

The **Enable Main Menu Hotkey** checkbox, when selected, will allow the TermSecure Main Menu to be launched with a hotkey combination. The Change Hotkey button allows the default **CTL+m** combination to be changed.



Select HotKeys Window for Main Menu

The default hotkey for the Main Menu is set to **Control+m**. This can be changed by selecting the **Alt Key** radio button or using the drop-down to select another hot key.

Select the **OK button** to continue or the **Cancel** button to close without accepting changes.



Main Menu

The Main Menu can be launched with the **Ctrl+ m** hotkey if the **Enable Main Menu Hotkey** checkbox is selected.

26.11 Card and Badge Configuration for a TermSecure User

TermSecure allows the use of USB drives and RFID cards as login devices at terminals. This is configured on the **Card/Badge Information** page of the **TermSecure User Configuration Wizard**. The **TermSecure Users Configuration Wizard** can be launched by double clicking on a TermSecure User in the ThinManager tree or by right clicking on the **TermSecure Users** branch of the tree and selecting **Add TermSecure User**.

Card / Badge Information Page

- **This user will use a card, badge, or other device to log in** - This checkbox, if selected, enables the use of a USB device, card or badge to login to a terminal.
- **Enter Card/Badge ID number** - This field is for the unique identification number of the ID device. This can be filled manually or automatically. See Automatic Card/Badge ID Number Entry and Manual Card/Badge ID Number Entry for instructions on the methods.
- **Always Prompt for Password** - This checkbox, if selected, will require a password in addition to the ID device to login to a terminal as a TermSecure User.

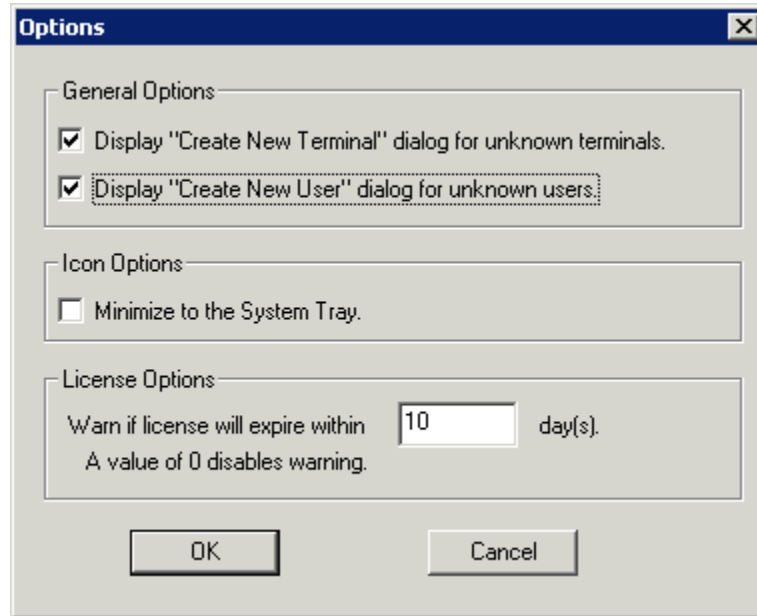
26.11.1 Automatic Card/Badge ID Number Entry

ThinManager can be configured to automatically add the Card/Badge ID number. There are a few conditions that need met to allow this to happen.

- The **Display “Create New User” dialog for unknown users** check box on the **Options** page must be selected.
- The terminal must use Display Clients.
- The terminal needs the **Enable TermSecure** checkbox on the **Terminal Specification** page of the Terminal Configuration Wizard.

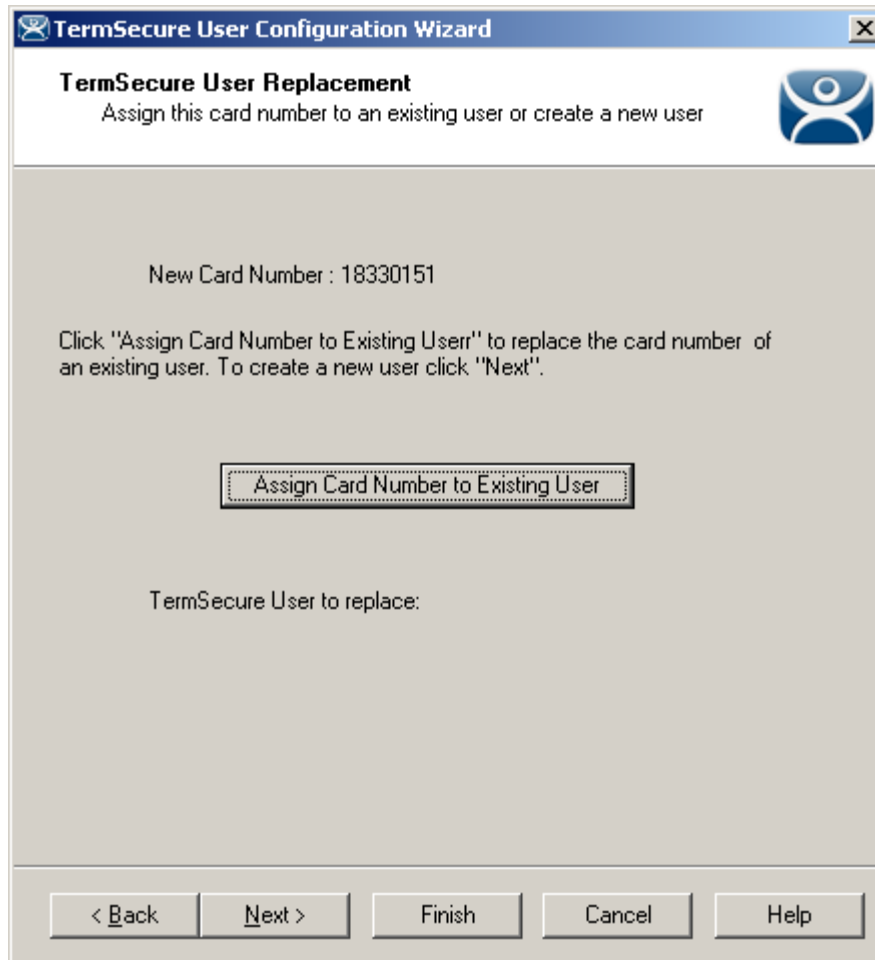
- The **USB Drive module**, **RF Ideas pcProx Module**, or **Wavetrend Tag Reader Module** need added to the terminal. The USB Drive module needs the **Use with TermSecure** parameter set to **Yes**.
- The user needs to scan the card or insert the USB drive to start the TermSecure Configuration Wizard.

Automatic Card/Badge use starts with the enabling of the Create New User dialog box. This is configured on the **Options** window that is opened by selecting **View > Options**.



Options Window

The **Display “Create New User” dialog for unknown users** check box, if selected, will launch the **TermSecure User Configuration Wizard** on the ThinManager Server when an unknown ID device (USB key or ID card) is read by a terminal. Once this checkbox is selected, scanning a new ID card or inserting an undefined USB key will launch the **TermSecure User Configuration Wizard** with the **Enter Card/Badge ID number** automatically filled in.

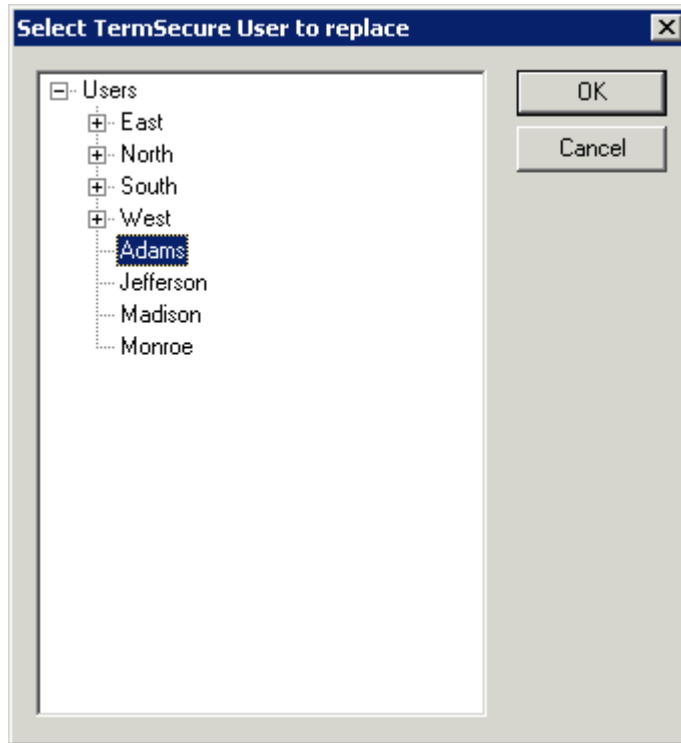


TermSecure User Configuration – TermSecure User Replacement

When a new card is scanned or a new USB key is inserted into a USB slot on the terminal the **TermSecure User Configuration** is launched with an option to assign the card to an existing user.

Selecting **Next** will open the TermSecure User Configuration Wizard and allow a new TermSecure user to be configured.

Selecting **Assign Card Number to Existing User** will launch the **Select TermSecure User to replace** window to assign the card/badge number to an existing TermSecure User account.



Select TermSecure User To Replace Window

Highlight the desired TermSecure user and select **OK**. The wizard will display the **TermSecure User Information** page with the selected user entered.

TermSecure User Configuration Wizard

TermSecure User Information
Enter TermSecure username, password and permission information.

TermSecure User Information

User Name

Password

Verify Password

Password Options

Group

Change Group

Copy Settings

Copy Settings from another User

Copy From

Permissions

< Back Next > Finish Cancel Help

TermSecure User Information Page

If a TermSecure user was selected for the badge, the user will be displayed in the **User Name** field of the TermSecure User Information page.

Selecting **Next** will continue with the configuration and show the **Card/Badge Information** page.

TermSecure User Configuration Wizard

Card / Badge Information
Enter card/badge information if user has one.

This user will use a card, badge, or other device to log in

Card / Badge Information

Enter Card/Badge ID number

18330151

Always Prompt for Password

< Back Next > Finish Cancel Help

Card/Badge Information Page

The card, badge, or USB drive number will be entered in the **Enter Card/Badge ID number** field.

Select **Back** to change the configuration, select **Next** to continue, select **Finish** to accept the changes, or select **Cancel** to cancel changes.

26.11.2 Manual Card/Badge ID Number Entry

Although the easiest method for assigning a card or badge is automatic as described in the Automatic Card/Badge ID Number Entry section, ThinManager can be configured for manual entry

If the **Display “Create New User” dialog for unknown users** check box on the Options window is unselected, the **Enter Card/Badge ID number** field will need to be entered manually. The Card/Badge ID number is accessible in the event log. To configure a terminal to allow a device one needs to:

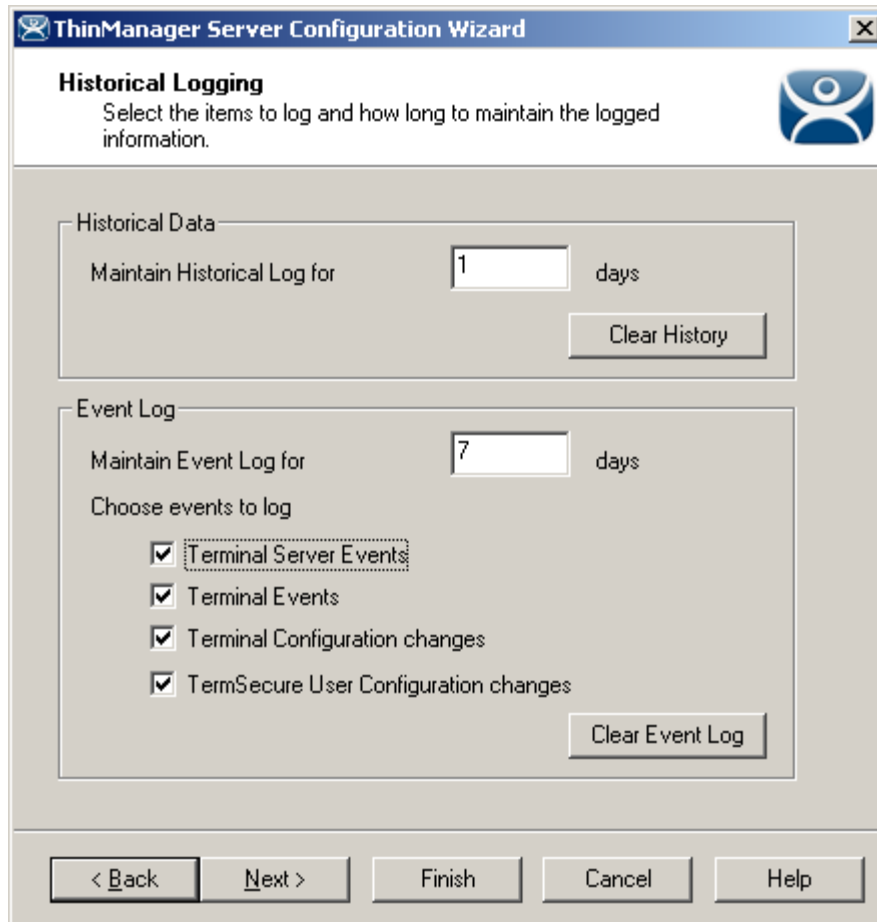
- Turn the Event Log on
- Have the appropriate hardware on the terminal, either a USB port or a ProxCard reader.
- Add the appropriate module.
- Use the device once to have the device’s identifier entered to the event log.
- Open the **TermSecure User Configuration Wizard** and enter the ID number to tie the TermSecure User to the device.
- Login with the ID device.

26.11.2.1 Event Log

The Event Log is configured in the ThinManager Server Configuration Wizard.

Open the **ThinManager Server Configuration Wizard** by double clicking on the ThinManager Server icon in the tree, or highlighting it and selecting **Edit > Modify** from the menu.

Navigate to the **Historical Logging** page.



Historical Logging Page

All events may be selected to be logged, but the **Terminal Events** checkbox is critical to the TermSecure Device detection. Select the **Terminal Events** checkbox and select the **Finish** button.

26.11.2.2 USB Device Module

When using the USB drive as a TermSecure identifier, the USB Flash Drive Module needs added to the terminal.

See USB Flash Drive Module for details.

26.11.2.3 ProxCard Reader Module

A ProxCard Reader works much the same as the USB device, but uses a different module, the **RF Ideas pcProx Module**.

See RF Ideas pcProx Module for details.

26.11.2.4 WaveTrend Tag Reader Module

A WaveTrend Tag Reader works much the same as the USB device, but uses a different module, the **WaveTrend Tag Reader Module**.

See Wavetrend Tag Reader for details.

26.11.2.5 Device Identifier Number

Next the ID device needs to be scanned or inserted to help find the ID number.

Insert the USB device or scan the ProxCard on the terminal.

A TermSecure message should be displayed.



TermSecure Message

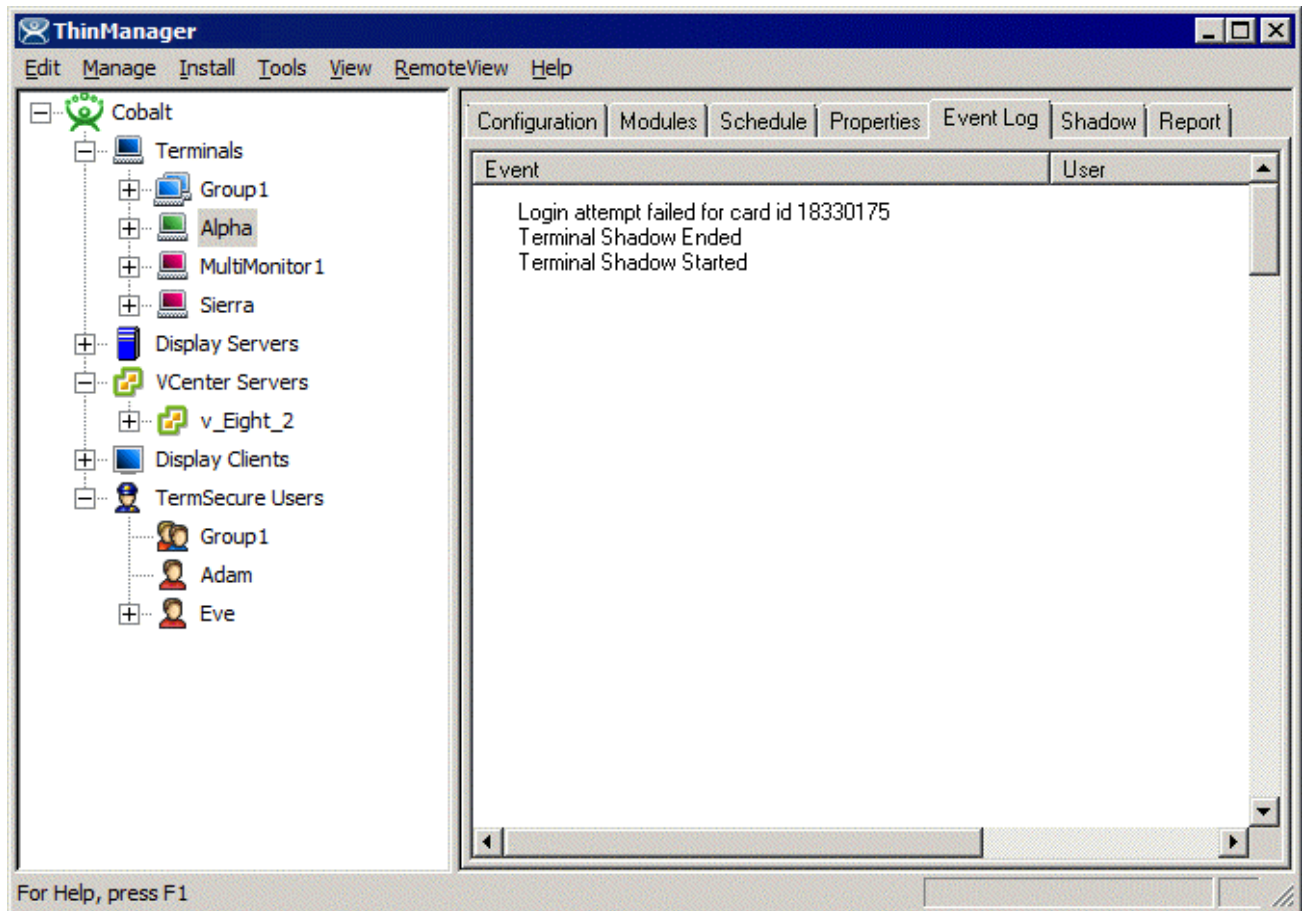
The ID device will not work so the terminal will send a message with the ID device's identifier number.

- Record this number.

This number is also entered in the event log if the Terminal Events were selected in the ThinManager Server Configuration Wizard.

- Open ThinManager.
- Highlight the terminal in the tree and select the Event Log tab.

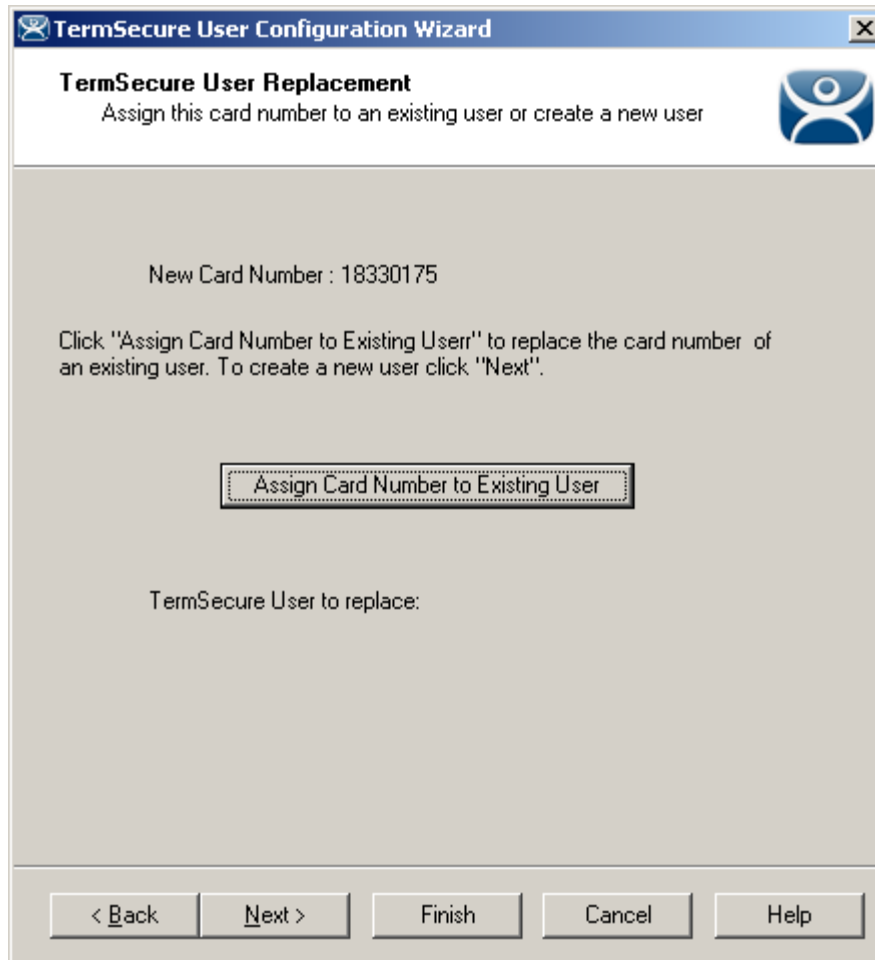
The ID for the device is entered in the log.



ThinManager Event Log

Next the ID number needs to be associated with the TermSecure User.

- Open the **TermSecure User Configuration Wizard** for the user you want to have use that ID device.
- Navigate to the **Card / Badge Information** page.



Card / Badge Information Page

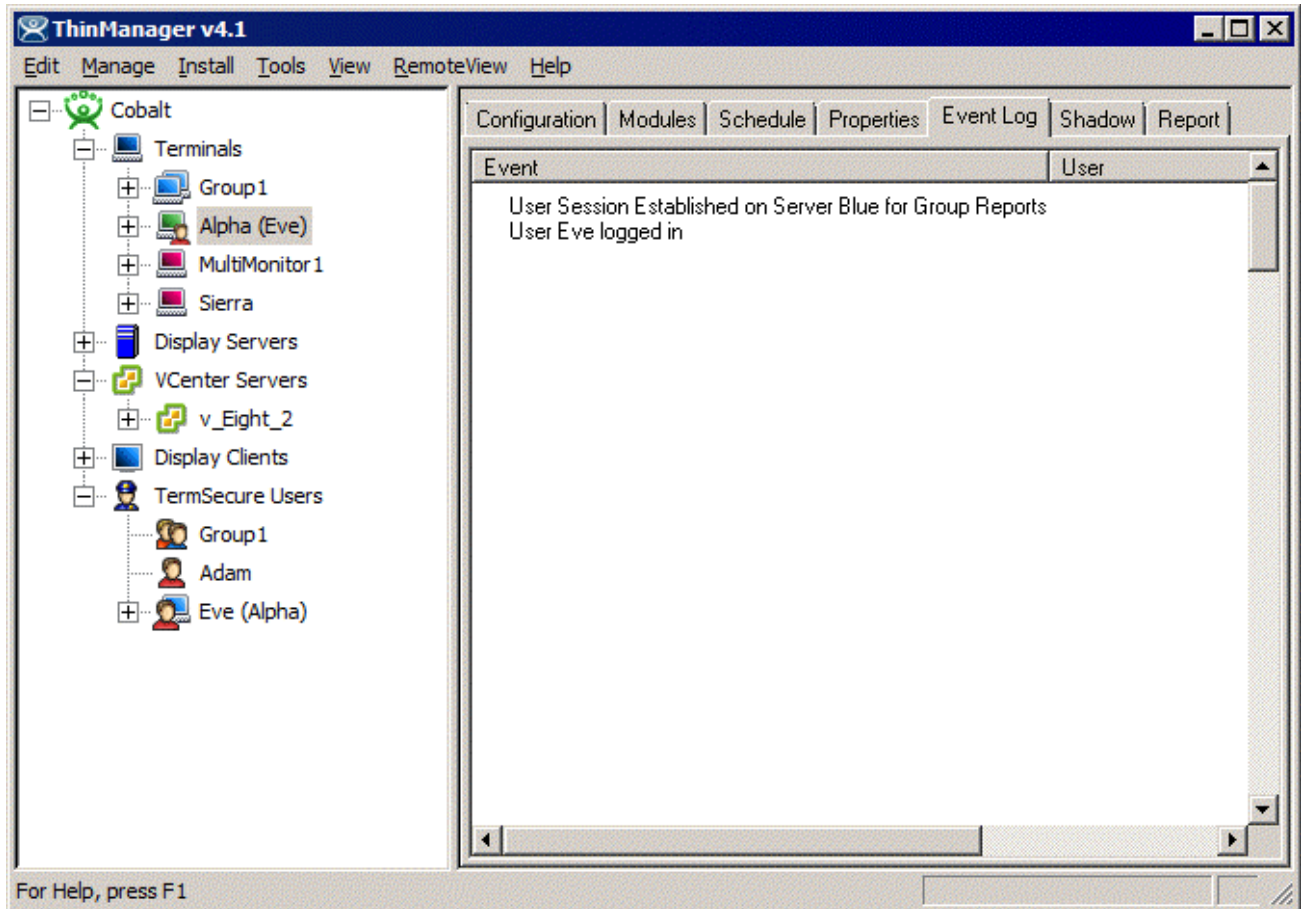
- Select the This user will use a card, badge, or other device to log in checkbox.
- Enter the ID Identifier from the earlier steps into the Enter Card/Badge ID number field.
- Select the Always Prompt for Password, if desired.

Now the Terminal is configured, the ID device is identified, and the TermSecure User is configured to use the device.

- Insert the USB device into the USB port on the thin client or scan the ProxCARD on the card scanner.

The USB device will log the TermSecure User into the terminal server.

- Open ThinManager.
- Highlight the ThinManager Server and select the **Event Log** tab.



Event Log

The Event Log will show the results of the successful login. The terminal will have the TermSecure User added to its icon in the tree, while the TermSecure User icon will show the name of the terminal that it is logged into.

27 TermMon ActiveX Control

The TermMon ActiveX Control can be used to collect information about a terminal and perform terminal functions. For the purposes of this document Control will refer to the TermMon ActiveX Control.

This section is not meant as a tutorial on ActiveX controls but is a datasheet on the properties and functions of the TermMon ActiveX control.

27.1 Registering the Control

The TermMon ActiveX Control can be found on the ThinManager CD as **termmon.ocx**.

The Control must be registered before it can be used. Copy the file **termmon.ocx** to the computer where you want to use it. Register the OCX by executing **regsvr32 <path\termmon.ocx>**.

27.2 Using the Control

27.2.1 TermMon ActiveX Configuration Module

If running the Control in the terminal's terminal services session, no special configuration of the terminal in ThinManager is required. The **TermMon ActiveX Control Configuration Module** is not required.

If the Control is not run in the terminal's terminal services session, the **TermMon ActiveX Control Configuration Module** must be added to the terminal configuration in ThinManager. In the module configuration, **Allow ActiveX Connections** must be set to **YES** and **Only Allow Connections from Session** must be set to **NO**.

The **TermMon ActiveX Control Configuration Module** can be used to prevent a connection from an application running in the terminal's terminal services session. This is accomplished by adding the **TermMon ActiveX Control Configuration Module** to the terminal in ThinManager and setting the **Allow ActiveX Connections** option to **NO**.

27.2.2 Read-Only Properties

The following properties are read only strings. An event will be generated any time one of these properties changes. The Enable method must be invoked prior to reading these properties.

- **TerminalName** - This is the name of the terminal.
- **TerminalModel** - This is the terminal model number.
- **TerminalIP** - This is the terminal IP address.
- **TerminalMAC** - This is the terminal MAC Address.
- **TerminalBootLoaderVersion** - This is the terminal network boot loader version.
- **TerminalFirmwareVersion** - This is the firmware version that the terminal is running.
- **TerminalWindowsUsername** - This is the Windows Username that is specified in the terminal's ThinManager configuration.

- **TermSecureUsername** - This is the TermSecure username of the TermSecure user currently logged onto the terminal. If no TermSecure user is logged on, this value will be blank.
- **TermSecureWindowsUsername** - This is the Windows Username associated with a TermSecure user. This is the Windows Username for all TermSecure user sessions. If no TermSecure user is logged on, this value will be blank.
- **TerminalServerGroupList** - This is a comma-separated list of Display Clients currently running on the terminal.
- **ConnectionState** - This is the Control's connection state with the terminal.
- **CurrentTerminalServerGroup** - This is the Display Client that is currently being displayed on the terminal.
- **CurrentWindowsUsername** - This is the Windows Username of the session where the Control has been executed. This property is not available when the RunInSession property is set to **False**.
- **TerminalServerName** - This is the name of the Terminal Server where the Control is running. This property is not available when the RunInSession property is set to **False**.

27.2.3 Read-Write Properties

These properties can be set by the application.

- **RunInSession** - When the RunInSession property is set to True, the Control will be running in the terminal's terminal services session. The terminal IP address will be determined automatically by the control.
- **OverrideIP** - If the RunInSession property is set to False, the OverrideIP property specifies the IP Address of the terminal that the Control will connect to.

Note: To use the OverrideIP property, the TermMon ActiveX Control Configuration Module must be added to the terminal configuration in ThinManager. In the module configuration, **Allow ActiveX Connections** must be set to **YES**, and **Only Allow Connections from Session** must be set to **NO**.

- **WatchdogTime** – This is the number of seconds before the watchdog will reset the terminal session. Once this property is set to a non-zero value, the property must be updated before the watchdog time reaches zero. To disable the watchdog, set this property to zero. The watchdog is disabled by default.

Note: The **Enable Method** does not need to be called for watchdog operation. Watchdog operation is independent of the **Enable** and **Disable Methods**.

- **ActiveScreen** – For MultiMonitor configurations, this is the active screen number. A value of zero (default) will set the active screen to the screen the mouse pointer is on when a method or command is executed. A non-zero value will set the Active Screen to the screen number specified. All methods and commands will be executed on the specified screen.

27.2.4 Events

When a property value changes, an event will be generated by the Control. When an Event occurs the event code can be used to determine the property that changed. The Enable method must be invoked in order to receive events (except for WatchdogTime). The event code is provided by the Control as follows:

- TermMonEvent.TerminalName
- TermMonEvent.TerminalModel
- TermMonEvent.TerminalIP

- TermMonEvent.TerminalMAC
- TermMonEvent.TerminalBootLoaderVersion
- TermMonEvent.TerminalFirmwareVersion
- TermMonEvent.TerminalWindowsUsername
- TermMonEvent.TermSecureUsername
- TermMonEvent.TermSecureWindowsUsername
- TermMonEvent.TerminalServerGroupList
- TermMonEvent.ConnectionState
- TermMonEvent.CurrentTerminalServerGroup
- TermMonEvent.CurrentWindowsUsername
- TermMonEvent.TerminalServerName
- TermMonEvent.WatchdogTime

27.2.5 Methods

- **Enable** - Invoking this method will enable the Control. The Control will attempt to connect to the terminal and generate events to update the Control Properties. The Control will maintain a connection to the terminal as long as it is enabled.
- **Disable** - Invoking this method will cause the Control to break the connection with the terminal. Events will be generated to clear the Control Properties.
- **Command** - The Command method can be used to send terminal action commands. The Command method requires one parameter which is the terminal command to be performed. The Enable method must be invoked before these commands can be executed (except for noted exceptions). The supported commands are:
 - **Reboot** - This command will initiate a terminal reboot.
 - **Restart** - This command will initiate a terminal restart.
 - **Calibrate** - This command will initiate a touch screen calibration.
 - **GotoMainMenu** - This command will cause the Main Menu to be displayed.
 - **SwitchToNextGroup** - This command will switch to the next Display Client.
 - **SwitchToPrevGroup** - This command will switch to the previous Display Client.
 - **SwitchInstFailover** - This command will switch the instant failover group.
 - **ChangeTermSecureUser** - This command will disconnect any current TermSecure user sessions and then display the TermSecure Log On menu.
 - **LogOffAndChangeTermSecureUser** - This command will log off any current TermSecure user sessions and then display the TermSecure Log On menu.
 - **LogOffTermSecureUser** - This command will log off any current TermSecure user sessions and will return to a Display Client which is assigned to the terminal. If no Display Clients have been configured on the terminal, the TermSecure Log On menu will be displayed.
 - **DisconnectTermSecureUser** - This command will disconnect any current TermSecure user sessions and will return to a Display Client which is assigned to the terminal. If no Display Clients have been configured on the terminal, the TermSecure Log On menu will be displayed.

- **DisconnectSession** - This command will disconnect the Terminal Services Session running on the terminal. This command does not require that the Enable Method be invoked prior to execution.
- **LogOffSession** - This command will log off the Terminal Services Session running on the terminal. This command does not require that the Enable Method be invoked prior to execution.
- **TileStart** - This command will tile the Display Clients on the current Screen.
- **TileEnd** - This command will untile the Display Clients on the current Screen.

The Command Method constants are provided by the Control as follows:

- TermMonCommand.Reboot
 - TermMonCommand.Restart
 - TermMonCommand.Calibrate
 - TermMonCommand.GotoMainMenu
 - TermMonCommand.SwitchToNextGroup
 - TermMonCommand.SwitchToPrevGroup
 - TermMonCommand.SwitchInstFailover
 - TermMonCommand.ChangeTermSecureUser
 - TermMonCommand.LogOffAndChangeTermSecureUser
 - TermMonCommand.LogOffTermSecureUser
 - TermMonCommand.DisconnectTermSecureUser
 - TermMonCommand.DisconnectSession
 - TermMonCommand.LogOffSession
 - TermMonCommand.TileStart
 - TermMonCommand.TileEnd
- **ChangeTerminalServerGroup** - This method can be used to change the Display Client currently displayed on the terminal. This method requires one parameter which is the name of the Display Client that the terminal should switch to.
 - **TermSecureCheckAccess** - This method can be used to query the access rights of a TermSecure user. This method requires two parameters. The first parameter is the name of the user. The second parameter is the name of the Access Group. This method returns the result of the query as follows:
 - **TermMonConst.Timeout** - The request timed out.
 - **TermMonConst.Busy** - The Control is busy with another request.
 - **TermMonConst.InvalidMember** - The user is not a member of the specified TermSecure Access Group.
 - **TermMonConst.ValidMember** - The user is a member of the specified TermSecure Access Group.
 - **TermMonConst.UserNotFound** - The TermSecure Username was not found.
 - **TermMonConst.GroupNotFound** - The Access Group Name was not found.

- **GetGroupScreen** - This method can be used to determine which screen the specified Display Client is currently on for MultiMonitor configurations. This method requires one parameter which is the name of the Display Client.
- **TermSecureLogonUser** - This method can be used to Log On a specified TermSecure user. This method requires two parameters. The first parameter is the name of the TermSecure user. The second parameter is the password of the TermSecure user. The password will be encrypted before being sent to the terminal. This method returns a result as follows:
 - **TermMonConst.Success** - The TermSecure user was successfully logged on.
 - **TermMonConst.Timeout** - The request timed out.
 - **TermMonConst.Busy** - The Control is busy with another request.
 - **TermMonConst.UserNotFound** - The TermSecure username was not found.
 - **TermMonConst.BadPassword** - The TermSecure password was invalid.
 - **TermMonConst.NoPermission** - The TermSecure user does not have permission to use the terminal.
 - **TermMonConst.PasswordChangeReq** - The TermSecure user is required to change his password.
 - **TermMonConst.NoWindowsUsername** - This TermSecure user does not have a Windows Username specified in the TermSecure user configuration. This is only required for Terminal Services Display Clients assigned to the TermSecure User.
 - **TermMonConst.NoWindowsPassword** - This TermSecure user does not have a Windows Password specified in the TermSecure user configuration. This is only required for Terminal Services Display Clients assigned to the TermSecure User.
- **CameraOverlayEnable** - This method is used to enable a camera overlay. This method requires two parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay.
- **CameraOverlayDisable** - This method is used to disable a camera overlay. This method requires two parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay.
- **CameraOverlayCycleStart** - This method is used to start camera cycling for a camera overlay. This method requires two parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay.
- **CameraOverlayCycleStop** - This method is used to stop camera cycling for a camera overlay. This method requires two parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay.
- **CameraOverlaySwitchNext** - This method is used to switch to the next camera in a camera overlay list. This method requires two parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay.
- **CameraOverlaySwitchPrev** - This method is used to switch to the previous camera in a camera overlay list. This method requires two parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay.
- **CameraOverlayFullscreenEnter** - This method is used to make the current camera in a camera overlay enter full screen. This method requires two parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay.
- **CameraOverlayFullscreenExit** - This method is used to make the current camera in a camera overlay exit full screen. This method requires two parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay.

- **CameraOverlaySwitchByName** - This method is used to change cameras in a camera overlay. This method requires three parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay. The third parameter is the name of the camera. The camera name must include the full path if the camera is in a camera group.
- **CameraOverlayMove** - This method is used to change the position of a camera overlay. This method requires four parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay. The third parameter is the x location. The fourth parameter is the y position.
- **CameraOverlayResize** - This method is used to change the size of a camera overlay. This method requires four parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay. The third parameter is the width. The fourth parameter is the height.
- **CameraOverlayResizeMove** - This method is used to change the size and position of a camera overlay. This method requires six parameters. The first parameter is the name of the Display Client the overlay is on. The second parameter is the name of the overlay. The third parameter is the x position. The fourth parameter is the y position. The fifth parameter is the width. The sixth parameter is the height.

27.2.6 Control Constants

Constant values provided by the Control are as follows:

TermMonEvent

- TerminalName 1
- TerminalModel 2
- TerminalIP 3
- TerminalMAC 4
- TerminalBootLoaderVersion 5
- TerminalFirmwareVersion 6
- TerminalWindowsUsername 7
- TermSecureUsername 8
- TermSecureWindowsUsername 9
- TerminalServerGroupList 10
- ConnectionState 11
- CurrentTerminalServerGroup 12
- CurrentWindowsUsername 13
- TerminalServerName 14
- WatchdogTime 15

TermMonCommand

- Reboot 100
- Restart 101
- Calibrate 102
- GotoMainMenu 103
- SwitchToNextGroup 104
- SwitchToPrevGroup 105
- SwitchInstFailover 106
- ChangeTermSecureUser 107
- LogOffAndChangeTermSecureUser 108
- LogOffTermSecureUser 109
- DisconnectTermSecureUser 110
- DisconnectSession 111
- LogOffSession 112
- TileStart 113
- TileEnd 114

TermMonConst

- Success 0
- Fail 1
- Disconnected 2
- Connected 3
- Timeout 4
- Busy 5
- Updating 6
- RequestFailed 7
- InvalidMember 8
- ValidMember 9
- UserNotFound 10
- GroupNotFound 11
- BadPassword 12
- NoPermission 13
- PasswordChangeReq 14
- NoWindowsUsername 15
- NoWindowsPassword 16

27.3 TermMon ActiveX Demo Application

The TermMon ActiveX Demo Application can be used to demonstrate the features of the Control. The demo application is found on the ThinManager CD in the **Terminal ActiveX** folder as **TermMon.exe**.

To start the application in graphical mode, run **TermMon.exe** in a terminal's terminal services session. This will allow the Control functionality to be demonstrated.

The demo application can also be run non-graphically using command line options. The format is as follows:

```
TermMon -c <command> -f <output path and filename> -d <data> -a <ip address>
```

The following commands are terminal action commands:

- Reboot
- Restart
- Calibrate
- GotoMainMenu
- SwitchToNextGroup
- SwitchToPrevGroup
- SwitchInstFailover

- ChangeTermSecureUser
- LogOffAndChangeTermSecureUser
- LogOffTermSecureUser
- DisconnectTermSecureUser
- ChangeTerminalServerGroup -d <groupname>

The following commands return the result in the output filename.

- TerminalName -f <output filename>
- TerminalModel -f <output filename>
- TerminalIP -f <output filename>
- TerminalMAC -f <output filename>

28 Non-ThinManager Components

Microsoft Terminal Servers play an important role in the ThinManager system. It is recommended that you become familiar with the documentation provided by Microsoft about their server. The following information is provided as an aid to understanding terminal services and is not a substitute for Microsoft documentation.

Microsoft Terminal Services requires a license, either a TS CAL (Terminal Services Client Access License) on a 2003 Server or a RDS CAL (Remote Desktop Services Client Access License) on a 2008 Server.

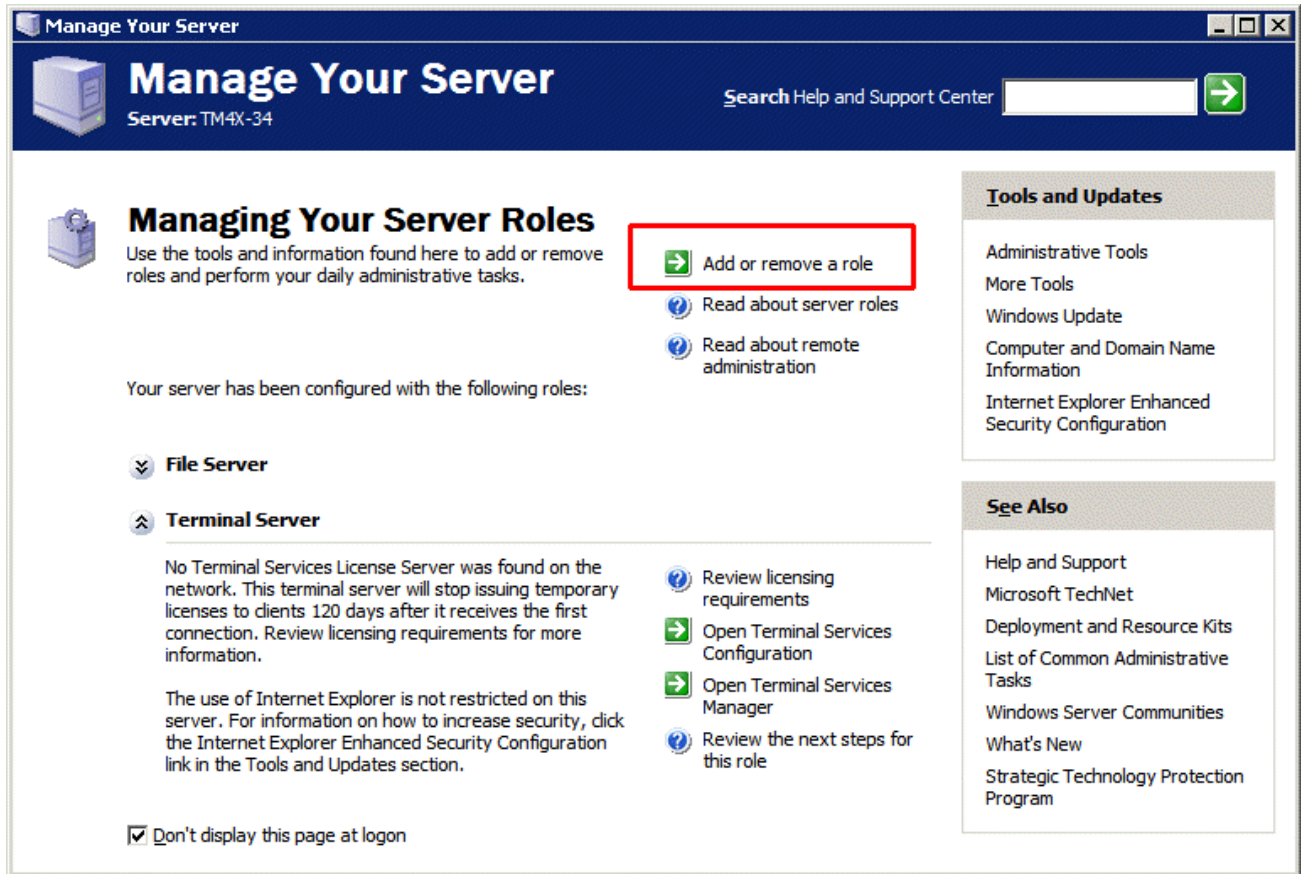
This section covers:

- Server 2003
- Server 2008
- DHCP (Dynamic Host Configuration Protocol) Servers
- Terminal Services Licensing

28.1 Server 2003

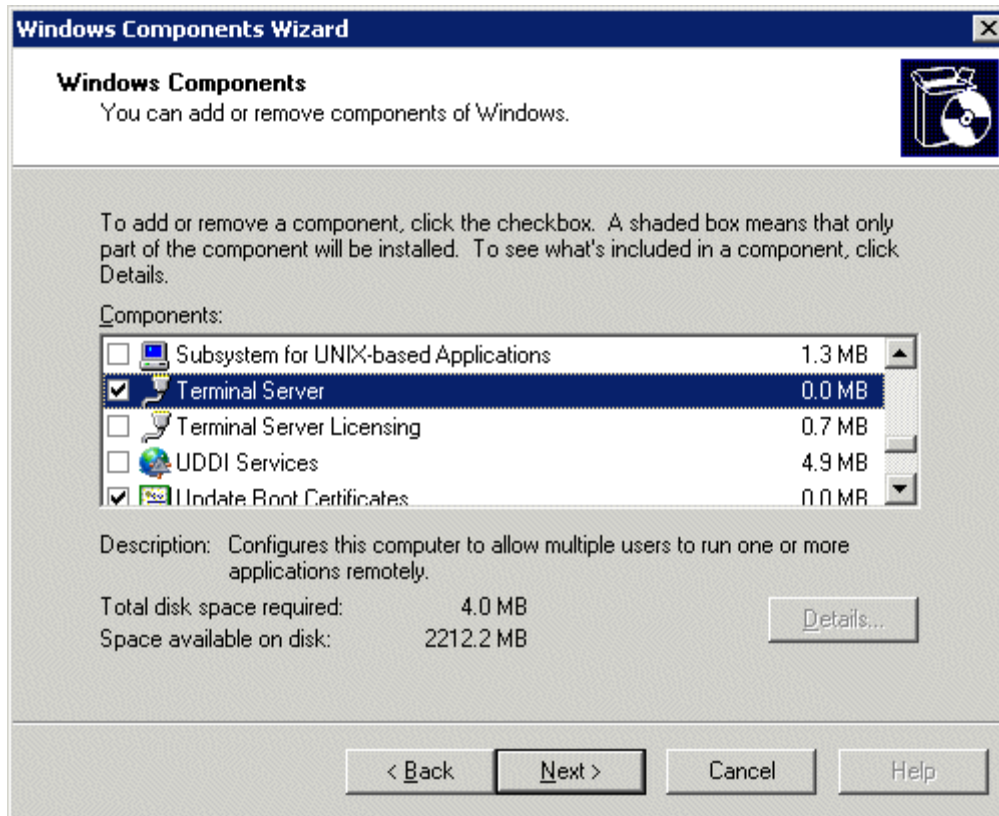
28.1.1 Installing Terminal Services

A Windows 2003 Server can be made a terminal server by installing the Terminal Services role. This can be done with either the **Manage Your Server** or through the **Add/Remove Programs > Add/Remove Windows Components**.



Manager Your Server

Select the **Add or remove a role** link on the **Manager Your Server** splash screen to install the Terminal Services role and/or the Terminal Services License Server role.



Windows Component Wizard

Terminal Services can be installed by selecting the **Terminal Server** checkbox in the **Windows Component Wizard**.

The **Windows Component Wizard** is launched by selecting the **Add/Remove Windows Component** button on **Control Panel > Add/Remove Programs**.

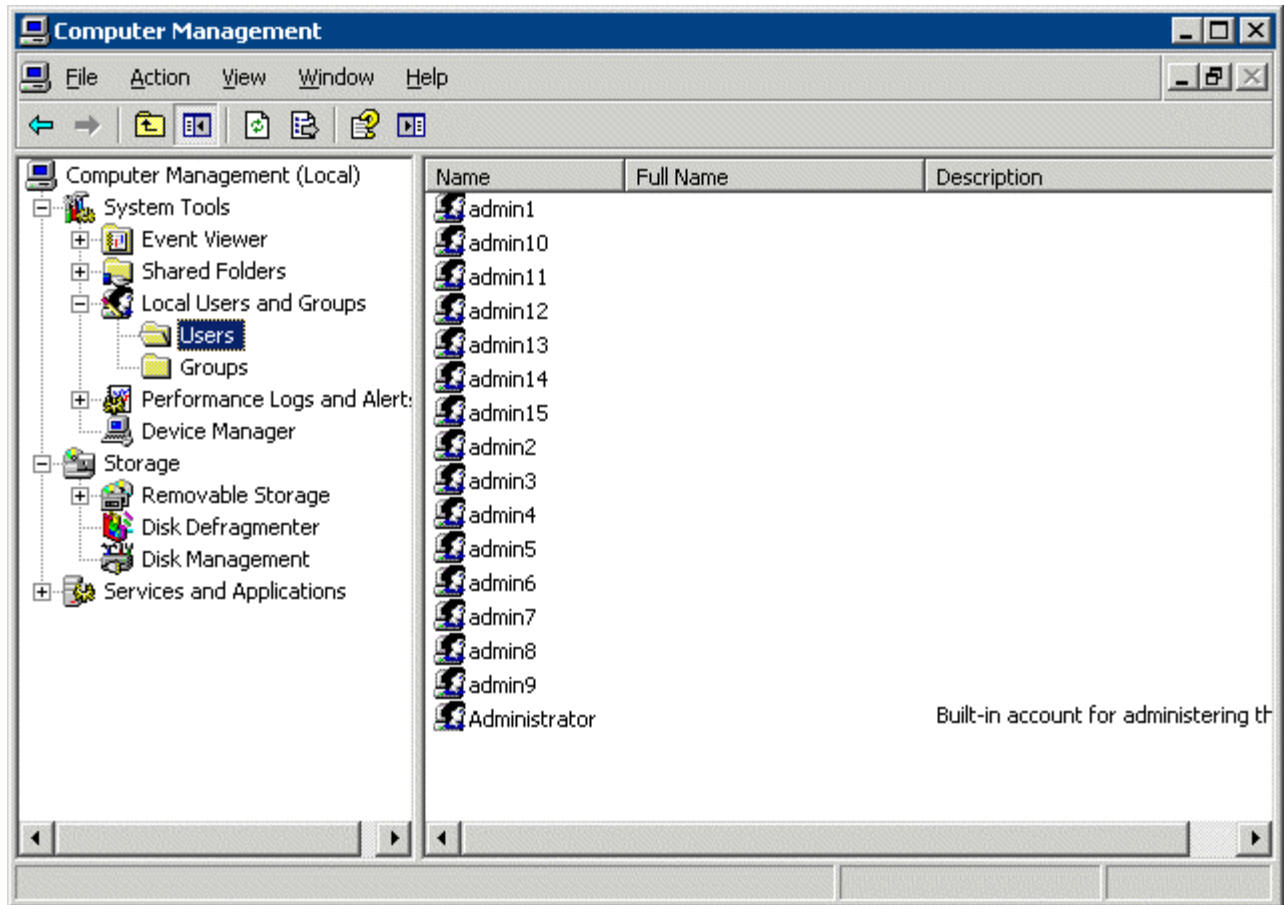
Each Microsoft terminal server system will need a Microsoft Terminal Server Licensing server install. This doesn't have to be a separate computer but is a program installed on an existing computer. It is installed by selecting the **Terminal Server Licensing** checkbox on the **Windows Component Wizard**.

See Microsoft Licenses for details.

28.2 Creating Microsoft User Profiles

A terminal needs a valid Windows User Profiles to log onto a terminal server.

Open the **Computer Management Console** by selecting **Start > Administrative Tools > Computer Management** in Windows 2003/2008 to create a user profile.



Computer Management Console

Highlight the **User** sub-folder of Local Users and Groups in the Computer Management tree pane. Select **Action > New User**. This will launch a New User dialog box.

The image shows a 'New User' dialog box with the following fields and options:

- User name: [Text Input]
- Full name: [Text Input]
- Description: [Text Input]
- Password: [Text Input]
- Confirm password: [Text Input]
- User must change password at next logon
- User cannot change password
- Password never expires
- Account is disabled
- Buttons: Create, Close

New User Dialog

Enter the user name for the user in the **User name** field.

Enter a password in the **Password** field.

Re-enter the password in the **Confirm password** field.

The **User must change password at next logon** check box forces the user to change the password.

Select the **Create** button to finish the profile.

Select the **Close** button to return to the Computer Management Console.

Note: Users need to be added to the **Remote Desktop Users** group or the **Administrators** group to be allowed to connect to a terminal server.

28.3 Software Installation On Windows 2003

Microsoft Windows 2003/Server requires that software be added in the “**Install Mode**” through the **Control Panel > Add/Remove Programs**.

Select **Start > Settings > Control Panel > Add/Remove Programs** to launch the **Add/Remove Programs** dialog box.

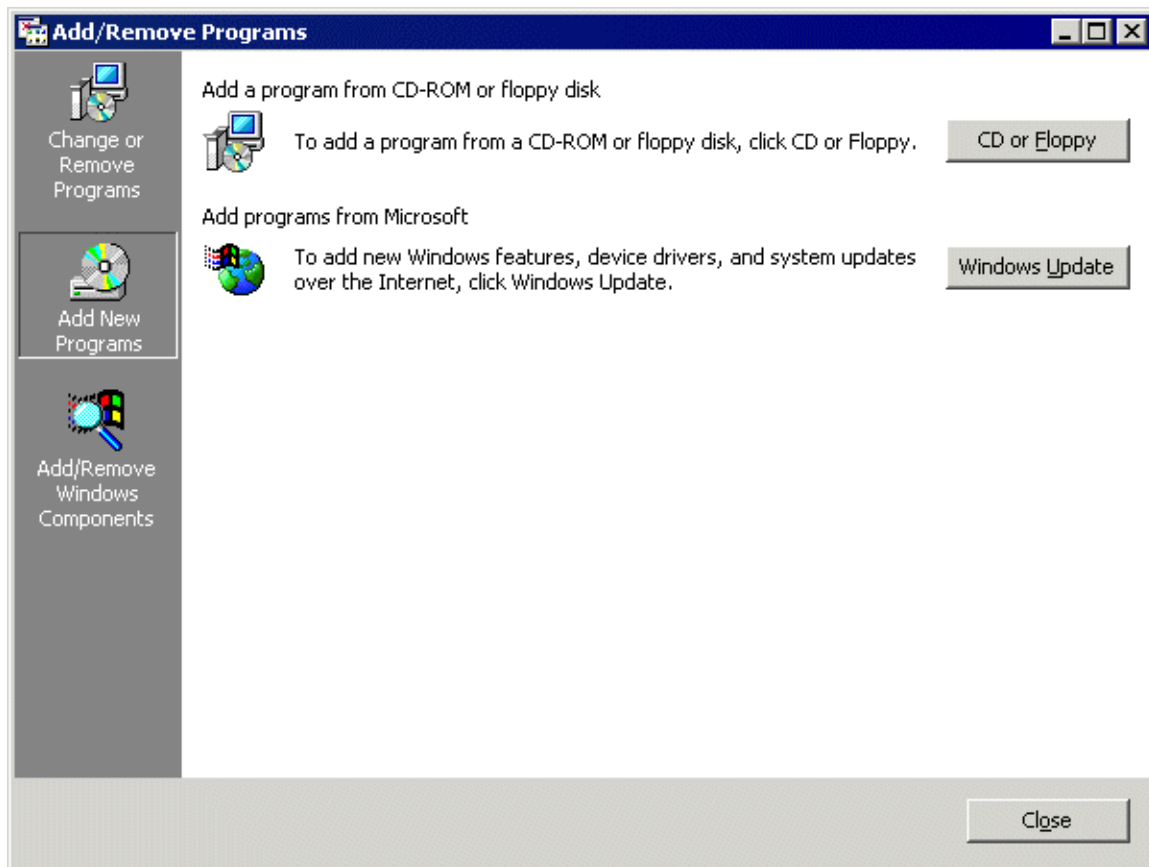
Note: Some software, especially downloaded software, doesn't allow the installer to install it through the Add/Remove Programs tools. To manually put the machine into the install mode open a command prompt and type:

```
change user /install
```

This command sets the machine to install mode. When finished, type:

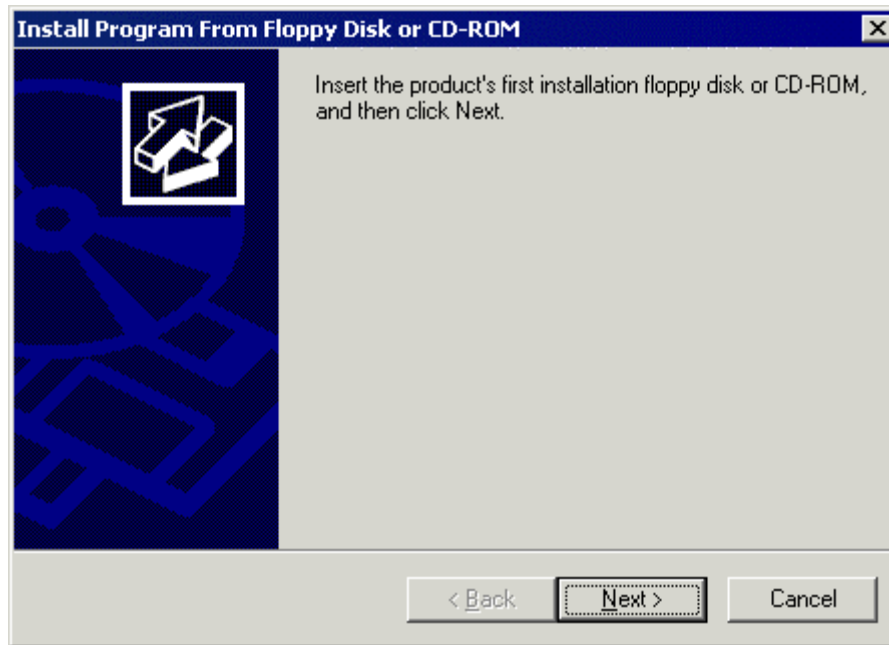
change user /execute

This command returns the machine to the normal run mode.



Add/Remove Programs

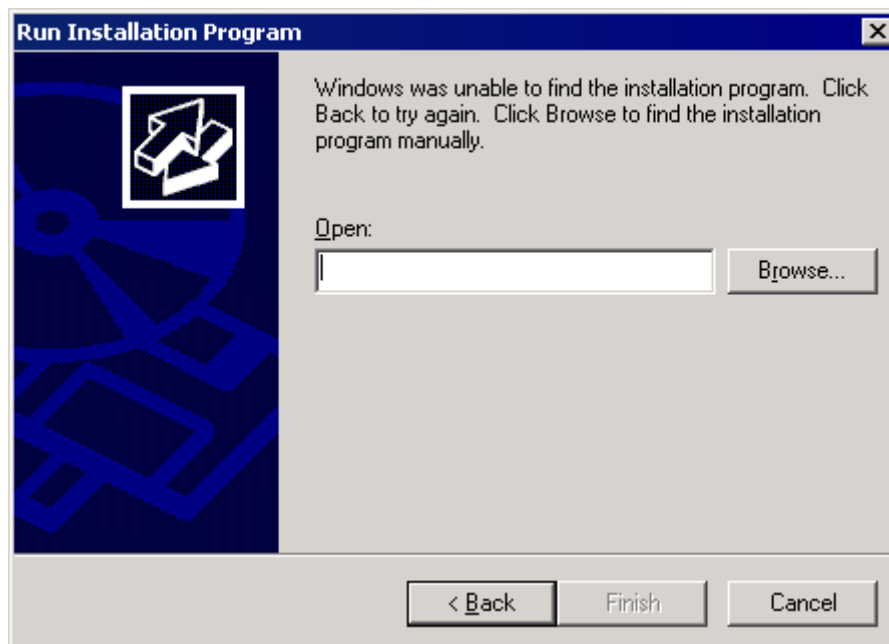
Select the **CD or Floppy** button on the **Add/Remove Programs** dialog box to open the Installation wizard.



Install Program Window

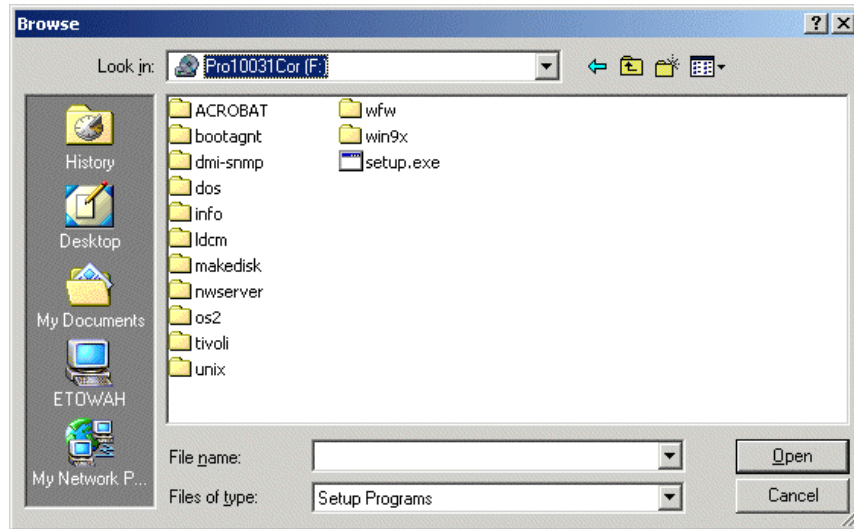
The wizard will prompt for the installation of the software disk. Select **Next** to display the **Run Installation Program** dialog box.

Note: If the new program starts in **autorun** and proceeds without going through the following procedures, either stop the **autorun** and use the wizard to initiate the installation, or use the **change user /install** command to place the machine in the install mode. Use the **change user /execute** command when finished to return the machine to the Run mode.



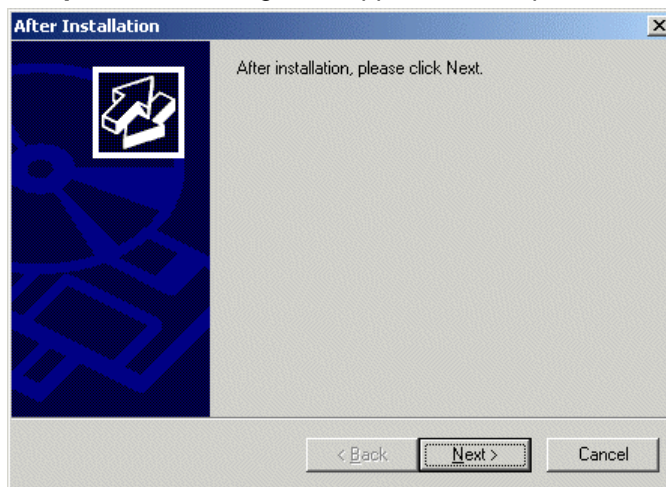
Run Installation Program

Enter the command line of the installation program and select **Finish**, or select the **Browse** button to select the installation file.



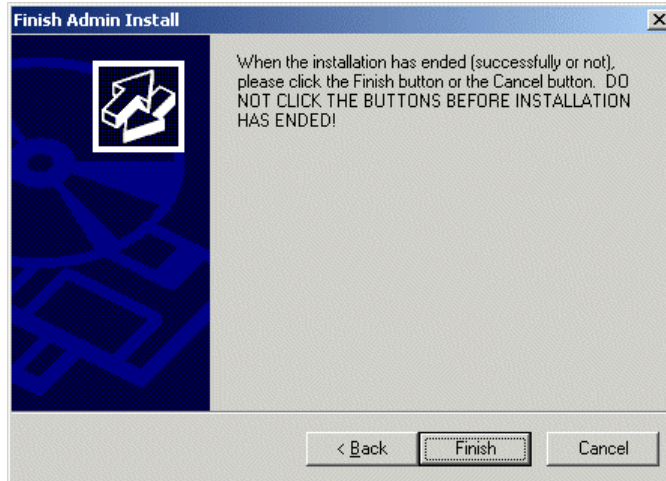
Browse File Window

Selecting the **Browse** button on the **Run Installation** dialog box will launch a **Browse File** window. Highlight the installation file and select **Open**. This will begin the application setup.



After Installation Window

As the installation begins, an **After Installation** dialog box is displayed. It requests that the **Next** button be selected when the installation is finished. When this button is selected a second confirmation window is displayed.



Finish Install Window

Select the **Finish** button when the installation is finished.

Note: If a choice is given to **Reboot Now** or **Reboot Later**, choose to reboot later once the entire setup is completed and the dialog boxes are cleared.

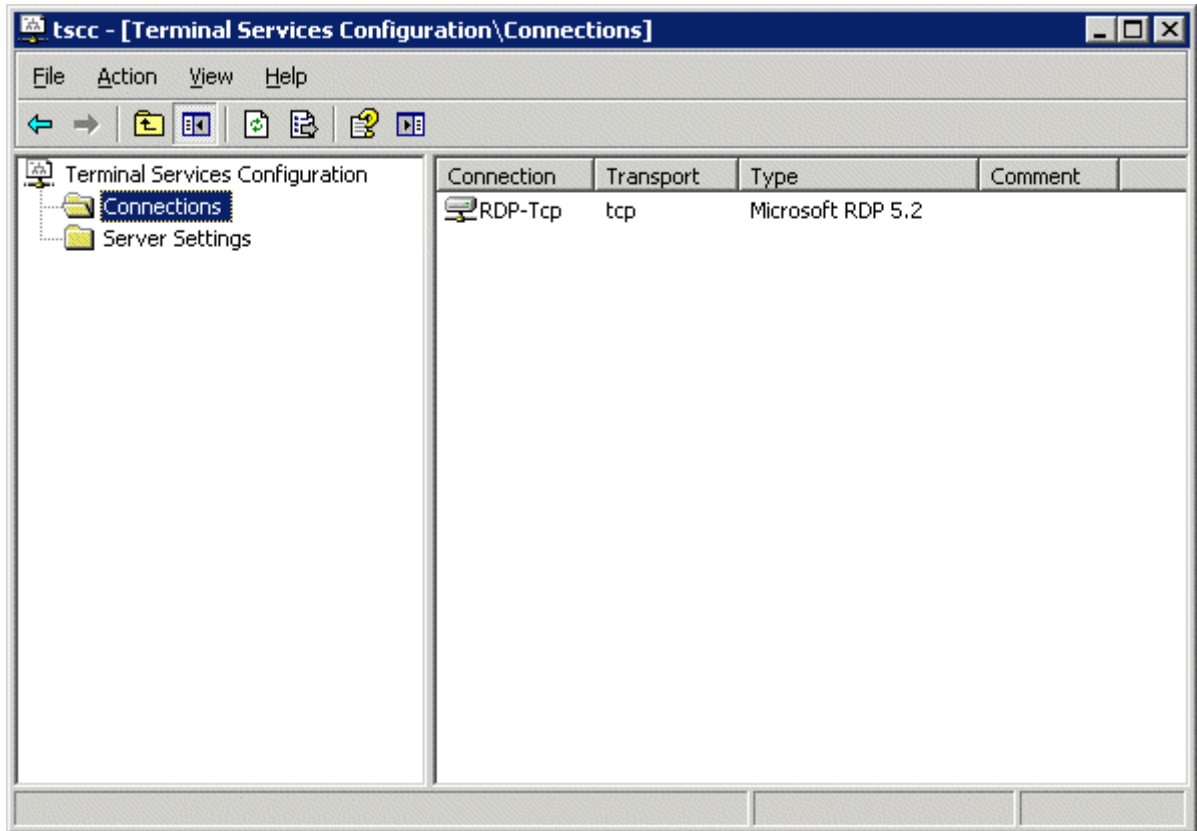
28.3.1 Terminal Services Configuration

Microsoft provides the **Terminal Services Configuration** interface to configure how terminal services is handled on each terminal server.

Select **Start > Programs > Administrative Tools > Terminal Services Configuration** to launch the **Terminal Services Configuration Console**. There are two folders, **Connections** and **Server Settings**.

28.3.2 Terminal Services Connections

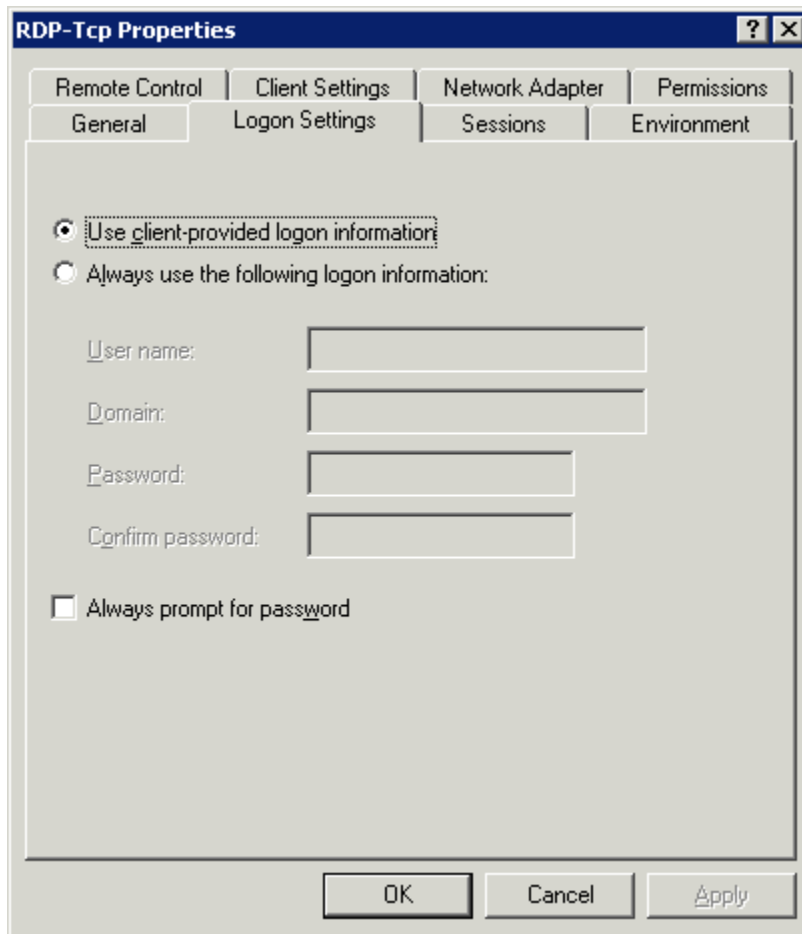
The **Terminal Services Configuration** tree has a **Connections** folder. Highlighting this folder will display the installed client communication protocols.



Terminal Services Configuration\Connections Console - Connections

Double clicking on the RDP-tcp icon on the right will launch the RDP-tcp Properties

28.3.2.1 RDP-tcp Login Settings

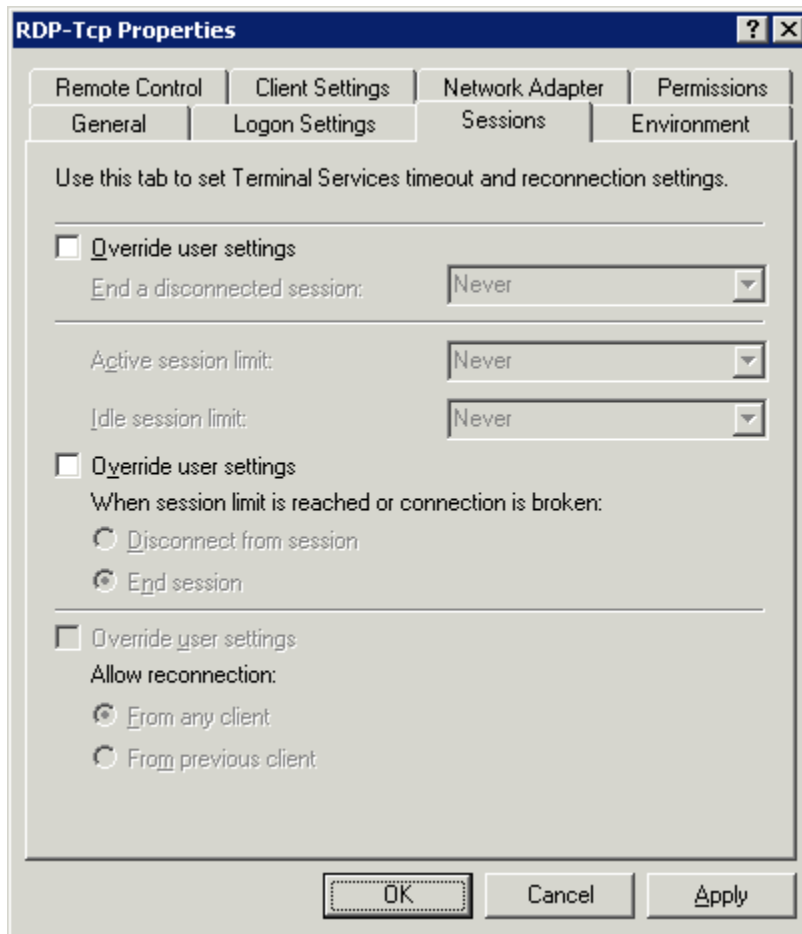


RDP-tcp Login Settings

The **Logon Settings** should use the **Use client-provided logon information** radio button so that each user will login with a unique account.

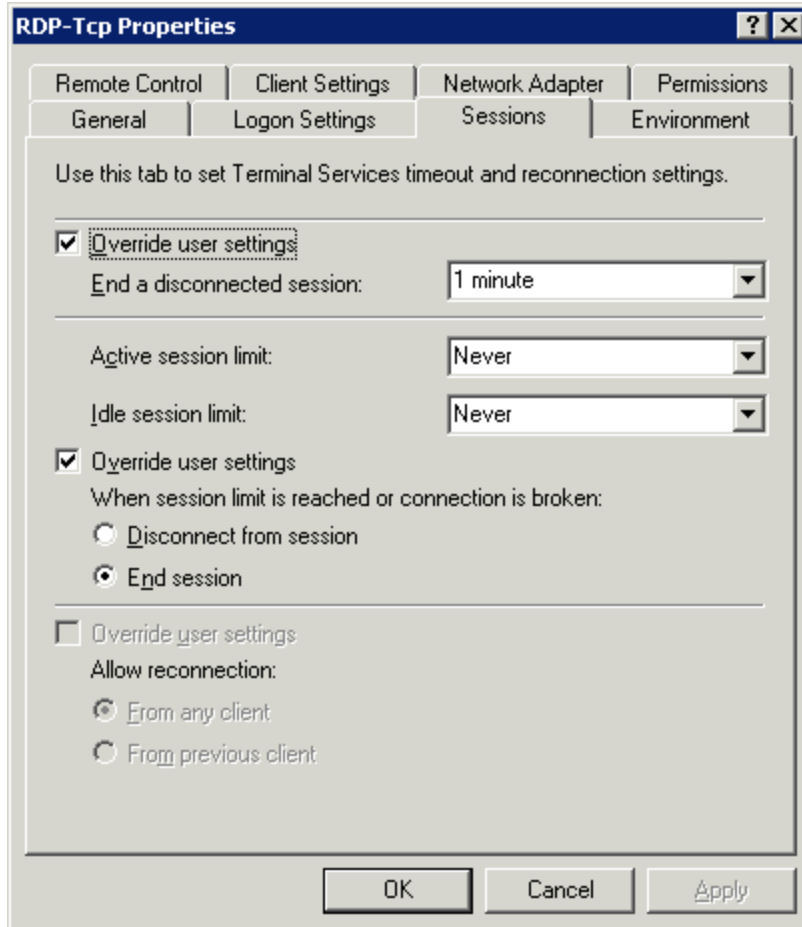
The **Always prompt for password** should be unselected to allow auto-logins.

28.3.2.2 RDP-tcp Sessions Settings



Individual User Account Sessions Configuration

Each user account can be configured individually in the Computer Management interface. These can be set to end a disconnected session or an idle session after a period of time. The **Terminal Services Configuration Console** allows these settings to be made for every user of the terminal server, speeding configuration time.

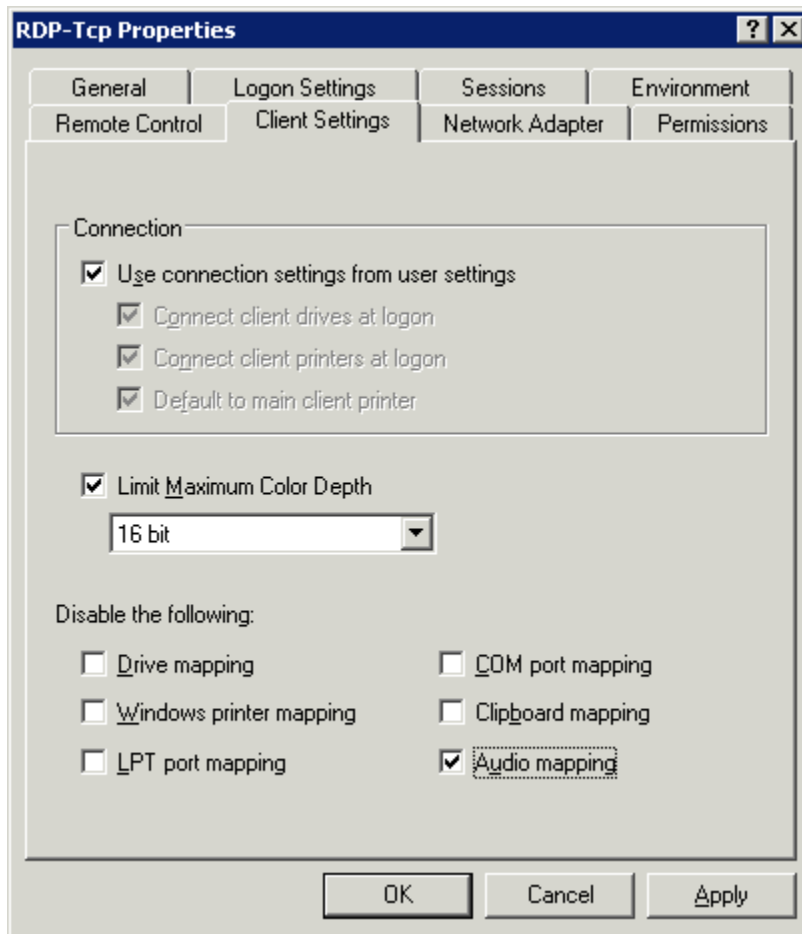


RDP-tcp Sessions Settings

The **Sessions** tab of the **RDP-tcp Properties** allows all users to be configured with a consistent disconnect policy by selecting the **Override user settings** checkbox.

Selecting **End Session** setting for the **When session limit is reached or connection is broken** and selecting the **Override user settings** will cause a new session to be created when a terminal disconnects and reconnects.

28.3.2.3 RDP-tcp Client Settings



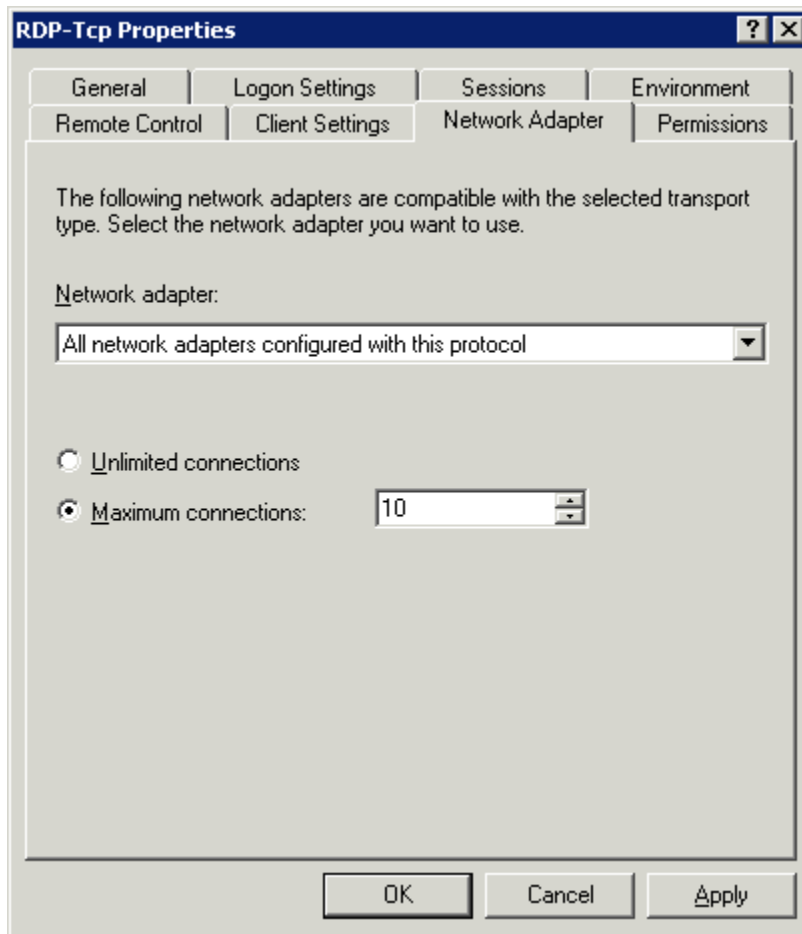
RDP-tcp Client Settings

The **Client Settings** tab of the **RDP-tcp Properties** allows the color depth to be set in the Limit Maximum Color Depth drop-down.

Drive mapping, LPT port mapping, COM port mapping, and audio mapping are allowed if the appropriate **Disable the following** checkboxes are un-selected.

Audio mapping is disabled by default. You need to uncheck the **Audio mapping** checkbox to allow a thin client to play sound.

28.3.2.4 RDP-tcp Network Adapter Settings

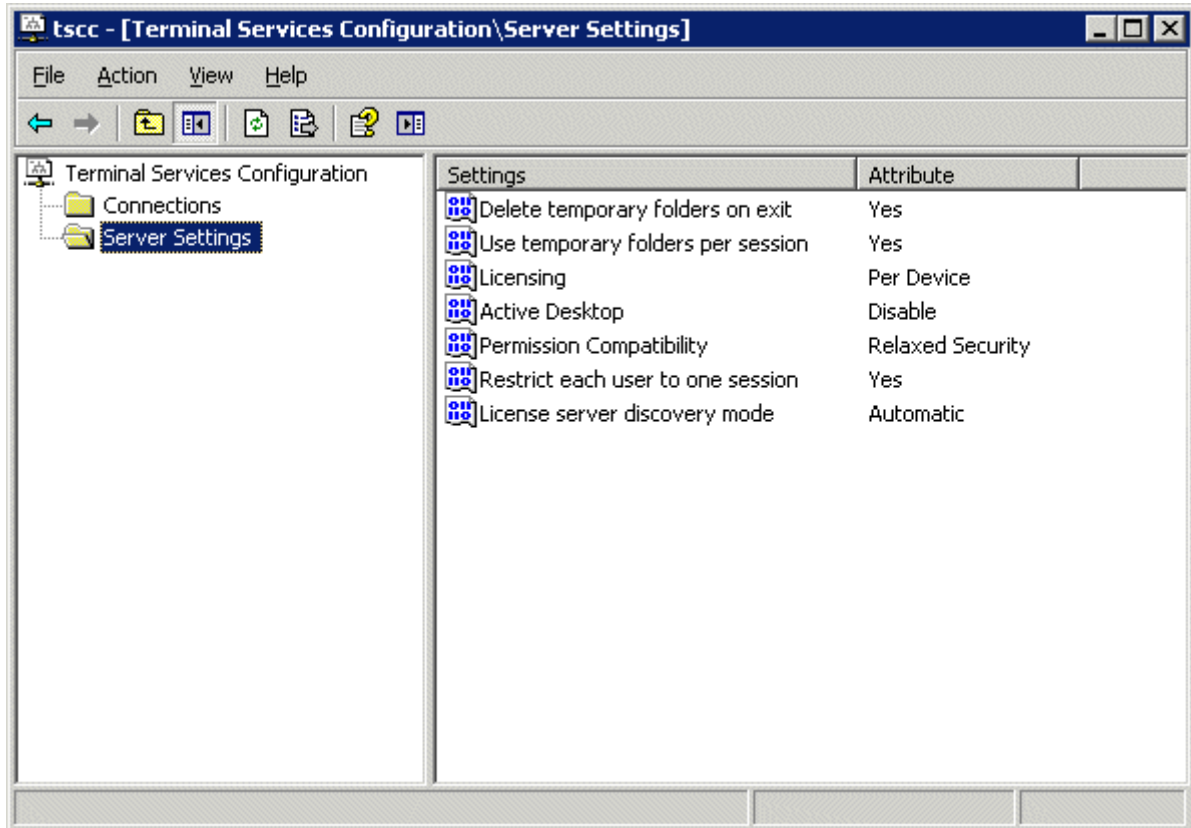


RDP-tcp Network Adapter Settings

The **Network Adapter** tab of the **RDP-tcp Properties** can be used to limit the number of active users to aid in application licensing compliance.

28.3.3 Terminal Services Connections

The **Terminal Services Configuration** tree has a **Connections** folder. Highlighting this folder will display the installed client communication protocols.



Terminal Services Configuration\Connections Console - Connections

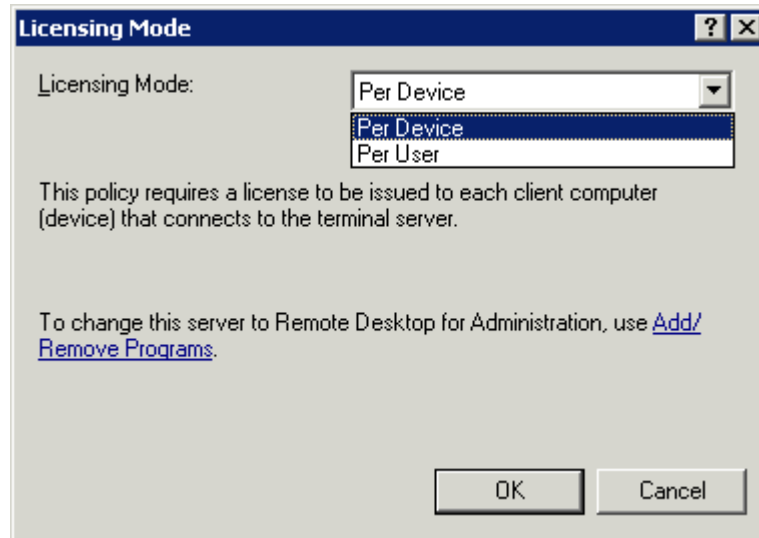
The **Server Settings** have several settings that can control the terminal services experience.

28.3.4 Licensing Mode

Microsoft expanded the Terminal Services Client Access License (TS CAL) program in Windows 2003. TS CALs are available in two types, TS Device CALs and TS User CALs.

- The TS Device CAL licenses one device to connect to any Microsoft Terminal Servers as any user. This functions like the previous Windows 2000 TS CAL.
- The TS User CAL licenses one user for any device to connect to any Microsoft Terminal Servers.

To change between the **Per Device** licensing and **Per User** licensing, double-click **Licensing** to launch the **Licensing Mode** window.

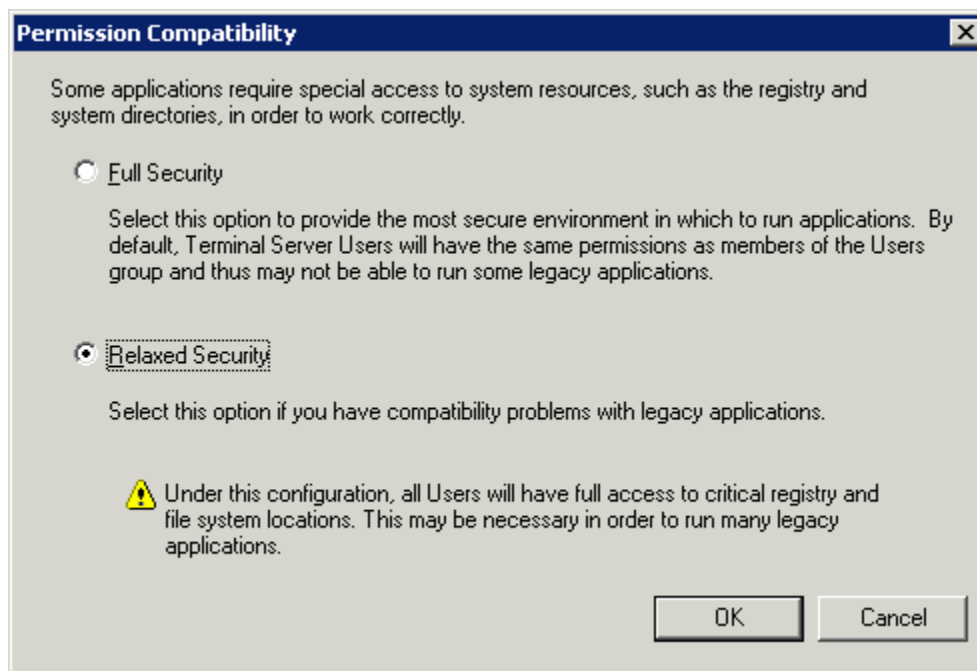


Terminal Services Configuration Console- Licensing Mode

Select the desired mode from the **Licensing Mode** dropdown box and click **OK**.

28.3.5 Permission Compatibility

Microsoft has increased the security in each successive release of its terminal server software. These new policies prevent users from accessing the system folder, *.ini files, the registry, and other resources. Some programs such as HMI, SCADA, database, and control software need access to these resources to function. Instead of making all the users administrators, the security can be set to the less strenuous Windows NT 4.0-style security.



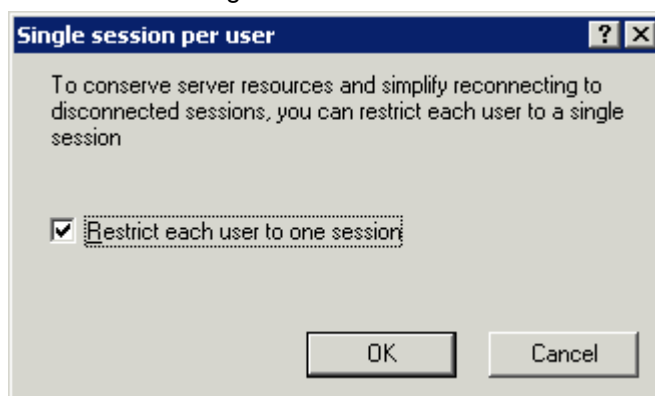
Terminal Services Configuration Console- Permission Compatibility

Launch the **Permission Compatibility** window by double-clicking on the **Permission Compatibility** setting. Select the **Relaxed Security** radio button and select the **OK** button.

28.3.6 Restrict Each User to a Single Session

The **Restrict Each User to a Single Session** setting prevents duplicate and orphaned sessions by limiting each user to a single login.

Double-clicking the setting will launch a settings window.



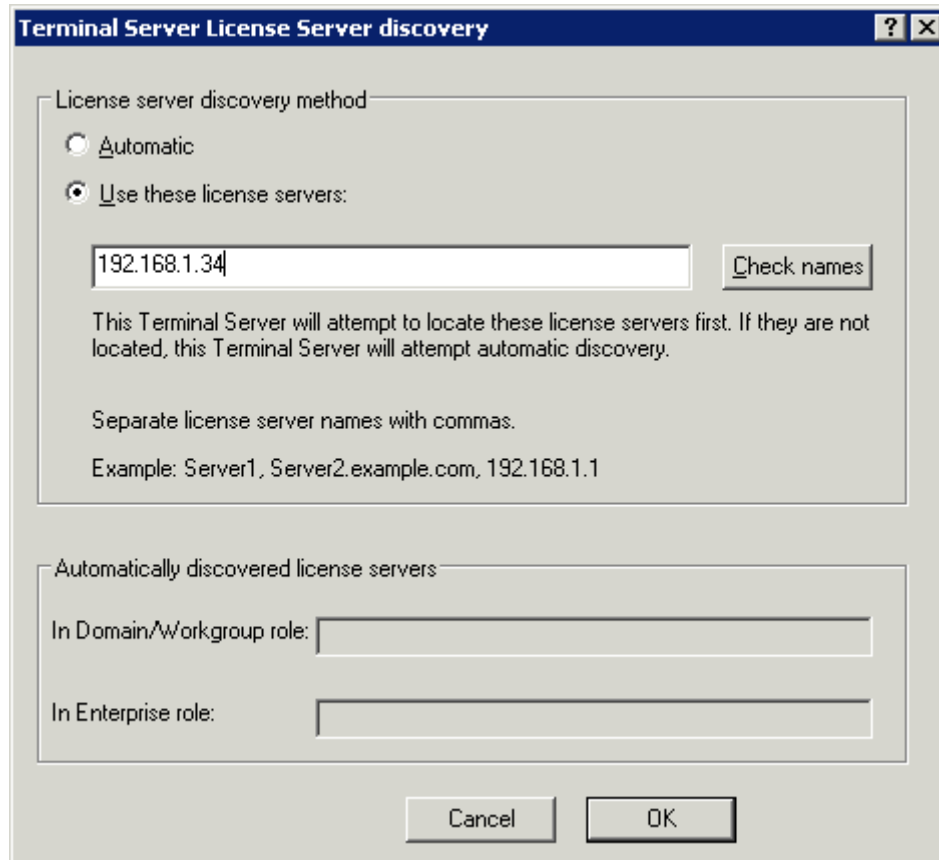
Terminal Services Configuration Console- Single Session Per User

The **Restrict each user to one session** checkbox is selected by default in Windows 2003.

Note: Keep this setting selected. MultiSession will still work as long as each session is using a different AppLink program.

28.3.7 License Server Discovery Mode

A new feature in Windows 2003, Service Pack 1 and later, is a setting to point the terminal server to a specific Terminal Server Licensing Server. This is the **License server discovery mode** setting in **Terminal Services Configuration**. This is easier than hard coding the license server into the registry.



Terminal Server License Server Discovery Window

Launch the Terminal Server License Server Discovery Window by double-clicking the **License server discovery mode** setting in **Terminal Services Configuration** window.

Entering a valid Microsoft Terminal Server Licensing Server name in the **Use these license servers** field will force the terminal server to use the defined server as the license server. This keeps the terminal server from getting confused when there are multiple license servers.

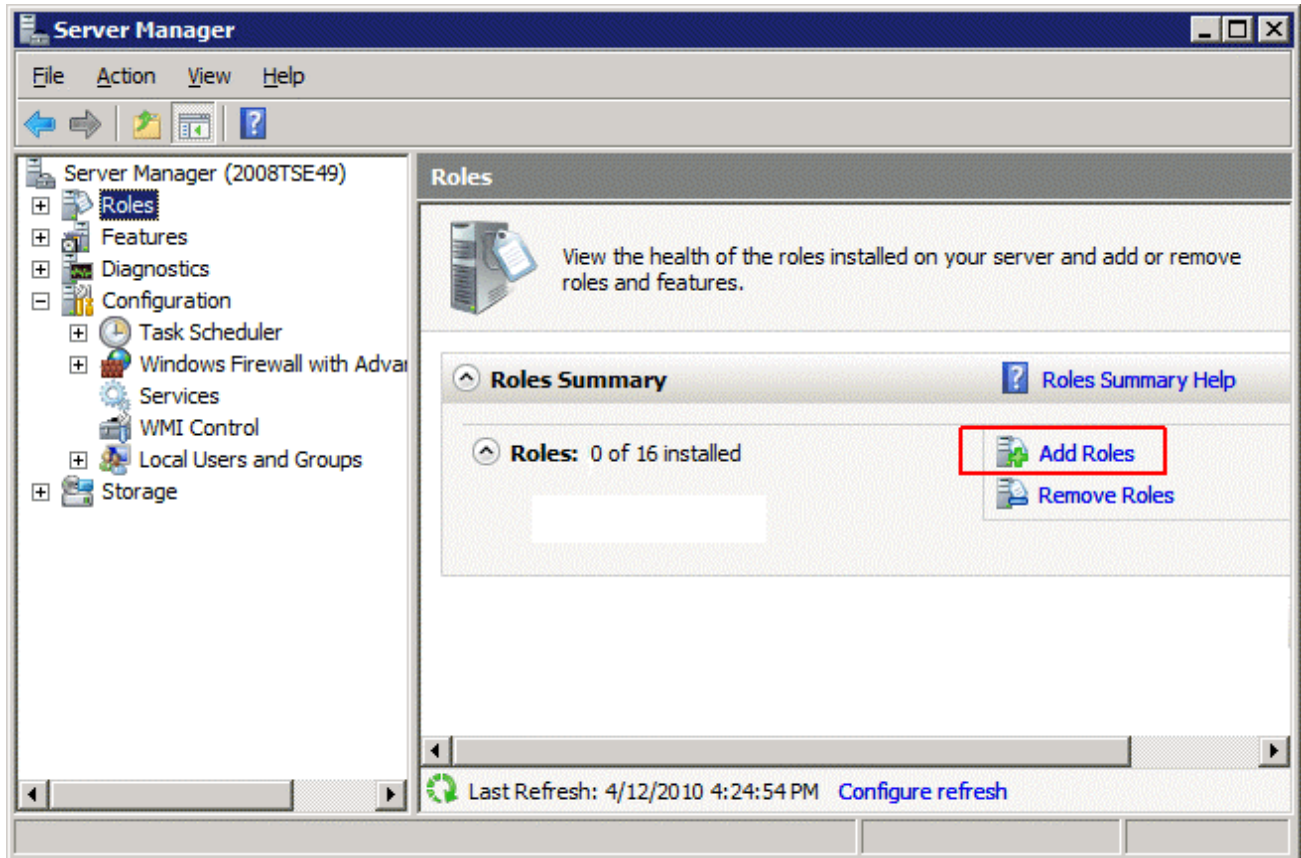
The **Automatically discovered license servers** field would be automatically populated with license servers found by the terminal server and can be used as a reference. The **Check names** button will check the validation of the name in the **Use these license servers** field.

28.4 Windows 2008 Server

28.4.1 Adding Terminal Server Role

Windows 2008 Server, like Windows 2003 Server, allows two RDP connections for administrative purposes. To make the Windows 2008 Server a terminal server where many people can access applications requires adding the Terminal Services Role.

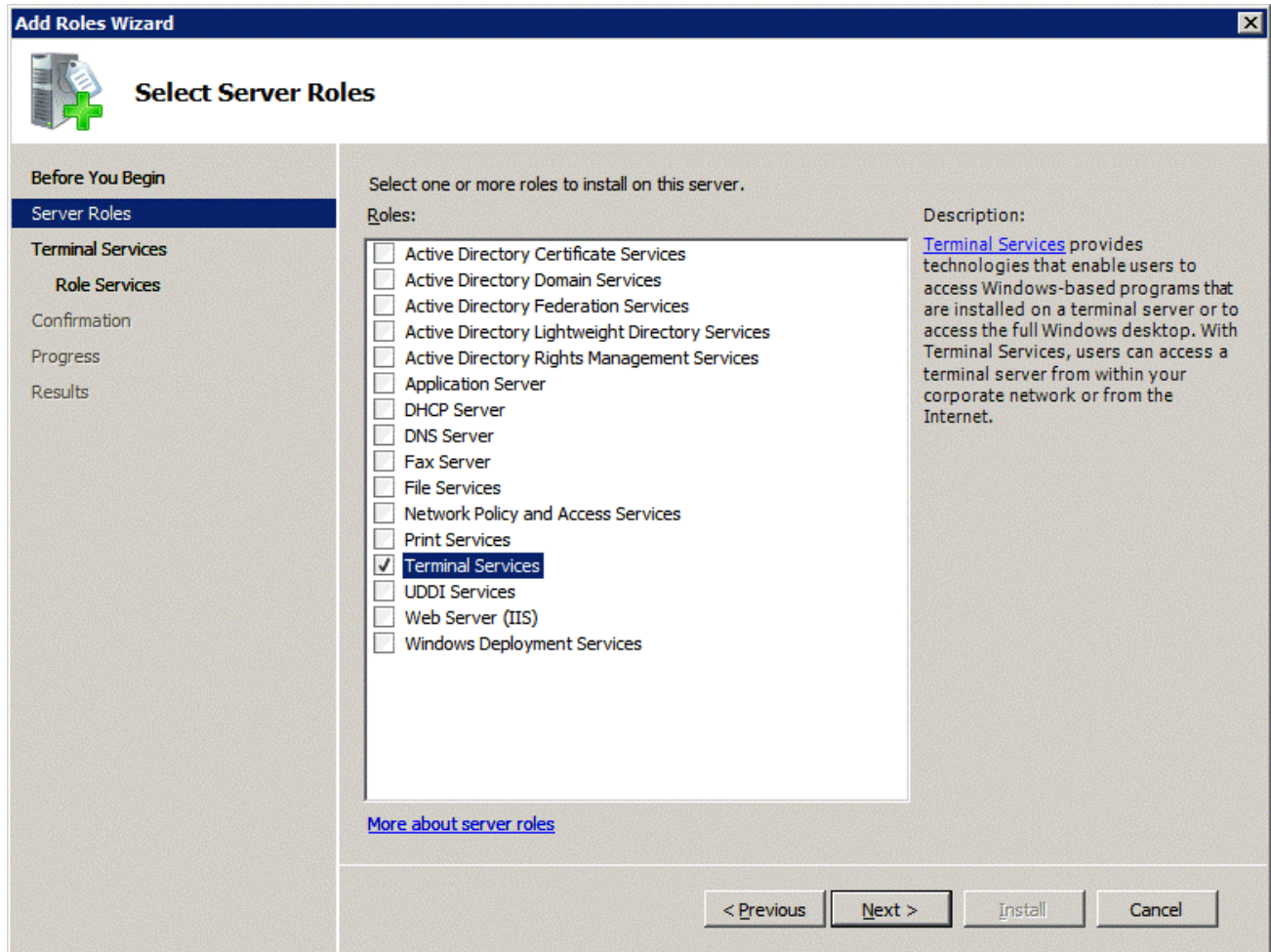
Open the **Server Manager** window.



Server Manager Window

Highlight **Roles** in the tree and select **Add Roles** in the right pane. A wizard will launch allowing you to add Terminal Services as a role.

Highlights of the **Role Wizard** include:

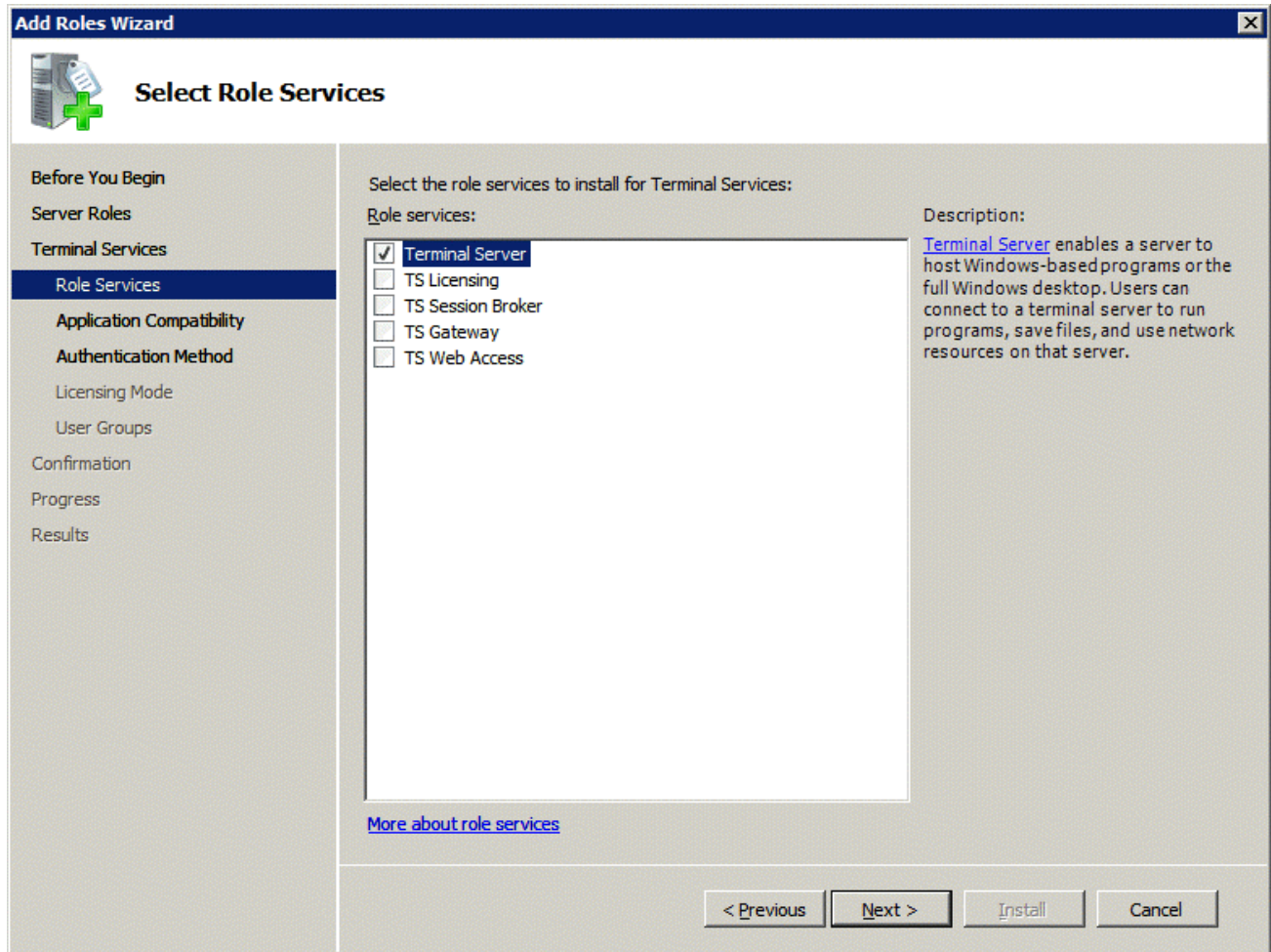


Role Wizard - Select Server Roles

The **Role Wizard** lists a dozen roles that are available.

Check the **Terminal Services** checkbox and any other roles desired.

Select **Next** to continue.

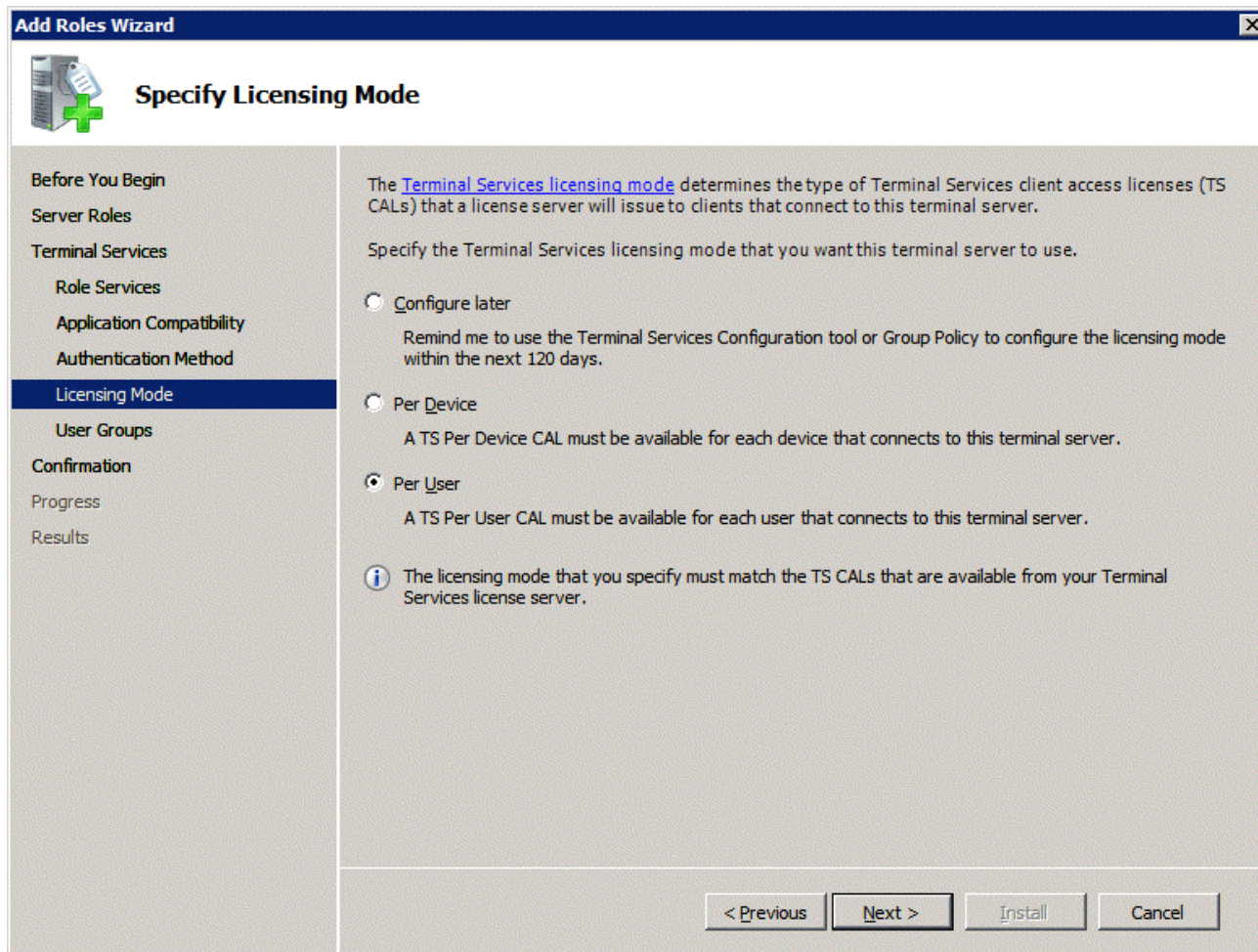


Role Wizard –Select Role Services

Terminal Services has several options:

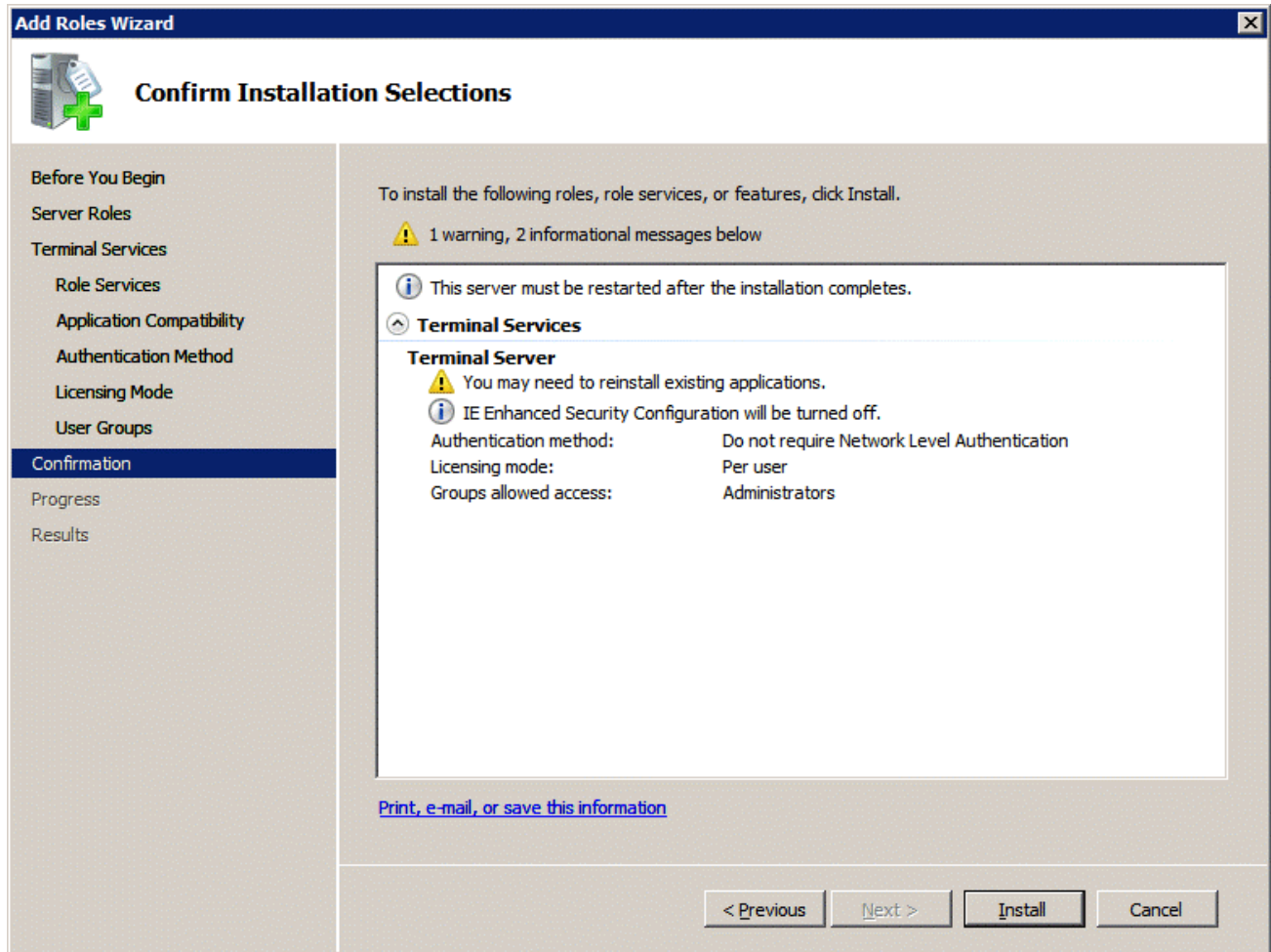
- **Terminal Server** – the basic terminal services option. Check this option
- **TS Licensing** – This makes the server a 2008 License Server. You need a 2008 License Server and 2008 Terminal Services Client Access Licenses (TS CALs) to operate. Select this if this server will be your Terminal Services License Server.

Select **Next** to continue.



Role Wizard – Specify Licensing Mode

Windows 2008 TS CALs, like Windows 2003 TS CALs, are available as **Per Device** or **Per User**. The terminal server should match the mode that the license server is using. Select **Next** to continue.



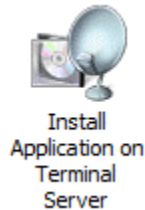
Role Wizard – Confirm Installation Selections

The **Add Roles Wizard** will end with a list of the configurations that will be installed.

Select **Install** to add the role(s). Once the wizard is finished it will assume the role of a terminal server.

28.4.2 Adding Applications in Windows 2008

Applications on terminal servers need to be installed in the **Install Mode**. Open the Control Panel and click on the **Install Application on Terminal Server** icon to start the installation wizard.



Install Application on Terminal Server Icon

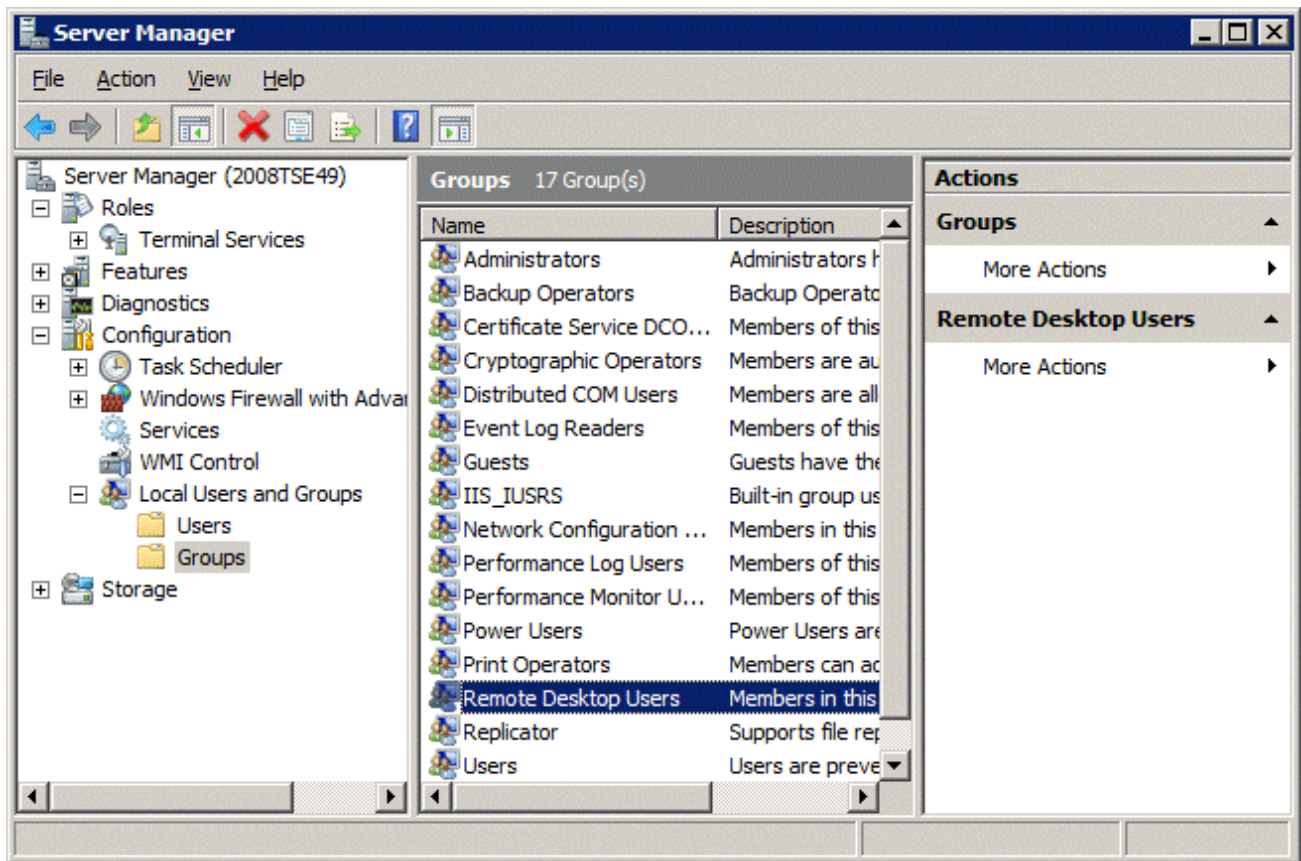
A wizard will run that allows the installation of the application.

The **Install Mode** can also be entered by typing **change user /install** at a command prompt. You can then run the **setup.exe** to install your application.

Type **change user /execute** when finished installing to leave the Install Mode.

28.4.3 Create Users

Users management is located in the **Server Manager** console.



Server Manager – Local Users and Groups

Users need to be members of the **Remote Desktop Users** group to access the terminal server.

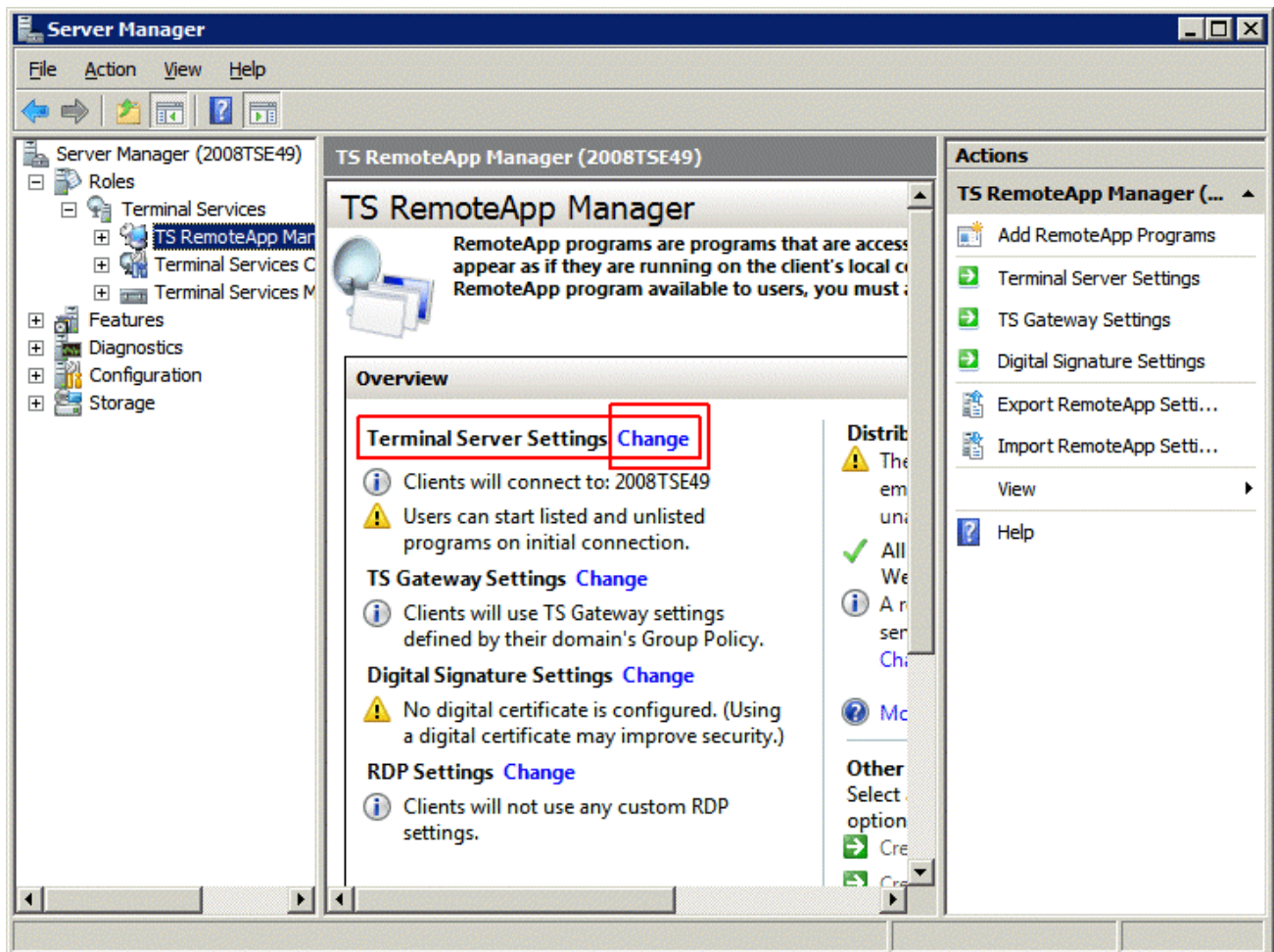
28.4.4 Allowing Application Access

Applications installed on a terminal server are not available to remote users unless the Terminal Server Settings are changed to allow access to the applications. You can either allow access to all applications or allow access to specific applications in the **TS RemoteApp Manager**.

28.4.4.1 Allowing Application Access – All Applications

Applications installed on a terminal server are not available to remote users unless the Terminal Server Settings are changed to allow access to the applications.

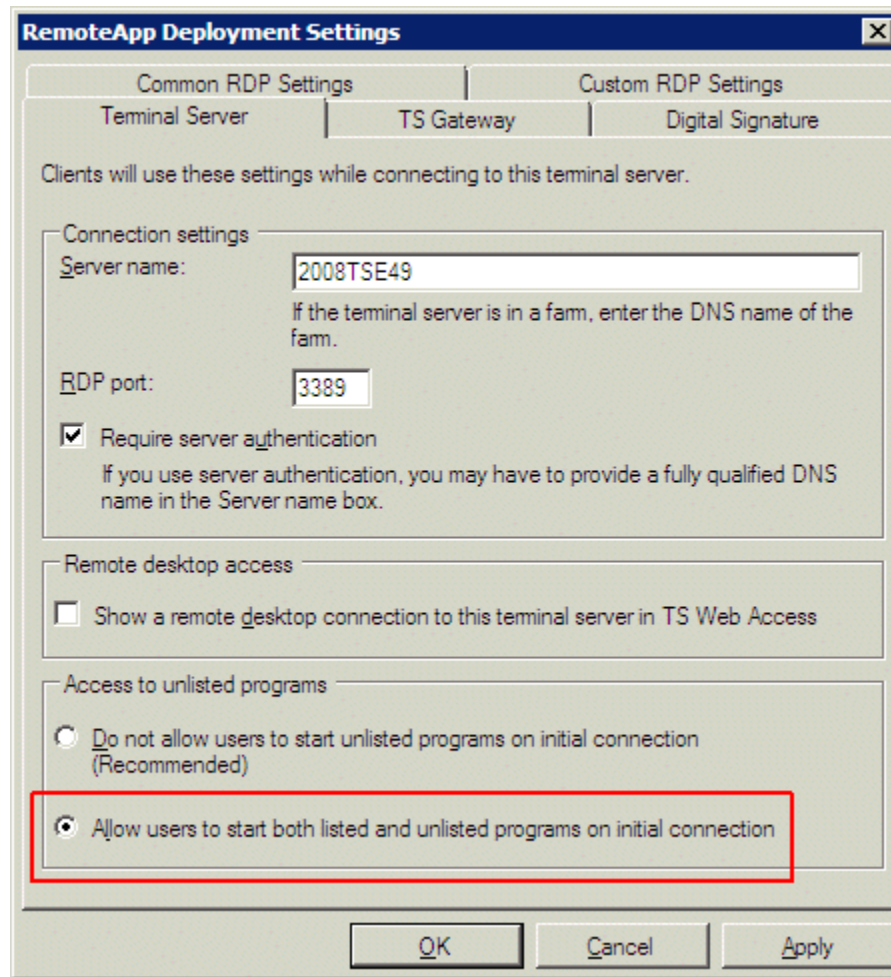
You can change the settings to allow access to all installed applications in the **TS RemoteApp Manager**.



TS RemoteApp Manager

Highlight **TS RemoteApp Manager** under the **Terminal Services** branch of the **Server Manager** tree.

Select the **Change** link for the **Terminal Server Settings** to launch the **RemoteApp Deployment Settings** page.



RemoteApp Deployment Settings

Select the Terminal Server tab of the **RemoteApp Deployment Settings** page.

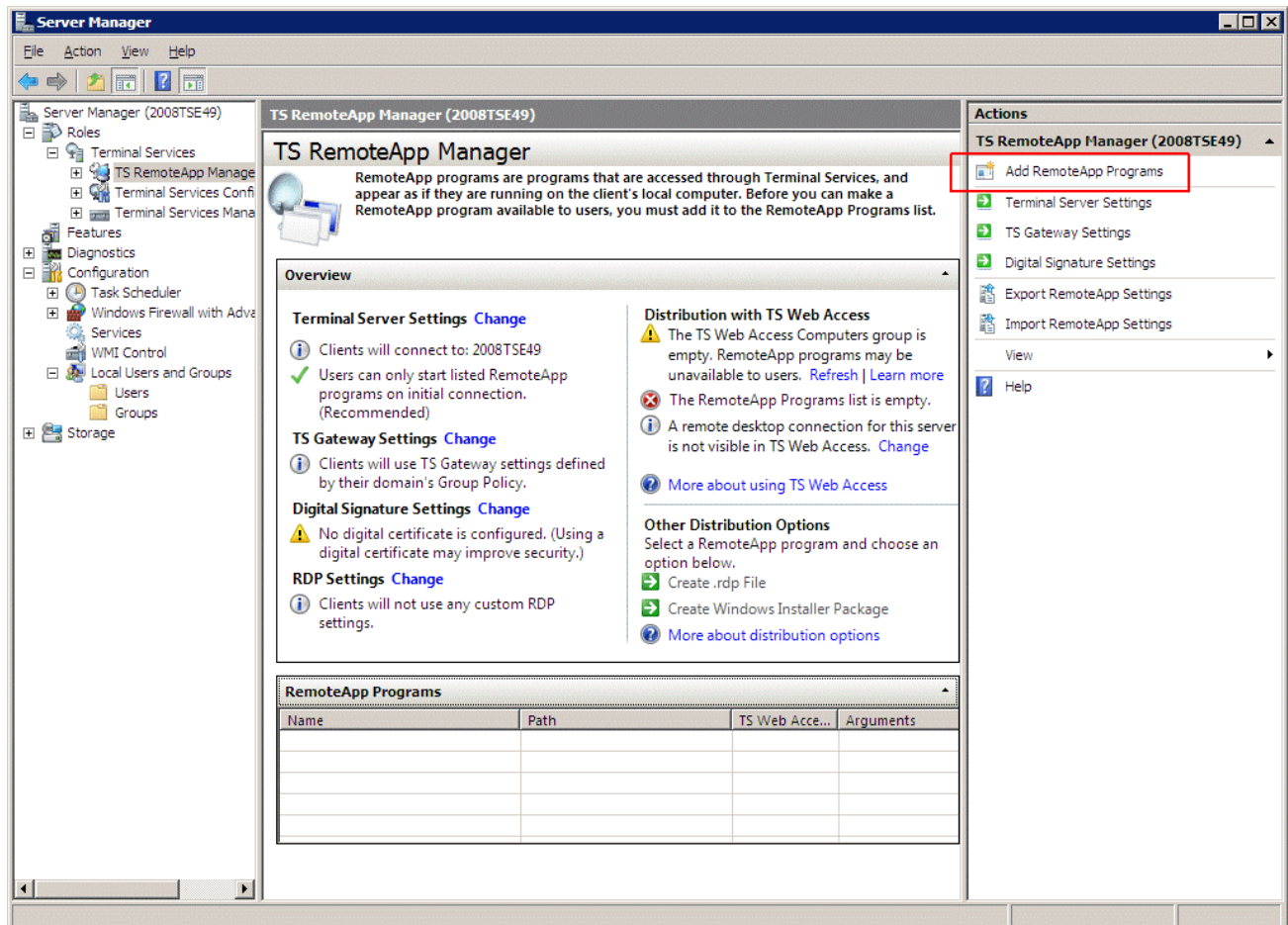
Select the **Allow users to start both listed and unlisted programs on initial connection** radio button in the **Access to unlisted programs** section.

This will allow any program to be run by an authorized user.

You can also select and define specific applications that can be run by configuring them in the **TS RemoteApp Manager**.

28.4.4.2 Allowing Application Access – Specific Applications

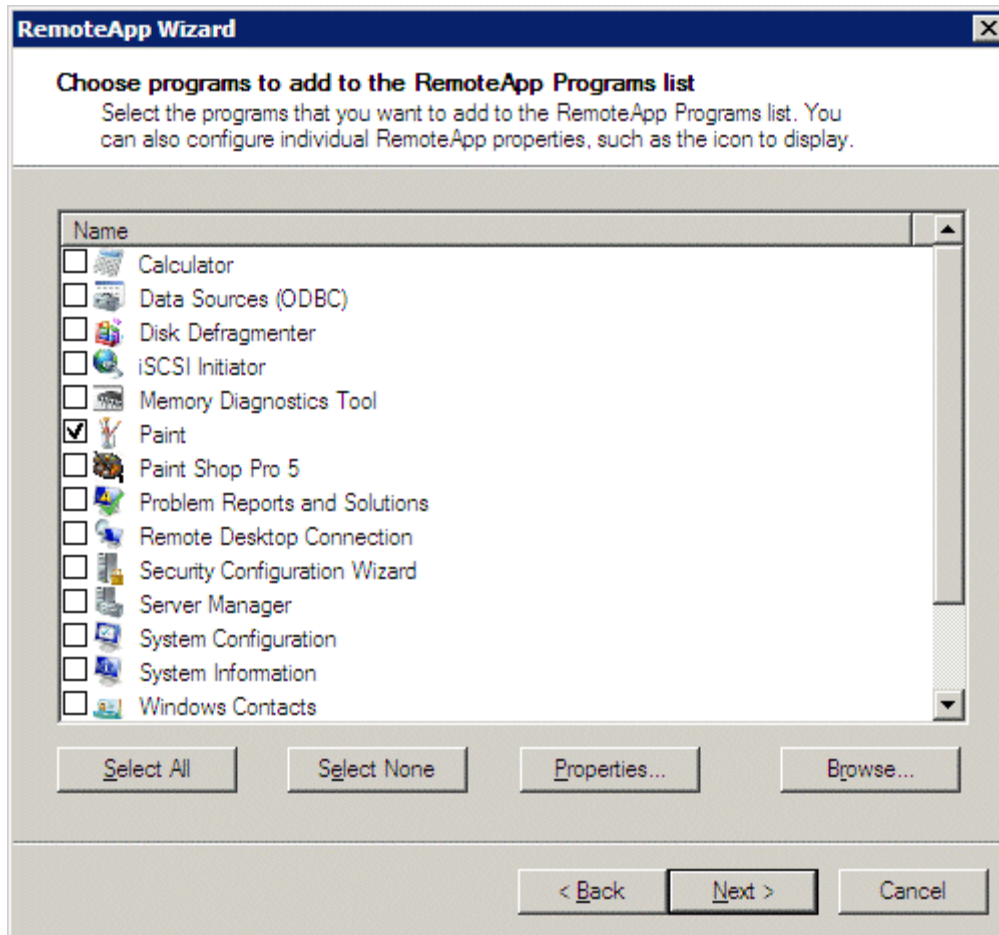
You can control application access on Windows 2008 Server by only allowing access to specific applications.



TS RemoteApp Manager

Highlight **TS RemoteApp Manager** under the **Terminal Services** branch of the **Server Manager** tree.

Select the **Add RemoteApp Programs** link in the **Actions** column on the right of the screen to launch the **RemoteApp Wizard**.



RemoteApp Wizard

The **RemoteApp Wizard** shows a list of applications installed on the Windows 2008 Server.

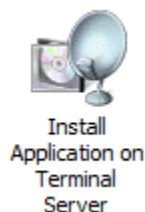
Select the checkbox for each application that you want available for deployment as a ThinManager Display Client.

Select **Next** to complete the wizard. A remote user can run any checked application.

28.4.5 Installing ThinManager

It is a common practice to install ThinManager on a terminal server but ThinManager is independent of terminal services and doesn't need to be installed on a terminal server.

Applications on terminal servers need to be installed in the **Install Mode**. Open the Control Panel and click on the **Install Application on Terminal Server** icon to start the installation wizard.



Install Application on Terminal Server Icon

Once the wizard begins navigate to the ThinManager setup.exe program and continue with the wizard. See Installation of ThinManager for details.

The Install Mode can also be entered by typing **change user /install** at a command prompt. You can then run the **setup.exe** to install ThinManager.

Type **change user /execute** when finished installing to leave the Install Mode.

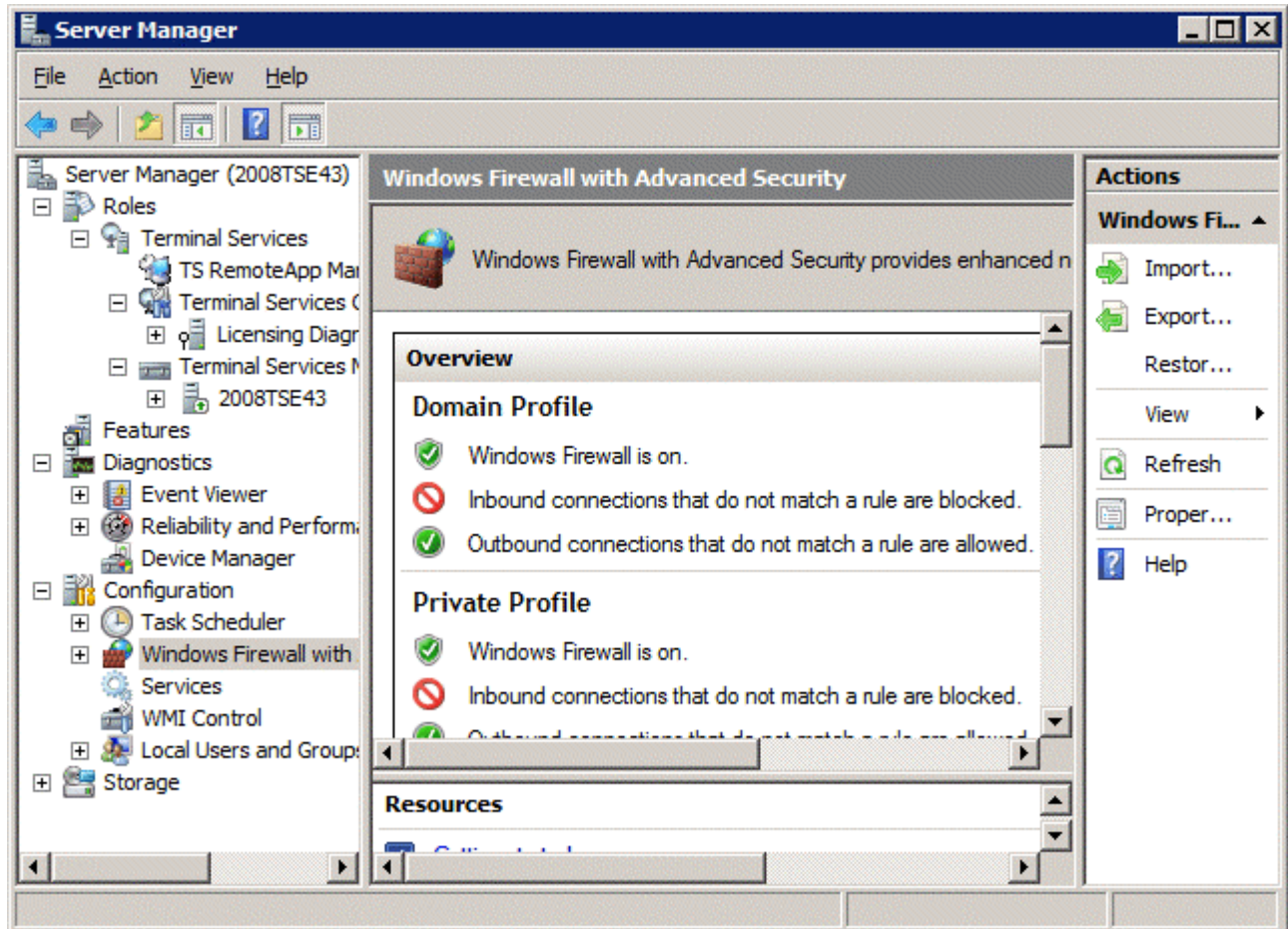
28.4.6 Allow Inbound Traffic to Firewall

ThinManager requires communications to the thin clients. This communication is blocked by default in the firewall and needs to be allowed.

You can either open the firewall to all traffic or open the specific ports needed.

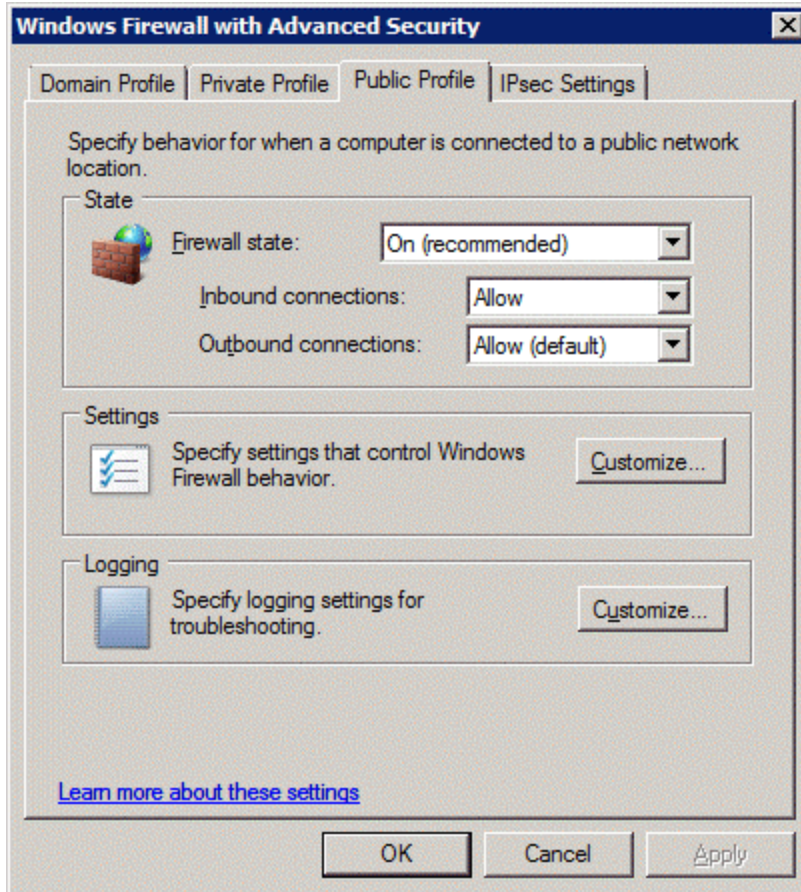
28.4.6.1 Allow All Inbound Traffic

You can configure the firewall by selecting **Windows Firewall with Advanced Security** in the **Server Manager** tree.



Windows Firewall with Advanced Security

Highlight **Windows Firewall with Advanced Security** in the **Server Manager** tree. Right click and select **Properties** to launch the **Properties** window.



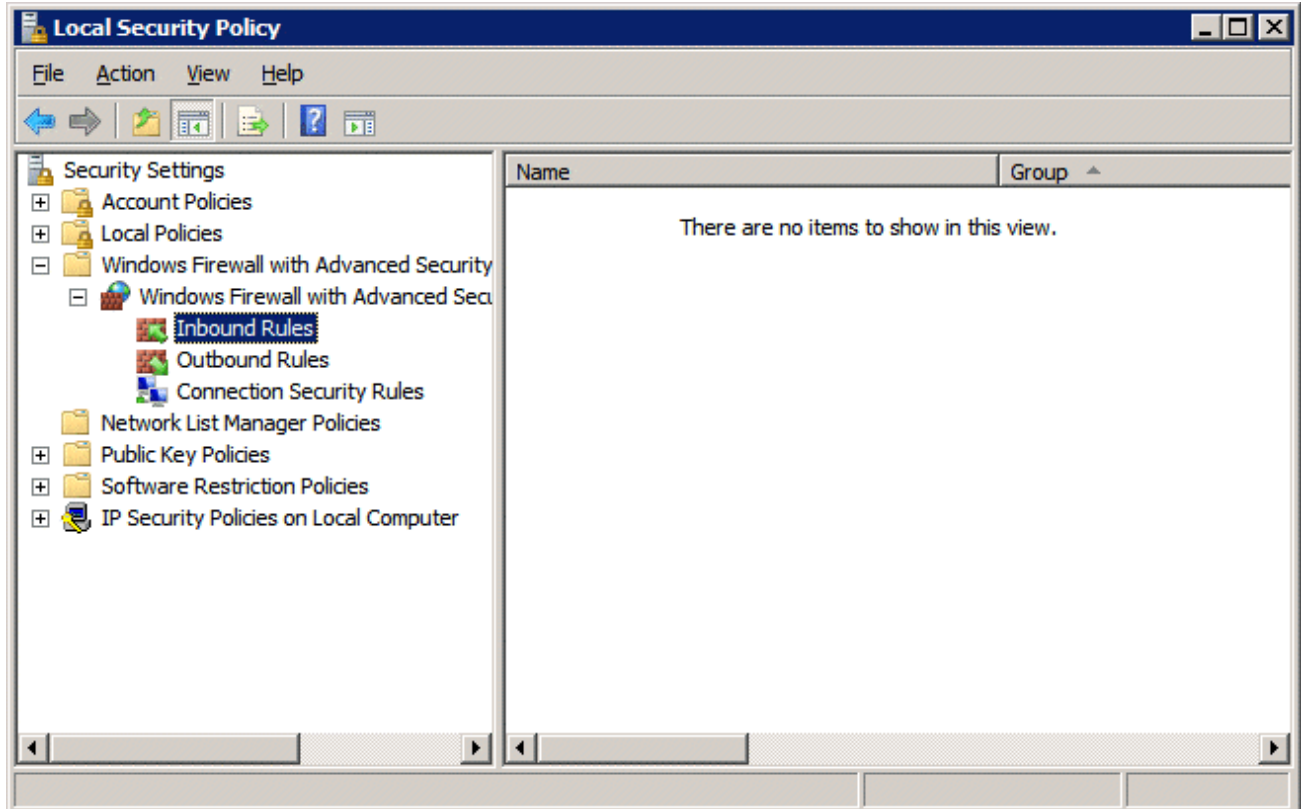
Windows Firewall with Advanced Security Properties

Select the profile tab that matches the type of network you are using, **Domain**, **Private**, or **Public** profile. Change the **Inbound connections** to **Allow** and select **OK** to accept the change. This will allow the thin clients to connect to ThinManager through the firewall.

28.4.6.2 Open Ports in Firewall

You can open specific ports in the Windows 2008 Server firewall instead of allowing all inbound connections if you prefer.

Open the **Local Security Policy** by selecting the **Start > Administrative Tools > Local Security Policy**.

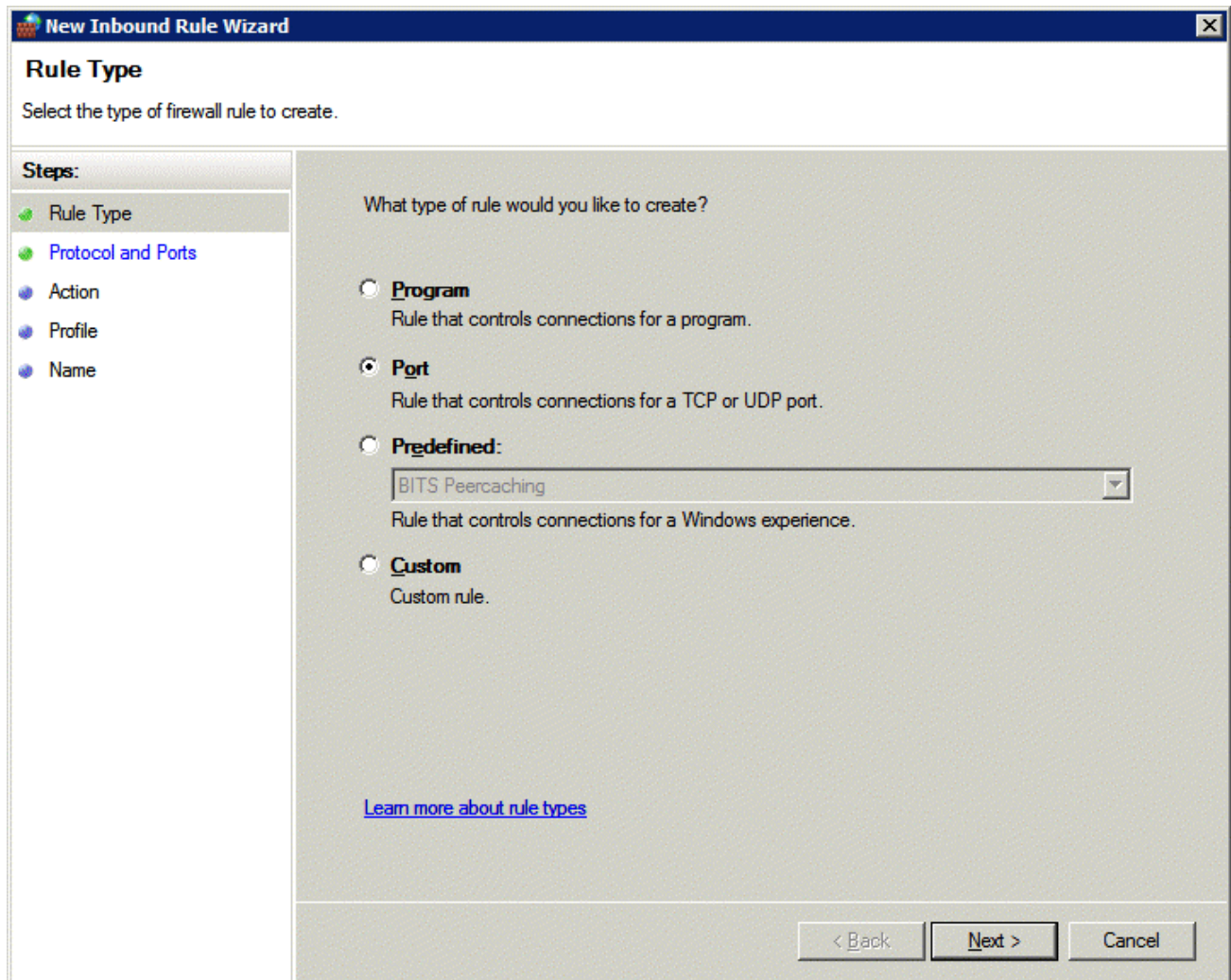


Local Security Policy

Expand the **Windows Firewall with Advanced Security** to show the **Inbound Rules**.

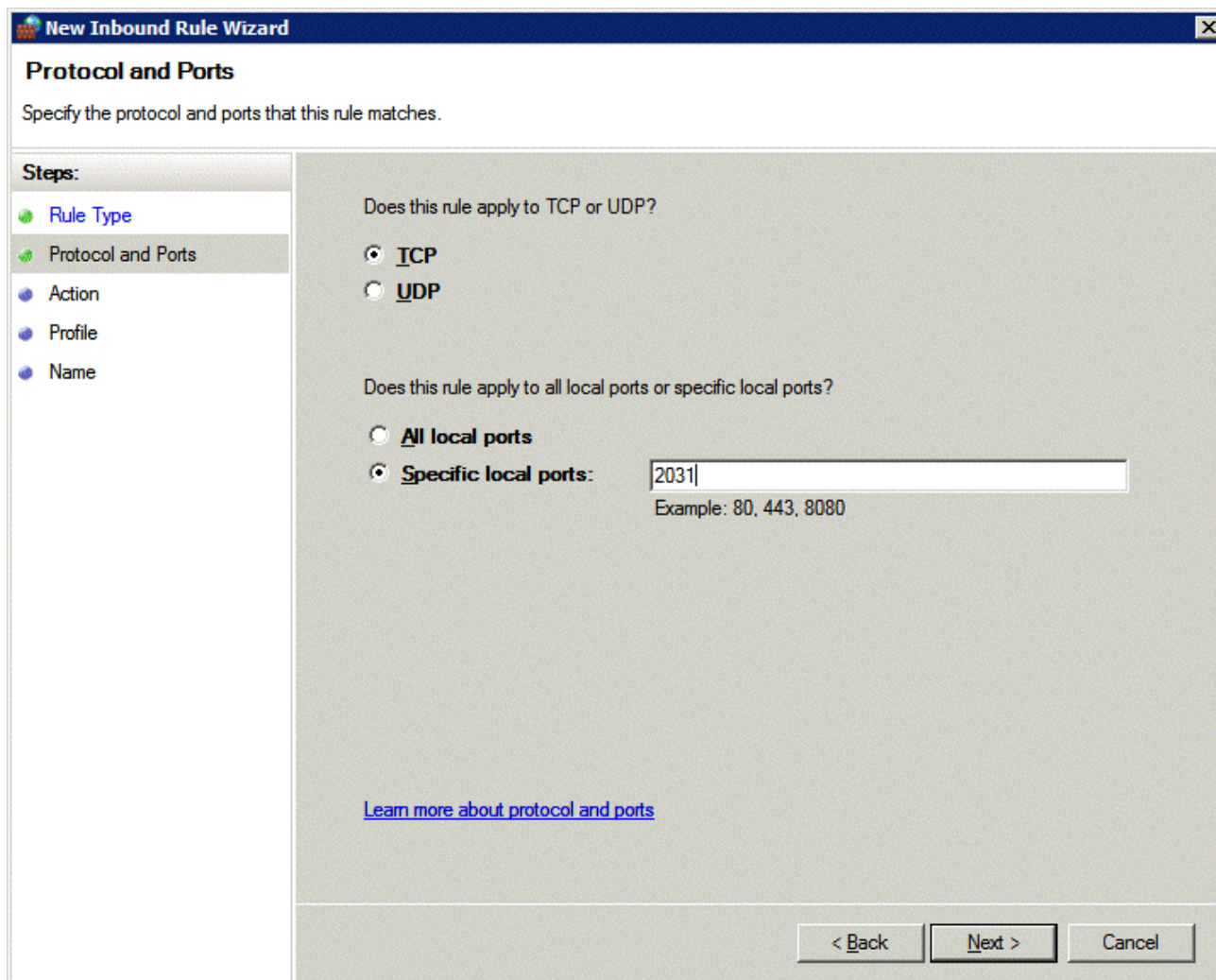
Right click on the **Inbound Rules** and select **New Rule**. A wizard will launch that allows configuration of a new port.

You need to run the wizard twice, once to allow **UDP 4900** and once to allow **TCP 2031**.



Rule Wizard – Rule Type

Select **Port** as the rule you are configuring and select **Next** to continue.

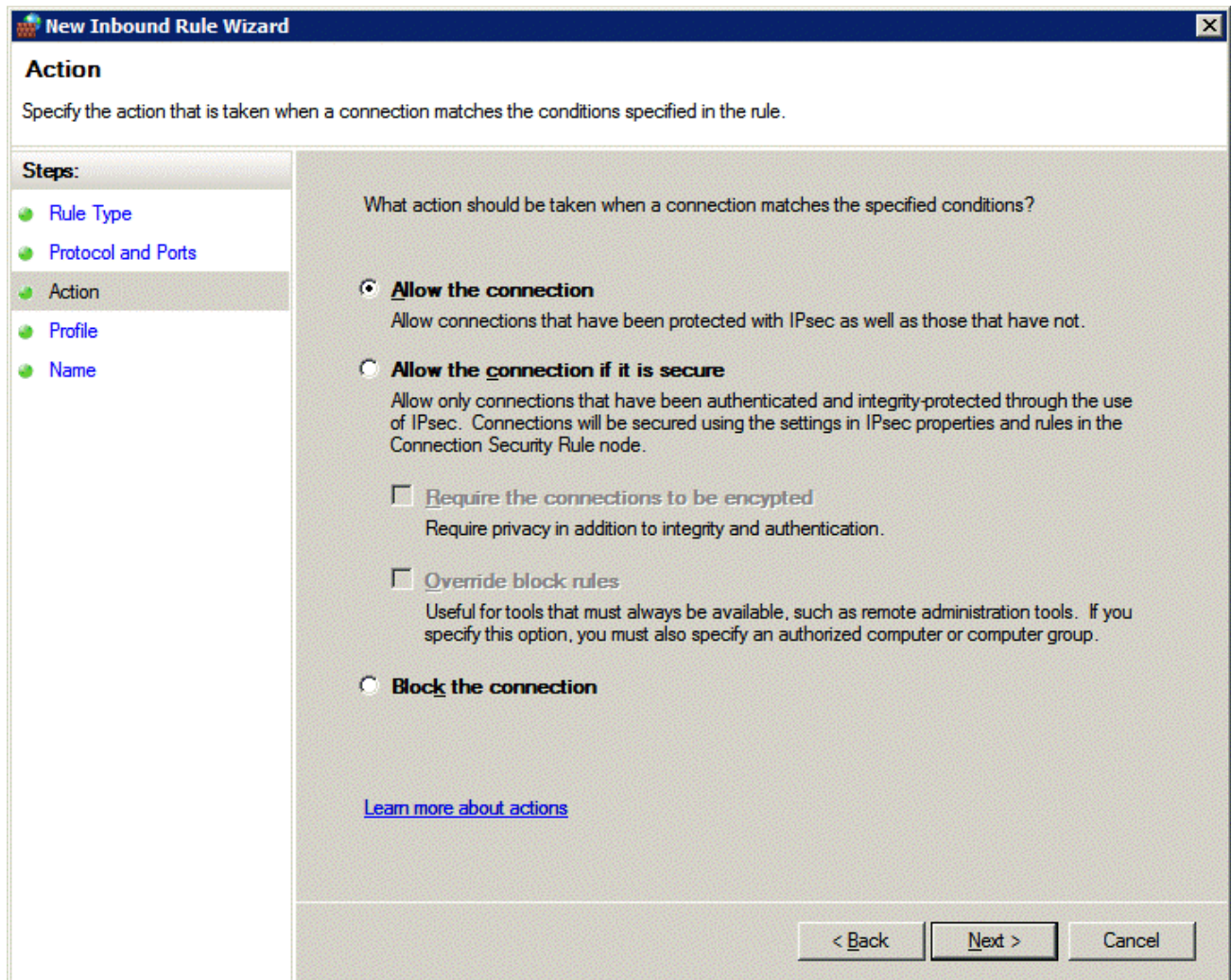


Rule Wizard – Protocols and Ports

You will need to select the protocol and port for each rule. You will need to run the wizard once for UDP 4900 and once for TCP 2031.

Select the protocol and enter the port as shown in *Rule Wizard – Protocols and Ports*.

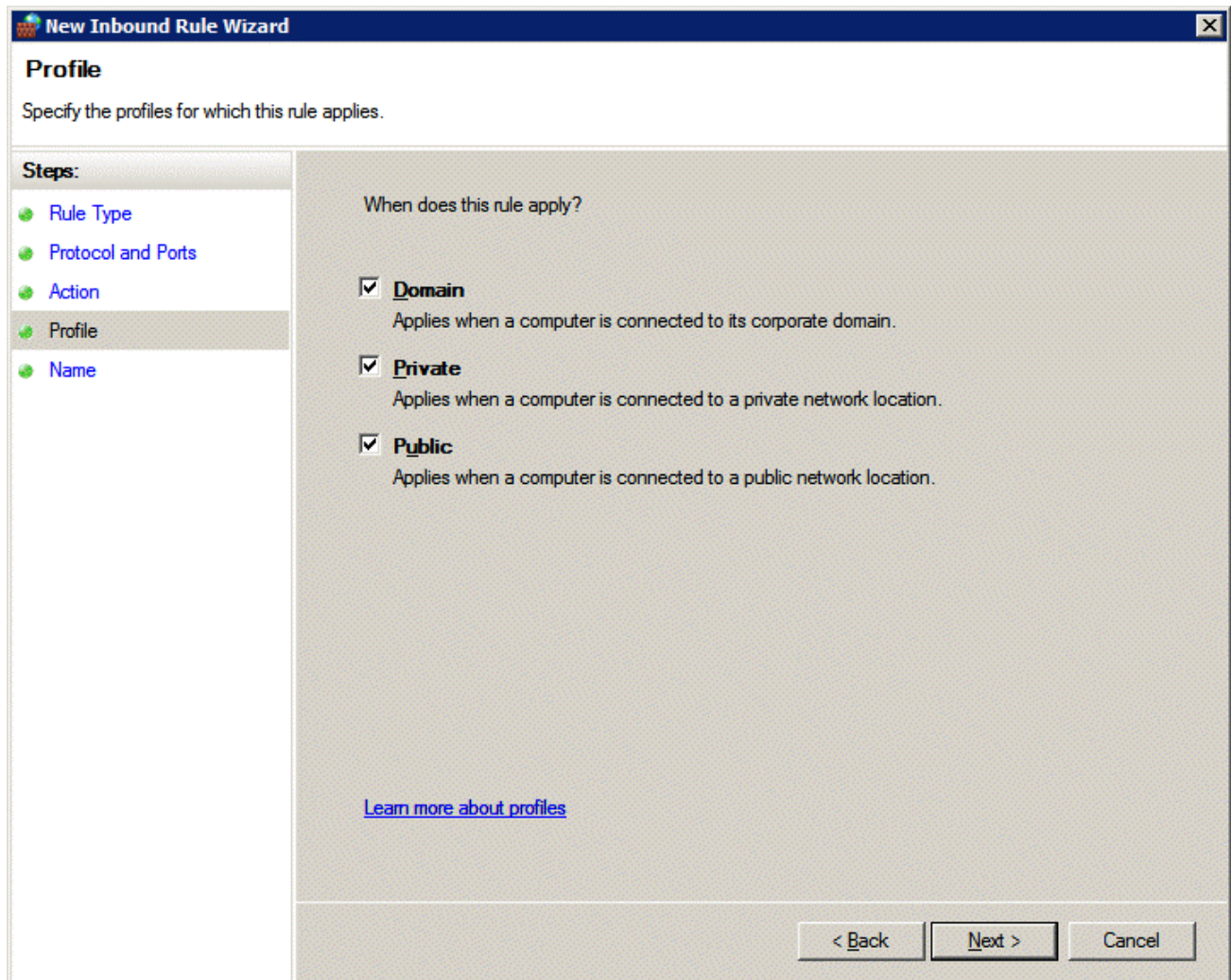
Select **Next** to continue.



Rule Wizard – Action

Select **Allow the Connection**.

Select **Next** to continue.



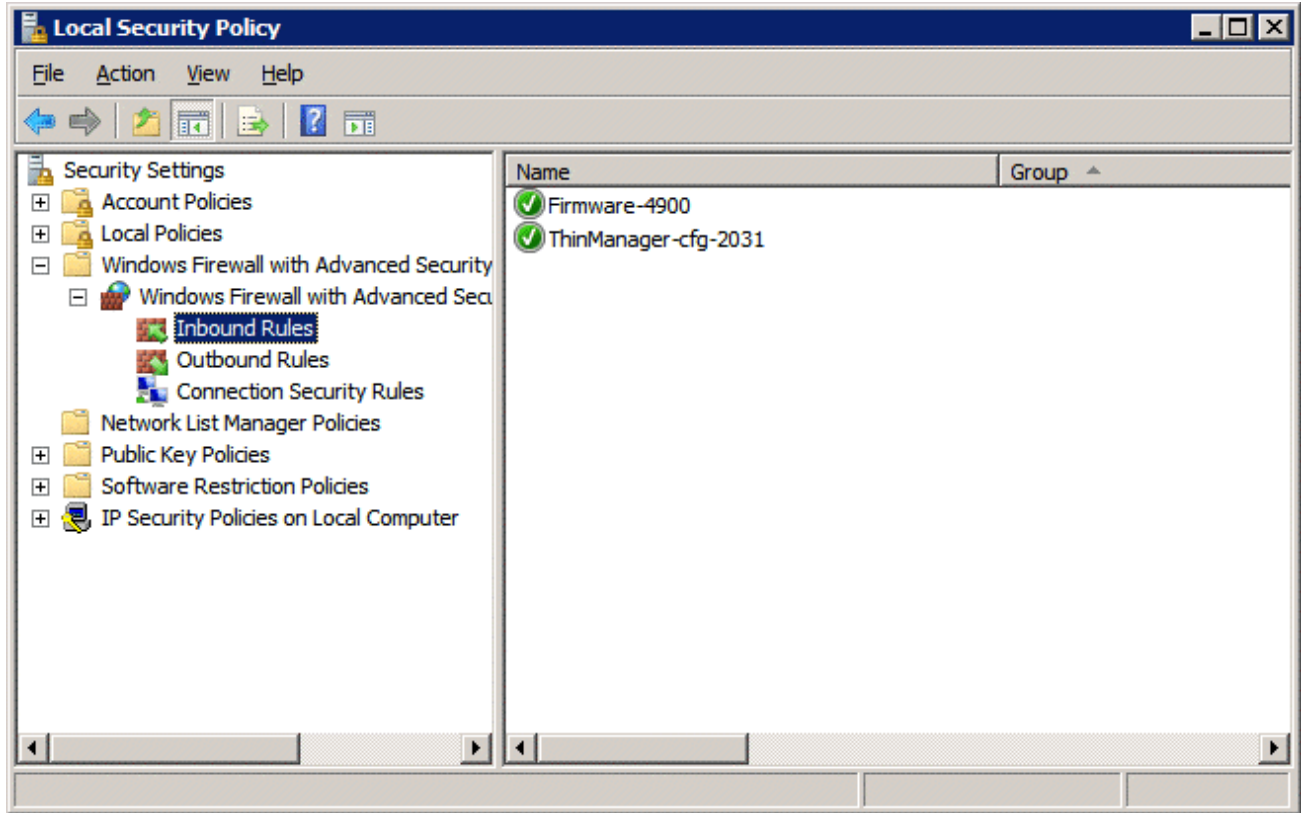
Rule Wizard – Profile

Select the network(s) that the rule will apply to.

Select **Next** to continue.

A **Name** page will allow you to name the rule and add a description for management and organizational purposes.

Select **Finish** to save and apply the rule.



Applied Rules

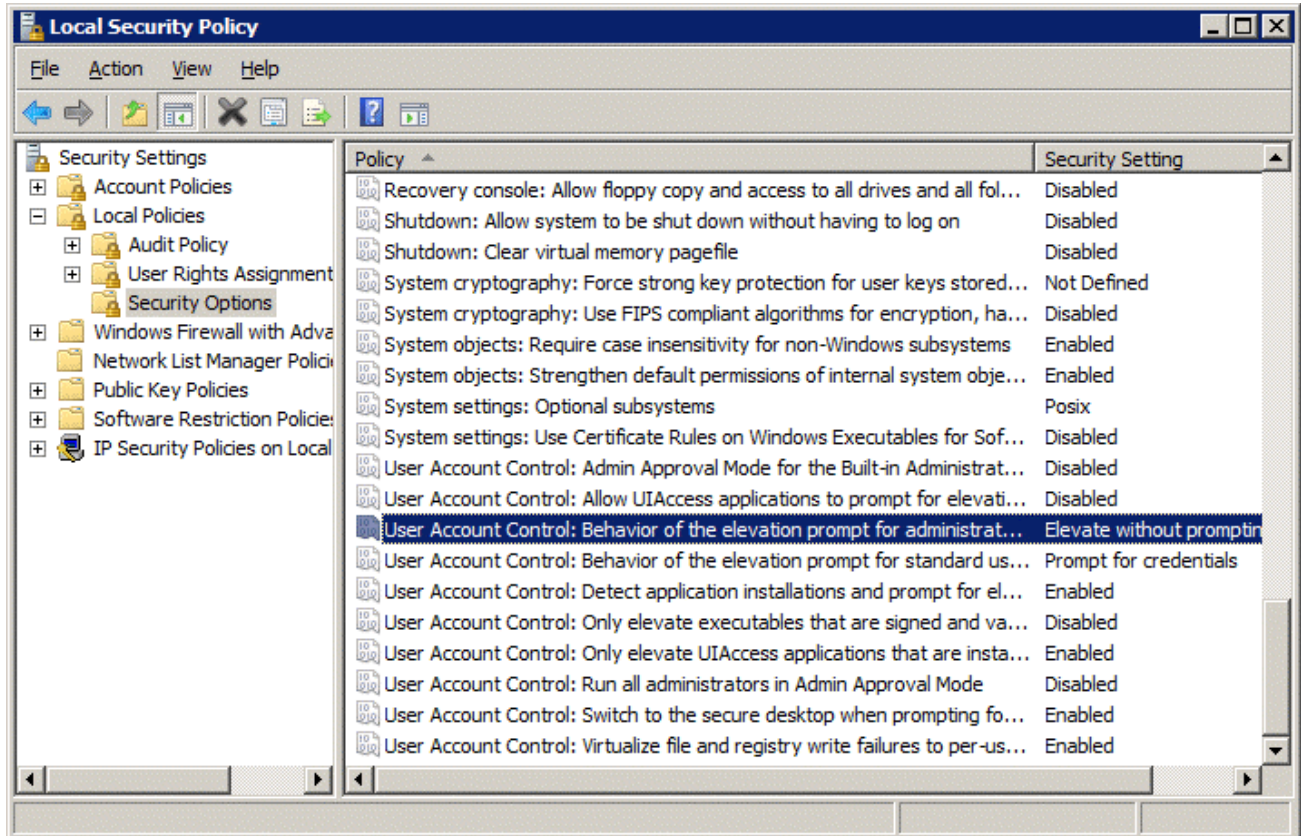
Repeat for **UDP 4900** or **TCP 2031**.

This will allow thin clients to use port 4900 to download the firmware and allow the thin client to use port 2031 to download the configuration but will keep other ports closed on the firewall.

28.4.7 Local Security Policy – User Access Controls

You may need to go to the Local Security Policy and change the **User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode** to *Elevate without prompting* for ThinManager to run properly.

Open the **Local Security Policy** by selecting the **Start > Administrative Tools > Local Security Policy**.



Local Security Policy – User Account Controls

Highlight **Local Policies > Security Options** in the tree.

Browse to **User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode** and change the setting to *Elevate without prompting*.

This may be needed to run ThinManager as a non-administrator.

28.5 Command Prompt

Terminal Services has several commands that aid in managing the terminal server. Some useful ones are:

Command	Action
change logon	Temporarily disables logons to a Terminal Server
change port	Changes COM port mappings for MS-DOS program compatibility
change user /install	Puts the server into "Install Mode"
change user /execute	Removes the server from "Install Mode"
Ipconfig	Displays the IP addresses of the network card
Logoff	Logs off a user from a session and deletes the session from the server
net send <i>username</i> " <i>message</i> "	Sends a message to a user. <i>username</i> is the NT/2000 user name that the person or terminal is logged in as. " <i>message</i> " is the text of the message. Quotation marks are needed for any messages containing a space.
query process	Displays information about processes running on a Terminal server
query session	Displays information about sessions on a Terminal server
query termserver	Displays a list of all Terminal servers on the network
query user	Displays information about user sessions on a Terminal server
reset session	Resets a session to known initial values
Shadow	Monitors another user's session
Tsdiscon	Disconnects a client from a terminal server session
Tsshutdn	Shuts down the terminal server in an orderly manner

See the Windows online help for additional commands and parameters.

Other useful commands include:

Command	Action
gpedit.msc	Launches the Group Policy Editor
tscc.msc	Launches the Terminal Services Configuration Console
tsadmin	Launches the Terminal Services Manager

28.6 Alternative Terminal Keystrokes

Certain keystrokes are not available in a terminal session. Microsoft has provided these alternatives.

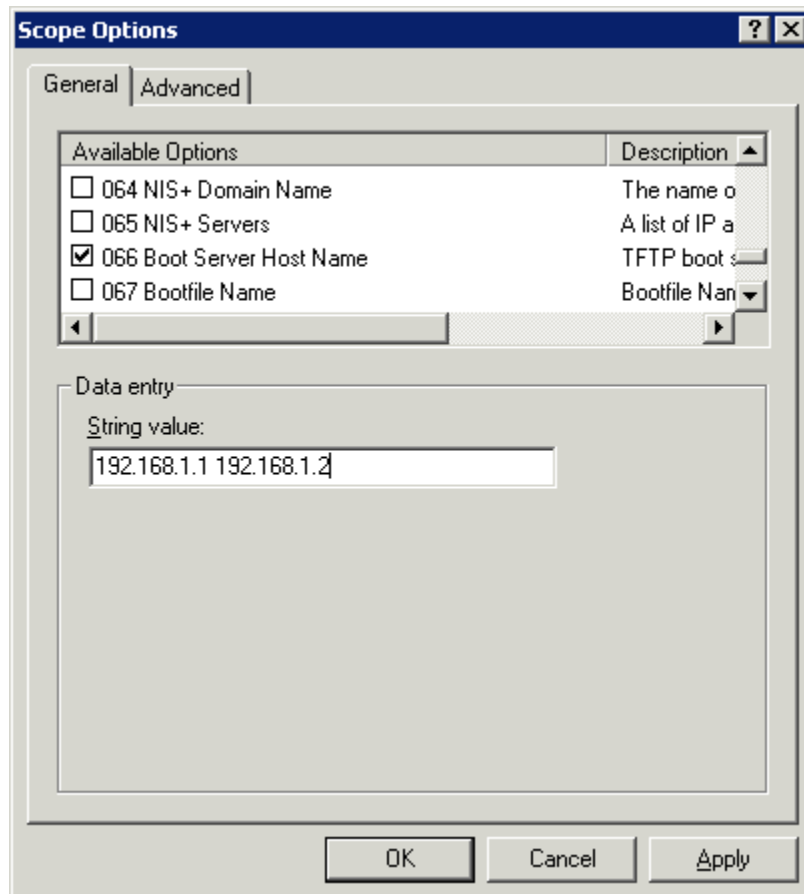
Keystroke	Function
ALT+PAGE UP	Switches between programs from left to right.
ALT+PAGE DOWN	Switches between programs from right to left.
ALT+INSERT	Cycles through the programs in the order they were started.
ALT+HOME	Displays the Start menu.
CTRL+ALT+BREAK	Switches the client between a window and full screen.
CTRL+ALT+END	Brings up the Windows 2000 Security dialog box.
ALT+DELETE	Displays the Windows menu.
CTRL+ALT+Minus (-) symbol on the numeric keypad	Places a snapshot of the active window, within the client, on the Terminal server clipboard (provides the same functionality as pressing PrintScrn on a local computer.)
CTRL+ALT+Plus (+) symbol on the numeric keypad	Places a snapshot of the entire client window area on the Terminal server clipboard (provides the same functionality as pressing ALT+PrintScrn on a local computer.)

28.7 DHCP Server Setup

Dynamic Host Configuration Protocol (DHCP) is a program that assigns IP addresses to devices on a network. DHCP server can be used to provide IP addresses to thin clients. It can also be configured to point the thin clients to the ThinManager Servers with **Option 66, Boot Server Host Name**.

28.7.1.1 Scope Options

The DHCP Server needs **Option 066** configured before it will provide the ThinManager Server IP address that the terminal needs to boot.



Boot Server Host Name

The **Boot Server Host Name, Option 066**, assigns a ThinManager server to the terminal.

Open the Scope Options dialog box by highlighting the **Scope Option** folder in the tree pane of the Computer Management Console under the **Services and Application > DHCP** folder and selecting **Action > Configure Options**.

Scroll through the list window and check the **Option 066** check box.

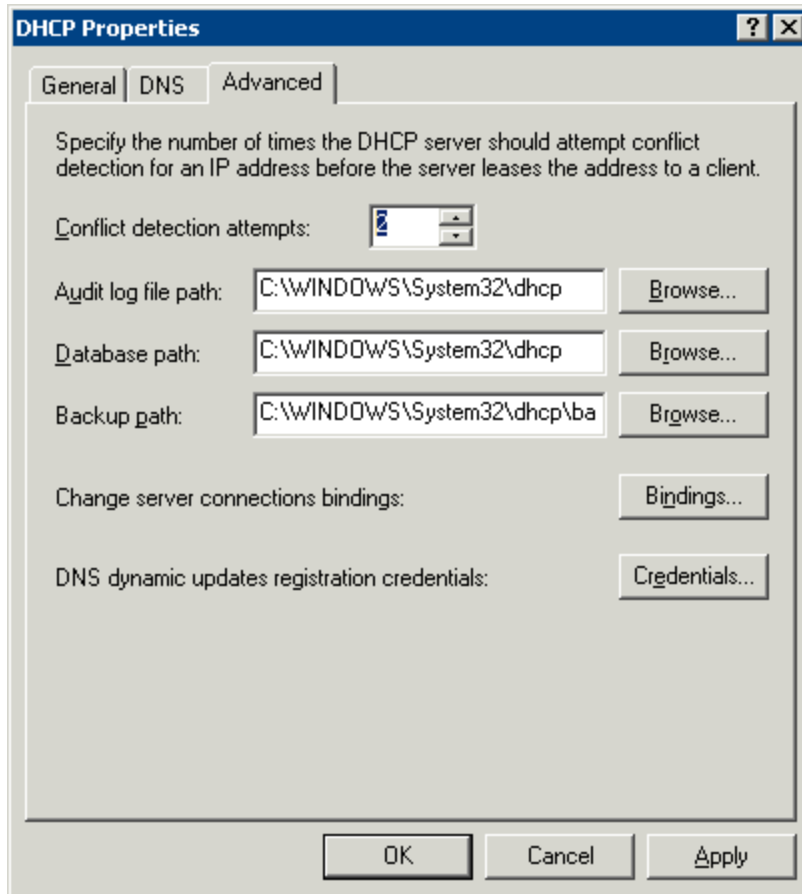
Enter the IP address of the desired ThinManager server in the **String Value** field.

The DHCP Server can issue the IP address for a Primary ThinManager Server and a Secondary ThinManager Server by listing the IP addresses of both, separated with a space.

28.7.1.2 DHCP Properties

The DHCP Server can be configured to check for duplicate IP addresses before issuing a new address. This is a good feature to use.

Highlight **DHCP** under **Services and Applications** in the **Computer Management** tree and select **Action > Properties**, or right-click on **DHCP** and select **Properties**. The **DHCP Properties** window will launch.



DHCP Properties – Advanced Tab

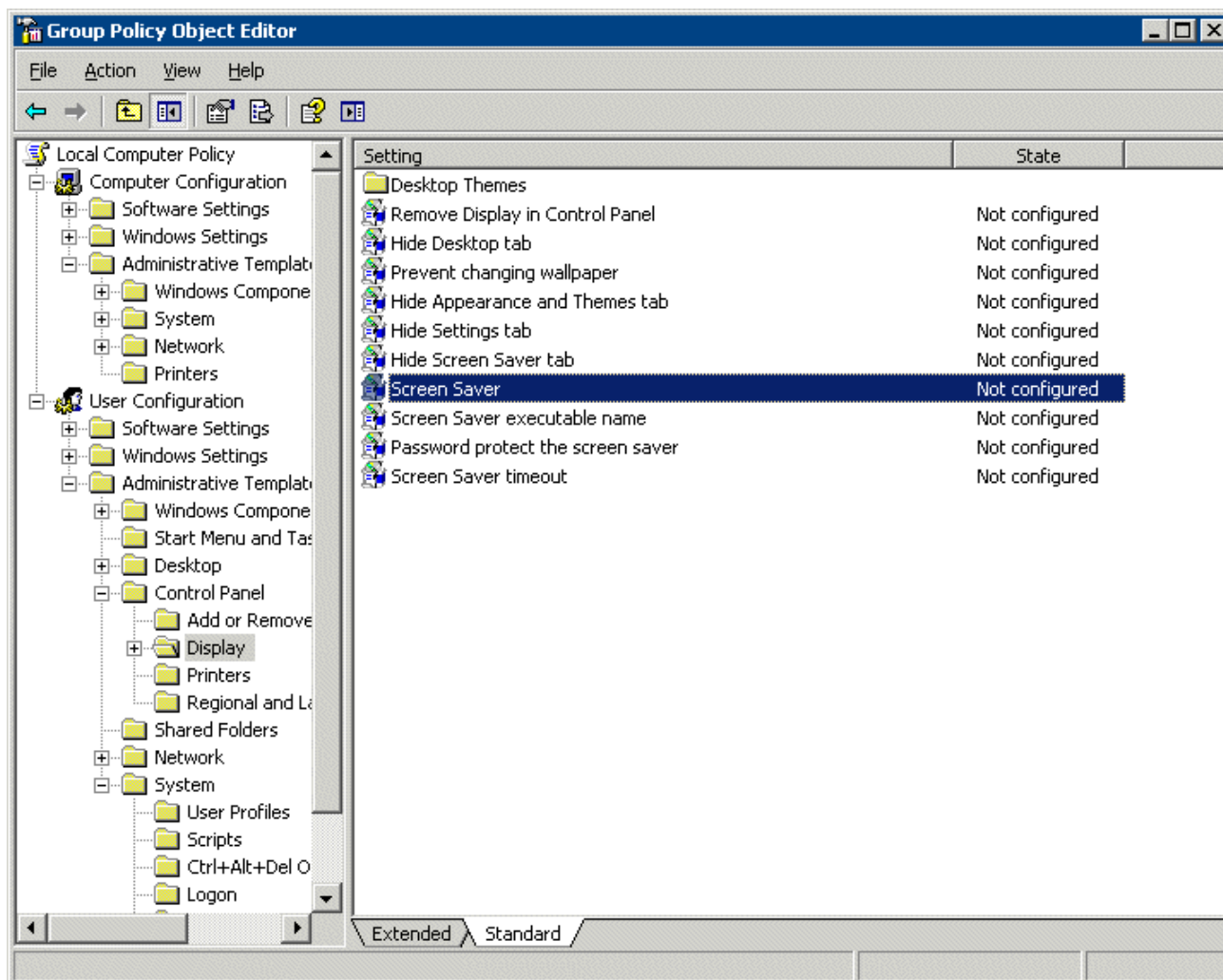
Select the **Advanced** tab. Replace the zero in the **Conflict detection attempts** field with an integer. This will prompt the DHCP Server to check for duplicate IP addresses before assigning an IP address.

Select **OK** when finished.

28.8 Group Policy

Windows has a number of features that can be allowed or prevented with a Group Policy. Group Policy is configured in the Group Policy Object Editor snap-in to the Microsoft Management Console.

Access the Group Policy Editor by typing **gpedit.msc** at a command prompt to launch the Microsoft Group Policy Editor.



Group Policy Settings

Expanding the tree will show Group Policy settings that can affect the terminal server experience. Please refer to Microsoft documentation for information on using these features.

28.9 Microsoft Licenses

28.9.1 Microsoft Client Access Licenses (CALs)

Thin Clients require a terminal server with **Windows 2003** or **2008 Server** with **Terminal Services** enabled as an operating system.

Each of these operating systems requires a standard Microsoft Client Access License (CAL) for each connection to the server. These are based on concurrent use; a 5-pack would allow more than five users to access server resources, but only five users at a time.

28.9.2 Microsoft Terminal Server Licenses

Terminals, such as thin clients and fat clients, require a license to access terminal services in addition to the standard Microsoft Client Access License (CAL). This is called the **Microsoft Terminal Services Client Access License (TS CAL)** in Windows 2003 and is called the **Remote Desktop Services Client Access License (RDS CAL)** in Windows 2008.

Windows 2003 terminal servers require Windows 2003 TS CALs and Windows 2008 terminal servers require Windows 2008 RDS CALs.

Note: This document will refer to all terminal services CALs as a TS/RDS CALs.

. This licensing is **per seat**; ten terminals would require ten TS/RDS CALs, even if only two were connected at a time.

These can be installed as Per Device or Per User.

- The TS/RDS Device CAL licenses one device to connect to any Microsoft Terminal Servers as any user. This functions like the previous Windows 2000 TS CAL.
- The TS/RDS User CAL licenses one user for any device to connect to any Microsoft Terminal Servers.

All TS/RDS CALs are installed on a **Terminal Services Licensing Server**. This acts as a repository for all TS/RDS CALs. The terminal servers request TS/RDS CAL authentication from the Terminal Services Licensing Server as terminals attach to terminal servers.

Note: The Terminal Server Licensing Server does not need to be a separate computer. It is a program that can be installed on any existing server.

The Terminal Services Licensing server is activated through the Internet by connecting to the Microsoft Certificate Authority and License Clearinghouse.

Windows 2003 and 2008 Servers with Terminal Services enabled will issue 90-day or 120-day temporary licenses while the Terminal Services Licensing server is being setup and activated. If this period has elapsed, the terminal will not connect to the terminal server and will display an "Error Number 50" message box.

Windows Server is not normally sold with TS CALs. These need to be purchased separately and installed on the Terminal Services License server.

28.9.3 Microsoft Terminal Server Licensing Activation

In Windows 2003 and 2008, all the TS CALs are installed on a single Terminal Server Licensing Server. This allows a single site for management and authentication of terminal server connections. A server becomes a Terminal Server Licensing Server by selection of the option during the installation phase or by selecting **Add/Remove Programs > Add/Remove Windows Components** from the Control Panel and selecting the Terminal Services Licensing.

The licensing of the Microsoft components of a Windows 2003 or 2008 terminal server is a two-step process; one must first authorize the Terminal Server Licensing Server, then one must activate the licenses. The license activation will be repeated for each license pack.

29 ThinManager Troubleshooting Guide

This is a list of common configuration errors and a guide for fixing them.

Note: When any problem arises, check Downloads at www.thinmanager.com for the latest firmware and any service packs. The problem you are experiencing may have already been fixed and released in a later version of firmware and using the latest version will cure the current problem. Try applying the latest firmware, and then reboot the thin client to see if the problem still exists. The current version (v.2.06.X) is backwards compatible to earlier versions of ThinManager (2.3.1, 2.4, 2.5, etc.)

29.1 Section 1 - From Power on to Terminal Server Login

1) Powering on the Thin Client

A) No Power

- Check power cable, power supply, and power outlets.

B) No Video

- Check video cable and monitor.

Warning: Never go into the thin client BIOS and change the *Integrated Peripherals>Display Status* from CRT to LCD. This changes the video output of the motherboard from the VGA port to a socket on the motherboard used for integrated LCD panels. Changing this from CRT will prevent any video from being displayed on a monitor.

2) Booting - ACP Network Boot Loader

A) Cannot get IP address using DHCP

- Is the thin client set to DHCP? They are set to DHCP by default, but can be changed.
- Is the Thin Client on the same side of the router as the DHCP server?
- Does the DHCP server have addresses to give out?

B) Cannot get IP address using Static IP menu

- Certain models (ThinAdapters and older DC-40-100s with black PS/2 ports) cannot use static IP.
- Static IP hasn't been set. Use the spacebar when the "**Select any Key to Configure IP Settings**" is displayed and set the client IP address

3) Cannot Load Firmware

A) Is Thin Client connecting to ThinManager Server?

i) Using DHCP

- Has Option 066 been set to the ThinManager Server IP Address?
- Is there a link light on the network port?
- Check router address, IP Addresses, and Subnet Mask

ii) Using Static IP

- Has the ThinManager Server IP Address been entered in the IP Configuration Menu?

B) Is the network blocked?

ACP Enabled thin clients that communicate through routers, gateways, or firewalls may need some ports opened to allow data flow through these devices. If the thin client communicates through one of these and it is having trouble, check to see if these ports are allowed.

The required ports are:

- UDP/4900 - TFTP - Used for the TFTP download of the firmware.
- TCP/2031 - Configuration - Used to pass the configuration from the ThinManager Server to the thin client.
- TCP/1494 - Citrix - Used by the ICA protocol (if using ICA instead of RDP).
- TCP/3389 - RDP - Used by the RDP protocol (if using RDP in v2.4.1 or later).
- TCP/5900 - Shadowing - Used to shadow terminals.
- TCP/1758 – Multicast – Used for firmware download unless multicast is turned off on the ThinManager Server Configuration Wizard.
- Ping and DHCP - These need configured as needed.

C) Loads firmware intermittently/slowly

- Check for IP conflicts
- Check cable connections
- Make sure ThinManager Server CPU usage is below 100%
- Check the IGMP settings on the routers. If the IGMP is blocked, the Multicast of firmware will be interrupted. Unselecting Multicast in the ThinManager Server Configuration wizard will allow firmware downloads if the IGMP is blocked.

4) Thin Client Loads Firmware but shows blue message screen

A) "Please Define on Server"

- Enter ThinManager and define the terminal.

B) "License Not Available"

- Check your license usage in ThinManager. You are out of an ACP-supplied License

C) "This Terminal Disabled"

- A ThinManager administrator has disabled this terminal. Re-enable it.

D) "Network Error - Check Network Connections"

- Check the network cable. Link light, and network.

E) Was Disabled, but did not go on when Re-enabled.

- Reboot.

F) Terminal Selection menu is shown, but keyboard does not work

- Check keyboard and reboot
- Use PS/2 splitter if the unit has only one PS/2 port
- Switch the mouse and the keyboard if plugged into a PS/2 splitter.

5) Graphical ACP Logo is shown, but boot process stops

A) Does not attempt to connect to the terminal server

- Check Terminal Configuration Wizard to make sure a terminal server is specified

B) Cannot Connect to Server xxx (0.0.0.0)

- The terminal server doesn't have an IP address configured in the Terminal Server Configuration Wizard.
- If using DNS, check the terminal server's registration.
- If you are using a Citrix Published Application, you may need to specify the ICA browser.

C) Cannot Connect to Server xxx (w.x.y.z)

- Check the event viewer. If it says "Could not issue client license", you need a Microsoft Terminal Server Client Access License (MS TS CAL) and/or a Microsoft Terminal Server Licensing server.
- Check the Subnet Mask in the ACP Boot Loader on the thin client. If it is set to 255.255.255.255 instead of 255.255.255.0, it will fail to connect to the terminal server. Reboot the thin client and use the spacebar when the **"Select any Key to Configure IP Settings"** is displayed. Change the subnet mask in the ACP Boot Loader menu.

D) Error 50 - Disconnected

- Check the event viewer. If it says "Could not issue client license", you need a MS TS Cal / MS TS Licensing server.

6) Attempts to connect to terminal server, but dies

- Some servers (Dell and its Dellwall.bmp, for example) load a complex bitmapped background that can interfere with loading. Find the offending wallpaper file on the console session and renamed it so that it doesn't load at login

7) Connects to connect to terminal server, but cannot login

- Is the user a valid user? Is the password correct?
- Does the user have permission to connect through Terminal Services (user properties in the User Manager)
- If logging in to a Windows 2003/2008 terminal server, is the user a member of the Administrators group or Remote Desktop Users group?
- Check the event viewer. If it says "Could not issue client license", you need a Microsoft TS Cal and or a Microsoft TS Licensing server.

8) Login to Terminal Server prompts for password even though the username and password are filled in ThinManager

- The password may be entered wrong in ThinManager.
- Windows 2000 Server is set to always prompt for password at login for RDP users. Select **Programs>Administrative Tools>Terminal Services Configuration** and double click on **RDP-tcp Properties** in the right-hand window. Uncheck the **Always Prompt for Password** checkbox on the **Login Settings** tab.

29.2 Section 2 - Thin Client is Booted, Connected, and Running a Session on the Terminal Server

9) Disconnects randomly

- Make sure each user is logging on with a unique user name. Windows 2003/2008 will only allow one session per name by default.
- Check the physical network connection.
- Check for a different computer (e.g. a laptop) with the same IP address.
- Slow down the Monitoring Interval on the Monitoring Connection page of the Terminal Configuration Wizard by increasing the timeout and retry values.

10) The session in Windows 2003 requires frequent logins

- Turn off the Windows screen saver. User accounts in Windows 2003 use a secure screen saver by default that requires this frequent login.

11) Mouse works but the application is unresponsive

- Application on terminal server is locked up - kill the application and let the thin client reconnect to terminal server and restart the application

12) Sound doesn't work

- Make sure that you are using a Windows 2003/2008 terminal server
- Make sure that Audio Mapping is allowed on the Client Settings of the RDP-tcp Properties in the Terminal Server Configuration Console.
- Make sure that you are using a thin client that has sound capability
- Add the Universal Sound Module to that thin client
- Connect a powered speaker to the "Line Out" plug. Line Out isn't amplified so it requires a powered speaker.
- Properly working thin clients will play sounds at boot.

13) The touch screen doesn't work

- Make sure you are using the right Touch Screen Module for the touch screen controller.
- Make sure that the serial cable is plugged into the correct serial port
- Make sure that the Touch Screen Module is using the correct baud rate.

14) The touch screen mouse doesn't match the touches.

- Calibrate the touch screen by highlighting the unit in the ThinManager tree and select **Tools > Calibrate Touch Screen**.

15) Changes to the configuration in ThinManager don't show up on the thin client.

- Reboot the thin client. Changes are only set to a thin client at bootup.

16) The configuration of the primary ThinManager Server and the secondary ThinManager Server are different.

- Synchronize the configurations by selecting **Manage>ThinManager Server List** and selecting **Auto-synchronize** in the ThinManager Server List Wizard.

17) The terminals in the tree on the primary ThinManager Server show green while the terminals on the secondary are all red.

- Add both ThinManager Servers to the ThinManager Server Monitor List in the Terminal Configuration Wizard (then reboot the terminals and synchronize the ThinManagers as in Number 15 and Number 16).

18) The client is showing the time of the terminal server in a different time zone and not the local time.

- Use the Time Zone Redirection Module on the client with the local time zone selected.
- Make sure that the security policy of the terminal server or domain allows it. Look at **Computer Configuration > Administrative Templates> Windows Components > Terminal Services >Client/Server data redirection >Allow Time Zone Redirection** and set it to **Enabled**

19) When "Terminal Servers" is highlighted in the ThinManager tree, the Details pane doesn't show *OK* for the connections.

A) No login information supplied

- Run the Terminal Server List Wizard and add an administrative user name and password on the Terminal Server Name page of the Terminal Server List Wizard.

B) User specified does not have permission to connect

- This indicates that the Terminal Server had an invalid username and password added on the Terminal Server Name page of the Terminal Server List Wizard. Run the Terminal Server List Wizard and change to an administrative user name and password on the Terminal Server Name page of the Terminal Server List Wizard.
- Use the domain in the Domain field on the Terminal Server Name page of the Terminal Server List Wizard.
- If not in a domain, try using the terminal server name in the Domain field on the Terminal Server Name page of the Terminal Server List Wizard.

C) WTSAPI 32.dll connection failed

- This occurs when the terminal server is off or unreachable. Try pinging the terminal server.

20) The Users, Sessions, and Processes tabs don't show data for a terminal server

A) No login information supplied

- Run the Terminal Server List Wizard and add an administrative user name and password on the Terminal Server Name page of the Terminal Server List Wizard.

B) User specified does not have permission to connect

- This indicates that the Terminal Server had an invalid username and password added on the Terminal Server Name page of the Terminal Server List Wizard. Run the Terminal Server List Wizard and change to an administrative user name and password on the Terminal Server Name page of the Terminal Server List Wizard.
- Use the domain in the Domain field on the Terminal Server Name page of the Terminal Server List Wizard.
- If not in a domain, try using the terminal server name in the Domain field on the Terminal Server Name page of the Terminal Server List Wizard.

21) The Users and Sessions tabs show data for a terminal server, but the Processes tabs shows no data.

- Shorten the name of the terminal.
Microsoft truncates the terminal names to 15 characters. The Process information won't display for terminals with a name longer than 15 characters.

22) When shadowing a client the mouse doesn't work in the shadowed session.

- The user must be logged into the shadowing computer as an administrator or as a ThinManager Administrator to use interactive shadowing.
- The interactive shadow must be checked in **RemoteView** on the ThinManager menu.
- A terminal using the Share Keyboard and Mouse module will only be interactive if the mouse is active in that session.

30 Glossary of Terms

Access Groups

TermSecure Access Groups are used to limit access to a terminal or Display Client unless the user is also a member of the access group.

ACP

Automation Control Products.

ACP Enabled Thin Client

A terminal that uses ACP technology. Also called ThinManager Ready

ACP Enabled Thin Client Network

A ThinManager server, a terminal server, and ACP enabled thin clients connected and configured on the same network.

ActiveX

A Microsoft technology that allows the sharing of data between different applications.

Application Group

A managed collection of terminal servers that a terminal can connect to. Used in ThinManager 3.2 and 3.3. Replaced by Display Client in ThinManager 4.0.

AppLink

A function that applies the Initial Program to a Display Client.

BIOS

Basic Input/Output System. A program that the computer uses to control the keyboard, mouse, monitor, serial ports, and other devices before the hard drive is accessed.

CAL

Client Access License. A Microsoft license that is required to print or access files on a Windows Server. See also TS CAL.

Client

A machine that requests data, resources, or services from a server. A software program that shares data with the server.

Client/Server

A relationship between two computers or programs where one, the client, requests data, resources, or services from the other, the server.

COM Port

A serial communication port on a PC.

Console

The administrative session that is run on the server.

DHCP

Dynamic Host Configuration Protocol. A protocol for assigning IP addresses and other boot information to computers on a network.

Disk-On-Chip

Storage device that contains firmware that allows an ACP Enabled thin client to boot locally. This may be a disk-on-chip or compact flash, depending on the make and model of the terminal.

Display Client

The graphic rendering of the output from a Display Server. This could be a traditional Terminal Server session, IP Camera display, or a Terminal-to-Terminal Shadow session. Added in ThinManager 4.0.

Display Servers

Devices that provide content that can be displayed on the client. Examples include the traditional terminal server and IP cameras. Added in ThinManager 4.0.

DNS

Domain Name Service. An Internet service that converts domain names to IP addresses.

Domain

A group of computers that are administered as a unit, with common rules, policies, and procedures.

Domain Name Service

An Internet service that converts domain names to IP addresses. Often abbreviated to DNS.

Enforce Primary

A ThinManager feature that allows terminals that failed over to a backup terminal server to return to their primary terminal server once the primary terminal server has returned online.

Failover

The ability of a terminal to switch to a backup server when the primary server fails.

Fat Client

A computer with a hard drive and operating system that is acting as a client.

Firmware

The software that runs the ThinManager Ready thin client.

Gateway

A device that connects two computer networks that use different protocols.

GUI

Graphical User Interface. The portion of an operating system or program that provides icons, symbols, or pictures for options and choices.

HMI

Human-Machine Interface. A software program that allows an operator to control a manufacturing process. Also known as MMI, Man-Machine Interface.

Hot key

A keyboard combination that triggers a function.

ICA

Independent Computing Architecture. A remote presentation services protocol from Citrix that allows thin clients to access the terminal server.

ICA Connection

The communication channel between an ICA server and an ICA terminal.

Initial Program

A function that loads a specific application instead of the desktop in a terminal server session.

Instant Failover

A ThinManager function that allows a ThinManager Ready thin client to start sessions on two terminal servers, with only the session of the primary terminal server visible. If the primary terminal server fails, the secondary session is immediately displayed.

IP

Internet Protocol. A widely used protocol for network communications.

IP Address

Four sets of numbers from 0 to 255 that represent an Internet address.

IP Camera

A video camera that sends its graphic over a standard Ethernet network.

KeyBlock

A module that prevents certain keyboard combinations like CTL+ALT+DEL from functioning.

KVM

Keyboard/Video/Mouse. A device that allows several PCs to be displayed on a single monitor and controlled by a single keyboard and mouse.

Load Balancing

A dynamic ability to connect a thin client to a group of servers and login to the server with the lightest load. Used by SmartSession.

Load Sharing

A static ability to connect a thin client to one of a group of servers in a predetermined fashion to share the load among the servers available.

MAC

Media Access Control Layer. A protocol that controls access and communication on a network card.

Module

Modules are software components that can be added to the firmware to increase the functionality of the terminal. Modules include touch screen drivers, sound drivers, and special device drivers.

MultiCast

Multicast provides the ability for an unlimited number of terminals to boot simultaneously from the same data stream.

MultiMonitor

The ability for some ThinManager Ready thin clients to use two or more monitors attached to the thin client.

MultiSession

A function that allows a terminal to connect to several Display Clients at one time and to switch between sessions.

OEM

Original Equipment Manufacturer. A company that manufactures computers.

PLC

Programmable Logic Controller. A device, often using ladder logic programs, that controls processes and devices in an industrial plant.

POST

Power On Self Test. A diagnostic test that a computer runs when it is first turned on to make sure that the hardware is functioning.

Primary Up Delay

An interval of time given to a server to allow it to finish loading before terminals will connect to it.

Primary Terminal Server

The first terminal server that a terminal will log into.

Published Application

An application in a server farm that is shared equally among the servers.

PXE

Preboot Execution Environment, sometimes pronounced "pixie," is an environment which allows a computer to boot over a network.

Queuing

Queuing extends the functionality of Smart Session by preventing terminals from connecting to Terminal Servers that have exceeded their Smart Session CPU load limit by letting the terminals connect in an orderly fashion.

RAM

Random Access Memory. The computer's primary memory space.

Redundancy

The use of duplicate equipment so that if one unit fails, another one takes its place. ACP uses Redundancy for duplicate ThinManager Servers and uses Failover for duplicate terminal servers.

RDP

Remote Desktop Protocol. The client/server communication protocol used between Windows servers and Windows clients.

Router

A device that manages data transmission between two networks.

SCADA

Systems Control And Data Acquisition. A software program that gathers and displays data, and allows for operator input, for control of a manufacturing process.

Secondary Server

Backup terminal servers that a terminal may log into.

Server

A device, computer, or application that provides applications, files, or data for use by other computers

Server Farm

A group of connected servers that share responsibilities and are usually configured to allow

processing to continue if one or more server crashes.

Server Ranking

A number that represents the available resources on a terminal server using SmartSession. Lower numbers indicate a lighter load.

Shadow

The ability to remotely view the video of a terminal or PC.

Share Keyboard and Mouse

A module that allows several thin client to share a keyboard and mouse.

SmartSession

A function that allows a Display Client to be load balanced so that a ThinManager Ready terminal will connect to the terminal server in the Application Group that has the lightest load.

Subnet

A group of TCP/IP addresses that communicate without going through a router and can be reached by broadcasts.

TCP/IP

Transmission Control Protocol/Internet Protocol. A layered application that allows shared applications and data on PCs.

Terminal

A client device that relies on a server for operations. ThinManager Ready thin clients are terminals.

Terminal Server

A server with a multi-user operating system that processes data for terminals.

Terminal Server Groups

A managed collection of terminal servers that a terminal can connect to. Used in ThinManager 2.5 until 3.1. Replaced by Display Client in ThinManager 4.0.

TermSecure

A function that allows user profiles to be created and configured with their own Application Groups and Access Groups. When a TermSecure User logs in to a terminal using TermSecure, they will be allowed access to their own Application Groups and any of the terminal sessions that they are a member.

Thin Client

A terminal without a hard disk that is used to access a server.

ThinManager

Thin client configuration and management software from ACP.

ThinManager Ready

An ACP Enabled thin client.

ThinManager Server

A computer running both the ThinServer service and the ThinManager interface.

Since ThinManager will run on Windows workstations, a ThinManager "Server" can be a workstation.

ThinServer

The Windows service that is the engine for ThinManager.

Trialware

A free demo version of ThinManager that can be downloaded from www.thinmanager.com. It can run for 30 days without a license.

TS CAL

Terminal Server Client Access License. A Microsoft license that is required for each client accessing a terminal server.

UniCast

Unicast allows a single terminal to boot from a data stream.

USB

Universal Serial Bus. A data port that allows peripherals to connect to a PC.

VCenter Server

VCenter is a virtual machine management tool from VMWare. It allows IT administrators to control and manage multiple ESX servers and their virtual machines in a single console.

Virtual Machine

An isolated and independent install of an operating system within a host operating system. It allows one computer to run several virtual computers on one physical device.

Virtualization

The use of virtual machines.

WinTMC

A terminal server client application that can be installed on a PC. It can be controlled, configured, and managed through ThinManager.

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