Automation Control Products

ThinManager 3.2 Help Manual

By the ACP Technical Staff

ThinManager 3.2 Rev 2

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1. Introduction

1.1. Documentation Contents

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- The Menu system.
- Adding thin client hardware.
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- Shadowing.
- ThinManager Security.
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- A Troubleshooting Guide to aid in deployment.

1.2. ACP ThinManager 3.2

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 ACP Enabled, ThinManager Ready 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. **ThinManager Ready 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.

1.3. What's New in ThinManager 3.2

Renamed – Application Groups

ThinManager 3.2 renames Terminal Server Groups to Application Groups to better define its role. Application Groups can be either the traditional Terminal Services group or a new Shadowing group.

See Application Groups for details.

New – Terminal-to-Terminal Shadowing

ThinManager 3.2 allows terminal-to-terminal shadowing through the use of the new Shadowing Application Group.

See Terminal Shadowing Application Groups for details.

New - SessionTiling

ThinManager 3.2 allows the tiling of MultiSession groups to show all sessions at once.

See Group Selection with SessionTiling for details.

New – TermSecure Support for WinTMC

ThinManager 3.2 includes support for TermSecure in the new v2.0 WinTMC client.

New – Enhanced AppLink Folder Path

ThinManager 3.2 includes a field for a working directory for AppLink.

See AppLink for details.

New – Connect-to-Console

ThinManager 3.2 allows a connection to the console session a terminal server that is displayed for the user via ThinManager instead of starting a new session on the Terminal Server.

See Connect Options for details.

New – Background Synchronization Check

ThinManager 3.2 includes a background synchronization check that shows when the last synchronization succeeded.

New – Configurable Firmware Packet Size

ThinManager 3.2 allows the firmware packet size to be adjusted as needed.

See MultiCast Configuration for details.

New – Configurable Shadow Port

ThinManager 3.2 allows the selection of the port to use for shadowing.

See Shadow Configuration for details.

New – Full Screen Shadow

ThinManager 3.2 includes the ability to expand a shadowed session to full-screen size.

See Connect Options for details.

New - Override

ThinManager 3.2 includes an Override button to allow an Application Group to use a different login account than the terminal.

See Application Group Override for details.

Enhanced – Auto-Synchronization

ThinManager 3.2 provides a wizard to make auto-synchronization easy.

See Automatic Synchronization for details.

Enhanced – Monitor Status Lights

ThinManager 3.2 adds new colors to the terminal monitor lights to include purple when terminals are downloading firmware and yellow when the terminals is waiting for a monitor connection.

See Terminal Icons for details.

Enhanced – Find Function

ThinManager 3.2 increases the Find function on the menu bar to include a search for names, IP addresses, Terminal ID/MAC addresses, and models.

See Find for details.

Changed – MultiSession Licensing

ThinManager 3.2 changes the MultiSession license from server-based to terminal-based licensing.

See ThinManager Licensing for details.

1.4. Twenty Things that Sound Alike, but Aren't

Terminals

Terminal: The individual client device, like a ThinManager Ready thin client, that relies on a server for operations.

Terminal Group: A group of Terminals that can be managed together or share a common configuration (was just "Group" in ThinManager 2.x).

Terminal Server: The Windows server that is configured to allow multiple logins.

Terminal Server Group: A collection of Windows Terminal Servers that ThinManager can use interchangeably for logins and applications. This is now called an Application Group.

Terminal Session: The Windows session that the terminal starts when it connects to a Windows Terminal Server. This is where the desktop and applications run.

Servers

Terminal Server: The Windows server that is configured to allow multiple logins.

ThinManager Server: A computer with running ThinManager and ThinServer that communicates and controls ThinManager Ready thin clients.

ThinServer: The engine component of ThinManager that does the work.

ThinManager: The graphic user interface of ThinManager that allows the data from ThinServer to be displayed and used.

Users

User: An account created in Windows that allows a login to a Windows computer.

Windows User: A more accurate name for Users.

Windows User Group: A more accurate name for User Group:

ThinManager User: A Windows User that has been added to a ThinManager Security Group to regulate their access to ThinManager.

TermSecure User: A user configured in ThinManager that can log into terminals using TermSecure.

Groups

Groups: Either (A), a collection of Windows Users with common access levels (also referred to as "User Groups").

Or (B), a group of Terminals (now referred to as "Terminal Group")

Application Group: A collection of Windows Terminal Servers that ThinManager can use interchangeably for logins and applications. Formerly called a Terminal Server Group.

Terminal Server Group: A collection of Windows Terminal Servers that ThinManager can use interchangeably for logins and applications. Now called Application Group.

User Group: A collection of Windows Users that share the same level of access in Windows.

Windows User Group: A more accurate name for User Group.

Terminal Group: A group of Terminals that can be managed together or share a common configuration (was just "Group" in ThinManager 2.x).

Terminal Server Group: A collection of Windows Terminal Servers that ThinManager can use interchangeably for logins and applications. Now called Application Group.

TermSecure User Group: A collection of TermSecure Users that share a common configuration.

ThinManager Security Group: A Windows User Group that ThinManager uses to regulate access to ThinManager functions.

2. System Overview

2.1. Quick Start Checklist

1. **Build a terminal server** whose operating system is either:
   - Microsoft Windows 2000 Server with Terminal Services enabled.
   - Microsoft Windows 2003 Server with Terminal Services enabled.
   - Microsoft Windows 2008 Server with Terminal Services enabled.
2. **Create a Licensing Server and add a TS CAL** (Terminal Server Client Access License) for each thin client.

   See Microsoft Terminal Services Licensing Activation.
3. **Install ACP ThinManager software** onto a computer to create a ThinManager Server.

Note: The ThinManager Server can be a terminal server but doesn't have to be. It can be a Windows 2000, XP, or Vista Workstation. The thin clients will connect to the ThinManager Server and download the firmware and configuration.

   See ThinManager Installation.
4. **Install a ThinManager License** for each ThinManager Ready thin client.

   See ThinManager Licensing.
5. **Select a Client-Communication protocol.** The default RDP Client-Communication Protocol installs with Terminal Services. If using a Citrix product, available separately, install and license on each terminal server.

   See Client Communication Protocol.
6. **Create a Microsoft user profile** for each user on the terminal server or the domain. Add the users to the Remote Desktop Users group.

   See Creating Microsoft User Profiles.
7. **Apply appropriate security** to each user profile using the standard Microsoft techniques.
8. **Establish the IP addressing scheme** for the thin clients, using either DHCP or Static IP.

If using DHCP, configure Option 066 to list the IP address of the ThinManager Server and configure 067 to list "firmware.acp" as the bootfile name.

See IP Address Assignment.

9. Attach the terminals to ThinManager by either:
   - Turning on the terminal and selecting the "Create New Terminal" option when the unit boots.
   - Pre-creating the terminals in ThinManager and selecting the proper terminal name when the terminal is turned on and offline terminals are listed.

     See Adding Thin Client Hardware.

2.2. Required Components

ThinManager Ready 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 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 2000 Server or 2003 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 server needs Windows 2000 and 2003 Server with **Terminal Services** enabled and TS CALs added.

See Microsoft TS CALs for details.

2.2.2. Client Communication Protocol

The second component is the Client Communication Protocol. 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 **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.

The **RDP (Remote Desktop Protocol)** is the Client-Communication Protocol that is included with Microsoft Terminal Services and can be used by ThinManager Ready 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 ThinManager Ready 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.

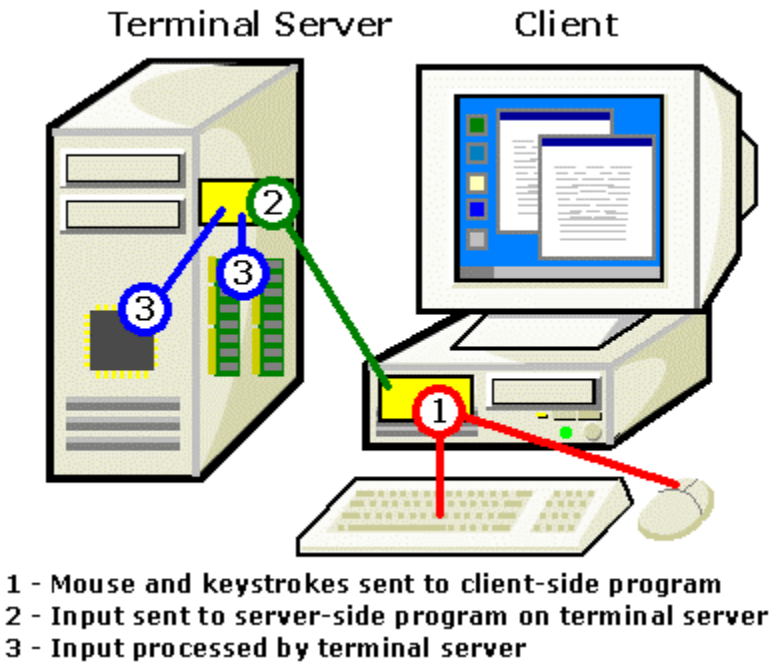
ThinManager Ready Logos

ThinManager Enabled thin clients should display a ThinManager Ready Logo.

2.3. Client/Server Architecture

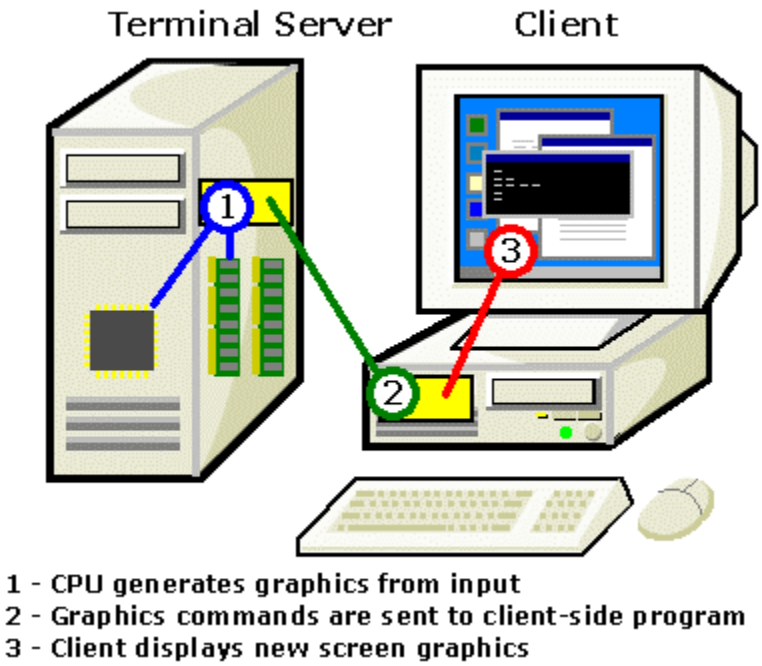
In terminal services, the client connects to a terminal server, logs in, and starts a session on the terminal server. The client uses a client communication protocol to send mouse and keyboard events to the terminal server for processing. Once the input is processed, the terminal server generates the video output and sends it to the client for display.

Although the user is typing on the client and sees the results on the client's monitor, the actual processing takes place on the terminal server.



Client to Server Communications

Input from the client is sent to the terminal for processing.



Server to Client Communications

Output from the Terminal Server is sent to the client for display.

2.4. Network Overview

2.4.1. Standard TCP/IP Network Infrastructure

ThinManager Ready Thin Clients use a standard TCP/IP network. This can include hubs, routers, gateways, cables, and wireless components. ThinManager Ready thin clients behave on a network as a PC would, but because the thin clients are connected to a terminal server where the actual processing takes place, thin clients are more sensitive to poorly deployed networks.

The simplest thin client network consists of a single computer, configured as a terminal server, with the TS CALs, ThinManager, ThinServer, and the applications installed on it. All the ThinManager Ready thin clients connect to this single computer.

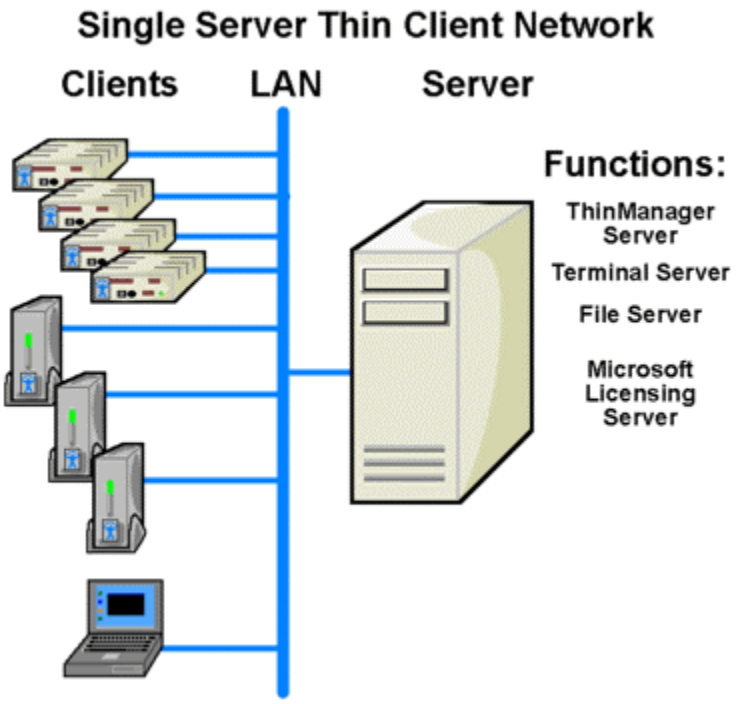
A more common scenario includes the use of multiple computers. These might be additional terminal servers for failover functionality and increased capacity, domain controllers, e-mail servers, file servers, database servers, and workstations. One of the strengths of ThinManager and ThinManager Ready Thin Clients is their versatility in networking. They do not demand a rigid proprietary network configuration but have the flexibility to run in almost any network configuration.

ACP Networks require:

- **A ThinManager Server**, that is, a computer running ThinManager. This may be a terminal server but does not have to be. It can be any Windows computer, including a workstation.

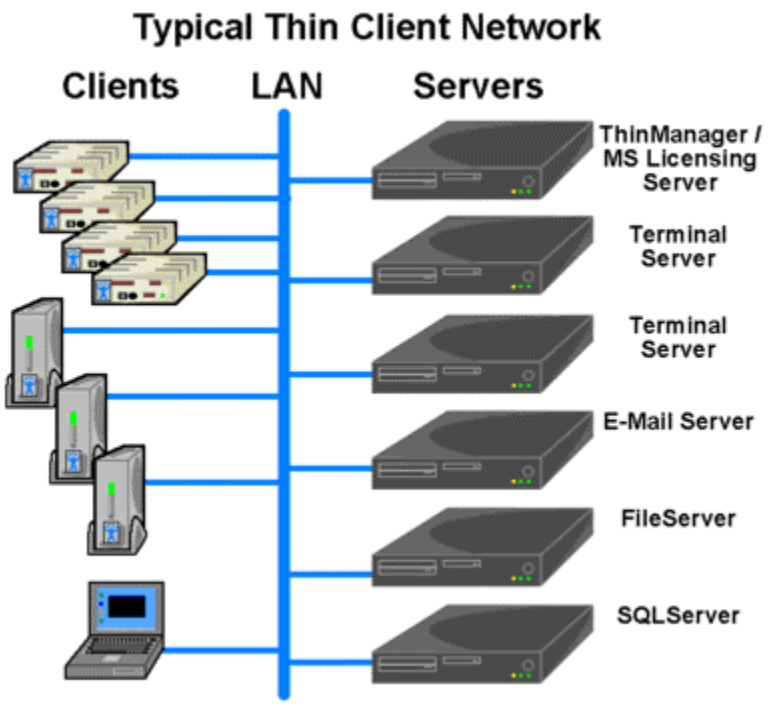
- **A Microsoft Terminal Server** with a Client Communication Protocol and all desired applications. This computer may also be the ThinManager Server.
- **A Microsoft Terminal Server Licensing Server** for the TS CALs (Microsoft Terminal Server Client Access Licenses). This does not need to be a separate computer but can run on a terminal server or a domain controller.
- A DHCP Server or Static IP addresses for the thin clients.
- ThinManager Ready Thin Client hardware.
- A standard **Ethernet** network.

Note: ThinManager does not have to be installed on a terminal server but can be installed on a workstation.



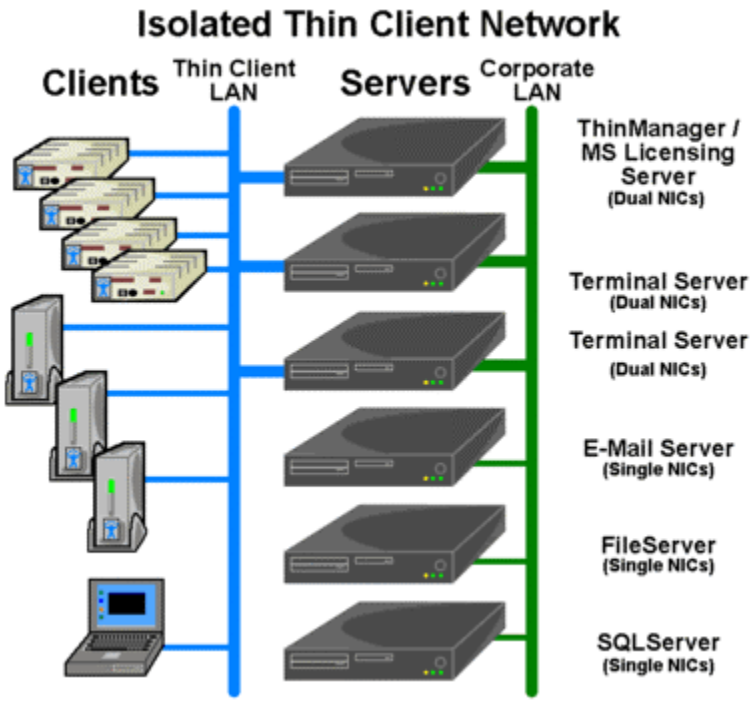
Sample ACP Thin Client Network – Single Terminal Server

When a single server is used for the ThinManager Ready thin client network, all components need to be installed on the single computer, including ThinManager, Microsoft Terminal Services Licensing, Terminal Services, applications, and a DHCP server, if desired.



Sample ACP Thin Client Network – Multiple Servers

A more common practice is to use several servers with specific functions. In addition to the normal corporate file servers, e-mail servers, and domain controllers, the use of multiple terminal servers allows failover and redundancy. The ThinManager may be run on a separate computer but is typically installed on a terminal server, or in conjunction with other server applications like DHCP and Microsoft Licensing.



Sample ACP Thin Client Network – Separate Subnet

The thin clients can be isolated to their own subnet by using a second network interface card (NIC) in the ThinManager Server and terminal servers. The thin clients can reach other servers in the corporate network by using the terminal server as a bridge.

2.5. Connection Overview

When a terminal is powered on:

- 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 the Boot Process for details.
- Alternately, the terminal may be assigned a static IP address and the ThinManager Server IP address.
- 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 ThinManager Ready 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. Application Groups are groups of terminal servers that have added functionality for the thin client.

2.6. 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.

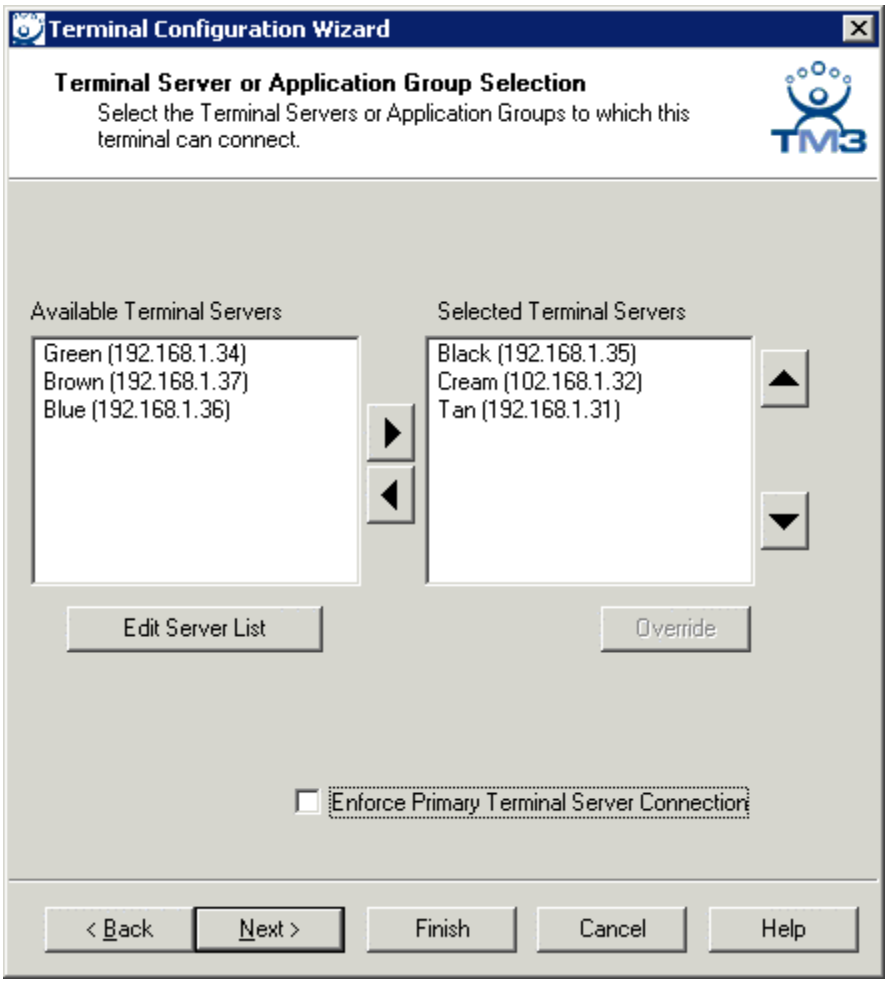
To initiate ACP ThinManager Failover protection, four steps are needed:

- **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 terminal 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 Applications Groups, list two or more terminal servers in the application group. The terminal will connect to the first available server in the list.

When using a SmartSession Group the terminal will connect to the terminal server with the lightest load.

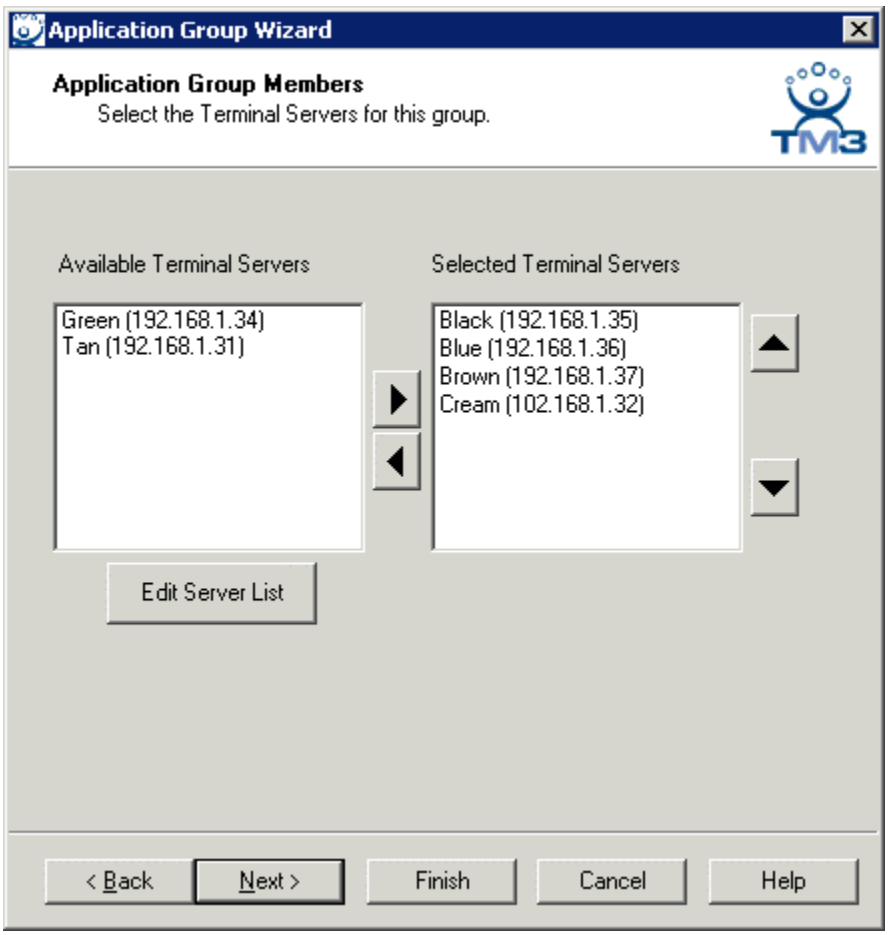
- **Sufficient Memory:** The third step is to have sufficient memory capacity on the servers to accommodate the addition of terminals during failover. If you do not plan for the extra capacity, the servers can be taxed with the addition of the new terminals.
- **User Permissions:** Each terminal server 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 ThinManager Ready 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 in the Terminal Configuration Wizard with Individual Terminal Servers

Failover when using individual terminal servers is configured in the Terminal Configuration Wizard. See Terminal Server Selection Page for details.



Failover Configured for Application Groups in the Application Group Wizard

Failover when using Application Groups is configured in the Application Group Wizard by adding multiple terminal servers to the application group. See Application Group Members Page 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 Module or Instant Failover with Application Groups for further details.

2.7. Application Group Overview

Application Groups are collections of Terminal Servers. Instead of being assigned to a list of individual terminal servers, a ThinManager Ready thin client can be assigned to an Application Group or Groups and the terminal will connect to one of the terminal servers of the group. The specific terminal server that the terminal connects to is based on the Application Group configuration and options.

- A **standard Application Group** has the terminal servers listed in a pre-defined order. The terminal connects to the first available member of the group.
- The **SmartSession** option of Application Groups provides load balancing by using CPU availability, memory, and the number of sessions on the member terminal servers to determine the resource availability on member terminal servers. A ThinManager Ready thin client connects to the terminal server in the Application Group with the most available resources.
- The **Instant Failover** option allows a terminal to connect to two terminal servers within an Application Group. 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 is immediately displayed, eliminating any downtime due to terminal server failure.
- The **AppLink** option provides the Initial Program function to members of an Application Group. When specifying the Initial Program function, a program is started instead of the desktop. Closing the program will terminate the connection.
- **MultiSession** is a terminal configuration that allows a ThinManager Ready thin client to connect to multiple terminal servers from multiple Application Groups. The user can switch between groups using an on-screen menu or hot keys. These groups may be standard Application Groups, Application Groups with SmartSession, AppLink, and/or Application Groups with Instant Failover.

These Application Group options can be combined on the same Application Group, for example an Application Group could use SmartSession to choose the server connection order, Instant Failover to maintain a backup, while using AppLink to limit the terminal to a single application. Additionally, a terminal server may be a member of several Application Groups.

See Application Groups for details.

2.8. TermSecure Overview

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

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

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 ThinManager Ready 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.

Note: TermSecure requires the usage of Application Groups instead of using individual terminal servers.

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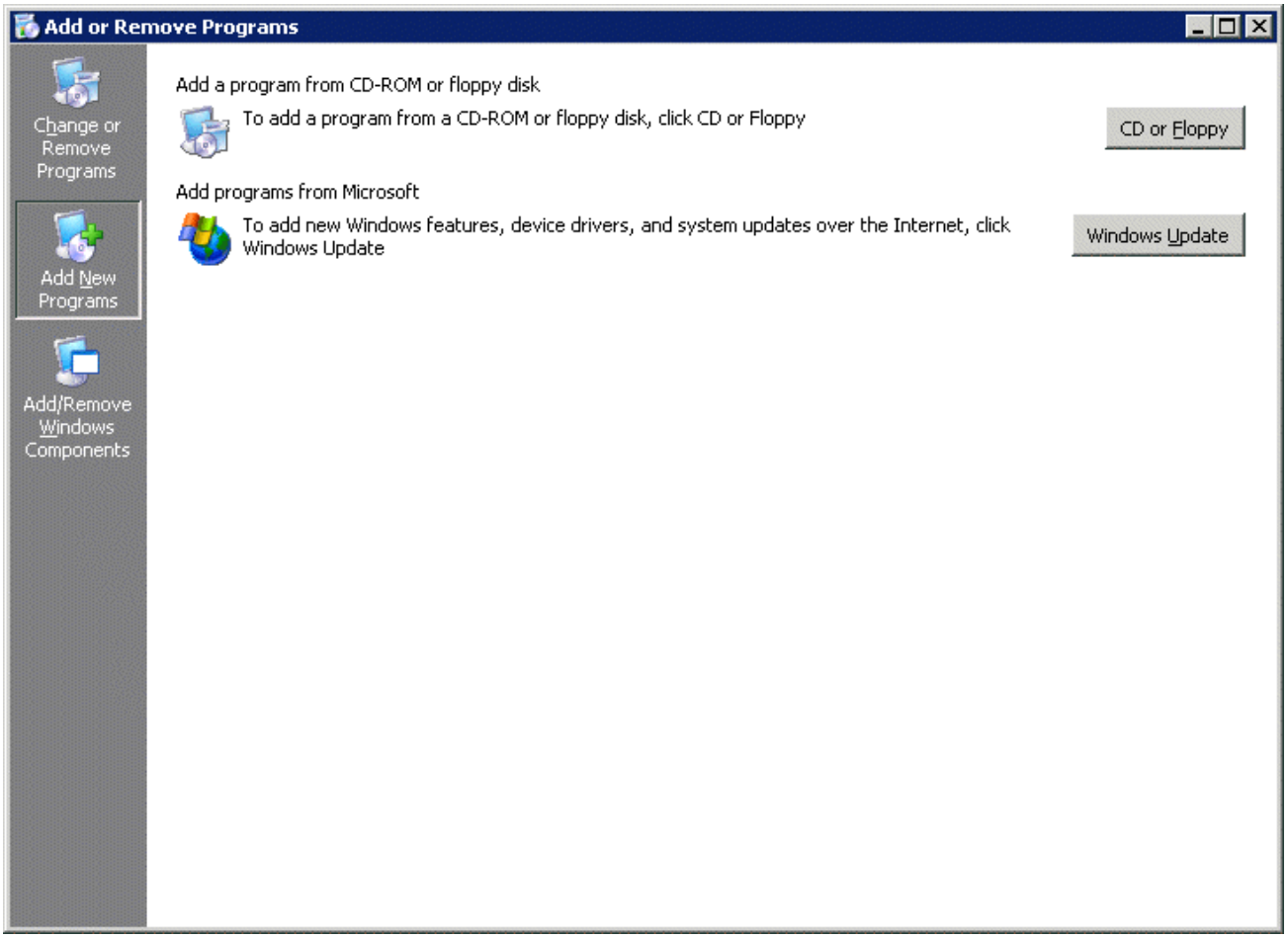
3. Installation of ThinManager 3.2

3.1. Standard ThinManager Installation in Windows

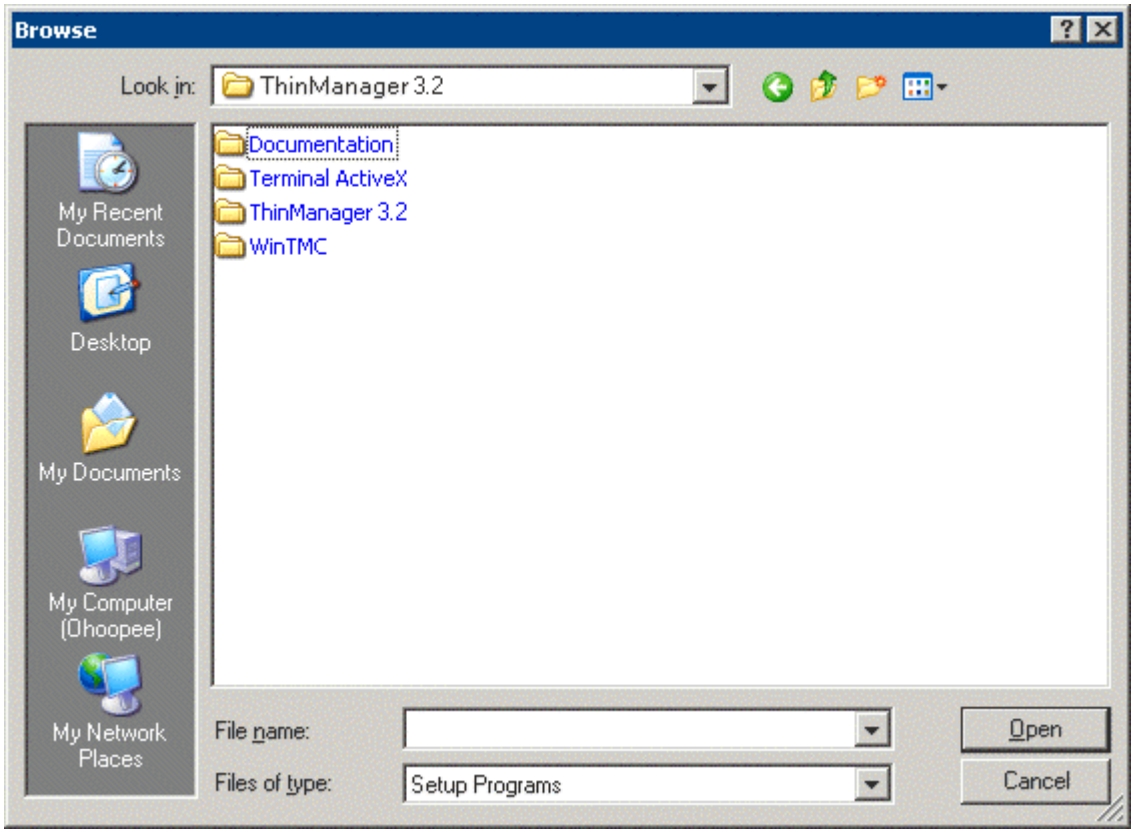
ThinManager can be installed on a Windows 200/2003/2008 server or a workstation (NT 4.0 SP5 and later). On Microsoft Windows 2000/2003/ 2008 Servers, software needs to be added in the **Install Mode** through the ***Control Panel > Add/Remove Programs***. Failure to use the Install Mode can prevent an 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.

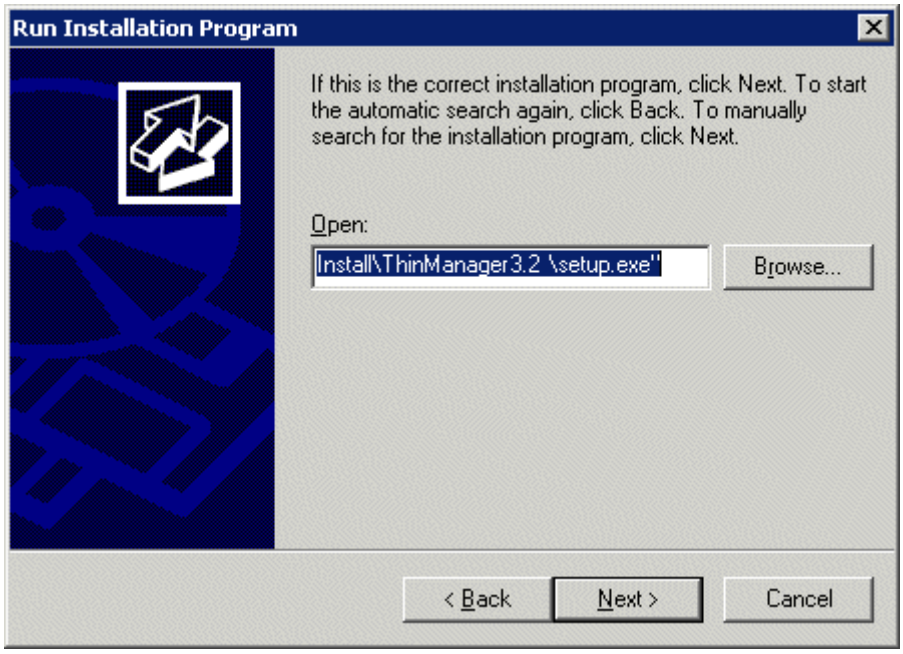


Install CD File System

The ThinManager CD has 4 folders.

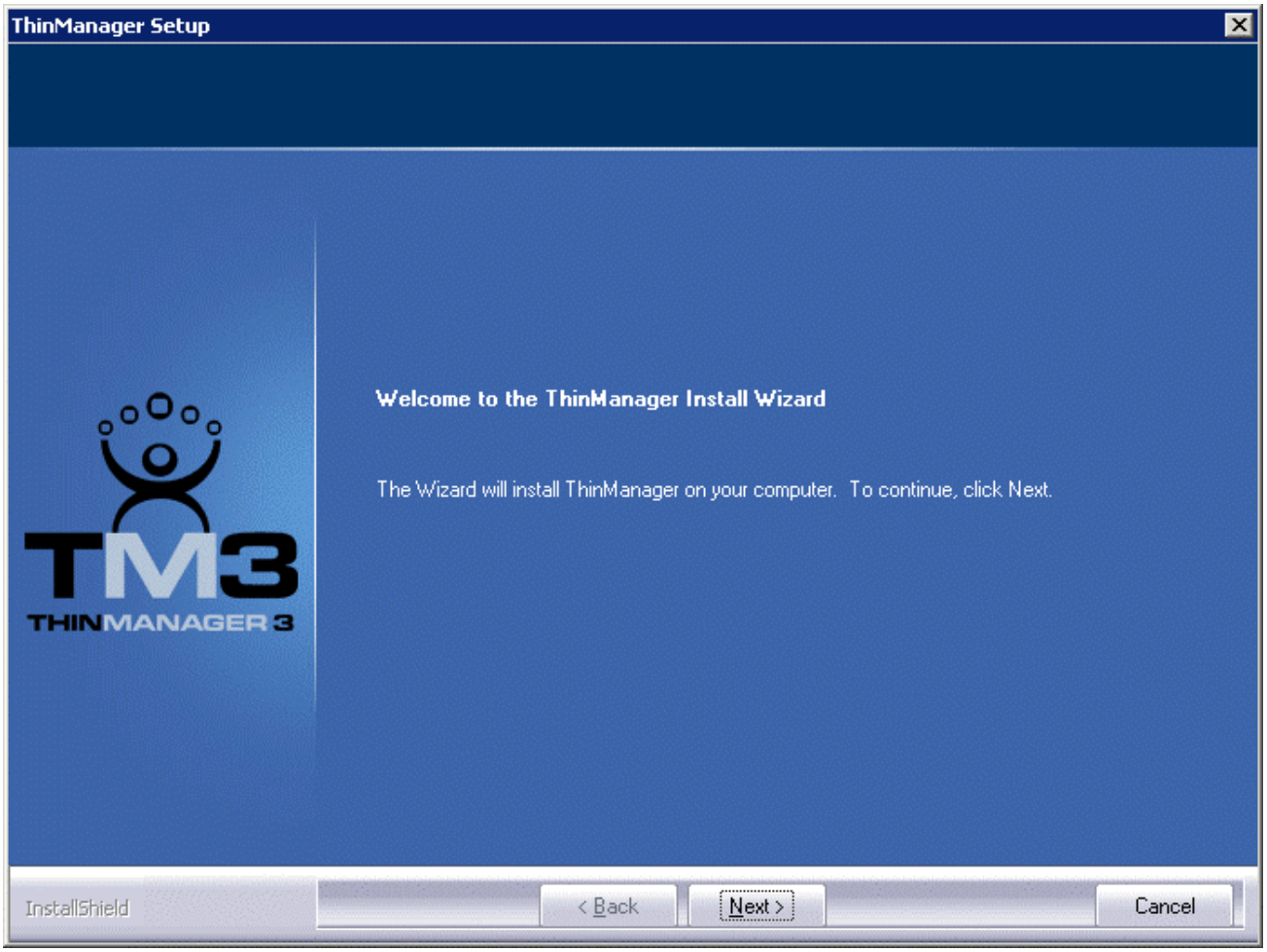
- **Documentation** – This folder contains a copy of this documentation in *.pdf format.
- **Terminal ActiveX** – This folder contains the Terminal Monitor ActiveX and companion documentation. See TermMon ActiveX Control for details.
- **ThinManager 3.2** – This folder contains the ThinManager setup program.
- **WinTMC** – This folder contains the WinTMC setup program. See WinTMC Installation for details.

Browse to the **setup.exe** file in the ThinManager 3.2 folder to install ThinManager.



Run Installation Program Window

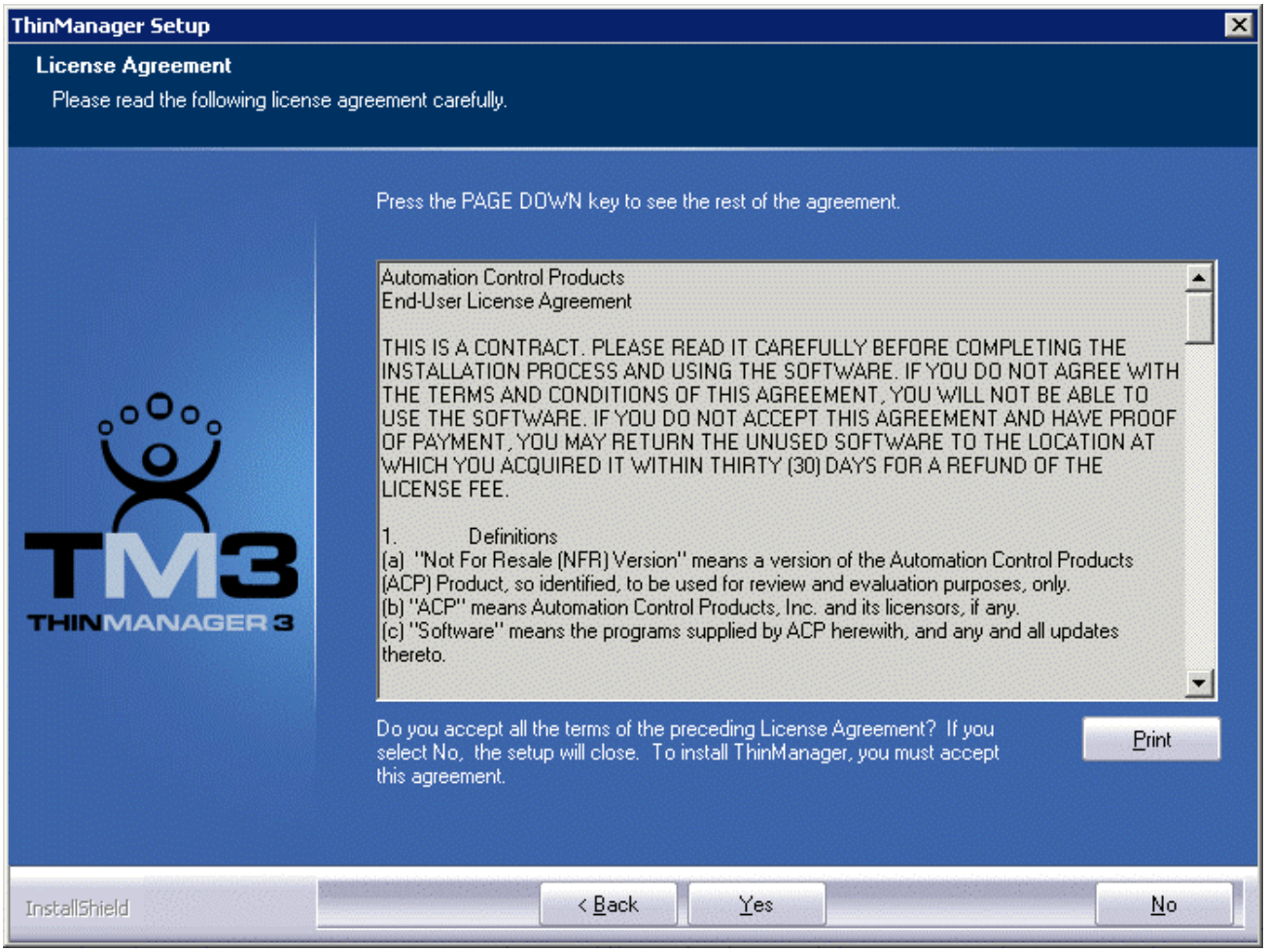
Once the ThinManager 3.2 setup program is selected, select ***Next*** to continue the installation.



ThinManager Setup Wizard

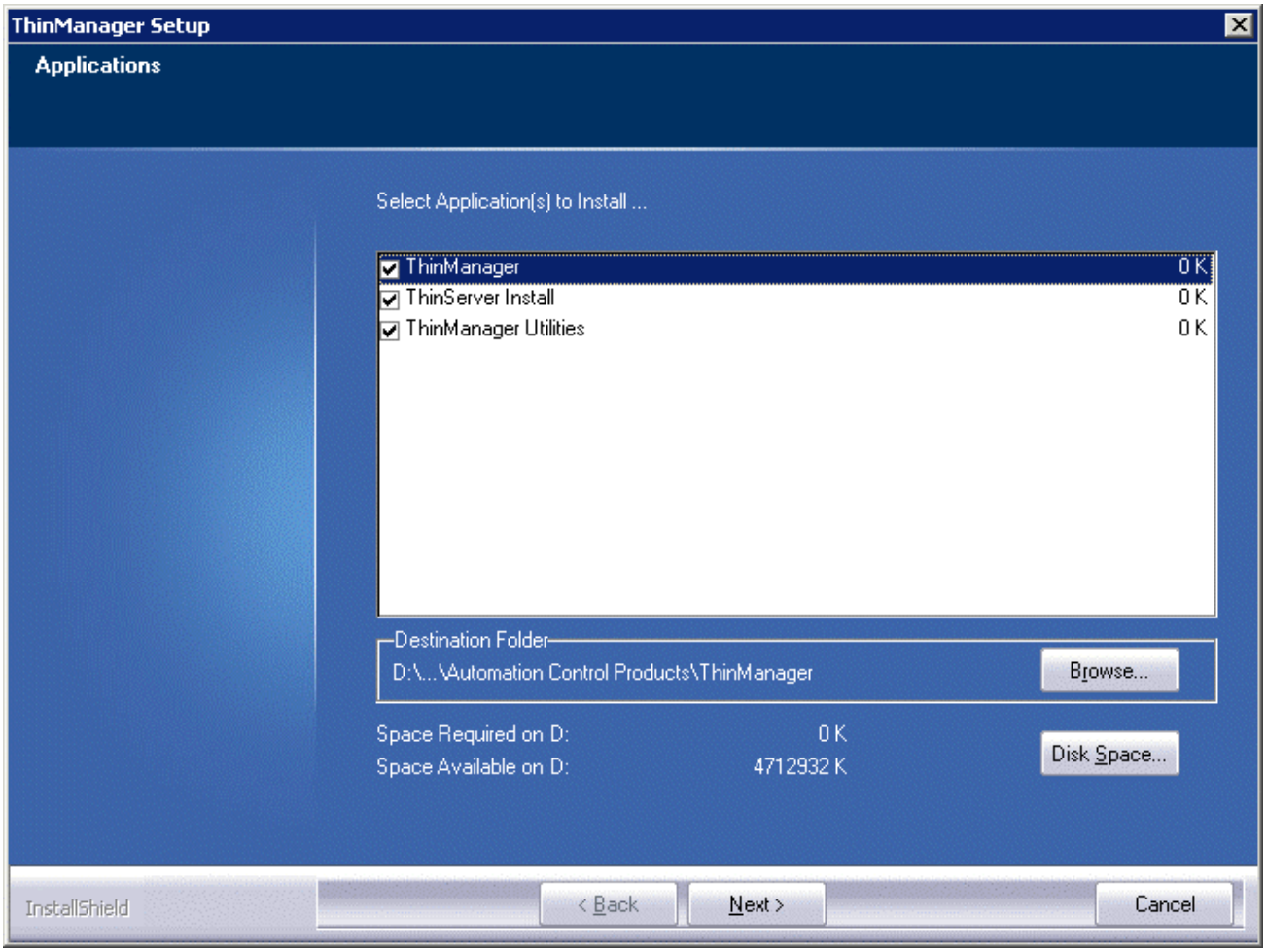
The ThinManager Setup Wizard will lead the user through the installation process.

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

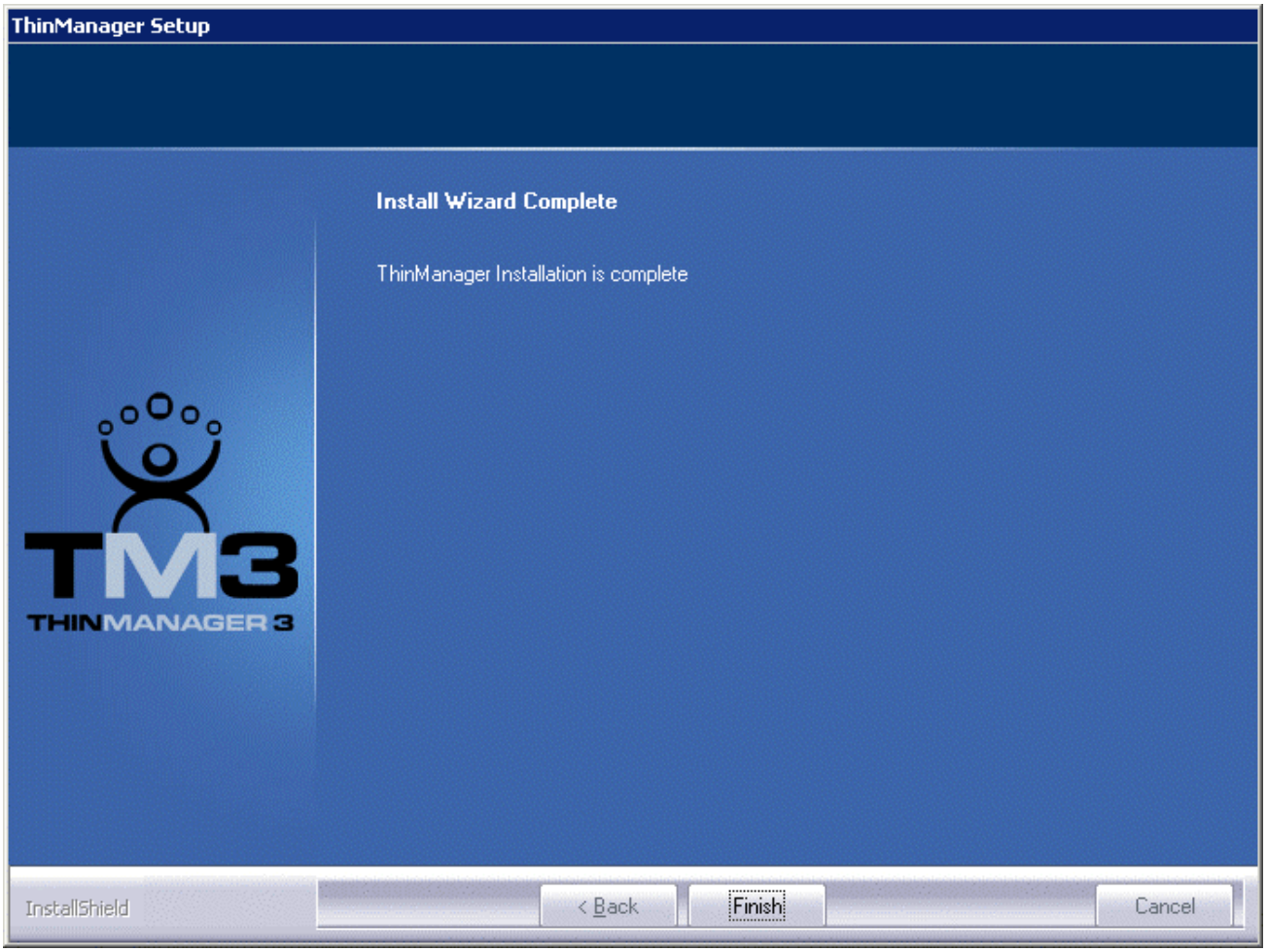
The installation wizard will display the components of the ThinManager installation. Although ThinManager appears to be a seamless program, it has two major components and utilities.

- **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 ThinManager Ready 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 ThinManager Ready thin clients, the **ThinManager Utilities** program needs installed on every terminal server to provide the **Calibrate Touch** program for connected thin clients.

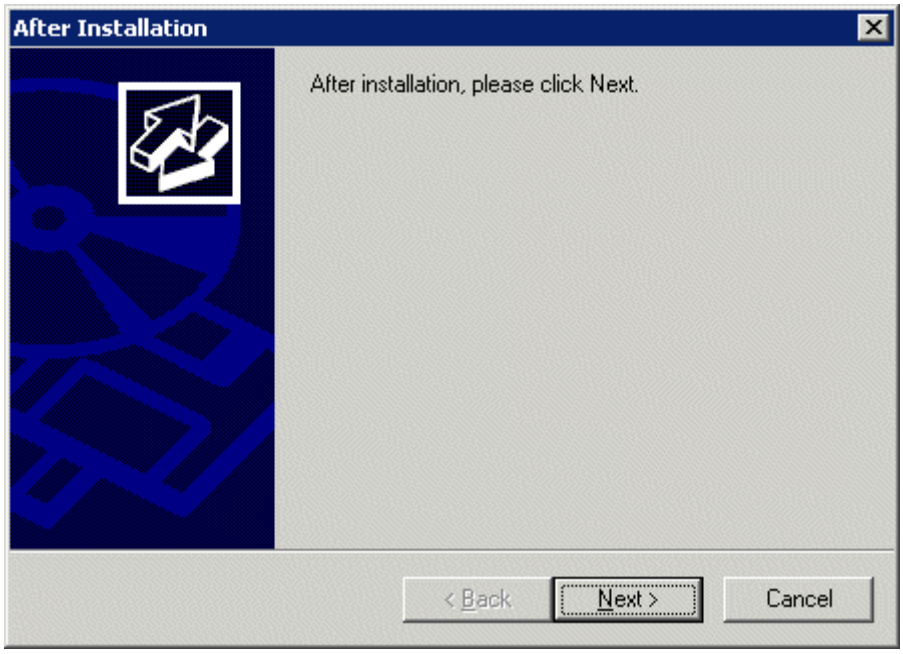
The ***Browse*** button will allow the user to change the path to the folder where ThinManager will be installed.

Check the desired components and select ***Next***.



Installation Wizard Completion

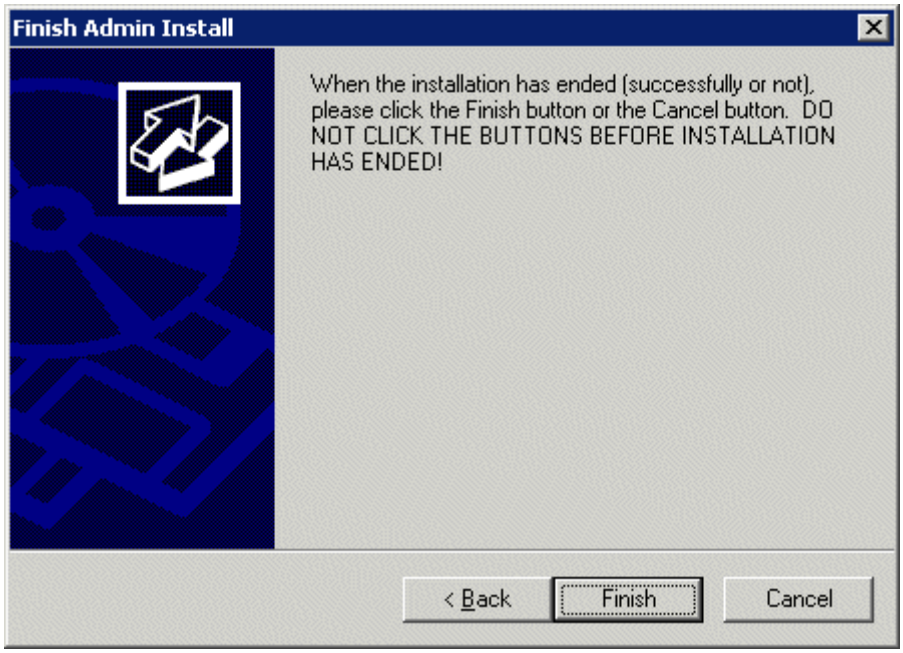
When the wizard has finished select the ***Finish*** button.



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 ThinManager Licensing for details.

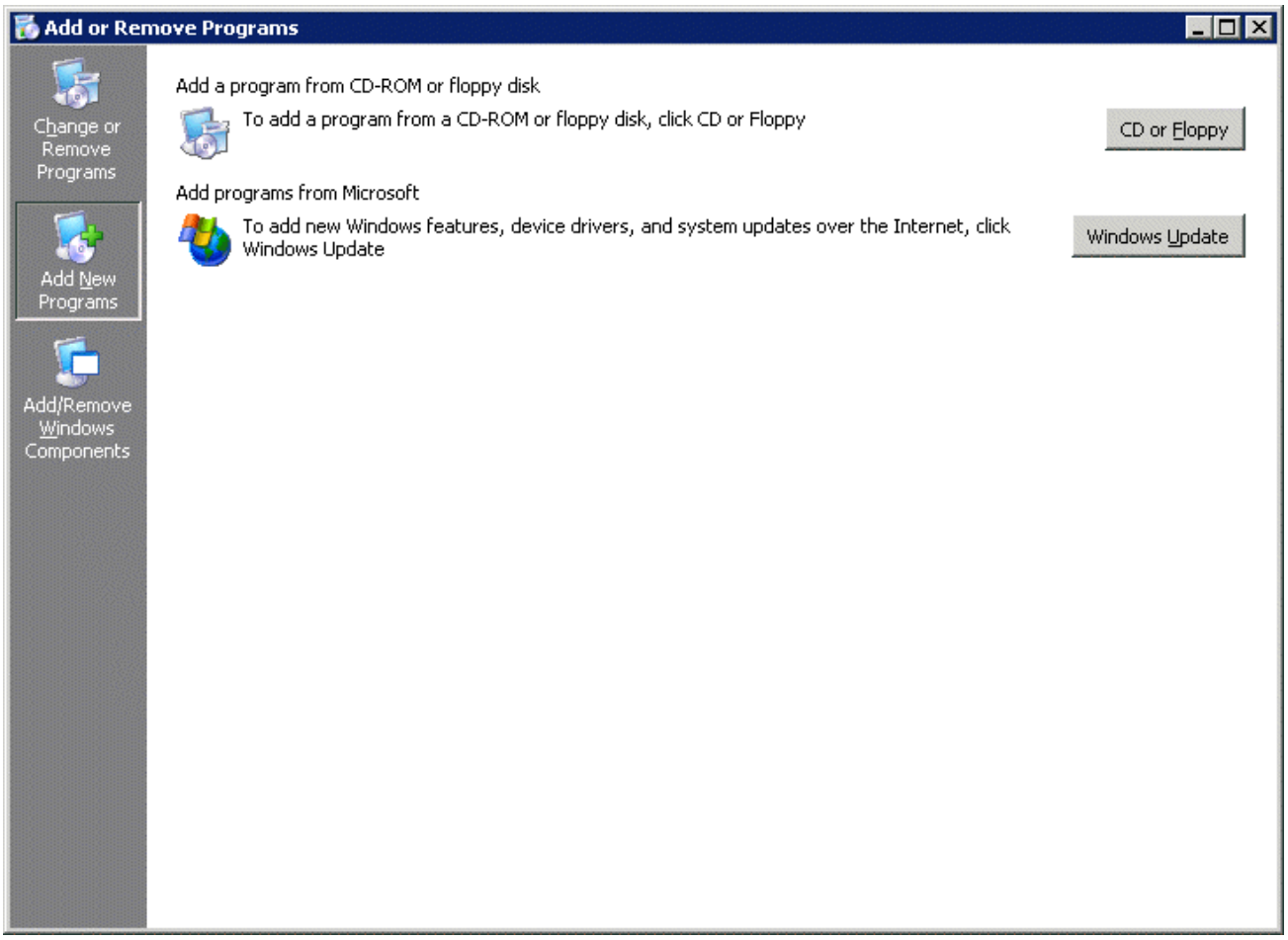
3.1.1. WinTMC Installation

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.

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

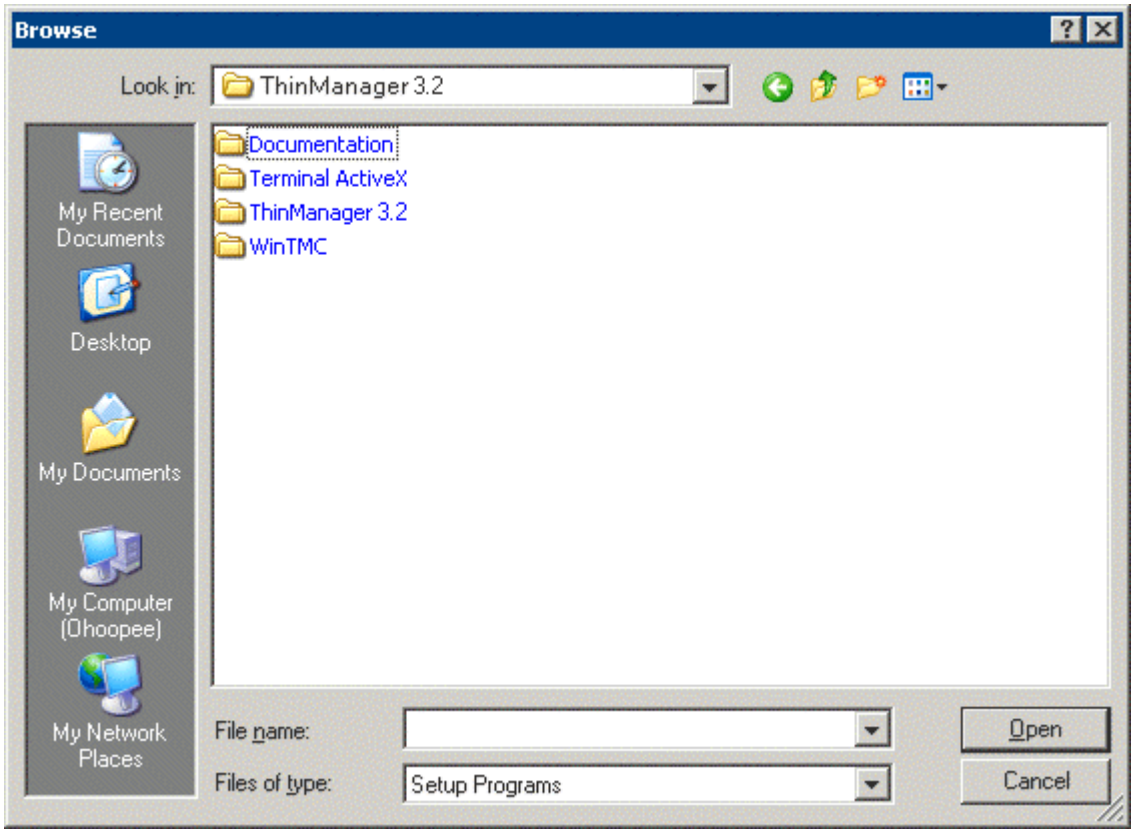
Note: Although PCs don't have as strict a requirement as terminal servers; it is a good idea to install the WinTMC client using the Add and Remove Programs feature.

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.

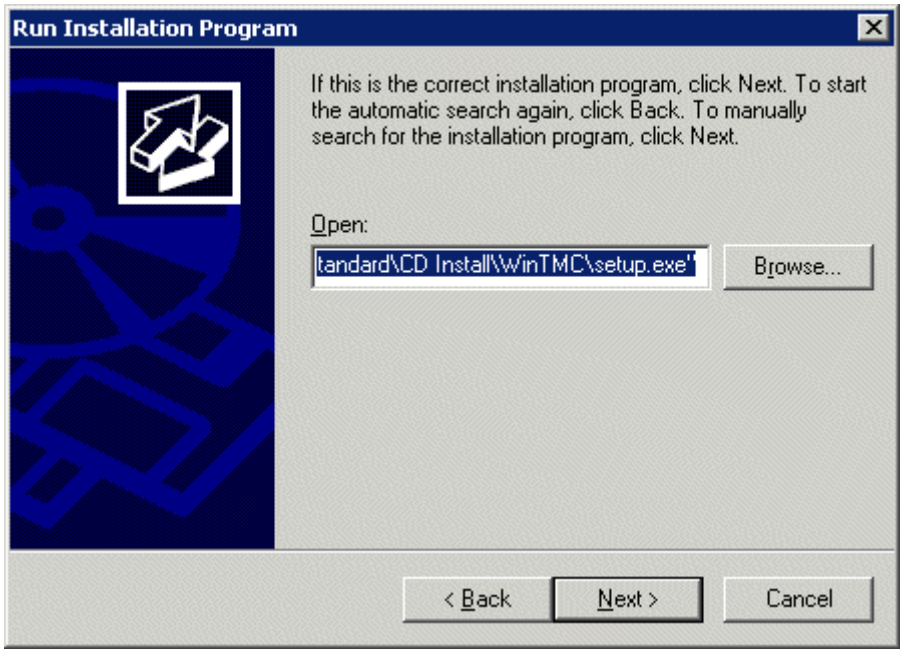


Install CD File System

The ThinManager CD has 4 folders.

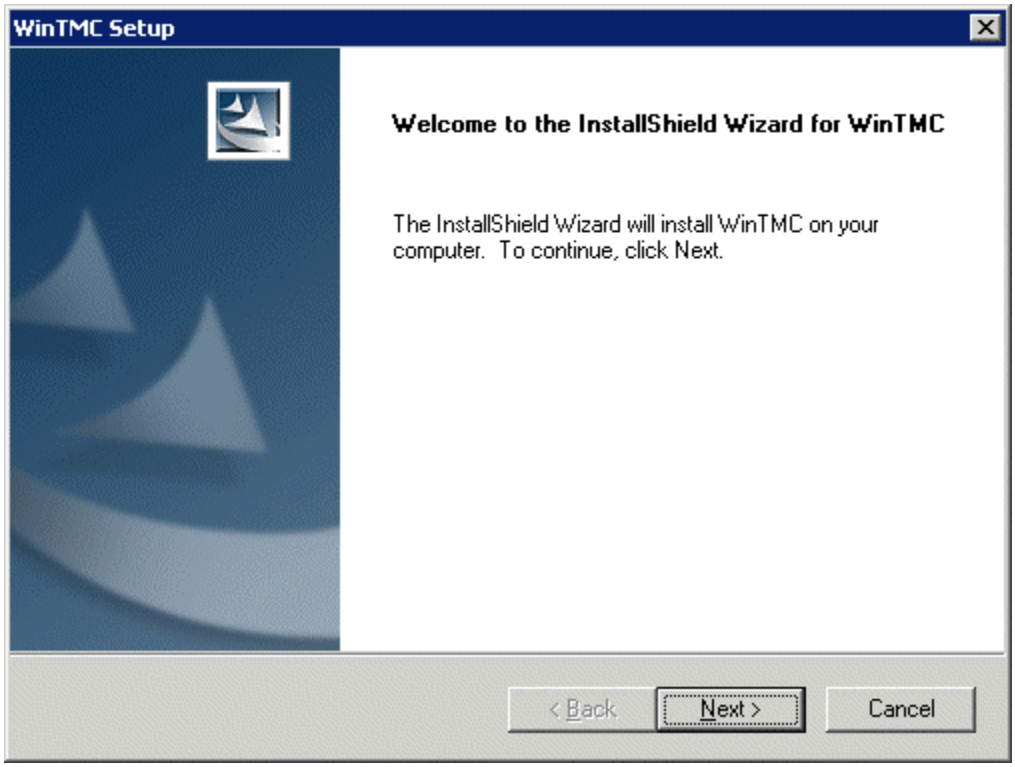
- **Documentation** – This folder contains a copy of this documentation in *.pdf format.
- **Terminal ActiveX** – This folder contains the Terminal Monitor ActiveX and companion documentation. See TermMon ActiveX Control for details.
- **ThinManager 3.2** – This folder contains the ThinManager setup program.
- **WinTMC** – This folder contains the WinTMC setup program.

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



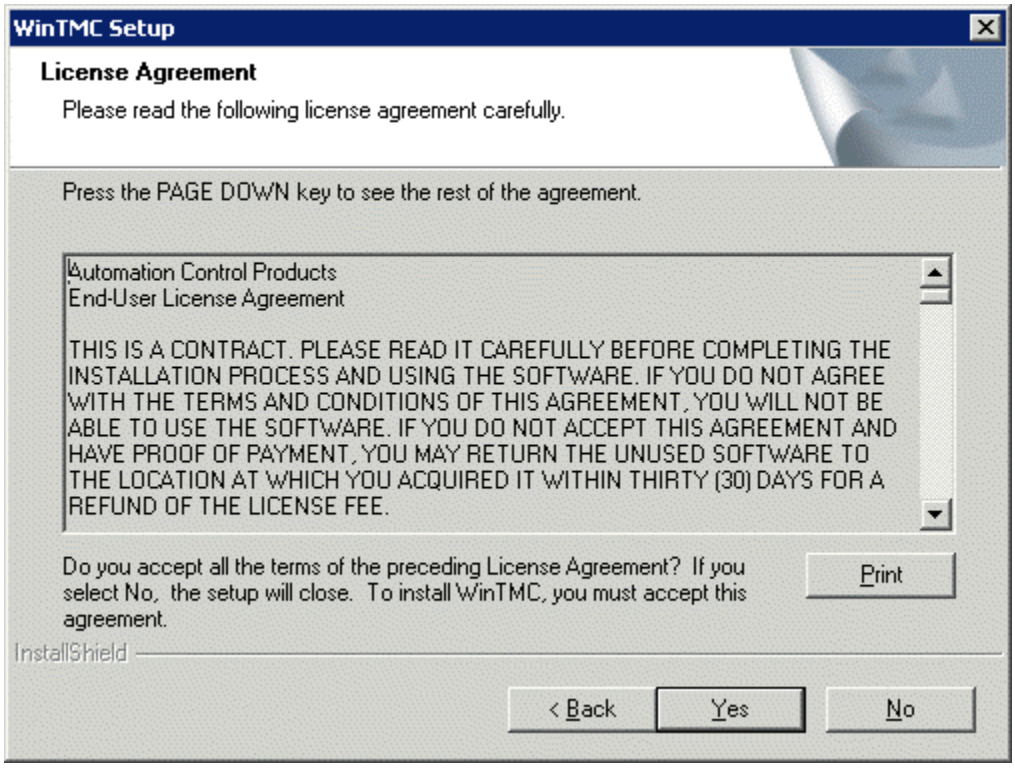
Run Installation Program Window

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



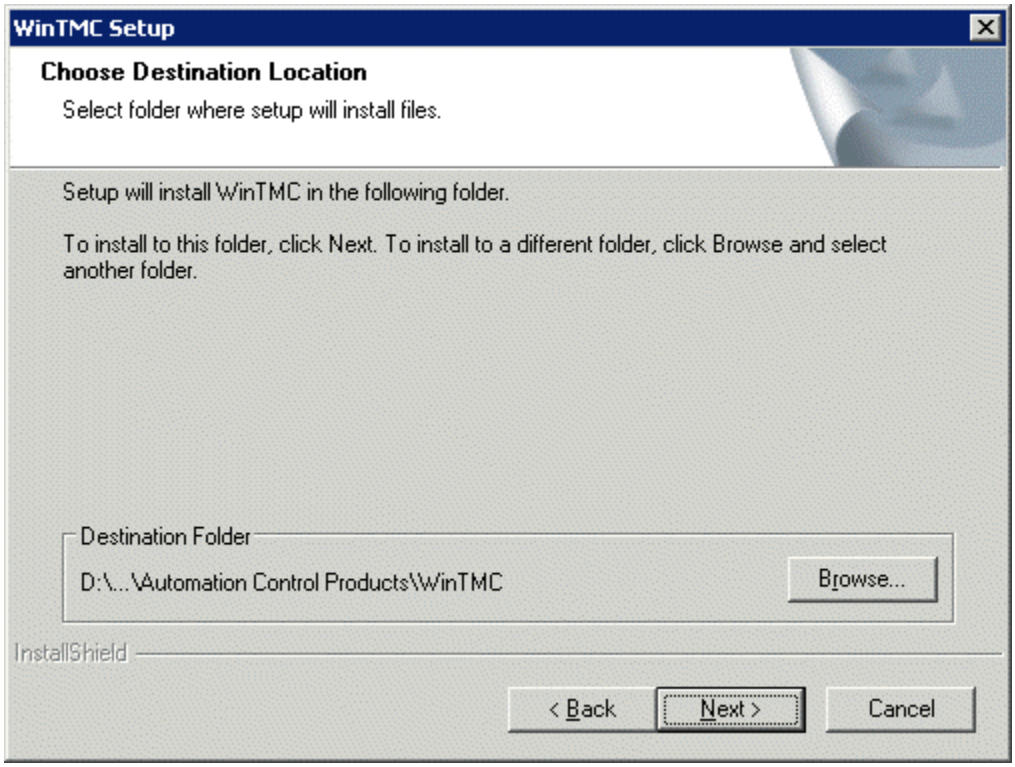
WinTMC Setup Wizard

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



License Agreement

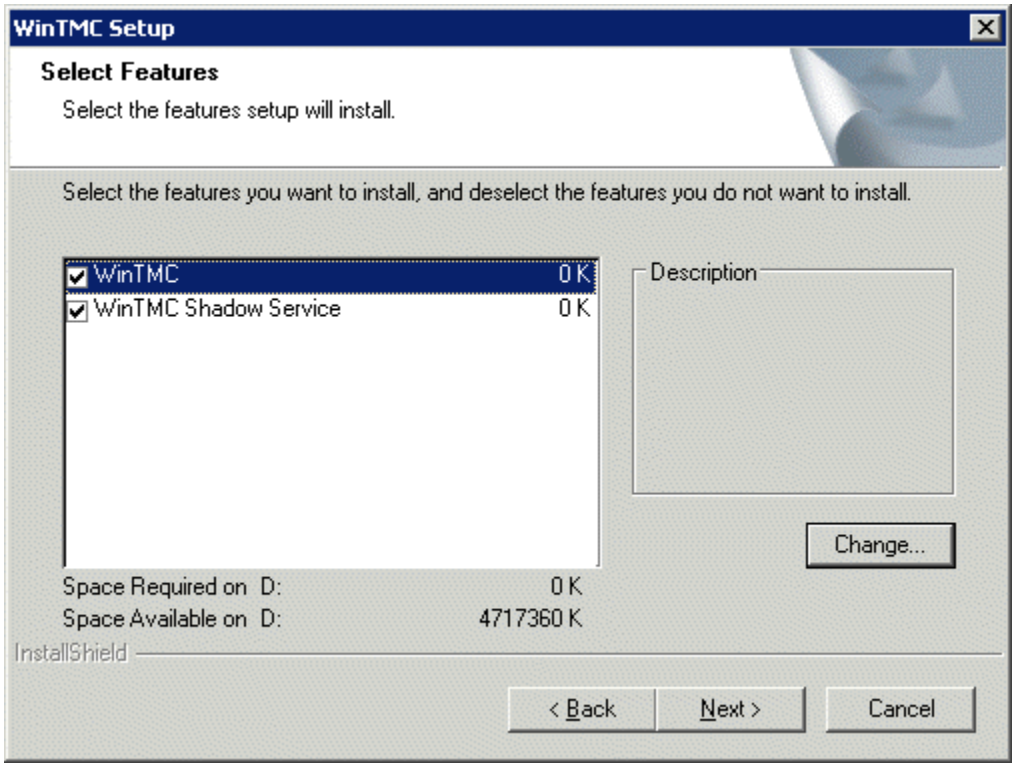
Read the End-User License Agreement (EULA). If you agree with the conditions select ***Yes*** to continue.



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.



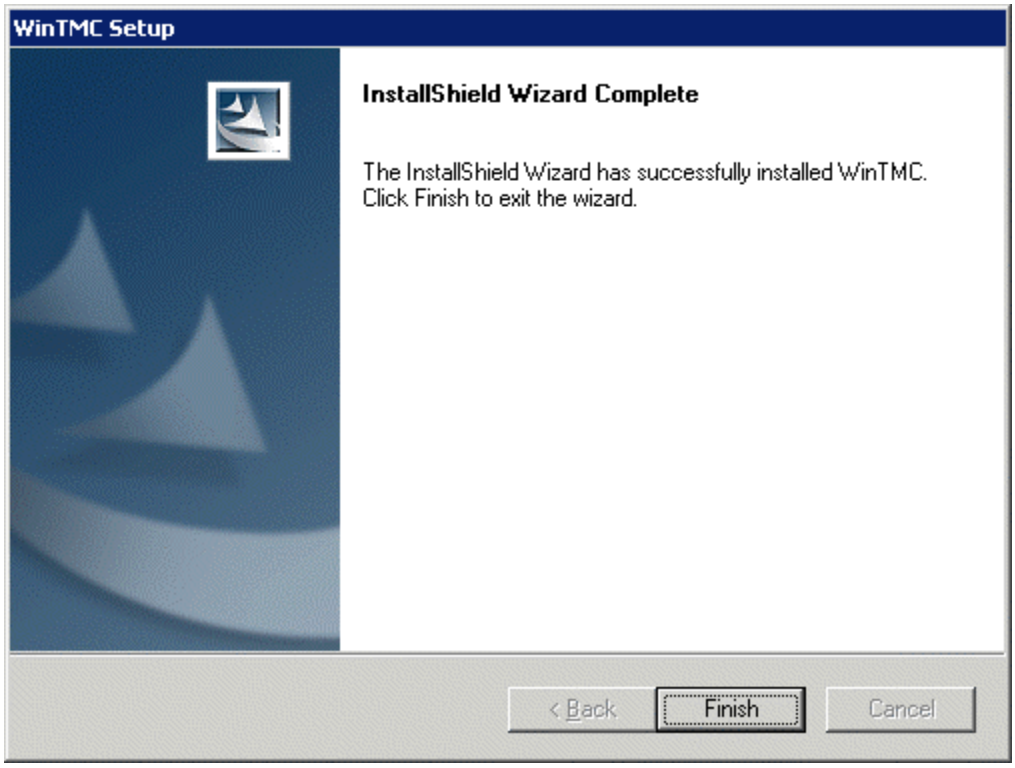
Feature Selection

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.

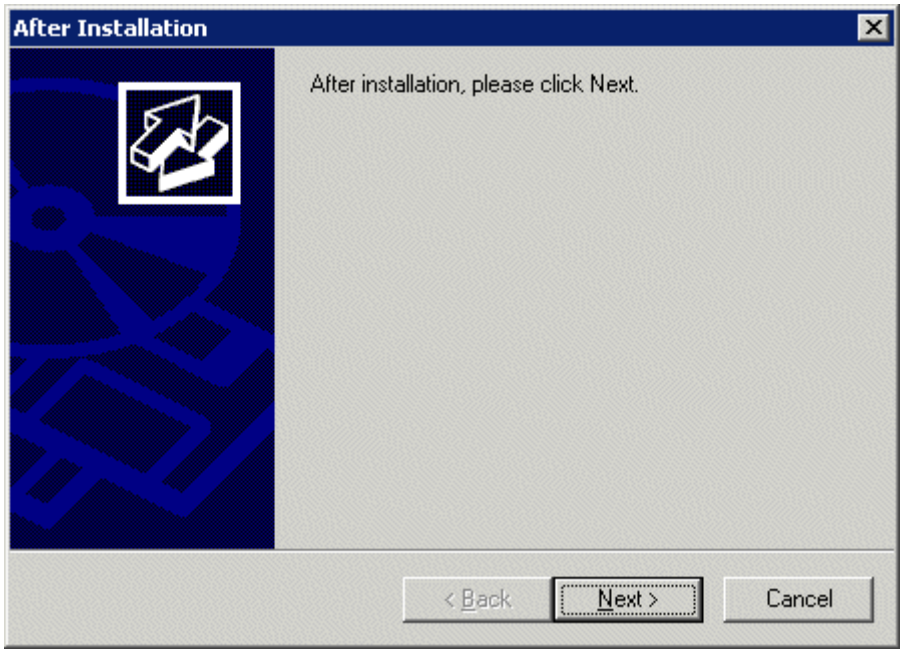
Note: The WinTMC Shadow Service will function even when the WinTMC isn't active.

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



WinTMC Installation Completion

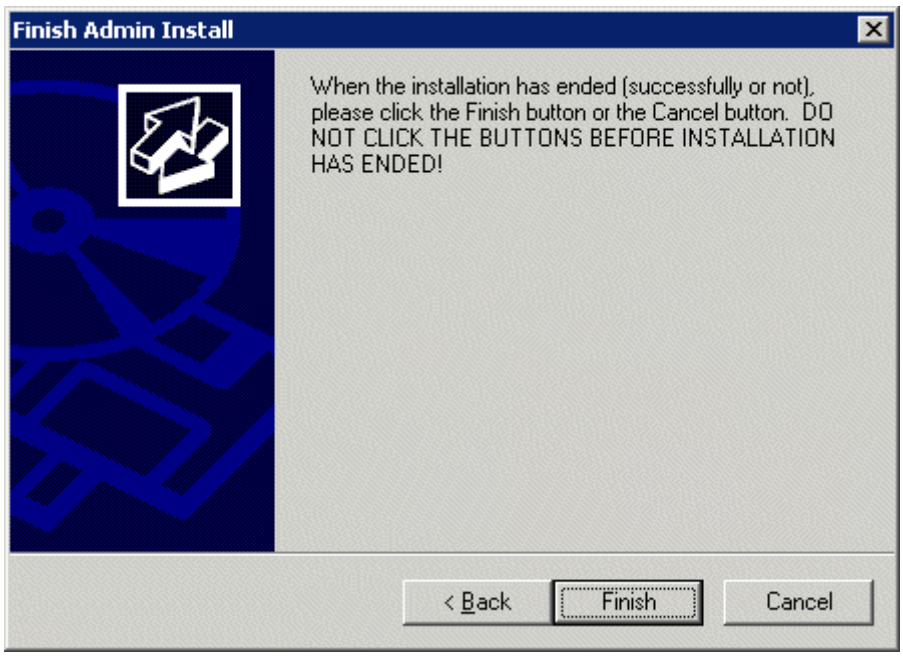
When the wizard has finished select the ***Finish*** button.



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.



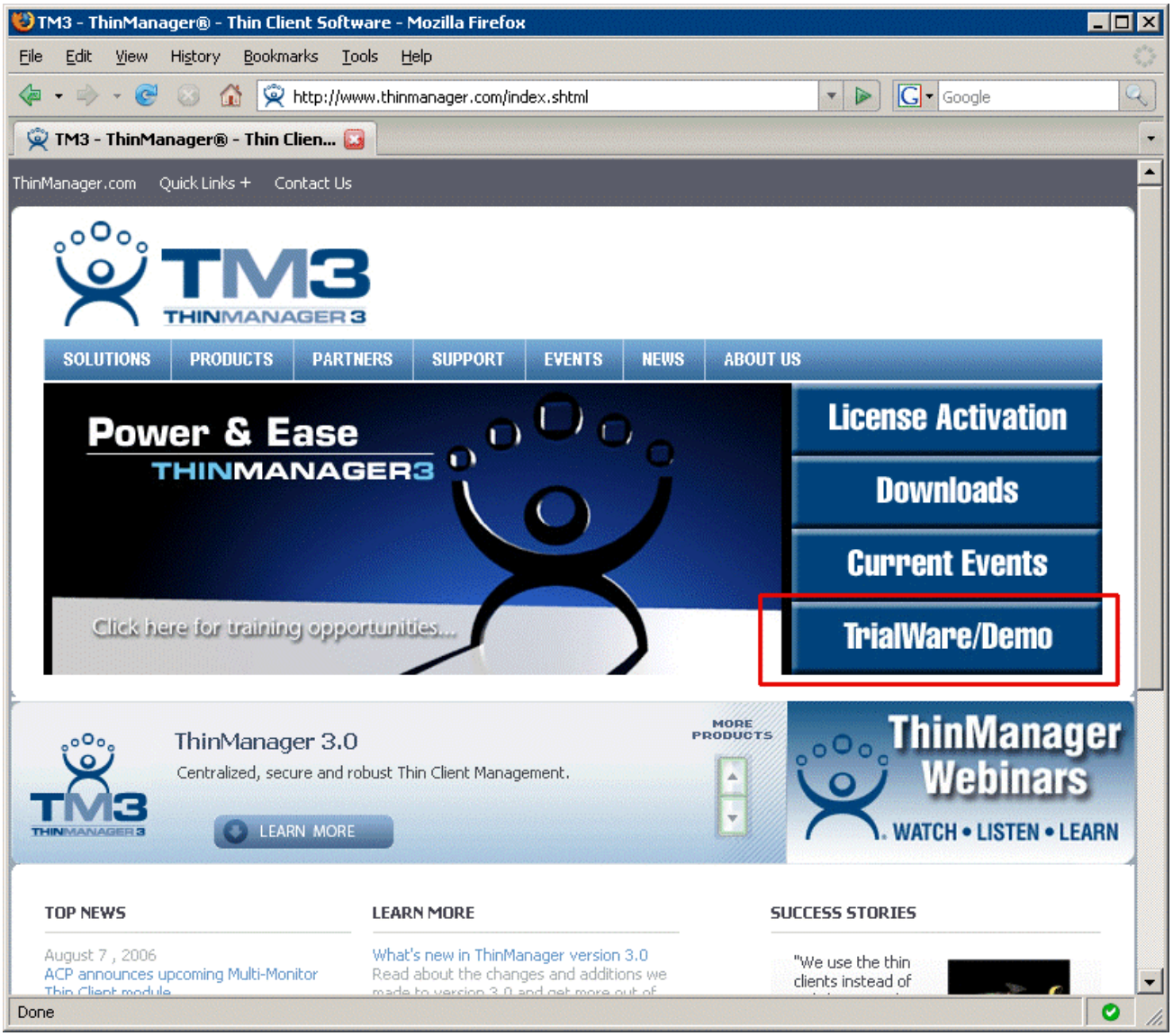
Finish Installation

Select Finish to complete the installation.

3.2. Trialware ThinManager Installation

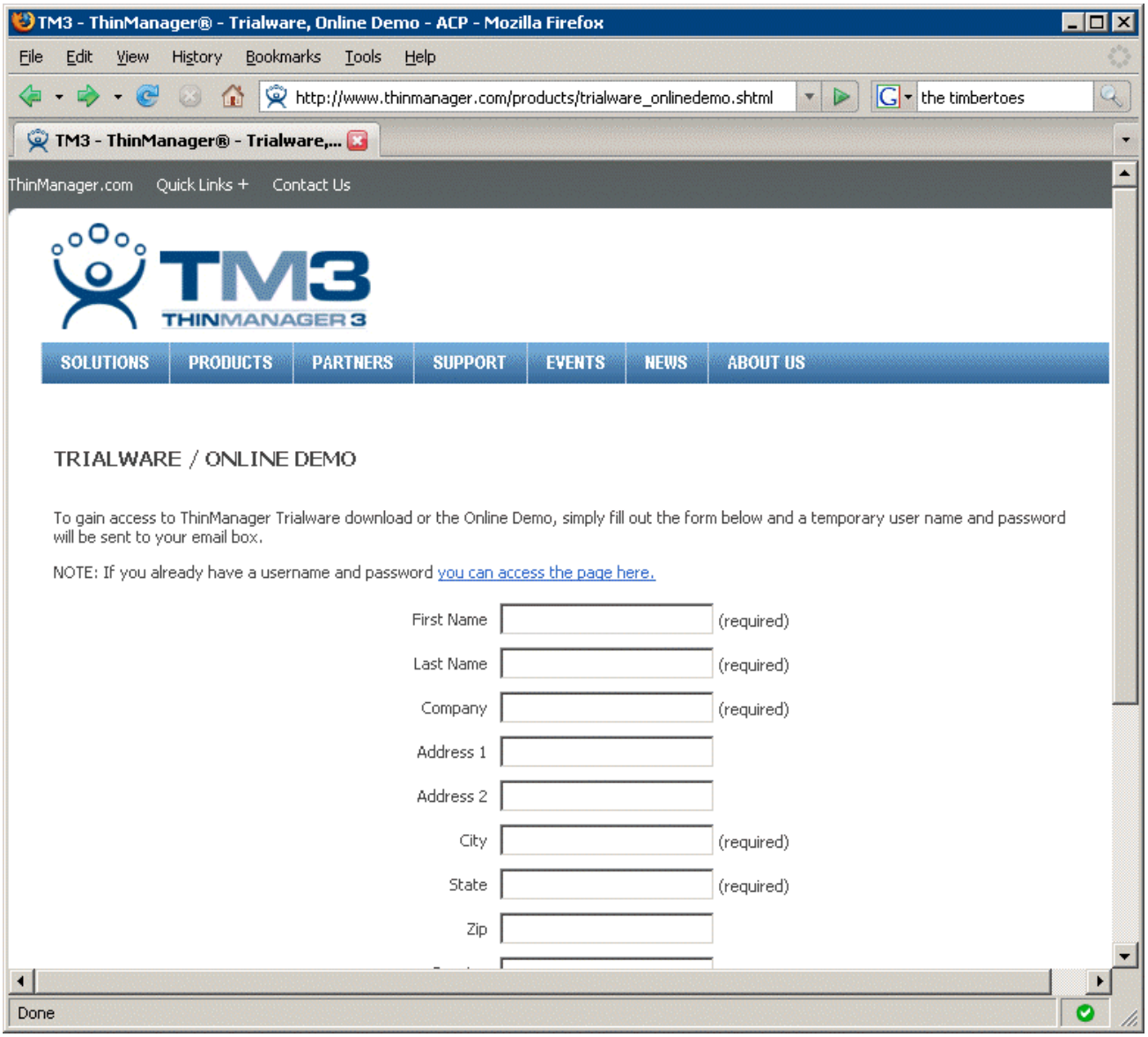
ACP has a demonstration version of ThinManager that provides customers with a 30-day trial. This version is downloaded from the ThinManager web site (www.thinmanager.com) as a self-extracting file.

- A user must register on the ThinManager web site to access the download.
- The software must be installed on a computer that hasn't had ThinManager installed before.
- The software can be installed on a workstation or a terminal server. Be sure to install in the **Install Mode** by using the ***Add and Remove Programs*** if the Trialware is installed on a terminal server.
- The software doesn't need license activation and will provide licenses for 30 days.
- The Trialware version won't accept normal ThinManager licenses, but needs to be replaced with the standard ThinManager version to become a regularly licensed program.



Trialware Download at www.thinmanager.com

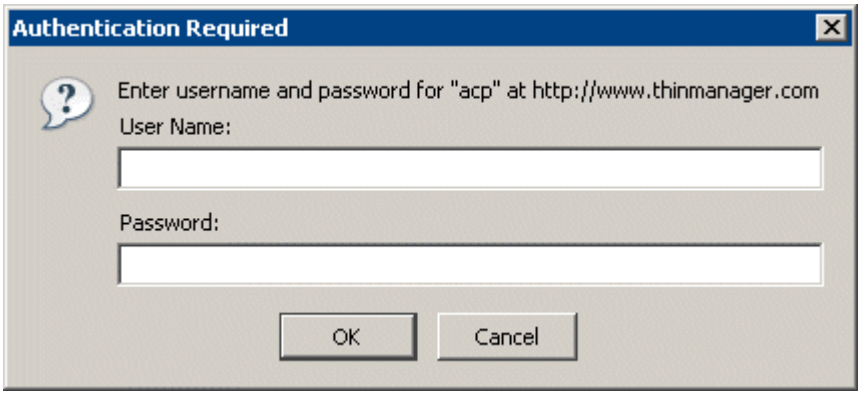
Selecting the ***Trialware/Demo*** button will lead to the **Trialware/Online Demo** window.



Trialware/Online Demo Page

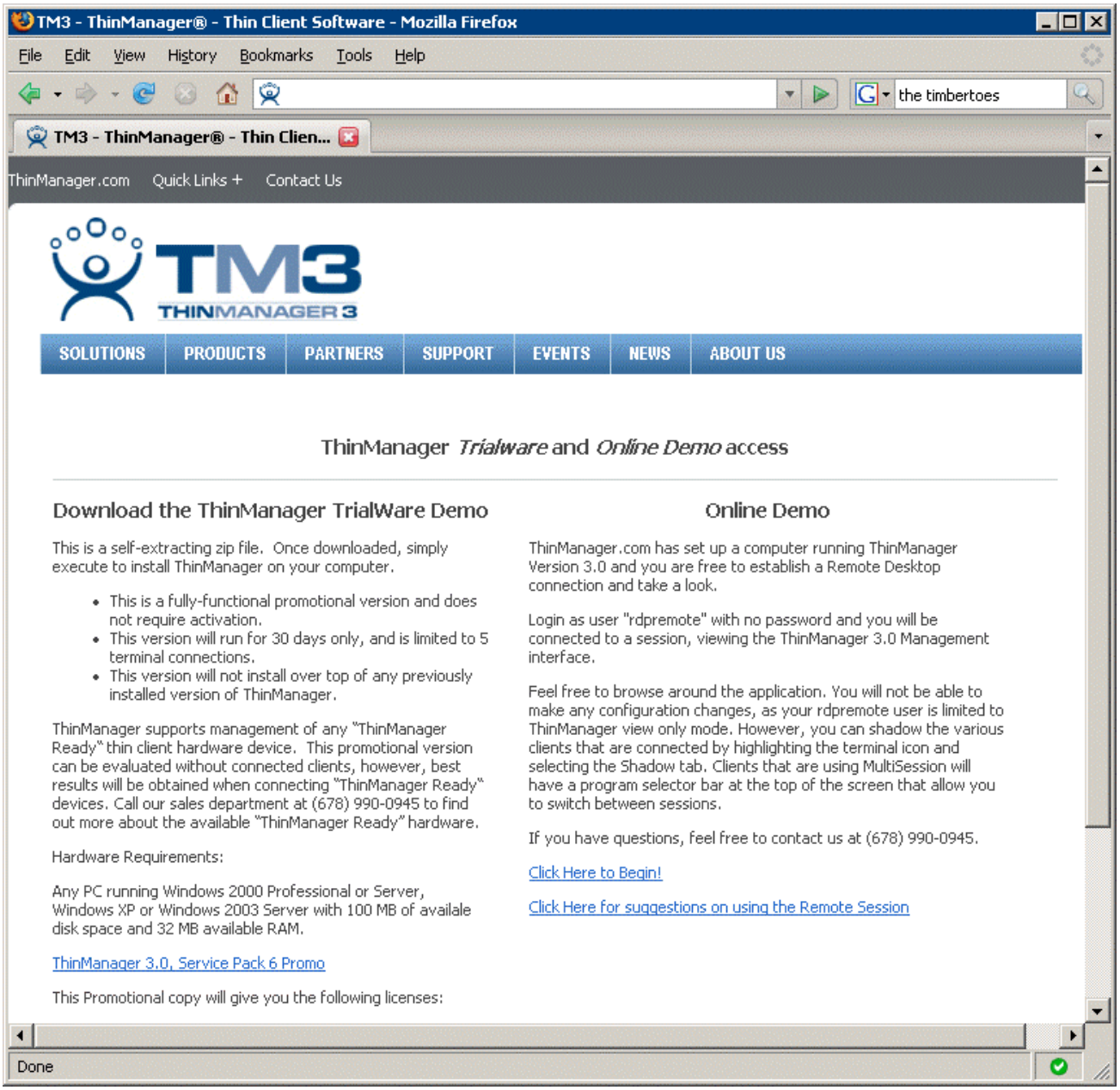
Fill in the required fields to register. The e-mail address is important because the password to the download will be sent to that e-mail address.

Once the form is filled out, a username and password will be e-mailed to allow access to the Trialware download. Select the ***you can access the page here*** link to access the download.



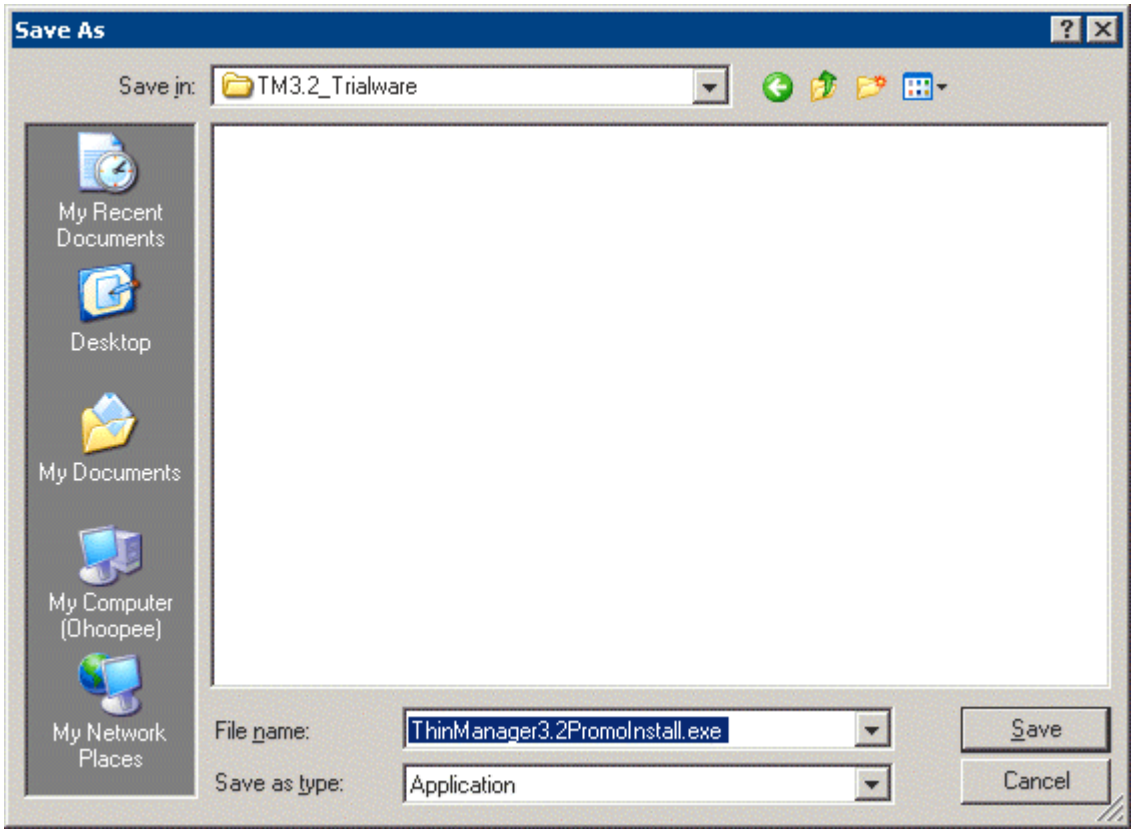
Download Authentication Window

Selecting the ***you can access the page here*** link will open an **Authentication Required** popup window. Enter the username and password that were e-mailed to you when you complete the Trialware registration form. A valid user name and password will open the **Trialware Demo Access** page.



Trialware Demo Access Page

Double-click on the ***ThinManager Promo*** link to download the file. Some browsers require that you right-click on the link and select ***Save Link As*** to save the file.



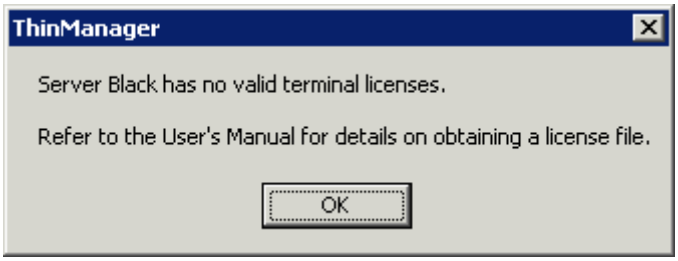
Save File Dialog Box

The download is a self-installing *.exe. It is recommended that it be installed using the **Add/Remove Programs** function. See Standard ThinManager installation for details on ThinManager installation.

4. Licensing ThinManager

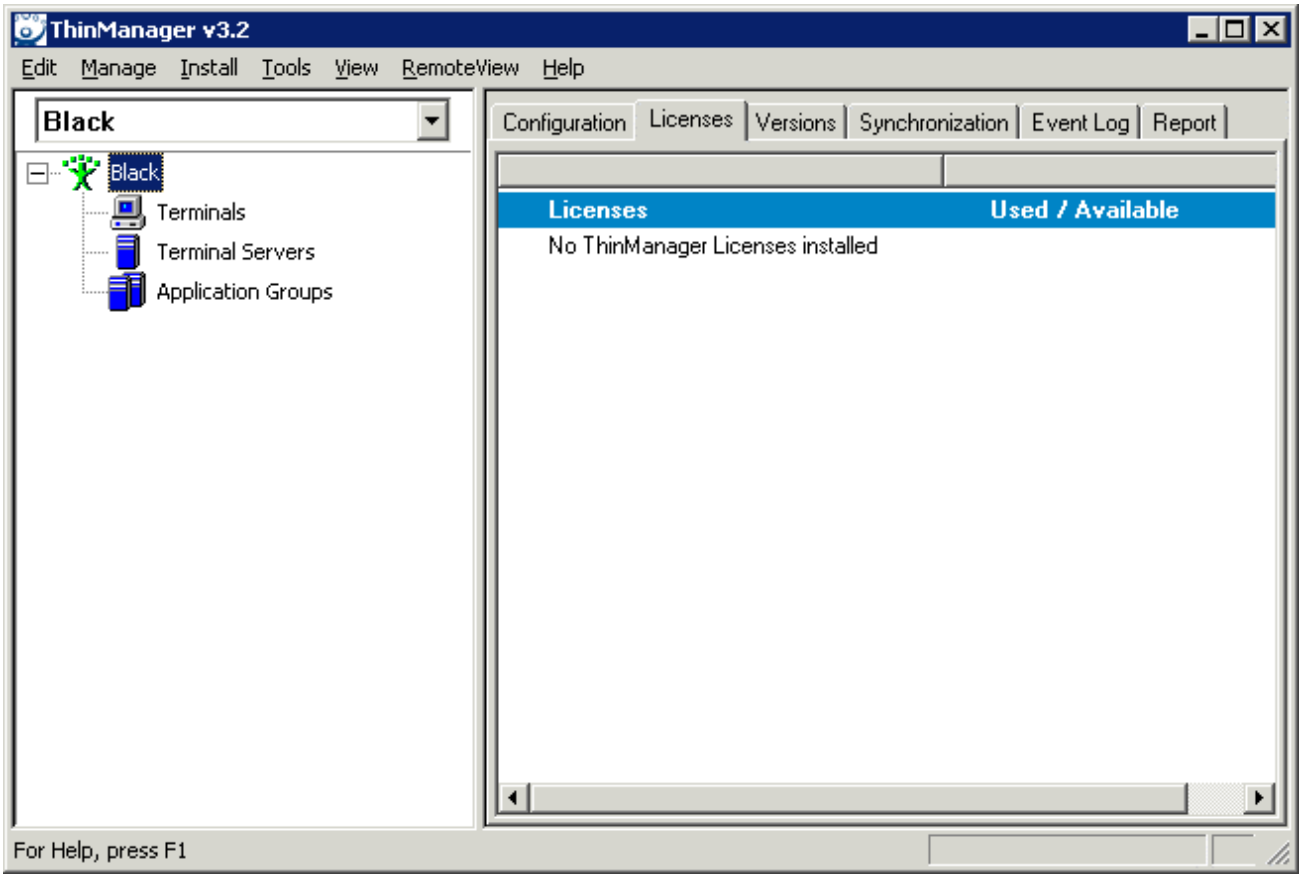
4.1. ThinManager Licensing

When an unlicensed copy of ThinManager is run, a message box will appear with notification that a license needs to be installed.



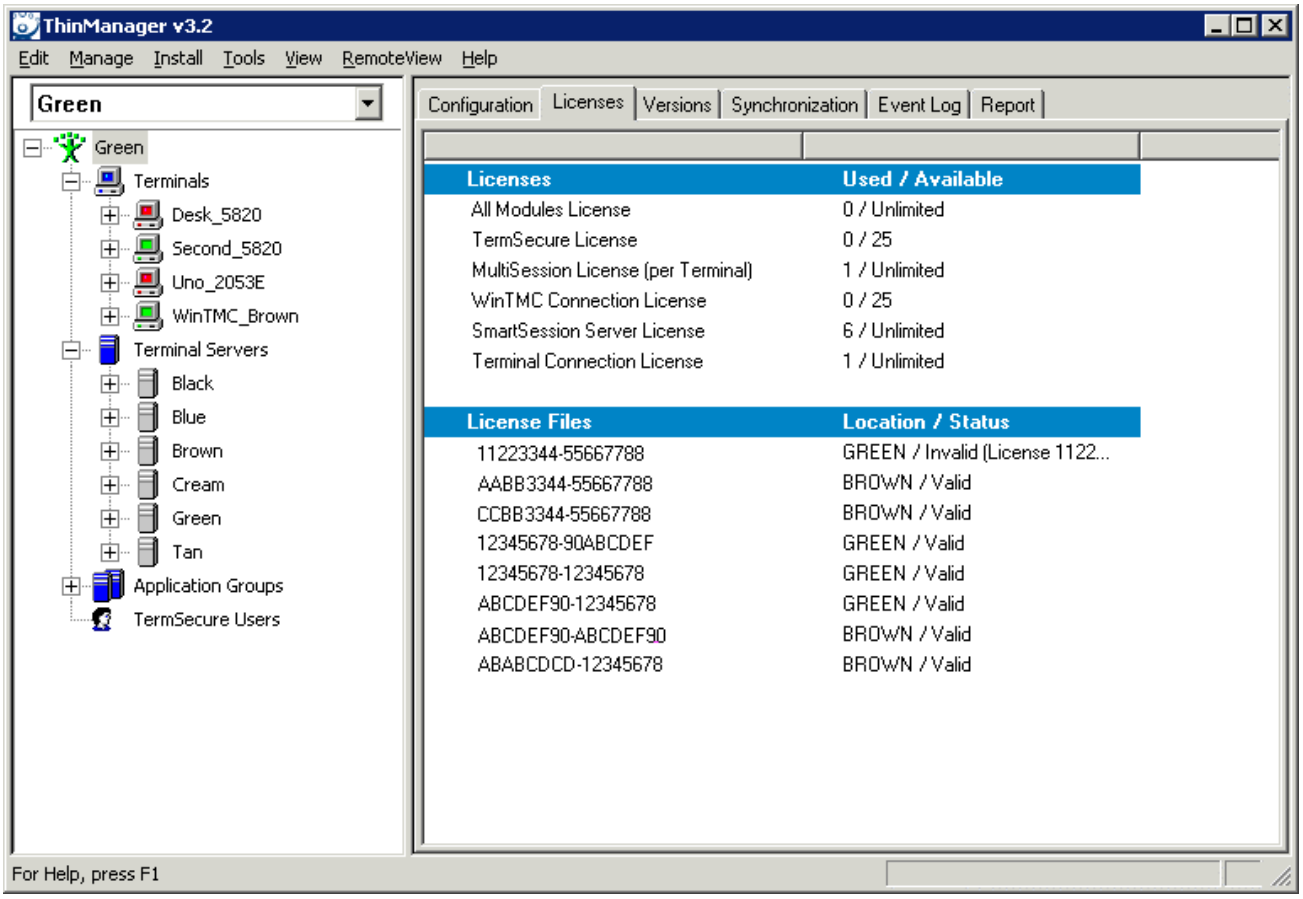
No Valid License Message Box

ThinManager has a Licenses tab on the Details Pane that shows the installed licenses.



Licenses Pane – No Installed Licenses

ThinManager will show no licenses on the Licenses tab until they are installed.



Licenses Pane –Installed Licenses on Auto-Synchronized ThinManager

Once ThinManager licenses are installed the license information will be displayed on the Licenses tab. A ThinManager that is a member of an auto-synchronized pair will display the licenses of both ThinManager Servers. Invalid licenses will also be shown.

ThinManager has two licensing modes, **Standard** and **Enterprise**. Several Application Group functions and modules require licenses.

Standard ThinManager licenses are sold per-connection and are available in 5, 10, and 25-user units. These licenses allow any 5, 10 or 25 ThinManager Ready thin clients to boot and connect to terminal servers and terminal server groups. The licenses are pooled and are released once the terminal is turned off.

Enterprise Licenses provide unlimited connections and are available as Server, Site, and Global versions.

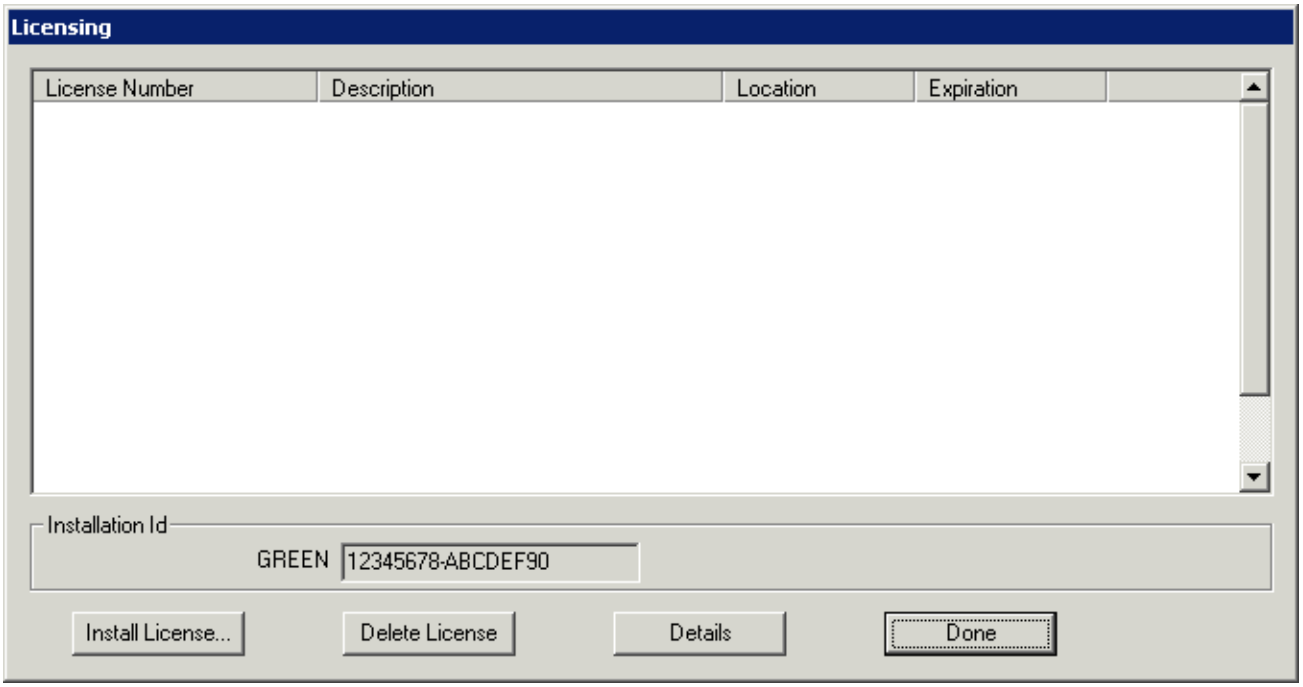
- **Enterprise Server** includes two license numbers that are installed on two computers to provide redundant ThinManager Servers.
- **Enterprise Site** has a single license number that can be installed on an unlimited number of computers at a single company facility to provide redundancy and departmental control. ThinManager Servers using this license will display the licensed company's name and site in the title bar of ThinManager.

Additional Licenses include:

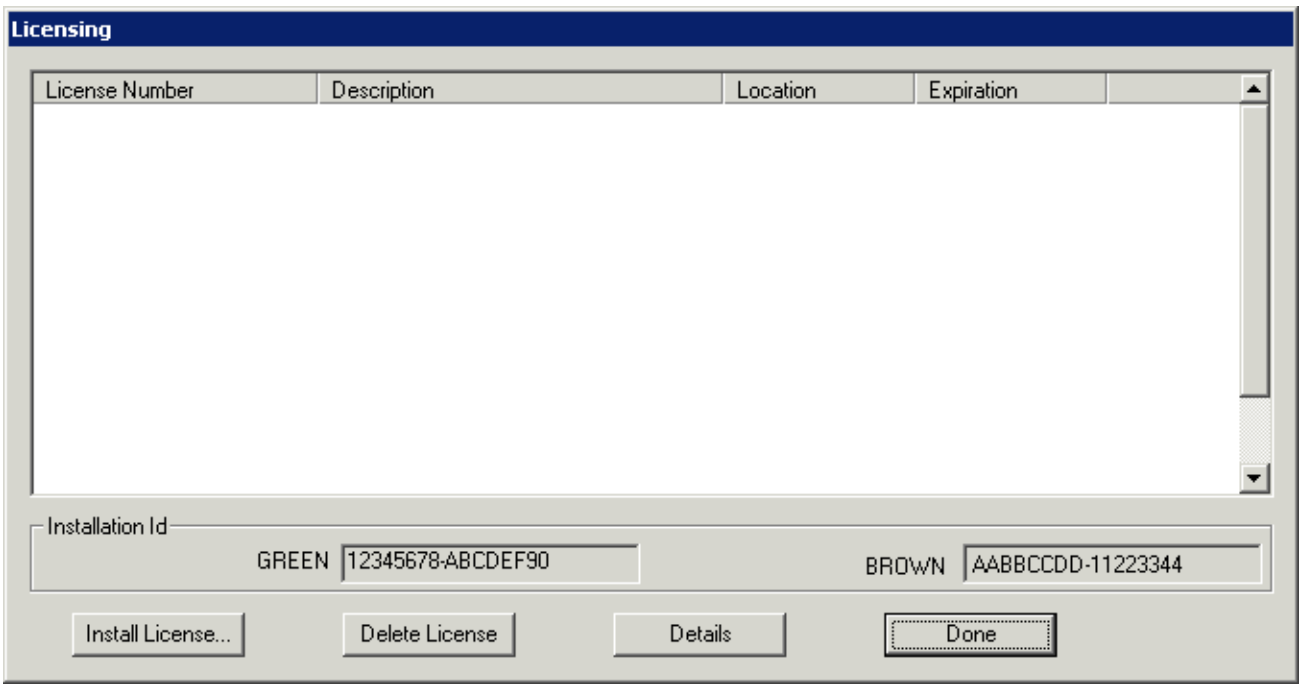
- A **SmartSession Server License** allows a terminal server to be added to an Application Group that uses SmartSession. A number of SmartSession Server Licenses are included with Enterprise Licenses or they can be purchased for use with Standard ThinManager licenses. This is the only license that applies to the terminal server and not the terminal.
- A **MultiSession License** allows a terminal to run two or more Application Groups. In ThinManager 3.2 each terminal that will run multiple Application Groups will need a MultiSession License.
- The **Instant Failover License** allows a terminal to use the Instant Failover module when using individual terminal servers or to connect to an Application Group that is configured to use the Instant Failover option. This is an additional purchase.
- The **Share Keyboard Mouse Module License** allows a terminal to use the Share Keyboard and Mouse Master module. This is an additional purchase. This license is not required for Share Keyboard and Mouse slave units.
- **MultiMonitor License** – This allows a thin client with multiple video ports to use two or more monitors for display.
- **Redundant Ethernet Module License** – This allows a ThinManager Ready thin client with 2 built-in LANs to use the Redundant Ethernet Module that allows the thin client to be connected to 2 hubs for network redundancy.
- **Terminal Shadow Module License** – This allows a terminal to shadow another terminal by using a Terminal Shadow Application Group. See Terminal Shadow Application Groups for details.

Mirrored Licenses – ThinManager has a new form of redundancy that ties a license to the Installation IDs of two ThinManager Servers. This is covered in Mirrored Redundancy.

The ThinManager Licensing dialog box shows the available licenses and shows the Installation ID that is needed for license activation. It is opened by selecting ***Install > Licensing*** from the ThinManager menu bar.



Licensing Dialog Box – Single ThinManager Server



Licensing Dialog Box – Auto-Synchronized ThinManager Servers

The Installation ID at the bottom of the window is used to obtain the License File from ACP.

Note: The **Installation ID** is required for obtaining a **License File**.

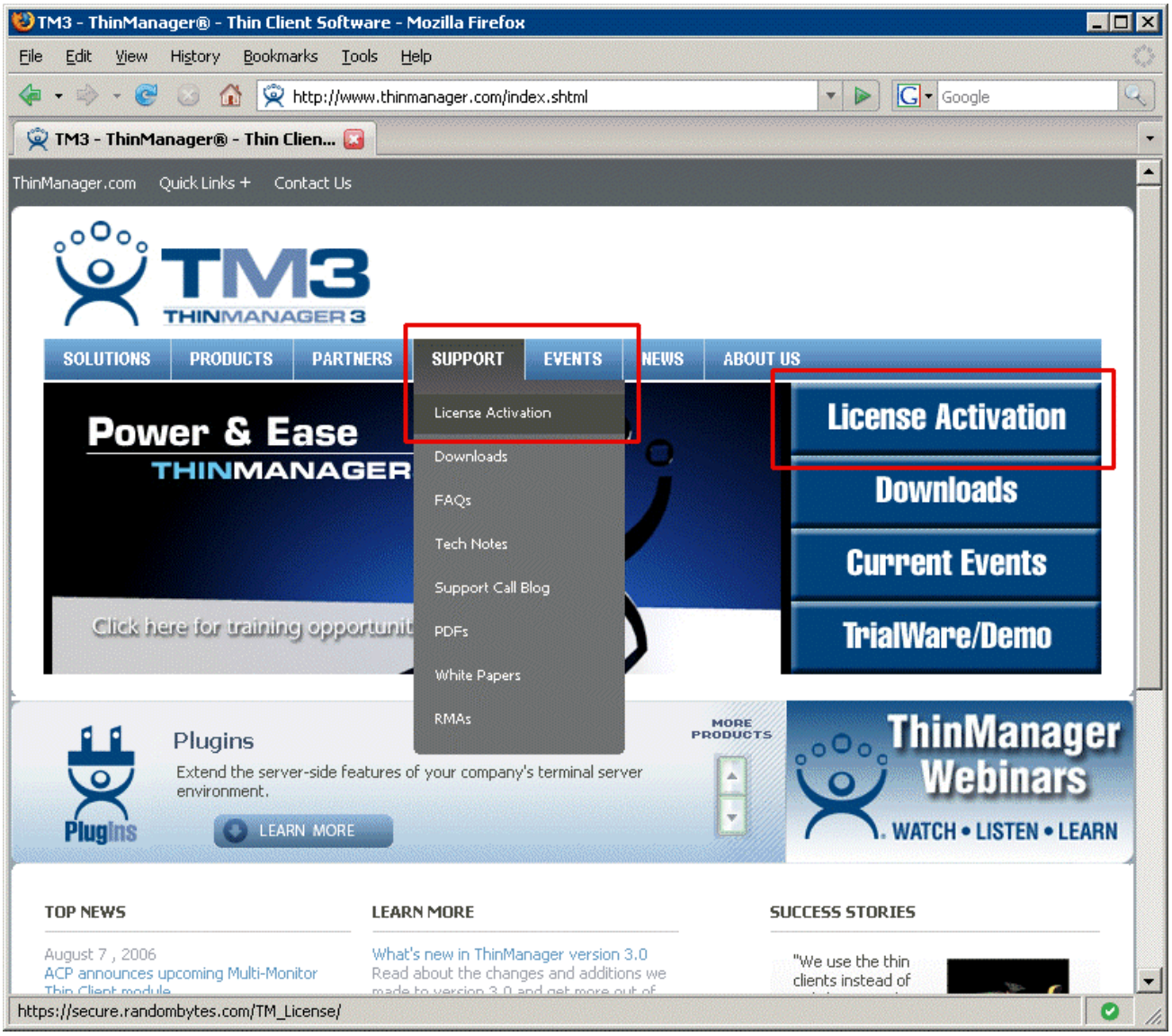
4.1.1. ThinManager License File Download

To obtain a license file you need two numbers:

- The **License Number** is purchased from an ACP ThinManager distributor. It is usually inside the ThinManager CD case.
- The **Installation ID** that is generated by ThinManager during installation. Mirrored licenses and Enterprise Server licenses require two Installation IDs.

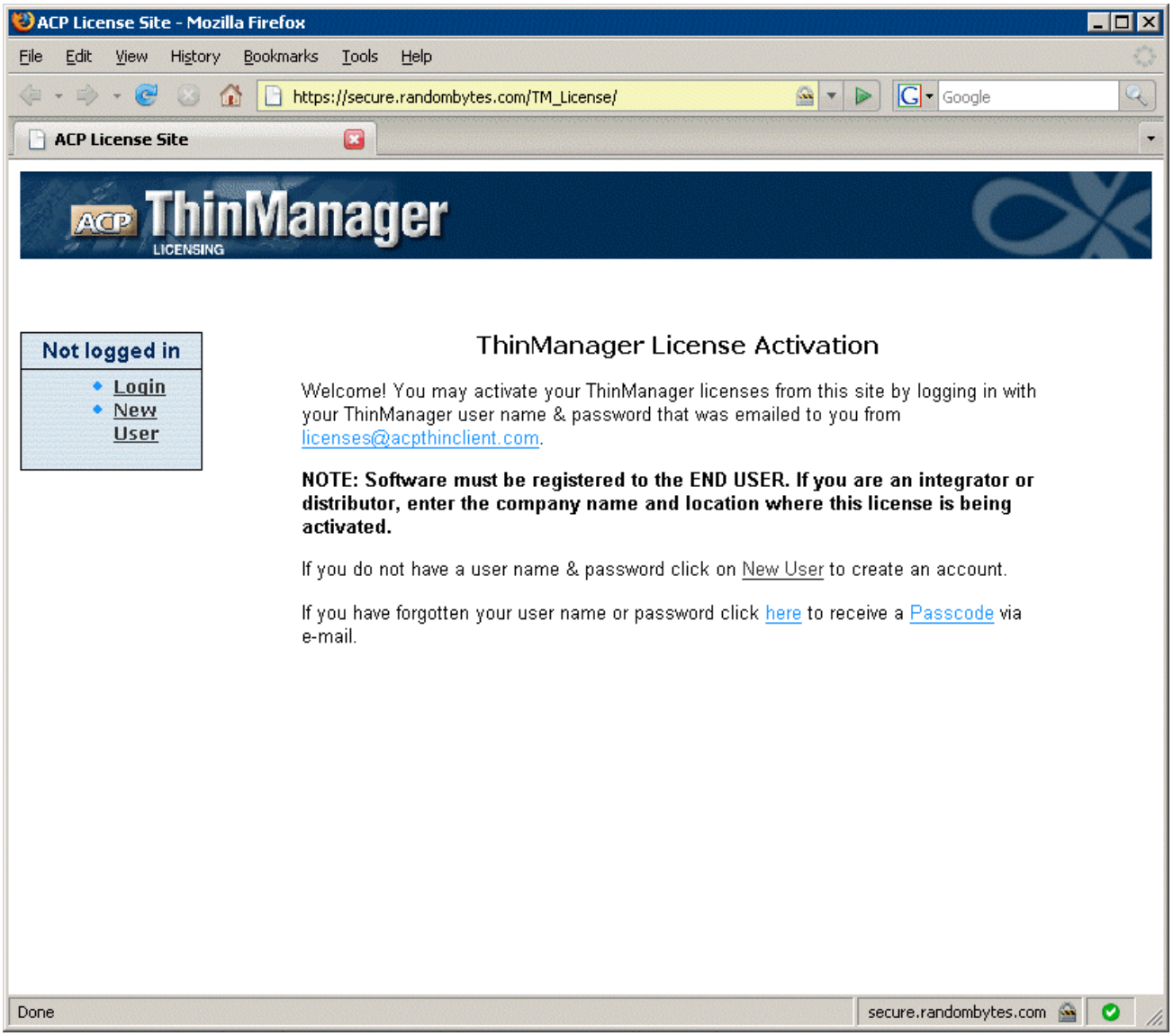
The License File needed to activate ThinManager is obtained from the ACP web site at www.thinmanager.com or www.acpthinclient.com.

Note: Since web sites are dynamic, the exact layout of the web screens may change, but the functionality should remain the same. If you have problems, please contact your distributor or e-mail support@acpthinclient.com for help.



www.thinmanager.com

Select the ***License Activation*** link in the **Support** section. This will launch the **ThinManager License Site**.



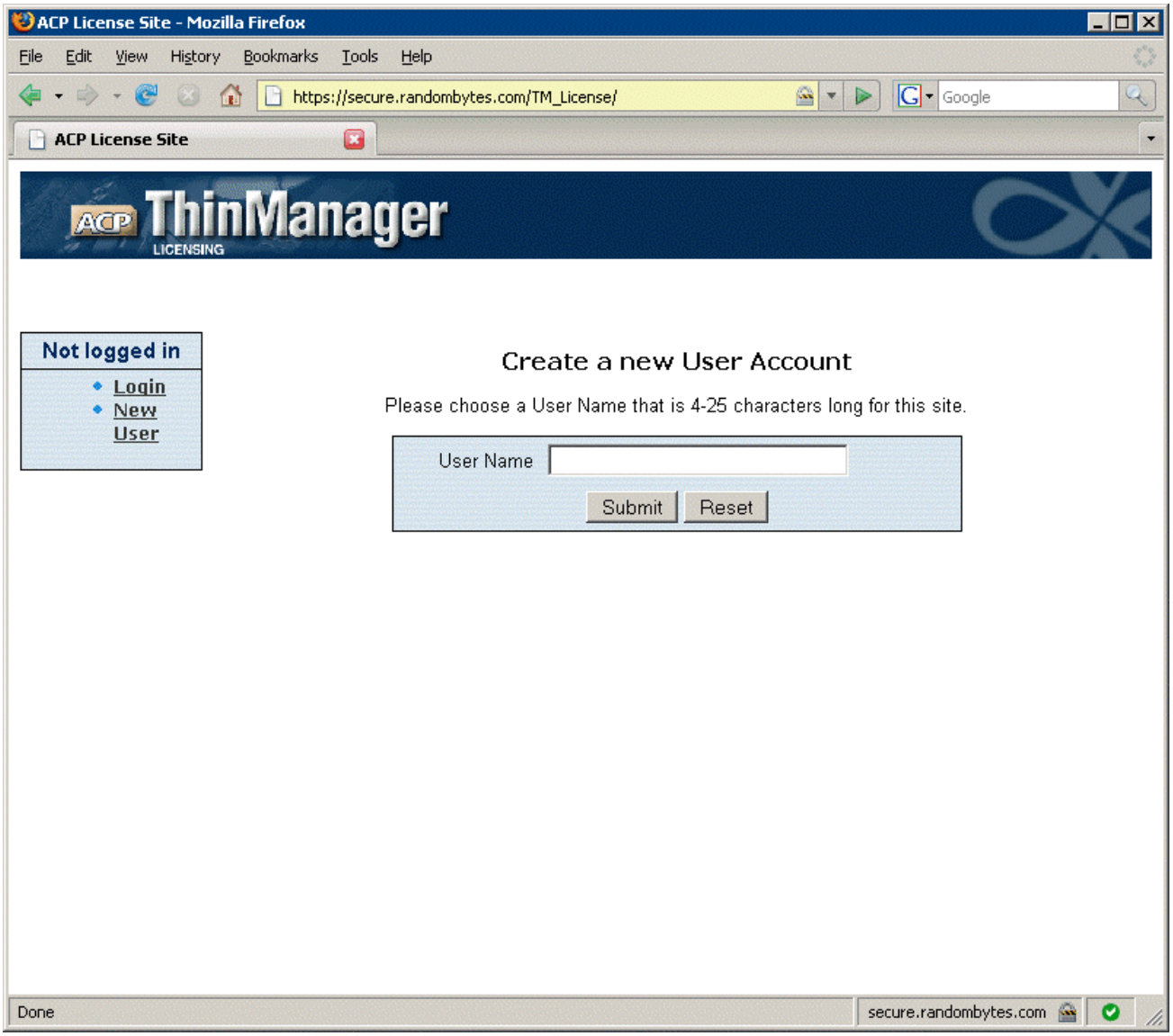
ThinManager License Activation Site

There are two links at the ACP Licensing Site:

- **Login** - This link allows previously registered users to enter the site.
- **New User** - This link allows a person to become a registered user of the site so that they can activate a license.

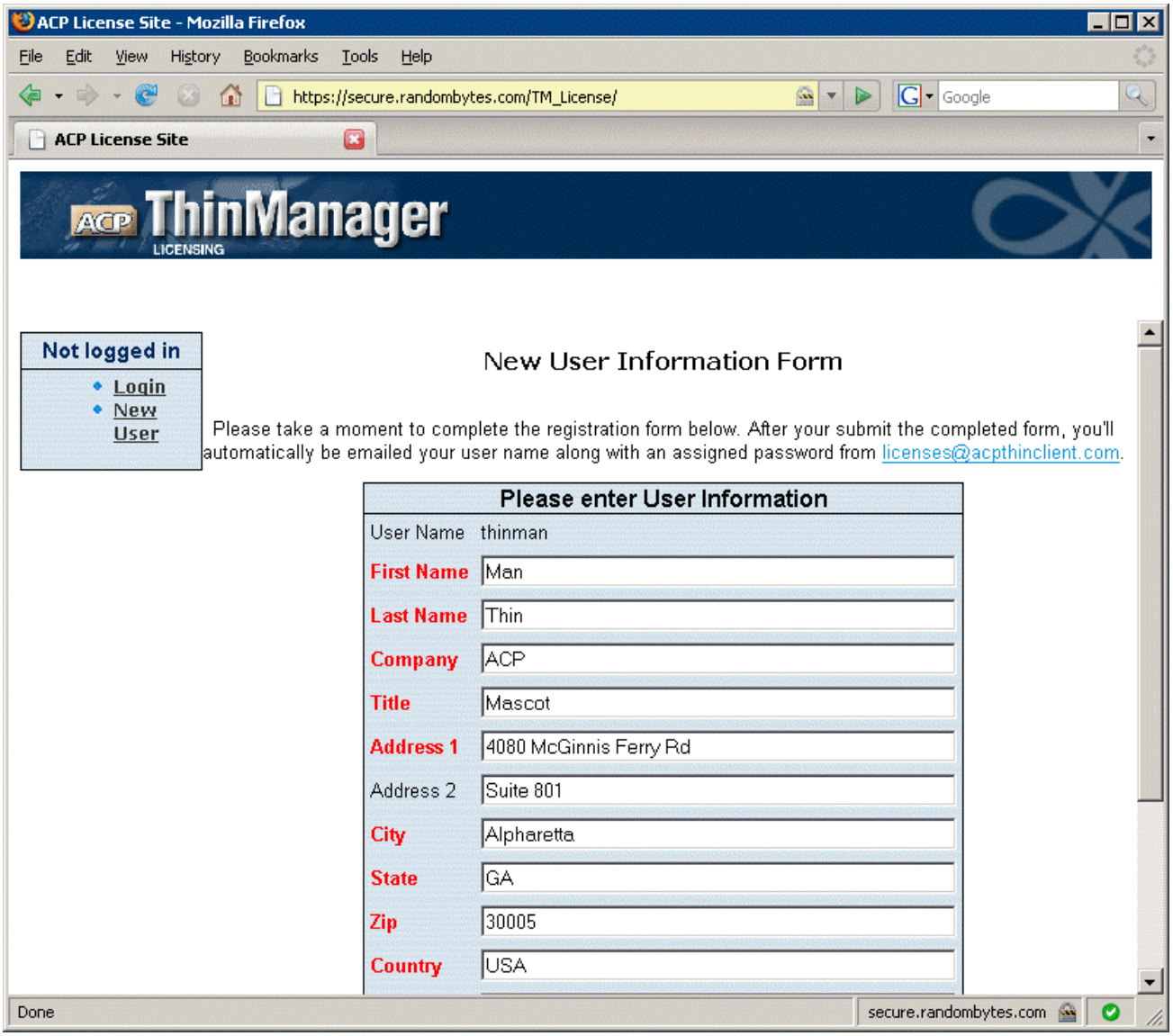
If you are a new user, select the ***New User*** link. Previously registered users should login by selecting the ***Login*** link.

Note: The login to the license site is separate from any login to www.thinmanager.com.



New User Login

Enter a name to be your ACP User Name. Select ***Submit*** to continue.

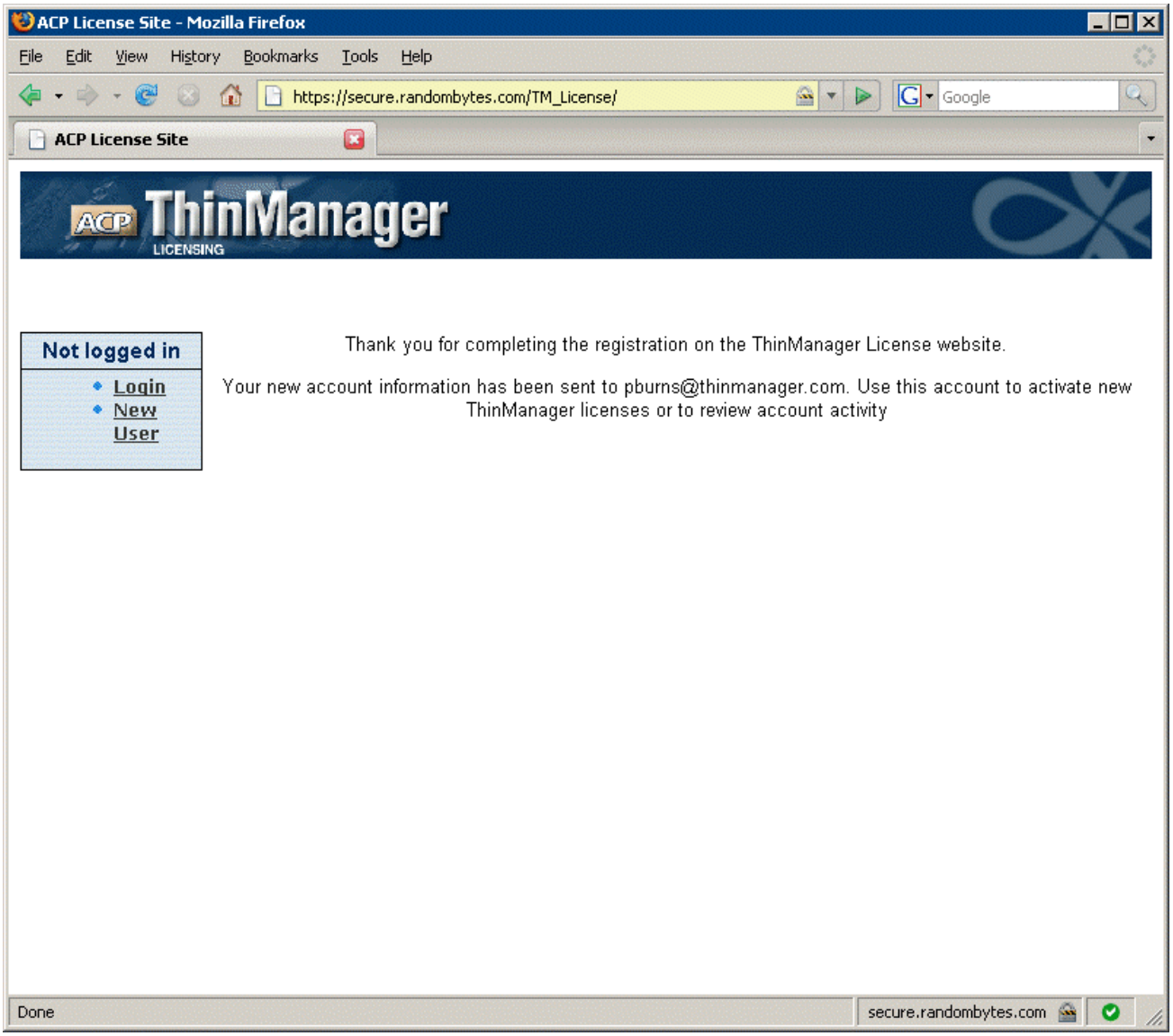


User Information Form

Fill in the **User Information** form.

Note: The e-mail address is very important because all correspondence will take place through e-mail. Your password will be sent to that address.

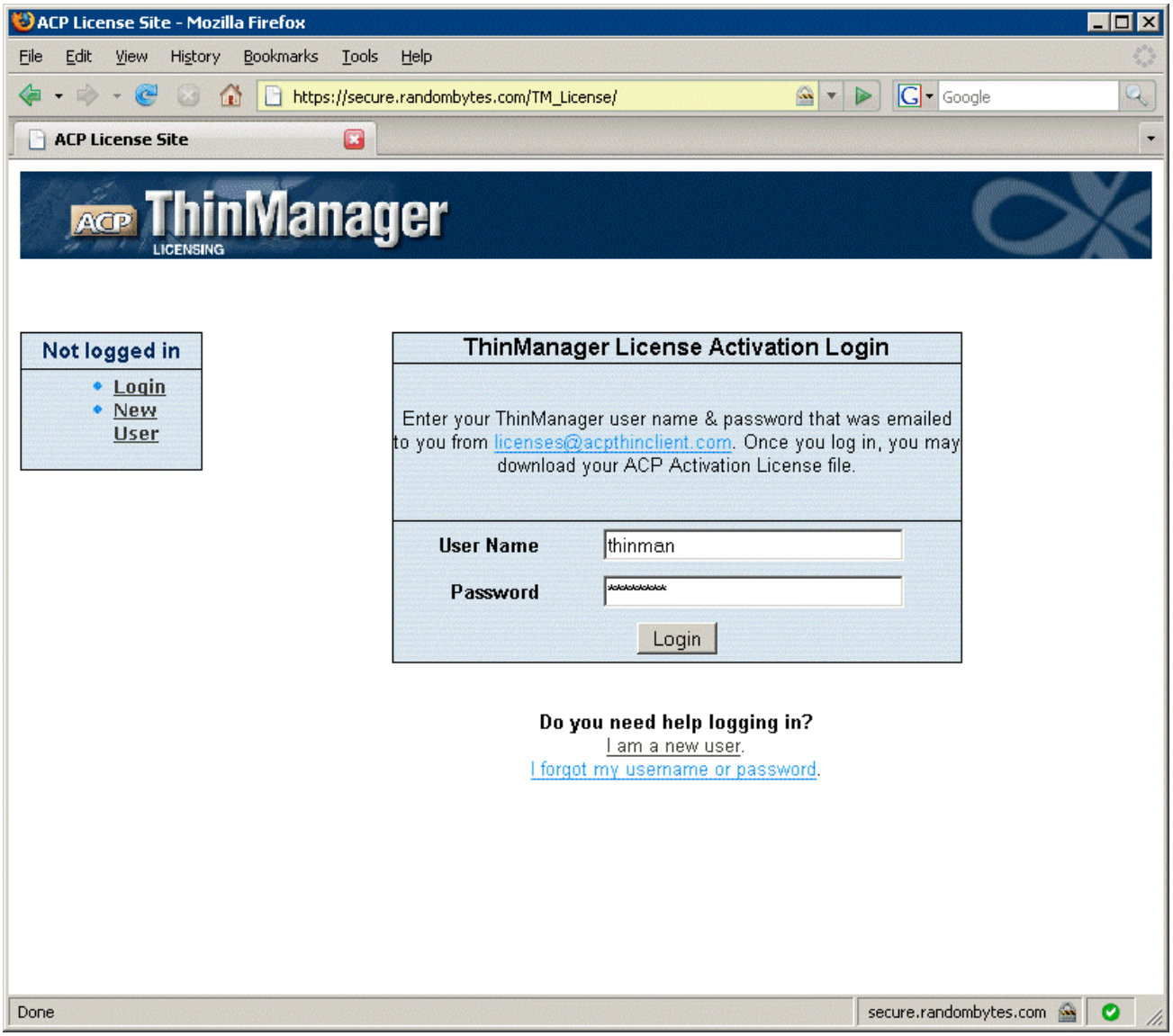
Select ***Submit*** when finished.



New Account Completion

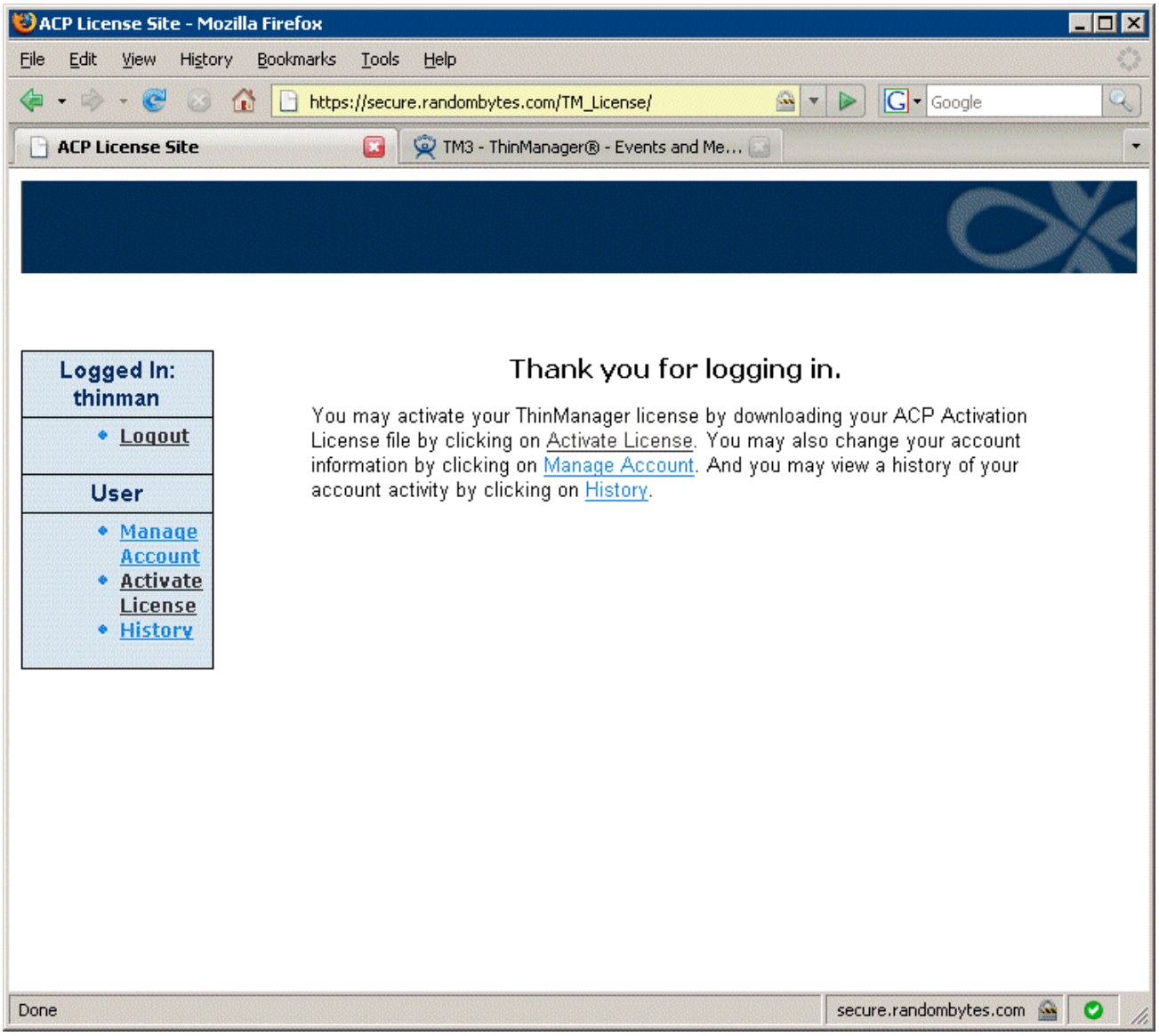
Your user name and password will be promptly sent to your e-mail address. Open your e-mail to receive your password.

Select the ***Login*** link to continue.



Licensing Site Login

Enter the user name and password that you received in your e-mail into the appropriate fields. Select the ***Login*** button to continue.



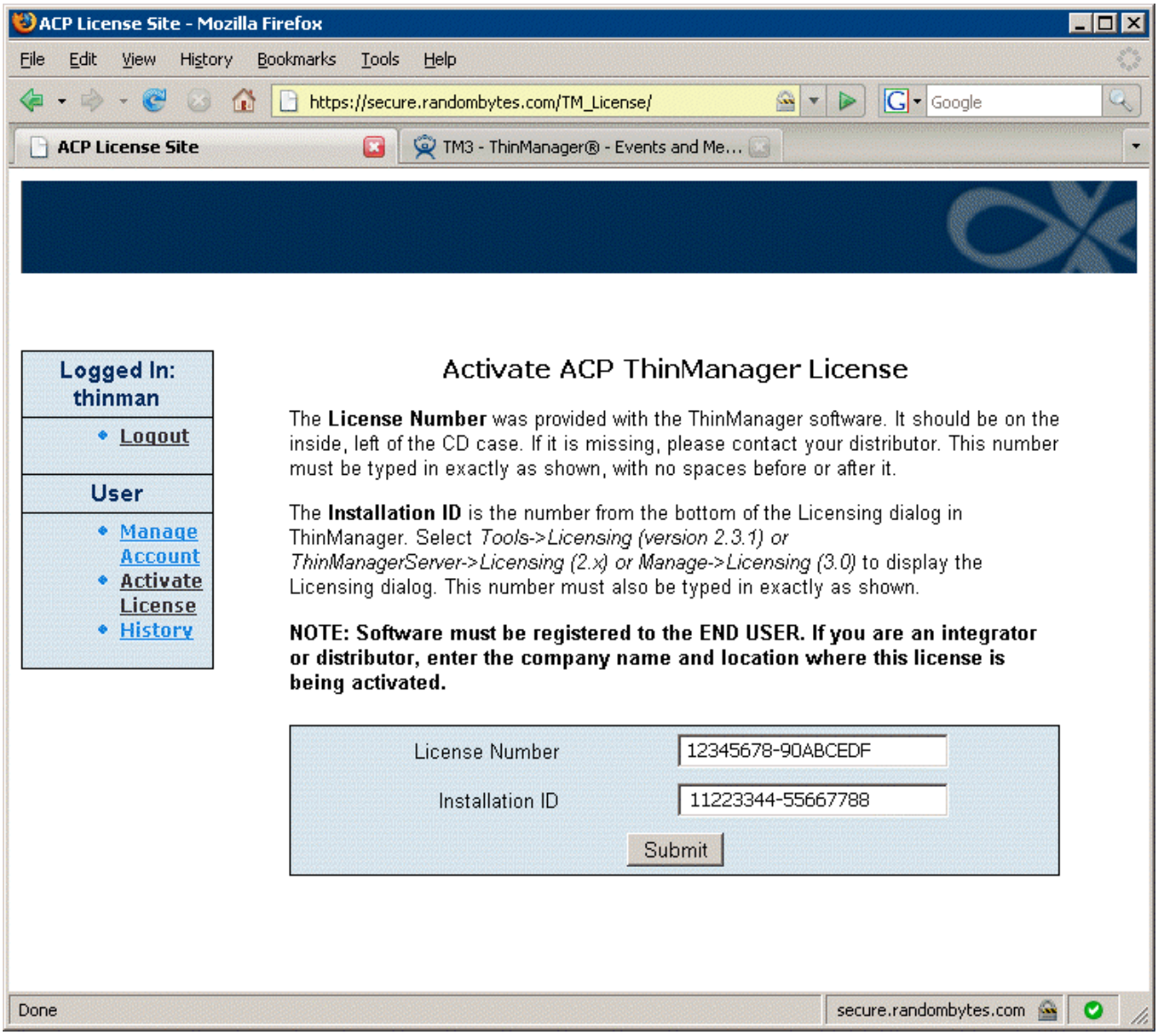
ACP Licensing Site

Inside of the ACP Licensing Site are four functions for the registered user.

- **Logout** - This link will allow exiting from the secure site.
- **Manage Account** - This link allows user information to be changed or updated. Passwords are changed here.
- **Activate License** - This link allows the activation of a license and the retrieval of a license file.
- **History** - This link displays past actions for the user account.

Select the ***Activate License*** link to activate a license and retrieve a license file.

Note: The initial password that is sent is complex and hard to remember. Going to ***Manage Account*** will allow the password to be changed to one of your choosing.



License Request Page

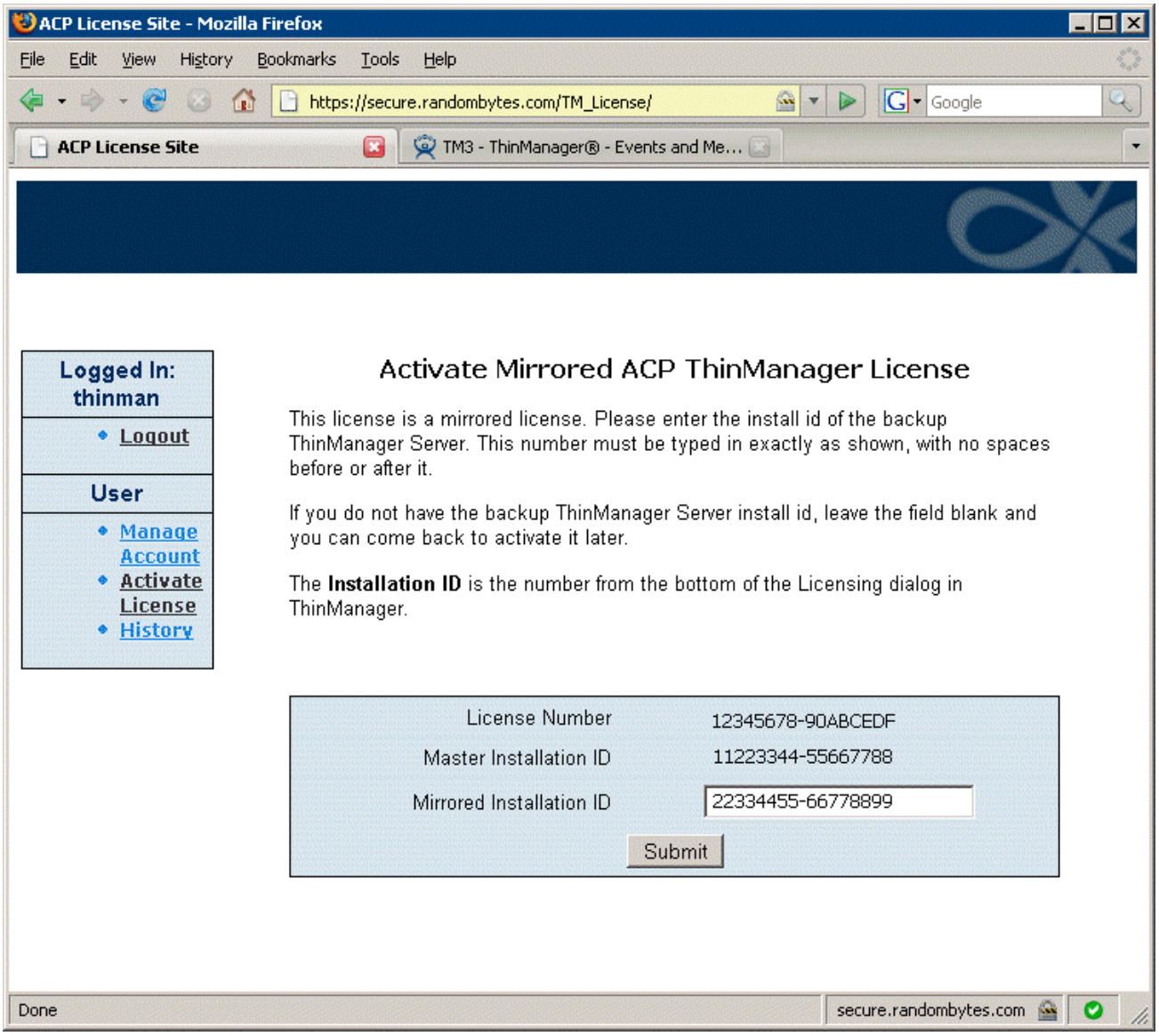
Logging on to the ACP License site and selecting ***Activate License*** will display a **License Activation** page. This web page will have a field for the **License Number** and a field for the **Installation ID**.

Note: The **License Number** is usually located on a label inside of the ThinManager CD case. The **Installation ID** is on the ThinManager Licensing dialog box that is launched by selecting ***Tools > Licensing*** from the ThinManager menu bar.

Fill in both fields with the correct numbers. These numbers are case sensitive and cannot have extra spaces added.

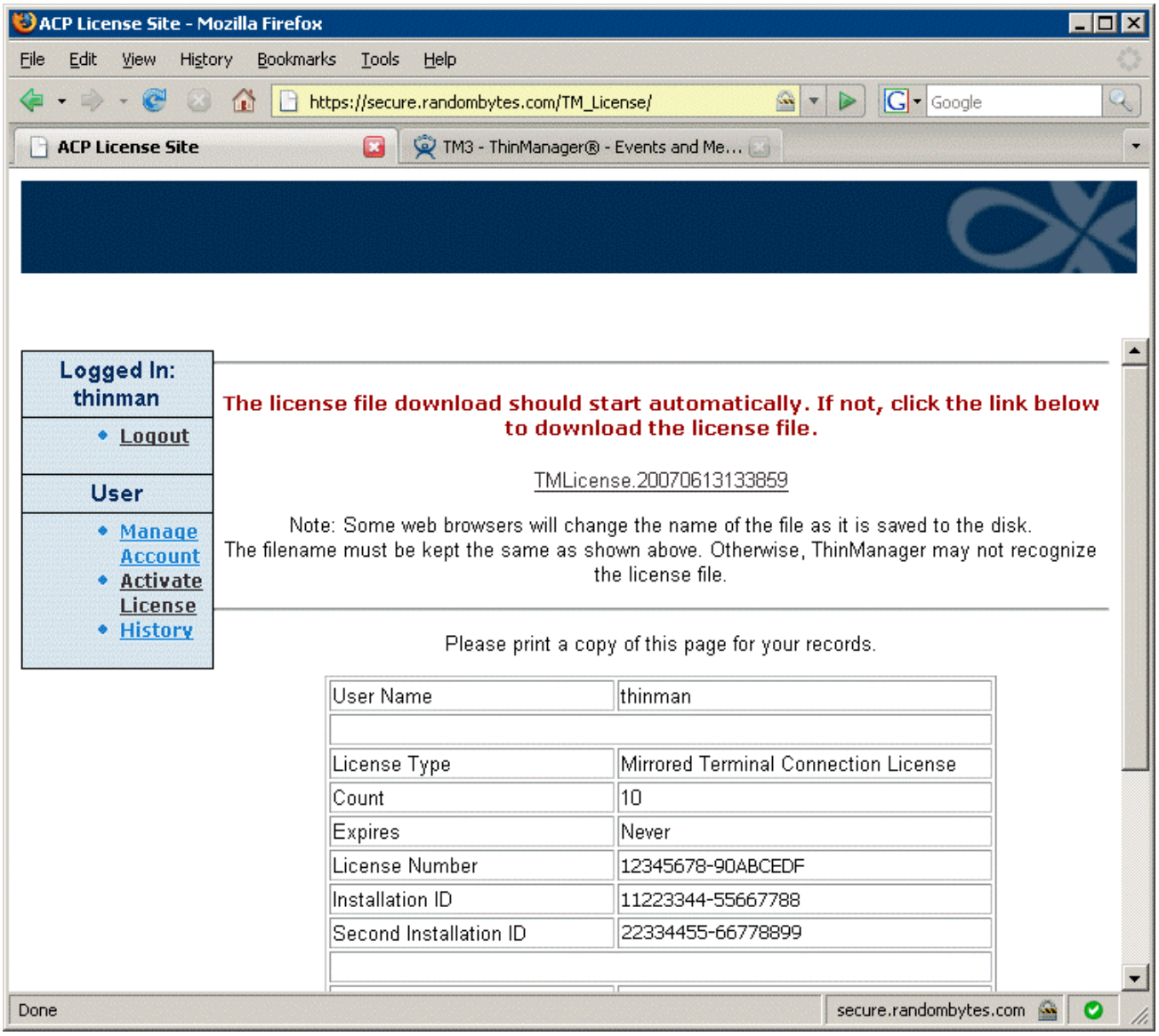
Select the ***Submit*** button to continue.

If the license is a Mirrored license or an Enterprise Server license then the site will ask for the Installation ID of the secondary ThinManager Server.



Mirrored License Activation

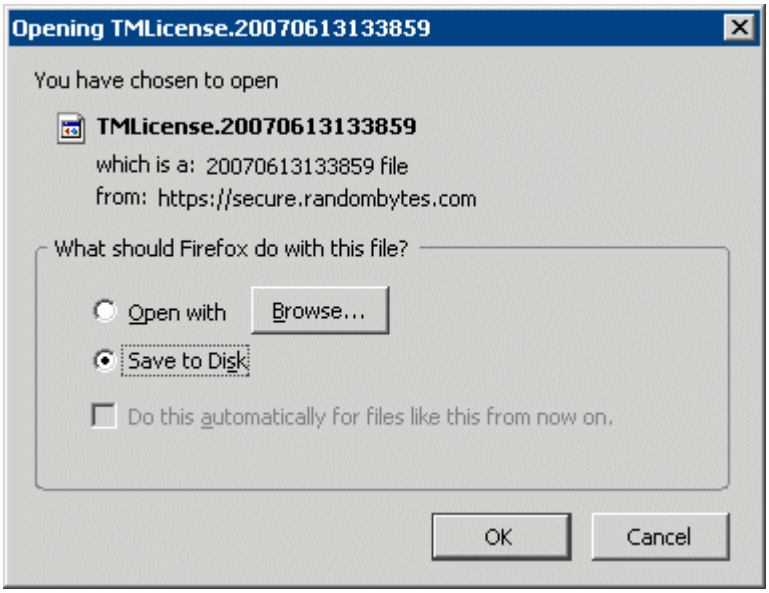
Enter the Installation ID of the secondary ThinManager Server into the ***Mirrored Installation ID*** field and select the ***Submit*** button.



Download License File

The site will display a page with license information. Print a copy of this page for your records.

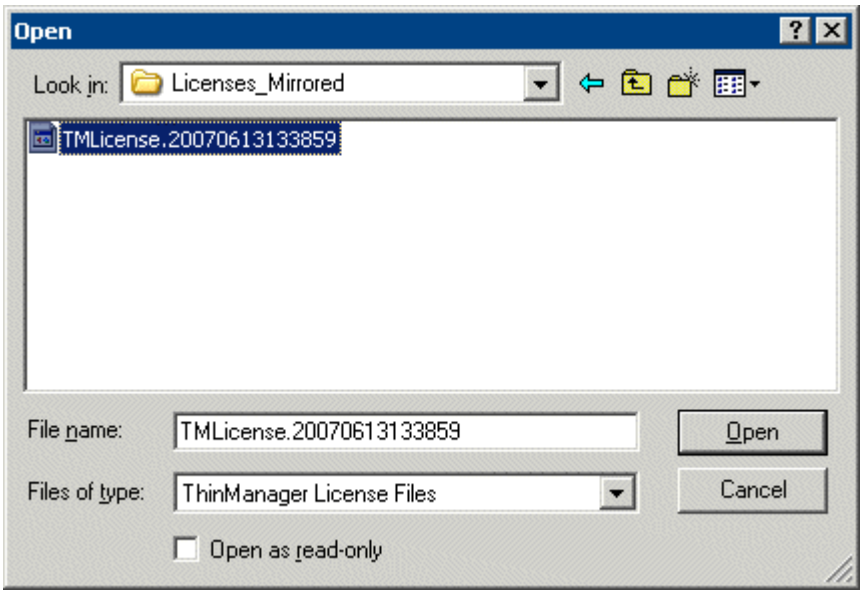
The License File will begin to download. A dialog box will appear that allows the option of opening the file from its current location or saving the file to disk. Saving the file to disk is recommended.



Saving File to Disk

Select ***OK*** to continue.

A dialog box will appear that allows the selection of the download directory.



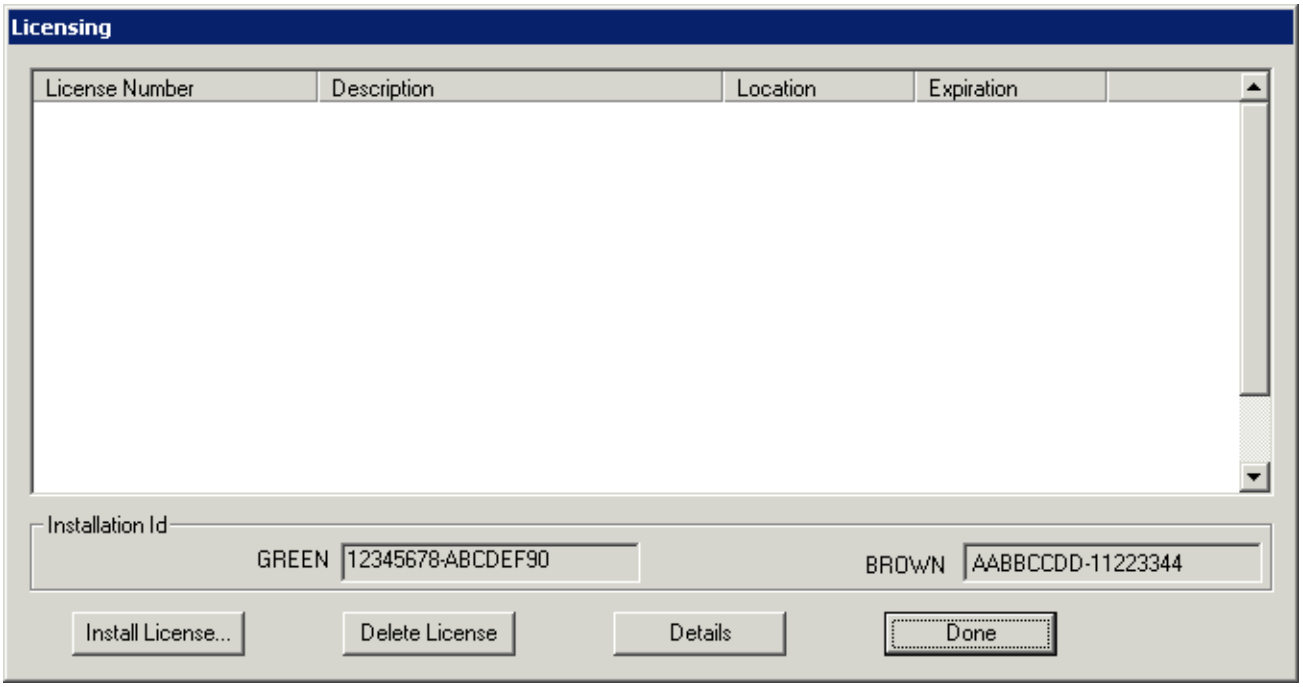
Save As Window

Select a directory or drive to copy the file, and select ***Save***.

The license file is now ready for installation.

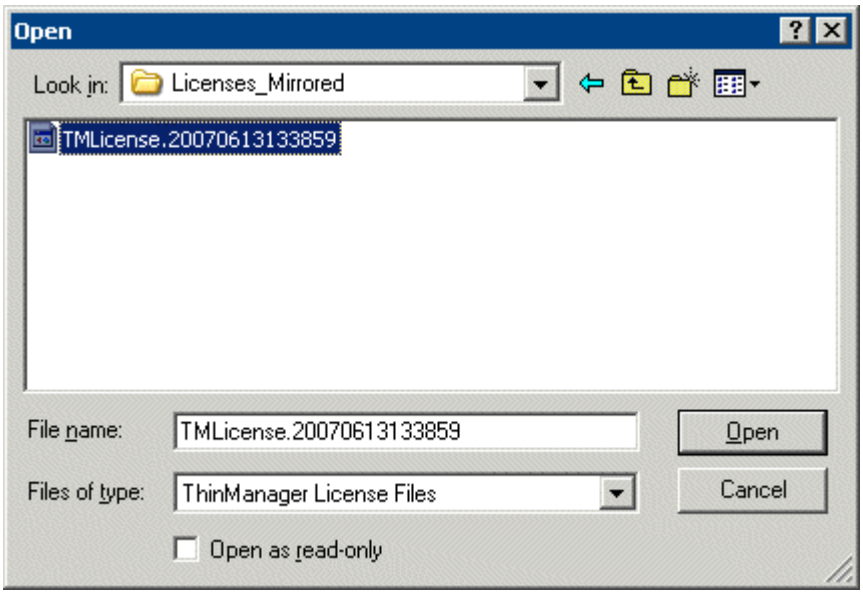
4.1.2. ThinManager License File Installation

Open the Licensing dialog box by selecting ***Tools>Licensing*** from the ThinManager menu bar.



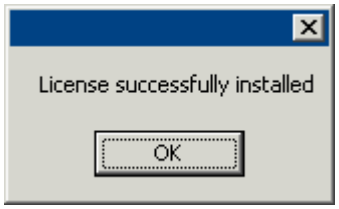
Licensing Dialog Box - Synchronized ThinManager Servers

Select the ***Install License*** button on the Licensing dialog box. An Open File dialog box will be displayed.



Open License File

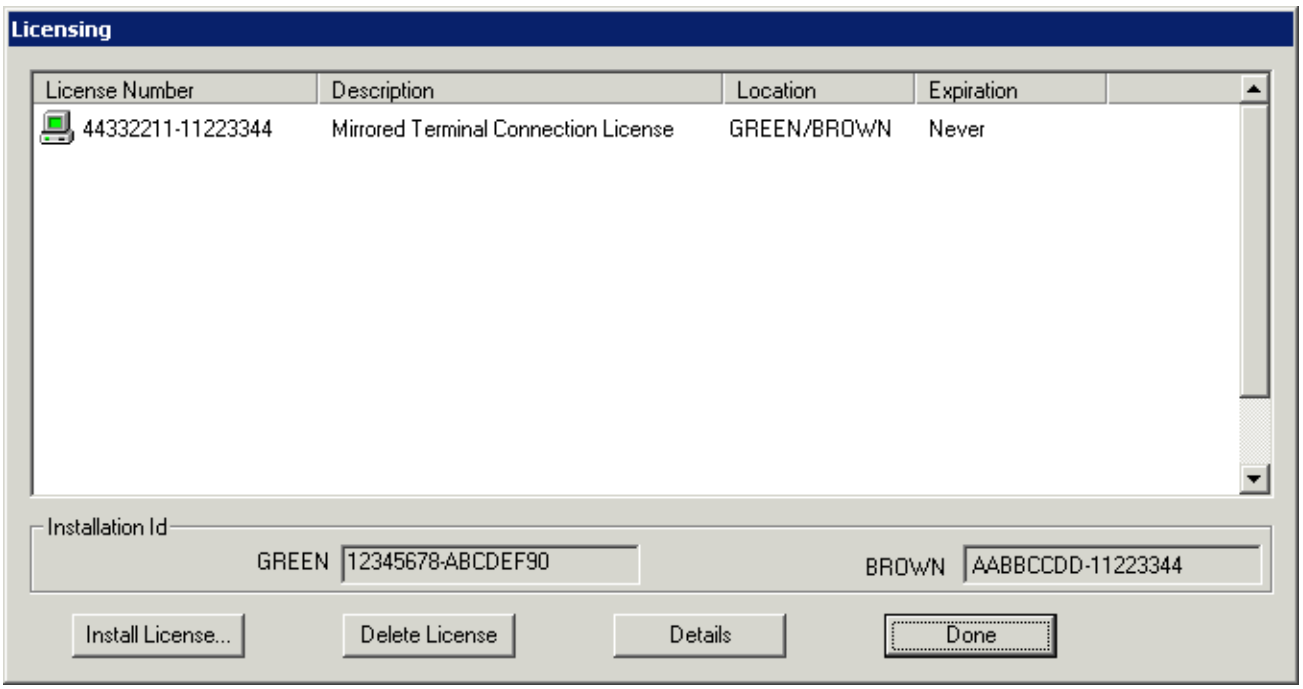
Select the License File that was downloaded from the ACP web site and select ***Open***. This will install the License File.



Successful License Installation Message

When the License File has been successfully installed, a message box will appear to confirm it. The License Number and properties will appear in the Licensing dialog box.

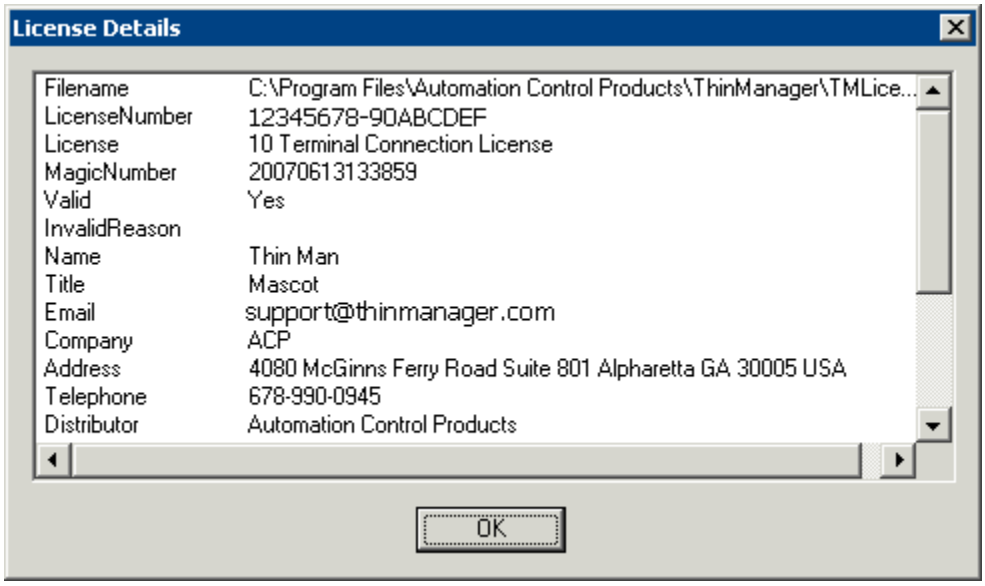
Select ***OK*** to close the message box.



Added Licenses

Selecting the ***Delete License*** button on the Licensing dialog box will open a message box that will allow the deletion of a selected license.

Selecting the ***Details*** button on the Licensing dialog box when a license is selected will display a window with the details of the selected license.

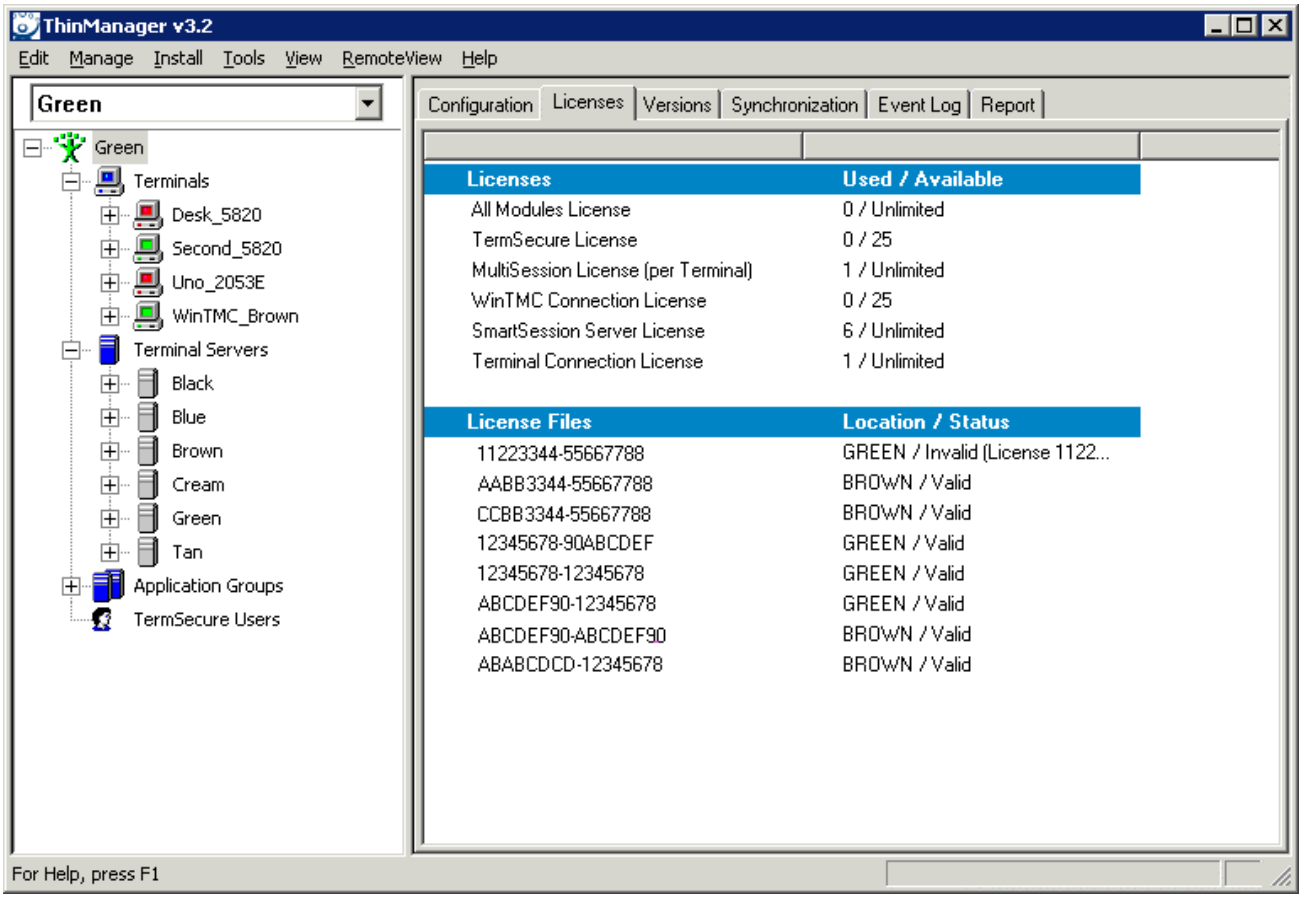


License Details

Double-clicking a license in the Licensing dialog box can also open this window. Selecting ***OK*** will close the License Details window.

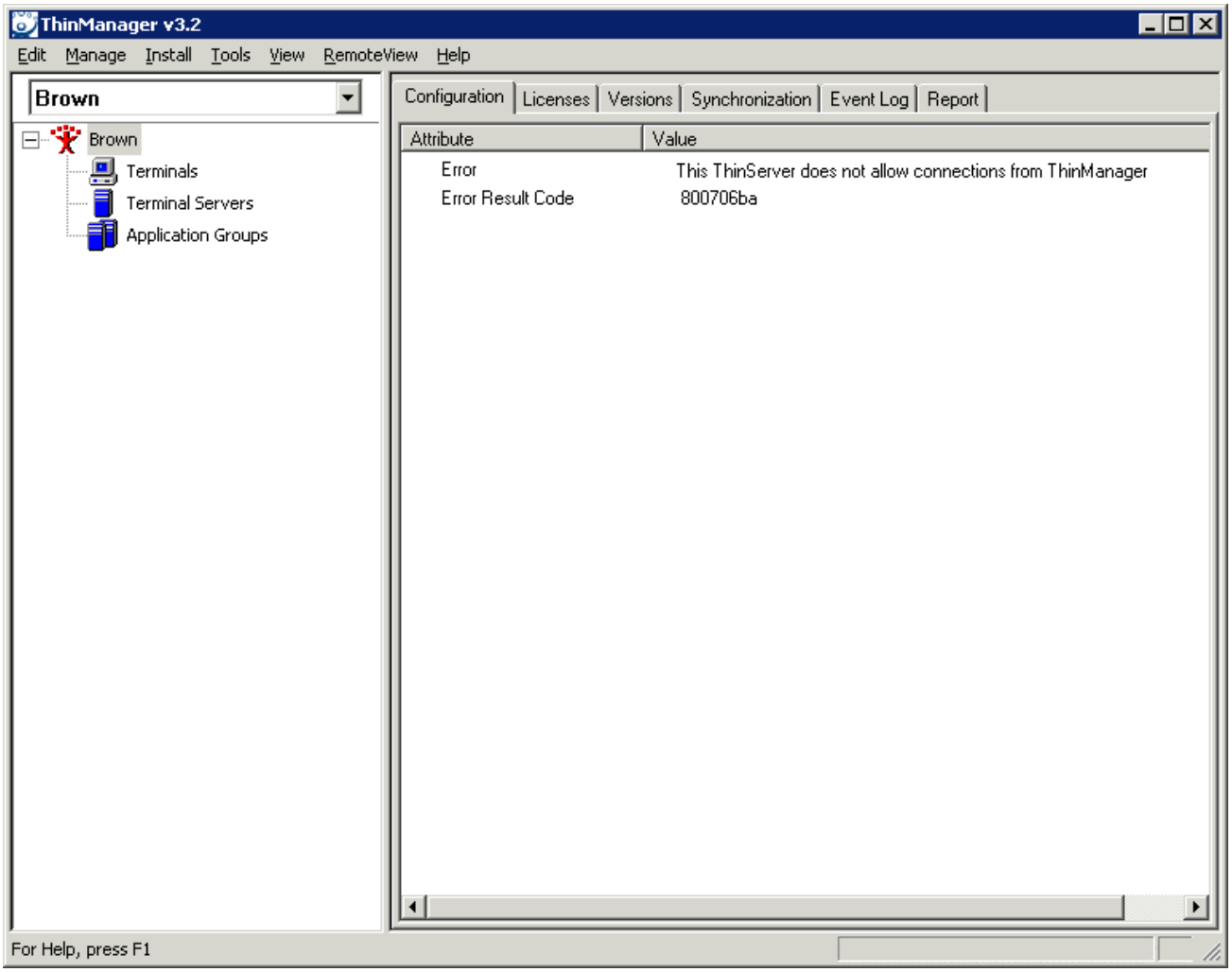
Selecting the ***Done*** button on the Licensing dialog box will close the Licensing dialog box.

Once a license is added to ThinManager it is displayed on the **Licenses** tab of the Details pane.



License Tab

When a Mirrored license is activated the mirrored ThinManager Server will allow thin clients to boot from it but it does not allow the ThinManager to run and allow configuration changes like a fully redundant ThinManager Server allows.



Mirrored ThinManager Server

The Mirrored ThinManager Server will show a message indicating that the ThinManager is not allowed to display the ThinServer data.

4.1.3. ThinManager Module Licensing

Certain modules, like the Instant Failover, MultiMonitor, Redundant Ethernet, and the Share Keyboard and Mouse module require an ACP license to activate. These are activated through the ACP web site using the same procedures as the ThinManager license.

See Module Overview for details.

4.1.4. WinTMC Licensing

WinTMC requires a Terminal/WinTMC connection license. Existing Terminal Connection Licenses can be upgraded to support WinTMC connections. For customers using ThinManager Enterprise Class licenses, a WinTMC Connection License is required. These are activated through the ACP web site using the same procedures as the ThinManager license.

4.1.5. TermSecure Licensing

TermSecure requires a TermSecure license for each terminal that will use TermSecure to control access to the terminal. For customers using ThinManager Enterprise Class licenses, a TermSecure License is required. These are activated through the ACP web site using the same procedures as the ThinManager license.

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.

Single ThinManager Server - If a system has a single ThinManager Server all the terminals will 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. If they reboot, however, they will be unable to connect to the failed ThinManager Server and will not receive their configuration or connect to a terminal server.

Redundant ThinManager Server - If the system has two ThinManager Servers that are synchronized with the same configuration on each, the thin clients can be configured to point to either ThinManager Server to receive their configuration. If the first ThinManager Server has failed a rebooted thin client can connect to the backup ThinManager Server and receive the proper configuration and connect to the proper terminal servers.

Redundancy requires an identical license set on both ThinManager Servers. Each ThinManager Server is fully functional and can be used to change or configure the thin clients.

Note: All Enterprise licenses include Redundancy.

Mirrored Redundancy is a feature that allows a pair of ThinManager Server to be auto-synchronized with the same configuration so the thin clients can receive their configuration from the backup ThinManager Server if the primary ThinManager Server goes offline.

Note: Mirrored redundancy was introduced to provide a less expensive alternative to full redundancy. Mirrored redundancy configures the second ThinManager Server as a headless server. The ThinServer engine is fully functional but the ThinManager interface won't run or allow changes to be made to the configuration except from the primary ThinManager Server. If the primary ThinManager Server fails the thin clients can boot from the secondary ThinManager Server but the configuration cannot be changed until the primary ThinManager Server is returned to service.

5.1.1. Redundancy Differences

No Redundancy - Single ThinManager Server

- Least expensive.
- If the ThinManager Server fails the thin clients cannot retrieve their configuration until the ThinManager Server is restored.

Mirrored Redundancy- Two ThinManager Servers

- Provides redundancy at a lower cost than full redundancy.
- Configuration changes can be made only on the primary ThinManager Server. If it fails the thin clients are able to retrieve their configuration but configuration changes must wait until the primary ThinManager is restored.

Full Redundancy - Two ThinManager Servers

- If a ThinManager Server fails, the other ThinManager Server will provide configuration.
- The ThinManager configuration can be changed on either ThinManager Server at anytime.
- Most expensive as it requires a duplicate set of licenses on the backup ThinManager Server.

5.2. Creating a Redundant Pair of ThinManager Servers

To create a redundant pair of ThinManager Servers:

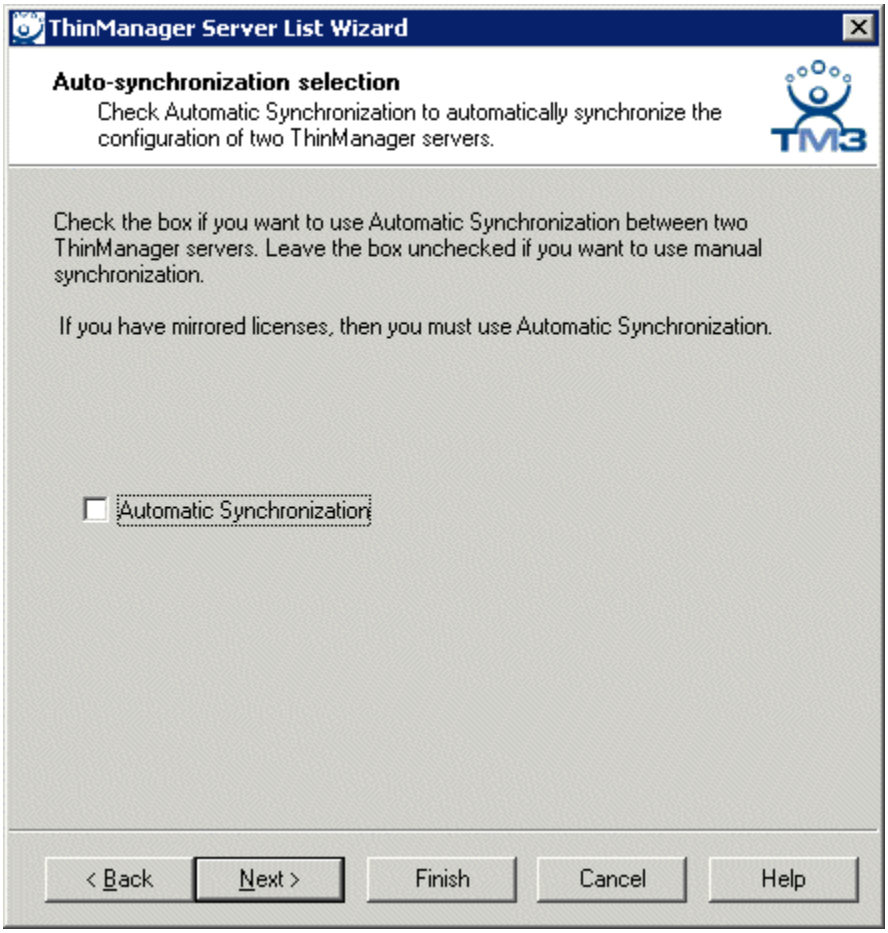
1. Install ThinManager on two computers. See Standard ThinManager Installation.
2. Configure the thin clients on the primary ThinManager Server. See Terminal Configuration Wizard.
3. Synchronize the two ThinManager Servers. See Synchronize Configuration.
4. Install a complete set of licenses on both ThinManager Server for full redundancy or install a mirrored license for mirrored redundancy. See ThinManager Licensing.
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.

5.3. Synchronizing ThinManager Servers

Redundant ThinManager Servers need to be synchronized so that a thin client booting from either will receive the same configuration regardless of the ThinManager Server. This can be done manually as described in Manual Synchronization or automatically as described in Automatic Synchronization.

Additionally each thin client needs to be able to boot from both ThinManager Servers. This can be configured in the DHCP server as described in DHCP Server Setup or when setting up a static IP address as described in Configuring New Hardware.

The decision to use manual or automatic synchronization is made on the **Auto-synchronization Selection** window of the **ThinManager Server List wizard** that is launched by selecting ***Manage > ThinManager Server List*** from the ThinManager menu.



Auto-synchronization Selection

Select the ***Automatic Synchronization*** checkbox to use auto-synchronization or leave it un-selected to use manual synchronization.

5.3.1. Automatic Synchronization

ThinManager has an automatic synchronization tool that makes it easier to keep the configuration on two ThinManager Servers the same. Changing a configuration on one will make the change on the other.

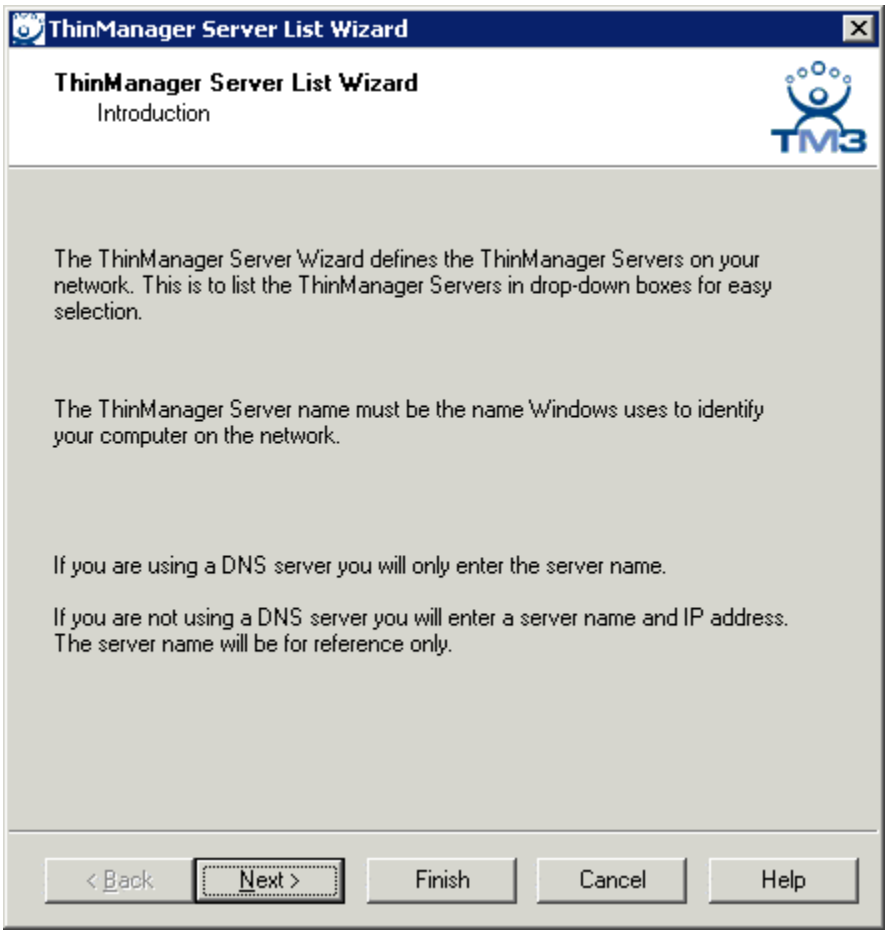
Automatic Synchronization has a few things to consider:

- It is a good idea to backup the configuration before making changes because a mistake on one ThinManager Server will pass the mistake to the other ThinManager Server. The backup will allow a chance to restore the configuration to a pre-mistake state. See Backup Configuration.

The configuration can be backed up automatically using the Scheduling tool. See System Schedule for details.

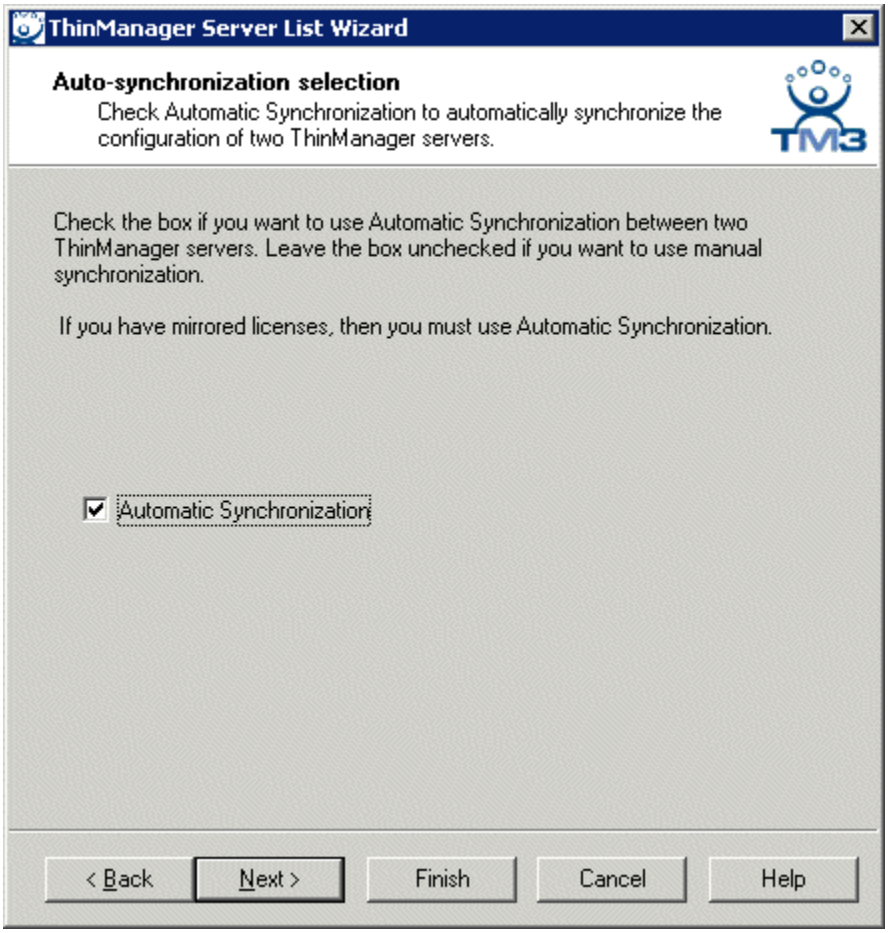
- Automatic synchronization is required for Mirrored Redundancy. See Mirrored Redundancy.
- Automatic synchronization will configure each thin client to send the green/red status lights to both ThinManager Servers so the **ThinManager Server Monitor List** page isn't shown in the Terminal Configuration Wizard, as it isn't needed. See ThinManager Server Monitor List for details.

Automatic synchronization is configured on the ThinManager Server List Wizard. Launch it by selecting ***Manage > ThinManager Server List*** ThinManager menu. See the ThinManager Server List for more detailed instructions.



ThinManager Server List Wizard - Introduction

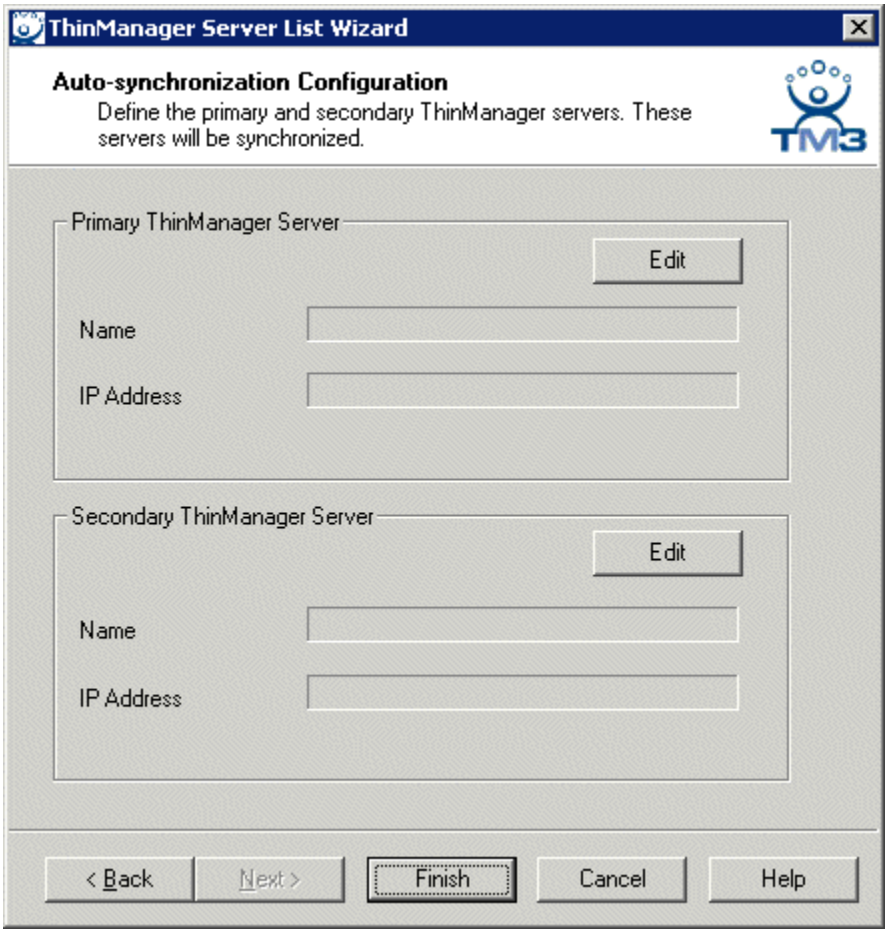
The ***ThinManager Server List Wizard*** begins with an introduction screen. Select ***Next*** to proceed the **Auto-synchronization Selection** page.



Auto-synchronization Selection

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

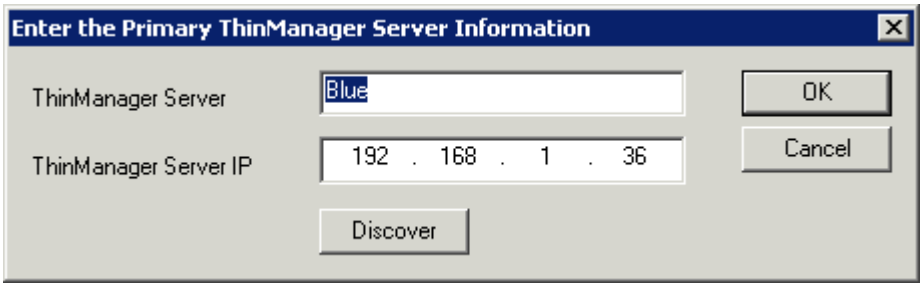
Automatic Synchronization Configuration Page



Auto-synchronization Configuration

The **Auto-synchronization Configuration** window has fields for the Primary and Secondary ThinManager Servers. Select each ***Edit*** button to define the ThinManager Servers

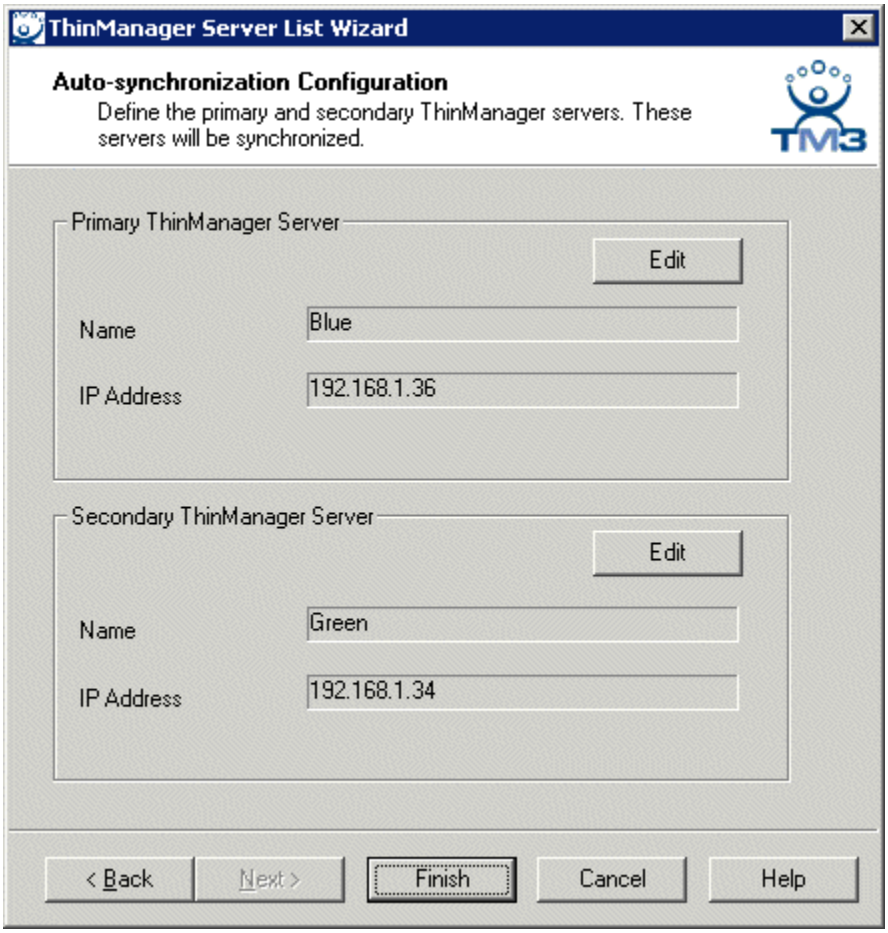
ThinManager Server Definition



Enter ThinManager Server Information Window

Enter the name and IP address of the ThinManager Server. The ***Discover*** button will automatically fill in the IP address of a connected ThinManager Server.

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



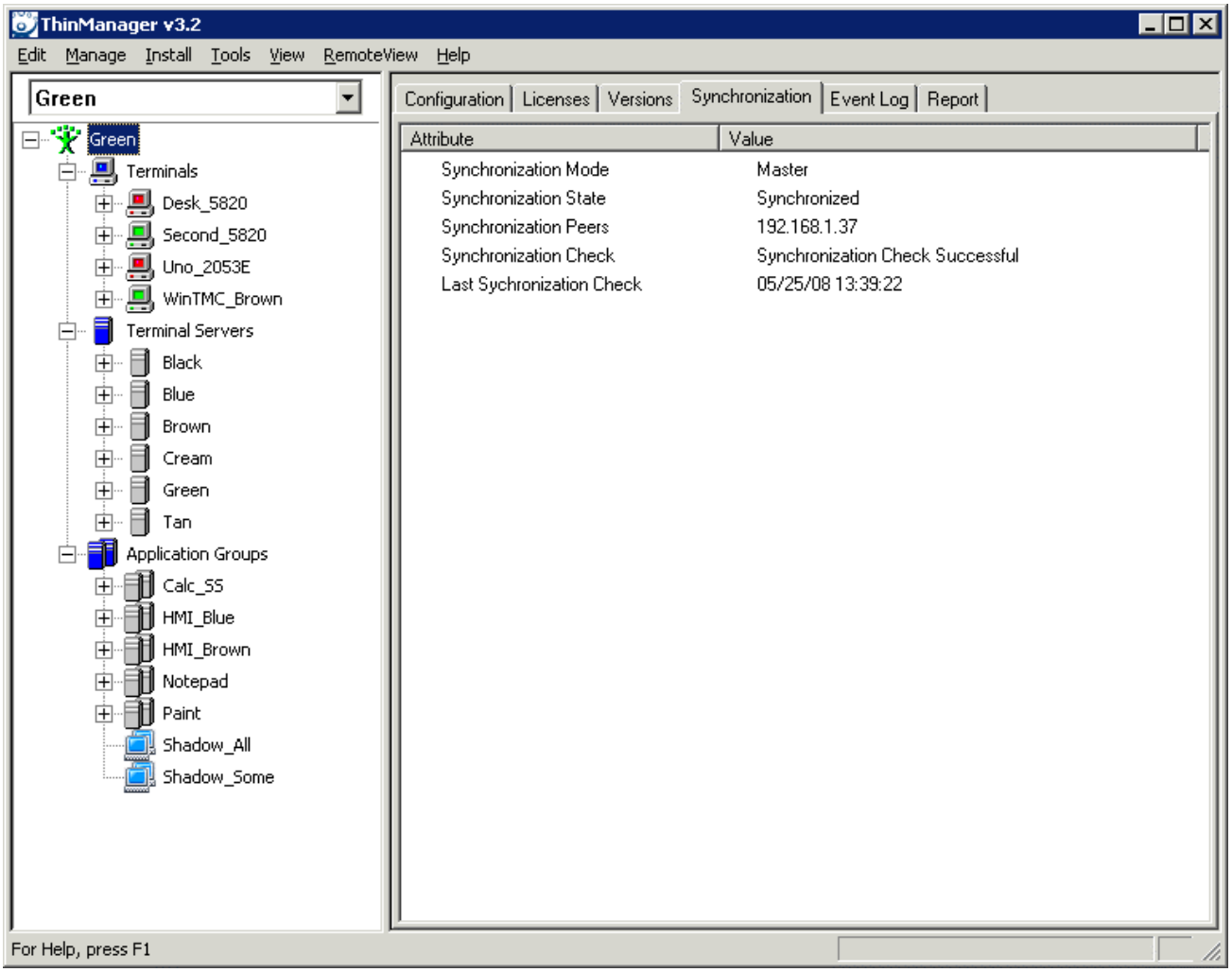
Auto-synchronization Configuration

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 close the ThinManager Server List wizard.

The two ThinManagers will now be synchronized. The synchronization status can be checked on the **Synchronization** tab of ThinManager.



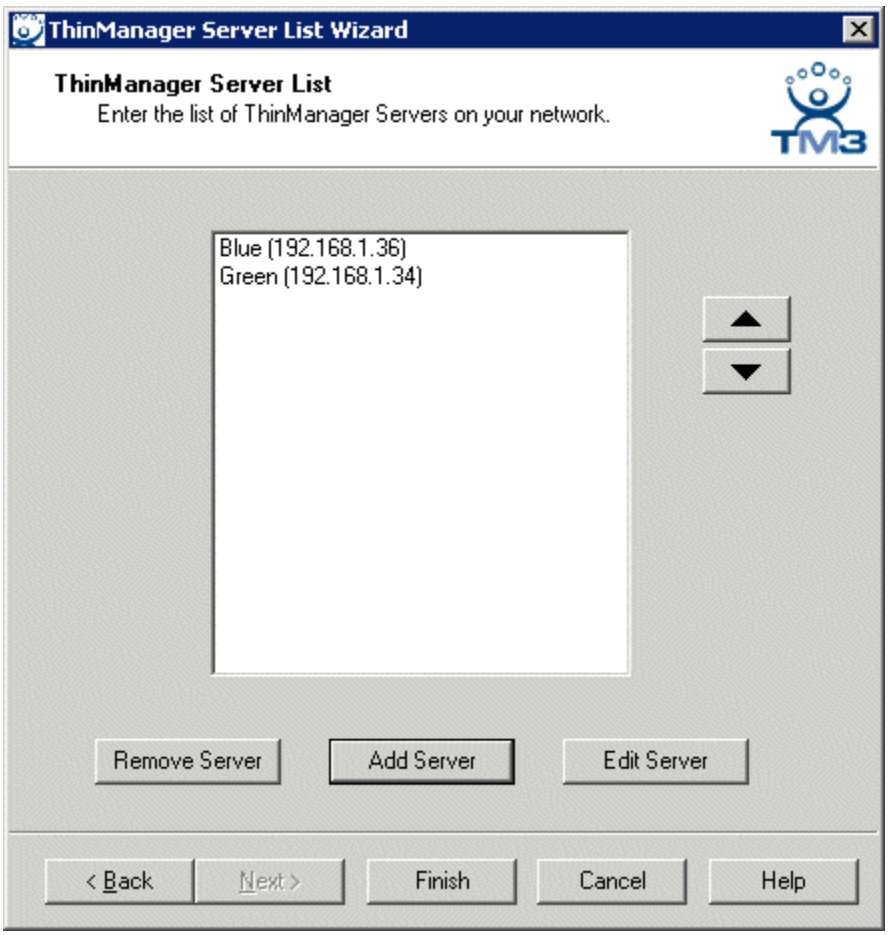
Properties Tab

The **Synchronization** tab will show whether the ThinManager Server is the master or the slave (although it doesn't matter which is which), the synchronization state, the IP address of the synchronized partner, and the time of the last synchronization.

5.3.2. Manual Synchronization

ThinManager Servers can be synchronized to that the same configuration is available to ThinManager Ready thin clients regardless of where they boot. The first step is to define the ThinManager Servers in the ThinManager Server List.

Open the ThinManager Server List by selecting ***Manage > ThinManager Server List***.



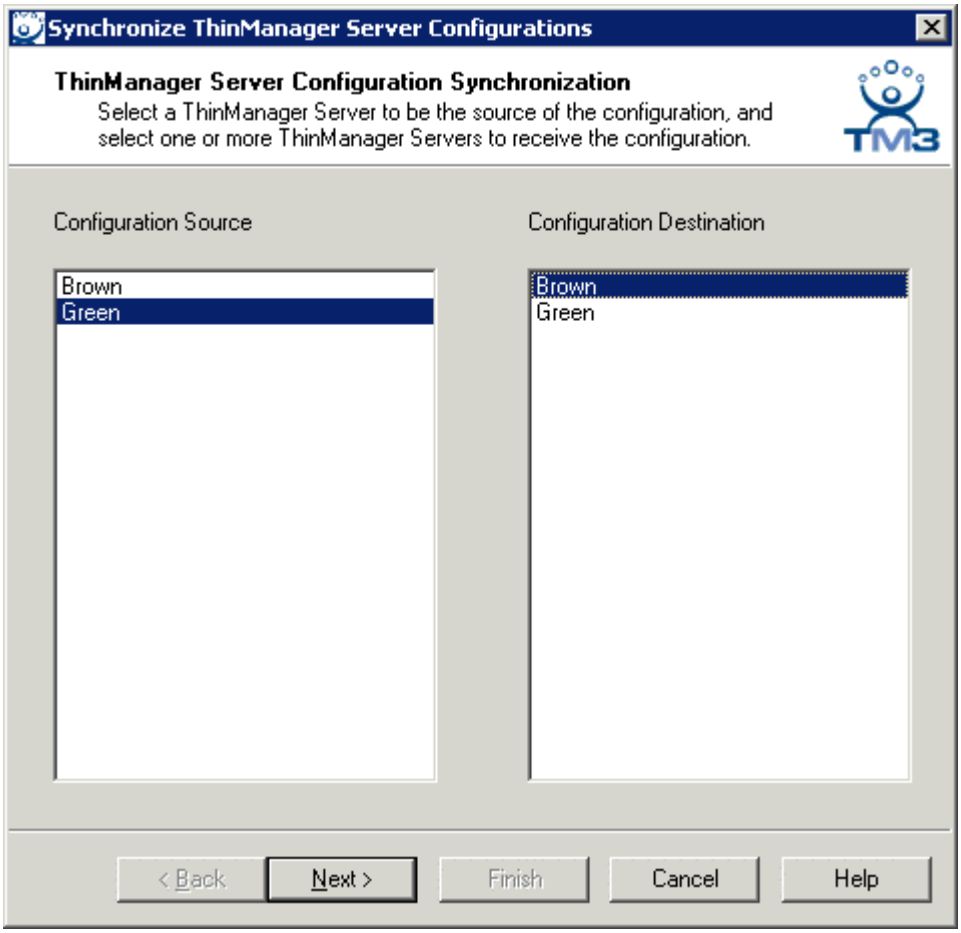
ThinManager Server List

Add the ThinManager Servers by selecting the ***Add Server*** button as described on the ThinManager Server List Page.

ThinManager Server Configuration Synchronization Page

Once the ThinManager Servers are defined select ***Manage > Synchronize Configuration*** from the ThinManager menu to launch the **Synchronize ThinManager Server Configurations Wizard** to manually synchronize ThinManager Servers.

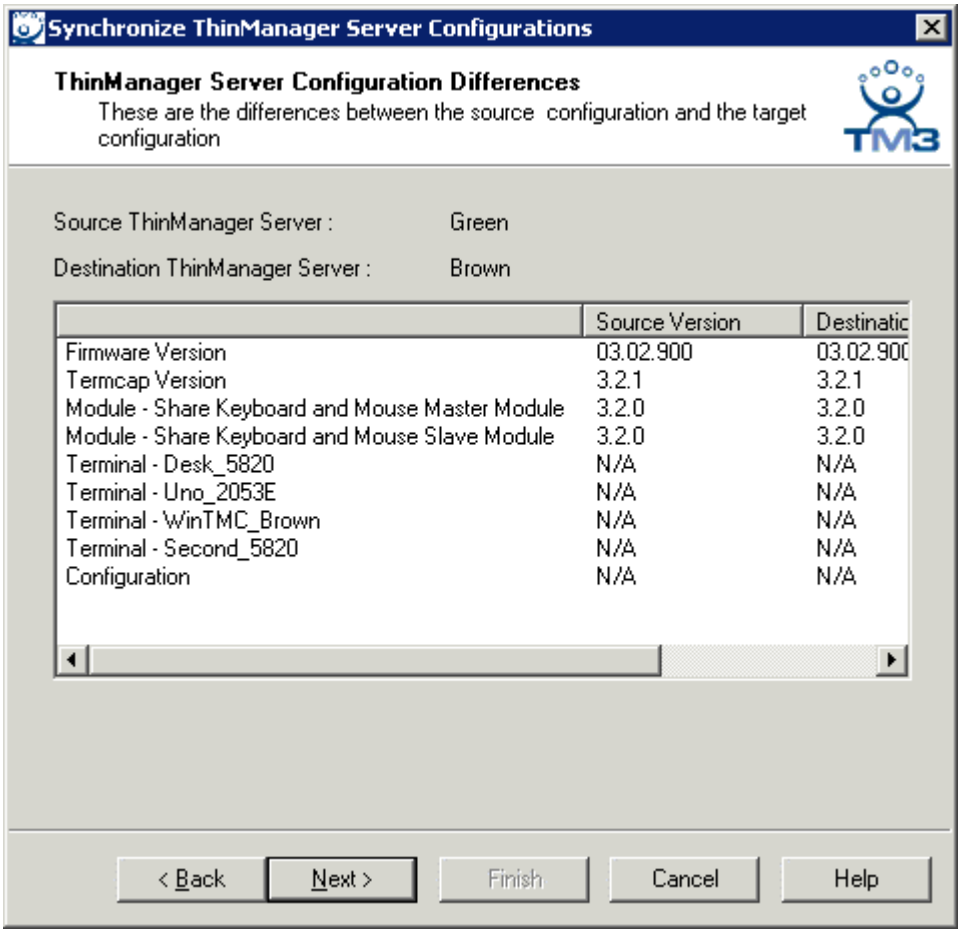
Note: It is important to synchronize the ThinManager Servers after each configuration change to keep the configurations identical.



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.

ThinManager Server Configuration Differences Page

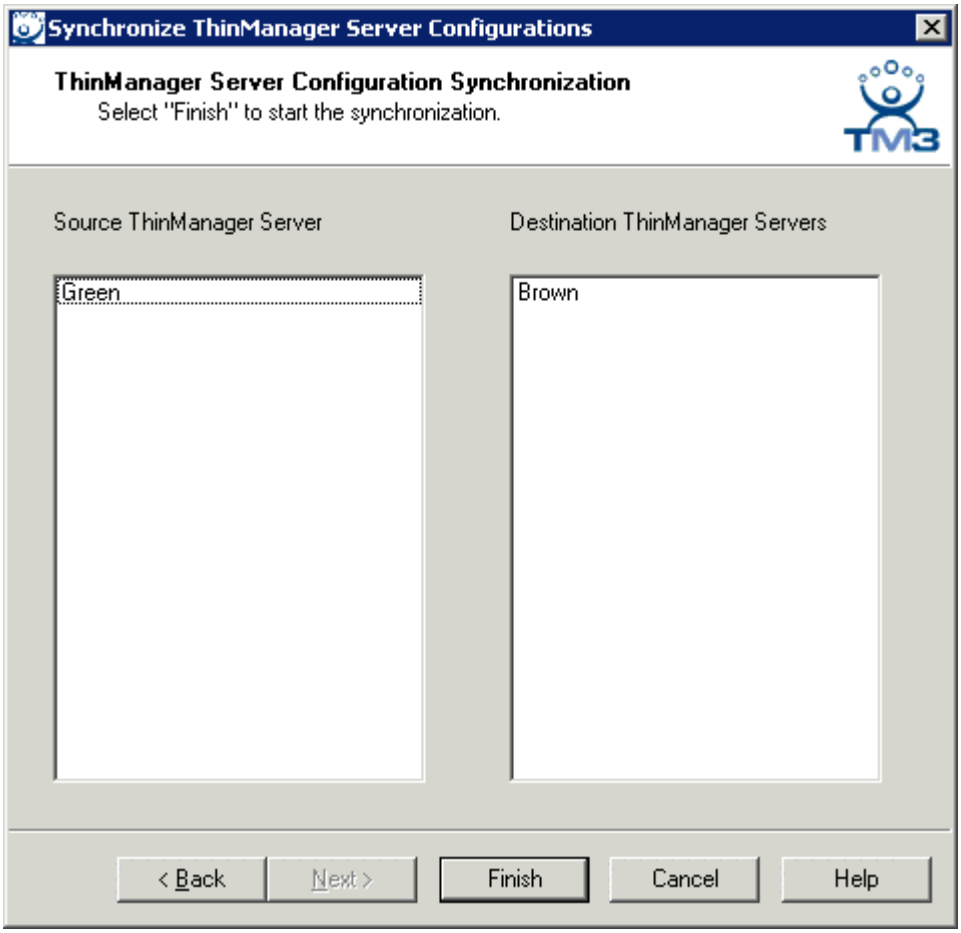


Synchronization Differences

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.

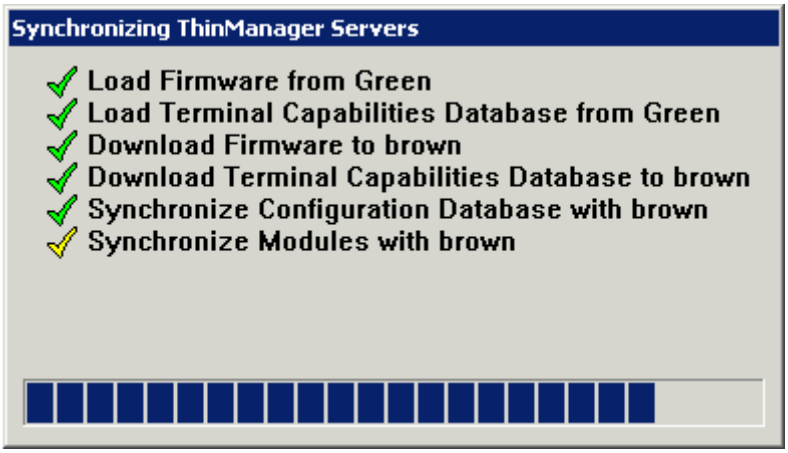
Note: The Synchronization tool does not compare and contrast then make changes back and forth. Synchronization will take the files and configuration from the source ThinManager Server and overwrite the corresponding files on the destination ThinManager Server.

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.

Synchronization Complete Window

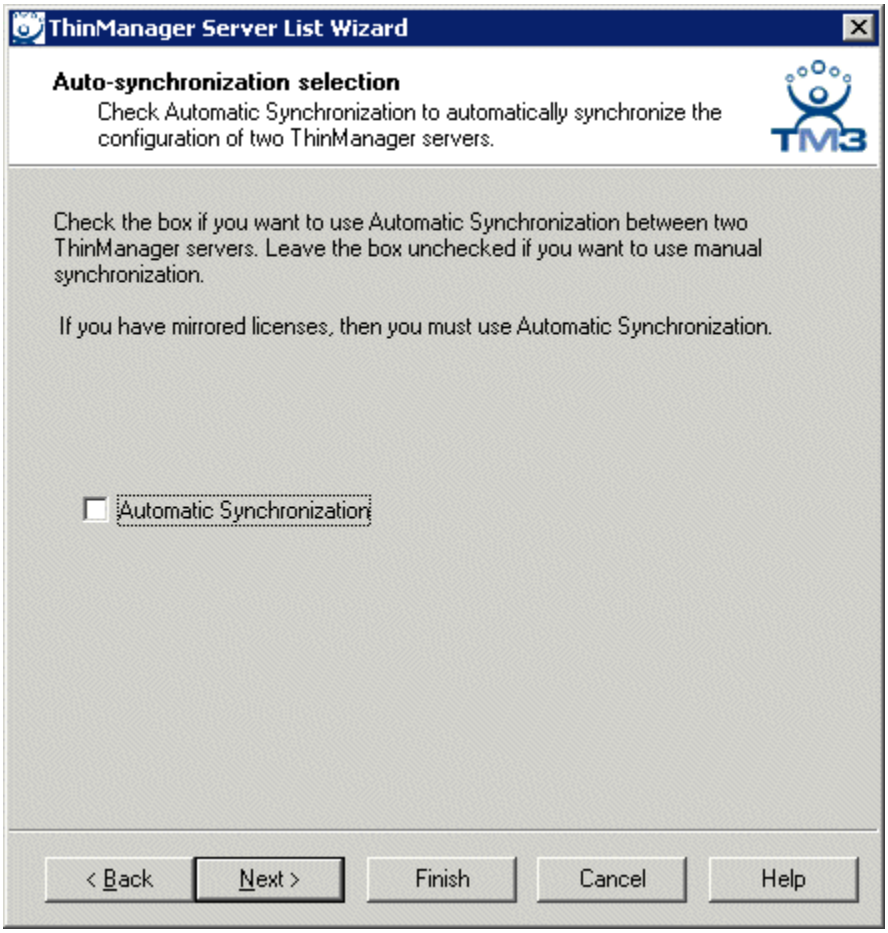
A message will display the final results of the synchronization.

5.4. Synchronizing ThinManager Servers

Redundant ThinManager Servers need to be synchronized so that a thin client booting from either will receive the same configuration regardless of the ThinManager Server. This can be done manually as described in Manual Synchronization or automatically as described in Automatic Synchronization.

Additionally each thin client needs to be able to boot from both ThinManager Servers. This can be configured in the DHCP server as described in DHCP Server Setup or when setting up a static IP address as described in Configuring New Hardware.

The decision to use manual or automatic synchronization is made on the **Auto-synchronization Selection** window of the **ThinManager Server List wizard** that is launched by selecting ***Manage > ThinManager Server List*** from the ThinManager menu.



Auto-synchronization Selection

Select the ***Automatic Synchronization*** checkbox to use auto-synchronization or leave it un-selected to use manual synchronization.

5.4.1. Automatic Synchronization

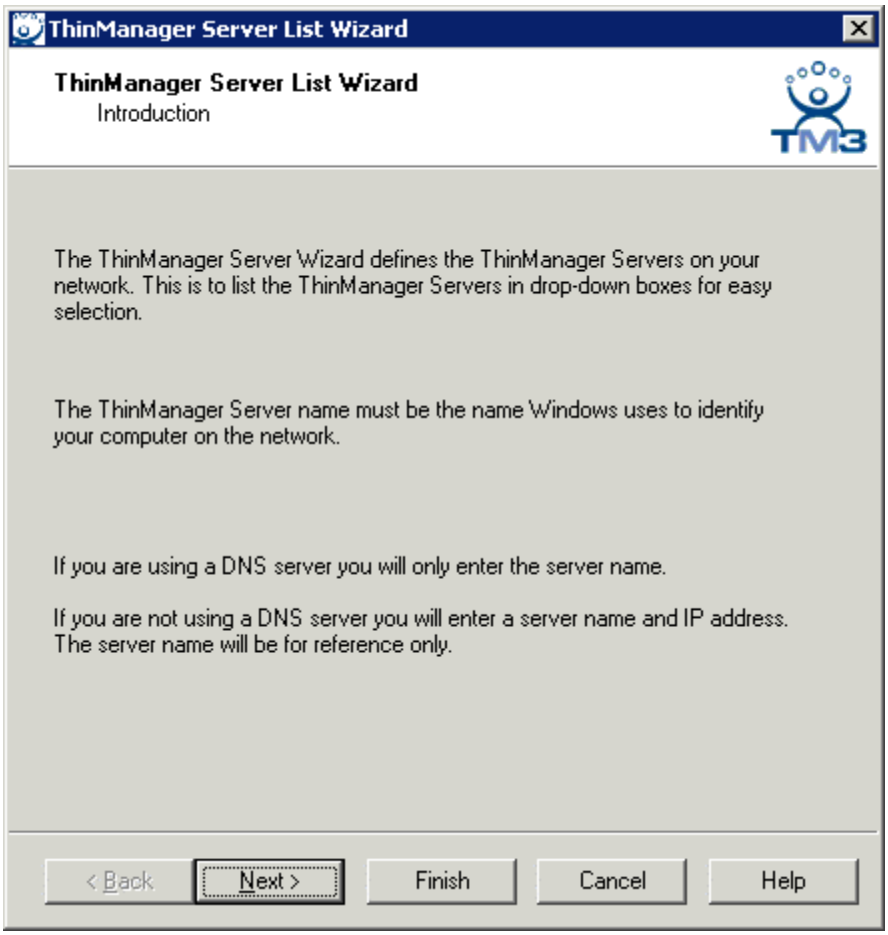
ThinManager has an automatic synchronization tool that makes it easier to keep the configuration on two ThinManager Servers the same. Changing a configuration on one will make the change on the other.

Automatic Synchronization has a few things to consider:

- It is a good idea to backup the configuration before making changes because a mistake on one ThinManager Server will pass the mistake to the other ThinManager Server. The backup will allow a chance to restore the configuration to a pre-mistake state. See Backup Configuration.
  The configuration can be backed up automatically using the Scheduling tool. See System Schedule for details.
- Automatic synchronization is required for Mirrored Redundancy. See Mirrored Redundancy.
- Automatic synchronization will configure each thin client to send the green/red status lights to both ThinManager Servers so the **ThinManager Server Monitor List** page

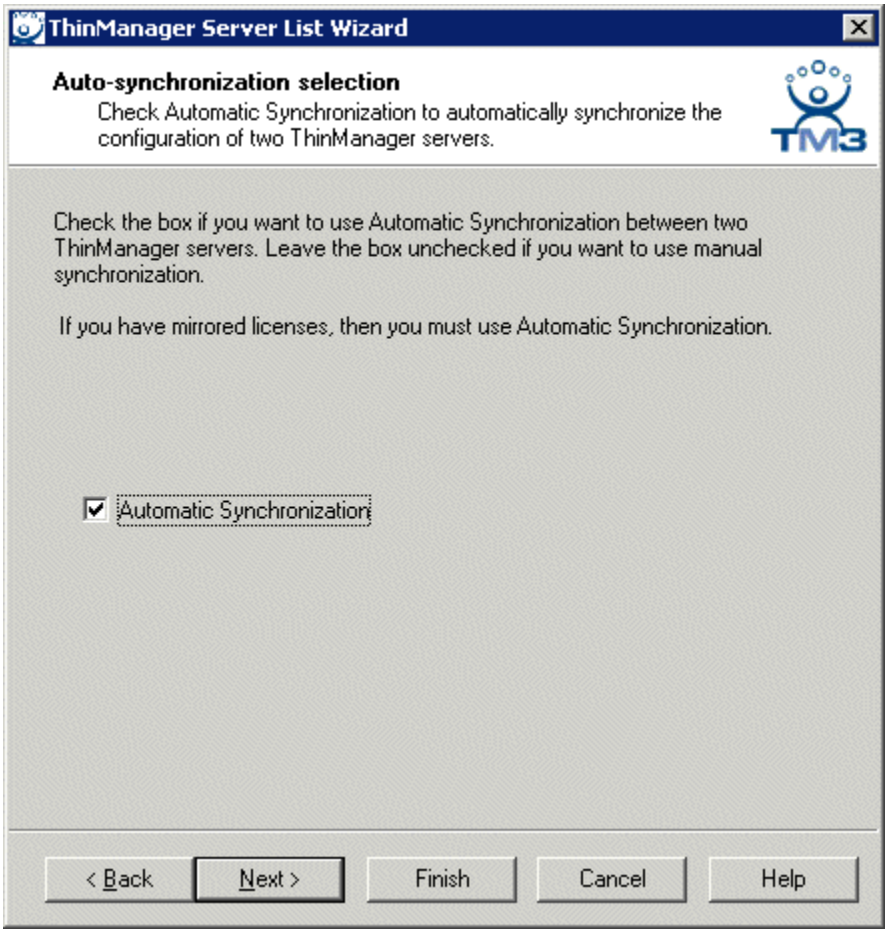
isn’t shown in the Terminal Configuration Wizard, as it isn’t needed. See ThinManager Server Monitor List for details.

Automatic synchronization is configured on the ThinManager Server List Wizard. Launch it by selecting ***Manage > ThinManager Server List*** ThinManager menu. See the ThinManager Server List for more detailed instructions.



ThinManager Server List Wizard - Introduction

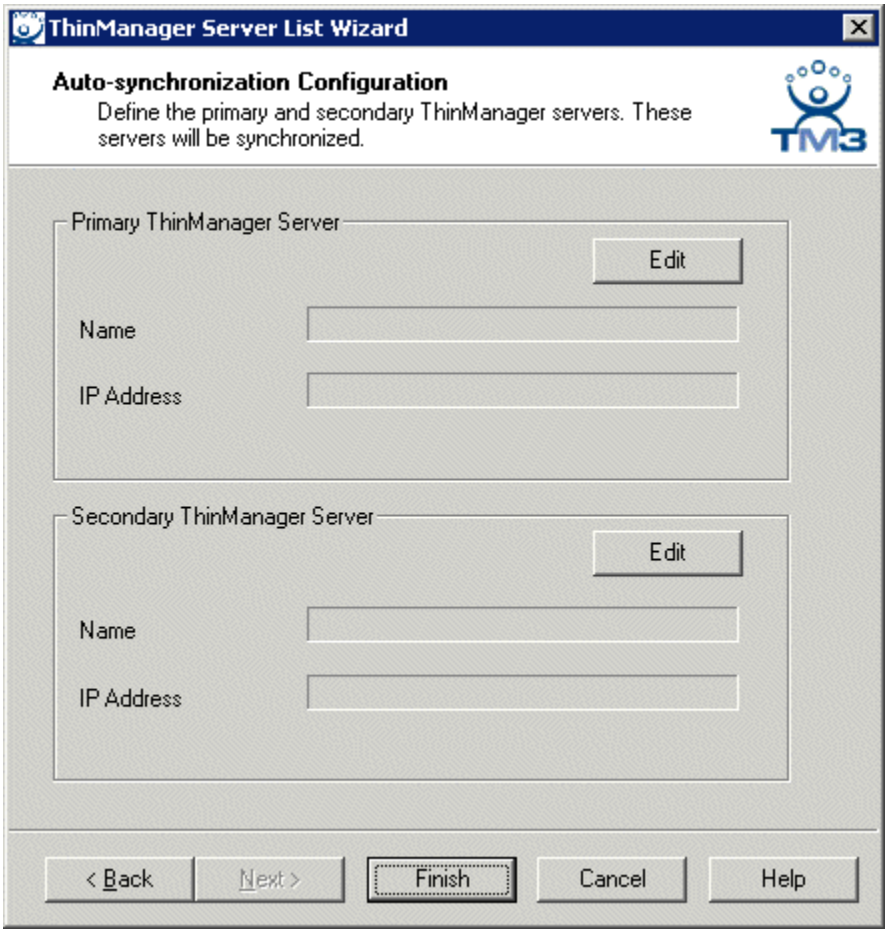
The ***ThinManager Server List Wizard*** begins with an introduction screen. Select ***Next*** to proceed the **Auto-synchronization Selection** page.



Auto-synchronization Selection

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

Automatic Synchronization Configuration Page



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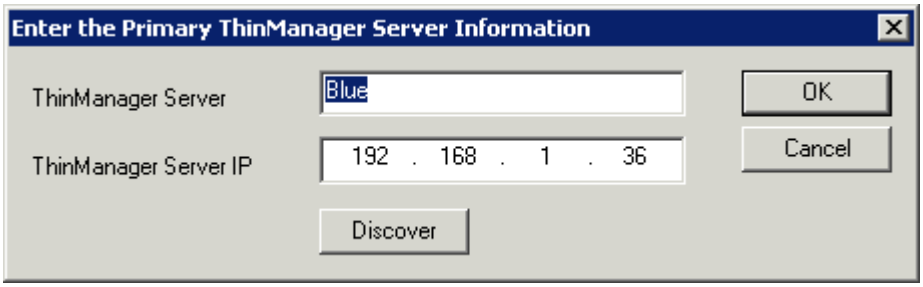
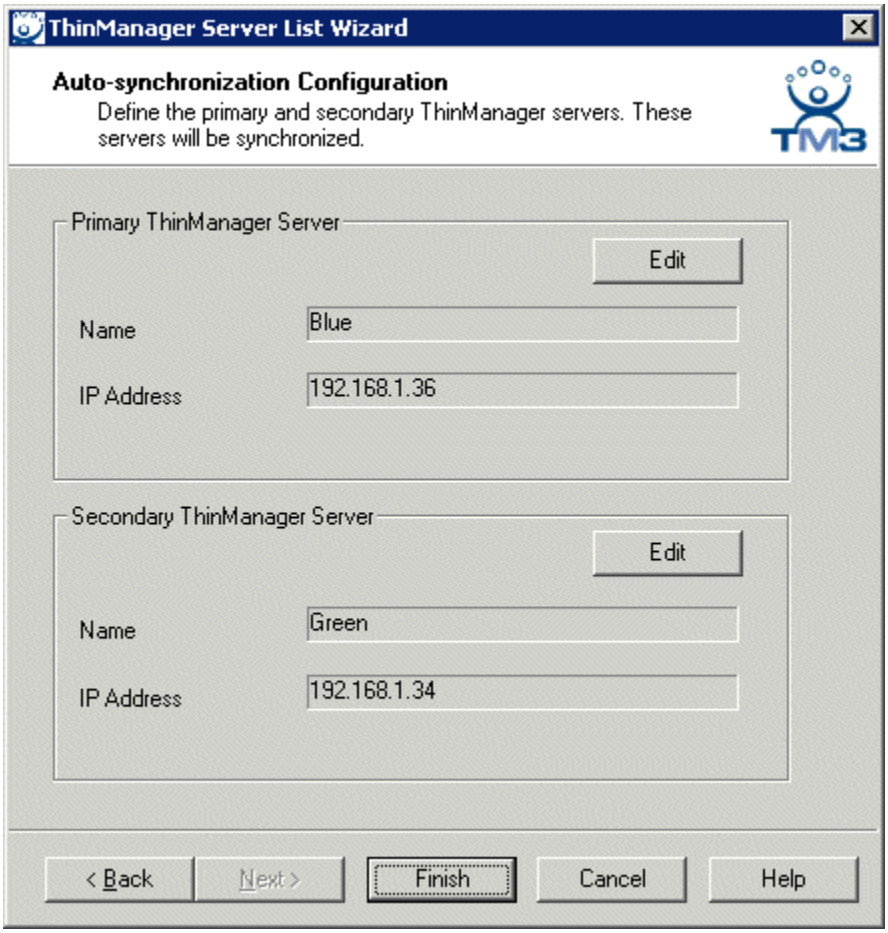


Enter ThinManager Server Information Window

Enter the name and IP address of the ThinManager Server. The ***Discover*** button will automatically fill in the IP address of a connected ThinManager Server.

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



Auto-synchronization Configuration

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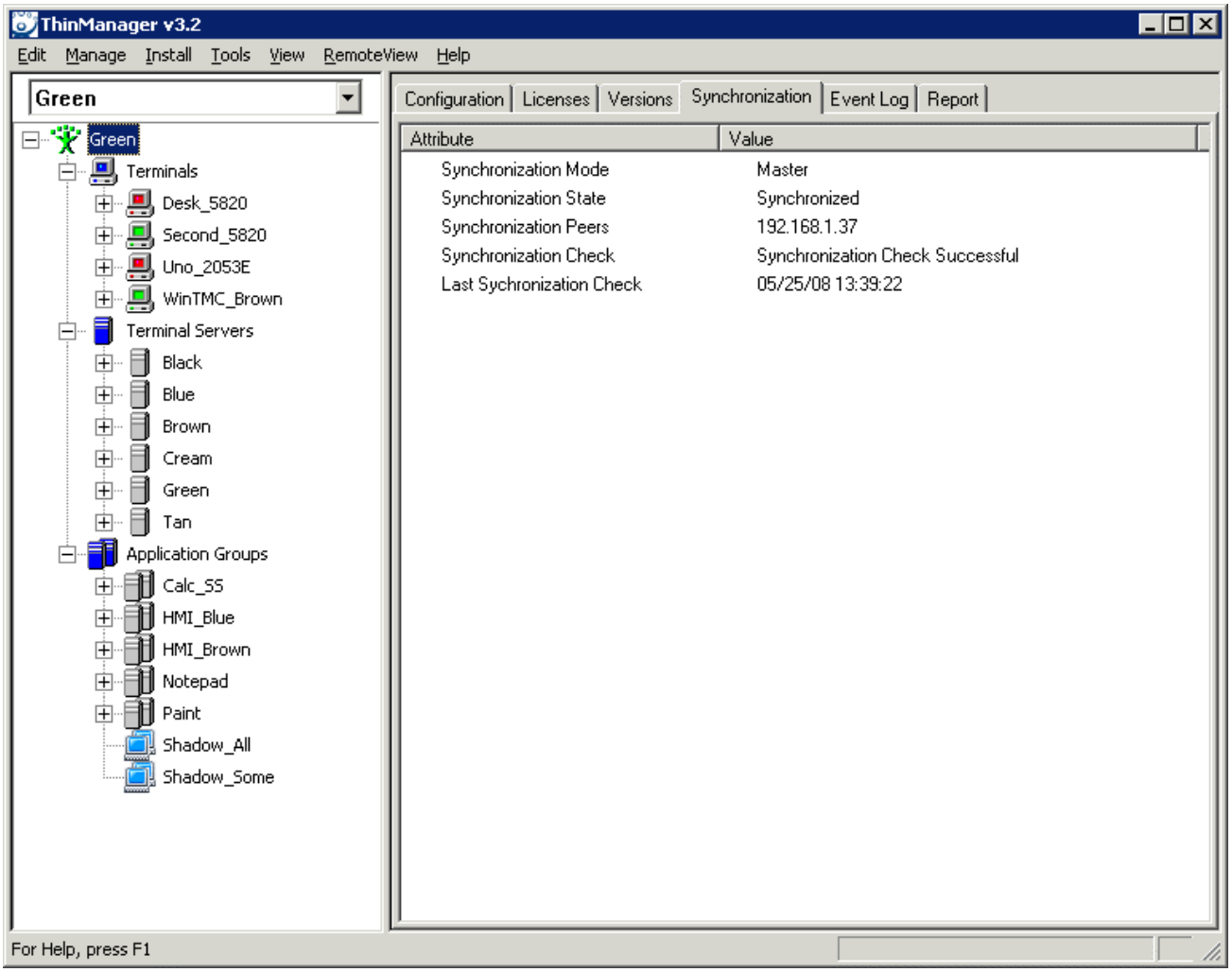
Additionally, the status lights for the terminals will be displayed in the trees of both ThinManager Servers.

Select ***Finish*** to close the ThinManager Server List wizard.

The two ThinManagers will now be synchronized. The synchronization status can be checked on the **Synchronization** tab of ThinManager.



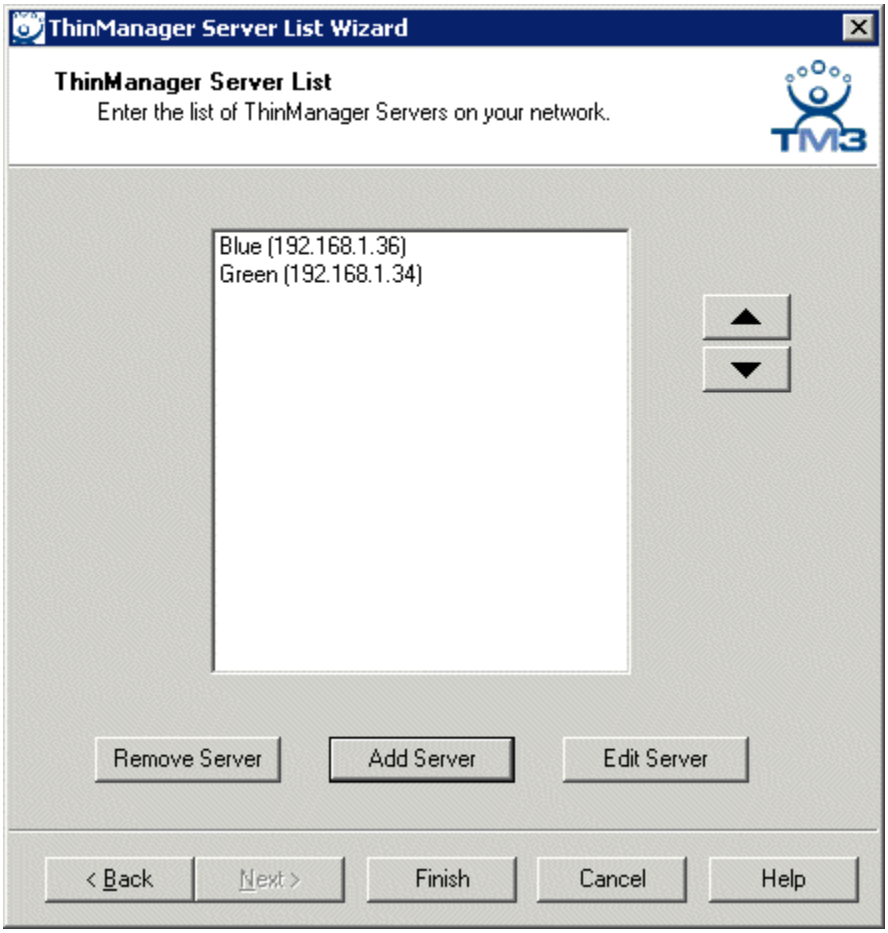
Properties Tab

The **Synchronization** tab will show whether the ThinManager Server is the master or the slave (although it doesn't matter which is which), the synchronization state, the IP address of the synchronized partner, and the time of the last synchronization.

5.4.2. Manual Synchronization

ThinManager Servers can be synchronized to that the same configuration is available to ThinManager Ready thin clients regardless of where they boot. The first step is to define the ThinManager Servers in the ThinManager Server List.

Open the ThinManager Server List by selecting ***Manage > ThinManager Server List***.



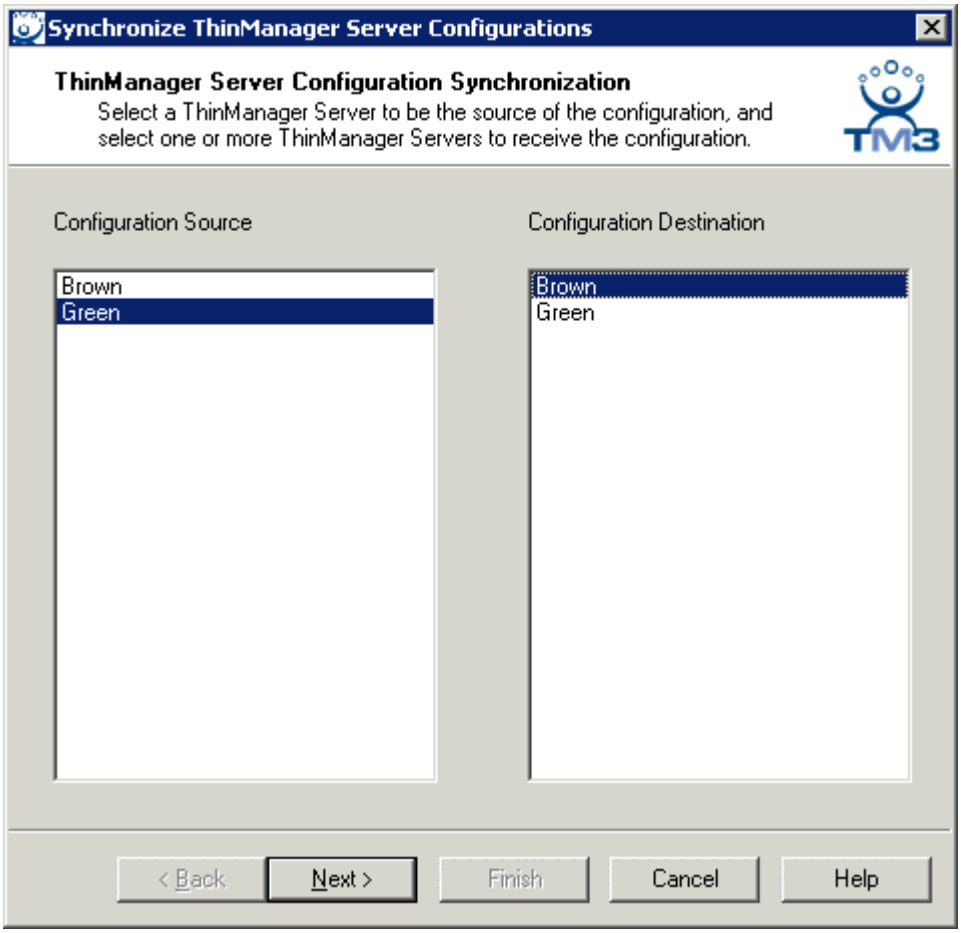
ThinManager Server List

Add the ThinManager Servers by selecting the ***Add Server*** button as described on the ThinManager Server List Page.

ThinManager Server Configuration Synchronization Page

Once the ThinManager Servers are defined select ***Manage > Synchronize Configuration*** from the ThinManager menu to launch the **Synchronize ThinManager Server Configurations Wizard** to manually synchronize ThinManager Servers.

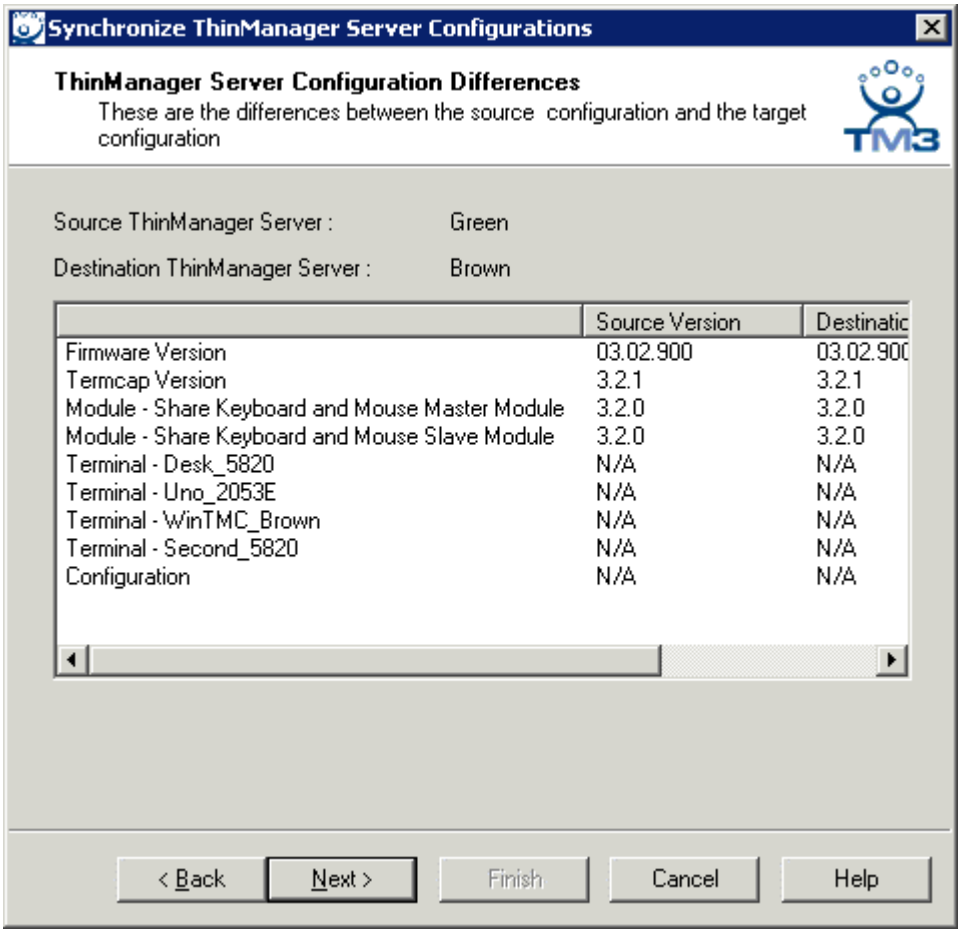
Note: It is important to synchronize the ThinManager Servers after each configuration change to keep the configurations identical.



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.

ThinManager Server Configuration Differences Page

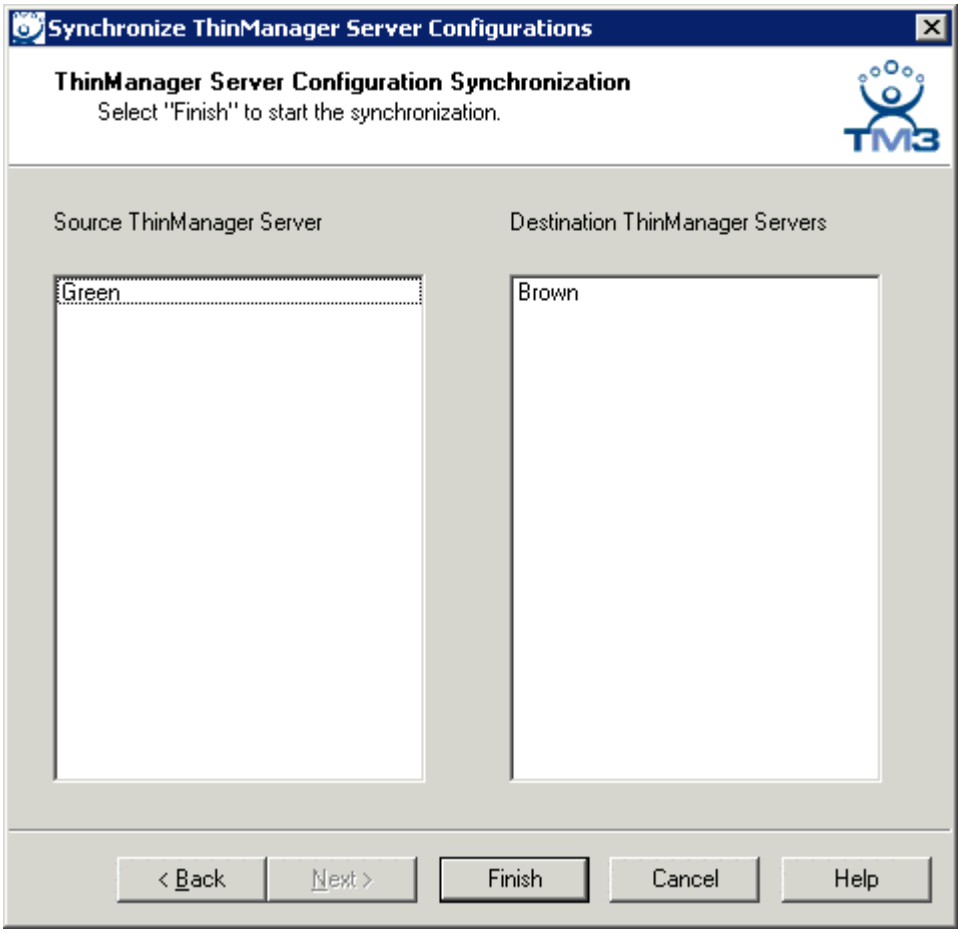


Synchronization Differences

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.

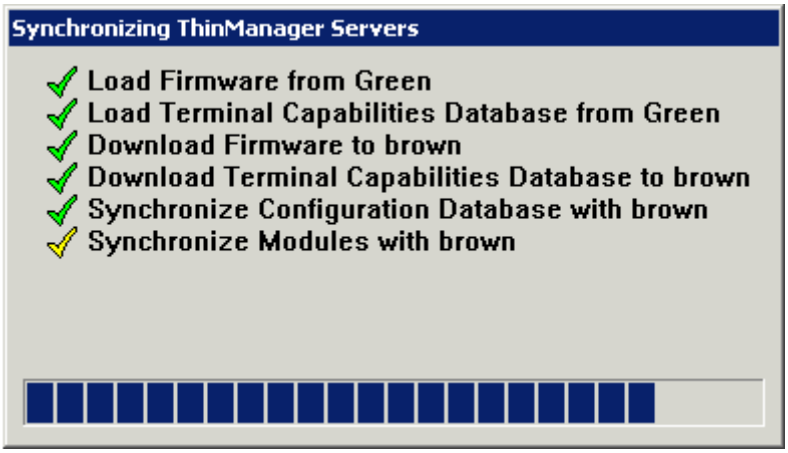
Note: The Synchronization tool does not compare and contrast then make changes back and forth. Synchronization will take the files and configuration from the source ThinManager Server and overwrite the corresponding files on the destination ThinManager Server.

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.

Synchronization Complete Window

A message will display the final results of the synchronization.

5.5. Mirrored Redundancy

Mirrored Redundancy is a new feature that provides redundancy at a reduced cost from full redundancy.

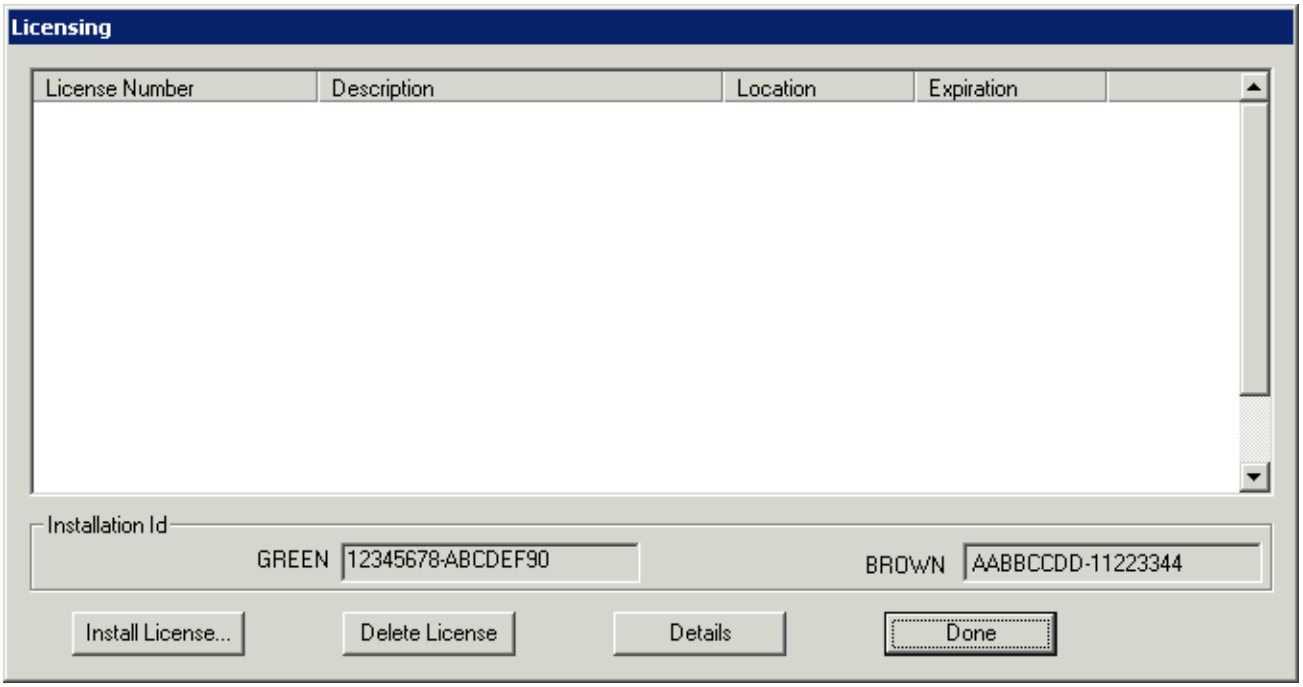
To set up Mirrored redundancy:

1. Install ThinManager on two computers. See Standard ThinManager Installation.
2. Synchronize the two ThinManager Server. See Manual Synchronization.
3. Install a complete set of licenses on both ThinManager Server for full redundancy or install a mirrored license for mirrored redundancy. See ThinManager Licensing.
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.

5.6. Activating a Mirrored License

This section will cover the highlights of Mirrored licensing. See ThinManager Licensing for full details.

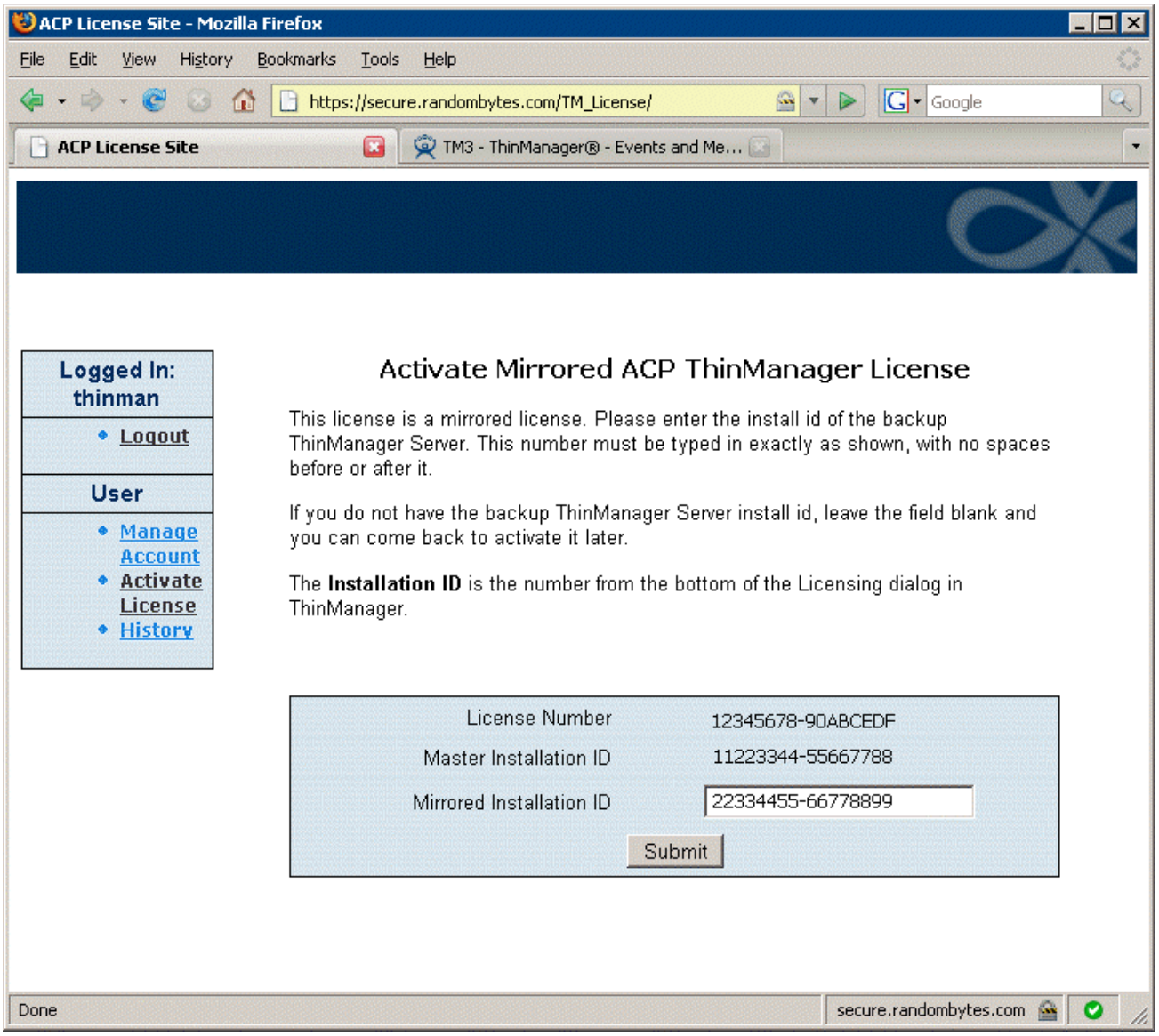
When a pair of ThinManager Servers are auto-synchronized that Licensing window will display the Installation ID of both ThinManager Servers.



Licensing Dialog Box - Synchronized ThinManager Servers

The Installation ID at the bottom of the window is used to obtain the License File from ACP. Mirrored licenses and Enterprise Server licenses require the Installation ID of both ThinManager Servers for activation.

When a license is a Mirrored license or an Enterprise Server license then the ThinManager License Activation site will display a third field for the Installation ID of the secondary ThinManager Server in addition to the Installation ID of the primary ThinManager Server.



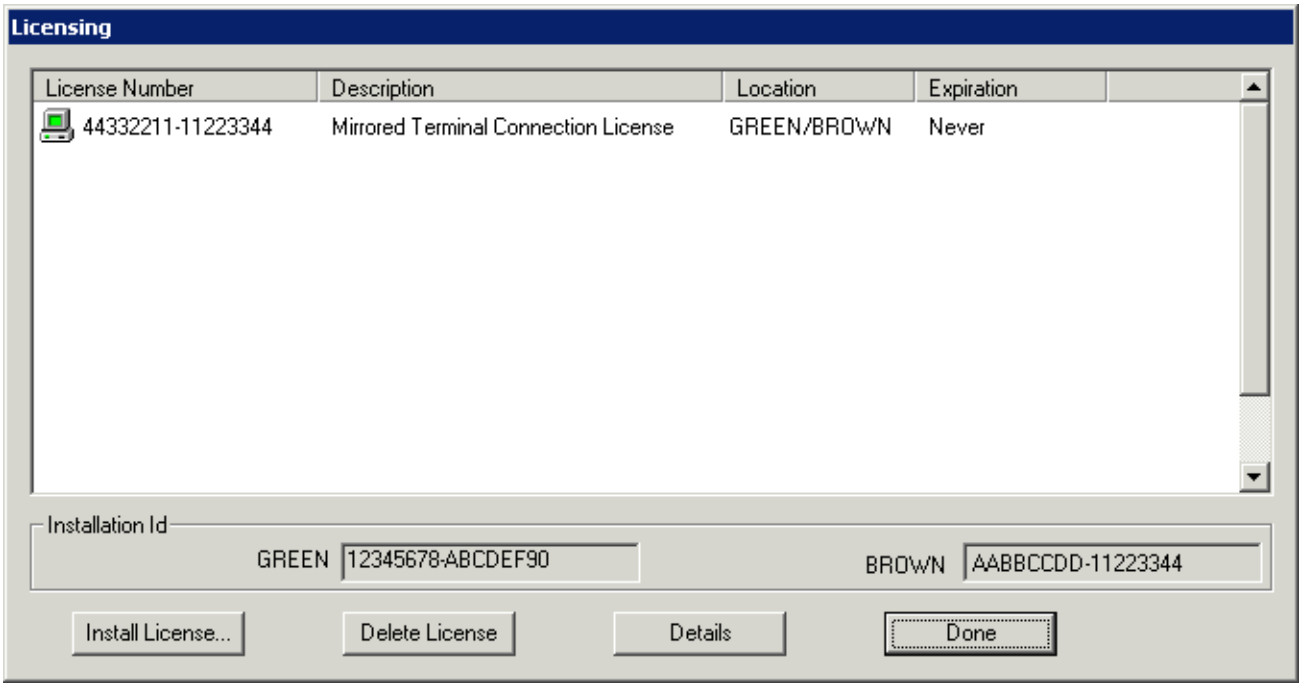
Mirrored License Activation

After the first Installation ID is entered and submitted, the site will recognize the license and ask for the second Installation ID.

Enter the Installation ID of the secondary ThinManager Server into the ***Mirrored Installation ID*** field and select the ***Submit*** button.

The license will download as described in ThinManager License File Download.

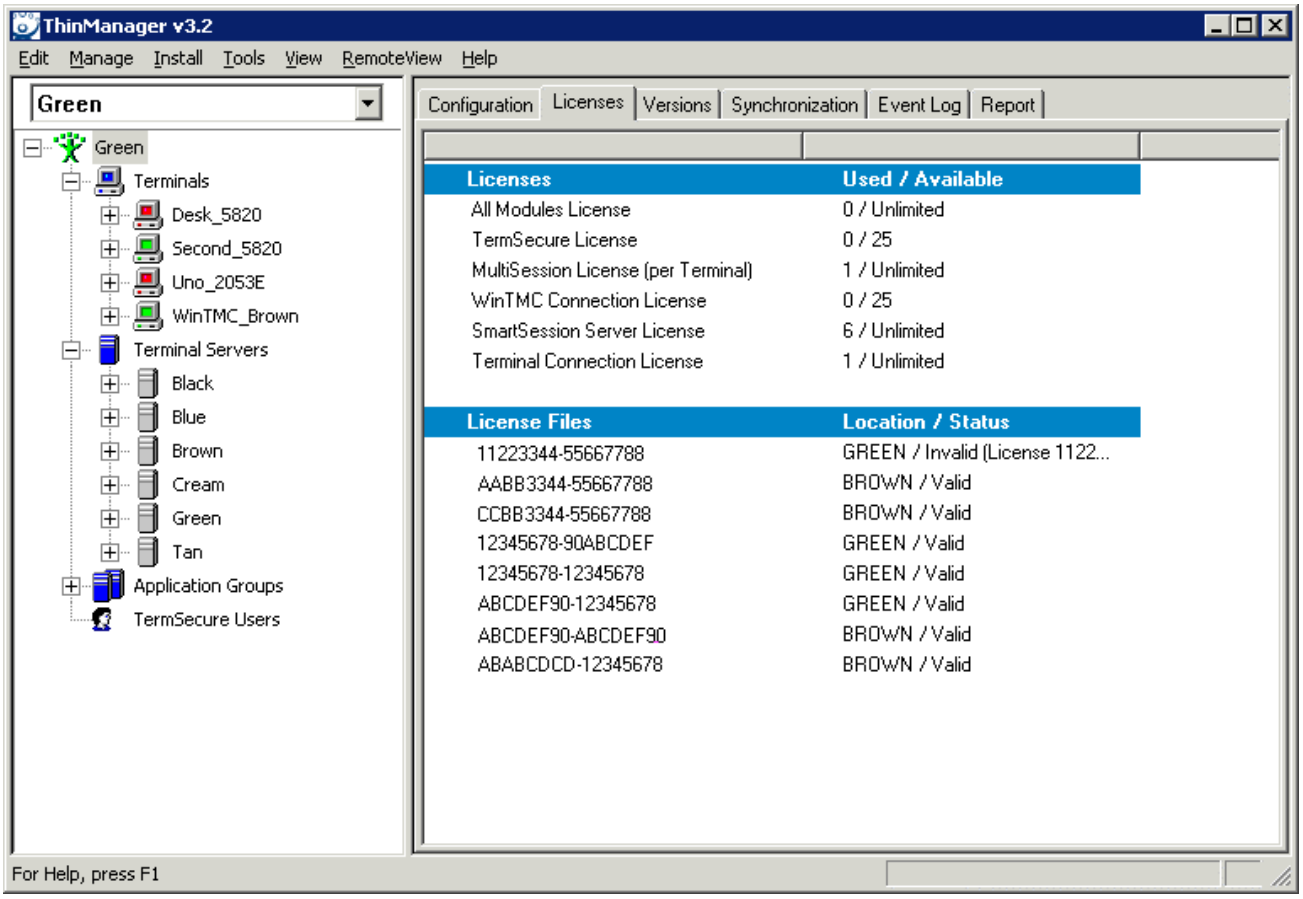
Add the license as described in ThinManager License File Installation.



Added Licenses

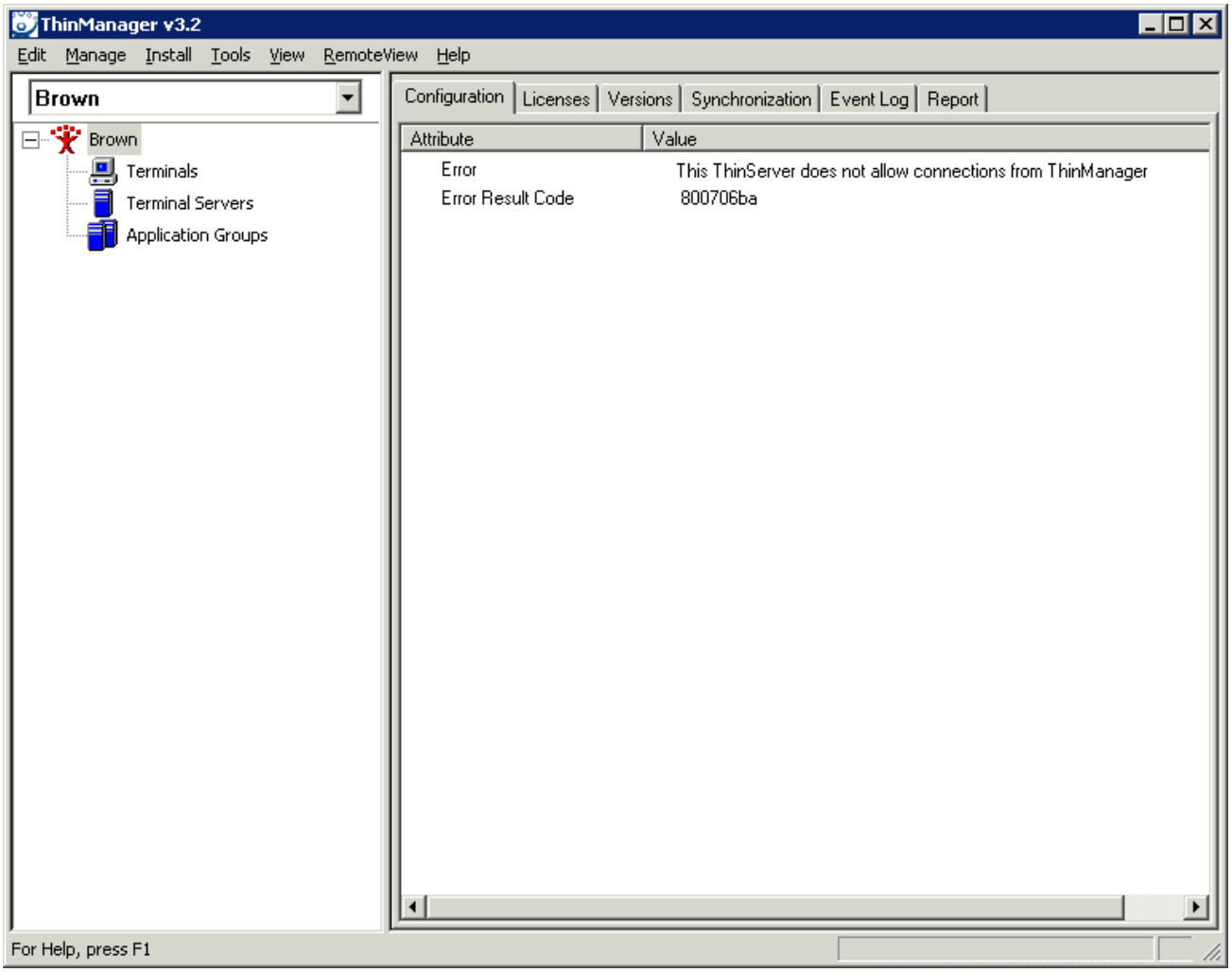
Once a Mirrored license is added the **Licensing** window will display the license with both ThinManager Servers as the location.

Once a license is added to ThinManager it is displayed on the **Licenses** tab of the Details pane.



License Tab

When a Mirrored license is activated the mirrored ThinManager Server will allow thin clients to boot from it but it does not allow the ThinManager to run and allow configuration changes like a fully redundant ThinManager Server allows.



Mirrored ThinManager Server

The Mirrored ThinManager Server will show a message indicating that the ThinManager is not allowed to display the ThinServer data.

Note: A fully redundant ThinManager Server with a complete set of duplicate licenses will allow the display of the ThinServer data and will allow changes to the configuration.

6. ThinManager Interface

6.1. Opening ThinManager

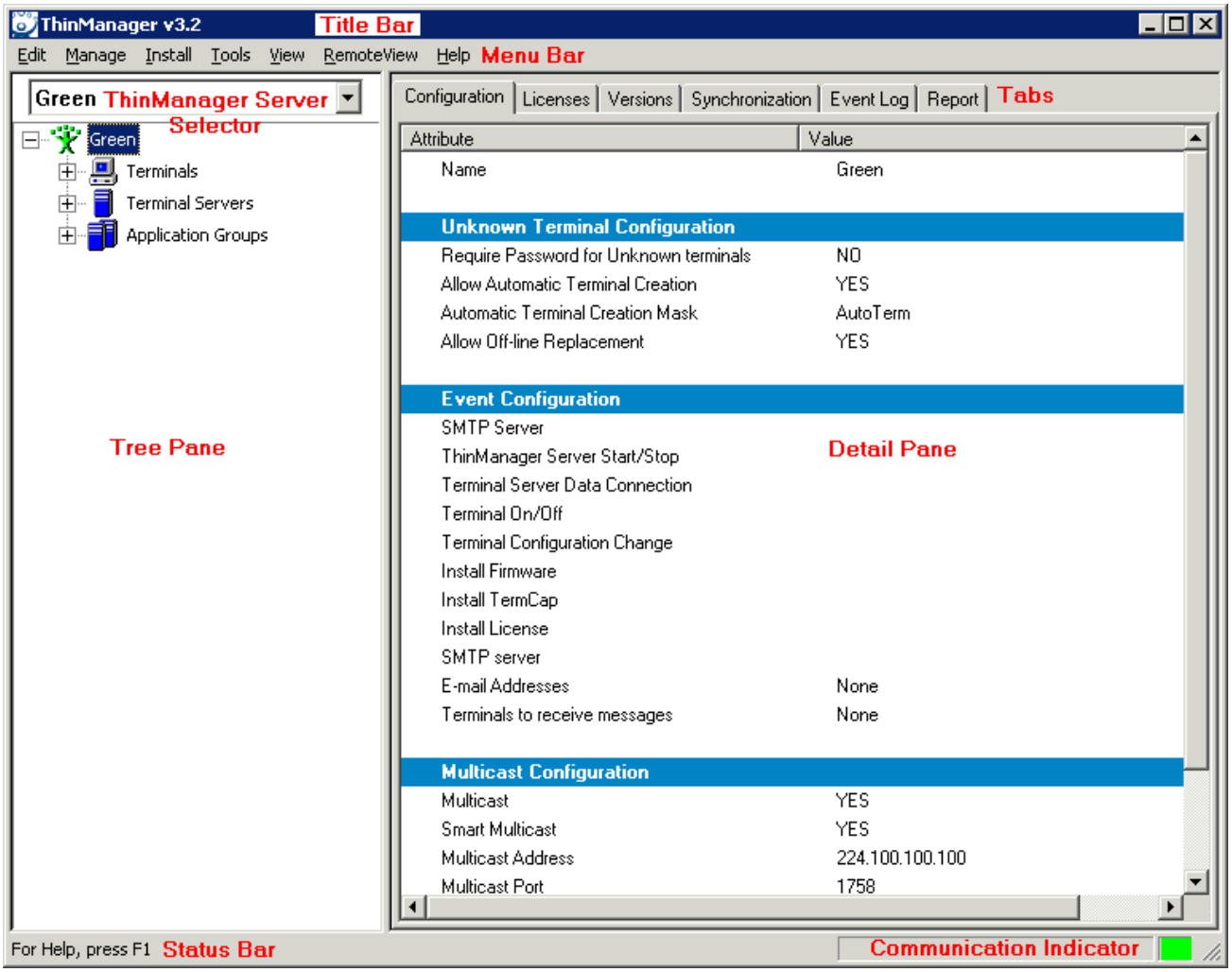
ThinManager is used for the configuration of ThinManager Ready Thin Clients in the ACP thin client environment.

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.

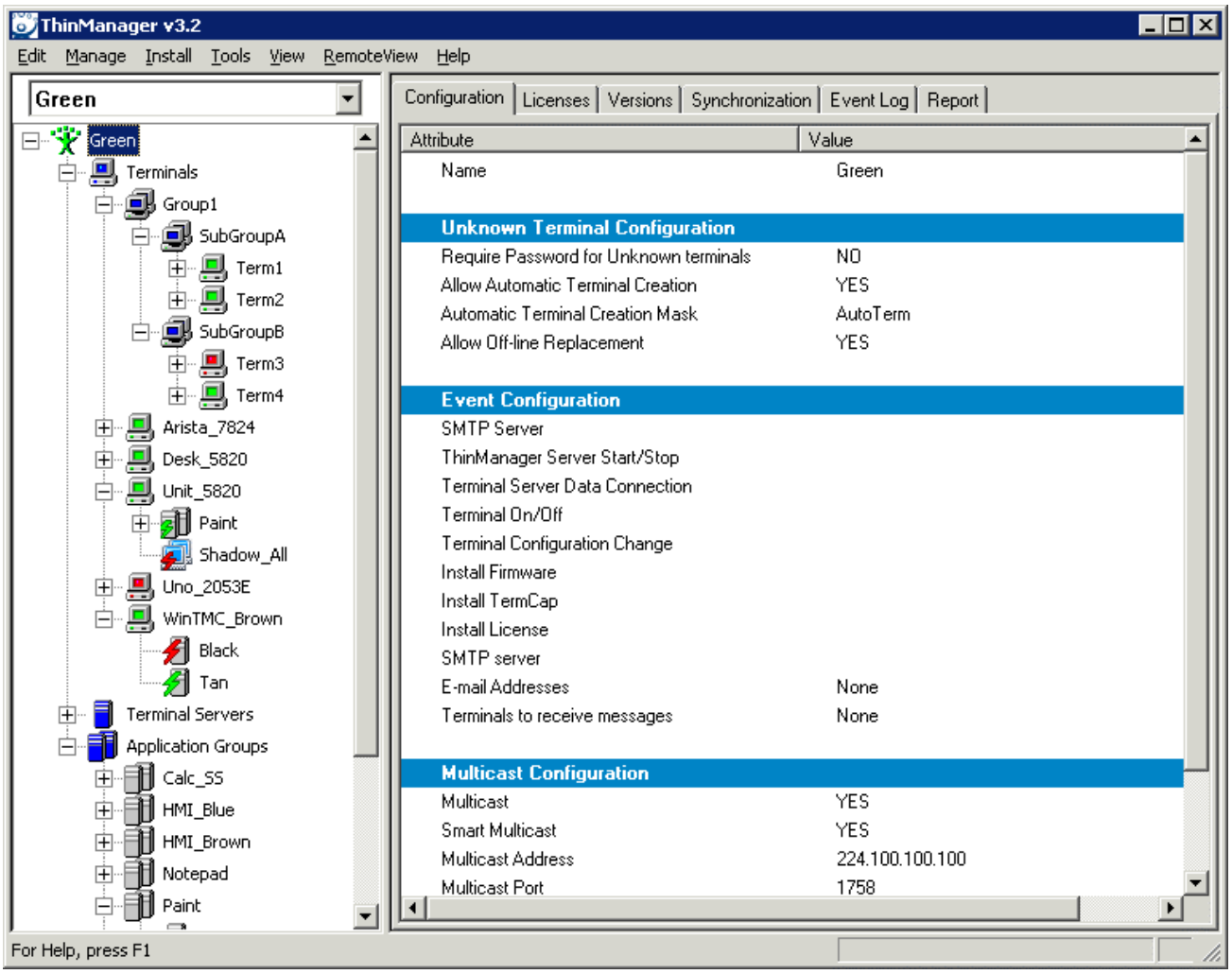
The sections of the **ThinManager** interface include:

- A **Title Bar** with the standard Windows Minimize/Maximize/Close shortcut icons.
- A **Menu Bar** with commands.
- A drop-down **ThinManager Server Selector** to pick which ThinManager Server will have its tree displayed.
- A **Tree Pane** with an expandable/collapsible tree showing the Terminals, Groups of terminals, Terminal Servers, Application Groups, and 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 four branches.

- **Terminals** – This lists terminals and groups of terminals. The groups can be expanded to show member terminals and terminals can be expanded to show its assigned terminal servers or application groups.
- **Terminal Servers** – This lists the terminal servers that the thin clients can use to connect and run sessions on. They can be expanded to show the terminals assigned to them.

- **Application Groups** – This lists the created application groups and shadow groups. They can be expanded to show member terminal servers and assigned terminals.
- **TermSecure Users** – This lists configured TermSecure Users and any created groups of TermSecure users. This branch is only visible when a TermSecure License is installed.

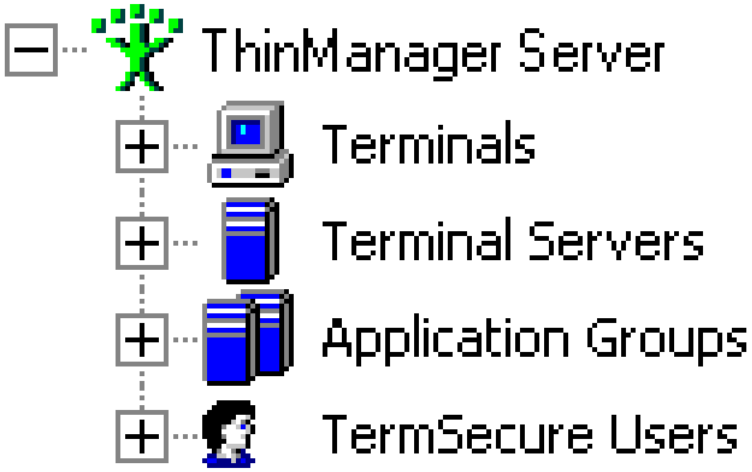
Although a single computer can be a ThinManager Server, a Terminal Server, and a member of an application group, these are three distinct functions that are displayed in the tree to reflect its function.

6.4. Icons

6.4.1. Tree Icons

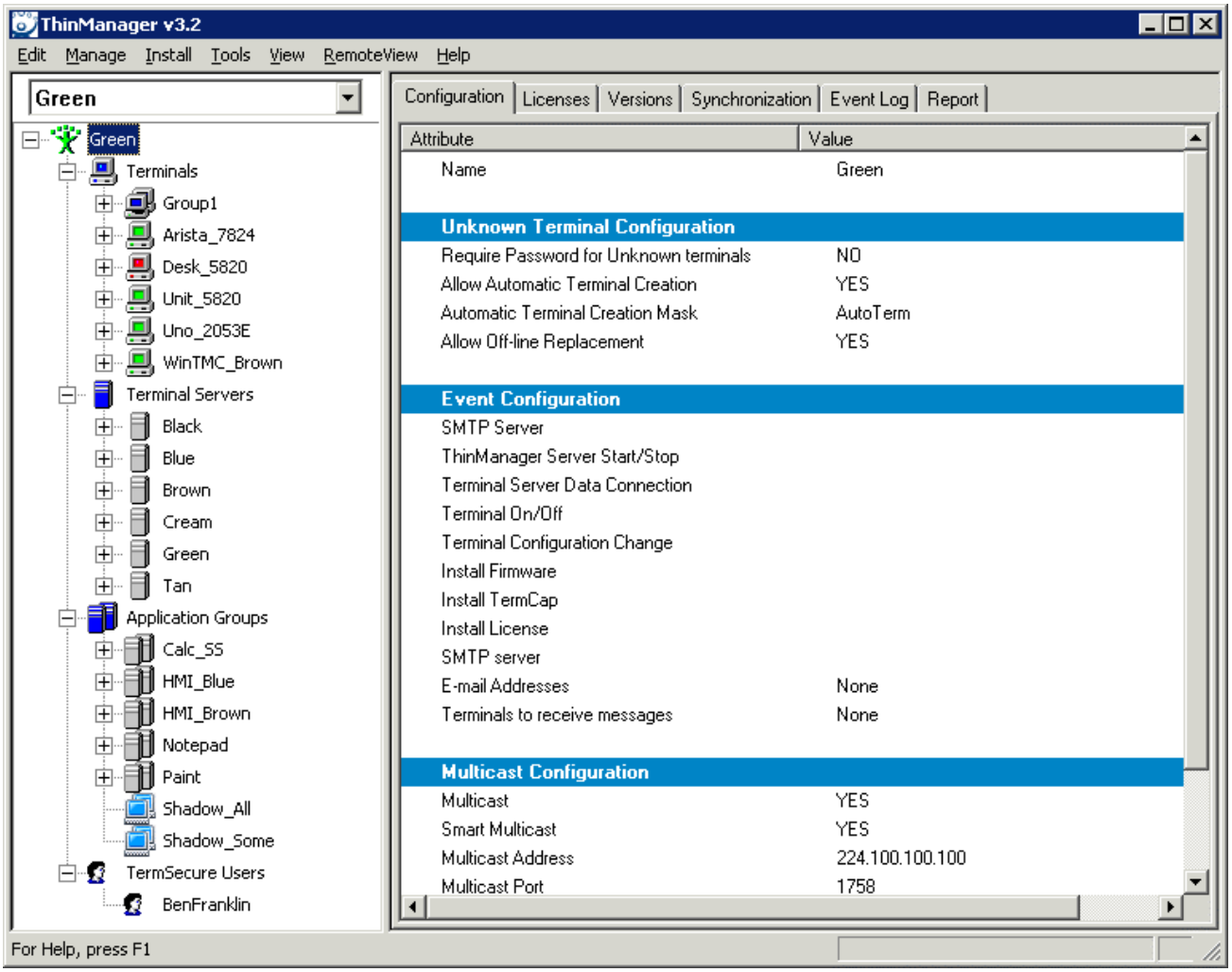
Several of the menu tools and other features are dependent on what icon is highlighted in the tree.

The tree is divided into four branches, **Terminals**, **Terminal Servers**, **Application Groups** and **TermSecure Users**.



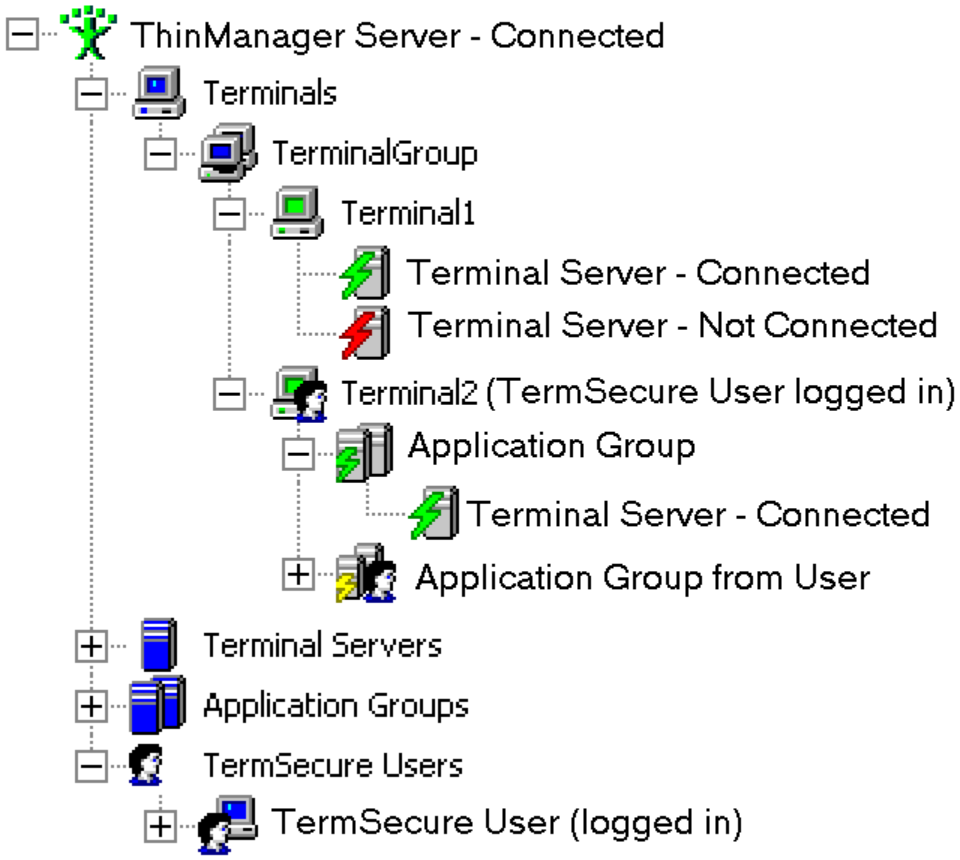
Four Tree Branches

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



Expanded Tree Showing Icon Variety

The tree in the example has been expanded to provide greater detail about the status of the terminals.



Group and Terminal Nesting

Each **Group** can be expanded to show the subgroups and terminals that are members of the group.

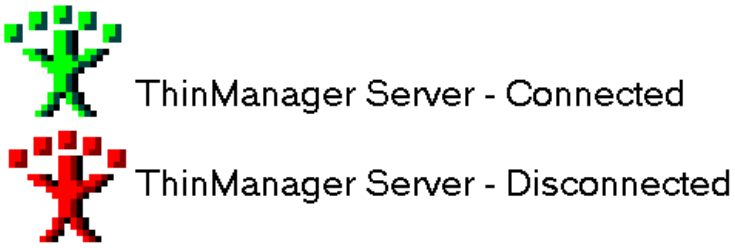
Each **Terminal** can be expanded to show the Application Groups or Terminal Servers that it is assigned to.

Each **Application Group** can be expanded to show the Terminal Servers that are assigned to it.

Each **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.

ThinManager Server Icons



ThinManager Server Icons

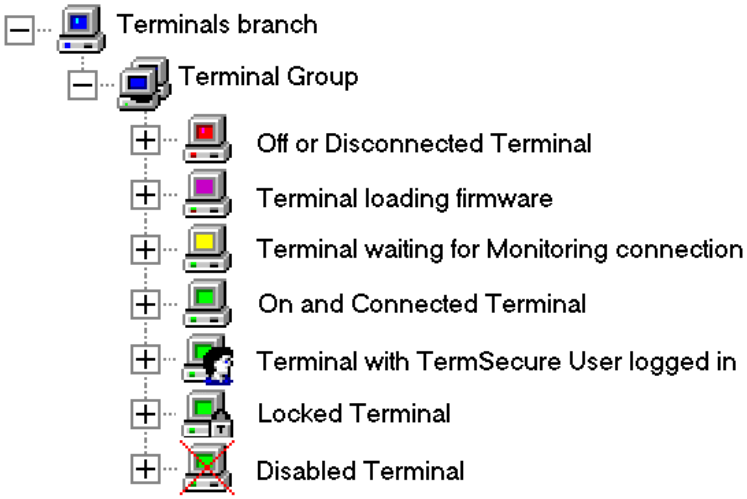
ThinManager can connect to several ThinManager Servers, but only one ThinManager Server tree can be displayed at a time. The tree shows the local ThinManager Server by default. Other ThinManager Servers can be added to the ThinManager Server drop-down box by selecting ***Edit > Add ThinManager Server***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

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.

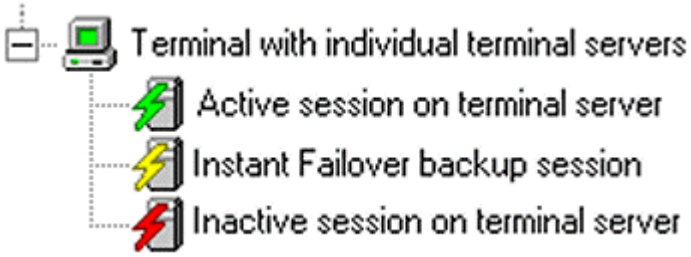
- A **Red terminal screen** indicates that the Terminal is off or not communicating with the ThinManager Server.
- A **Purple terminal screen** indicates that the Terminal is loading the firmware during the boot process.
- A **Yellow terminal screen** indicates that the Terminal has loaded firmware but is waiting to communicate with 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 Cross** 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.

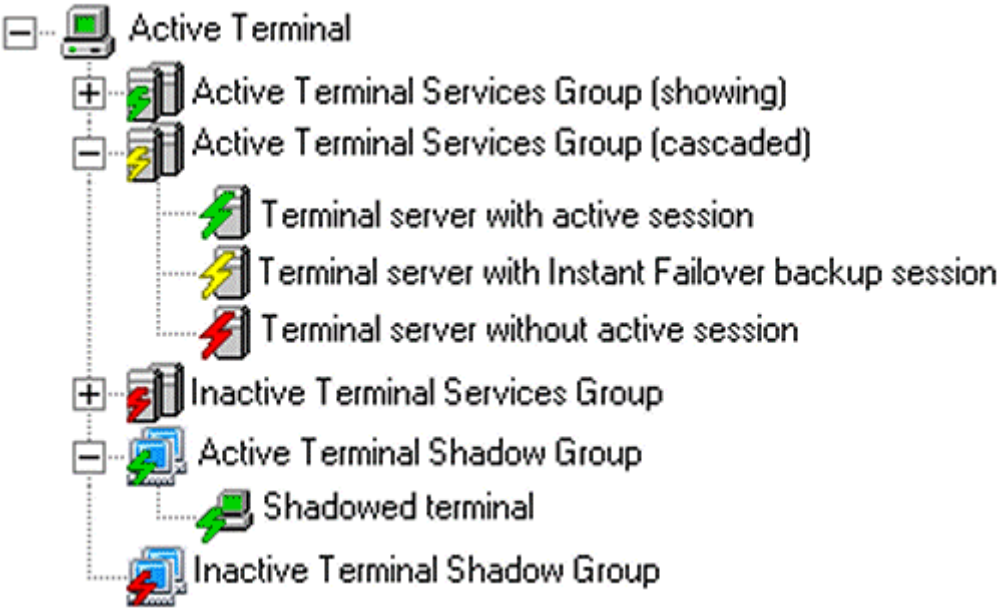
The Terminal icon can be expanded to show the assignment of the terminal.



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 Application Groups

A terminal that is using Application Groups can be expanded to show the status of the Application Groups. The application Groups can be expanded to show the terminal server status.

- A **double server icon with a green lightning bolt** indicates an active connection to a Terminal Services Application Group that is showing on the terminal.
- A **double server icon with a yellow lightning bolt** indicates an active connection to a Terminal Services Application Group that is not showing on the terminal but is cascaded.
- A **double server icon with a red lightning bolt** indicates an inactive connection to an assigned Terminal Services Application Group.
- A **double monitor icon with a red lightning bolt** indicates an inactive connection to an assigned Terminal Shadow Application Group.
- A **double monitor icon with a green lightning bolt** indicates an active connection to a Terminal Shadow Application Group.

If the Application Group is expanded it will show the connection status to the terminal server through the icon color.

- A **server icon with a green lightning bolt** indicates an active connection to the assigned terminal server.
- A **server icon with a yellow lightning bolt** indicates an active connection to the assigned terminal server. This session is not displayed on top but is the Instant Failover backup session.
- A **server icon with a red lightning bolt** indicates an inactive connection to the assigned terminal server.

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.

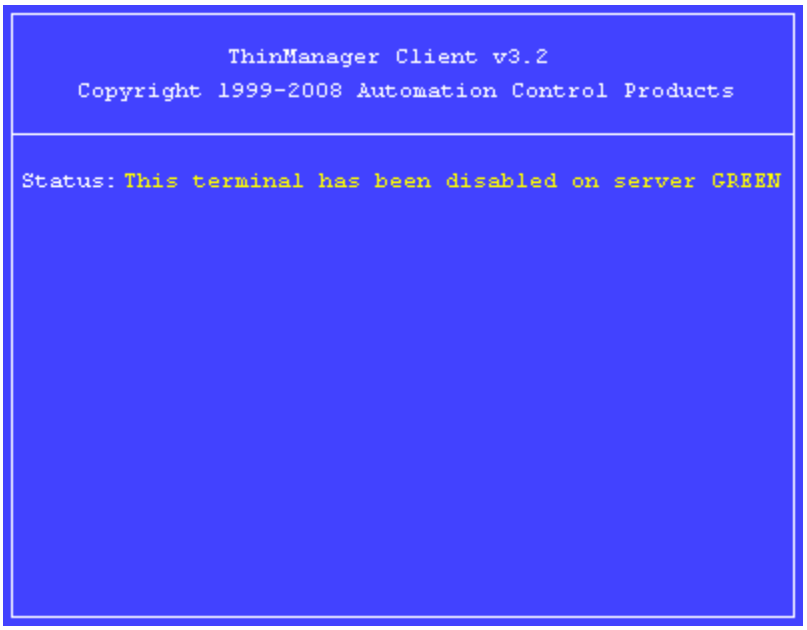
A **Green terminal screen** with a Red **X** indicates that the disabling has been applied to the terminal that is turned on. The terminal has a disabling screen and is waiting for enabling.

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.



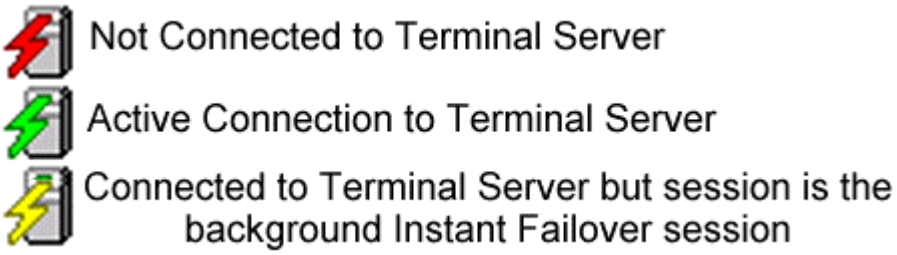
Disabled Terminal

If a terminal is booted when disabled, the boot process will be halted until the terminal is enabled.

See Disable Terminals for details.

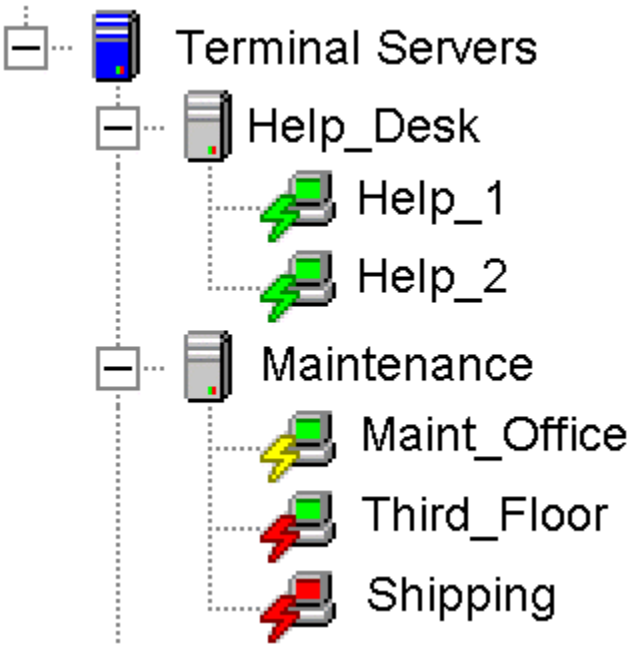
Terminal Server Icons

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

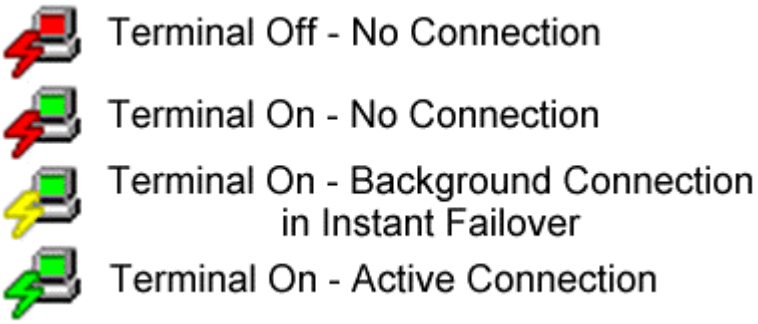
- A **Red lightning bolt** represents a lack of connection to the terminal server.
- A **Green lightning bolt** represents a connection to the terminal server with an active session.
- A **Yellow lightning bolt** represents a connection to the terminal server with an active session that is the backup in Instant Failover or MultiSession mode.



Terminal Server Nesting

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

The Application Group branch can be expanded to show the Application Groups that are configured. The Application Groups 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.

Application Group Icons

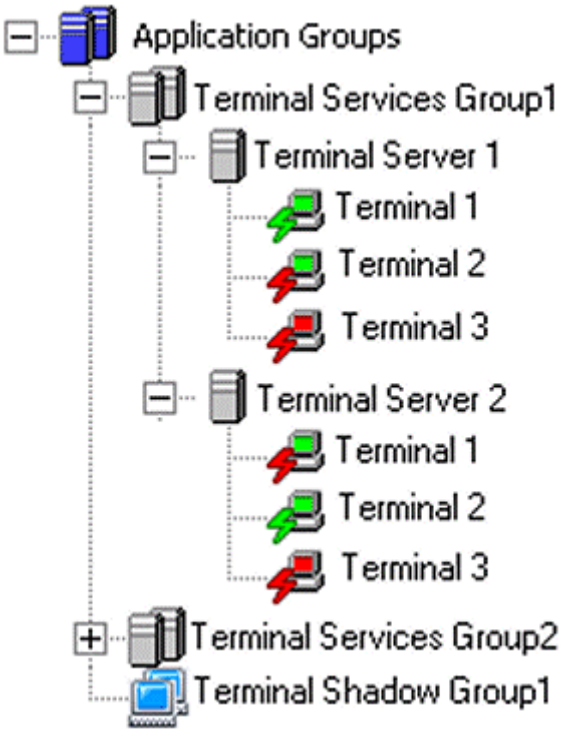
The **Application Group** branch can be expanded.

A **Two-Server icon** represents an Application Group. It can be expanded to show member terminal servers.

A **Single-Server icon** represents a terminal server that is a member of the Application Group. It can be expanded to show terminals assigned to it.

A light blue **Double Monitor icon** represents a Terminal Shadow Application Group.

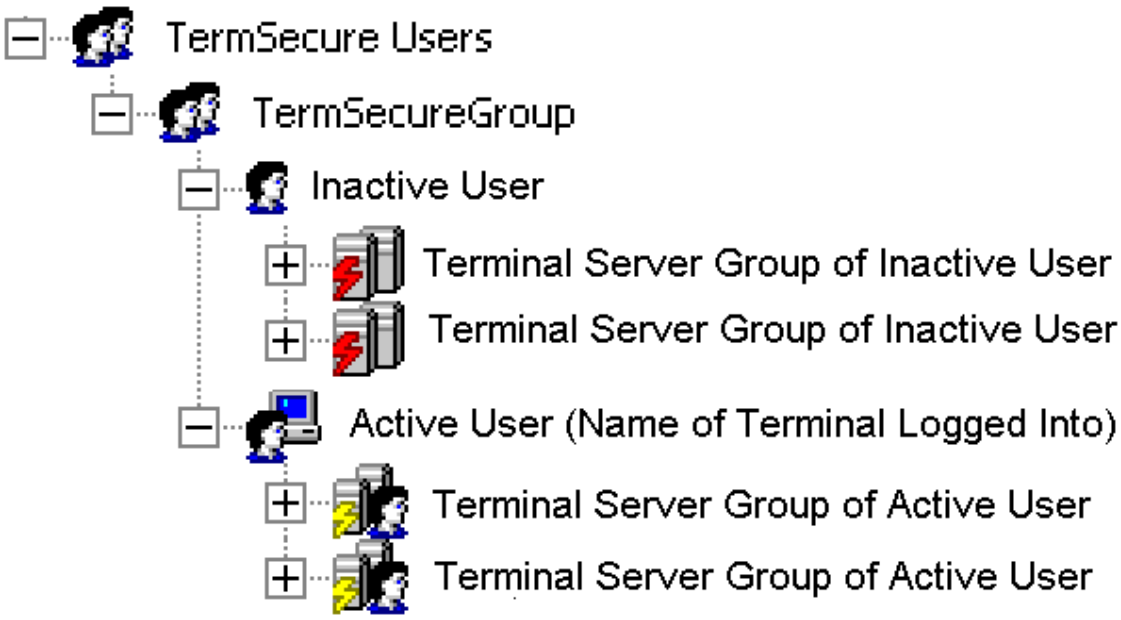
Monitor icons represent terminals that are assigned to the terminal servers. The red/green color of the screen and lightning bolt are the same as terminals in the Terminals branch, green for connected and red for disconnected.



Application Group Icons

TermSecure User Icons

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 Application Groups 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 Application Groups that are assigned to the TermSecure User.

A TermSecure User that is not active or logged into a terminal server will show the normal Application Group icon of two servers.

A TermSecure User that is active and logged into a terminal server will show an icon of the TermSecure User head with the Application Group icon of two servers. Analytics

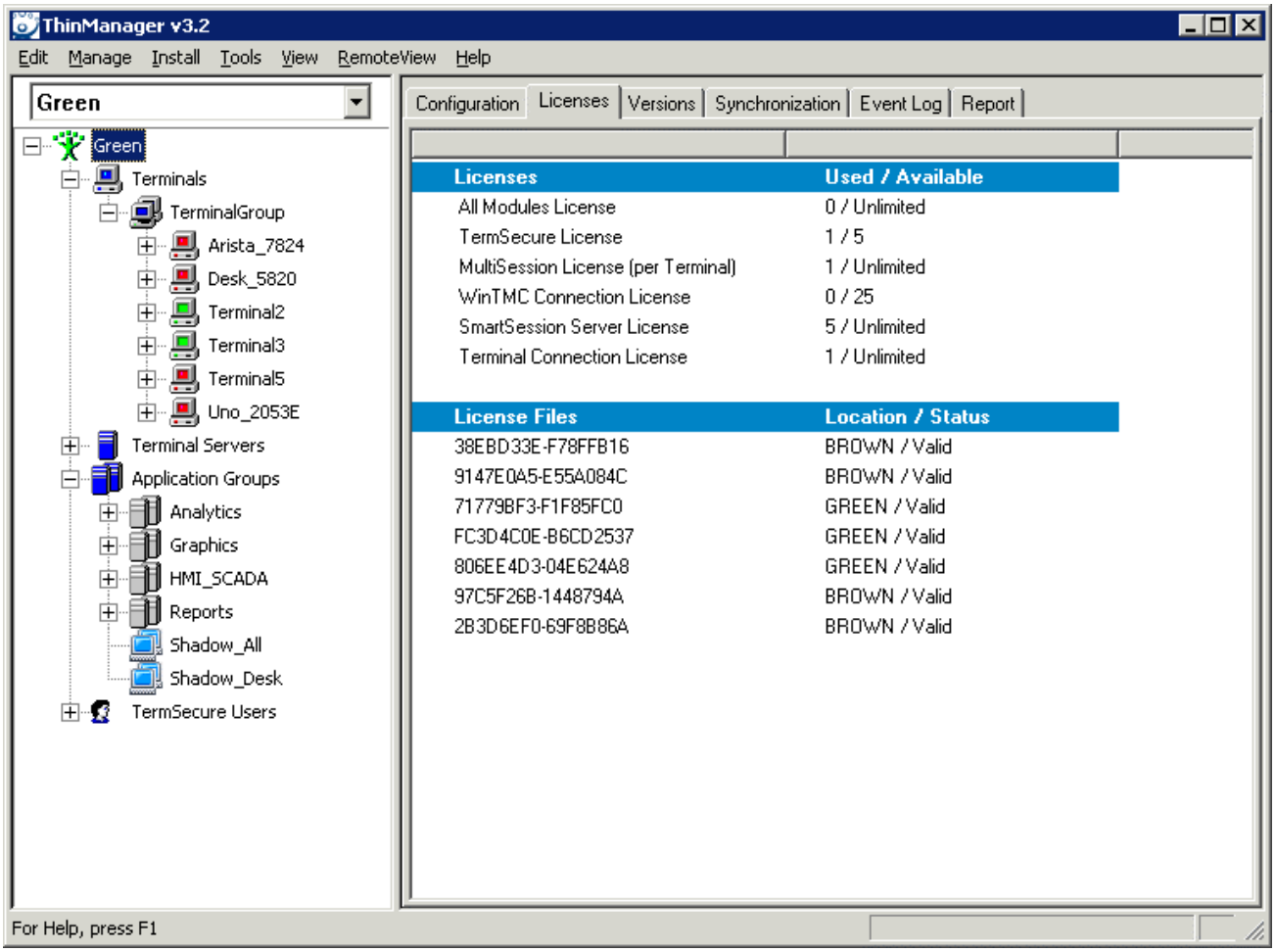
6.5. Details Pane

The Details Pane has tabs to provide additional information. Highlighting a **ThinManager Server**, **Group**, **Terminal**, **Terminal Server**, or **Application Group** 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 3.2 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.

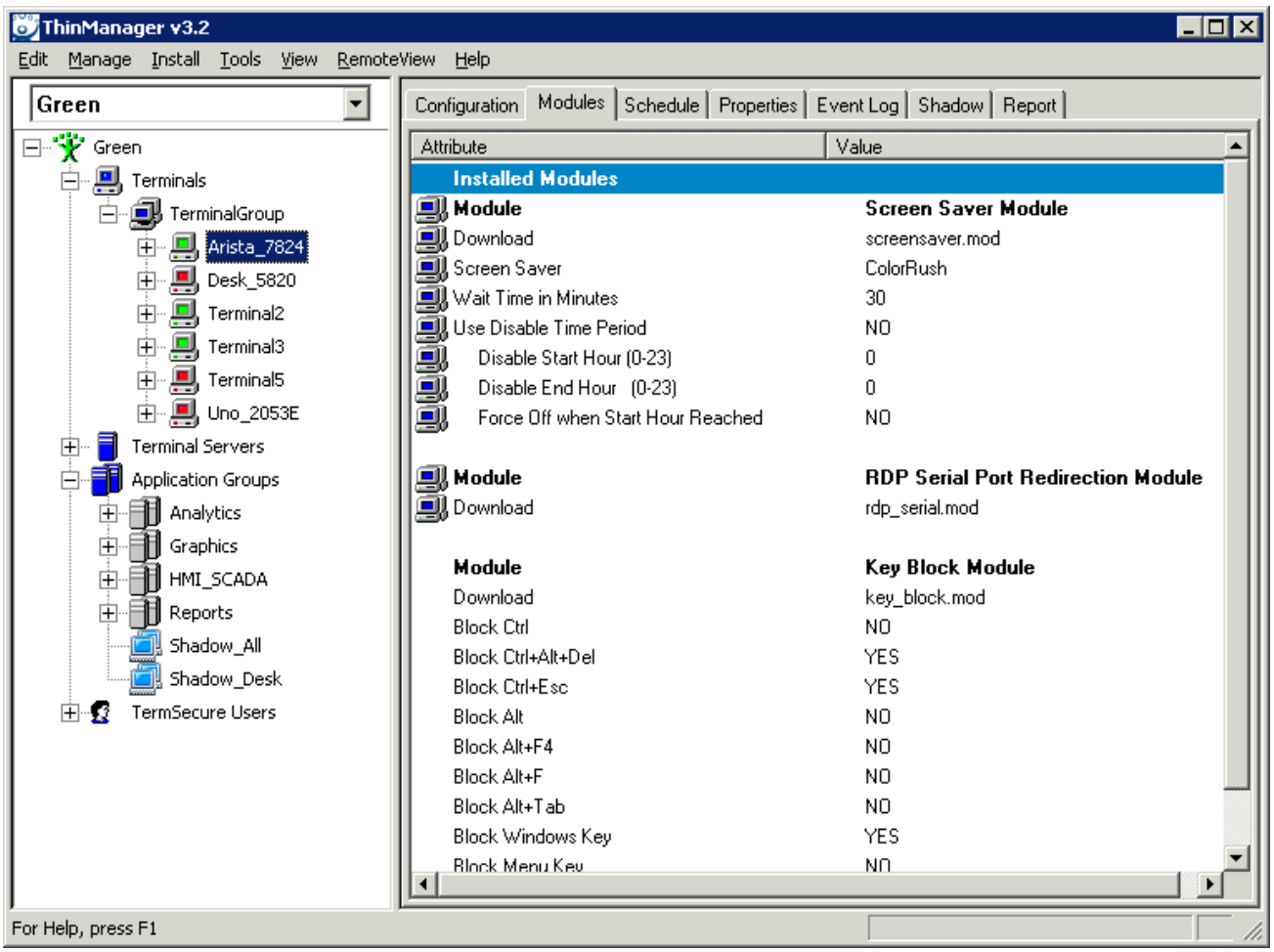


ThinManager Server Tabs – Licenses

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.



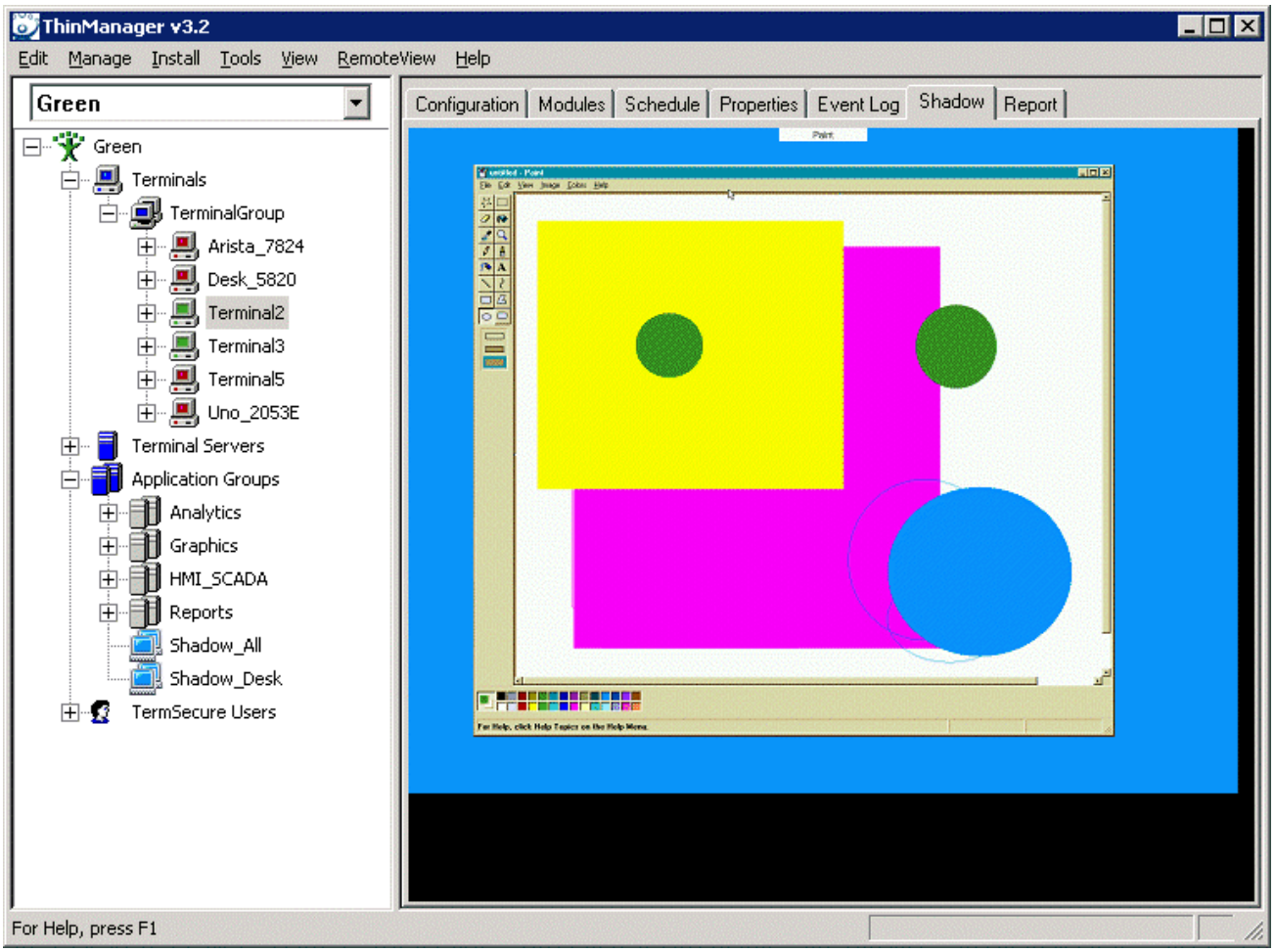
Group Tabs – Modules

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.



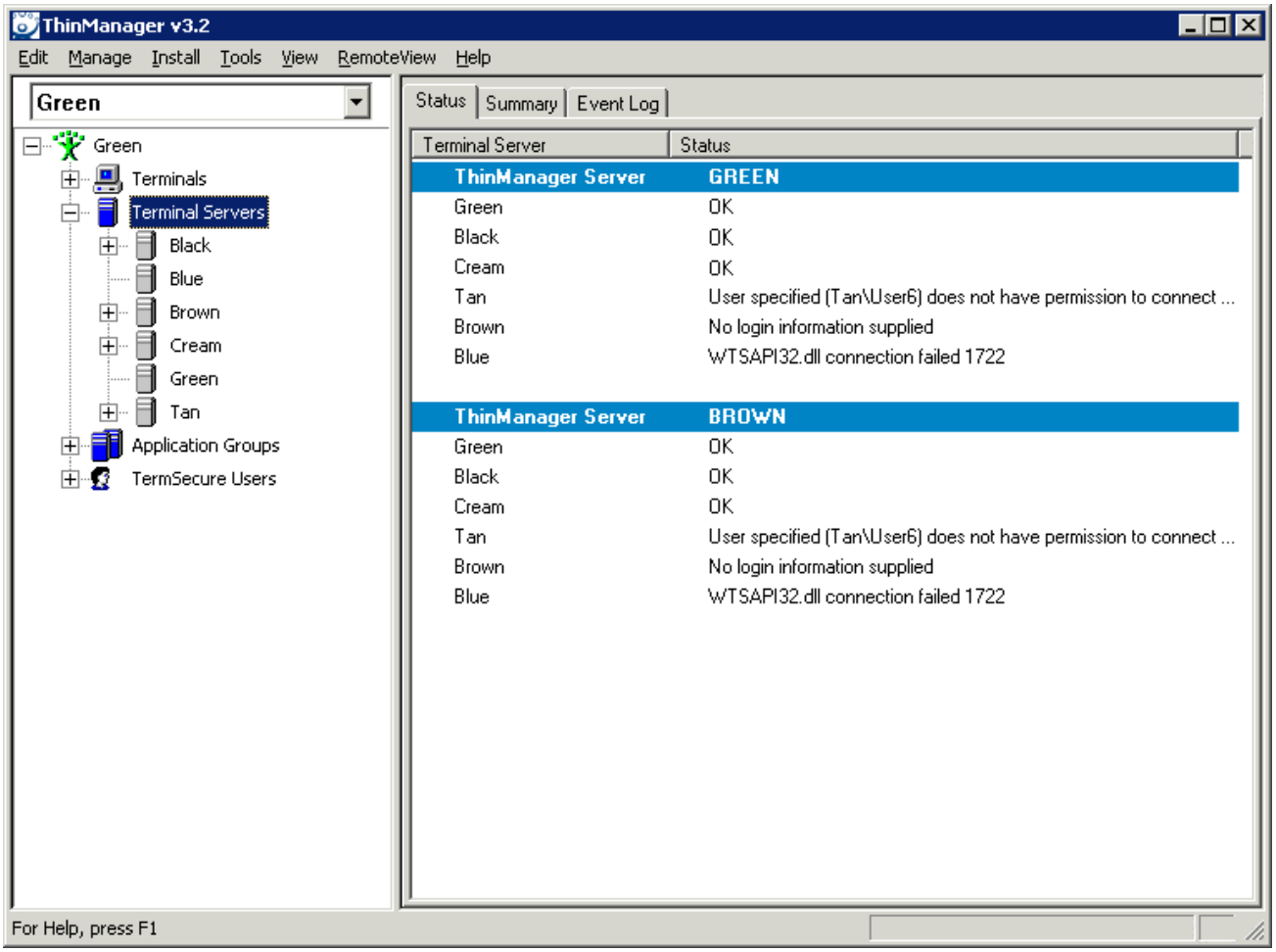
Terminal Tabs – Shadow

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.

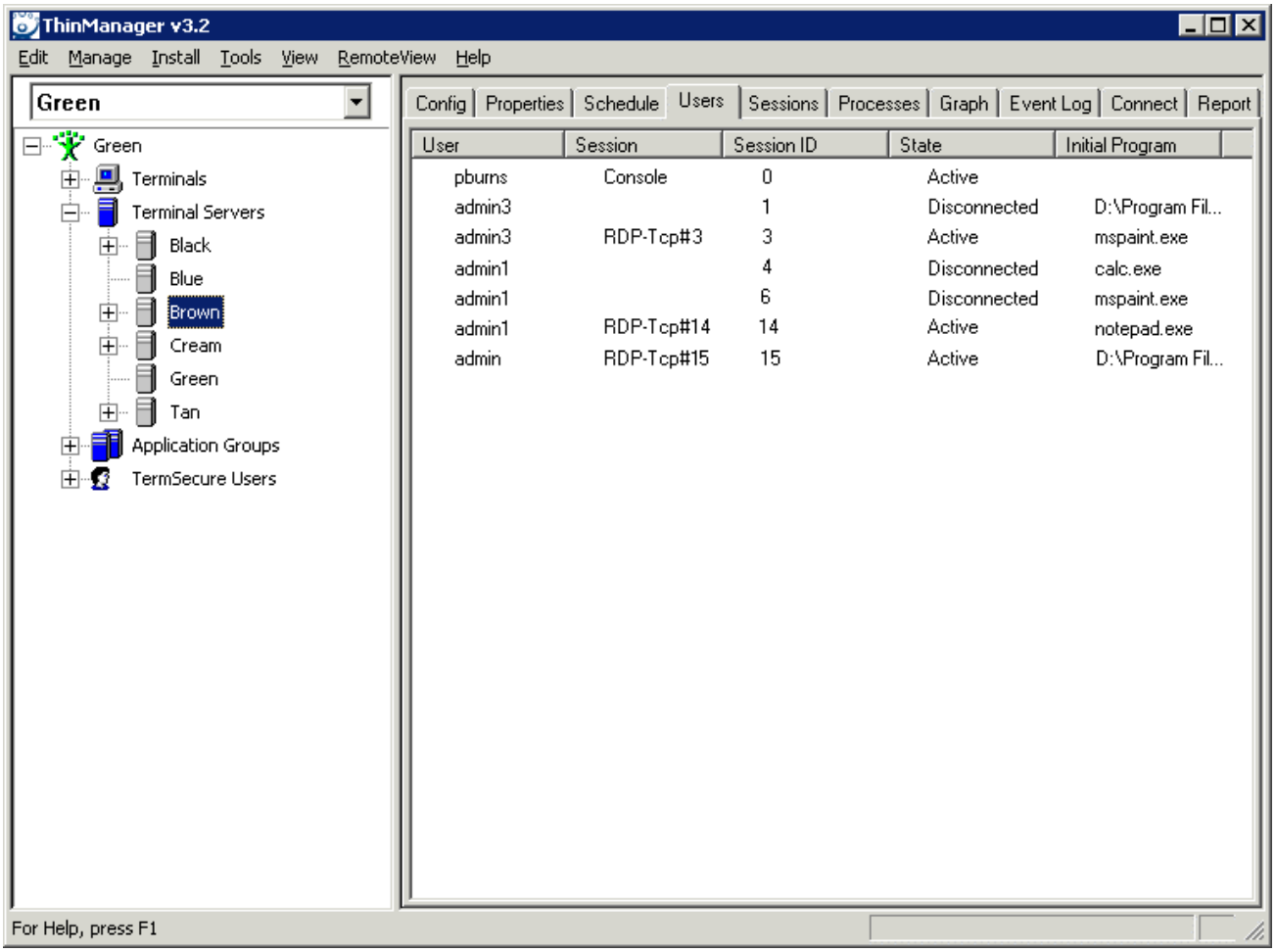


Terminal Servers Tabs – Status

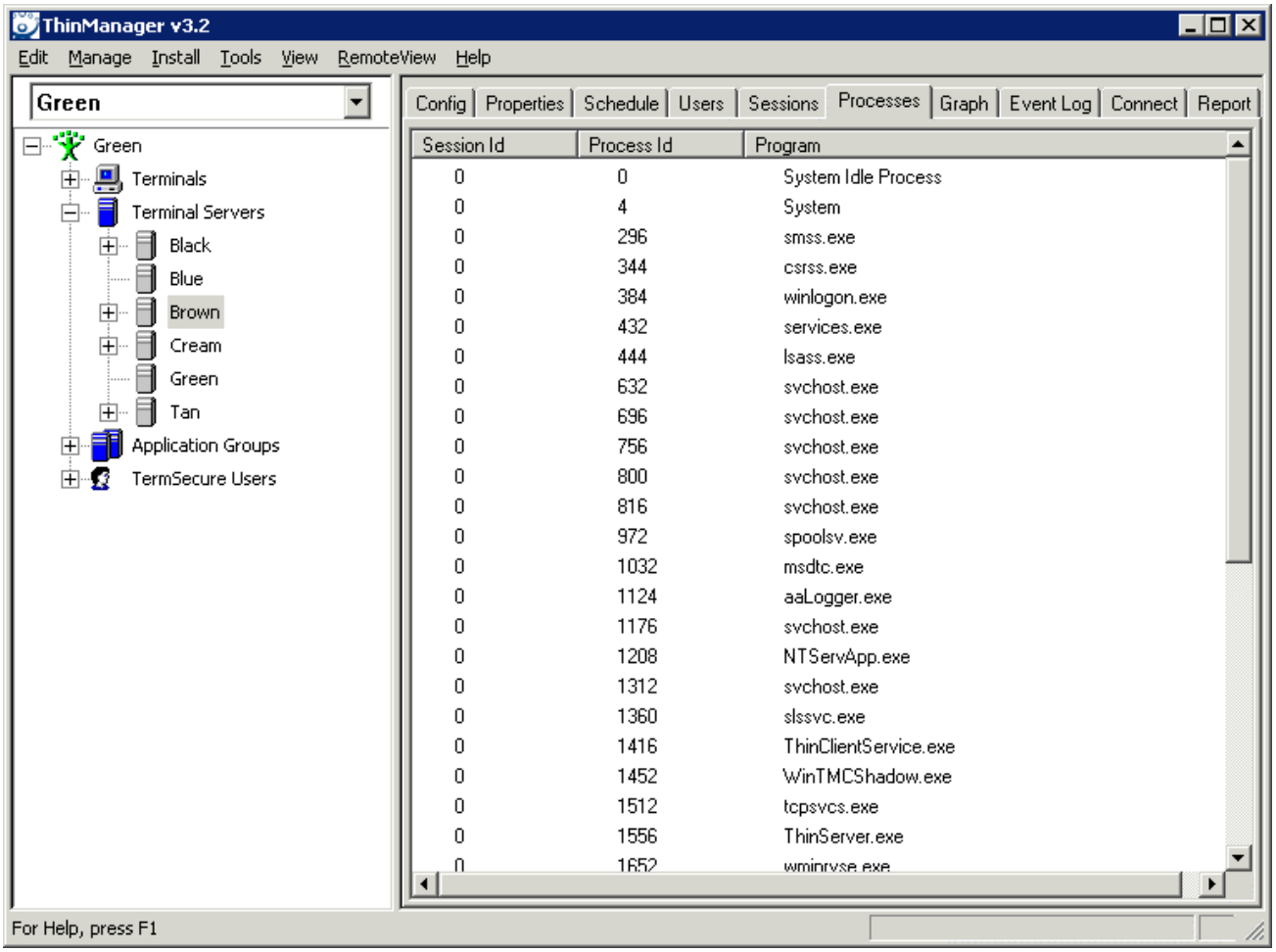
Highlighting an individual **Terminal Server** will show:

- **Configuration** - This shows the installed Client Communication Protocols and the SmartSession settings for the Terminal Server. See Terminal Server Capabilities Page for details.

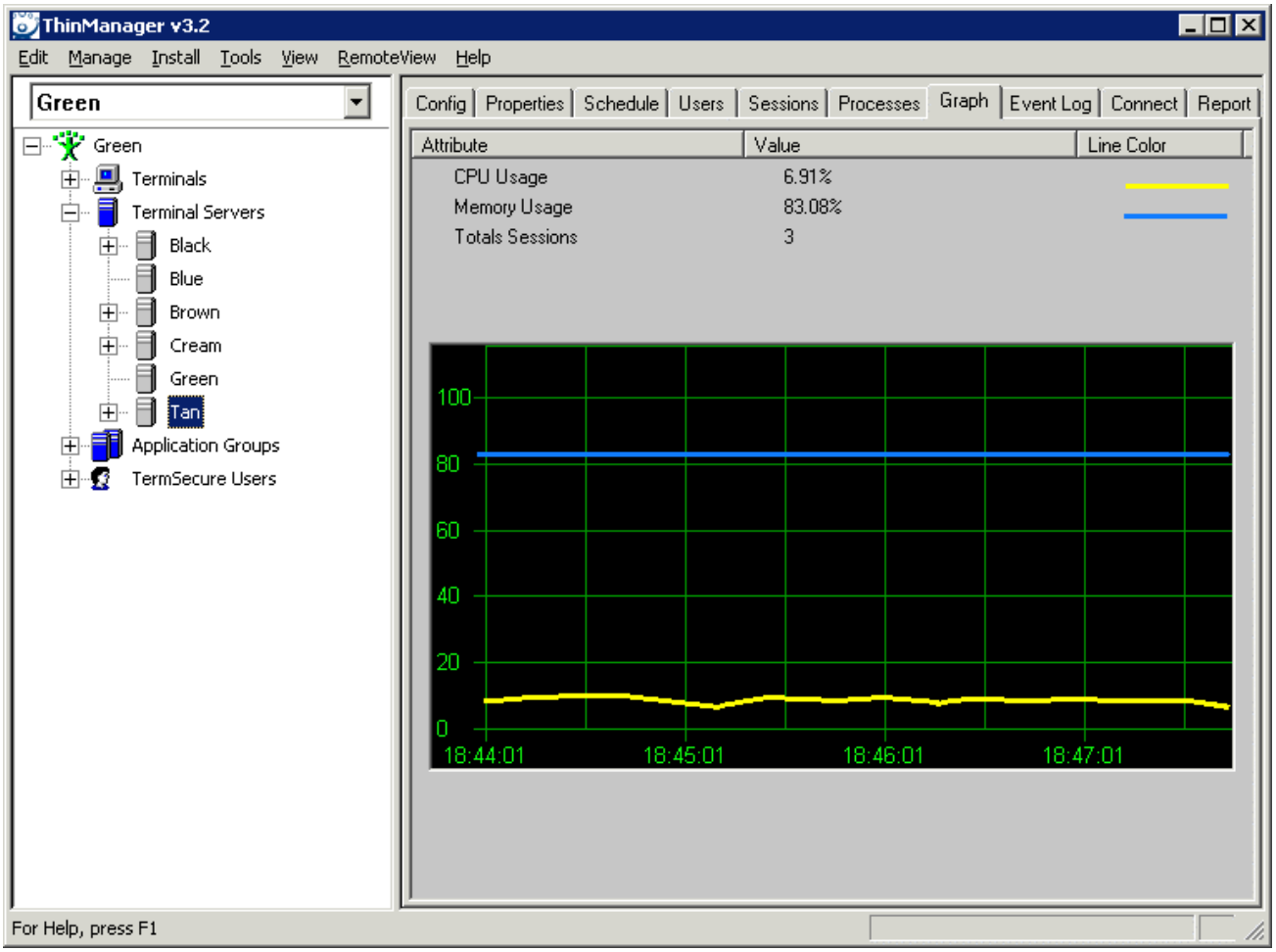
- **Properties** – This tab displays the server resource data like total memory, free memory, uptime, and CPU speed.
- **Schedule** – This will display any events scheduled for the Group. See Terminal Server Schedule for details.
- **Users** - This tab displays information from the Terminal Services 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 – Users

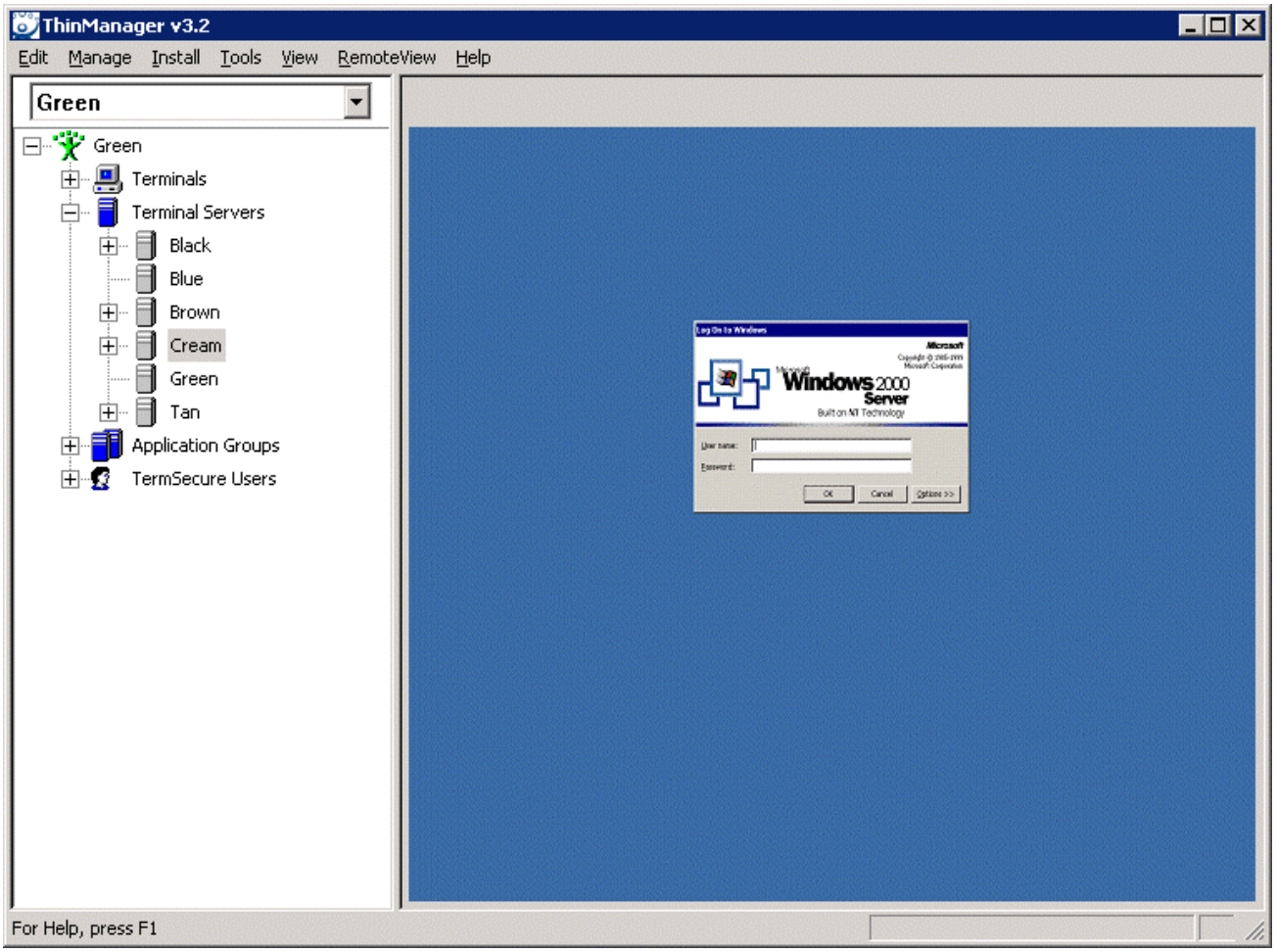


Terminal Server Tabs – Processes



Terminal Server Tabs – Graph

The **Graph** tab will show the memory usage and CPU usage of the selected Terminal Server. The length of time the historical data is stored for each terminal server is configurable in the ThinManager Server Configuration Wizard.



Terminal Server Tabs – Connect

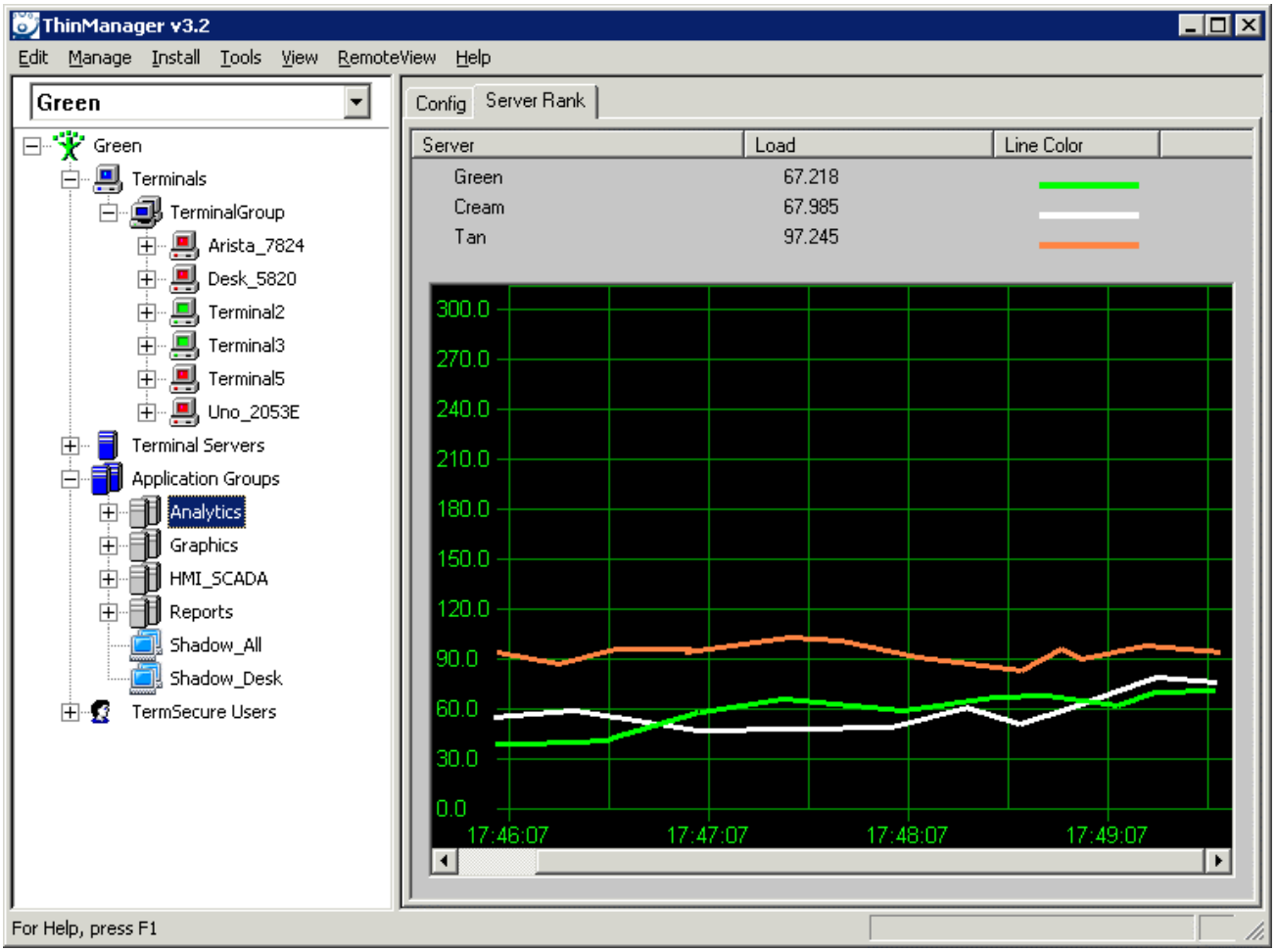
The **Connect** tab allows the ThinManager user to connect to a Terminal Server and start a session for administrative purposes if the user can supply a valid Microsoft username and password.

6.5.5. Application Group Detail Tabs

Highlight the blue **Application Group.** The icon will show no details.

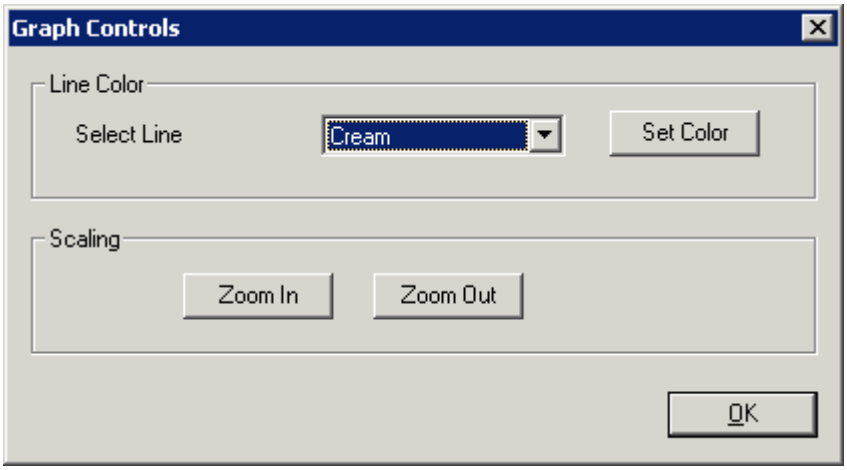
Highlight a **Application Group.** It will show:

- **Config** – The Configuration tab will show the members of the Application Group and details about SmartSession, Multi-Session, and AppLink.
- **Server Rank** - This shows a graph with the SmartSession ranking based on the available resources. The server with the lowest number has the lightest load. The server with the highest ranking has the highest load.



Application Group Tabs – Server Rank

Right clicking on the Server Rank graph will allow color change on the graph.



Graph Controls Window

Right clicking on the graph will launch the **Graph Controls** window. The color of the lines can be changed by selecting a line from the ***Select Line*** drop-down and selecting the ***Set Color*** button to choose a new color.

The ***Zoom In*** and ***Zoom Out*** buttons control the time intervals displayed on the graph.

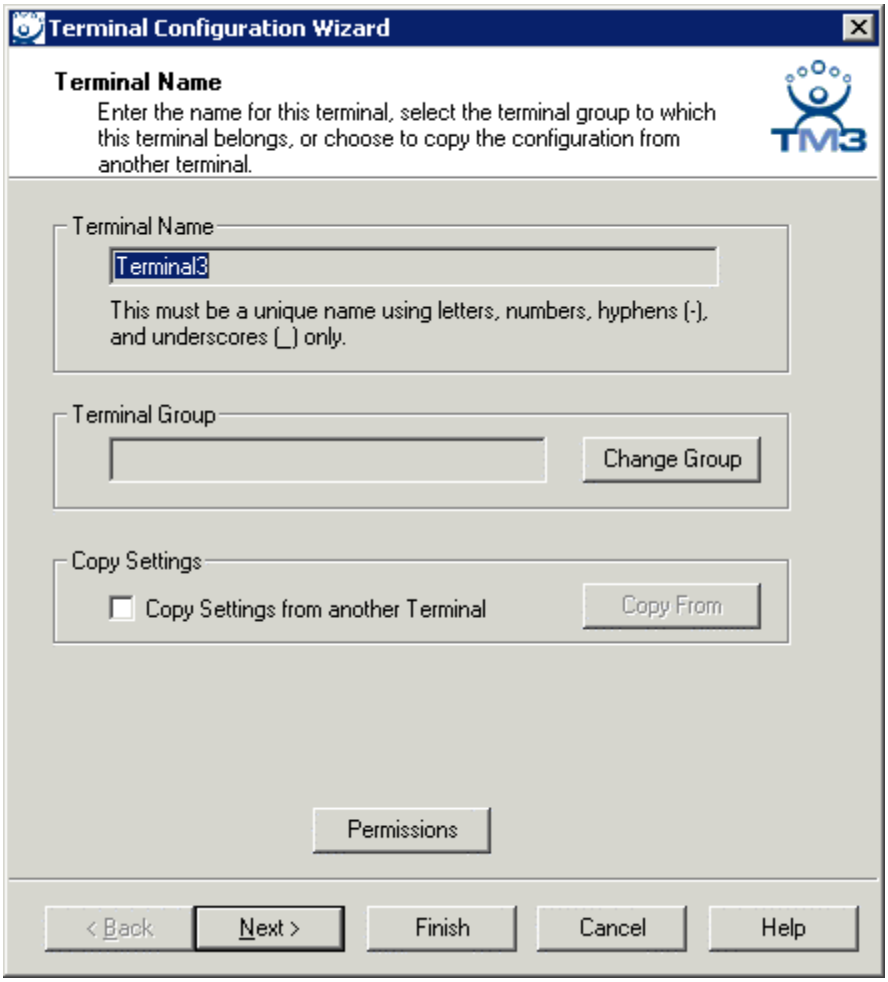
The ***OK*** button accepts the changes and closes the Graph Controls window.

6.5.6. Changing a Terminal's Group

To change the Group membership of a terminal, open the Terminal Configuration Wizard or the Terminal Properties by either:

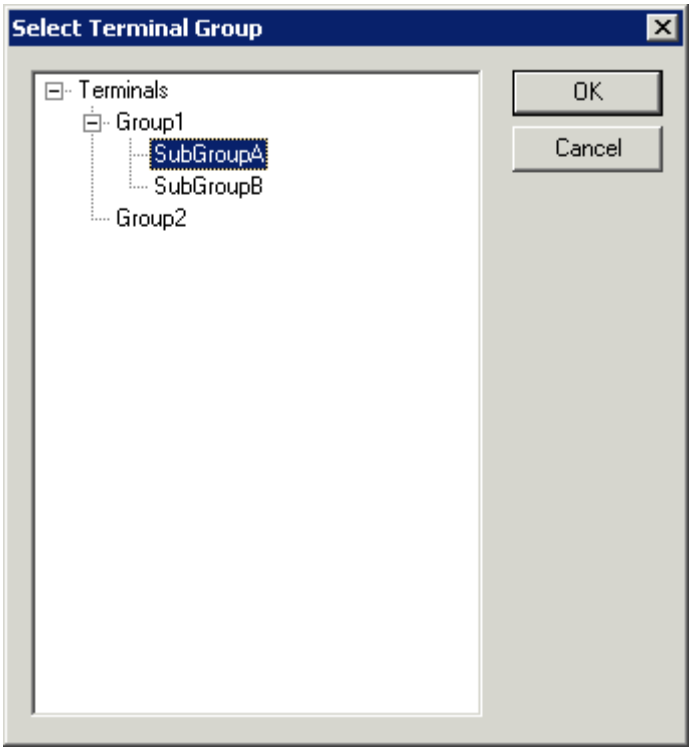
- Highlighting the terminal in the **ThinManager** tree pane by clicking on the terminal name or icon and select ***Edi t >Modify*** from the **ThinManager** menu bar.
- Right-clicking on the terminal icon in the **ThinManager** tree pane and select ***Modify***.
- Double-clicking on a terminal icon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

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

6.5.7. 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.

6.5.8. 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***.

6.5.9. 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.

6.5.10. Rebooting a Terminal

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

A terminal or group can be rebooted by:

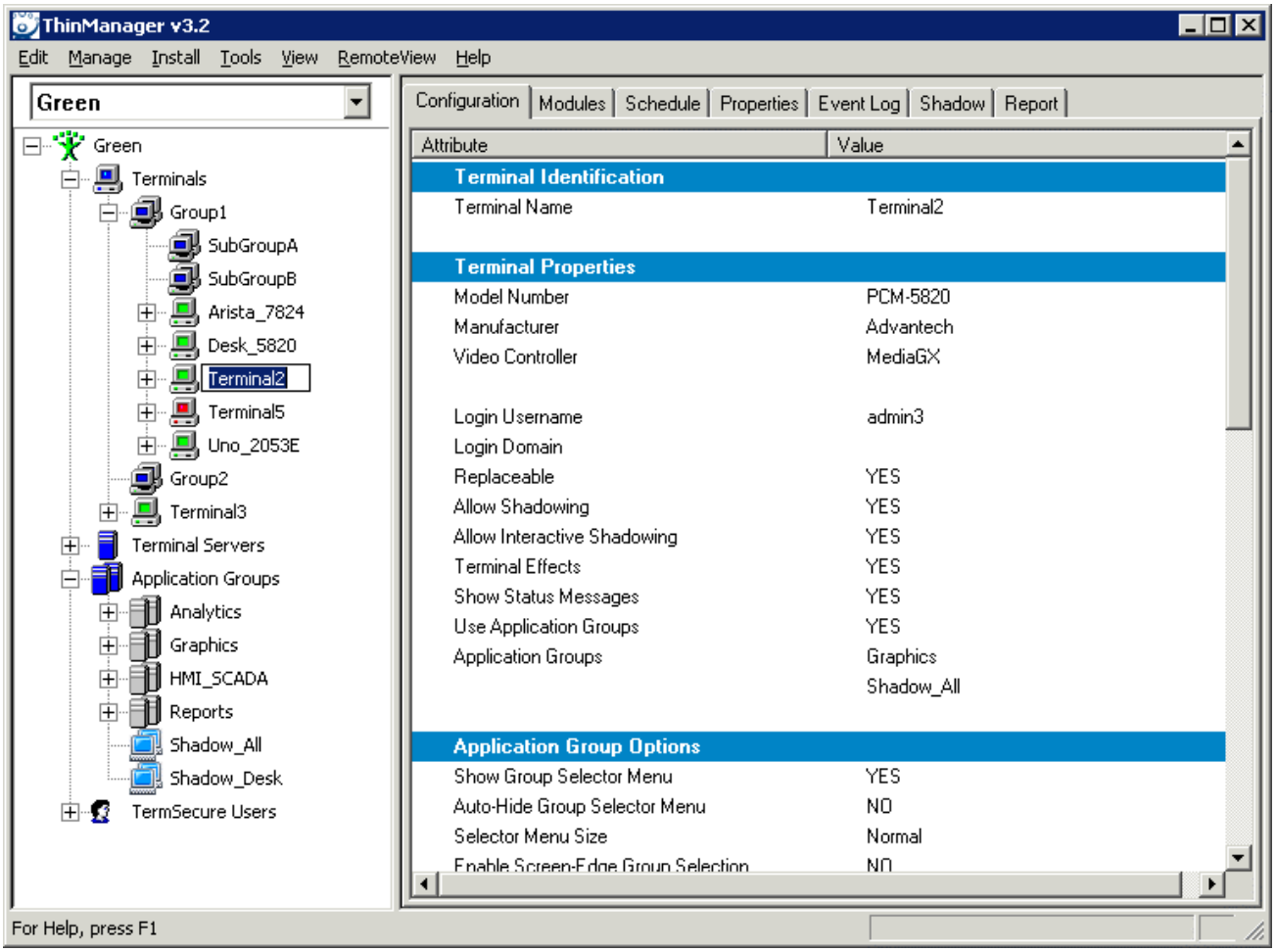
- Selecting ***Tools>Reboot Terminals*** from the ThinManager menu bar. This will reboot all the terminals on the server if the server is highlighted. If a group is highlighted, all members of the group will be highlighted. If a terminal is highlighted, the terminal is rebooted.
- Right-clicking a group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

6.5.11. 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

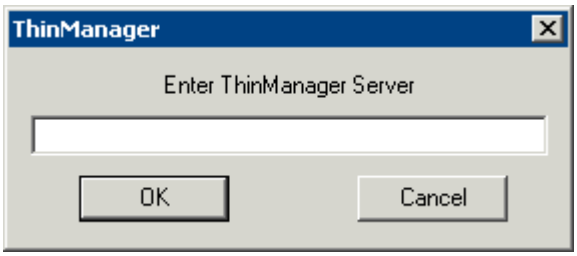
Edit > Add Terminal Group will launch the **Group Creation Wizard** to start the process of adding a new group of terminals. This command will be displayed when the ThinManager Server, Terminals branch, or a Terminal Group is highlighted.

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.

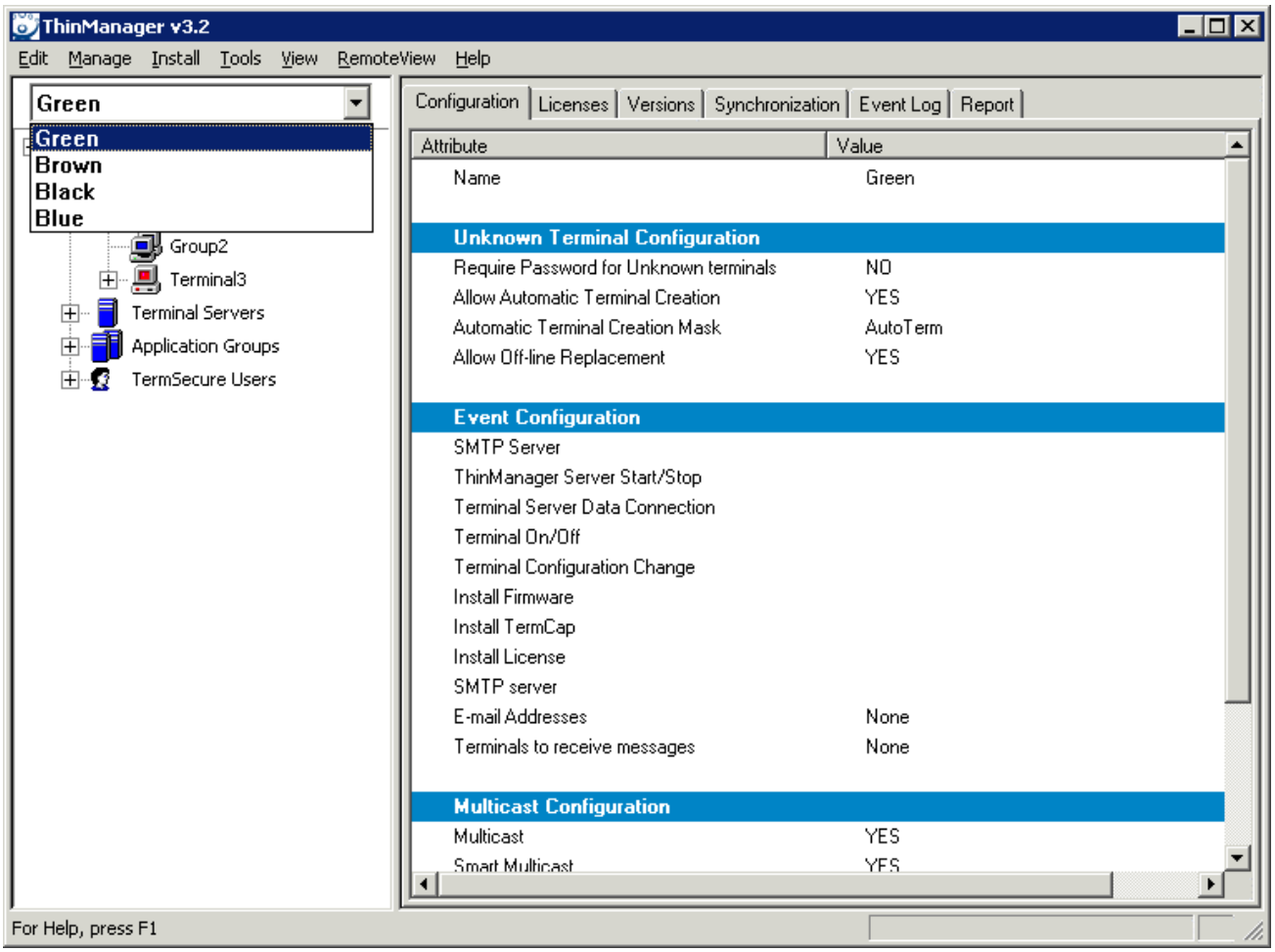
Selecting ***Add ThinManager Server*** will launch a dialog box.



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.

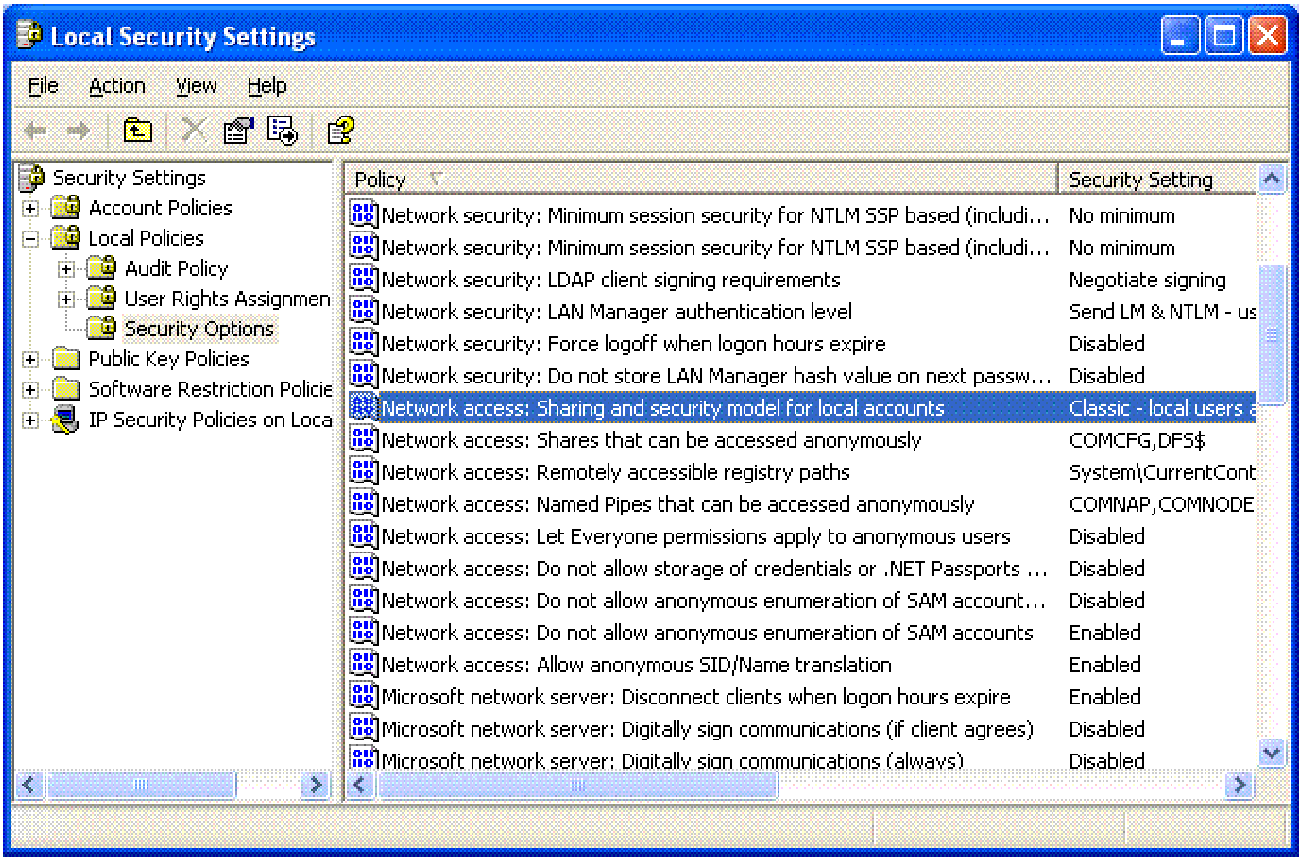
ThinManager no longer displays multiple ThinManager Servers in the tree to allow the right-click function to be active on each of the tree members.

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

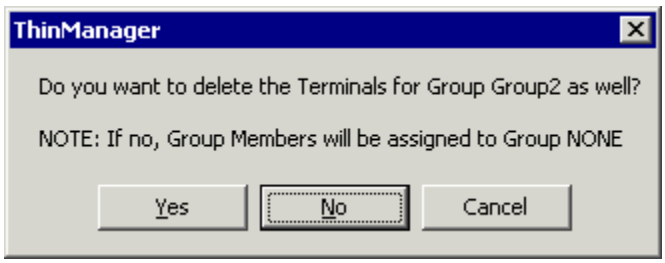
Highlight the ***Security Options*** folder in the **Local Security Settings** program. Change the ***Network access: Sharing and Security model for local accounts*** from the default ***Guest Only*** to ***Classic*** to match the setting of the Windows 2003 terminal server.

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 **Application Group Configuration Wizard** for a highlighted Application Group. This allows the Application Group to be configured as described in Application Group List.
- ***Modify*** will launch the **Terminal Server Configuration Wizard** for a highlighted Terminal Server. This allows the Terminal Server to be configured as described in Terminal Server List Wizard.

7.1.7. Rename

Edit > Rename will allow a highlighted group or terminal to have its name changed in the tree of ThinManager.

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

7.1.8. Lock

When a group property or a terminal property 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 group or terminal to prevent it from being changed. A lock icon will designate a locked group or terminal.

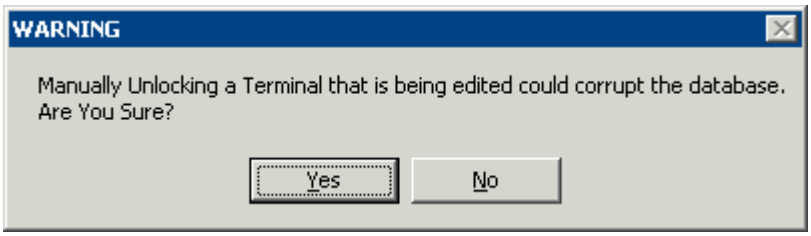
Lock Icons

When a terminal server or Application Groupis being modified, they will also be locked to prevent two people from making changes at the same time

7.1.9. Unlock

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

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



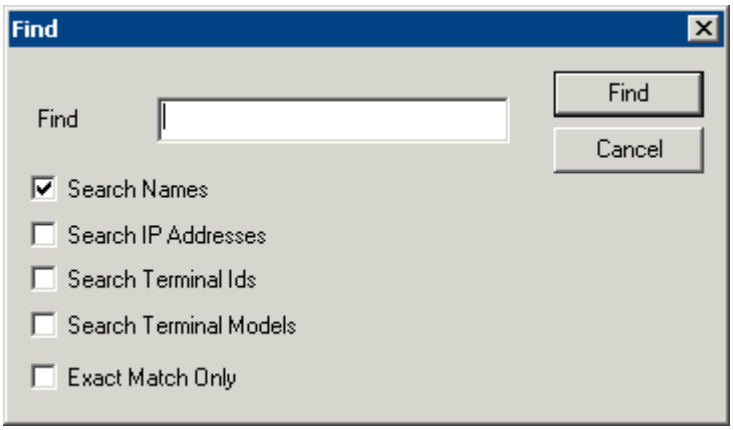
Lock Warning Message

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

Note: This tool is to be used only when a terminal remains locked due to an unexpected server shut down while a terminal 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. Terminal Server List

Manage > Terminal Server List will launch the **Terminal Server List Wizard** for configuring terminal servers. See Terminal Server List Wizard for details.

7.2.2. Application Group List

Manage > Application Group List will launch the **Application Group List** Wizard for creating Terminal Server Groups. See Application Group List for details.

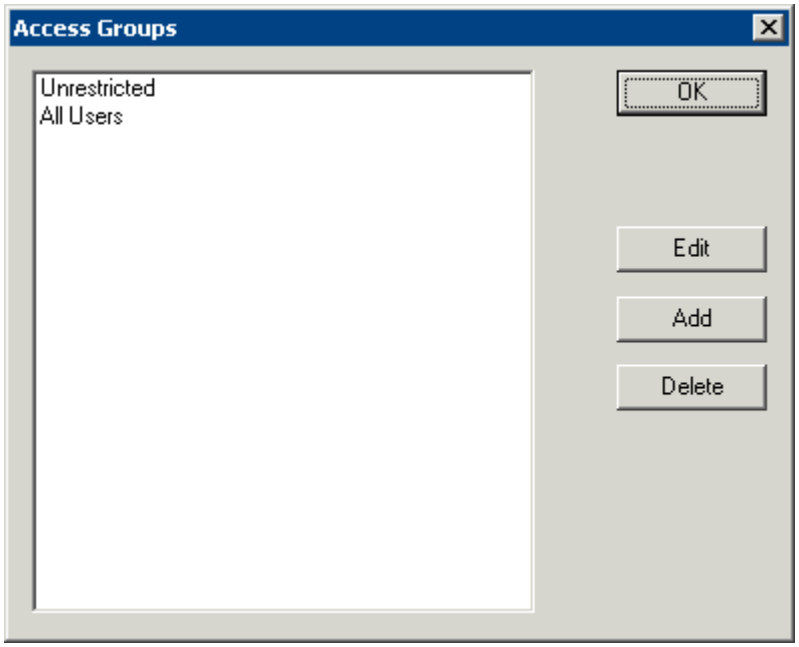
7.2.3. ThinManager Server List

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

7.2.4. 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

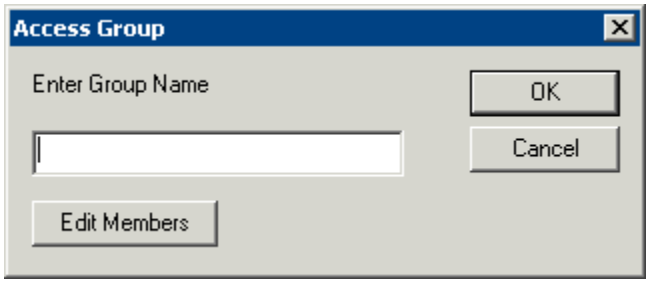
Select the ***OK*** button to accept the changes and close the window.

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

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

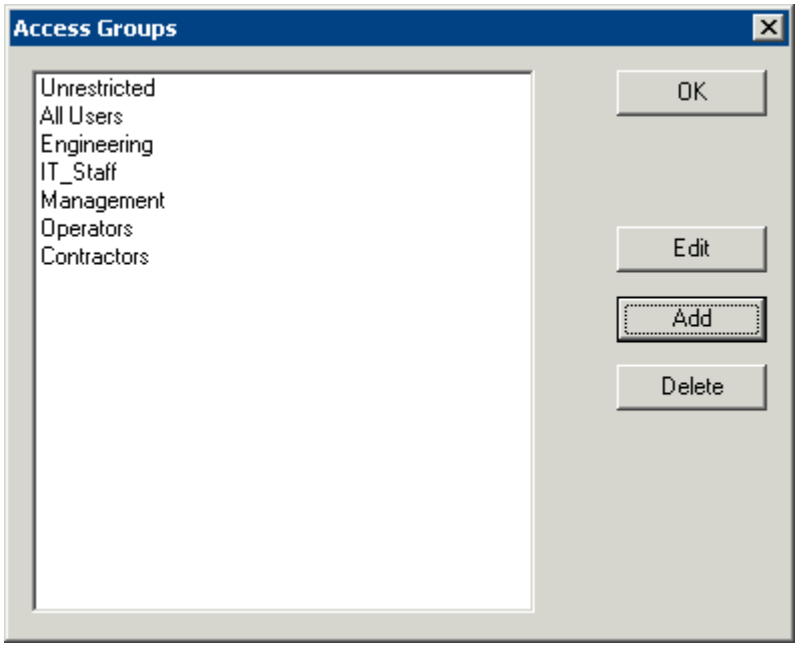
Select the ***Delete*** button to remove the highlighted Access Group.

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.

7.2.5. DNS Configuration

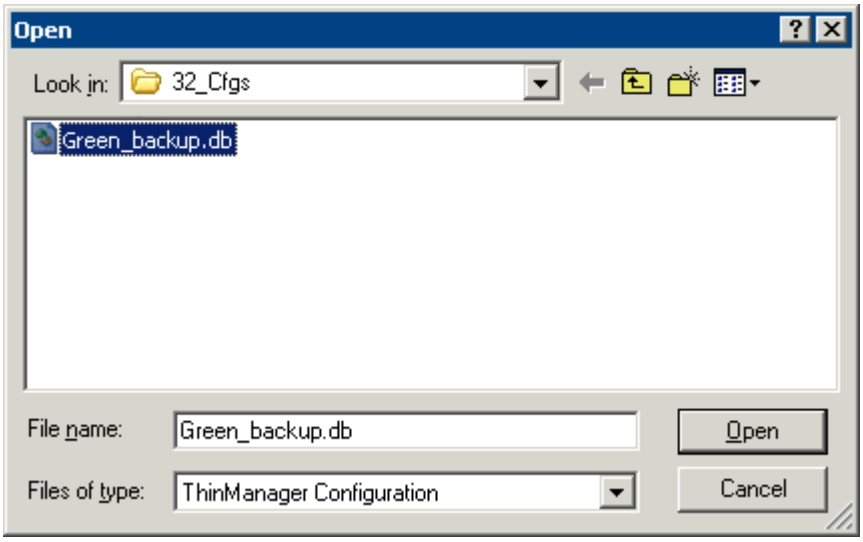
***Manage* > DNS Configuration** will launch the **DNS Configuration Wizard**. See DNS Configuration for details.

7.2.6. 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-Create** are based on. See Auto-Creation of Terminals for details on Auto-Creation of terminals.

7.2.7. Restore Configuration

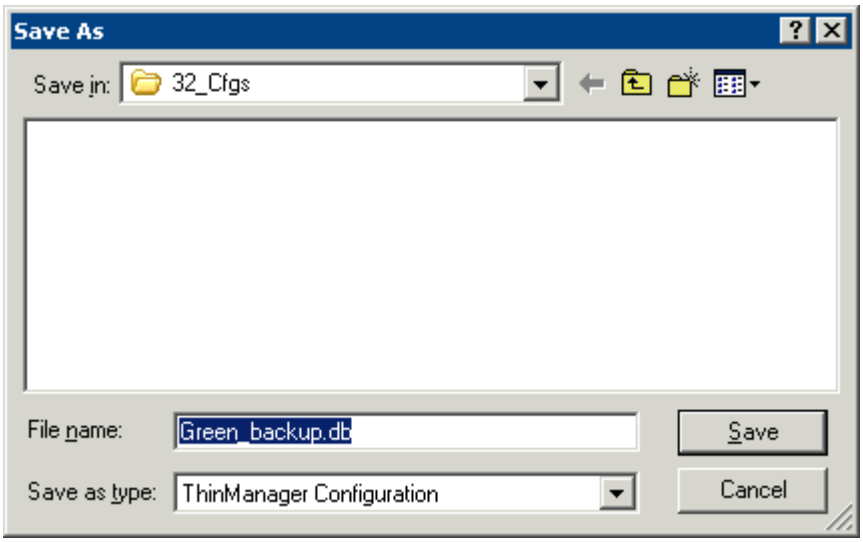
Manage* > *Restore Configuration will allow a backed up ThinManager configuration to be applied to the ThinManager Server. Select ***Restore Configuration*** to launch the desired ThinManager Configuration file in the browse window and select ***Open***. The backup copy will overwrite the existing configuration.



Restore ThinManager Configuration

7.2.8. 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

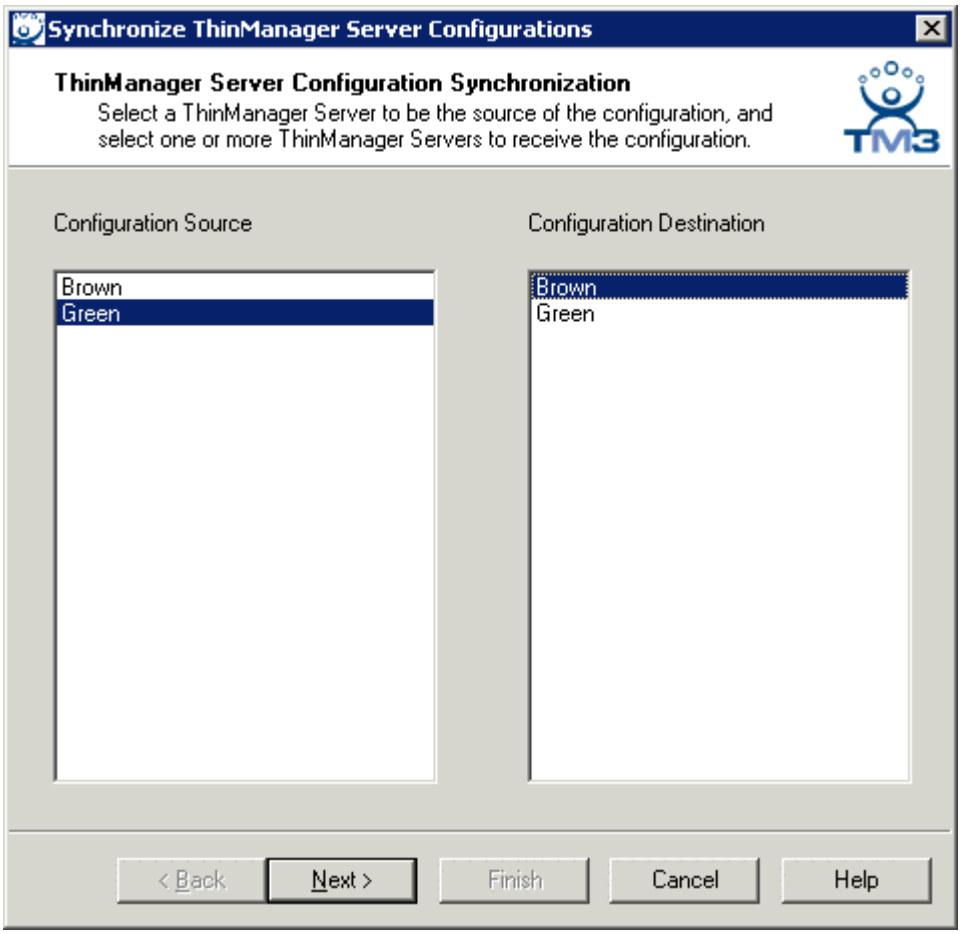
7.2.9. Synchronize Configuration

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. This is useful for multiple Thin Manager Servers and ThinManager Redundancy.

Selecting ***Synchronize Configuration*** will launch the **Synchronize ThinManager Server Configurations Wizard**.

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.

ThinManager Server Configuration Synchronization Page

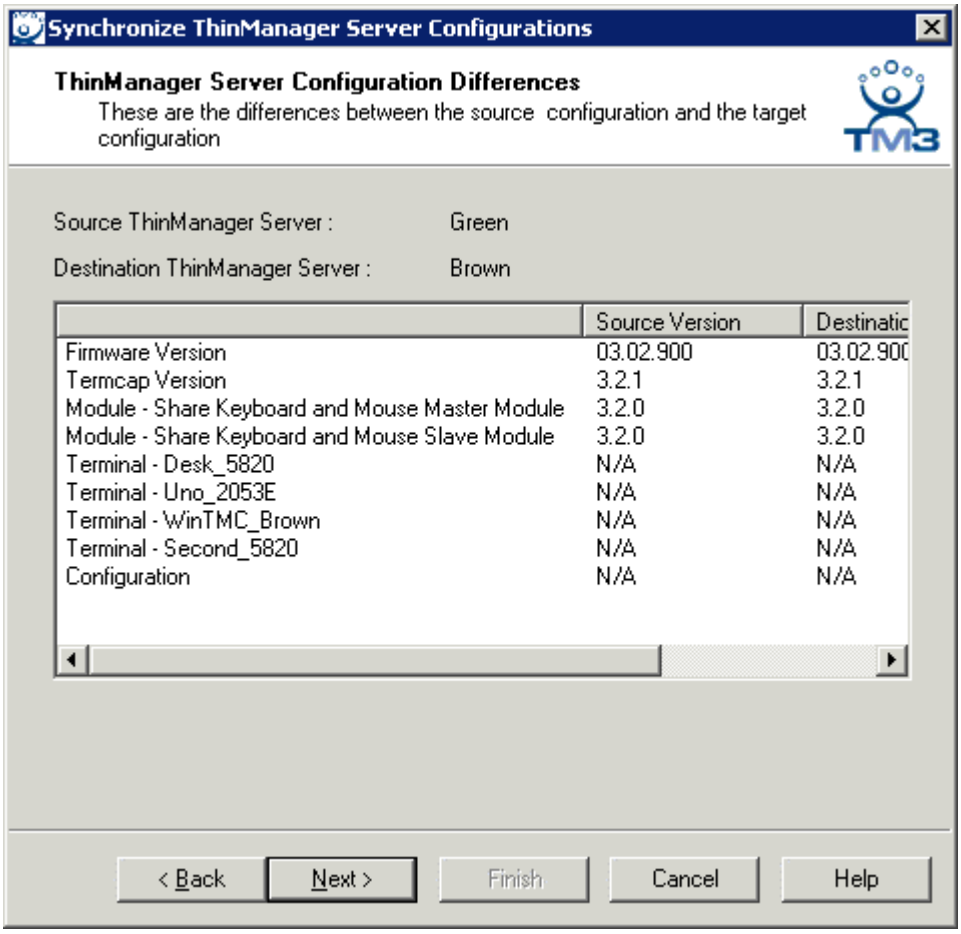


Synchronize ThinManager Server Configuration Wizard

Highlight the ***Configuration Source*** ThinManager Server and the ***Configuration Destination*** ThinManager Server and select ***Next***. Although many ThinManager Servers can be difined it is normal to have just a primary and a backup ThinManager Server.

Note: You may highlight multiple destinations to synchronize multiple ThinManager Servers by holding down the ***CTRL*** key while you select them with a mouse.

ThinManager Server Configuration Differences Page

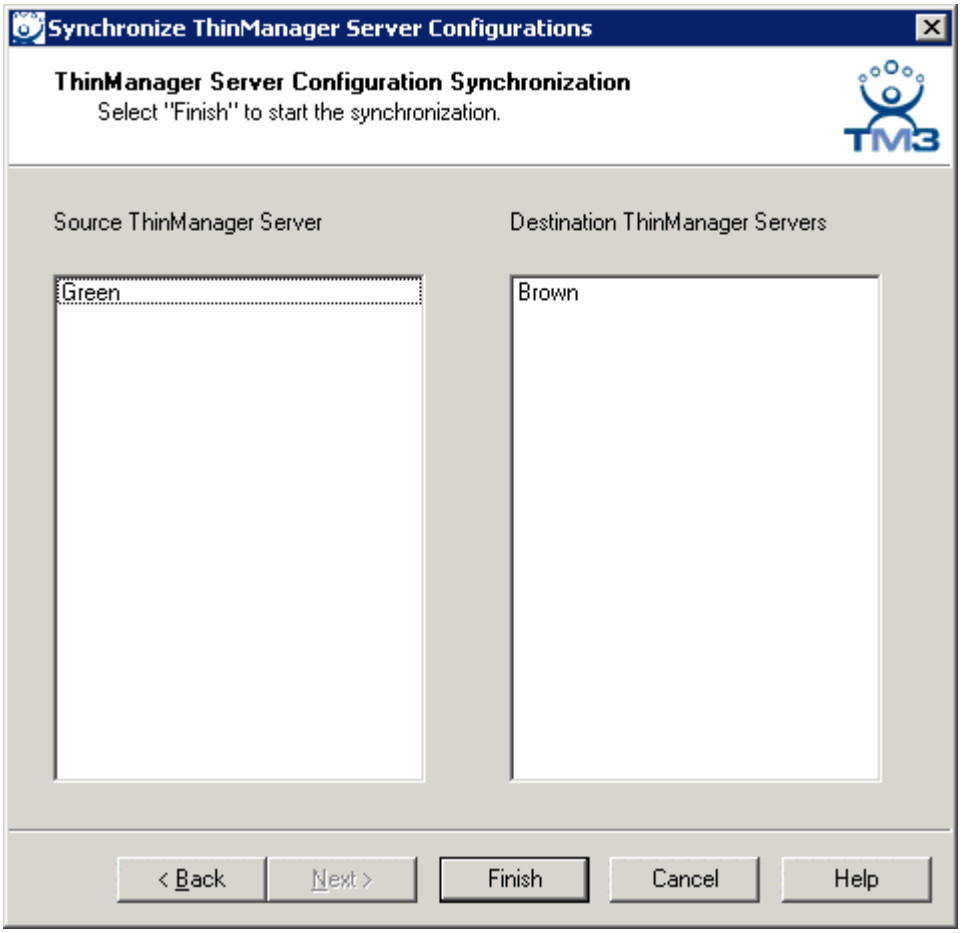


Synchronization Differences

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

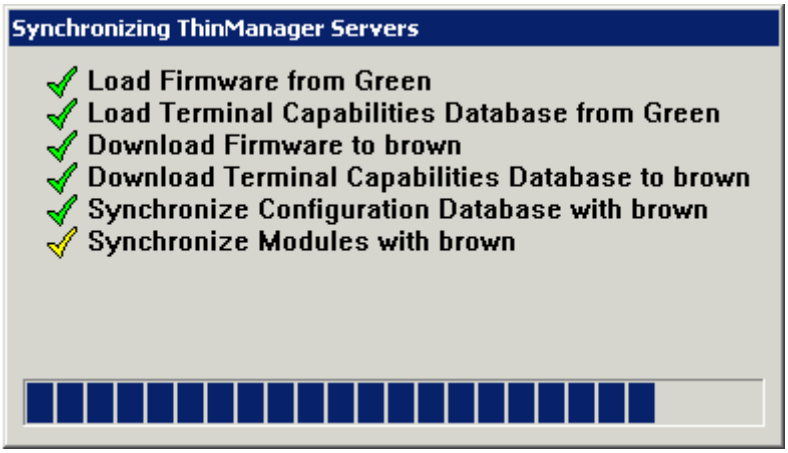
Note: The Synchronization tool does not compare and contrast then make changes back and forth. Synchronization will take the files and configuration from the source ThinManager Server and overwrite the corresponding files on the destination ThinManager Server.

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.

7.2.10. Reconnect

Manage > Reconnect will reinitialize the connection to the selected ThinManager Server.

7.2.11. Disconnect

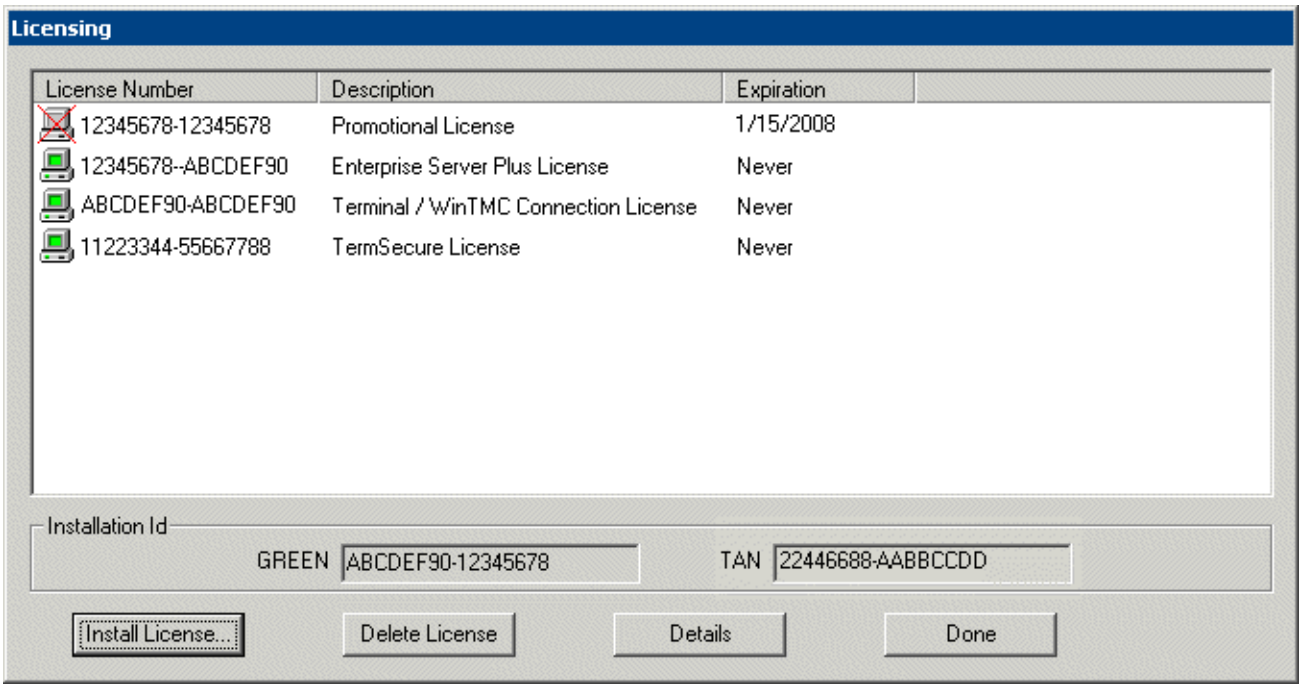
Manage > Disconnect will stop the connection to the selected ThinManager Server.

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 **Licensing** window displays three columns.

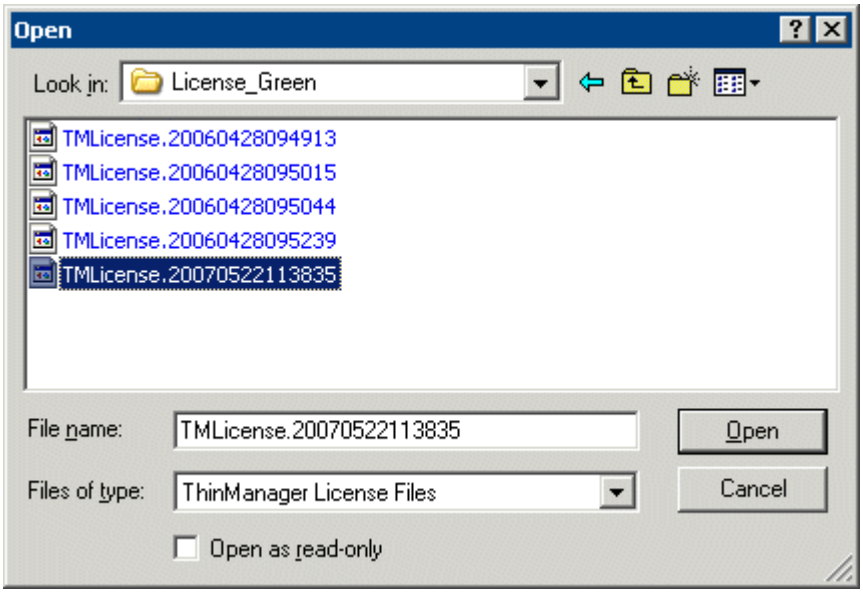
- **License Number** – This displays the license number of the license. A green monitor indicates a valid license while invalid licenses will display a red "X".
- **Description** – This lists the license type.
- **Expiration** – This displays the license expiration date.

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.
- ***Done*** – This button closes the Licensing window.

The ***Install License*** button launches a file browser to select a new license file.

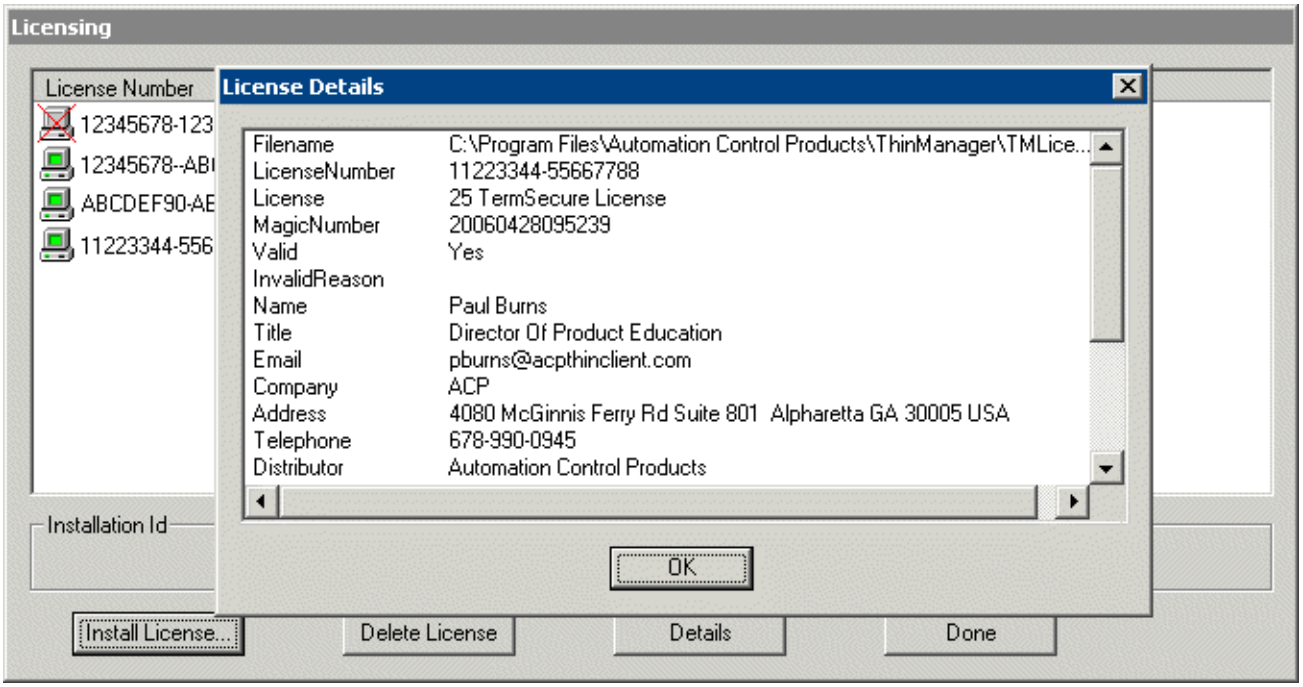


License File Browser

To install a new license file use the **Look In** drop-down to navigate to the folder that the license file was saved in. Highlight the license and select the ***Open*** button. The window will close when the license is installed.

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

The Details button will launch a **License Details** window for the highlighted license.



License Details

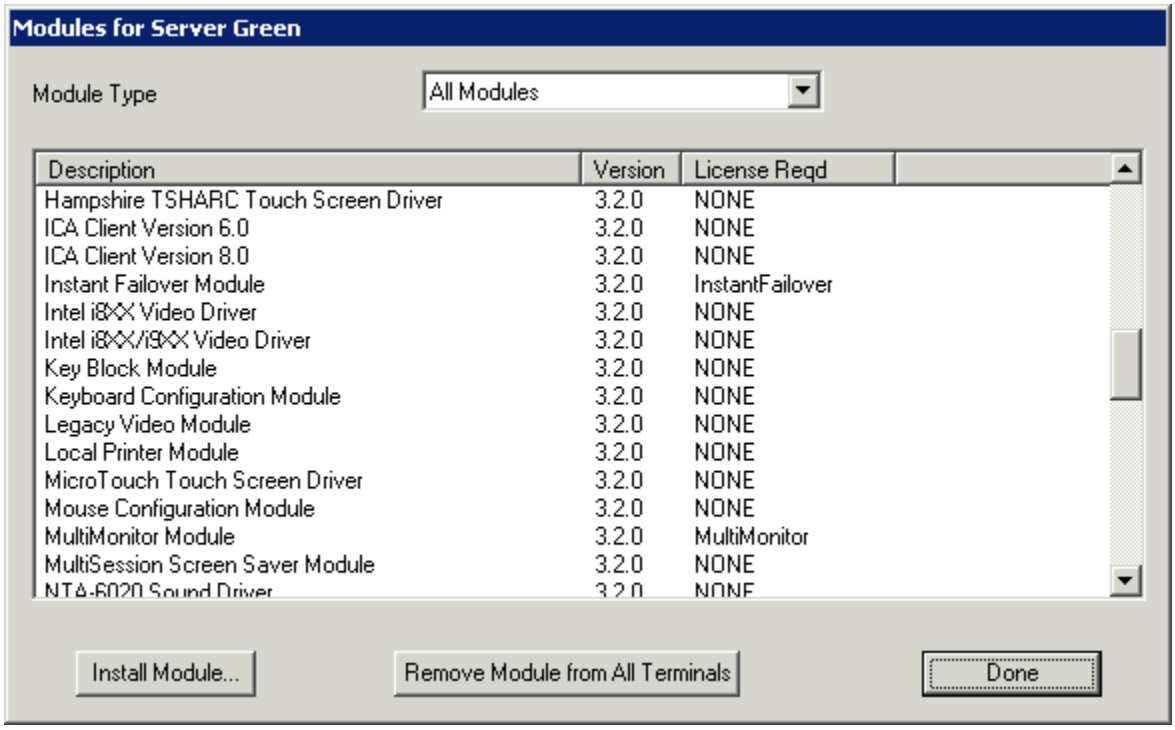
The **Magic Number** is the timestamp that is added to the license file when it is downloaded from the ThinManager License Activation site.

Select the ***OK*** button to close.

See ThinManager Licensing 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.

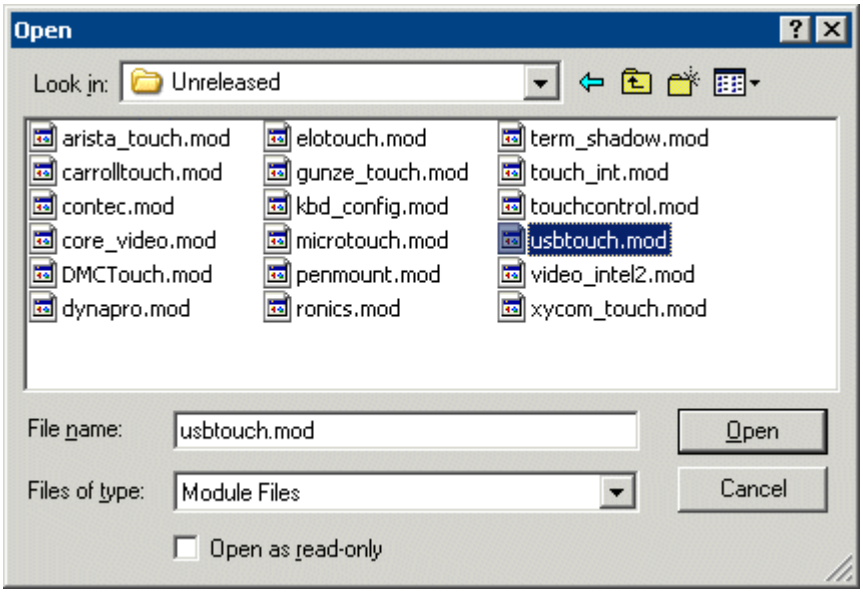
The **Modules for Server X** window has three columns.

- **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 Reqd** – 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.

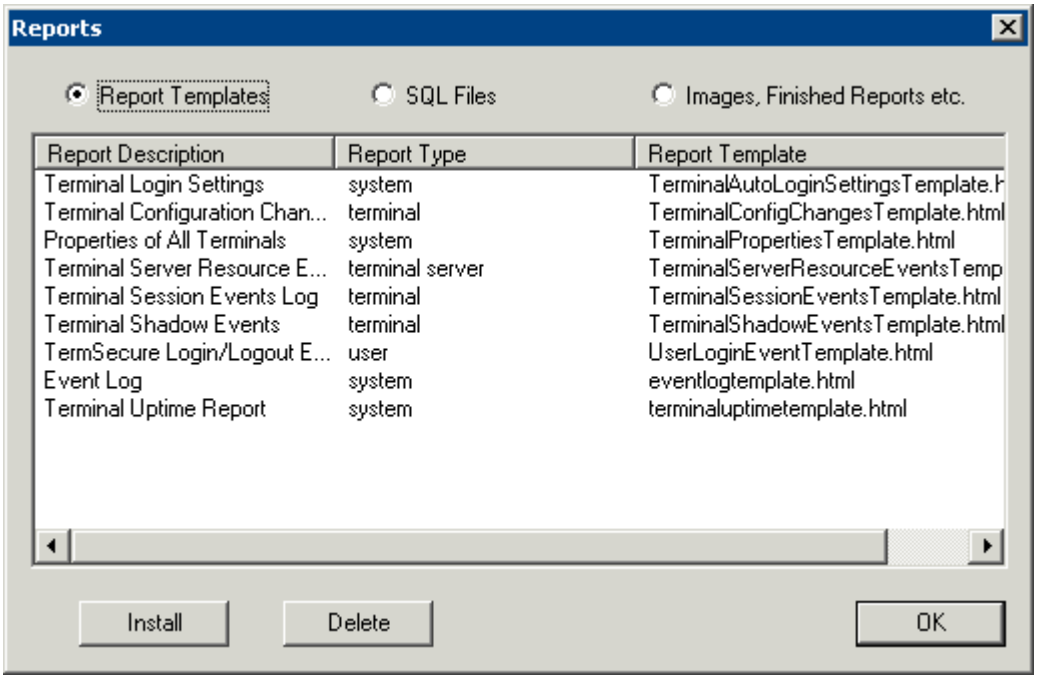
Note: The module files should not be saved directly into the ThinManager folder but should be saved to another folder and be installed using ThinManager.

See Module Overview for details

7.3.3. Reports

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.

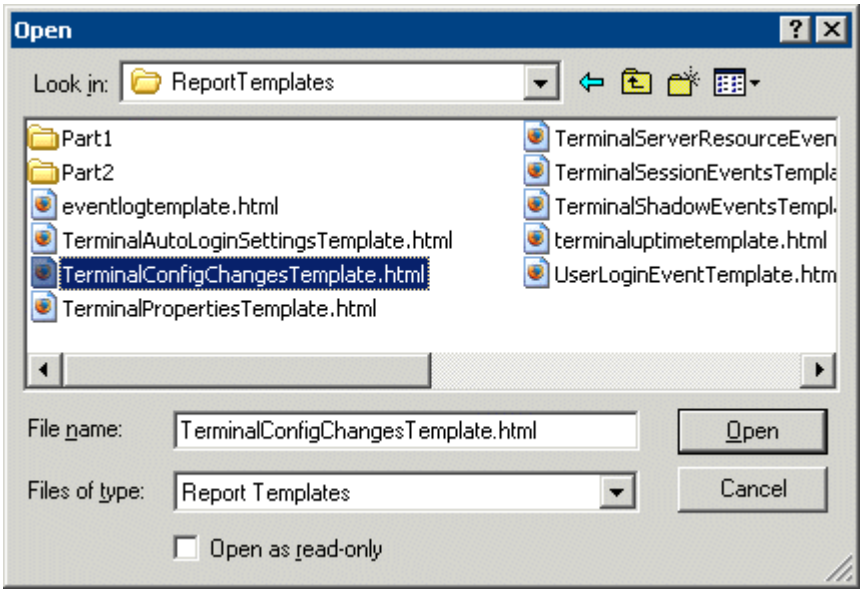


Reports Window –Reports Templates

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

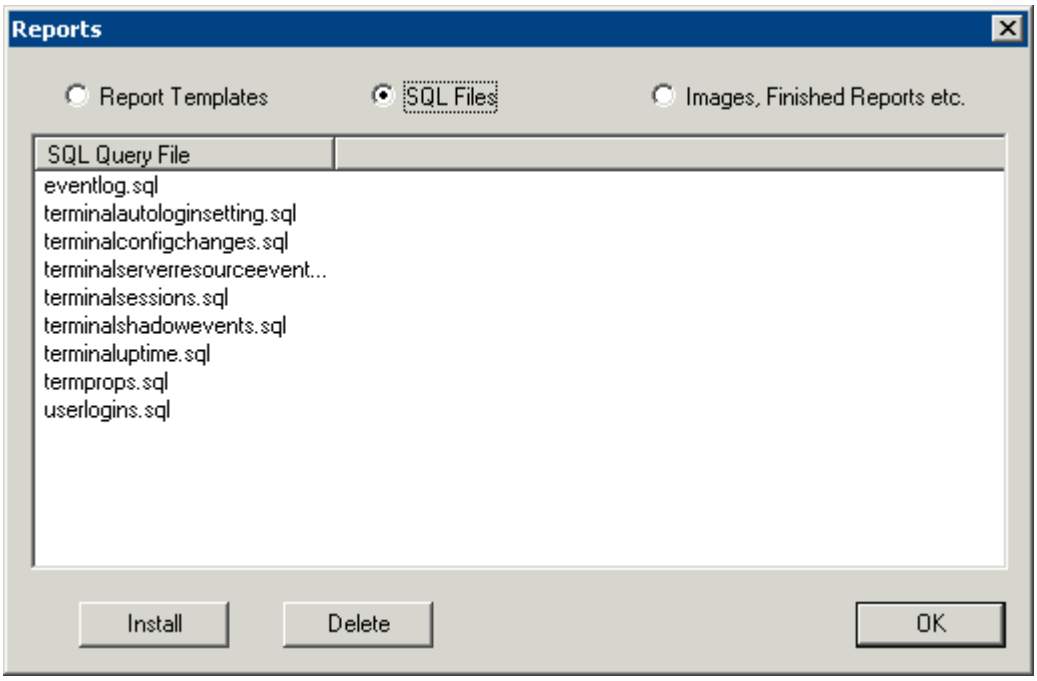
Selecting the ***Report Template*** radio button will display installed report templates. ThinManager installs a variety of templates. New templates can be downloaded from www.thinmanager.com.

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

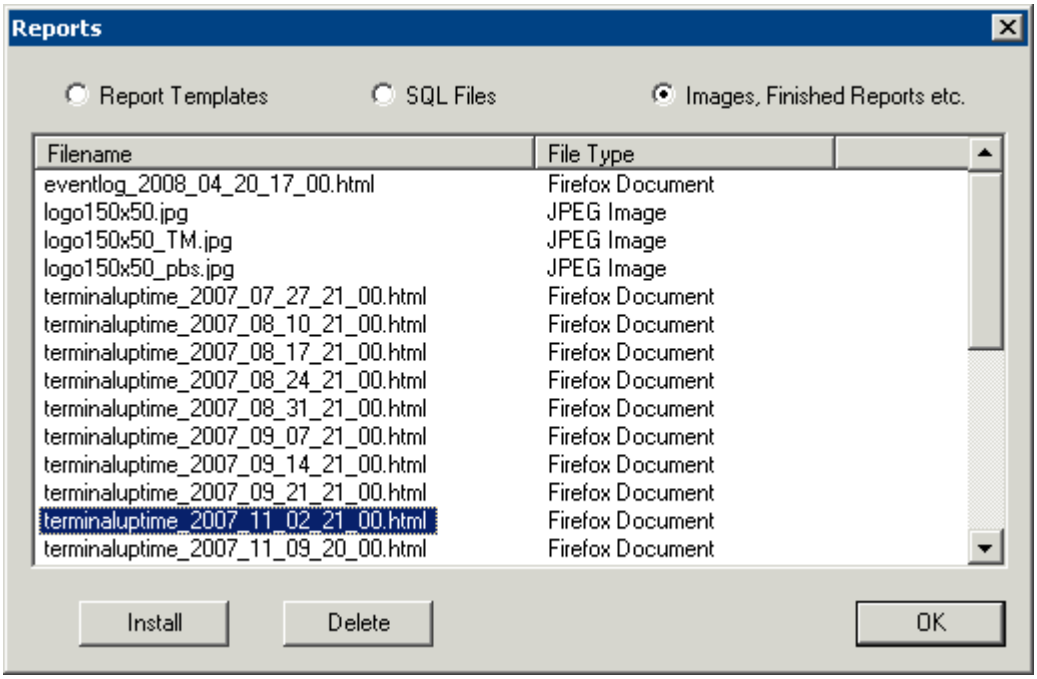
Navigated to the desired template, highlight the file, and select ***Open***. This will install the template and close the file browser window.



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.

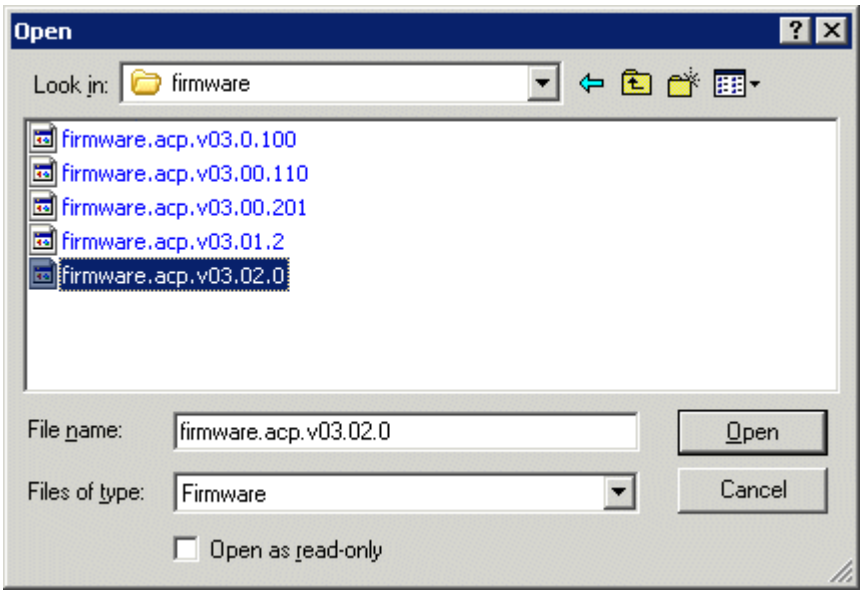
Selecting the ***Install*** button will launch a file browser to install new images. Selecting the ***Delete*** button will delete a highlighted image, report, or file. This is a handy way do delete older copies of backed up reports and configurations that were saved using the Scheduler. See System Schedule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

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

7.3.4. Firmware

ThinManager allows the firmware for the ThinManager Ready 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.



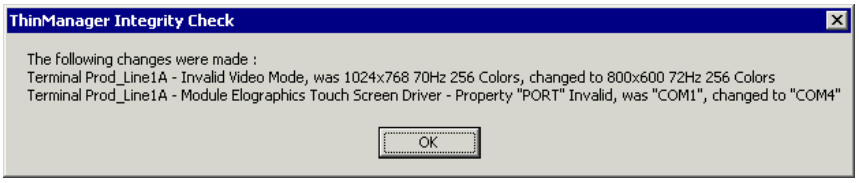
Install New Firmware

Select the new version of the **firmware.acp** and select ***Open***. This will install the new version of the firmware.

The ThinManager Ready thin clients will download the new version of firmware the next time they are rebooted.

7.3.5. TermCap Database

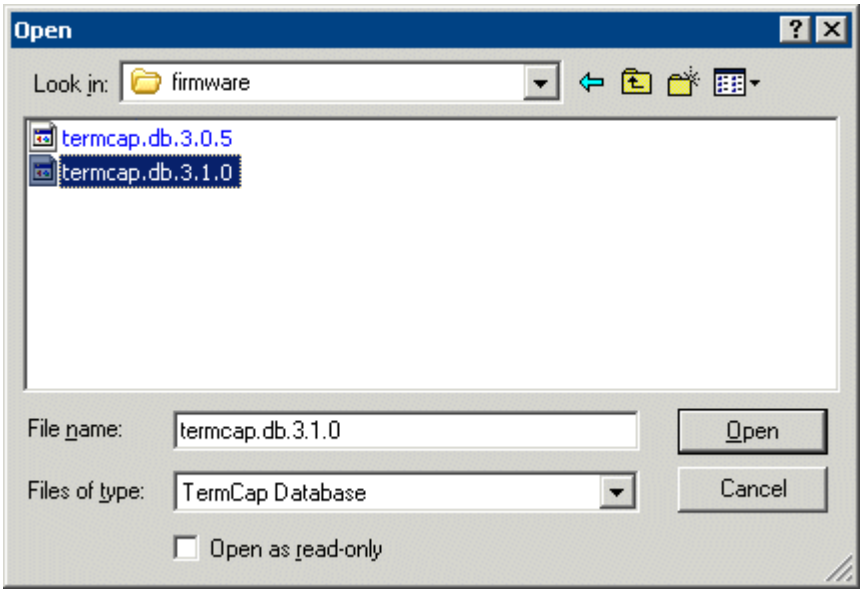
ThinManager has a **Terminal Capability Database** (`termcap.db`) that provides ThinManager with the configuration parameters for each thin client model. At each terminal connection, the TermCap database is checked and an integrity check is performed. If the configuration does not match the terminal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

7.4. 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

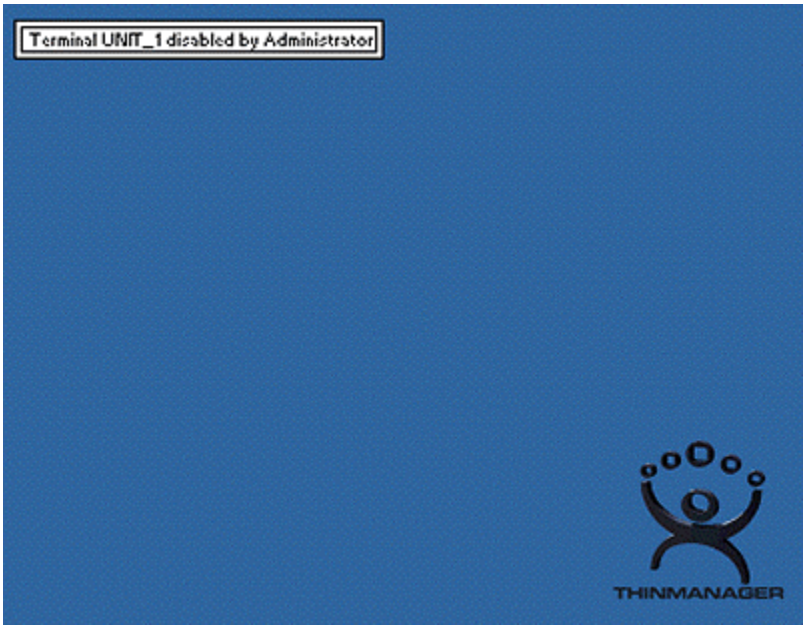
The ***Disable Terminal*** command will disable any highlighted Group or Terminal by displaying a lockout screen. The terminal will wait until it is enabled with the ***Tools > Enable Terminal*** function to be functional again. This allows terminals to be locked down for security reasons, or to prevent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

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

Disabled Terminal Icons

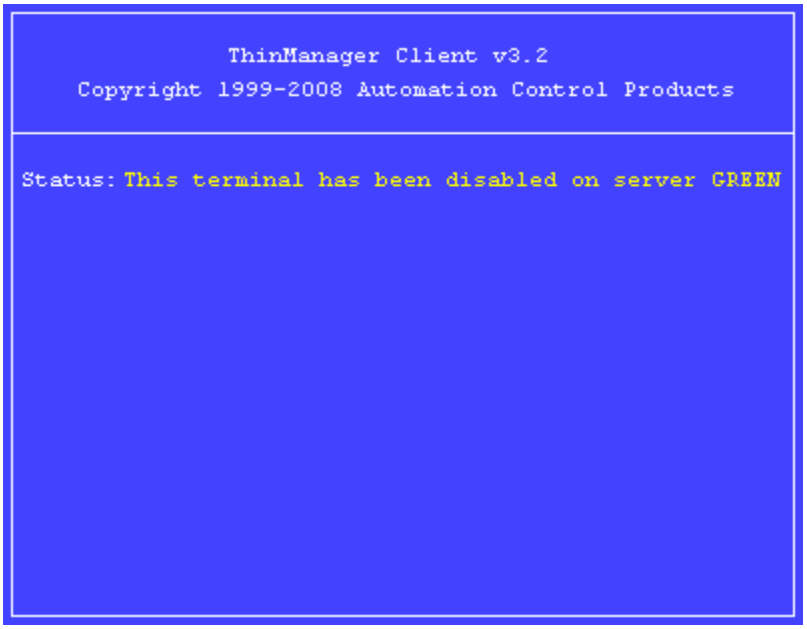
If a Group or Terminal is disabled using the ***Tools* > *Disable*** function, it will be displayed with a red **X** over the terminal icon. An entire ThinManager Server or an entire Group can be disabled, but only the terminal icons will show the **X**, not the ThinManager Server icon or the Group icons.

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

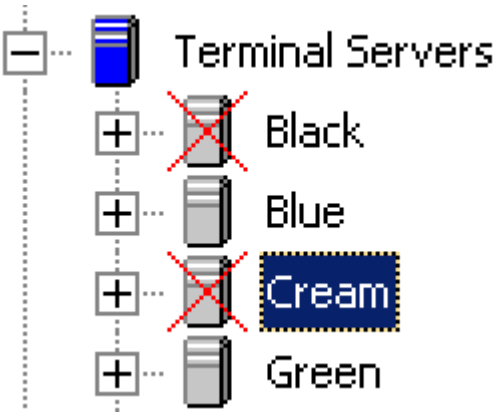
Terminals that are booted while disabled will halt on a blue screen indicating that the terminal is disabled.

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 ThinManager Ready 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.

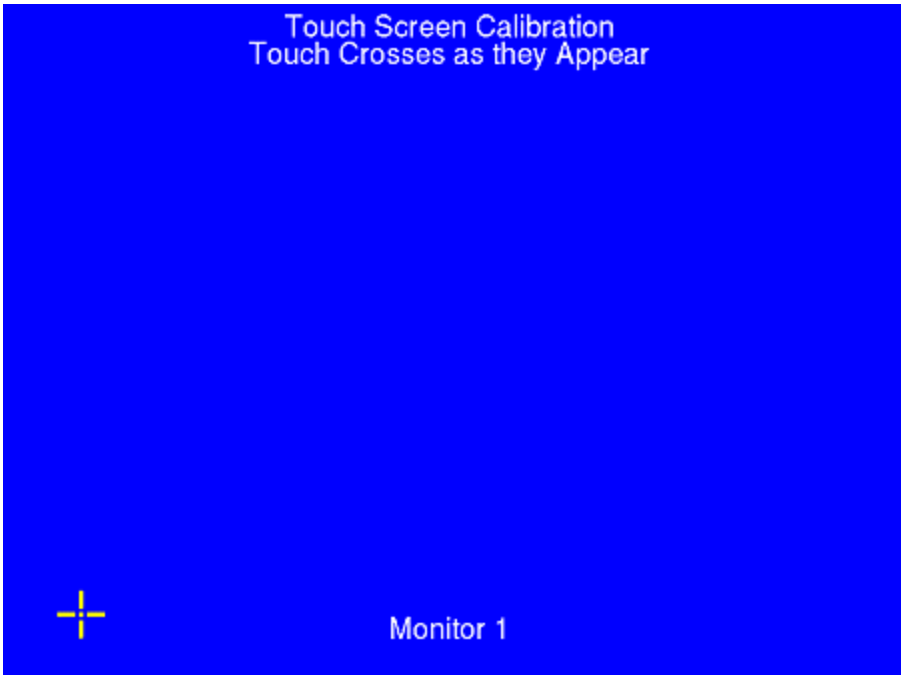
7.4.7. Enable Terminal Server

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



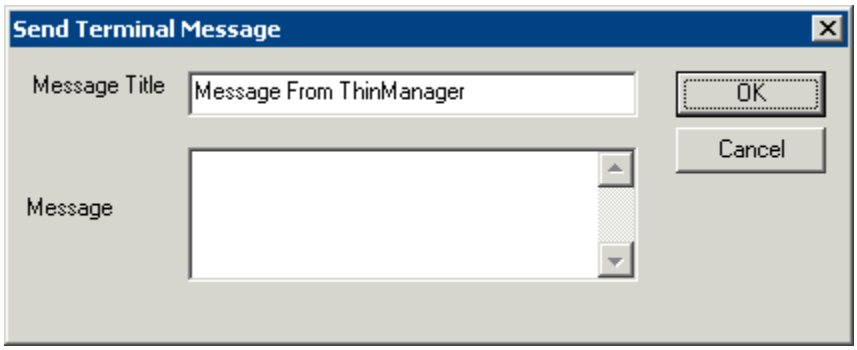
Touch Screen Calibration Screen

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

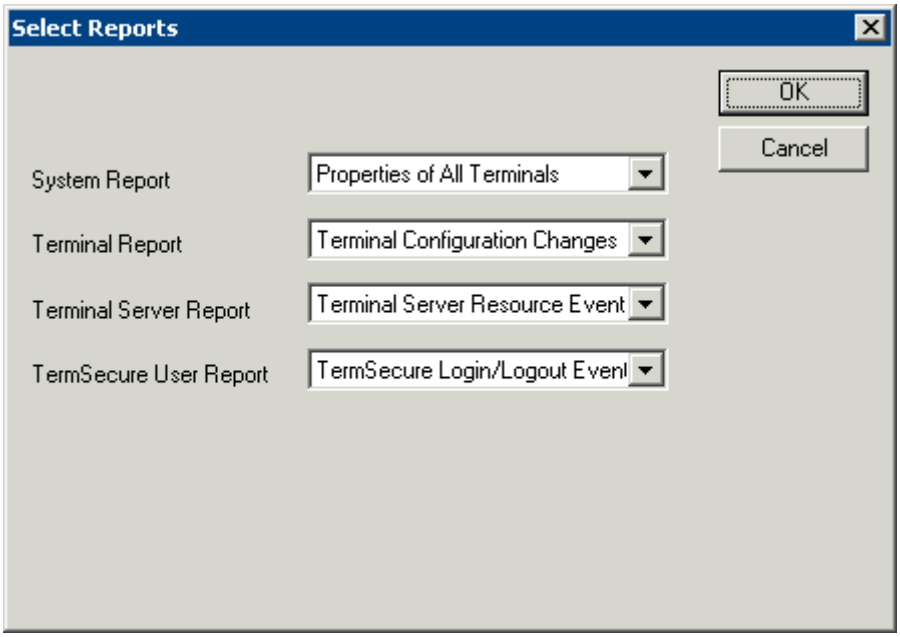
The ***Status Bar*** shows advice and comments on the bottom of the **ThinManager** window. When the ***Status Bar*** command is checked, the ***Status Bar*** text is visible. When the ***Status Bar*** command is unchecked, the ***Status Bar*** text is invisible.

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

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



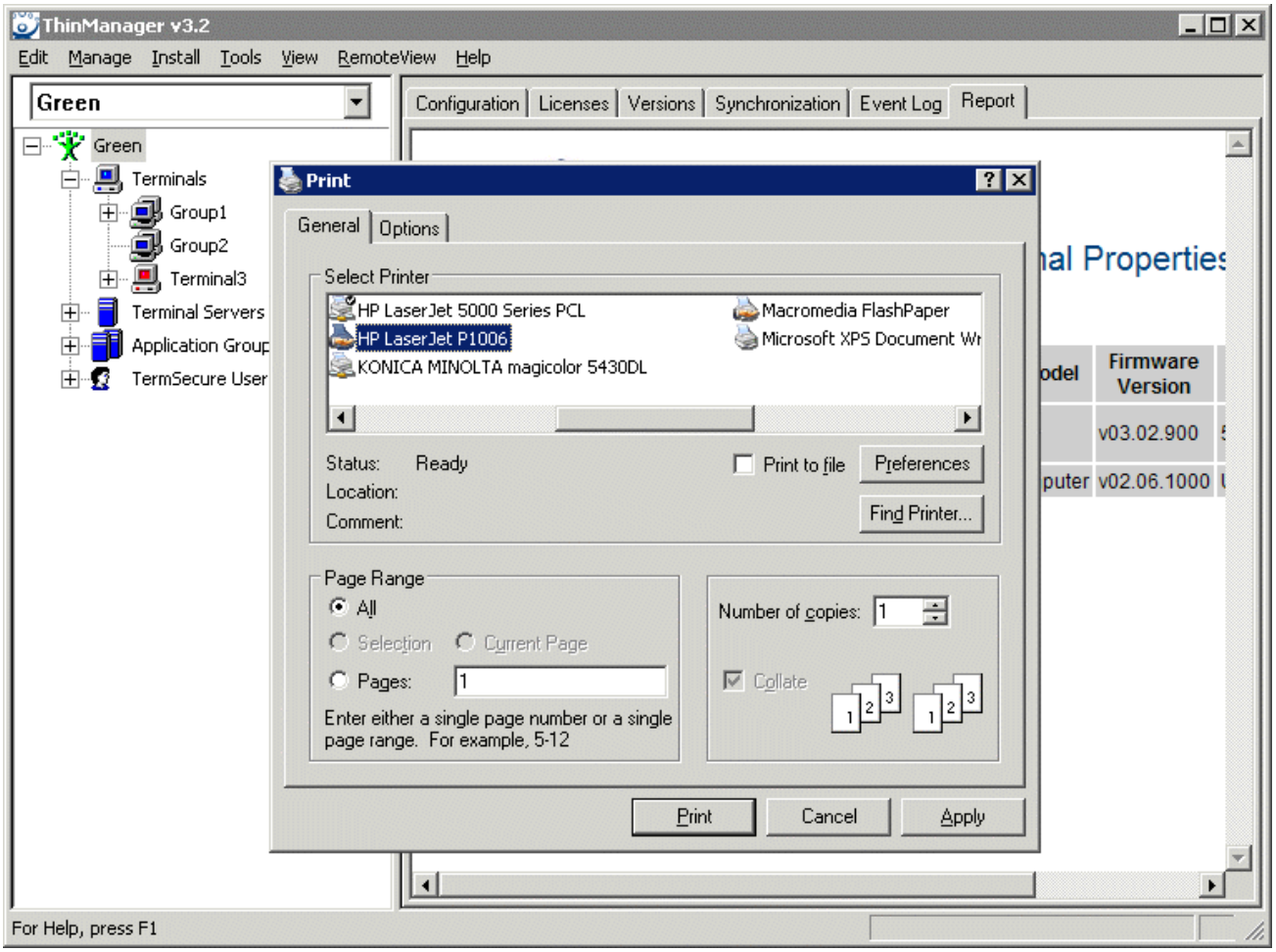
Select Reports Window

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 report currently selected in the Report tab.

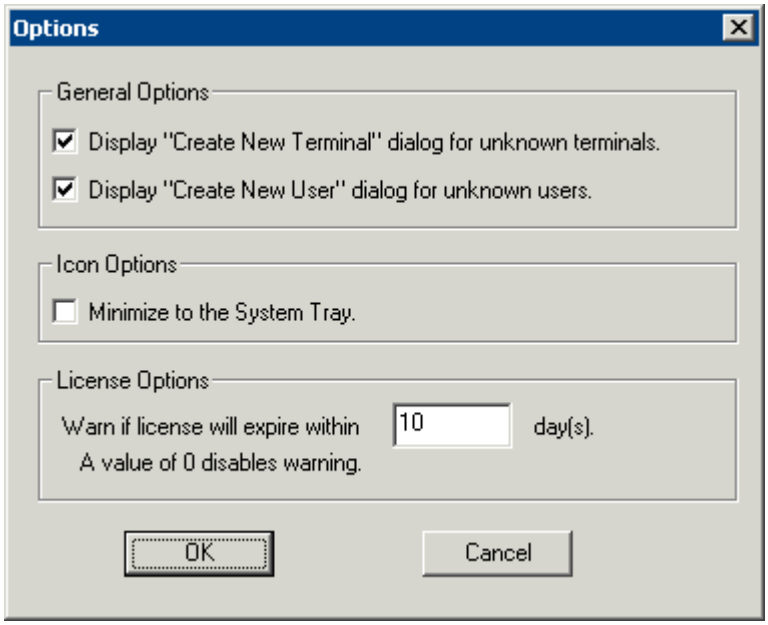


Print Reports

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.

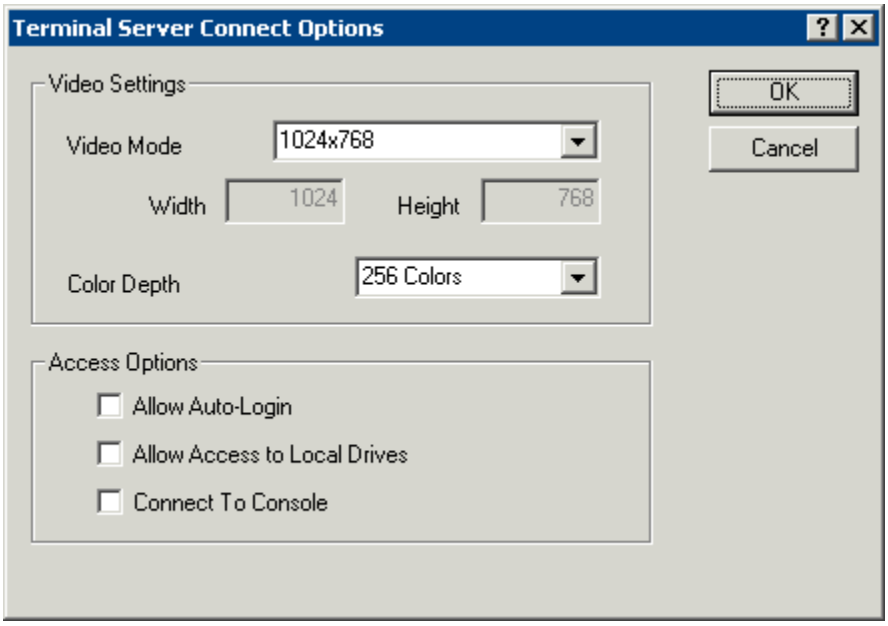
The full screen session will have a tool tab at the top of the screen with controls that allow the window to be switched back to the window or to close the connection.

Remote Session Tool Bar

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

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.

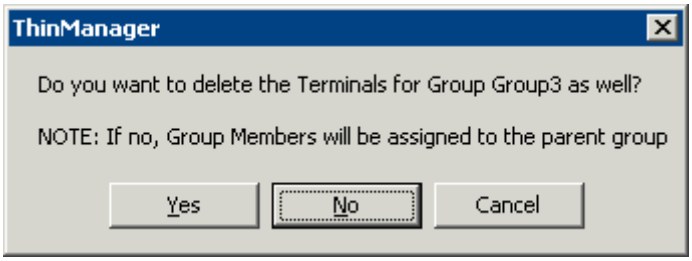
See Add ThinManager Server for details.

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 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.

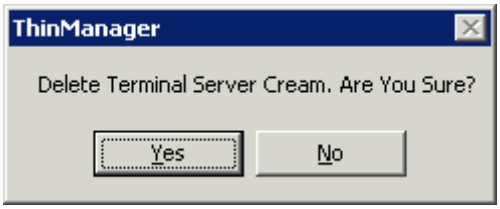
7.8.5. Right Click on the Terminal Server Branch Icon

- **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 Server List Wizard for details

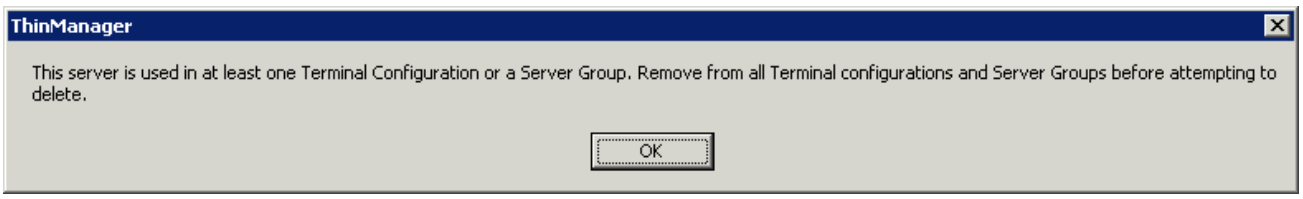
7.8.6. Right Click on a Terminal Server Icon

- **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.

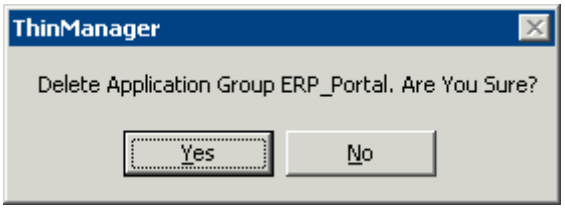
7.8.7. Right Click on the Application Group Branch Icon

- **Add Application Group**- This launches the **Application Group Wizard** to create and configure a new application group.
- **Edit Application Group**- This launches the **Application Group List** to allow the configuration of an existing application group.

See Application Group List for details.

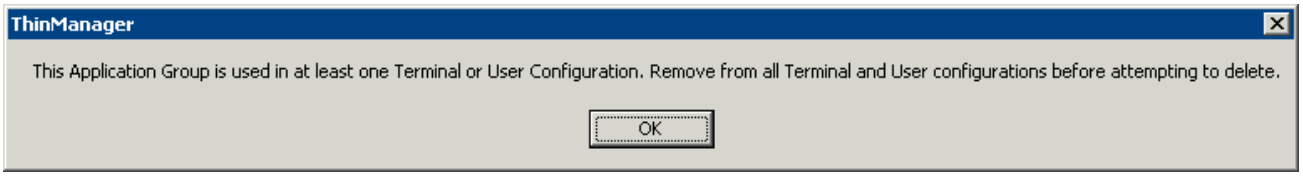
7.8.8. Right Click on a Application Group Icon

- **Modify** - This launches the **Application Group Configuration Wizard** to allow changes to the configuration of the highlighted application group.
- **Rename** - This allows the Application Group to be renamed.
- **Delete** - This removes the Application Group from the ThinManager configuration.



Terminal Server Deletion Confirmation

ThinManager will prompt for confirmation before deletion.



Application Group Deletion Error

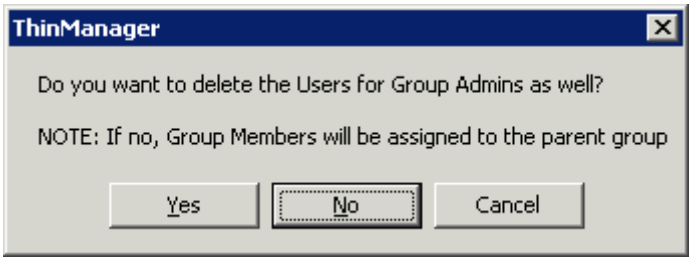
An Application Group cannot be deleted from a configuration if it still has terminals assigned to it.

7.8.9. 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.

7.8.10. 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.

7.8.11. 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:

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.

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.

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.

Firmware Loading: Next the terminal will download the firmware from the ThinManager Server.

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.

ACP ThinManager Logo Screen: After the terminal receives its configuration, it will display an ACP splash screen with the ThinManager logo.

Client Communication Connection: Next the terminal will launch its Client Communication protocol.

Terminal Server Connection: The thin client will connect to the terminal server(s) that it is assigned to in its configuration.

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.

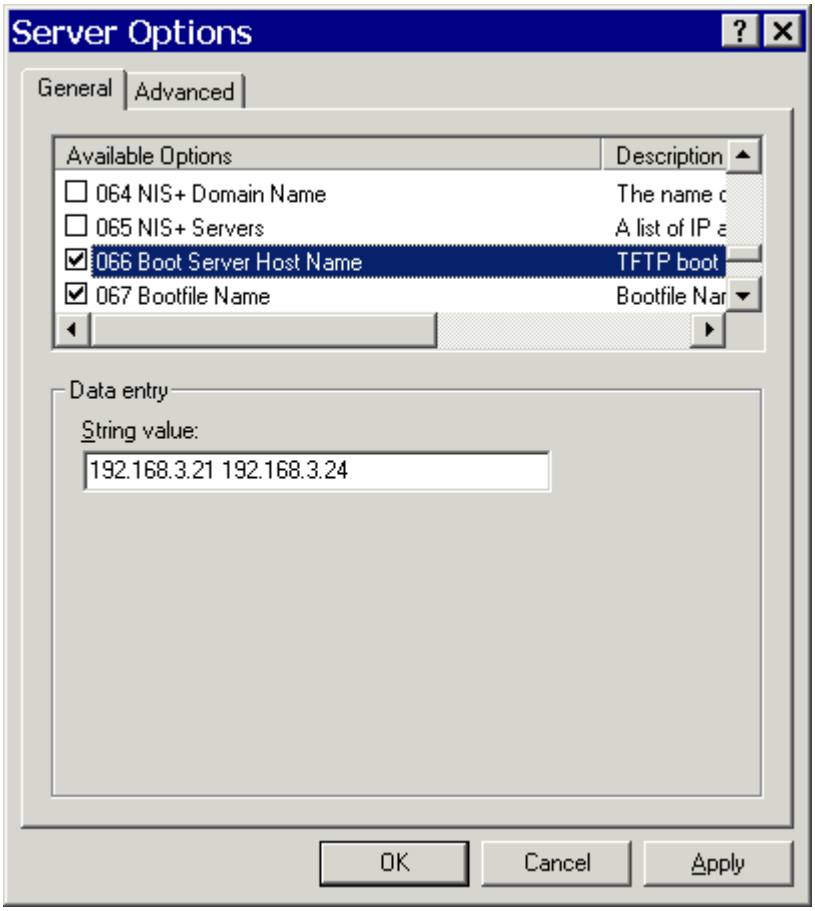
8.2. IP Address Assignment

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.



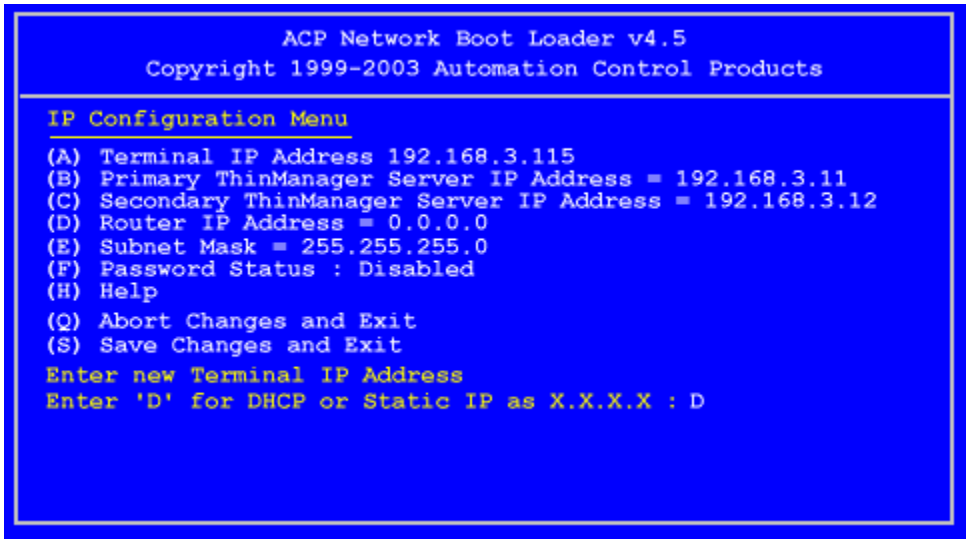
DHCP Options

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.

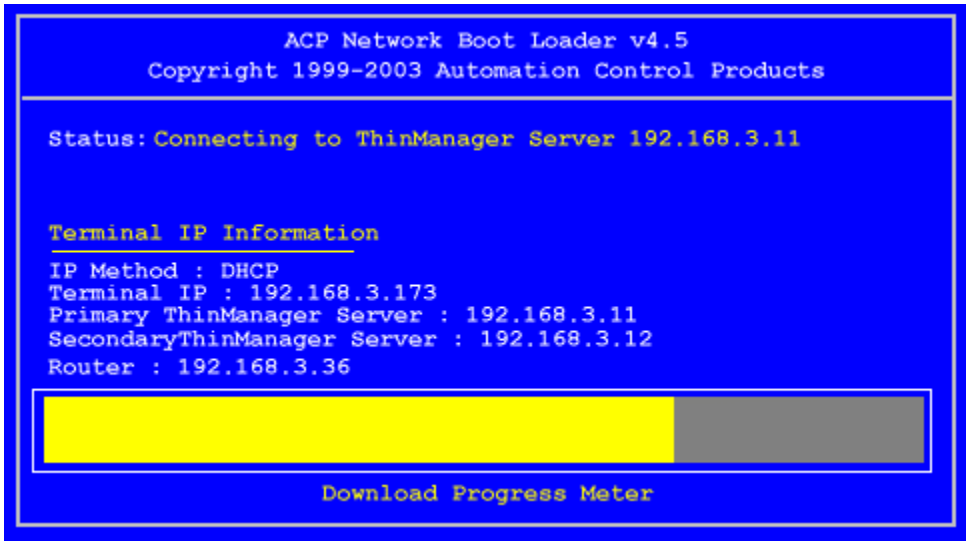
ThinManager Ready thin clients use DHCP (Dynamic Host Configuration Protocol) by default. If they have been set to use a static IP they can be reset to DHCP from static IP by pressing **any key** when prompted during the boot sequence to open the IP Configuration Menu.



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.

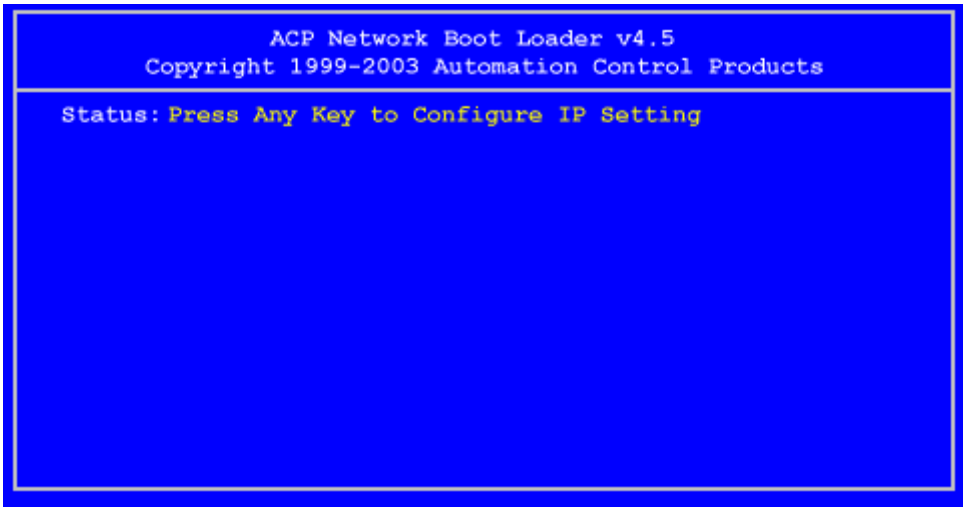


Boot Process - Firmware Download

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

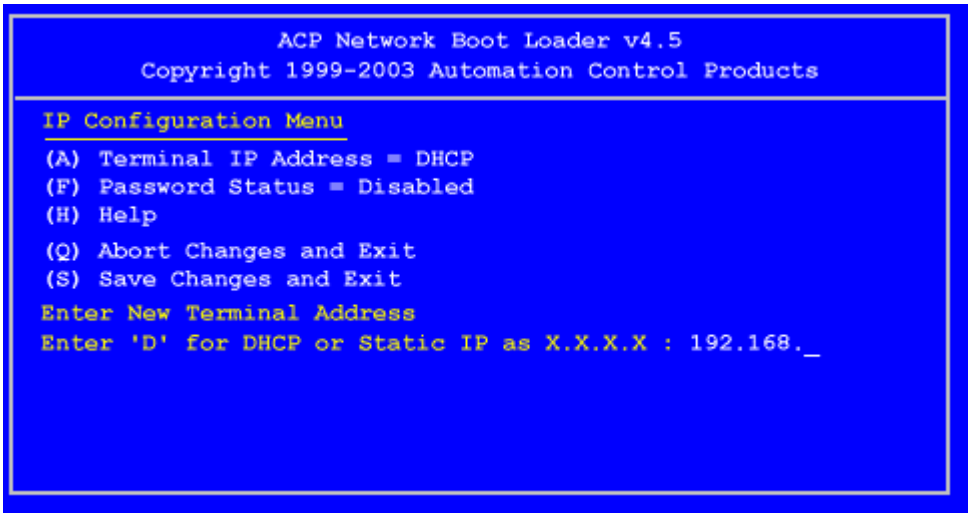
8.2.2. Static IP

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

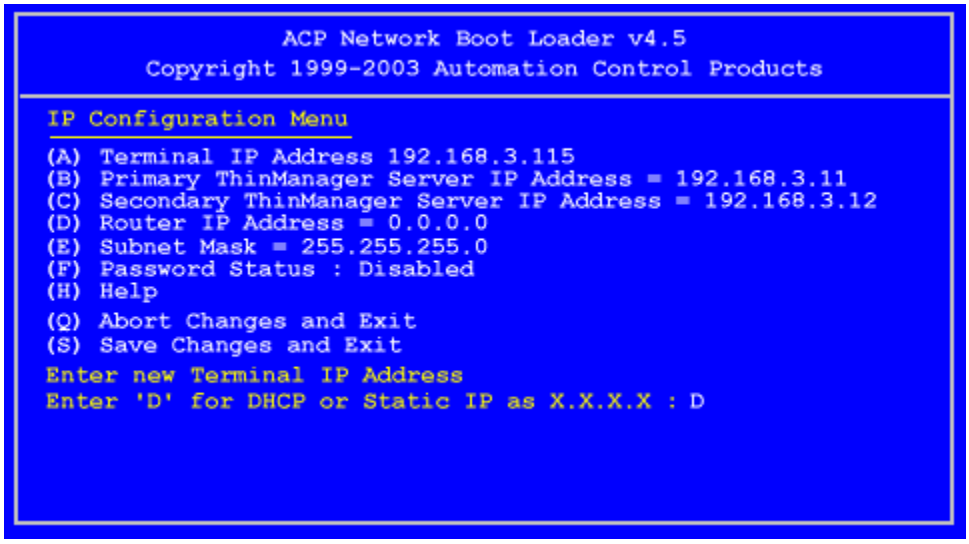
To set the terminal to use a static IP, press ***any key*** at the appropriate moment of the boot sequence.



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.



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.

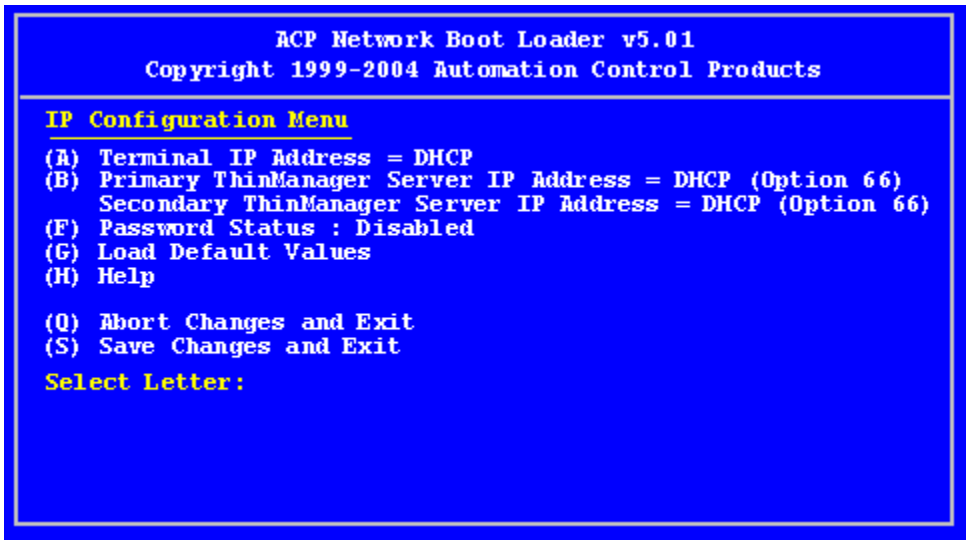
Type the letter of the desired setting and type the IP address, with periods. Press the ***Enter*** key on the keyboard to accept each change.

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

8.2.3. Hybrid IP Addressing

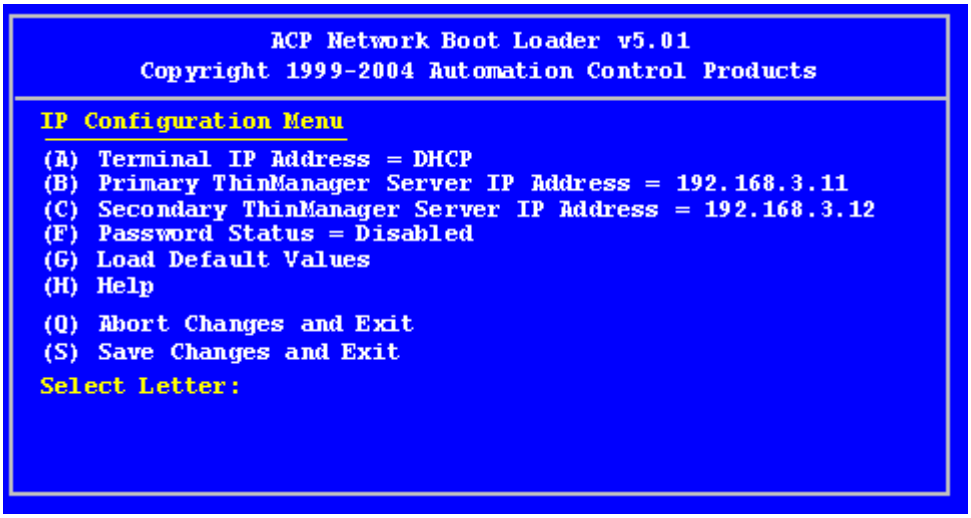
ThinManager Ready thin clients that have BootROM version 5.01 or later have the ability to use DHCP for the client IP address and have the ThinManager Server IP addresses entered as static IPs to save having to configure the DHCP server with Option 066.

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



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.



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

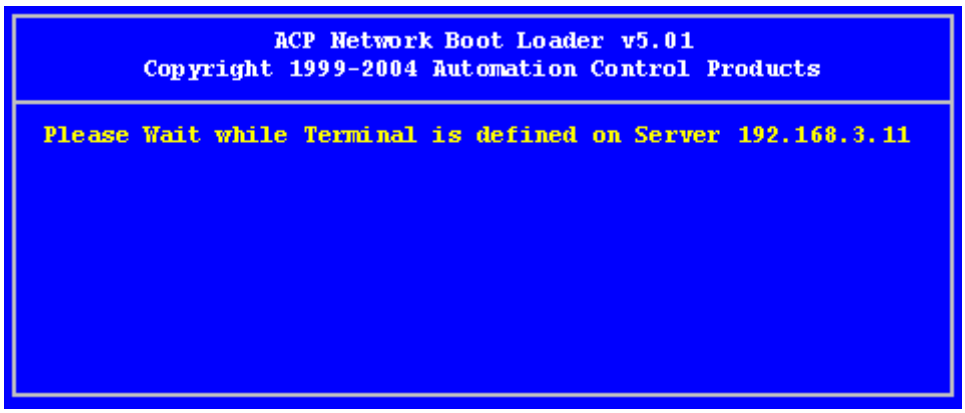
The configuration of terminals is done in ThinManager on the ThinManager Server and not on each individual terminal. When a new, undefined ThinManager Ready Thin Client is first connected to a ThinManager Server one of three things will happen:

- 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.

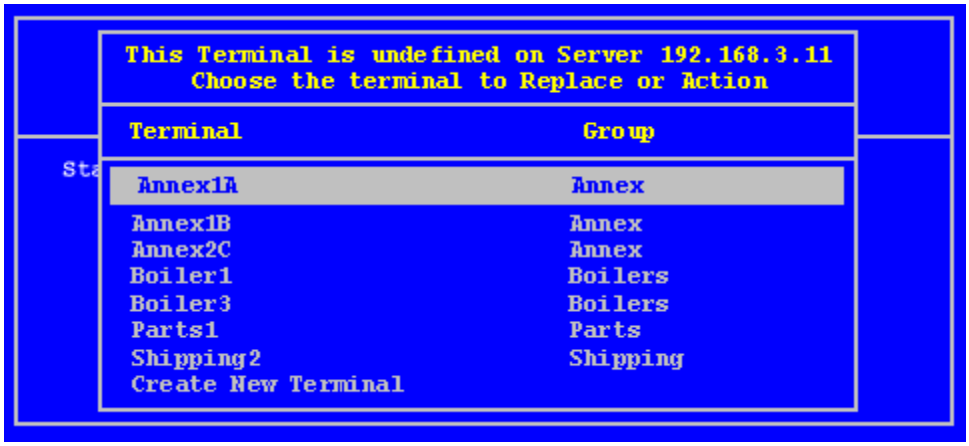


Create New Terminal Mode Screen

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.

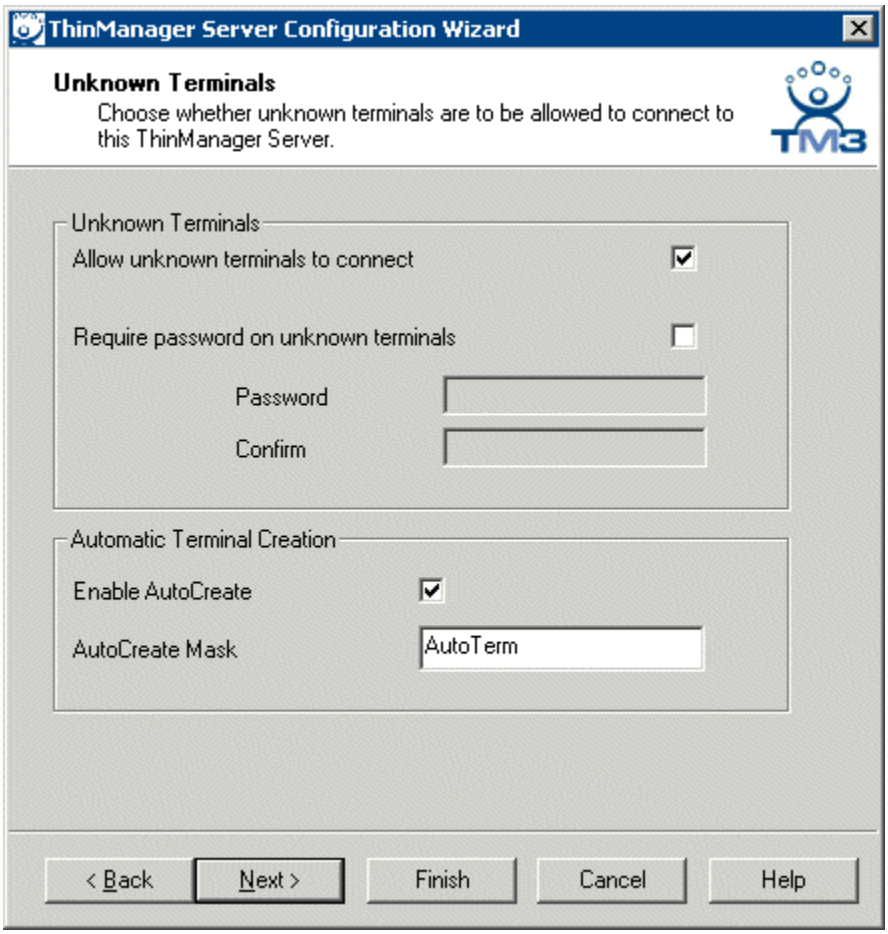
And

- 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**.

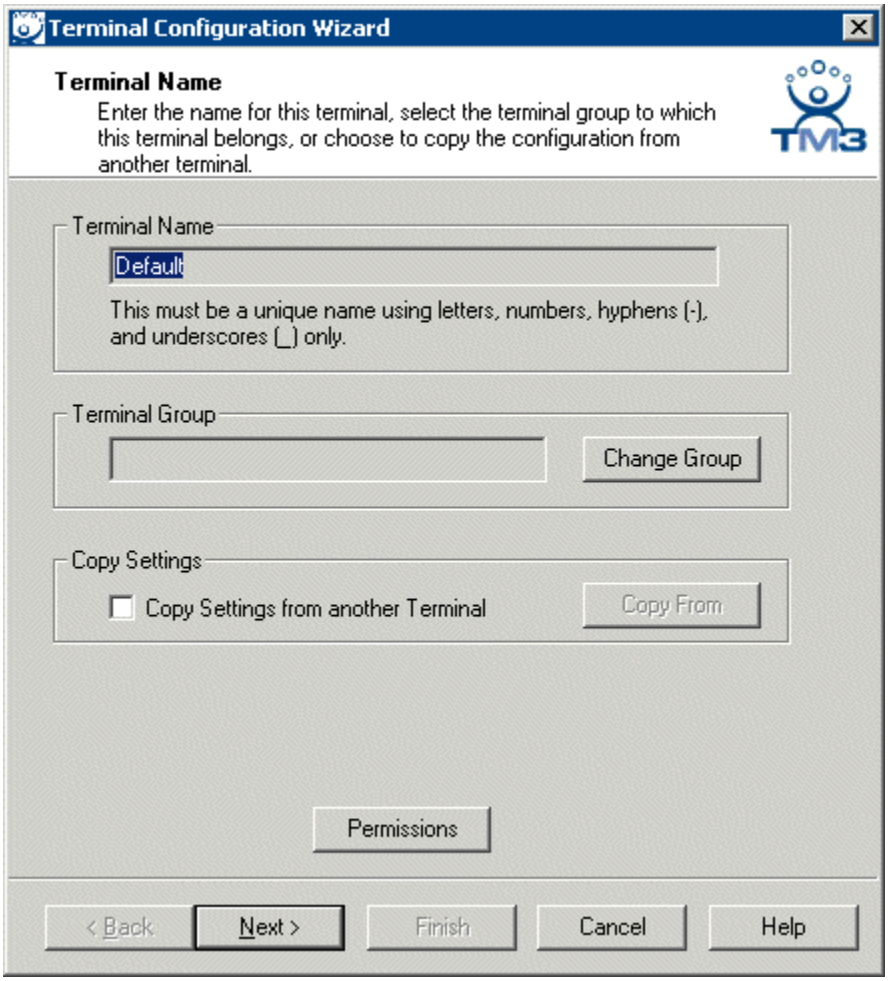


Unknown Terminals

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

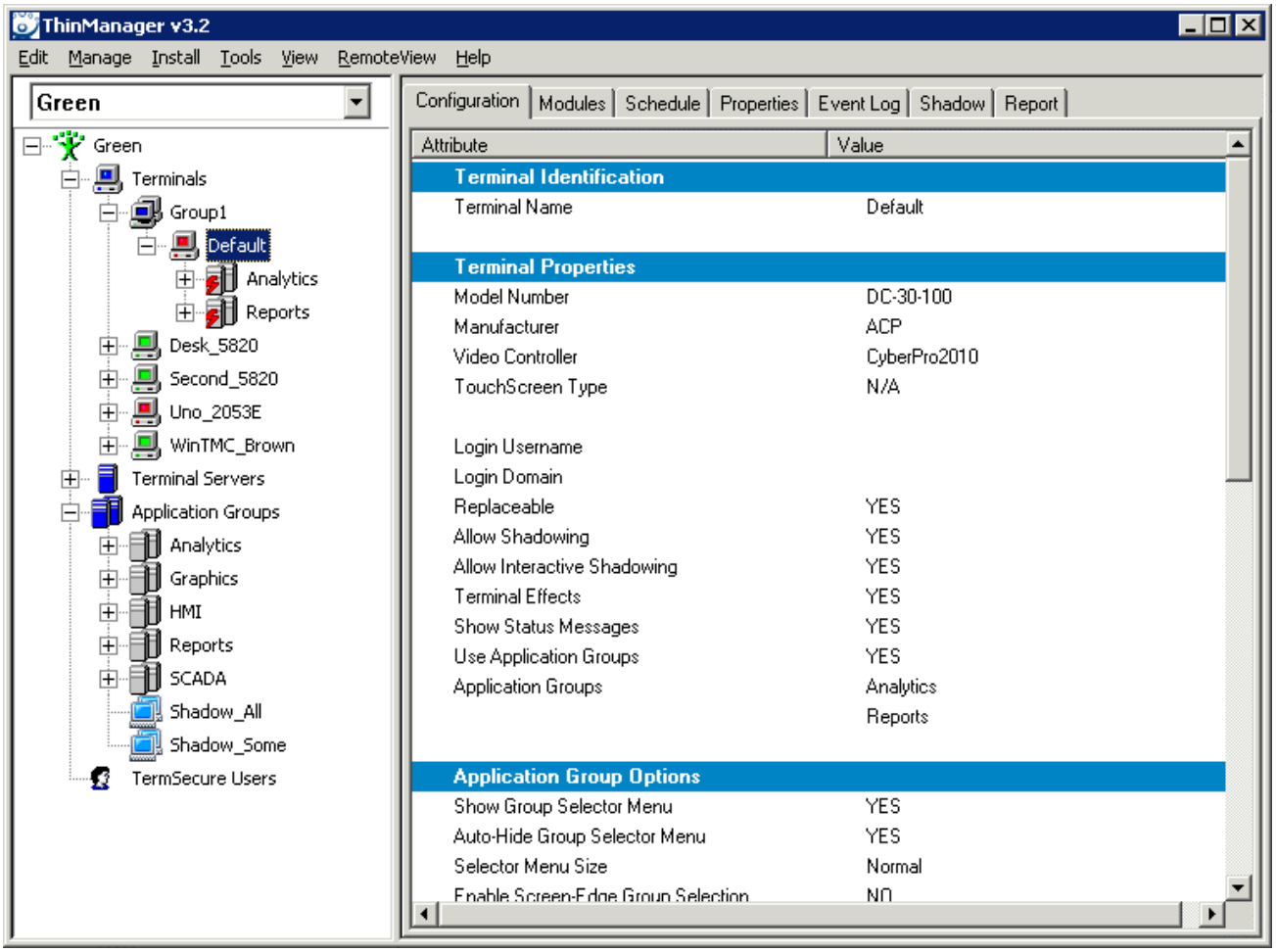
The Default Terminal is created by selecting ***Manage > Configure Default Terminal***. This will launch the **Terminal Configuration Wizard** for a terminal pre-named "**Default**".



Default Terminal Configuration

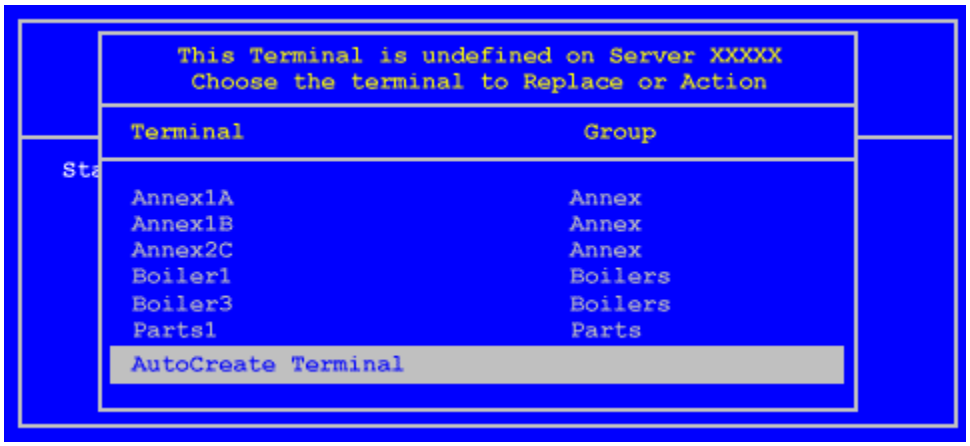
Configure the terminal with the desired settings. The Default terminal can be added to a Group by selecting the ***Change Group*** button.

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, TermSecure Users, and TermSecure Server Groups. This is where the terminals and TermSecure Users have their settings defined.

The **List Wizards** can be launched by:

- Selecting Manage from the ThinManager menu and selecting Terminal Server List, Application Group List, ThinManager Server List, or DNS Configuration.
- Right clicking on the Terminal Server branch in the tree to launch the option to define a terminal server with the Add Terminal Server command, or to edit an existing configuration by selecting the Edit Terminal Server command.
- Right clicking on the Application Group branch in the tree to launch the option to define an Application Group with the Add Application Group command, or to edit an existing configuration by selecting the Edit Application Group command.

The **Configuration Wizards** can be launched by:

- Selecting *Edit* > *Add Terminal* in the menu to launch the Terminal Configuration Wizard.
- Selecting *Edit* > *Add Terminal Group* in the menu to launch the Group Configuration Wizard.
- Right clicking on the Terminals branch in the tree to launch the option to define a Terminal with the *Add Terminal* command, or to define a Group with the *Add Group* command.
- Right clicking on a Terminal Group in the tree to launch the option to define a Terminal Group with the *Add Group* command, or to define a Terminal with the *Add Terminal* command. This puts the terminal or group in that group.
- Right clicking on the TermSecure User branch in the tree to launch the option to define a TermSecure User with the *Add* TermSecure *User* command, or to define a TermSecure User Group with the *Add* TermSecure *Group* command.

- Right clicking on a **TermSecure User Group** in the tree to launch the option to define a **TermSecure User Group** with the ***Add* TermSecure User *Group*** command, or to define a **TermSecure User** with the ***Add* TermSecure User** command. This puts the TermSecure User or TermSecure User group in that TermSecure User group.

See Terminal Server List Wizard for details.

See Application Group List for details.

See ThinManager Server List for details.

See DNS Configuration for details.

See Terminal Group Configuration Wizard for details.

See Terminal Configuration Wizard for details.

See TermSecure User Configuration Wizard for details.

See TermSecure Users Group Configuration Wizard for details.

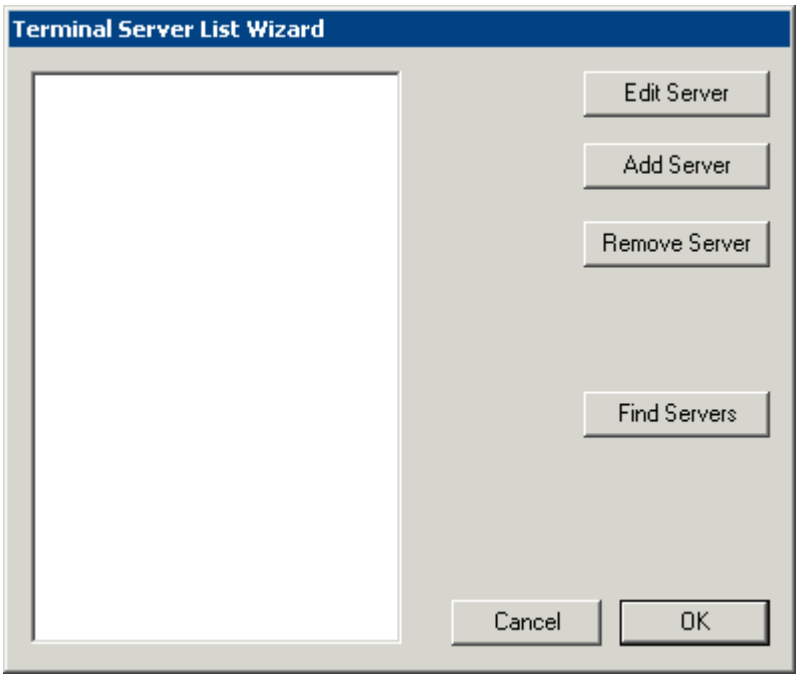
9.2. List Wizards

ThinManager has List wizards that allow the names of Terminal Servers, Terminal Server Groups, ThinManager Servers, and Domain Name Servers to be associated with their IP address for easy use. This is similar in function to a host table.

Each of the List Wizards is launched in the appropriate place during group and terminal configuration in the Group Configuration Wizard and Terminal Configuration Wizard, but they can also be run individually to configure and identify the members ahead of time.

9.3. Terminal Server List Wizard

The Terminal Server List Wizard can be launched by selecting ***Manage > Terminal Server List*** from the menu or by right clicking on the Terminal Server branch and choosing either the ***Add Terminal Server*** command, or the ***Edit Terminal Server*** command.



Terminal Server List Wizard

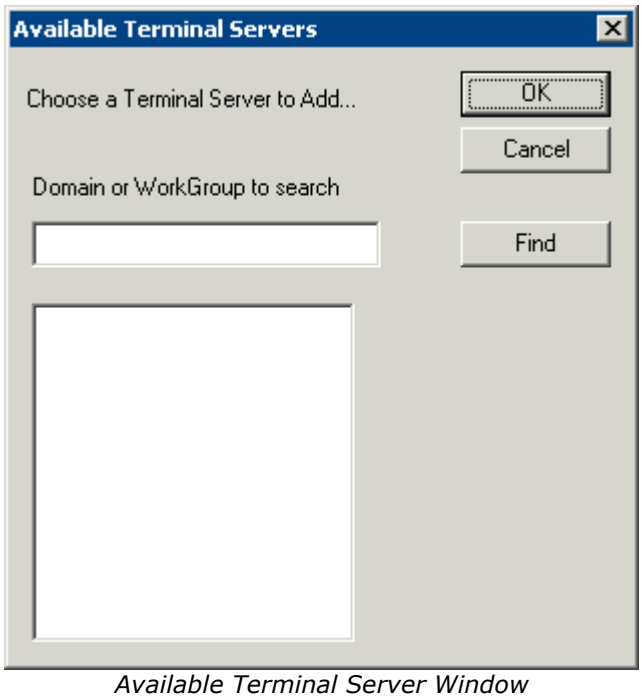
The opening window of the **Terminal Server List Wizard** will show any Terminal Servers that are defined or will be blank if none have yet been defined.

- ***Edit Server*** will open the properties for a highlighted terminal server in the list.
- ***Add Server*** will allow a new terminal server to be defined.
- ***Remove Server*** will remove a highlighted terminal server from the list.
- ***Find Servers*** will launch the **Available Terminal Servers** window for automated terminal server addition.
- ***Cancel*** will close the wizard without action.
- ***OK*** will close the wizard after accepting changes.

Selecting ***Add Server*** will open the ***Terminal Server Wizard Introduction*** page.

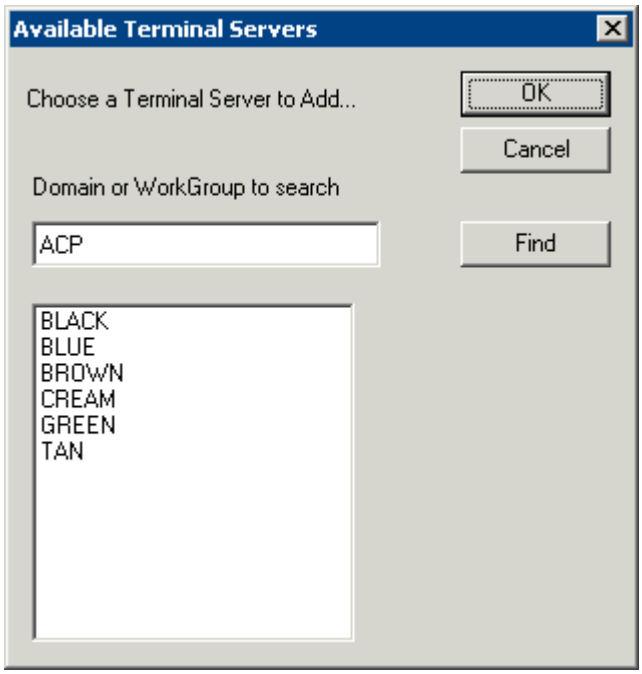
Selecting the ***Find Servers*** button will open the ***Available Terminal Server*** window that lets ThinManager search for terminal servers.

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.

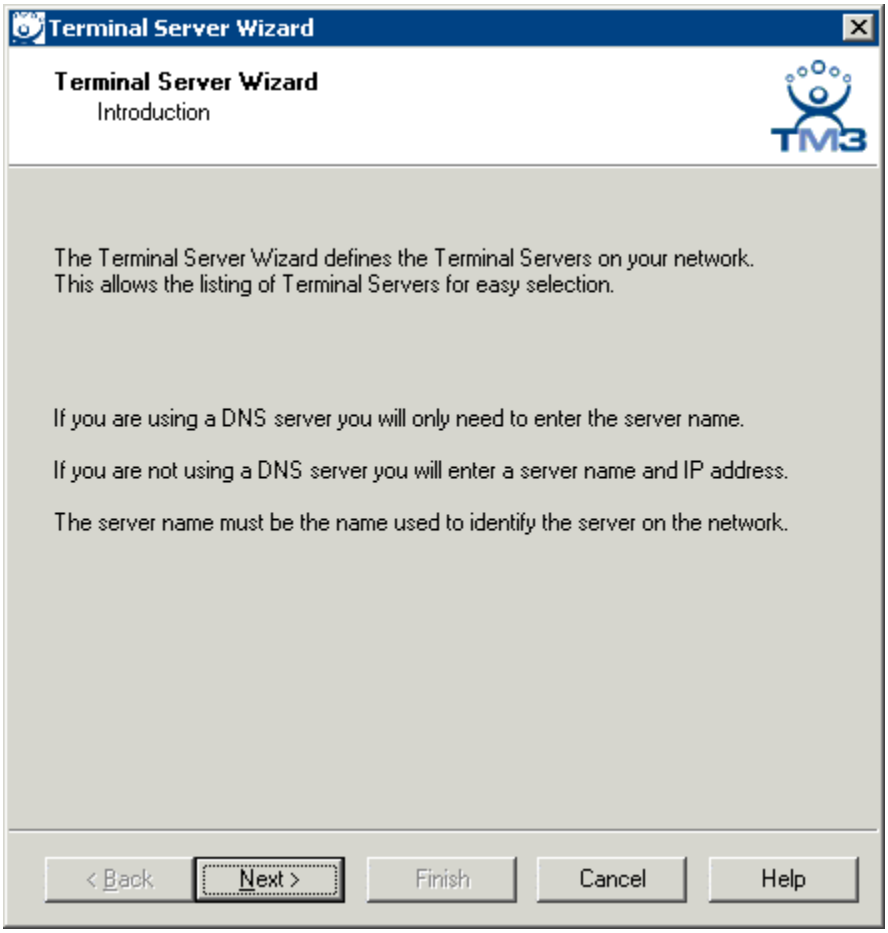


Available Terminal Server Window

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**.

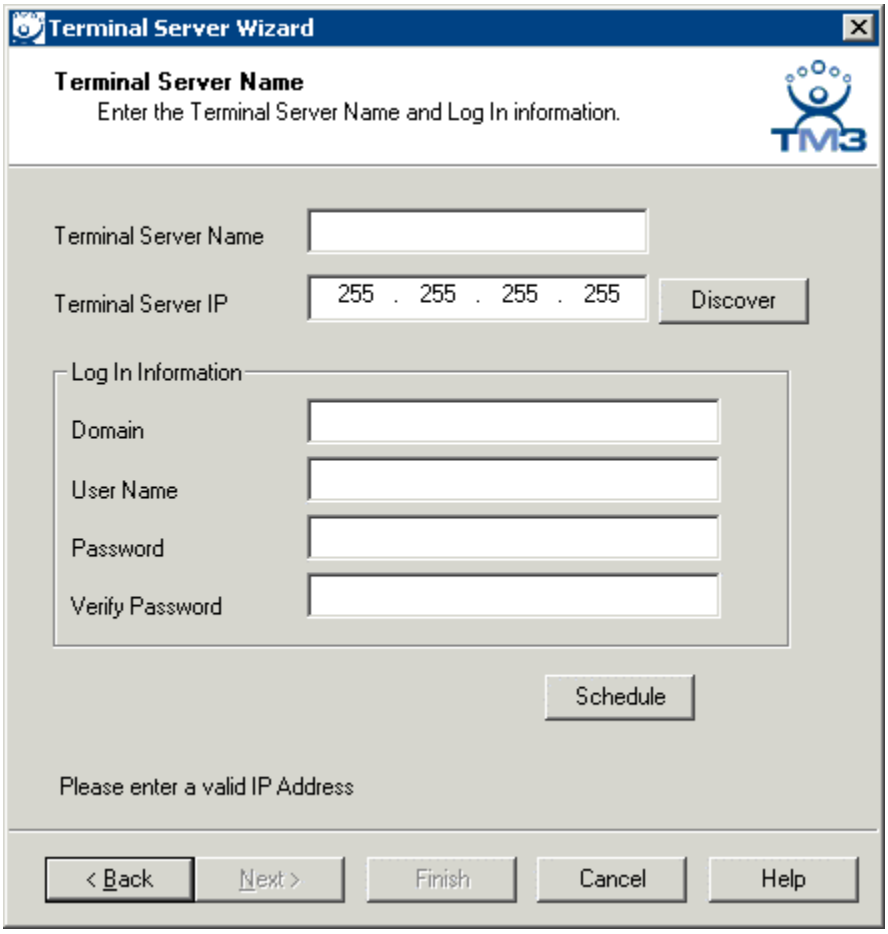
Terminal Server Wizard Introduction Page



Terminal Server List Wizard Introduction

The **Terminal Server List Wizard** starts with an Introduction page with instructions for the wizard. Select ***Next*** to continue.

Terminal Server Name Page



Terminal Server List Wizard – Terminal Server Name

The **Terminal Server Name** page defines the Terminal Server on the network.

The **Terminal Server Name** fields are:

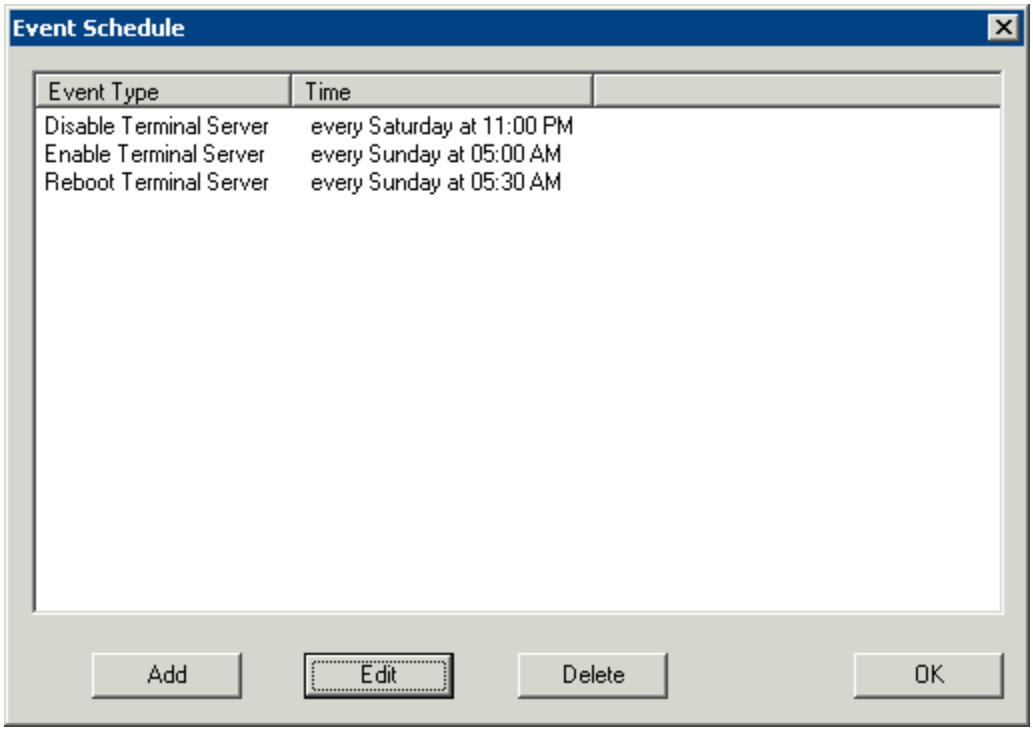
- **Terminal Server Name** - Enter the computer name as found in the Microsoft System Properties (NetBIOS name). The name will already be entered if the ***Find*** function on the **Available Terminal Servers** window was used.
- **Terminal Server IP** – Entered the IP address of the terminal server.
- **Discover** – The ***Discover*** button will automatically fill in the IP address for a terminal server listed in the ***Terminal Server Name*** field.
- **Domain** - Enter the **domain** for the computer, if it is a member of a domain.
- **User Name** - 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.
- **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.
- **Schedule** – The Schedule button will launch the Event Schedule for the terminal server. This allows the scheduling of repeated functions like rebooting and disabling.

Note: 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.

Terminal Server Schedule

Selecting the ***Schedule*** button on the **Terminal Server Name** page will launch the **Event Schedule** window and allow a schedule to be created for terminal server events.

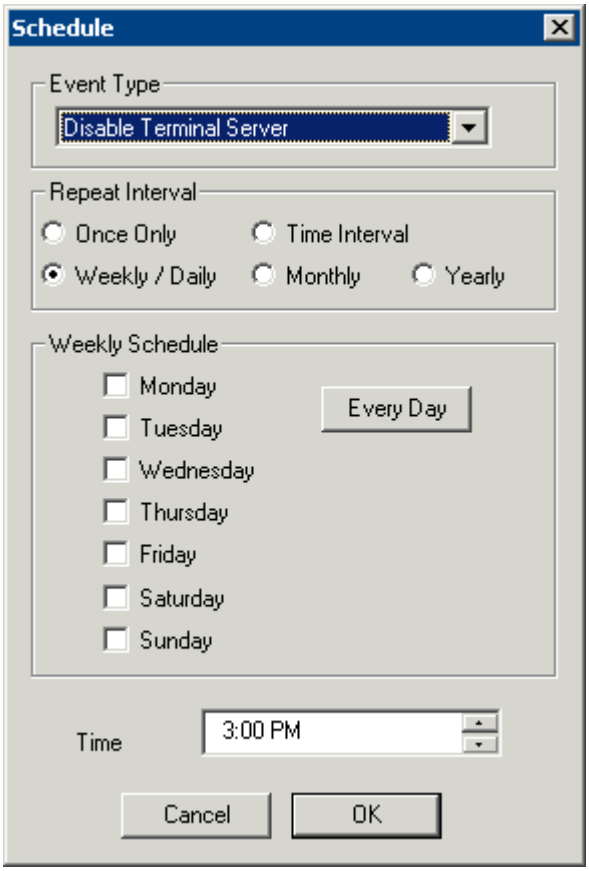


Event Schedule

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 ThinManager Ready 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 ThinManager Ready 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***.

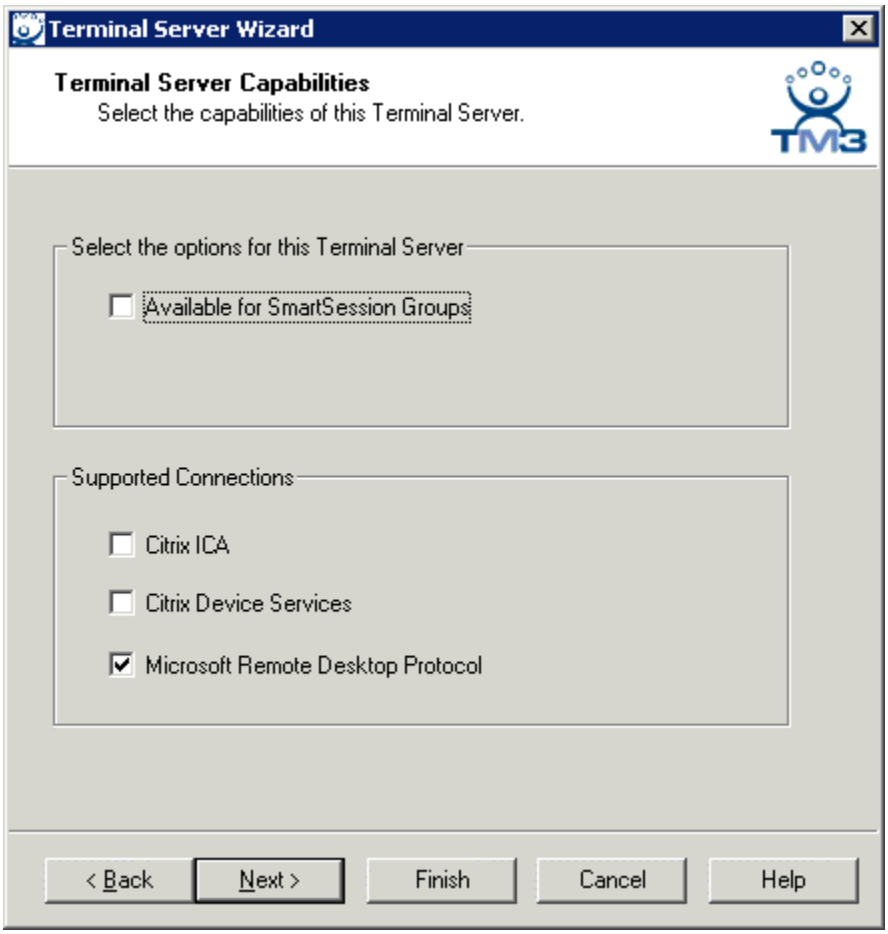
- Selecting ***Once Only*** will show a ***Select Date*** field for the event.
- Selecting ***Weekly/Daily*** will show a **Weekly Schedule** list for the event to run. The ***Every Day*** button will select all the days in the list.
- Selecting ***Monthly*** will show a ***Select Day of Month*** field 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.

Select ***Next*** to continue with the **Terminal Server Capabilities** page.

Terminal Server Capabilities Page



Terminal Server Capabilities

The **Terminal Server Capabilities** page determines whether a terminal server is configured for SmartSession and Multi-Session and determines what client communication protocols are used.

- Check the ***Available for Smart Session Server*** checkbox to make the terminal server available for terminal server groups using SmartSession to provide load balancing. See SmartSession for more details.
- Check the ***Available for MultiSession configurations*** checkbox to make the terminal server available for terminal server groups configured for MultiSession. See MultiSession for details.

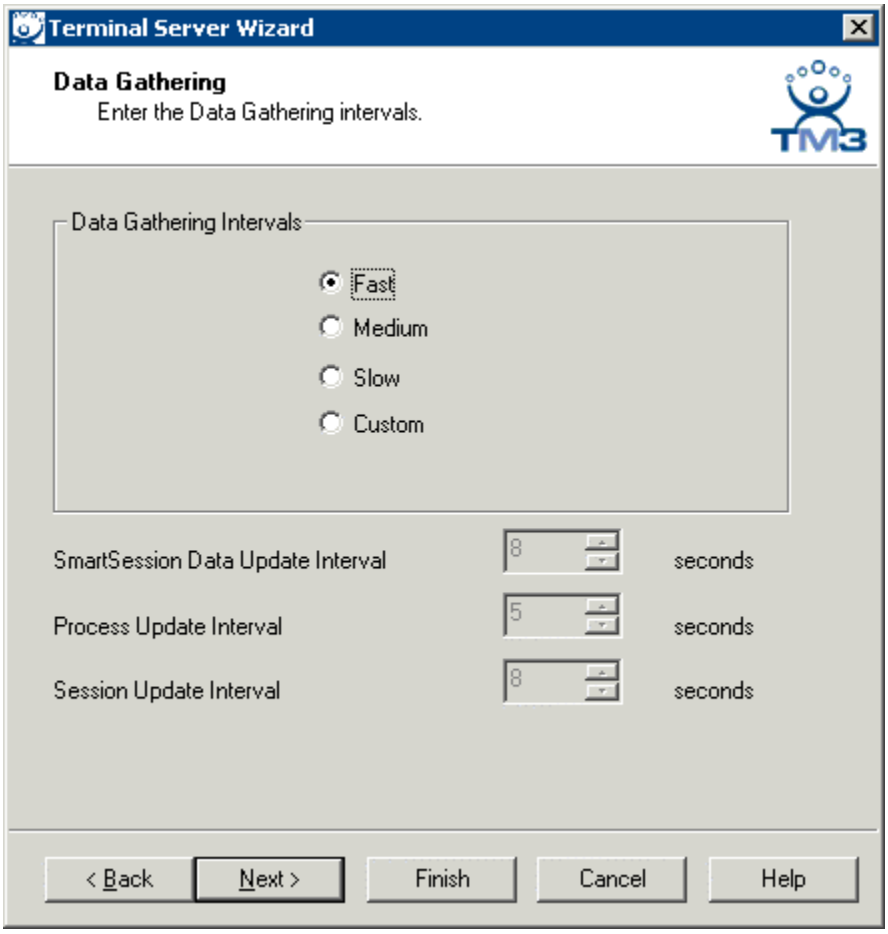
Note: Configuring a terminal server to use SmartSession uses a SmartSession license. Configuring a terminal server to use MultiSession uses a MultiSession license.

Supported Connections contains a list of the client communication protocols that the terminal server can use to talk to the ThinManager Ready thin client.

- Check the ***Citrix ICA*** checkbox if a Citrix server-side program is installed on the terminal server to provide the ICA protocol.
- Check the ***Citrix Device Services*** 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. ThinManager Ready 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.

Selecting ***Next*** will open the Data Gathering page.

Data Gathering Page



Data Gathering

The **Data Gathering** page allows configuration of the intervals that ThinManager uses to poll data from the terminal server. Preset intervals can be used, or custom intervals can be applied.

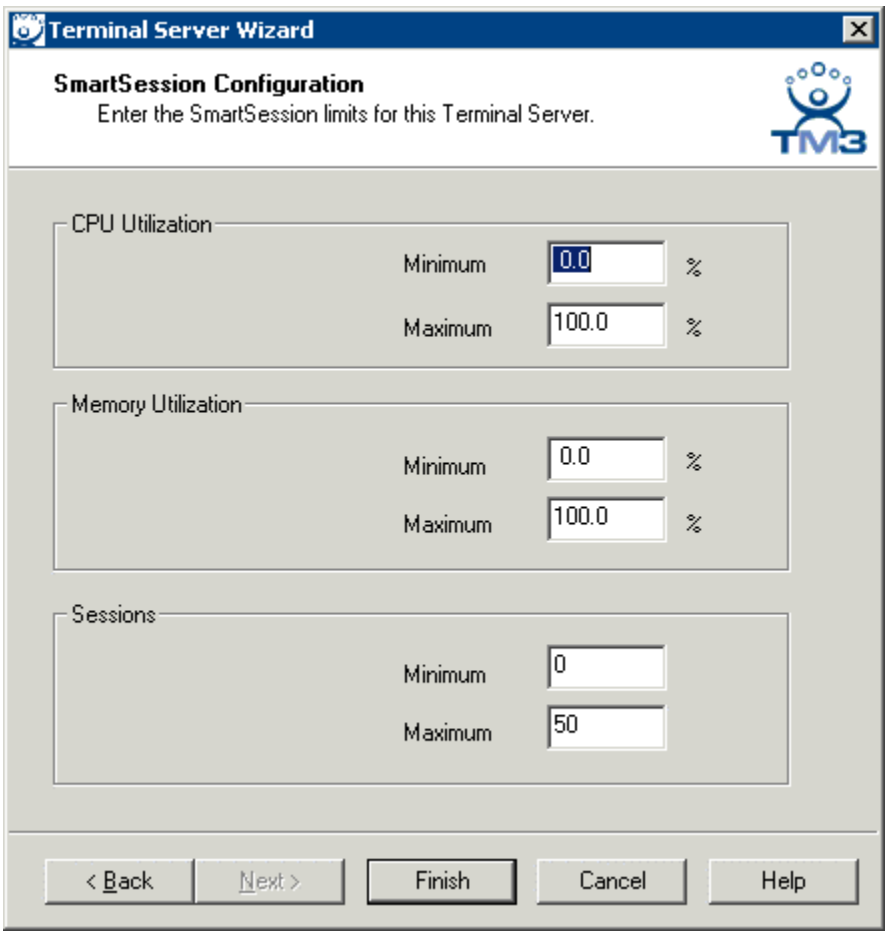
- **Smart Session Data Update Interval** is the amount of time between the retrieval of SmartSession data, CPU usage, memory usage, and session count, from the

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.

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.

SmartSession Configuration Page



Terminal Server List Wizard - SmartSession Configuration

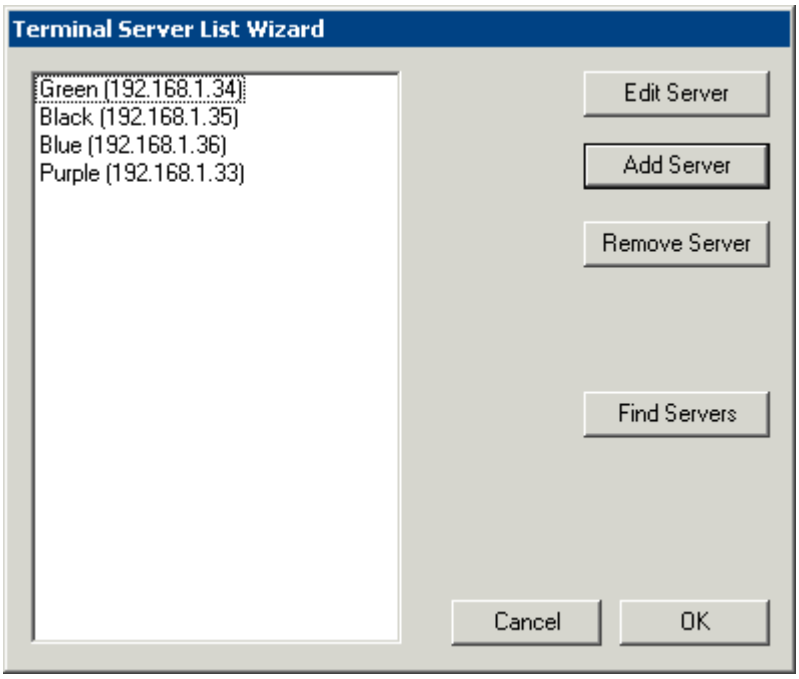
ThinManager uses the **CPU utilization**, **Memory utilization**, and **number of sessions** on the terminal server to define the SmartSession terminal server's available resources. ThinManager uses these resource values to rank the load of the SmartSession servers. ThinManager supplies this load data 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%.

- The ***Minimum*** field is the value that ThinManager will use as the starting point of the load. A value below the ***Minimum*** is considered to be unused.
- The ***Maximum*** field is the value that ThinManager will consider the parameter as reaching 100% utilized and is unavailable.

The ***Finish*** button will close the configuration of that terminal server and return to the beginning of the Terminal Server List Wizard for the configuration of other terminal servers.

Terminal Server List Wizard Window



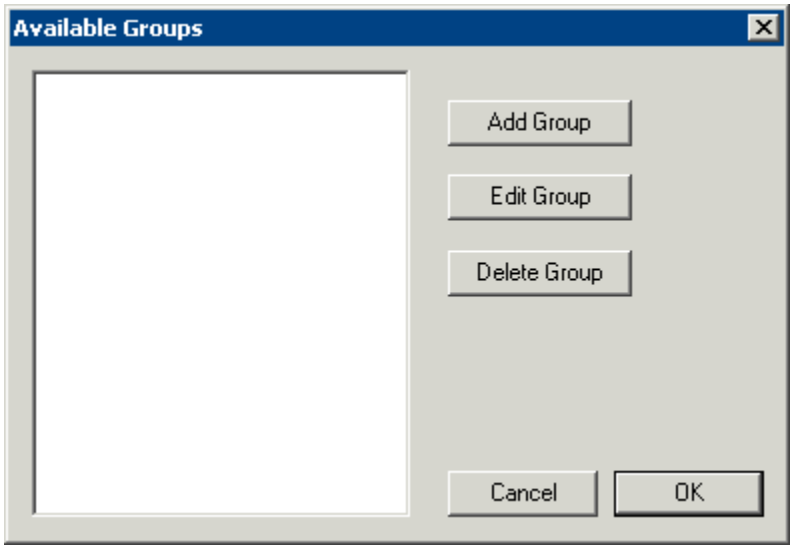
Terminal Server List Wizard

Once all the Terminal Servers are defined and configured in the **Terminal Server List Wizard** it can be closed by selecting the ***OK*** button.

9.4. Application Group List

Application Group replaces Terminal Server Group in ThinManager 3.2 because of new functionality like terminal-to-terminal shadowing that has been added.

The **Application Group List Wizard** can be launched by selecting ***Manage*** **>** ***Application Group List*** from the menu or by right clicking on the Application Group branch and choosing either the ***Add Application Group*** command or the ***Edit Application Group*** command.



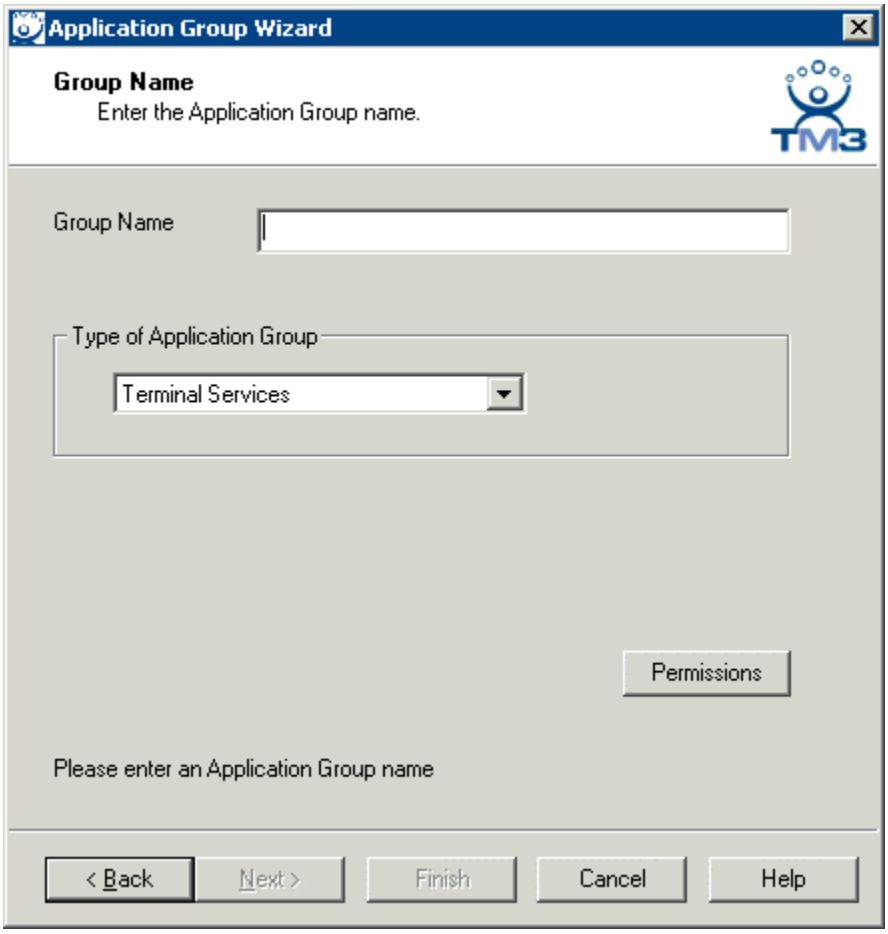
Application Group List Wizard

The opening window of the **Application Group List Wizard** will show any Application Groups that are defined or will be blank if none have been defined.

- ***Add Group*** will allow a new Application Group to be defined.
- ***Edit Group*** will open the properties for a highlighted Application Group in the list.
- ***Delete Group*** will remove a highlighted Application Group from the list.
- ***Cancel*** will close the wizard without action.
- ***OK*** will close the wizard after accepting changes.

Selecting ***Add Group*** will open the Group Name page.

Application Group Name Page



Group Name Page

Enter the desired name of the group in the ***Group Name*** field.

The ***Type of Application Group*** drop-down box selects the function of the Application Group.

- ***Terminal Services*** – This creates an application group that allows a terminal to connect to a terminal server, login, and run a session.
- ***Terminal Shadow*** – creates an application group that allows a terminal to be shadowed by another terminal.

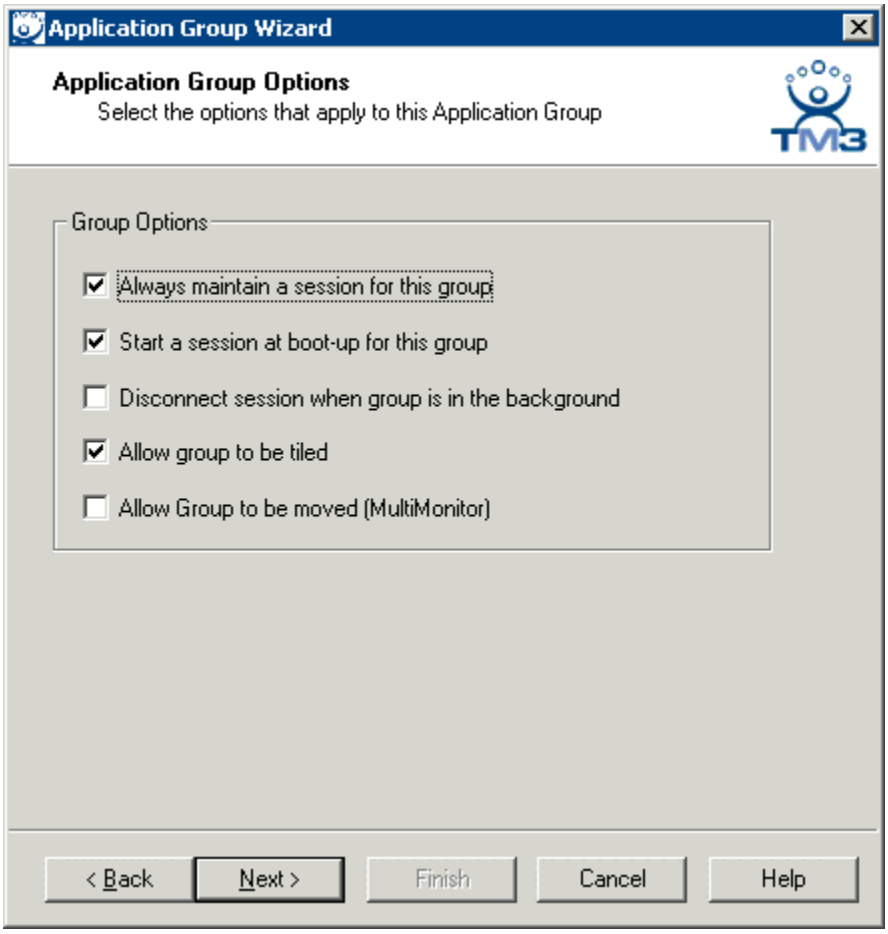
The ***Permissions*** button will launch the **Permissions** window that allows Permissions to be set for TermSecure. This is discussed in Permissions.

Once the ***Type of Application Group*** is set select ***Next*** to configure the group options.

9.4.1. Terminal Services Application Groups

The Terminal Services application groups of ThinManager 3.2 have the same function as the Terminal Server Groups from earlier versions of ThinManager. 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 Application Group configuration and options.

Application Group Options Page



Application Group Options

The **Group Options** allow the configuration of Application Group parameters.

Group Options include:

- ***Always maintain a session for this group*** – If checked, when the user closes his session, another session will be started automatically. If unchecked, the user can close a session and another session won't start automatically.
- ***Start a session at boot-up for this group*** – If checked, the terminal will start a session for this Application Group at boot up. If unchecked, a user action is required to start the session.

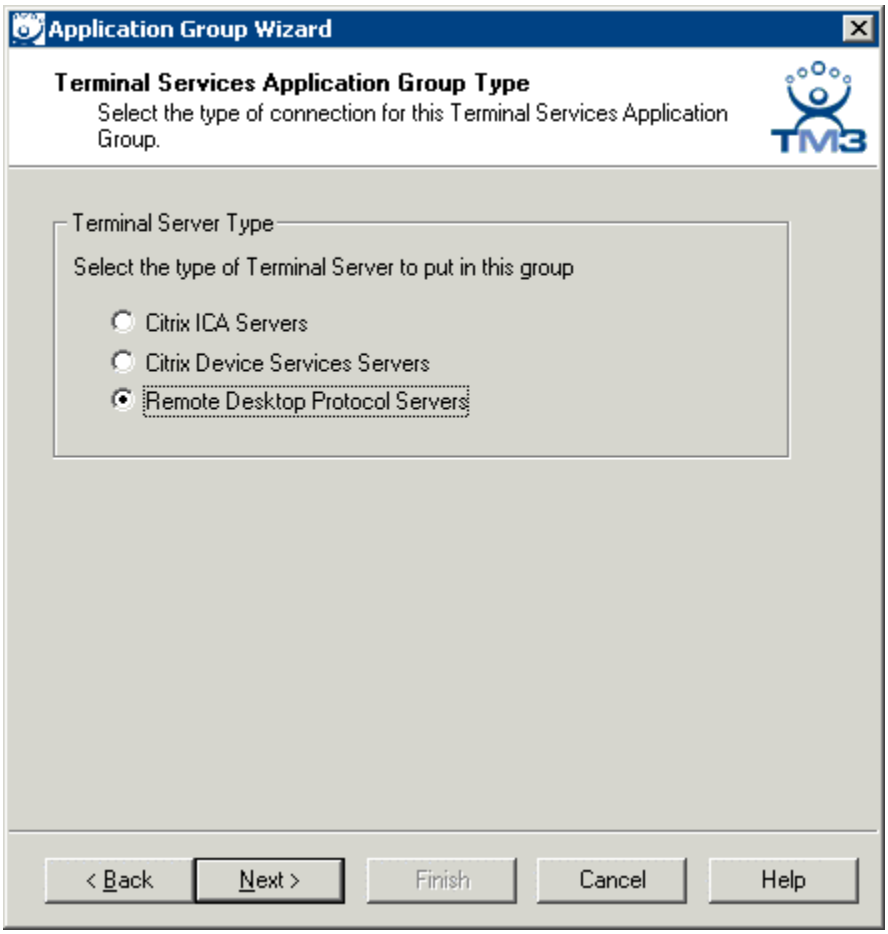
Note: The ***Always maintain a session for this group*** and ***Start a session at boot-up for this group*** checkboxes, if unselected, will lower the demand on the terminal servers by allowing sessions to be closed until needed.

- ***Disconnect session when group is in the background*** – If checked, this allows an Application Group being used in a MultiSession configuration, to disconnect once it is moved into the background. This could be done to require fewer resources.
- ***Allow group to be tiled*** – If checked, this allows the application group to be tiled in SessionTiling. See Group Selection with SessionTiling for details.

- ***Allow Group to be moved (MultiMonitor)*** – If checked, this allows an Application Group to be moved from one MultiMonitor screen to another. See MultiMonitor for details.

Once the Application Group parameters are configured, select ***Next*** to select the terminal servers for the group.

Terminal Services Application Group Type Page



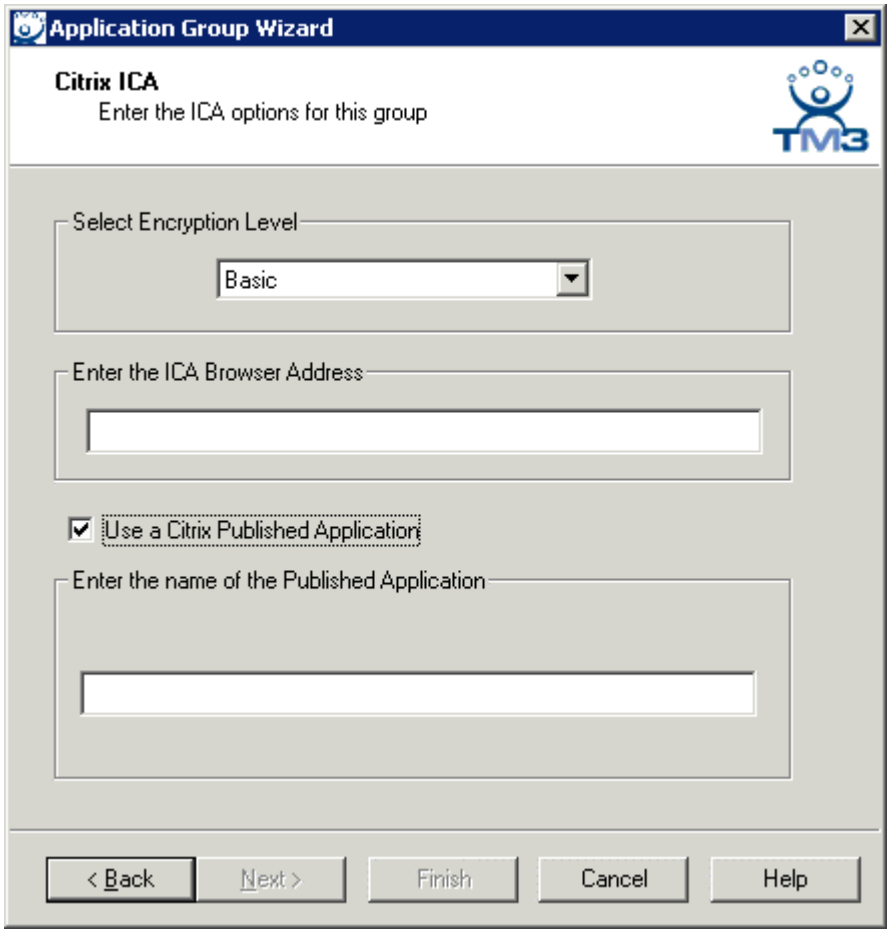
Terminal Services Application Group Type

Each Terminal Services Application Group can use a single protocol to connect to the terminal servers.

Select either the ***Citrix ICA Servers***, ***Citrix Device Services Servers***, or the default ***Remote Desktop Protocol Servers*** radio button and select ***Next*** to continue.

If ***Citrix ICA Servers*** is chosen, the **Citrix ICA** page will be displayed to allow the setting of Citrix options.

Citrix ICA Page



Citrix ICA Page

An Application Group that uses the Citrix ICA protocol can have Citrix functionality configured on the **Citrix ICA** page.

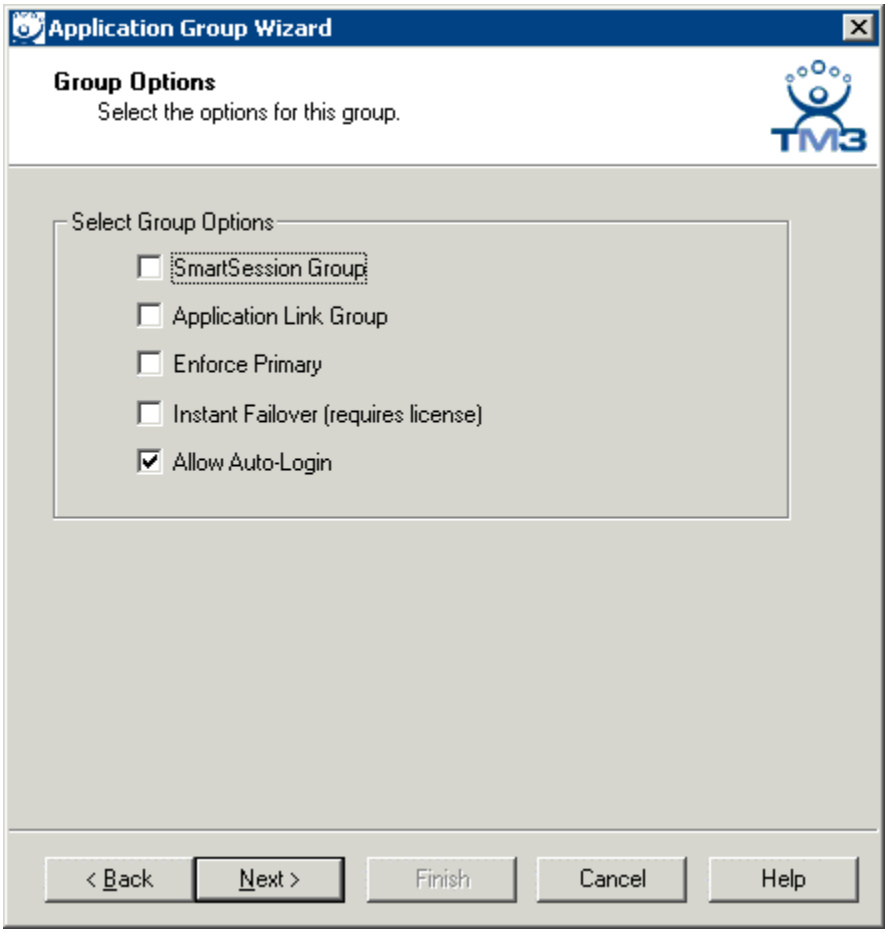
- ***Set Encryption Level*** – This drop-down allows the selection of the strength of security encryption used by the ICA protocol.
- ***ICA Browser Address –*** Entering the ICA browser address aids in connection across routers, subnets, and domains.
- ***Use a Citrix Published Application –*** This checkbox, if selected, will allow usage of Citrix Published Applications to deploy programs to the thin client.
- ***Enter the name of a Published Application -*** This field becomes active when the ***Use a Citrix Published Application*** checkbox is selected and allows the desired published application to be designated.

If a published application is used, check the ***Use a Citrix Published Application*** checkbox and enter the published application in the ***Enter the name of a Published Application*** field. 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.

Select ***Next*** to continue.

Group Options Page



Group Options

Additional Application Group options are configured on the **Group Options** page.

- ***SmartSession Group*** – Selecting this option allows the Application Group to provide load balancing by using CPU availability, memory, and the number of sessions on the member terminal servers to determine the availability of resources on member terminal servers. ThinManager Ready thin clients connect to the terminal server in the Application Group with the most available resources. See SmartSession for details.
- ***Application Link Group*** – This option, AppLink, provides the Initial Program function to ThinManager Ready thin clients that connect to members of the application group. 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 for details.
- ***Enforce Primary*** - This allows a ThinManager Ready thin client to connect to its original terminal server if that terminal server has failed and recovered.

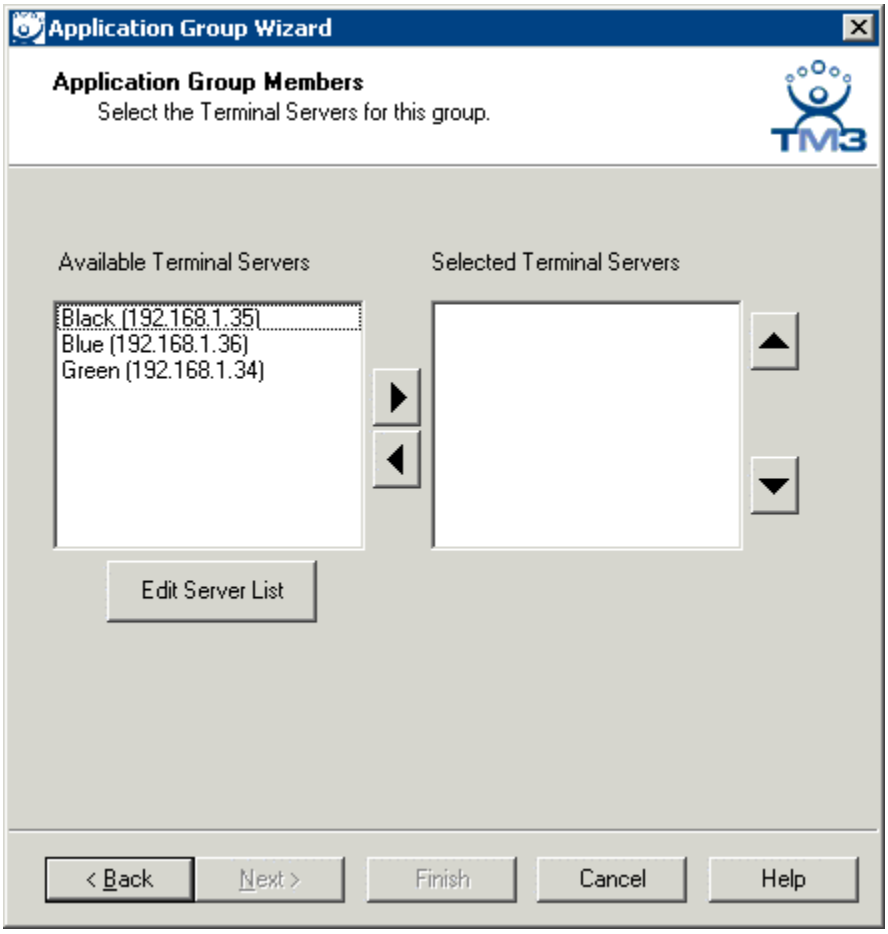
Note: Enforce Primary is not available with SmartSession.

- ***Instant Failover (requires license)*** - Allows a terminal to connect to two terminal servers in the Application Group. 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 is immediately displayed, eliminating any downtime due to terminal server failure.

Note: A terminal requires an Instant Failover license to use this function.

- ***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.

Application Group Members Page



Application Group Members

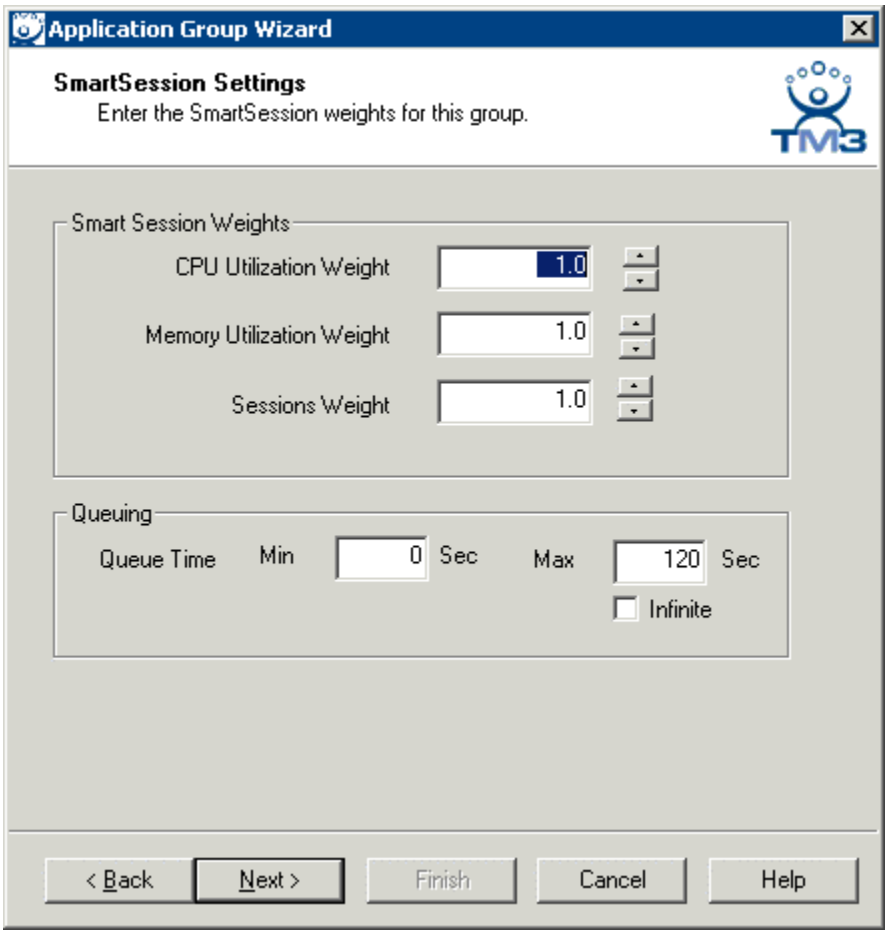
Once the Application Group is configured, the available Terminal Servers are listed on the **Application Group Members** page. Highlight the desired terminal server from the left-hand ***Available Terminal Servers*** list and use the arrow to move it into the right-hand ***Selected Terminal Servers*** column. Use the **Up** arrow and **Down** arrow to prioritize the order of connection unless SmartSession is being used.

Select *the* ***Edit Server List*** button to configure additional Terminal Servers.

If the Application Group is using the SmartSession option, the ***Next*** button will launch the **SmartSession Settings** page.

If the Application Group is not SmartSession Group the ***Finish*** button will complete the Application Group configuration.

Application Group SmartSession Settings Page



Smart Session Settings

The **SmartSession Settings** page sets the weight of the three parameters that ThinManager uses to determine availability for SmartSession.

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.

Note: The ***Weighs*** are relative. Increasing all three ***Weights*** from "1" to "10" doesn't change the relative values.

Queuing controls the rate that terminals connect to the terminal servers in the Application Group to allow processor intensive applications to load one at a time instead of many sessions

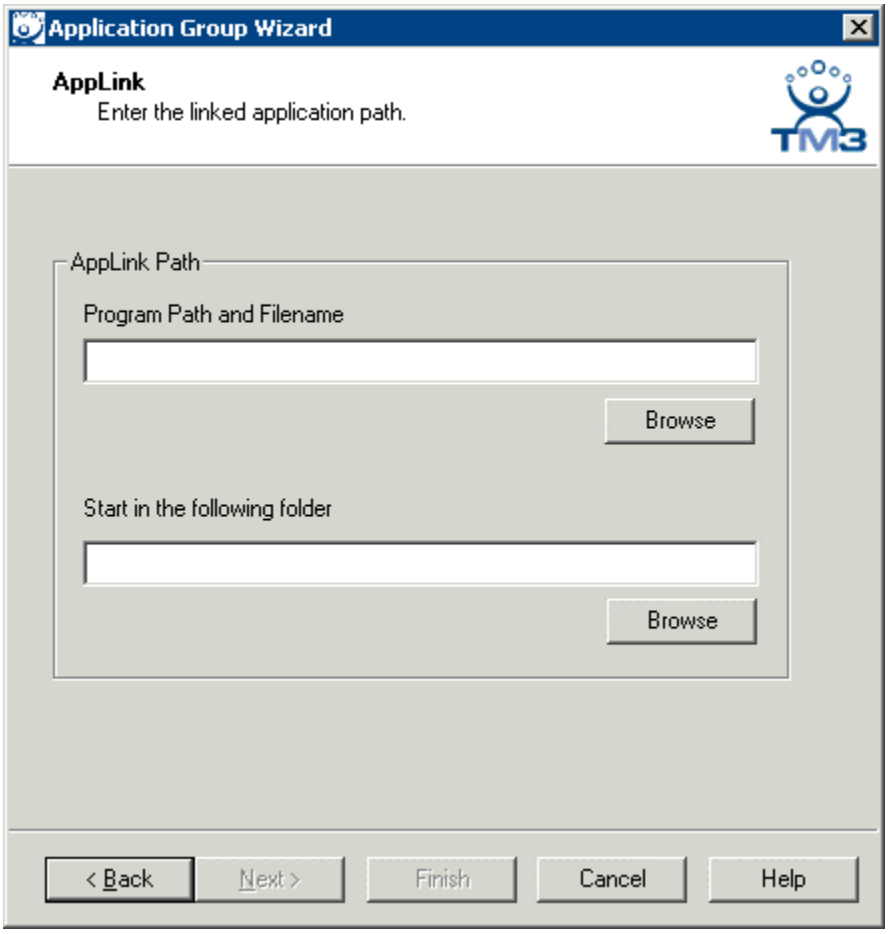
forming at once, bringing the server to a halt. As terminals that use SmartSession Queuing boot, they request their terminal server from ThinManager. ThinManager will send the first terminal to the terminal server with the lightest load and will put the other terminals in a queue for the interval defined 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.

- ***Min _ Sec*** 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*** 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.
- ***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.

The ***Finish*** button will close the configuration of that terminal server and return to the beginning of the Terminal Server List Wizard for the configuration of other terminal servers.

If the Application Group uses the AppLink option, an **AppLink** page will be displayed by selecting the ***Next*** button.

Application Group Linked Application Page



AppLink Path

The AppLink page allows a single application to be defined for the AppLink session.

- ***Program Path and Filename*** - Enter the path to the desired application in the field.
- ***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 is new to ThinManager 3.2 and may not be required.

Note: The path used must be valid for each and every terminal server in the AppLink group.

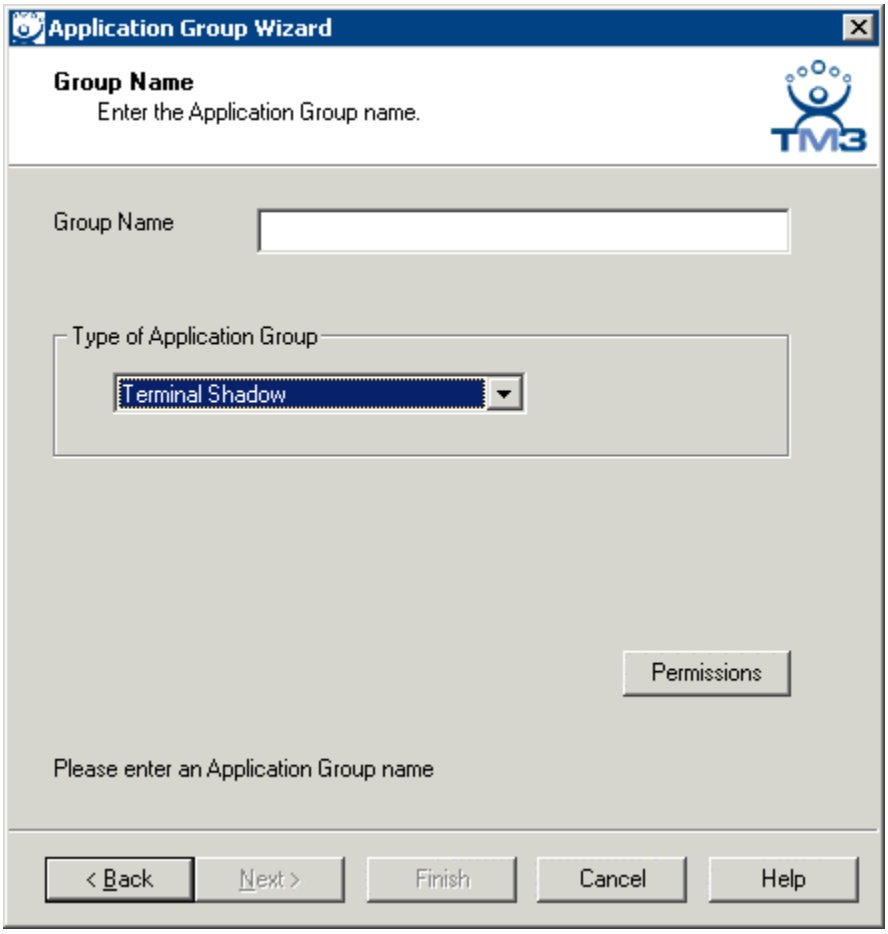
Note: Quotation marks may be needed when there is a space in the path.

Selecting the ***Finish*** button will close the Application Group List wizard and display the created terminal server groups.

9.4.2. Terminal Shadow Application Groups

Terminal Shadow application groups allow a terminal to shadow another terminal. This Shadow Group can contain a specific terminal or several terminals.

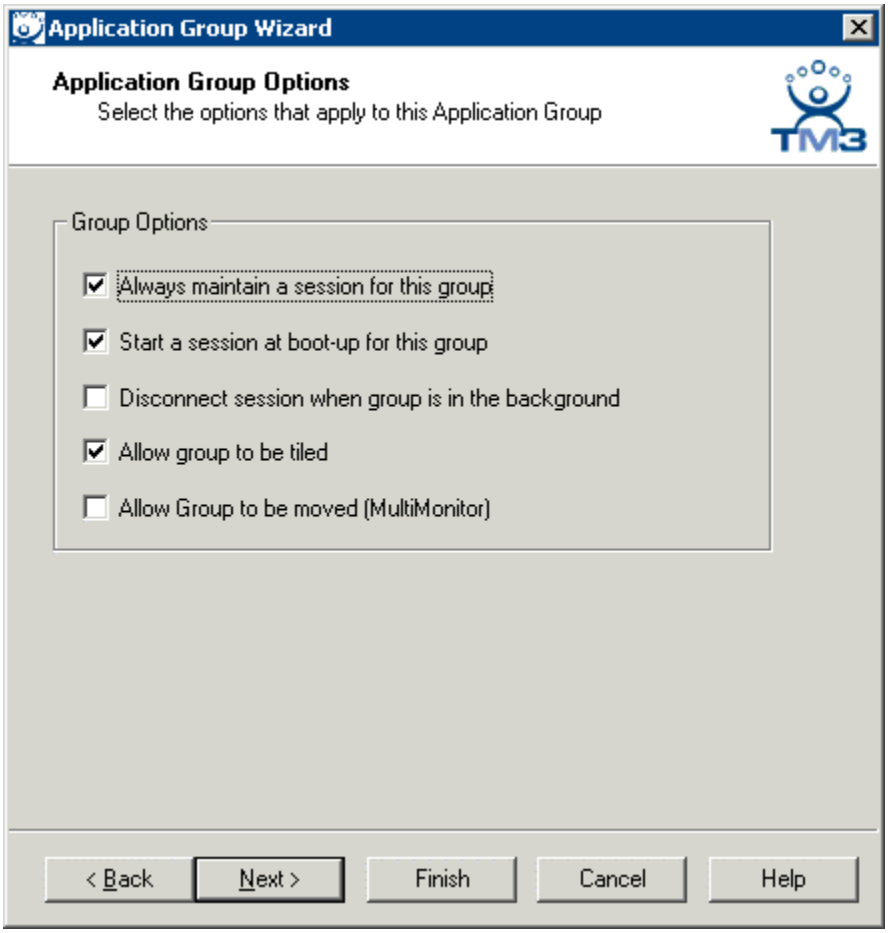
Group Name Page



Terminal Shadow Application Group - Group Name Page

Configure the Application Group by selecting ***Terminal Shadow*** from the ***Type of Application Group*** drop-down after naming the group.

Select the ***Next*** button to continue.



Terminal Shadow Application Group –Application Group Options

The **Group Options** allow the configuration of Application Group parameters.

Group Options include:

- ***Always maintain a session for this group*** – If checked, when the user closes his session, another session will be started automatically. If unchecked, the user can close a session and another session won't start automatically.
- ***Start a session at boot-up for this group*** – If checked; the terminal will start a session for this Application Group at boot up. If unchecked, a user action is required to start the session.
- ***Disconnect session when group is in the background*** – If checked, this allows an Application Group being used in a MultiSession configuration, to disconnect once it is moved into the background. This could be done to require fewer resources.

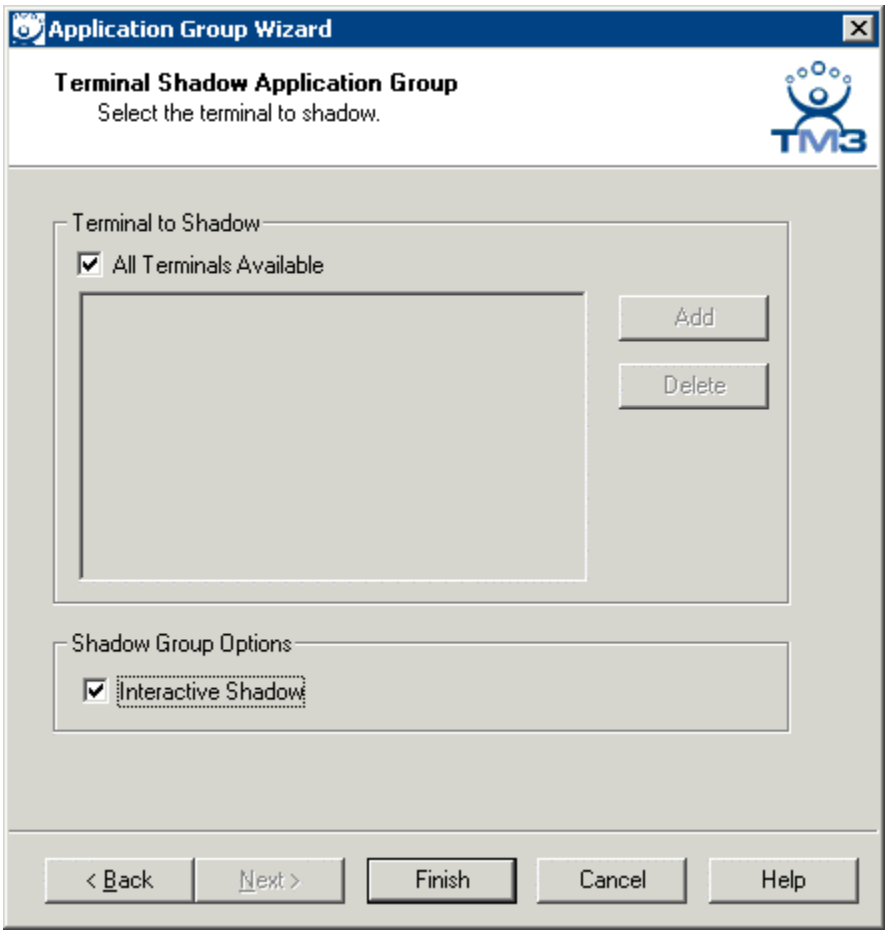
Note: The ***Always maintain a session for this group*** and ***Start a session at boot-up for this group*** checkboxes, if unselected, will lower the demand on the terminal servers by allowing sessions to be closed until needed.
Disconnect session when group is in the background will lower network traffic buy disconnecting idle sessions.

- ***Allow group to be tiled*** – If checked, this allows the application group to be tiled in SessionTiling. See Group Selection with SessionTiling for details.
- ***Allow Group to be moved (MultiMonitor)*** – If checked, this allows an Application Group to be moved from one MultiMonitor screen to another. See MultiMonitor for details.

Once the Application Group parameters are configured, select ***Next*** to select the terminal that will be shadowed in the group.

Terminal Shadow Application Group Page

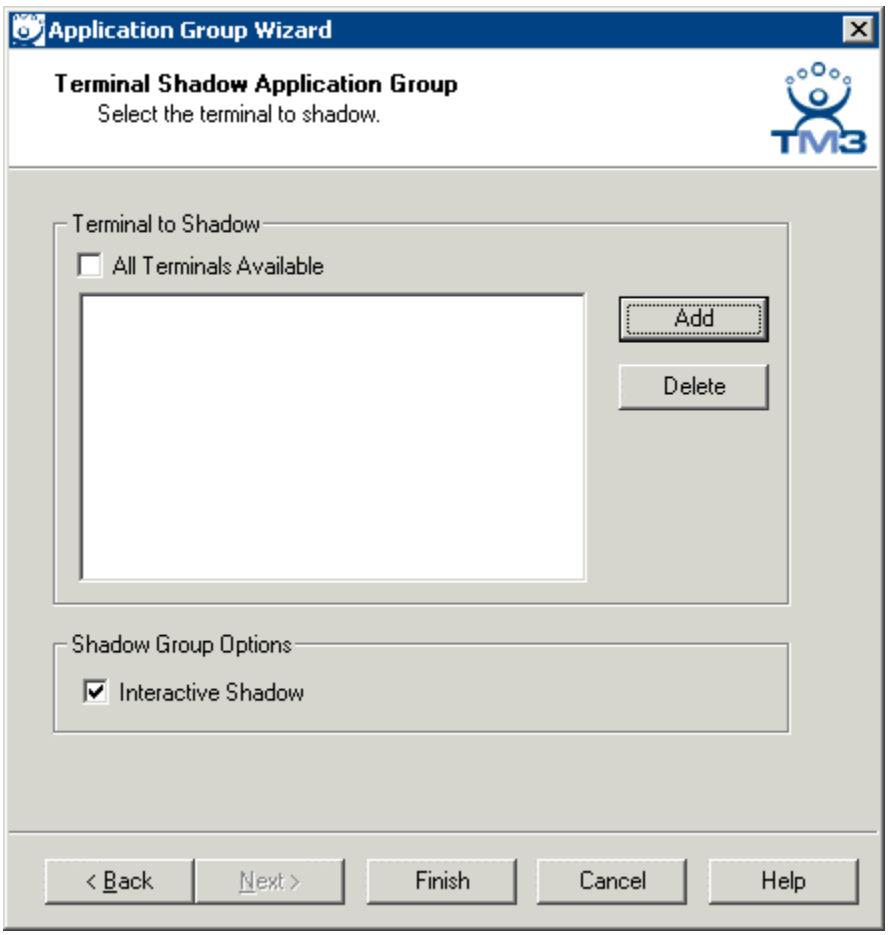
The Terminal Shadow Application Group page allows the selection of the terminal or terminals to be shadowed.



Terminal Shadow Application Group – All Terminals Available

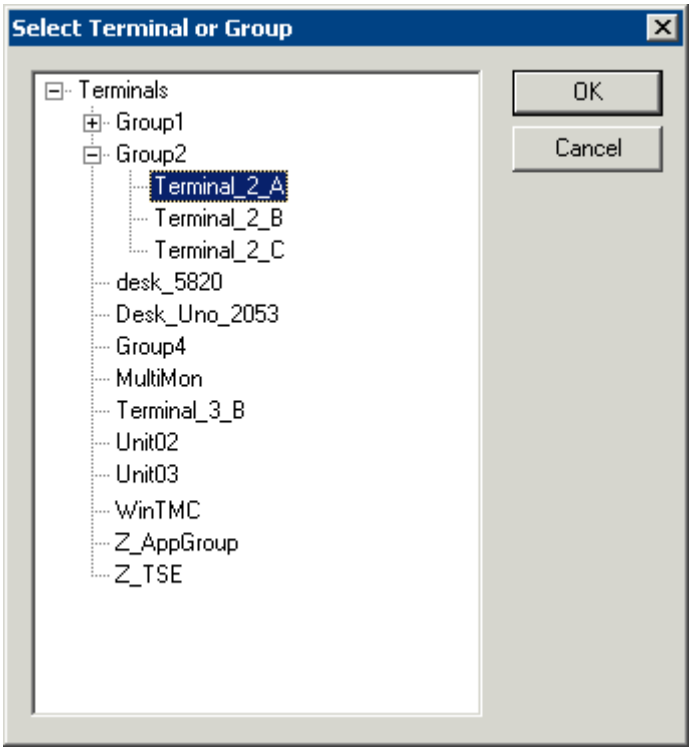
By default the Shadow Group is configured to allow all terminals to be shadowed.

Unselecting the ***All Terminals Available*** checkbox will allow the designation of specific terminals.



Terminal Shadow Application Group –Select Terminals

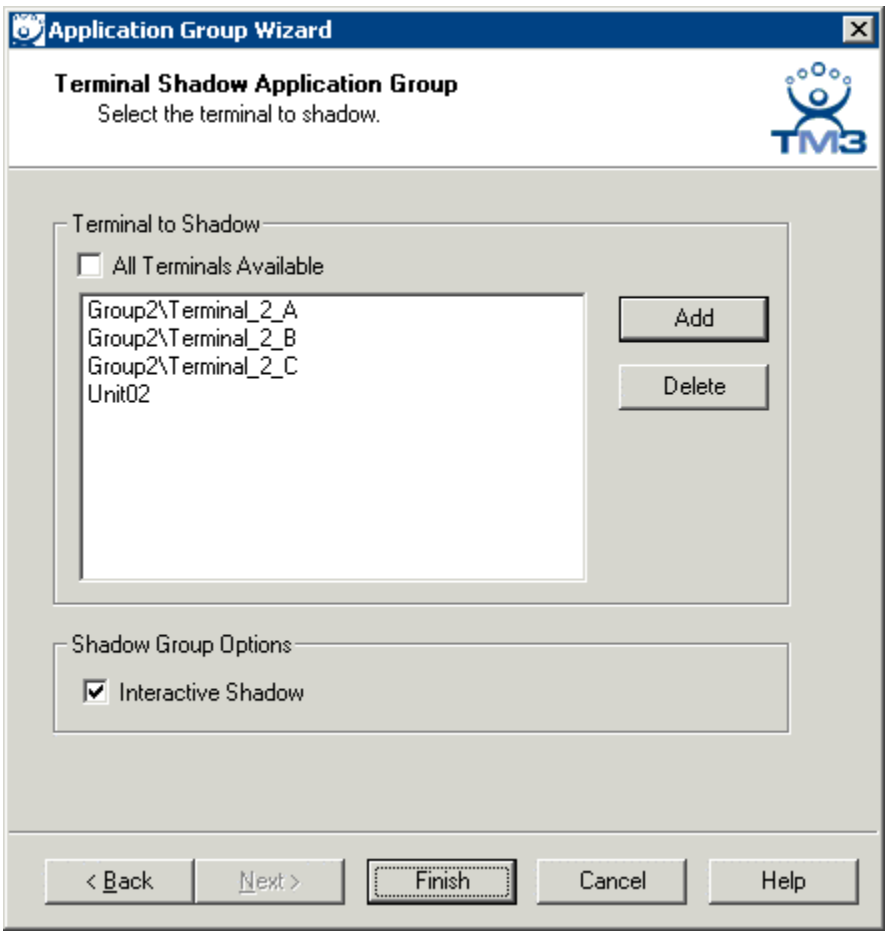
Select the ***Add*** button to launch the terminal selection window.



Select Terminal or Group Window

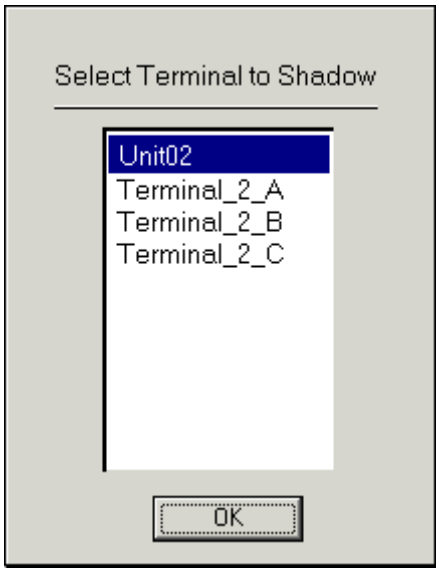
Select a terminal for shadowing by highlighting it in the **Select Terminal or Group** window and selecting the ***OK*** button. The window will close after each selection.

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

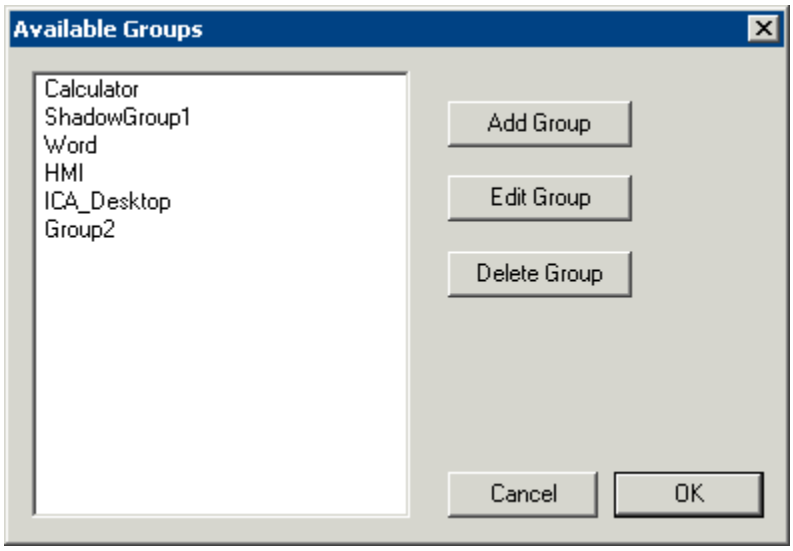
The Terminals to Shadow textbox will display the terminals added to the list.



Terminal Selector

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. Highlight the desired terminal and select the ***OK*** button.

Application Group List Window



Available Application Groups

After an Application Group is configured the Application Group List will show configured Application Groups.

Additional groups can be configured by selecting the ***New Group*** button.

The **Application Group List** wizard can be closed by selecting ***OK***.

9.5. ThinManager Server List

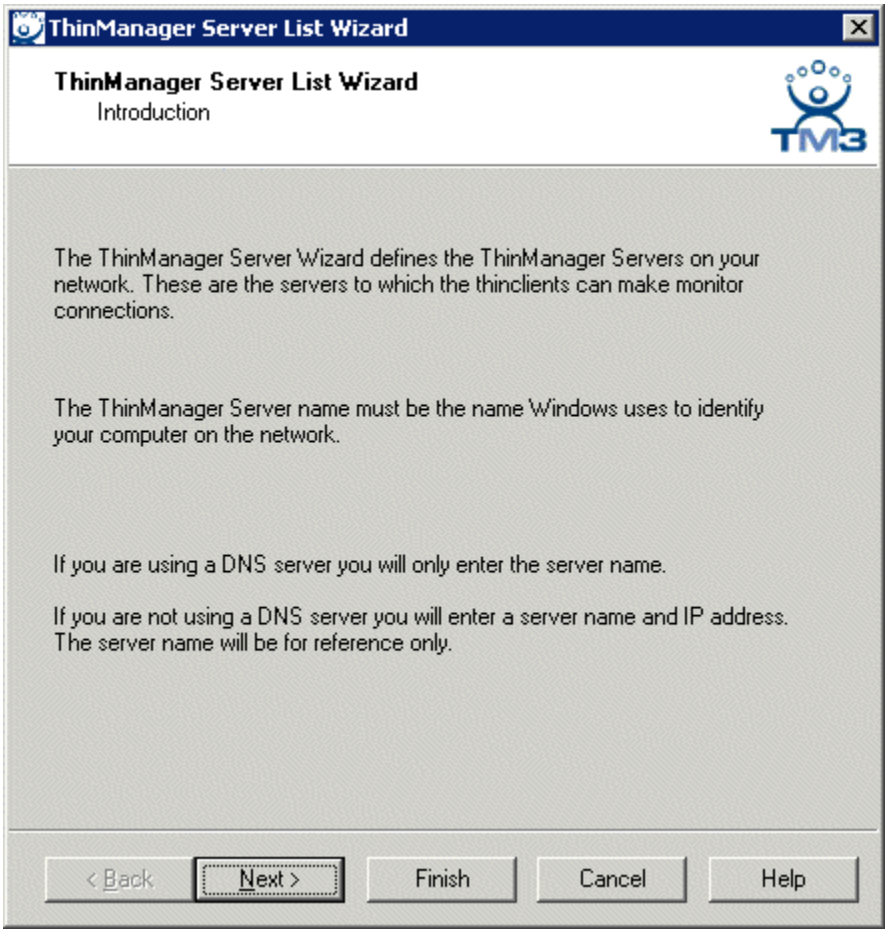
Selecting ***Manage > ThinManager Server List*** will launch the ThinManager Server List Wizard to allow the definition of ThinManager Servers. The definition of ThinManager Servers allows the connection to remote ThinManager Servers and allows the synchronization of ThinManager Server configurations.

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 Manual Synchronization for details.

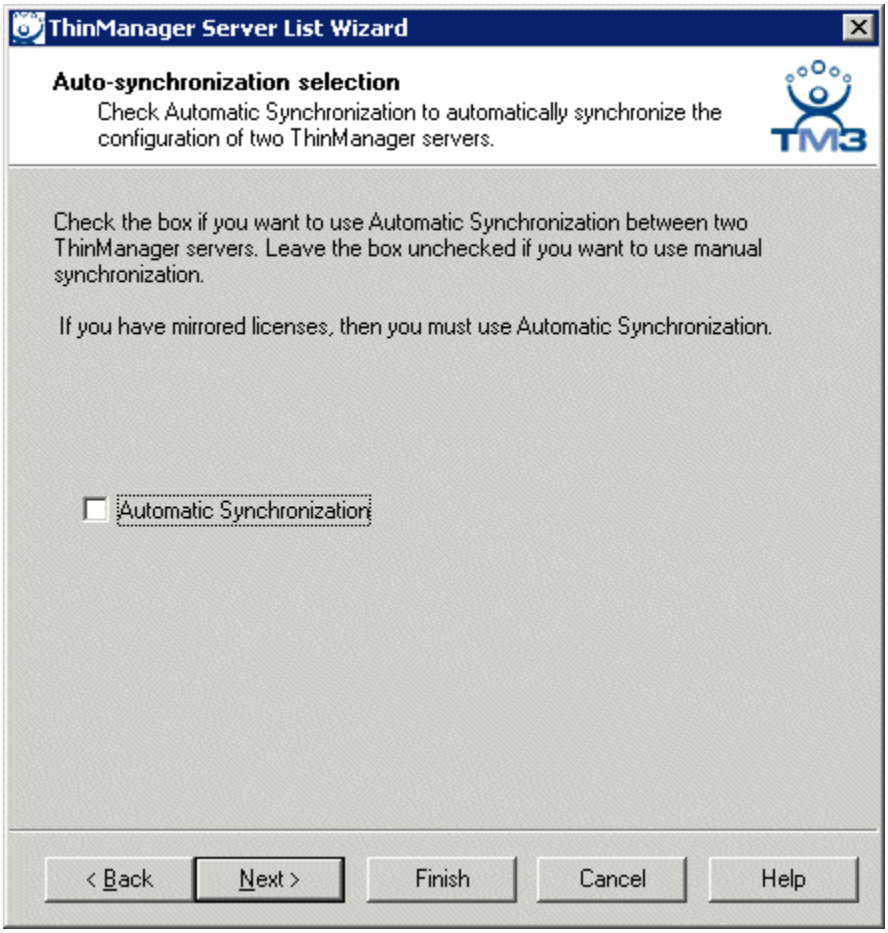
Select ***Manage > ThinManager Server List*** to launch the ThinManager Server List Wizard.



ThinManager Server List Wizard - Introduction

The ***ThinManager Server List Wizard*** begins with an introduction screen.

Select ***Next*** to proceed or click ***Finish*** to close.



Auto-synchronization Selection

The **Auto-synchronization Selection** window has a checkbox for ***Automatic Synchronization***. This checkbox, if left unselected, will lead to the definition of the ThinManager Servers for manual synchronization.

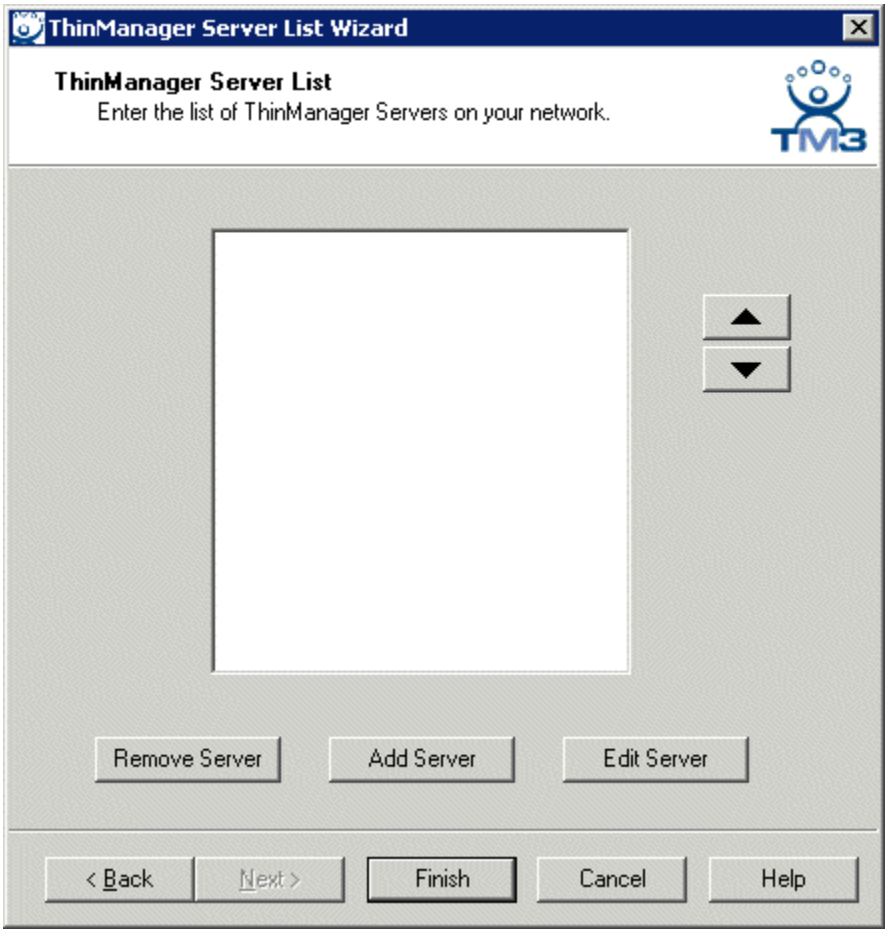
Select ***Next*** to proceed or click ***Finish*** to close.

9.5.1. Defining ThinManager Servers

Defining the ThinManager Servers will allow the connection to remote ThinManager Servers or allow ThinManager Servers to be manually synchronized.

See Manual Synchronization for details.

ThinManager Server List Page



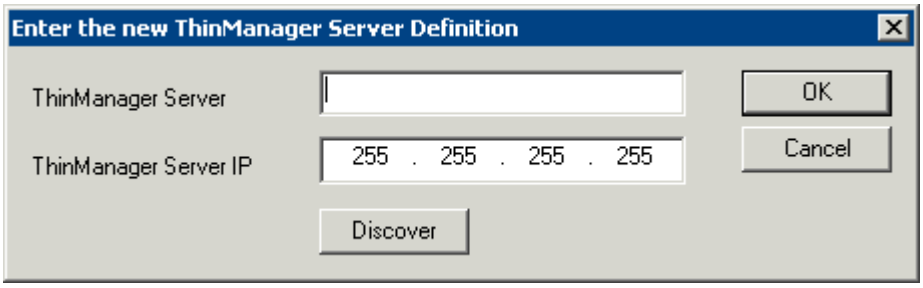
ThinManager Server List - Blank

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.

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

Selecting ***Add Server*** will launch a **ThinManager Server Definition** window that allows the entry of the ThinManager Server name and IP address.

Enter The New ThinManager Server Definition Window

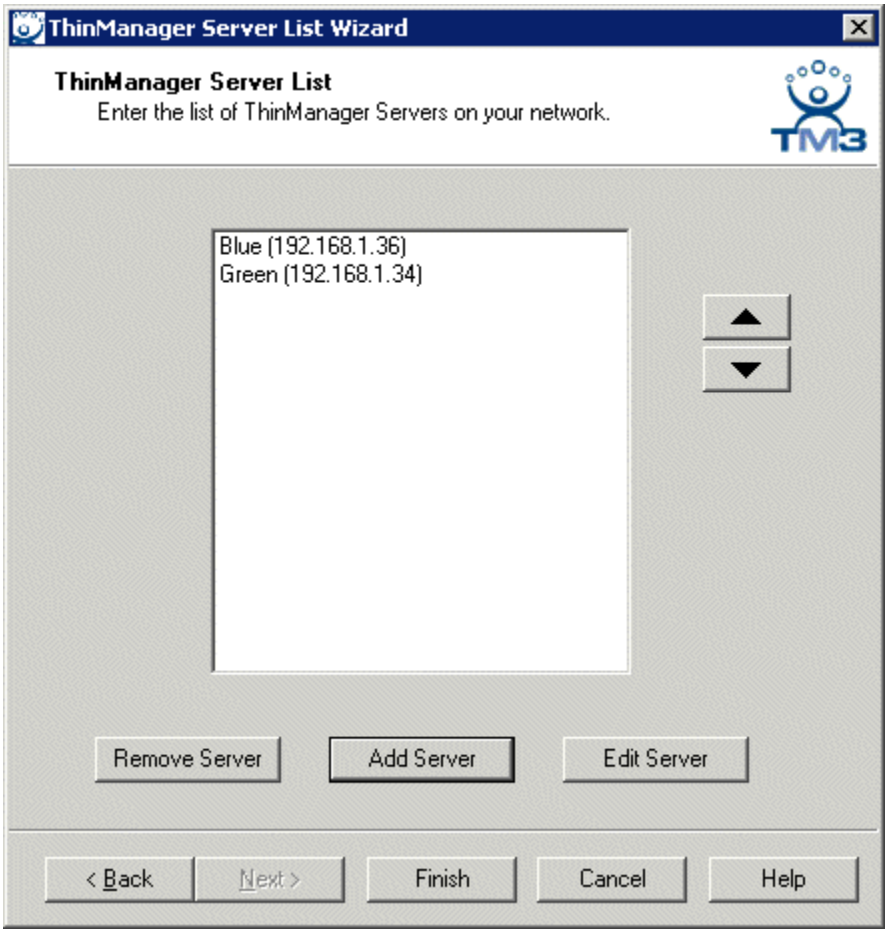


ThinManager Server Definition

Entering the network name of the ThinManager Server and its IP address allows the ***ThinManager Servers*** to be tied to a convenient name without the need of a DNS server.

Enter the computer name as found in the Microsoft System Properties in the ***ThinManager Server*** field. Add the IP address of the ThinManager Server in the ***ThinManager Server Address*** field, and select ***OK***. This adds the ThinManager Server to the ThinManager Server list.

- ***OK*** will add the ThinManager and the IP address.
- ***Cancel*** will close the window without saving any entry.
- ***Discover*** will find and fill in the IP address for a ThinManager Server entered in the ***ThinManager Server*** field.

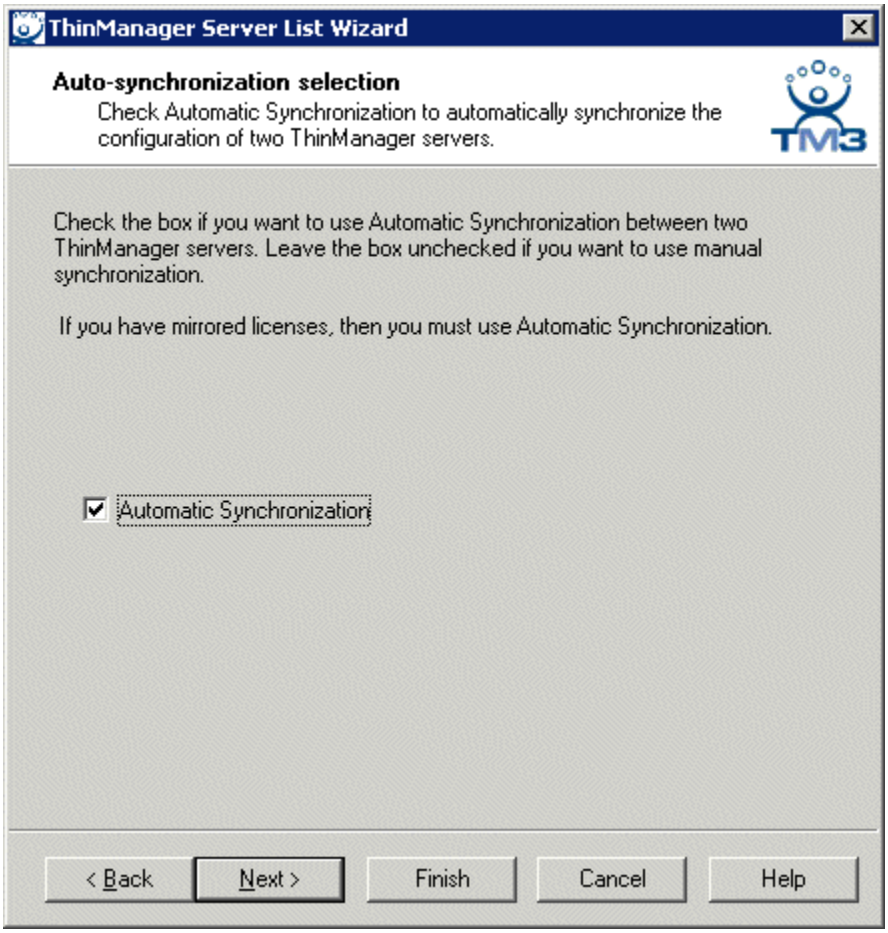


ThinManager Server List - Filled

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

9.5.2. Automatic Synchronization

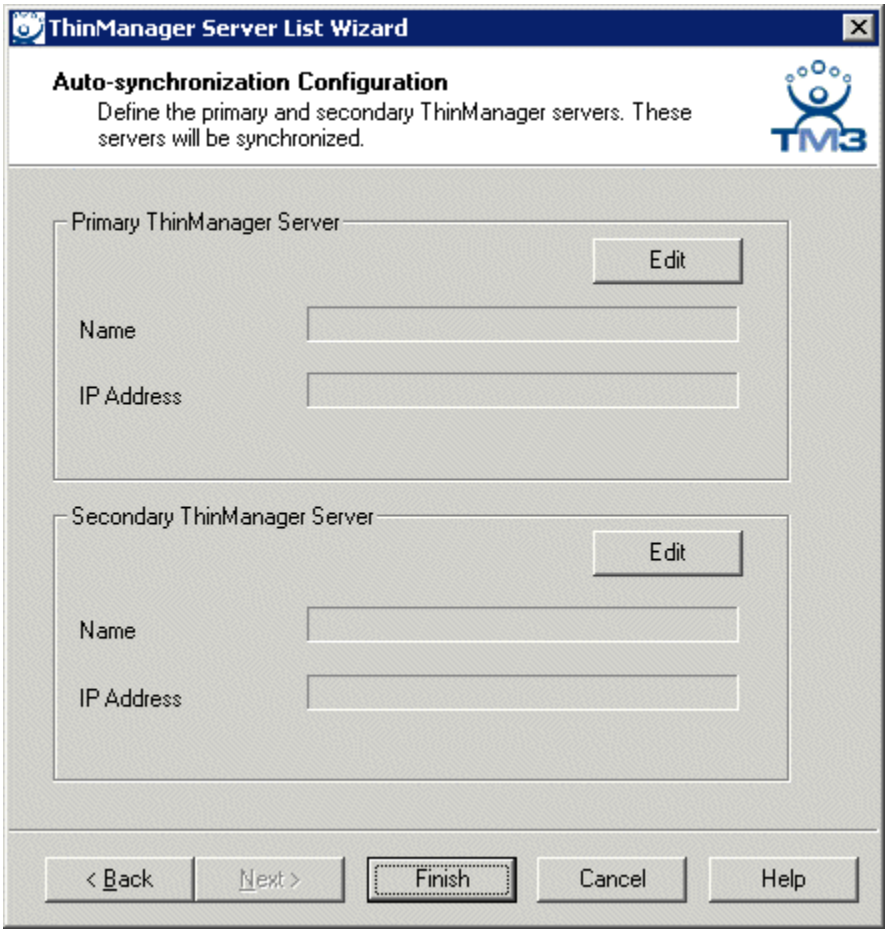
The **Auto-synchronization Selection** window has a checkbox for ***Automatic Synchronization***. This checkbox, if selected, will allow the configuration of auto-synchronized ThinManager Servers.



Auto-synchronization Selection

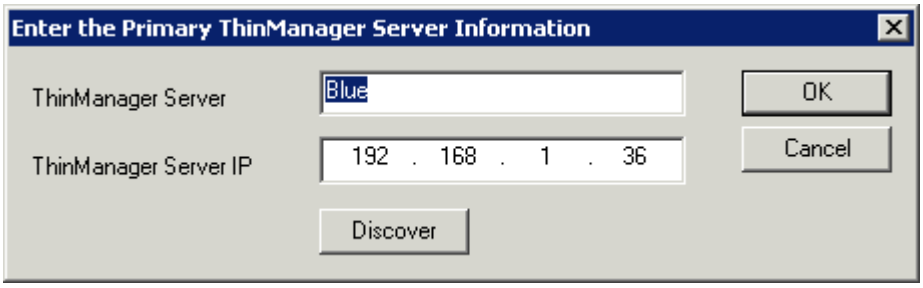
Select the ***Automatic Synchronization*** checkbox and select the ***Next*** button to configure Auto-synchronization.

Automatic Synchronization Configuration



Auto-synchronization Configuration

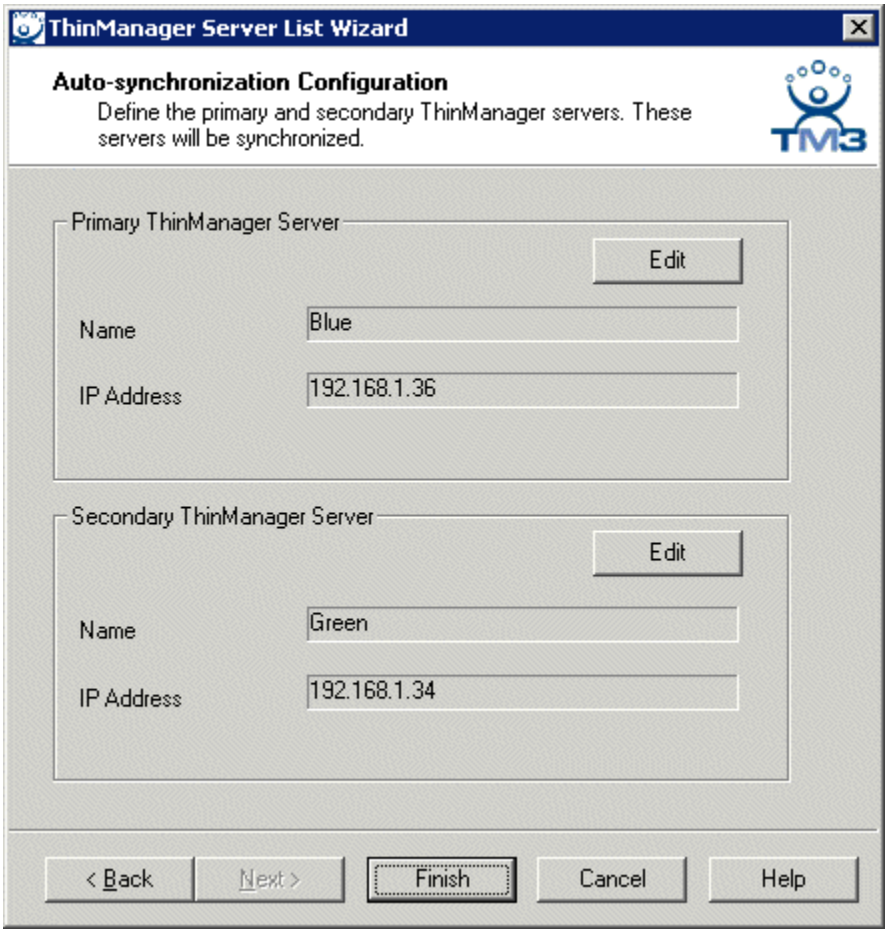
The **Auto-synchronization Configuration** window has fields for the Primary and Secondary ThinManager Servers. Select each ***Edit*** button to define the ThinManager Servers



Enter ThinManager Server Information Window

Enter the name and IP address of the ThinManager Server. The ***Discover*** button will automatically fill in the IP address of a connected ThinManager Server.

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



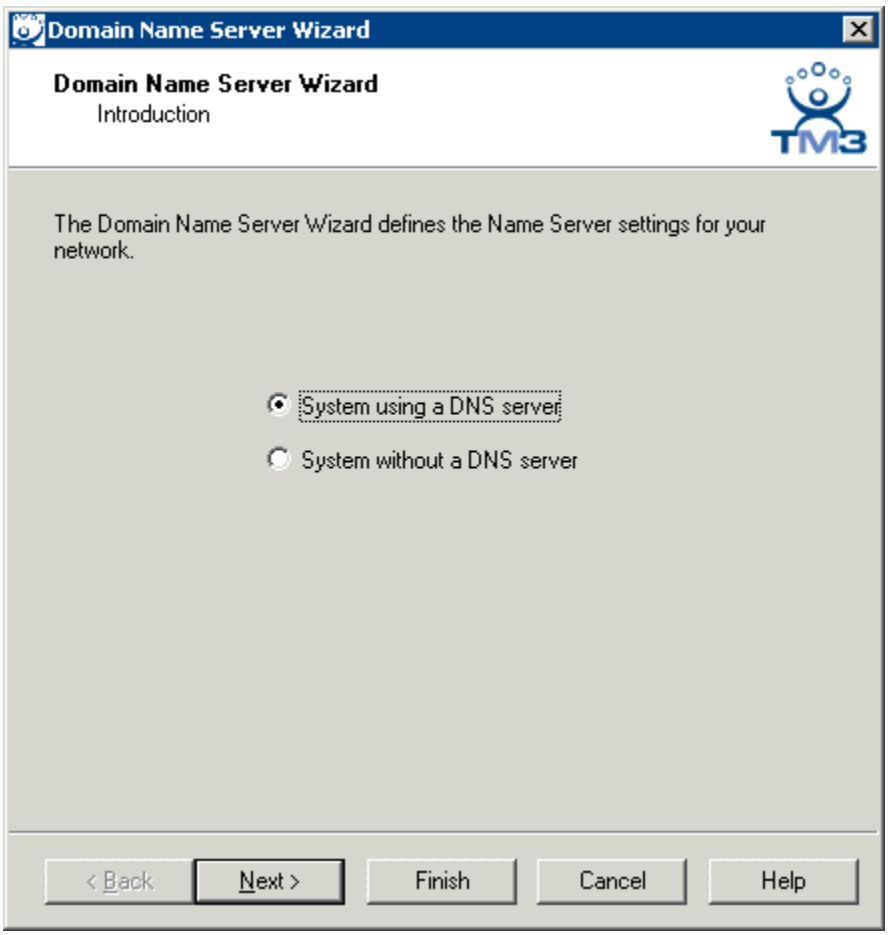
Auto-synchronization Configuration

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.

9.6. DNS Configuration

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

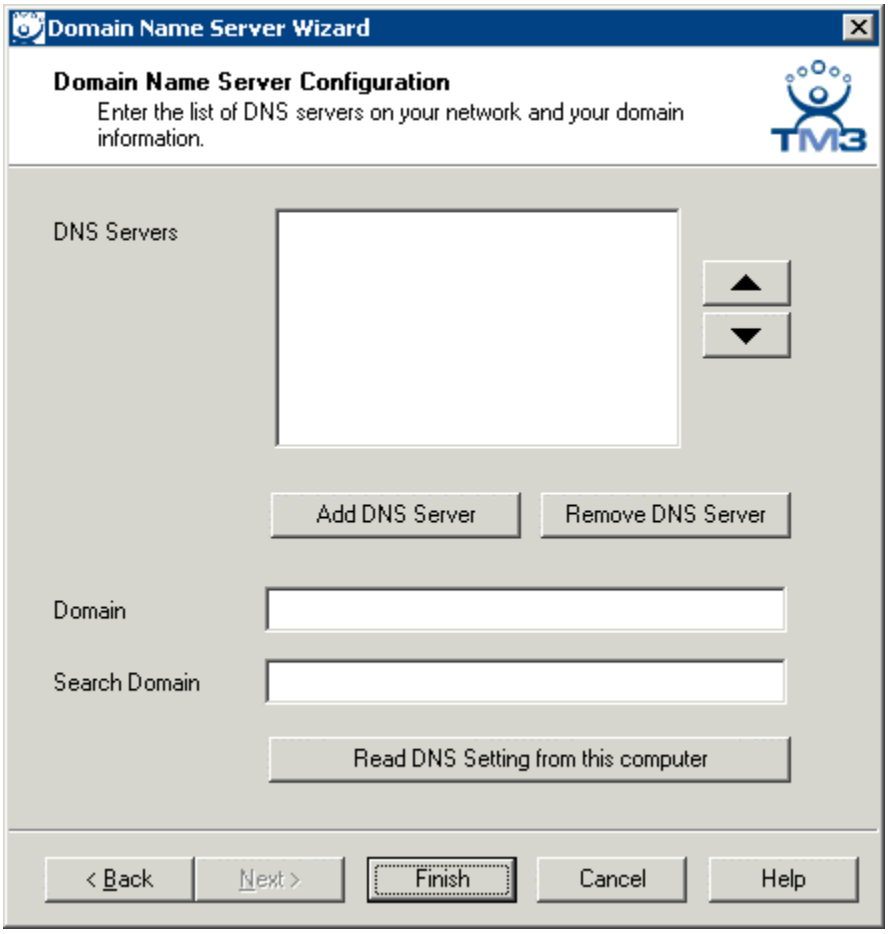


Domain Name Service Wizard - Introduction

The Domain Name Service Wizard Introduction screen will allow the use of DNS if a DNS server is being used.

- If the ***System without a DNS server*** radio button is selected, no configuration is needed. Select the ***Finish*** button to close the wizard.
- If the **System using a DNS server** radio button is selected, the ***Next*** button will launch the ***Domain Name Service Configuration*** screen.

Domain Name Server Configuration Page



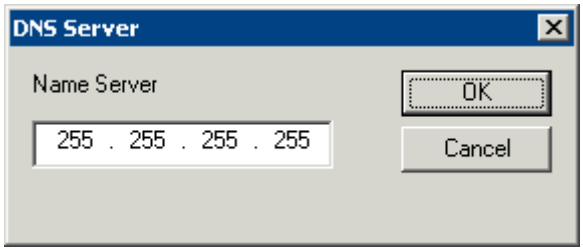
Domain Name Server Configuration

The ***Domain Name Service Configuration*** page allows DNS settings to be configured.

- The ***Add DNS Server*** **button** will launch a dialog box that allows a DNS Server to be added to the list.
- The ***Remove DNS Server*** button will remove a highlighted DNS server from the list.
- The **Up** and **Down** arrow keys will change the order of DNS servers used. Highlight a DNS server in the list and select the appropriate arrow.
- ***Domain*** is a field for the DNS domain name.
- ***Search Domain*** will add the contents of the field as a prefix to any DNS searches.
- Selecting the ***Read DNS Setting from this computer*** button will transfer the DNS settings from the current computer into ThinManager.

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.

DNS Server Entry Window



Domain Name Server Configuration - Add DNS Server

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.

9.7. 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.

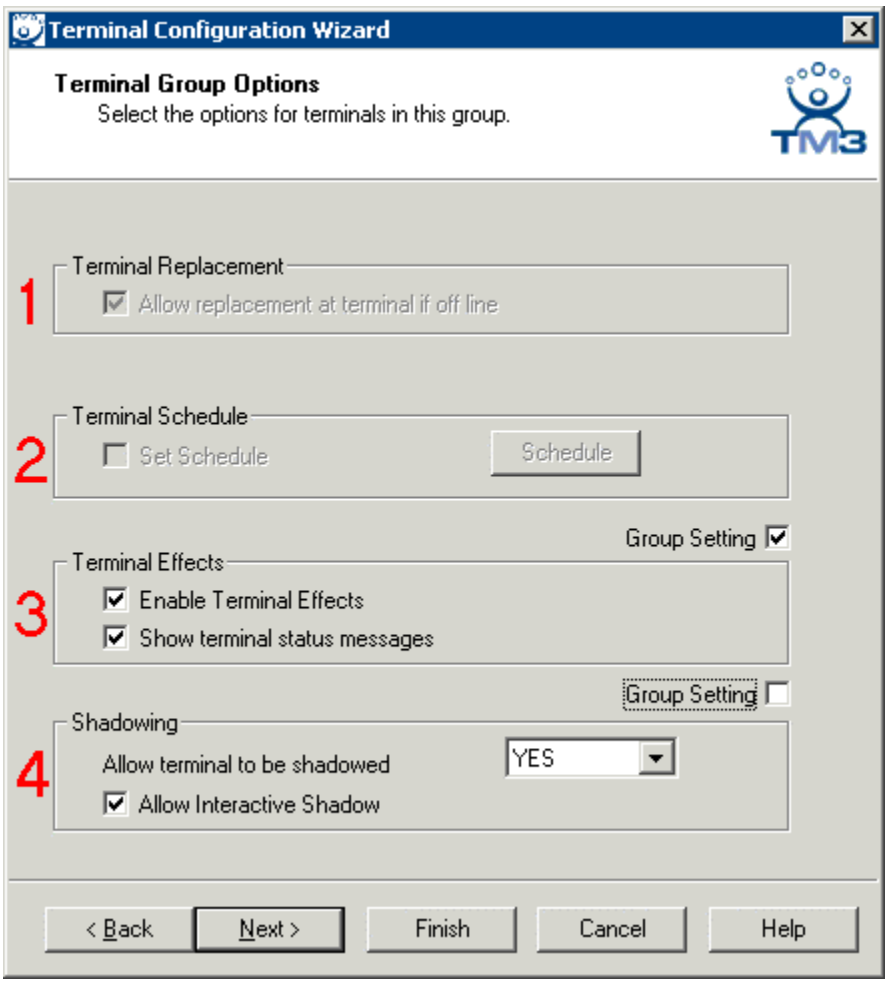
- Groups can be nested within groups, providing deeper levels of organization.
- All Group Settings use a forced inheritance because of the use of nested Groups. Once a setting has been selected as a group property, every terminal group and terminal beneath it will use that setting.
- Group Settings will be designated on the Configuration and Modules tabs with the Group icon of two blue monitors.

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.

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. This is a significant difference from ThinManager 2.X that allowed any **Group Setting** to be un-selected and individually configured for a terminal.

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.

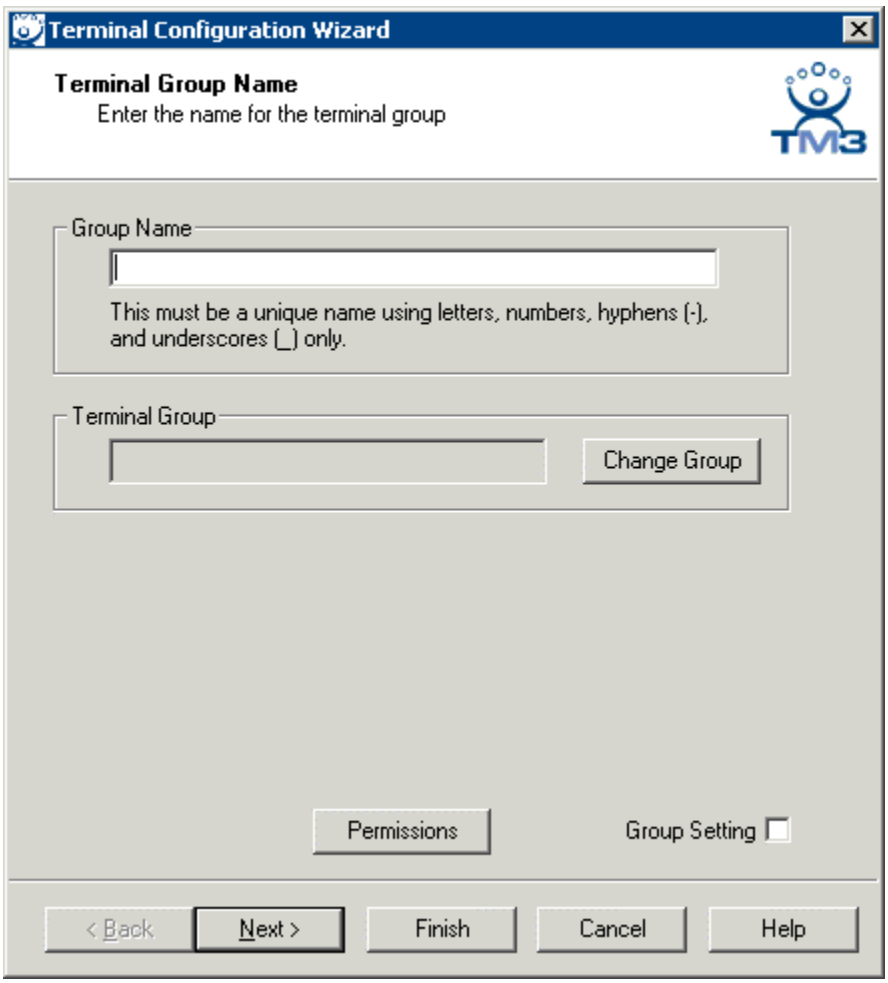
Terminal Replacement (1) and ***Terminal Schedule*** (2) were configured in the parent group and cannot be changed in this child group. ***Terminal Replacement*** (1) was set as checked, while ***Terminal Schedule*** (2) was set as unchecked.

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.

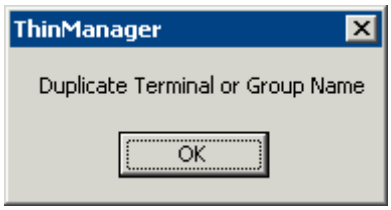
Group Name Page

The ***Group Configuration Wizard*** can be launched by selecting ***Edit > Add Terminal Group*** or by or right clicking on the Terminals branch in the tree and selecting ***Add Group***.



Group Configuration Wizard - Group Name

When a Group is first added, giving it a name is the first priority. Use numbers, letters, hyphens (-) and underscores (_), but don't use spaces or other characters.

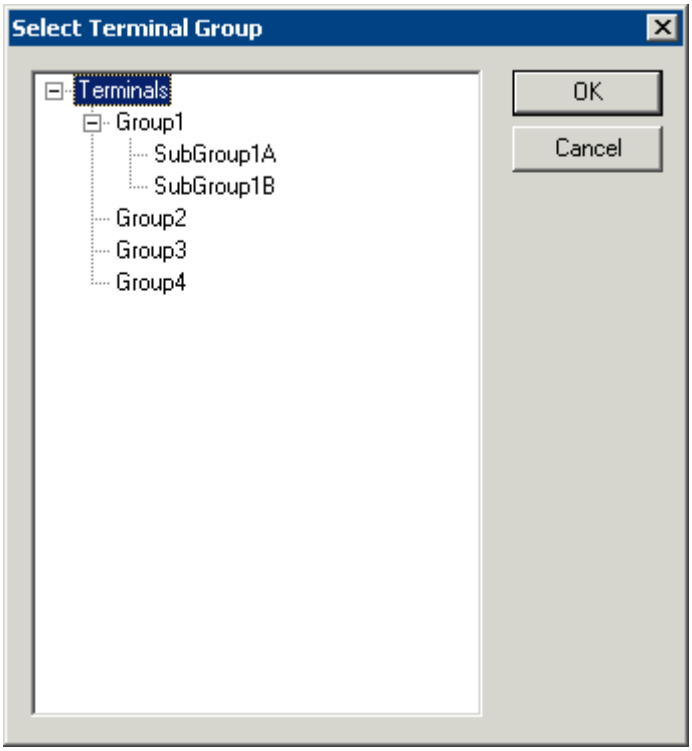


Duplicate Name Warning

If an existing name is selected, a **Duplicate Name Warning** popup will be displayed when the ***Next*** button is selected.

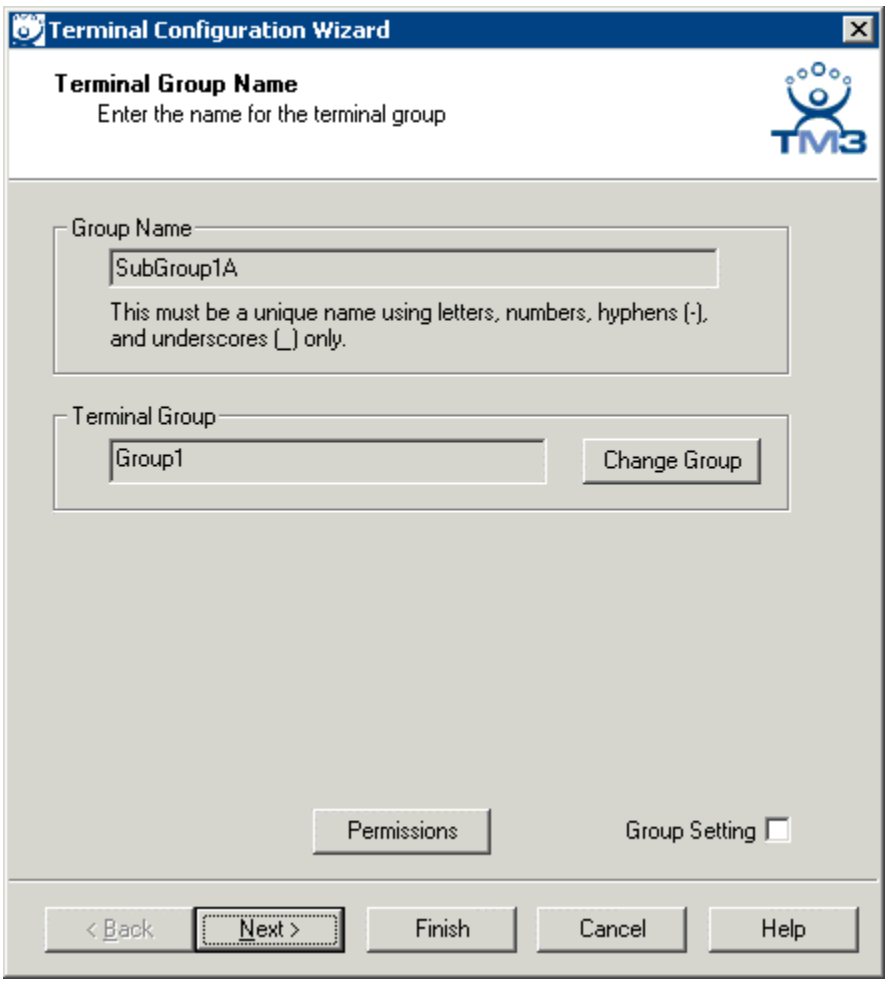
Terminal Groups can be added to Terminal Groups, creating a multi-level hierarchy.

Select the ***Change Group*** button to launch 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.



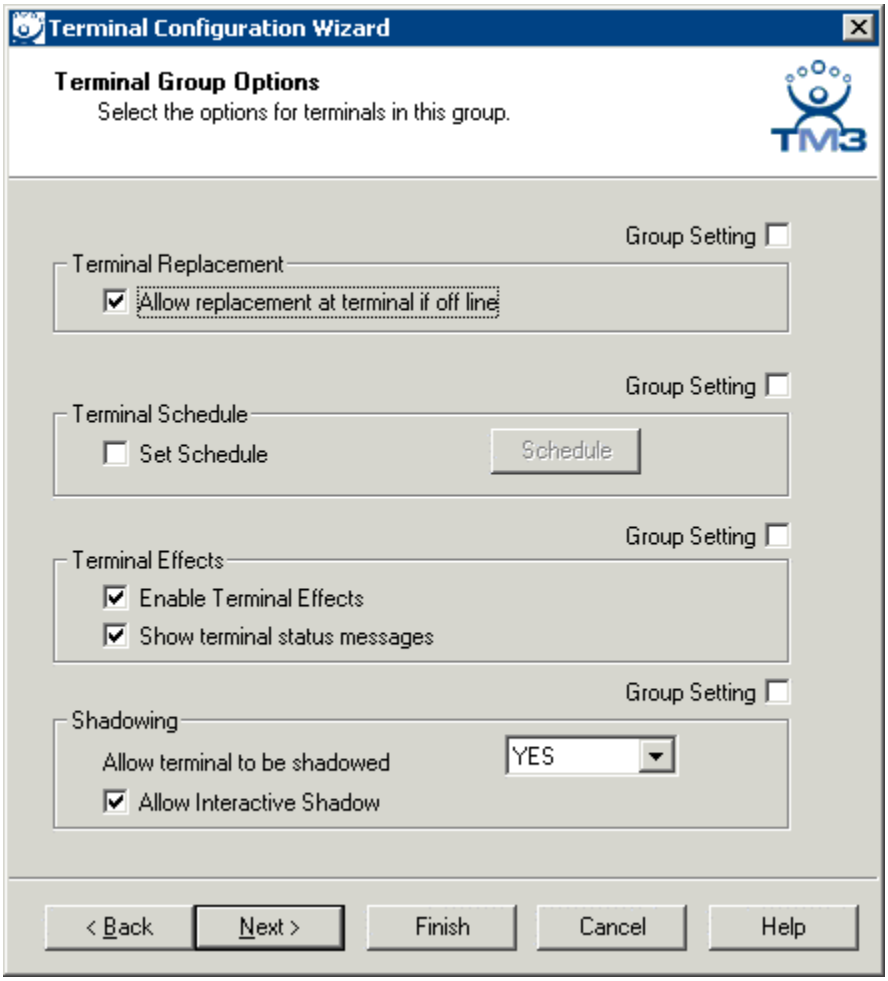
Terminal Group Configuration Wizard - Group Name Page

The parent Terminal Group you joined will be displayed in the ***Group*** field.

The ***Permission*** button allows the Terminal Group to be assigned Access Groups for security. This is a function of TermSecure. See Permissions for details.

Select the Next ***button*** to continue or select the ***Cancel*** button to close the configuration wizard without saving.

Terminal Group Options



Terminal Group Configuration Wizard - Terminal Group Options

Selecting the ***Allow replacement at terminal if offline*** checkbox will allow all members of the group to show up in the replacement list during a new terminal connection. See Replace or Create New Terminal Mode for details.

Set Schedule allows members of the group to be disabled, rebooted, or enabled on a schedule.

Select the ***Set Schedule*** checkbox and click the ***Schedule*** button to launch the **Schedule** window to configure the schedule for members of the group. See Terminal Schedule for details.

Enable Terminal Effects, when selected, will allow the desktops in MultiSession to slide smoothly into the desktop instead of appearing instantaneously.

Show terminal status messages, when selected, will allow status messages like TermSecure User logins and current Application Group to be displayed. If unselected, these status messages won't be displayed but critical messages like connection failures will still be displayed.

The ***Allow terminal to be shadowed*** drop-down box allows the configuration of Shadowing Options.

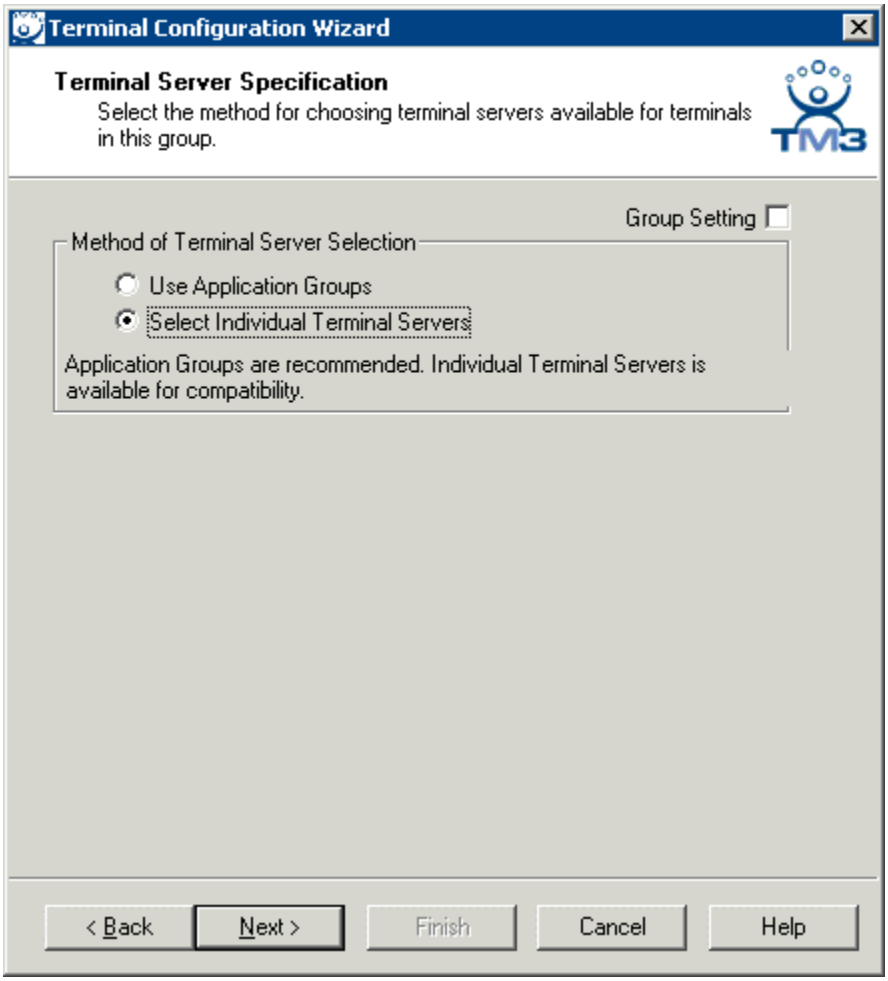
- ***No*** – Will prevent members of the Group from being shadowed.

- ***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*** – Will allow shadowing to occur without warning or recipient input.

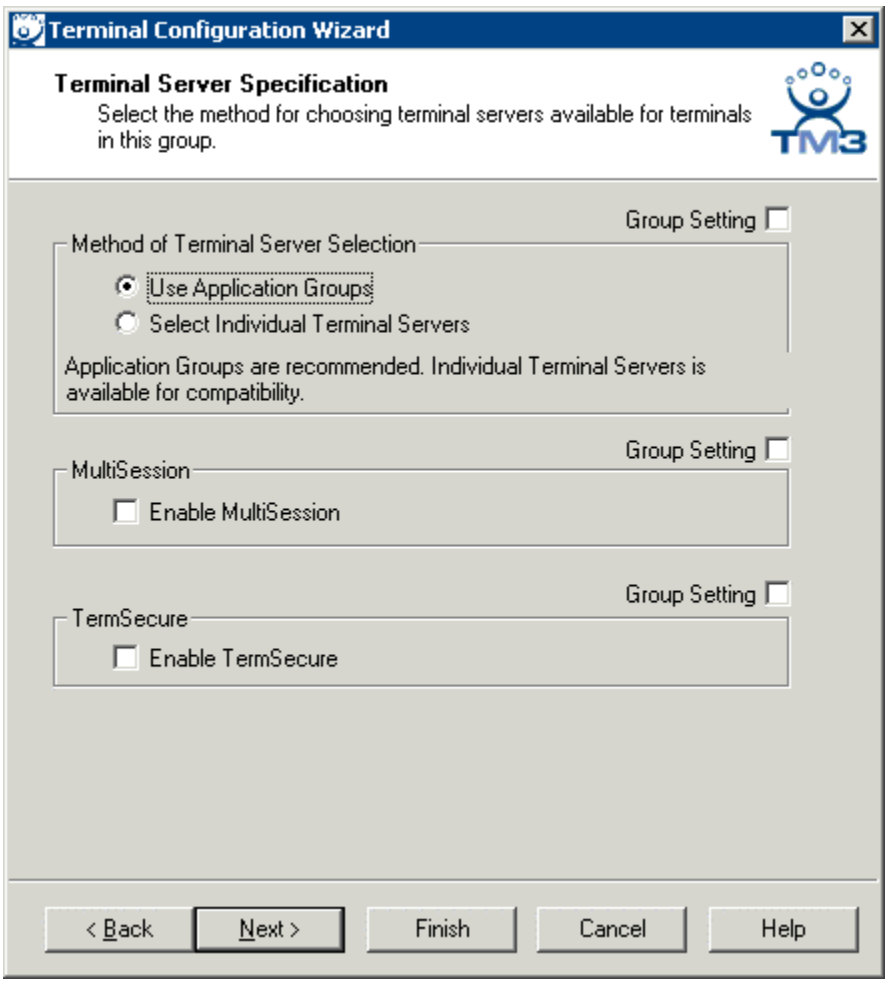
Allow Interactive Shadow will allow members with Interactive Shadow privileges to shadow members of the Group. Shadowing is initiated from the Shadow tab on the Details pane of the ThinManager program. Unselecting this will prevent shadowing from within ThinManager. See Details Pane.

The ***Group Setting*** checkboxes will lock the settings for the group and all member terminals.

Group Terminal Server Specification Page



Terminal Server Specification - Select Individual Terminal Servers



Terminal Server Specification - Use Application Groups

The ***Method of Terminal Server Selection*** radio button provides options for terminal server connections.

- ***Use Application Groups*** will allow terminals to connect to terminal servers in Application Groups for increased functionality like load balancing. See Application Groups for details.
- ***Select Individual Terminal Servers*** will allow terminals to connect to a list of terminal servers as it has been traditionally done in earlier versions of ThinManager. When this is chosen, the other options are hidden.

If the ***Use Application Groups*** is selected, two other settings become available:

- The ***Enable MultiSession*** checkbox allows the terminals in the group to use the MultiSession functionality as described in MultiSession. This is only available to Groups that use Application Groups. See MultiSession for details.
- ***Enable TermSecure***, when checked, will enable TermSecure functionality. This is covered in the TermSecure section. See TermSecure for details.

Note: ***Enable MultiMonitor*** is not available for Group Settings.

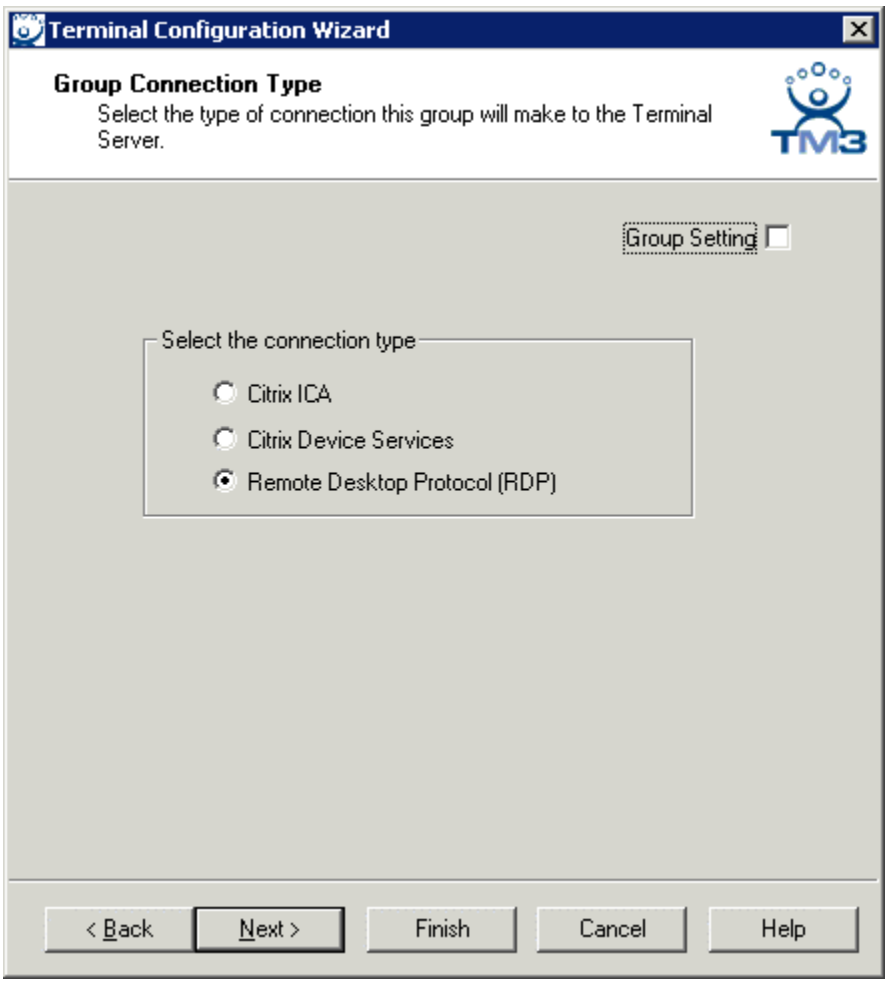
The ***Group Setting*** checkboxes will lock the settings for the group and all member terminals.

9.7.1. Groups Using Individual Terminal Servers

Groups that have the ***Select Individual Terminal Servers*** radio button selected will connect to terminal servers as assigned on the Terminal Server Specification page.

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

Group Connection Type Page



Terminal Group Configuration Wizard – Group Connection Type

Thin clients use a client communication protocol to connect to the Terminal Servers. Select the correct protocol and select the ***Next*** button.

- Select the ***Citrix ICA*** radio button if an optional third-party Citrix product is to be used to provide the ICA protocol.
- Select the ***Citrix Device Services*** radio button if Citrix Device Services is to be used to provide the ICA protocol. Citrix Device Services is a legacy deployment of ICA for Windows 2000 Terminal Servers but is no longer supported by Citrix. ThinManager

Ready thin clients can still connect to terminal servers with Device Services, but no new Device Services terminal servers can be licensed.

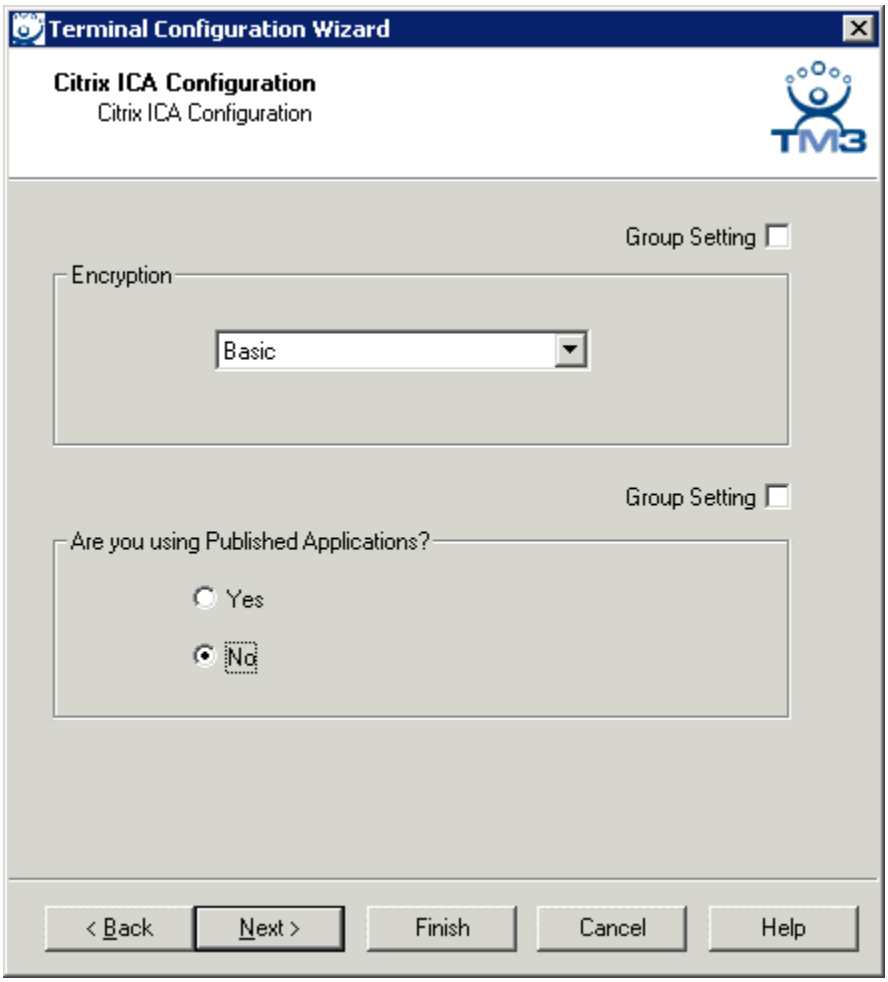
- Microsoft Remote Desktop Protocol (RDP) is installed by default on all Windows Terminal Servers. The ***Microsoft Remote Desktop Protocol (RDP)*** radio button is selected by default unless you choose another protocol.

The ***Group Setting*** checkbox will lock the settings for the group and all member terminals.

Selecting ***Citrix ICA*** offers additional configuration options before displaying the Terminal Server Selection. Selecting ***Citrix ICA with Device Services*** and ***Remote Desktop Protocol (RDP)*** will jump to the Terminal Server Selection.

A Group using Citrix ICA as its Client Communication Protocol will be shown additional configuration screens beginning with the **Citrix ICA Configuration** page.

Group Citrix ICA Configuration Page



Terminal Group Configuration Wizard - Citrix ICA Configuration

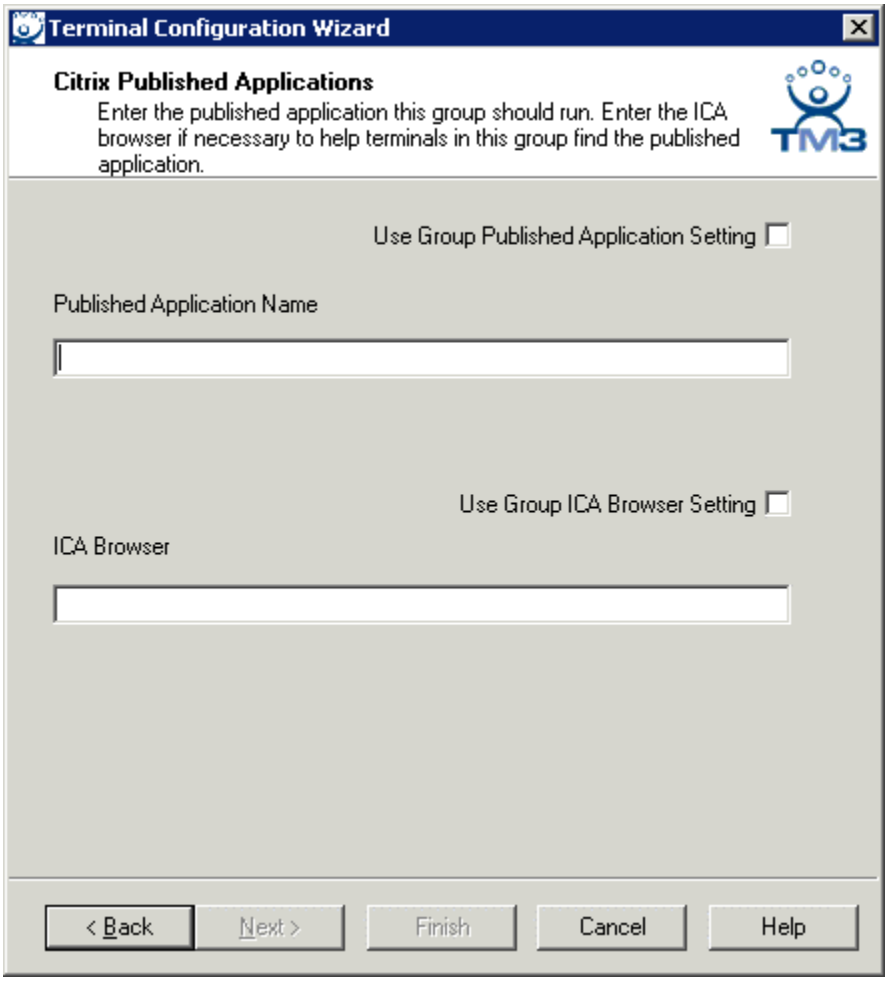
the ***Encryption*** drop-down box allows the selection of the Citrix encryption level.

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.

The ***Group Setting*** checkboxes will lock the settings for the group and all member terminals.

If you are not using Published Applications, select the ***No*** radio button, then select the ***Next*** button to continue to the Terminal Server Selection dialog.

Group Citrix Published Applications Page



Terminal Group Configuration Wizard - Citrix Published Applications

Enter the name of the desired Published Applications in the ***Published Application Name*** field. Do not use spaces in the name when creating a Published Application for Terminal Services.

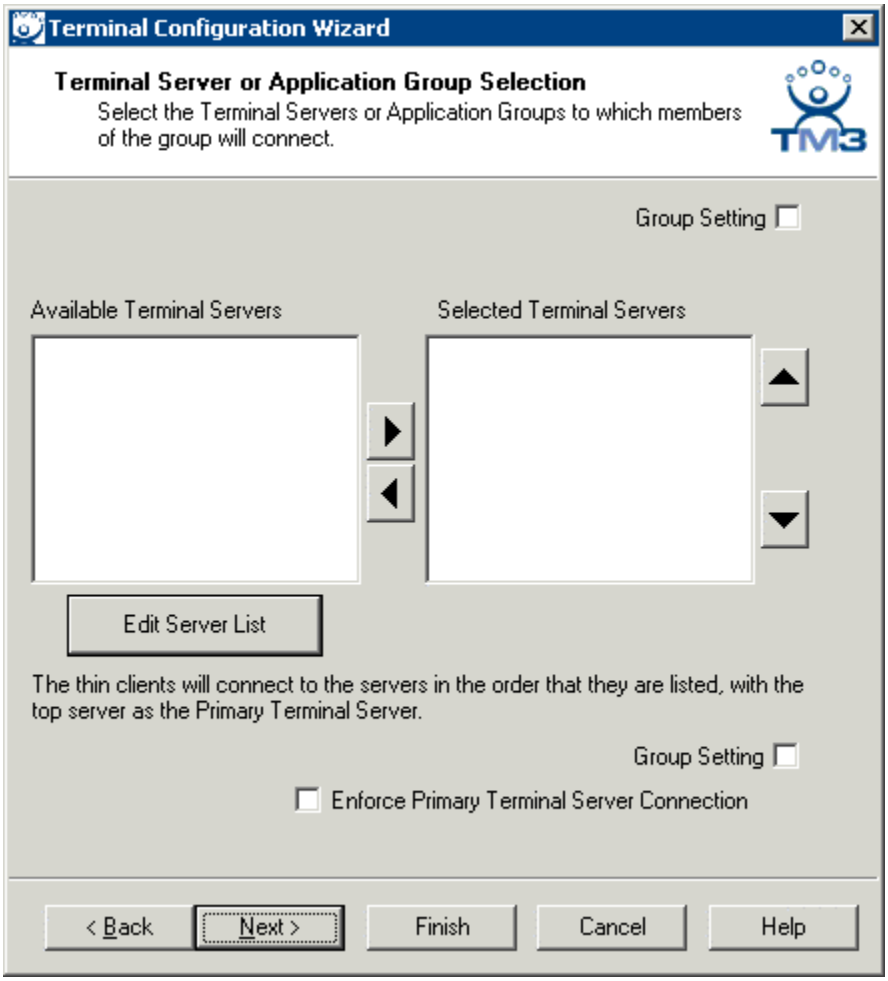
Citrix uses ICA Browsers as part of the system. Because the ICA client may have problems detecting an ICA browser across a router or switch, an ***ICA Browser*** field is provided for entering the name of an ICA browser.

The ***Group Setting*** checkboxes will lock the settings for the group and all member terminals.

Select the ***Finish*** button to create the Group, or select the ***Next*** button to rejoin the main configuration path to configure more options.

Group Terminal Server Selection Page

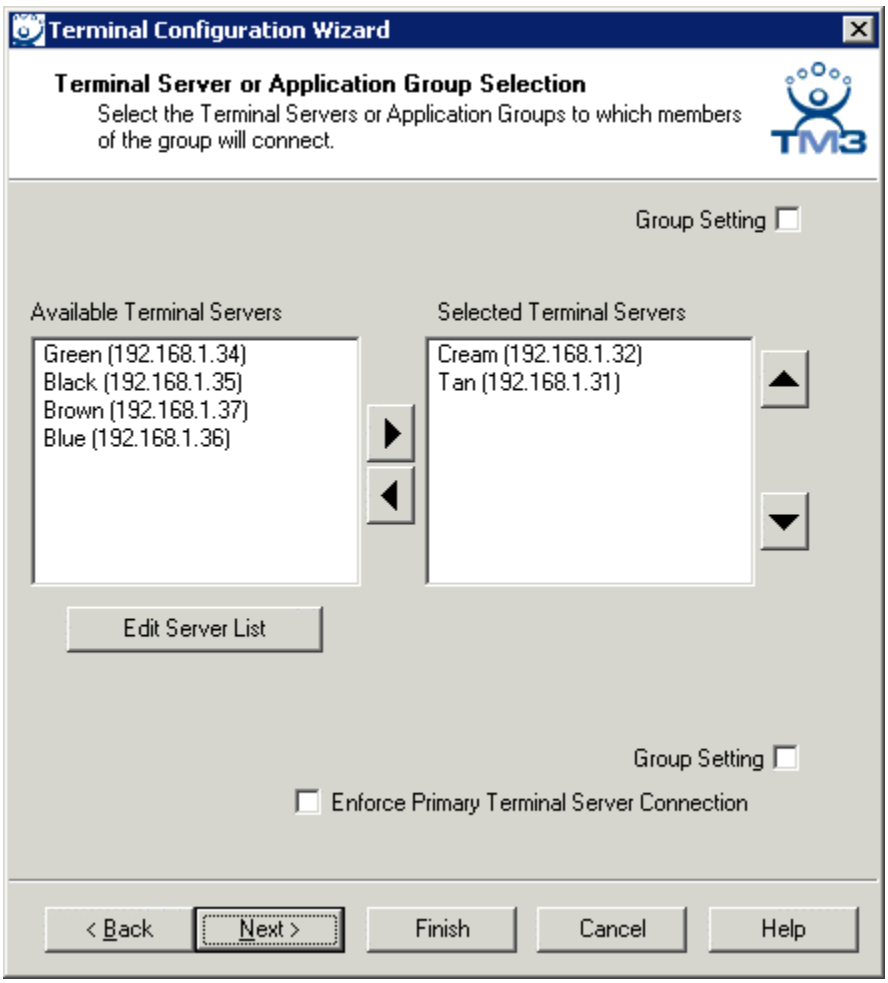
Groups using the ***Select Individual Terminal Servers*** will be shown the Group Terminal Server Selection page where the desired terminal servers can be selected.



Terminal Group Configuration Wizard - Group Terminal Server Selection

If Published Applications or Application Groups are not being used the terminal will need to be assigned to a Terminal Server. The Terminal Server is a server that allows a terminal to logon and run applications in an independent session.

If the ***Available Terminal Server*** column is empty, the **Terminal Server List Wizard** needs to be run to add terminal servers to ThinManager. Select the ***Edit Server List*** button to launch the Terminal Server List Wizard as shown in the Terminal Server List Wizard.



Terminal Group Configuration Wizard - Terminal Server Selection

Once the **Terminal Server List** wizard has run, each Terminal Server that is identified in the Terminal Server List Wizard will initially appear in the ***Available Terminal Servers*** box on the left of the Group Terminal Server Selection.

To choose a terminal server for the Group, highlight it in the list on the left and click the ***Right*** arrow button or double click on it. This will put the Terminal Server into the ***Selected Terminal Servers*** list on the right. The Group will use all the ***Selected Terminal Servers*** as Terminal Servers, in the order listed.

The Terminal Server on the top of the Selected Terminal Server List will be the **Primary Terminal Server**, the first Terminal Server that the terminal will attempt to login to. If the Primary Terminal Server fails, or is unavailable, the terminal will connect to the other terminal servers in the order that they are listed.

To change the order of the Terminal Servers in the Terminal Server Selection list, highlight a Terminal Server and use the ***Up*** arrow button and the ***Down*** arrow button to move it up or down in the list.

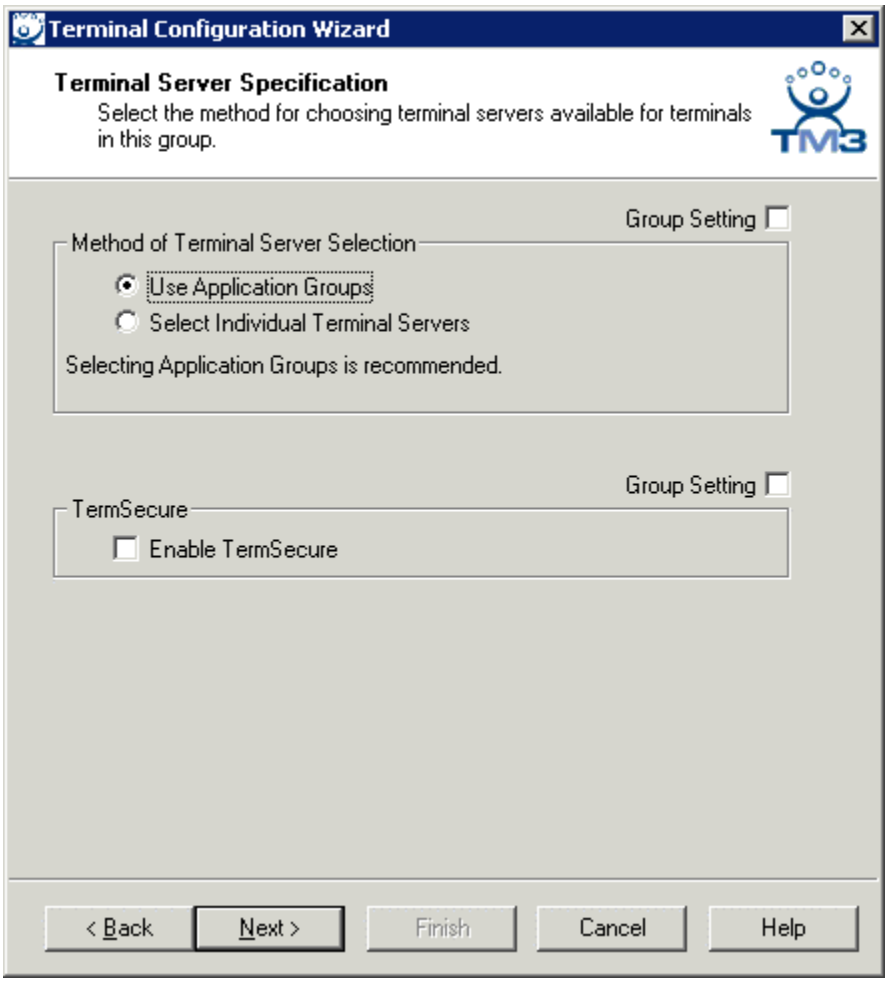
The ***Enforce Primary Terminal Server Connection*** will cause a terminal to return to the primary terminal server whenever that server is available.

The ***Group Setting*** checkbox will lock the settings for the group and all member terminals.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

9.7.2. Groups Using Application Groups

Members of a Group may connect to Application Groups by selecting the ***Use Application Groups*** on the Terminal Server Specification page instead of using the ***Select Individual Terminal Servers*** setting.



Terminal Group Configuration Wizard - Terminal Server Specification

If the ***Use Application Groups*** 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.

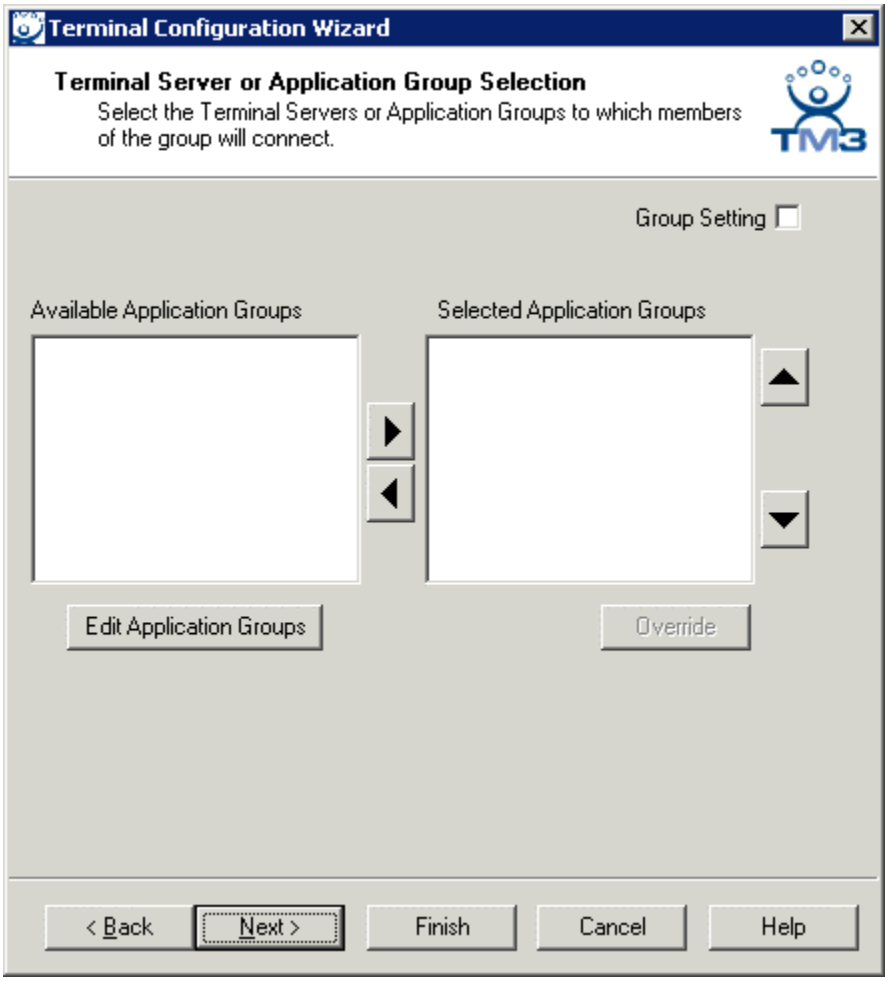
Note: ***Enable MultiMonitor*** is not available for Group Settings.

The ***Group Setting*** checkboxes will lock the settings for the group and all member terminals.

Select ***Next*** to continue configuration.

The ***Group Terminal Server or Application Group Selection*** page is displayed next to allow the selection of the desired Application Groups.

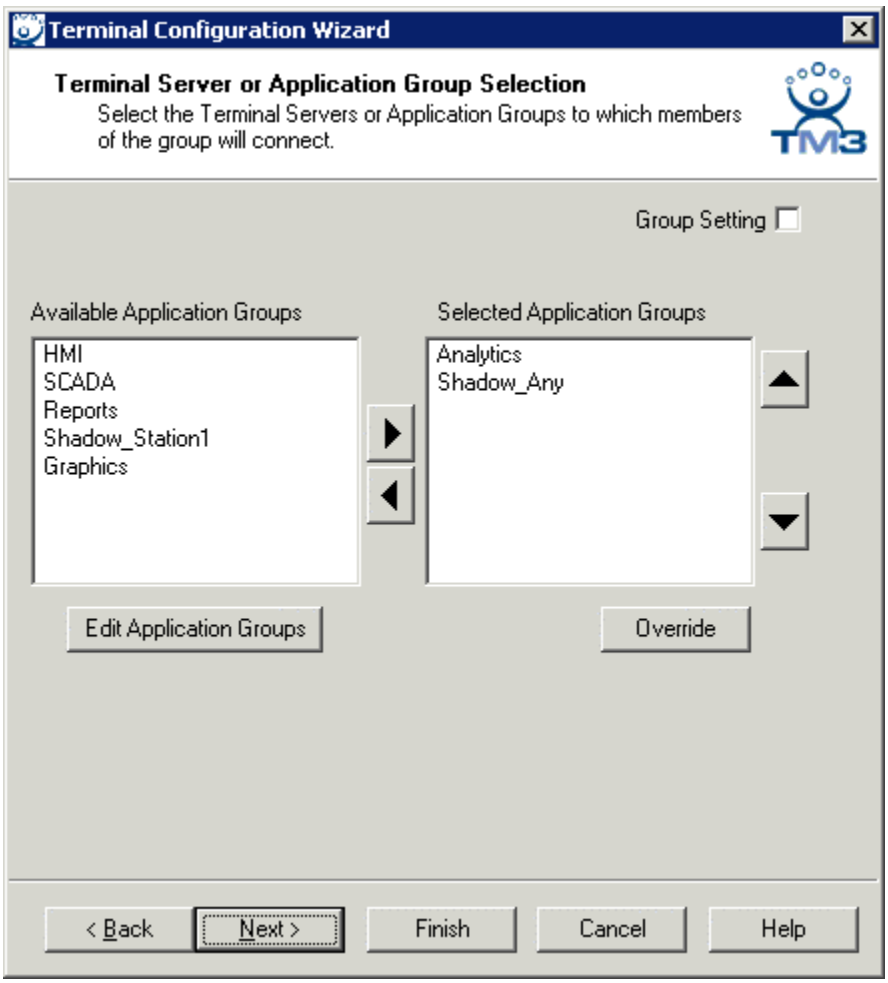
Group Application Group Selection Page



Terminal Group Configuration Wizard - Group Terminal Server or Application Group Selection

The Group will need to connect to Application Groups that contain terminal servers that will host the sessions.

If the **Available Application Groups** column is empty, the **Application Groups List** wizard needs to be run to configure Application Groups. Select the ***Edit Application Groups*** button to launch the **Application Group Wizard** as shown in Application Group List.



Terminal Group Configuration Wizard - Group Terminal Server or Application Group Selection

Once the ***Application Group*** wizard has run, each Application Group that is identified in the Application Group Wizard will initially appear in the ***Available Application Groups*** box on the left of the **Group Terminal Server Selection** page.

Note: The Available Application Groups will only list Application Groups that are appropriate. Only RDP Application Groups will be shown if the Group is using RDP. If the ***Enable MultiSession*** checkbox was selected on the **Terminal Server Specification** page, only Application Groups with MultiSession capabilities are shown in the ***Available Application Groups*** list. .

To select an Application Group for a Group, highlight it in the list on the left and click the right arrow button or double click on it. This will put the Application Group into the ***Selected Application Group*** list on the right. The Group will use the ***Selected Application Groups*** for the terminal servers that it can login to.

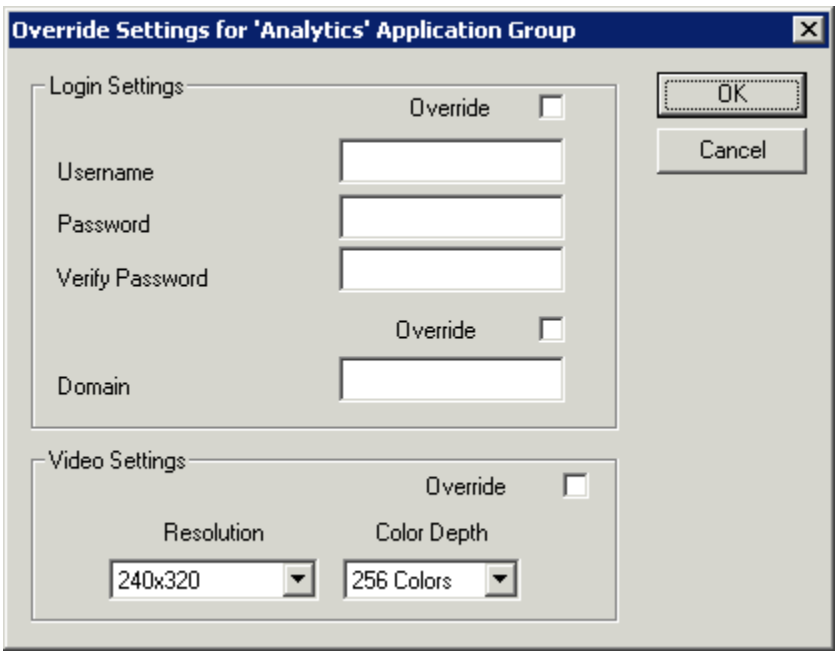
Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

Application Group Override

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

No Application Group Selected Dialog

If the ***Override*** button is selected without an Application Group highlighted then an error message will be displayed telling the user to select an Application Group.



Override Settings Window

The **Login Settings** allow the Application Group to login with a different Windows account than the terminal uses.

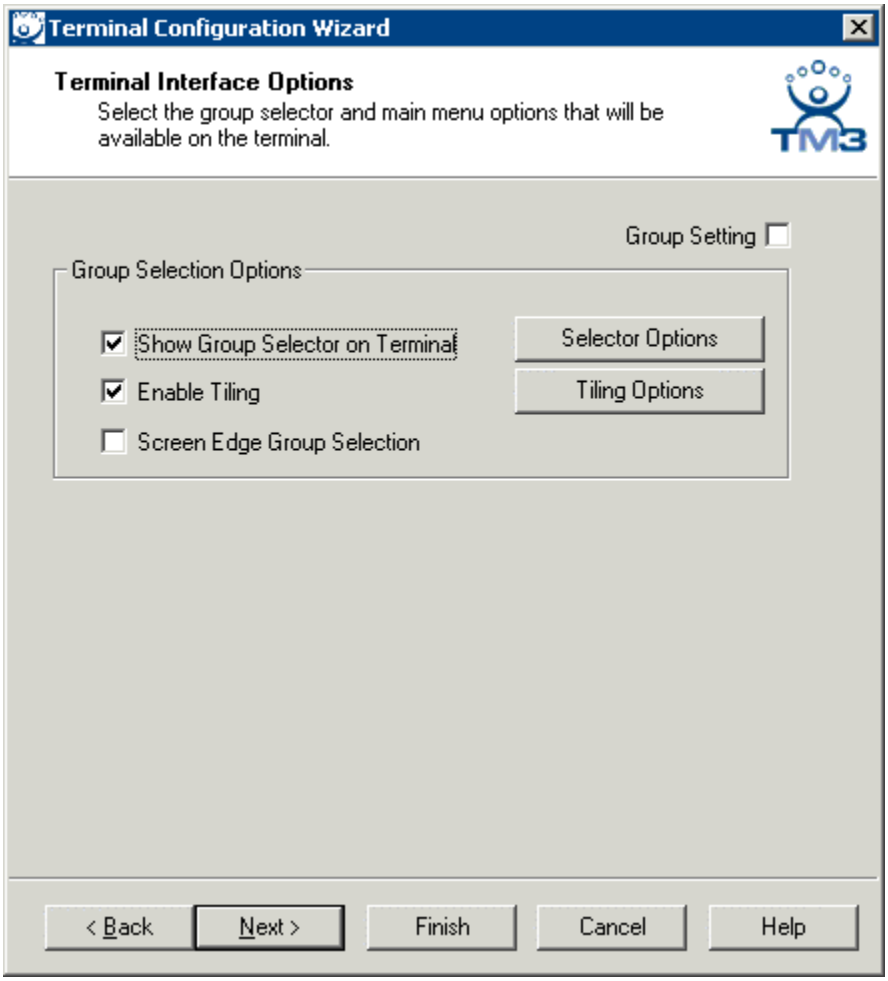
Select the Username, Password, and domain, if needed, and select the ***Override*** checkbox.

Note: The ***Override*** checkbox needs to be checked to enforce the override. This allows the use of blank ***Username/Password*** field to require a manual login.

The **Video Settings** can also be overridden with the ***Override*** checkbox. This is useful when a desired application has different resolution than the terminal.

Select ***OK*** to accept changes and select ***Cancel*** to close without changing.

Group Terminal Interface Options Page



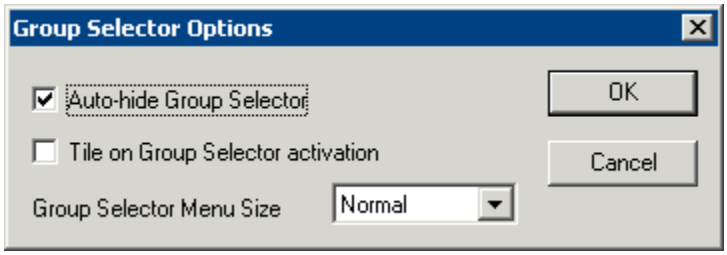
Terminal Group Configuration Wizard - Client Interface Options

Terminals in a Group using MultiSession will need to have a method to switch between sessions. This is configured on the **Group 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 application groups to be tiled on the monitor to provide an overview of all the sessions at once. See Group Selection with SessionTiling 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.



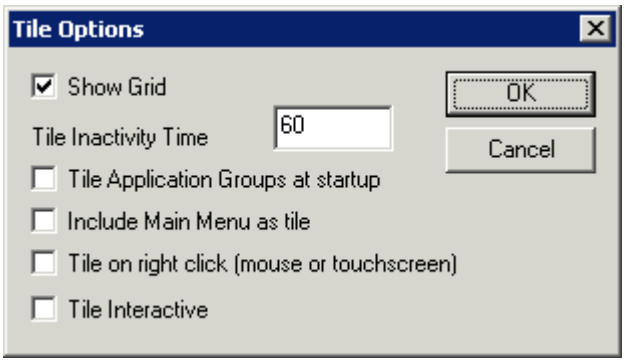
Group Selector Options Window

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*** checkbox, when selected, will tile the Application Groups 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.

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.

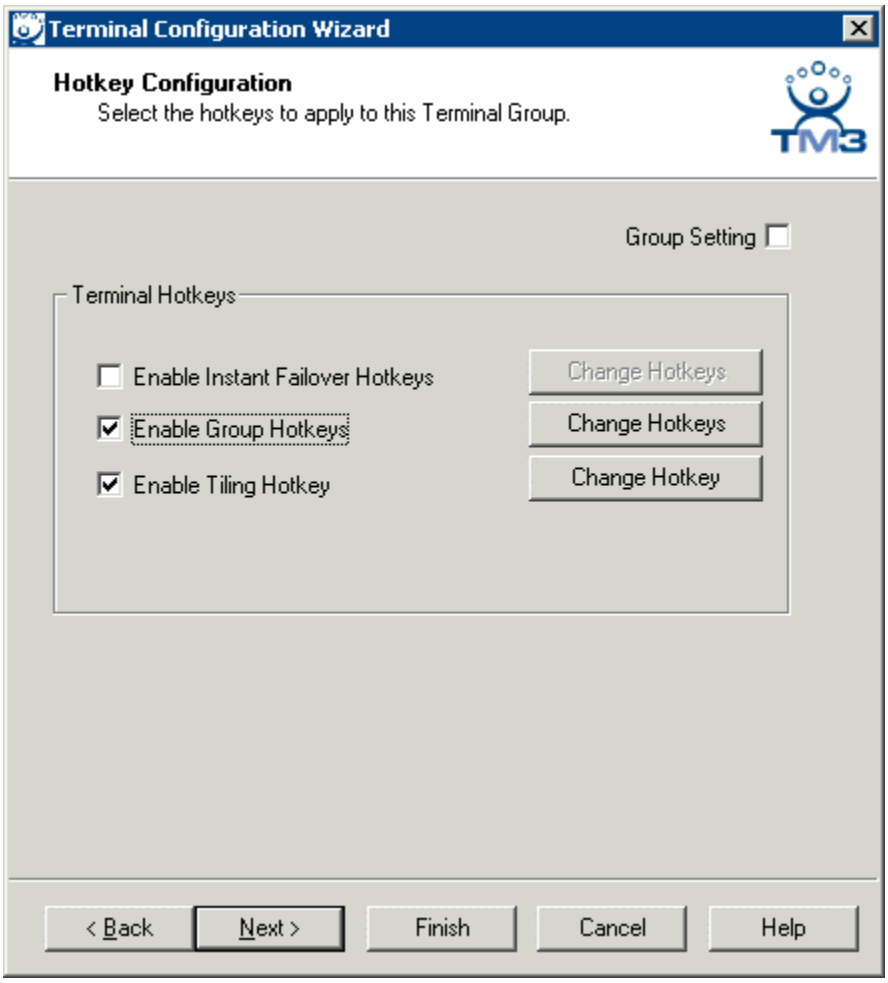
- ***Show Grid*** – This checkbox, when selected, will show the tiled sessions in a grid with each grid labeled with the session name as while the session is loading.
- ***Tile Inactivity Time*** – This field sets the length of time that the terminal screen will stay focused on a selected session before reverting back to a tiled state due to inactivity.
- ***Tile Application Groups 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 to allow the manual login to a TermSecure session.
- ***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 ***Group Hotkey Configuration*** page is displayed next to allow the selection of the desired hotkeys.

Hotkey Configuration Page



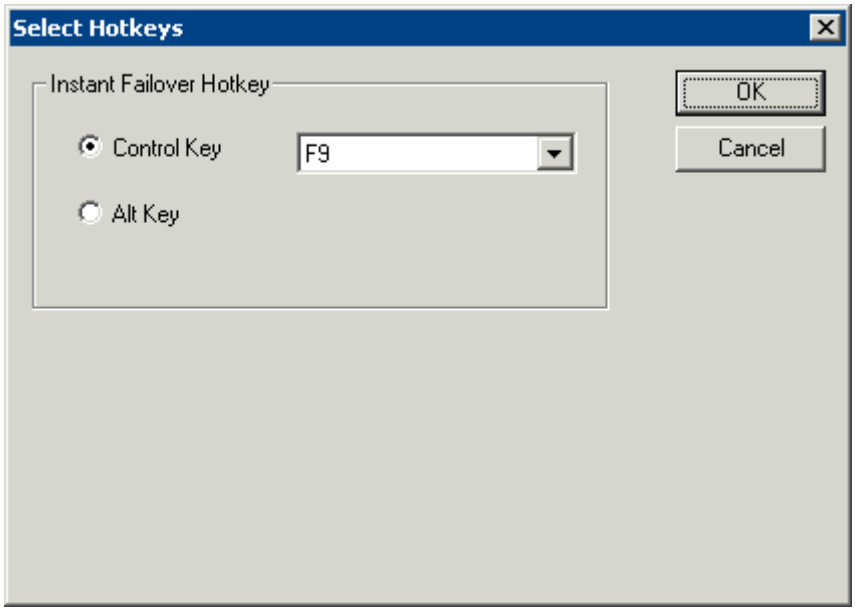
Hotkey Configuration Page

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 an Application Group 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.

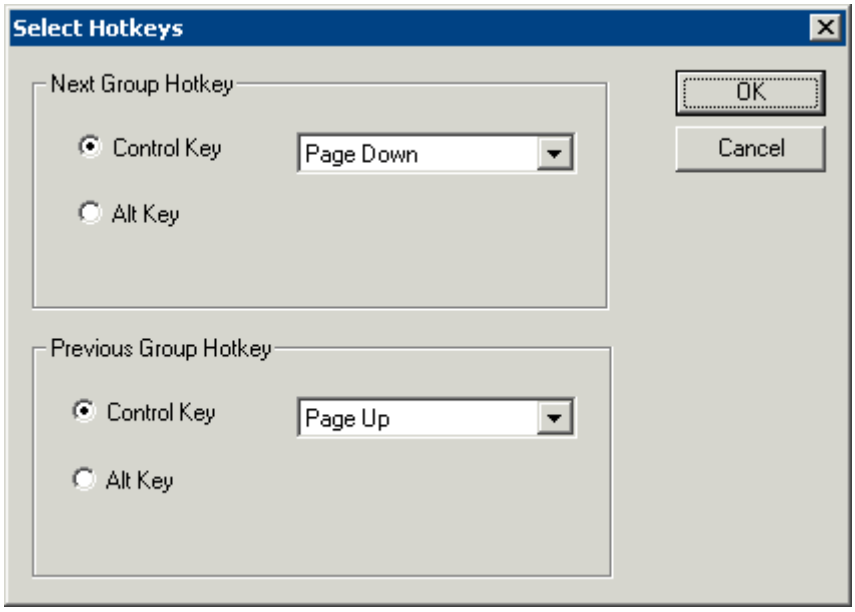
Selecting the ***Change Hotkeys*** button when ***Enable Instant Failover Hotkeys*** is selected will allow the hotkeys to be changed from the default.



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.

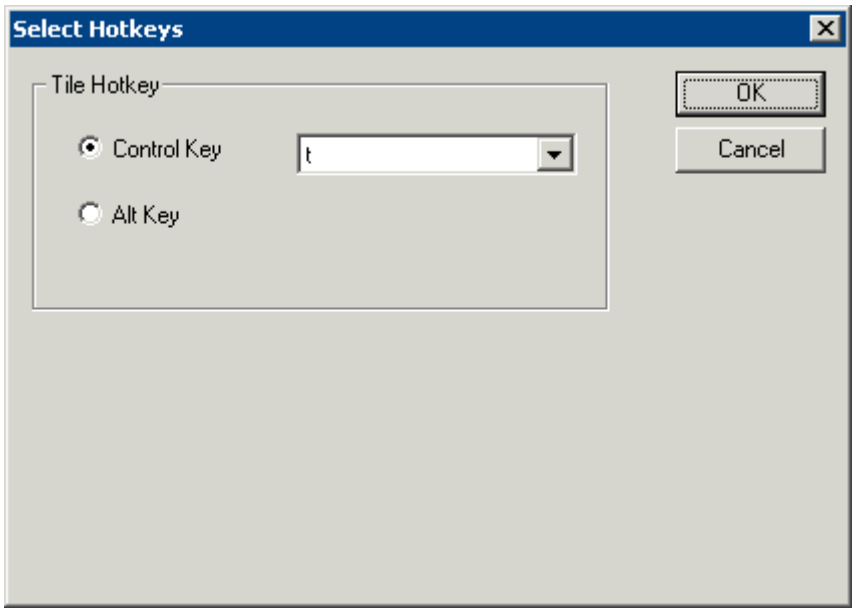
Selecting the ***Change Hotkeys*** button when ***Enable Group Hotkeys*** is selected will allow the MultiSession switching hotkeys to be changed from the default.



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.

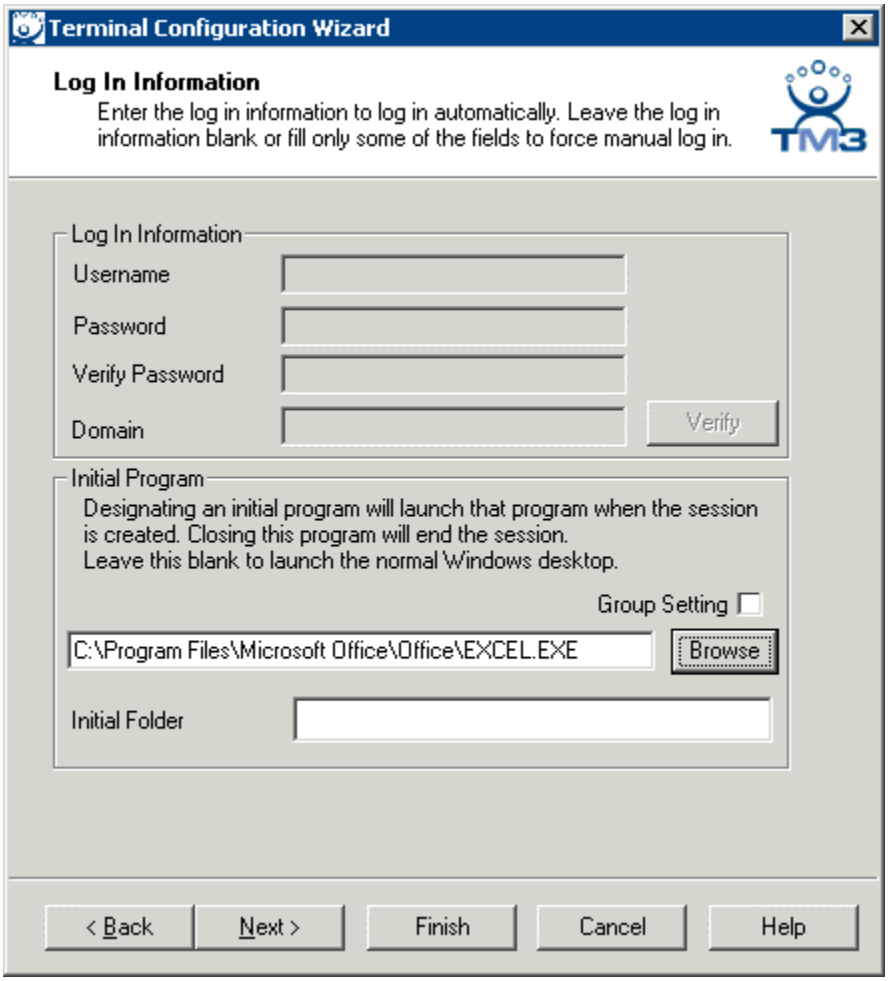
Select the ***OK* button** to continue or the ***Cancel*** button to close without accepting changes.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

9.7.3. Continuation of the Group Configuration

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

Group Login Information Page



Login Information - Select Individual Terminal Servers

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.

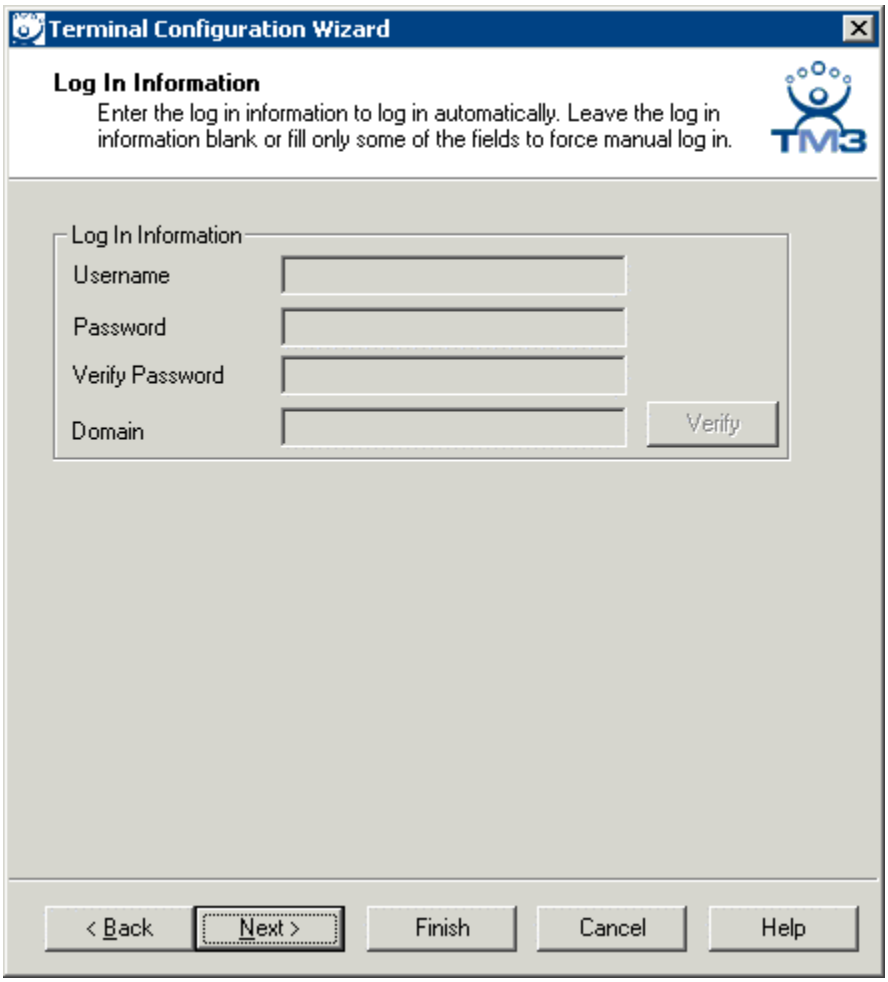
The ***Initial Program*** is a setting available to Groups using Individual Terminal Servers. The ***Initial Program*** loads the designated program instead of the Windows desktop when the terminal connects to the Terminal Server. If a program is launched as the initial program, it is the only program that will run. This provides a level of security and control because that program is the only program that will run in that session. If the Initial Program is closed on the terminal, the session on the Terminal Server will close and the ThinManager Ready Thin Client will reconnect to the Terminal Server and re-launch the Initial Program. This effectively makes the Initial Program the only program. See Login Information Page for details.

- ***Initial Program*** - Enter the path of the program that you want to start when the user logs on to the terminal server. Following the path and file name.
- ***Initial Folder*** - This field is provided in case you need to specify the working directory for the user. This field is new to ThinManager 3.2 and may not be required.

To use the Initial Program, enter the path to the program in the ***Initial Program*** field. The ***Browse*** button will open a file browser to allow program selection.

Note: When using the Initial Program with failover, the path must be identical on all terminal servers. If the path is different, use a batch file to launch the application.

The ***Group Setting*** checkbox will lock the settings for the group and all member terminals.

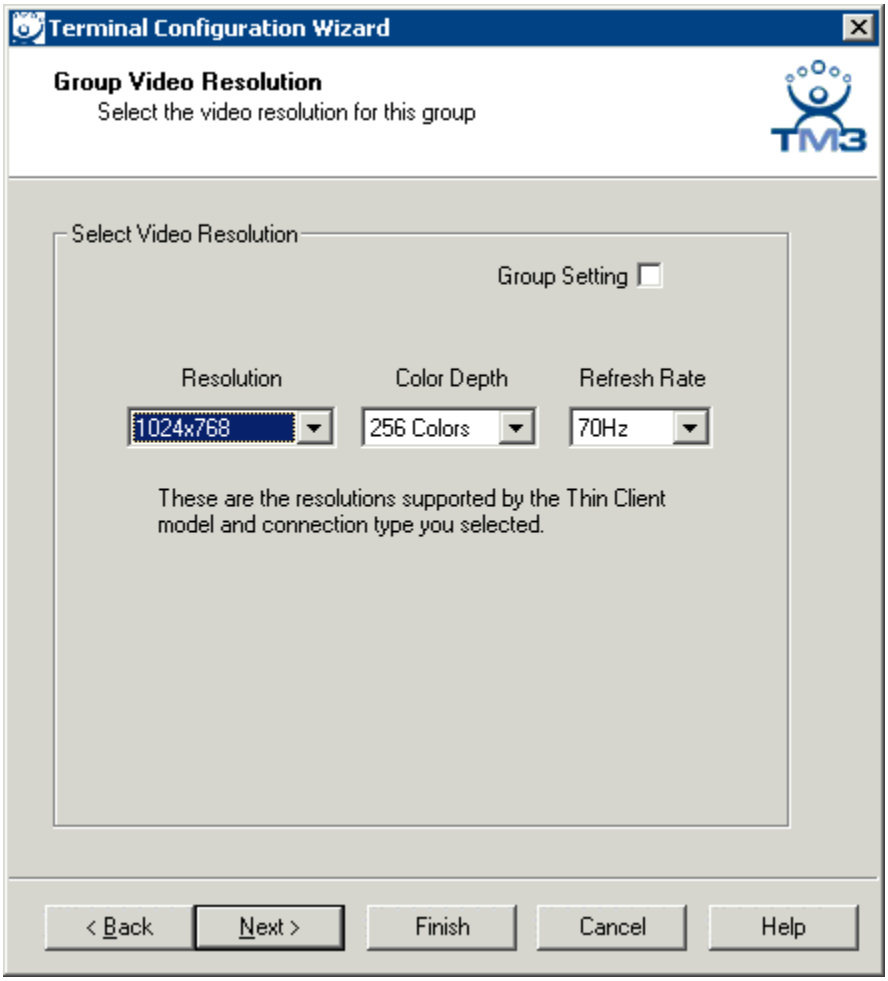


Login Information - Use Application Groups

Terminal Groups using Application Groups do not display the Initial Program field. AppLink instead provides the Initial Program function. See AppLink for details.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

Group Video Resolution Page



Group Configuration Wizard - Video Configuration

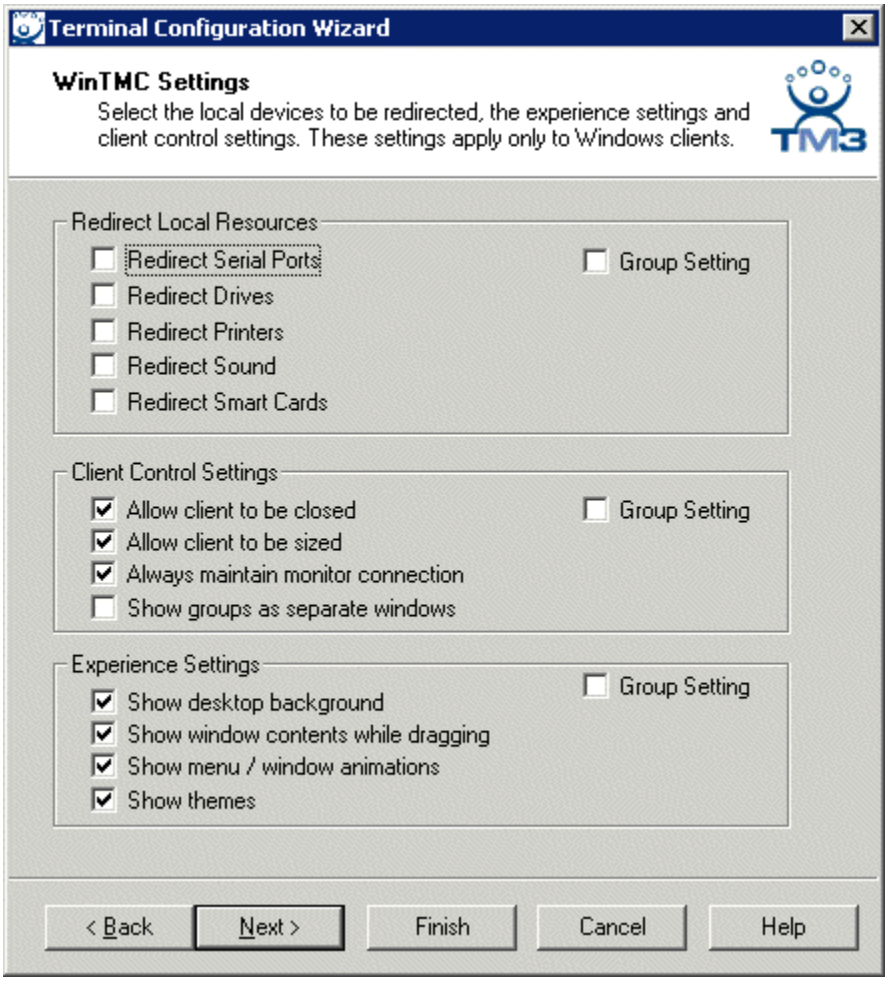
The **Group Video Resolution** page has a drop-down box that allows the video resolution to be set for all members of the Group.

The standard terminal connection uses a 256-color depth. The 64K-color depth is available by using RDP connected to a Windows 2003 Terminal Server, or by using the ICA client with Citrix MetaFrame 1.8 FR1 or greater.

The ***Group Setting*** checkbox will lock the settings for the group and all member terminals.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

Group WinTMC Settings



Group WinTMC Settings Page

WinTMC clients can be configured on the Group WinTMC Settings page. These only apply to connections made by the WinTMC fat client. See WinTMC Fat Client for details about the WinTMC client.

The settings include:

Redirect Local Resources:

- **Redirect Serial Ports** – Enable this setting to make the local PC serial ports available in the WinTMC 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 the local drives of the PC available in the 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 a local printer available in the 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 PC 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 Application Groups as separate windows rather than in one window shell.

Experience Settings:

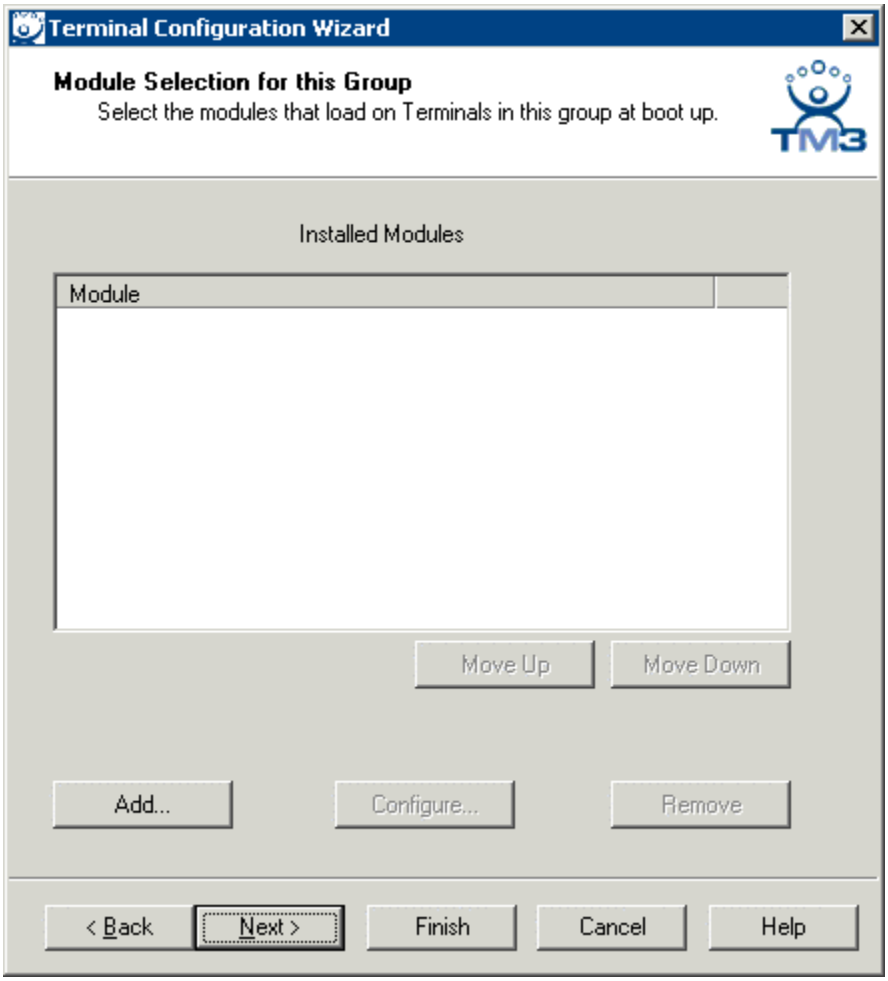
- **Show Desktop Background** – Enable this setting if you want your user to be able to select a Windows Desktop Background instead of a default solid color background.
- **Show window contents while dragging** – Enable this setting if you want the window contents of a window to be shown while the window is being dragged within the session.
- **Show menu/window animations** – Enable this setting if you want menu/window animations to be enabled in the session.
- **Show Themes** – Enable this setting if you want your user to be able to select a Windows Theme for the session.

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.

The ***Group Setting*** checkbox will lock the settings for the group and all member terminals.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

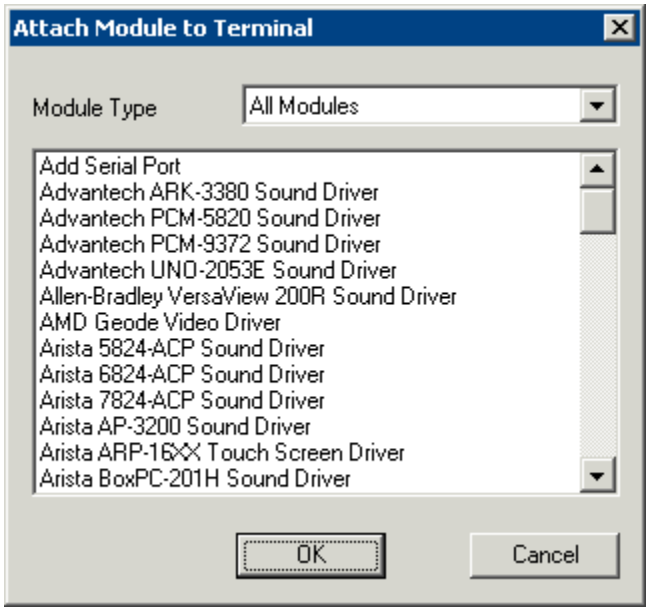
Group Module Selection Page



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.

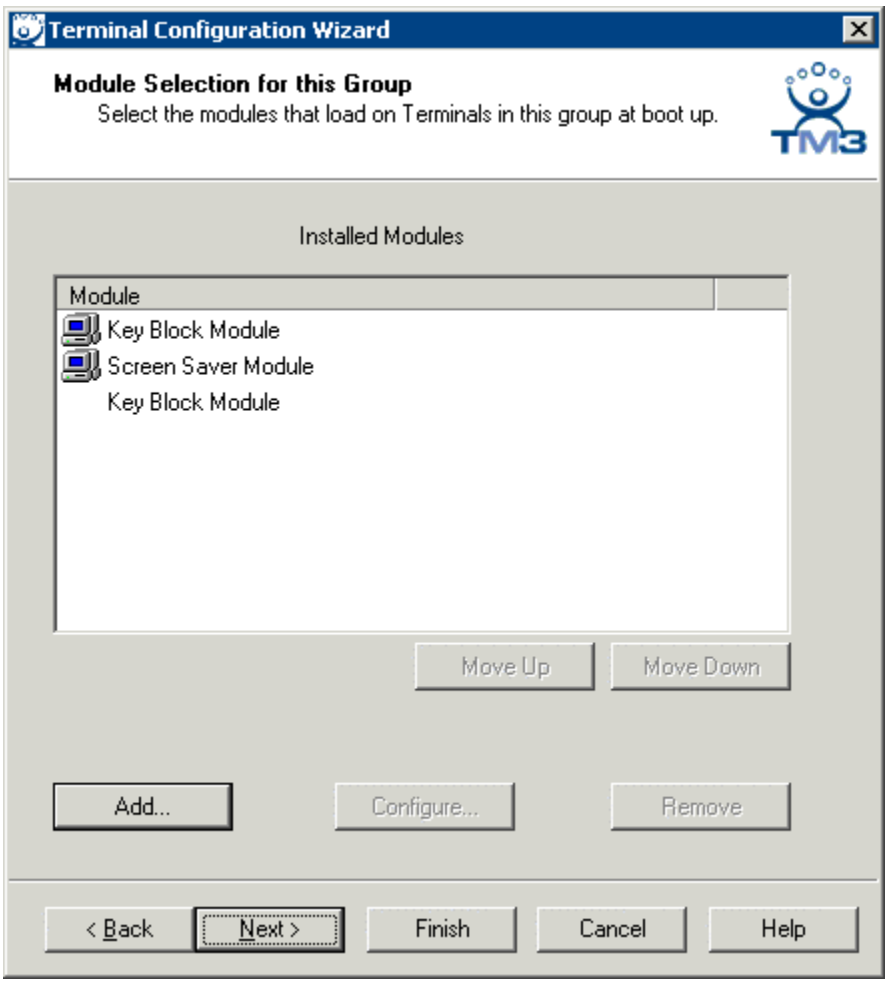
To add a Module to a Terminal Group, select the ***Add...*** button to launch the **Attach Module to Terminal** window.



Attach Module to Terminal

The **Attach Module to Terminal** window will show the modules that are available. The ***Module Type*** drop-down box sorts the modules by categories to make the modules easier to find.

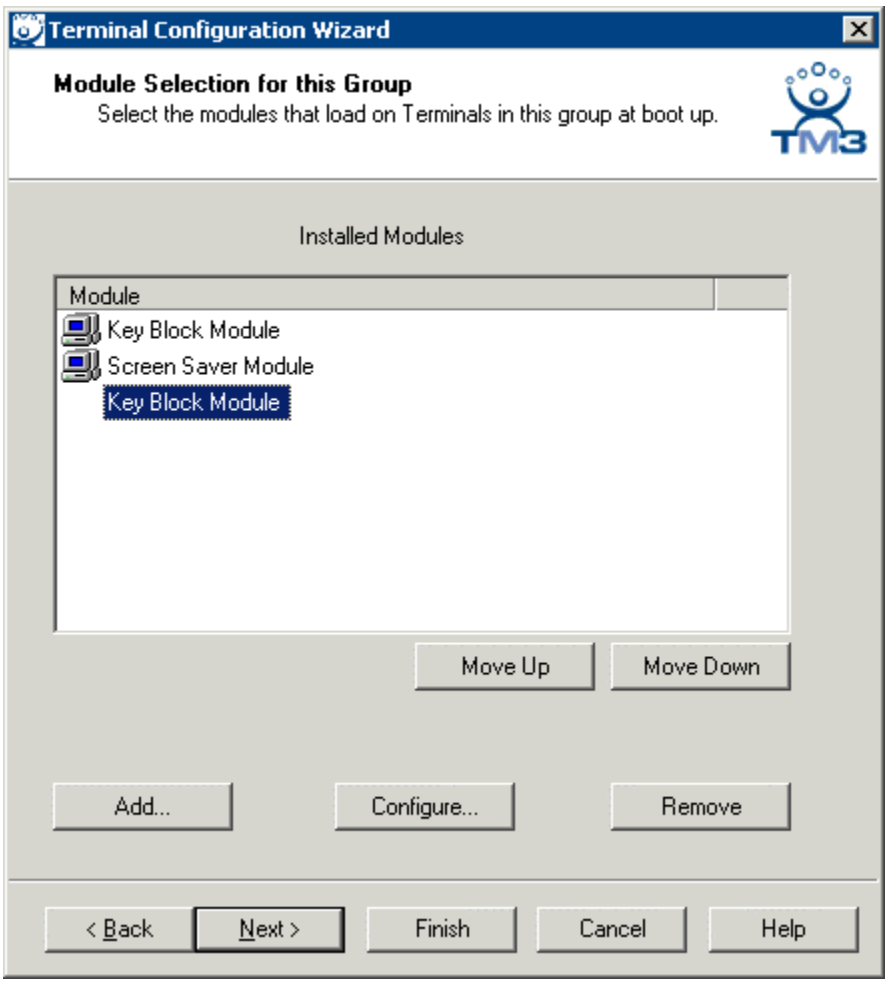
Highlight the desired module and select the ***OK*** button to add the module to the configuration.



Terminal Configuration Wizard - Module Selection

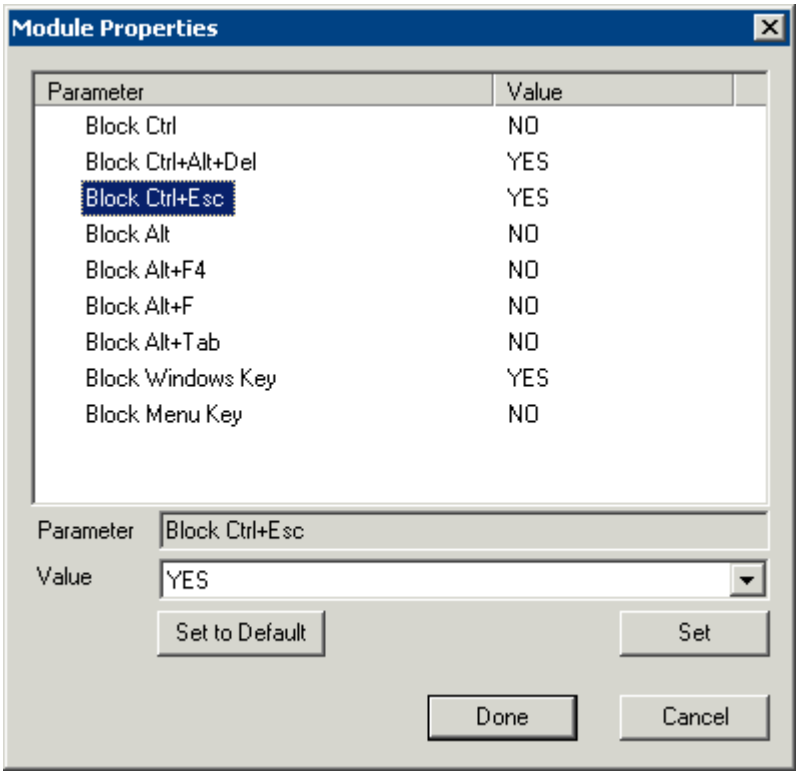
Terminals that are members of a Group may show icons to represent the properties of added modules.

-  The Group icon represents modules assigned to a parent Group.
-  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.



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

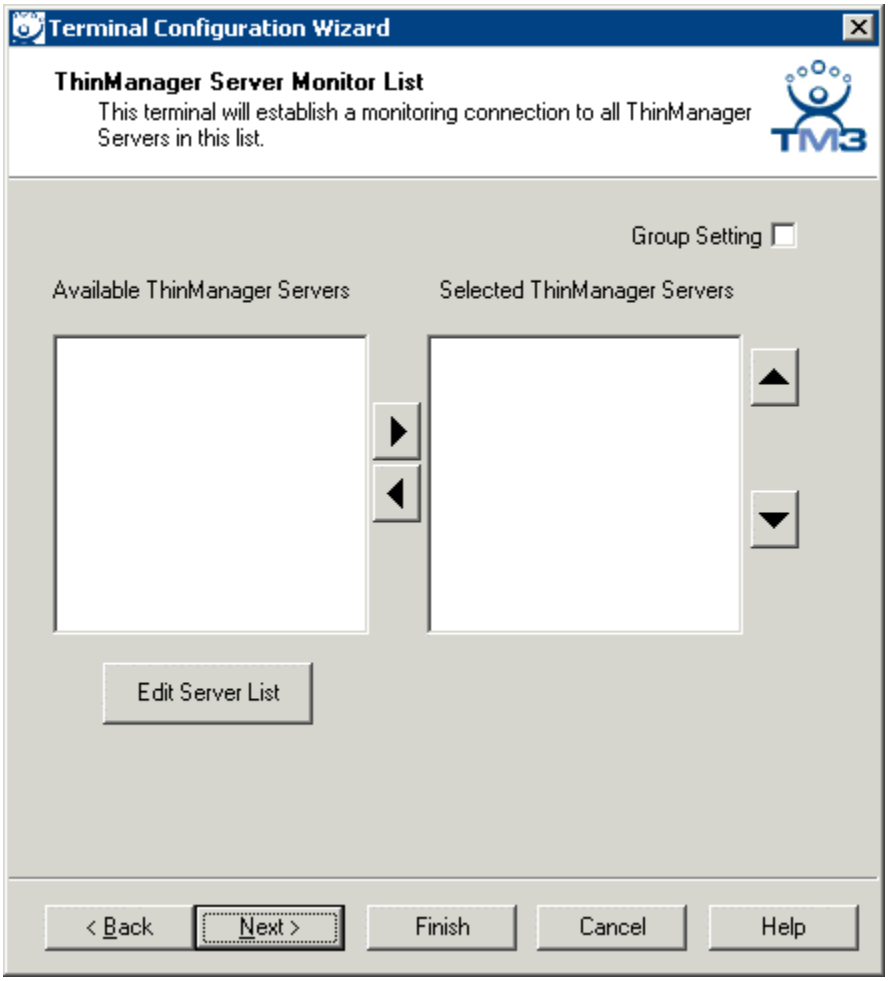
On the Modules Properties window, select the parameter to change, select the new value in the drop-down list, and click the **Set** button. This will change the setting.

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 Group Configuration Wizard.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

Group ThinManager Server Monitor List Page

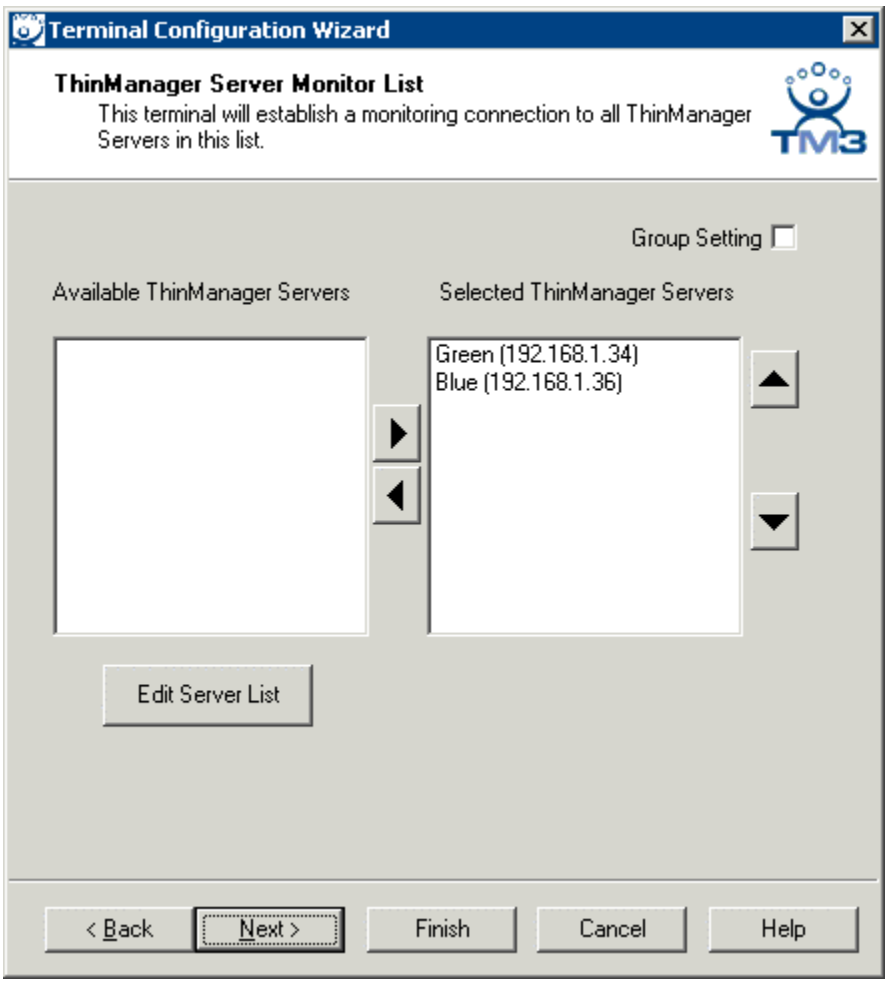


Group Configuration Wizard - Monitoring Configuration

The **ThinManager Server Monitor List** defines what Thin Manager Servers the terminal will communicate with to keep monitoring light status current. All ThinManager Servers defined in the ThinManager Server List Wizard will appear in the Available ThinManager Server column.

Note: This page is not shown when using Auto-Synchronization because Auto-Synchronization will cause a thin client to send its connection status to both ThinManager Servers automatically.

If the ***Available ThinManager Server*** column is empty, the ***ThinManager Server List Wizard*** needs to be run to define the ThinManager Servers. Select the ***Edit Server List*** button to launch the ***ThinManager Server List Wizard*** as shown in ThinManager Server List Wizard.



Group Configuration Wizard - Monitoring Configuration

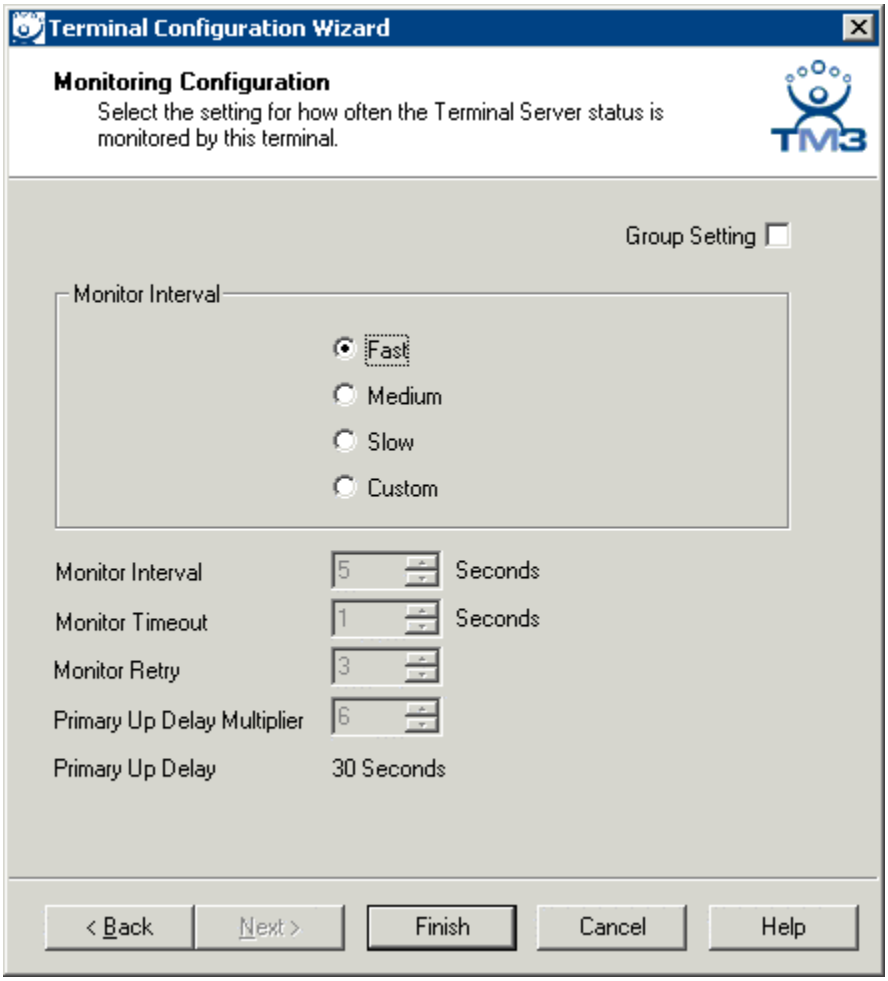
Once the ThinManager Server List wizard has run, each ThinManager Server that is identified in the ThinManager Server List Wizard will initially appear in the ***Available ThinManager Server*** box on the left of the Group Monitoring Configuration page.

To select a ThinManager Server for the Group, highlight it in the ***Available ThinManager Server*** list on the left and click the right arrow button. This will put the ThinManager Server into the ***Selected ThinManager Server*** list on the right. The terminals of the Group will send connection status (red/green icon lights) to all ThinManager Servers in the ***Selected ThinManager Server*** list.

The ***Group Setting*** checkbox will lock the settings for the group and all member terminals.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

Group Monitoring Configuration



Terminal Group Configuration Wizard - Monitoring Configuration

ThinManager Ready Thin Clients continuously monitor the Terminal Server to make sure that it stays online. If the Terminal Server goes offline, the terminal will disconnect and connect to the next Terminal Server in the Group Terminal Server Selection. The Monitoring Connection sets the frequency that the monitor occurs.

Use the ***Monitor Interval*** radio buttons to use a default frequency or select ***Custom*** and choose a setting of your own.

- ***Monitor Interval*** is the interval that the monitor checks occur.
- ***Monitor Timeout*** is the time the terminal will wait for a response from the terminal server.
- ***Monitor Retry*** is the number of times the monitor check will be tried.
- ***Primary Up Delay Multiplier*** is the number that generates the Primary Up Delay time.
- ***Primary Up Delay*** is a delay added (usually set to 30 or 60 seconds) to allow a Terminal Server to become fully booted before the terminal will try to login. This time period is equal to the ***Monitoring Interval*** times the ***Primary Up Delay Multiplier***.

The **Fast** setting of the Monitor Connection will detect Terminal Server failure quickly. However, the faster the setting is, the more sensitive it is and it may drop the Terminal Server when the network is busy and not offline. Setting the Monitoring Connection to a slower setting gives the Terminal Server more time to respond when it is busy.

The ***Group Setting*** checkbox will lock the settings for the group and all member terminals.

Select the ***Finish*** button to complete the Group configuration.

9.8. Terminal Configuration Wizard

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 are very similar, with few different settings.

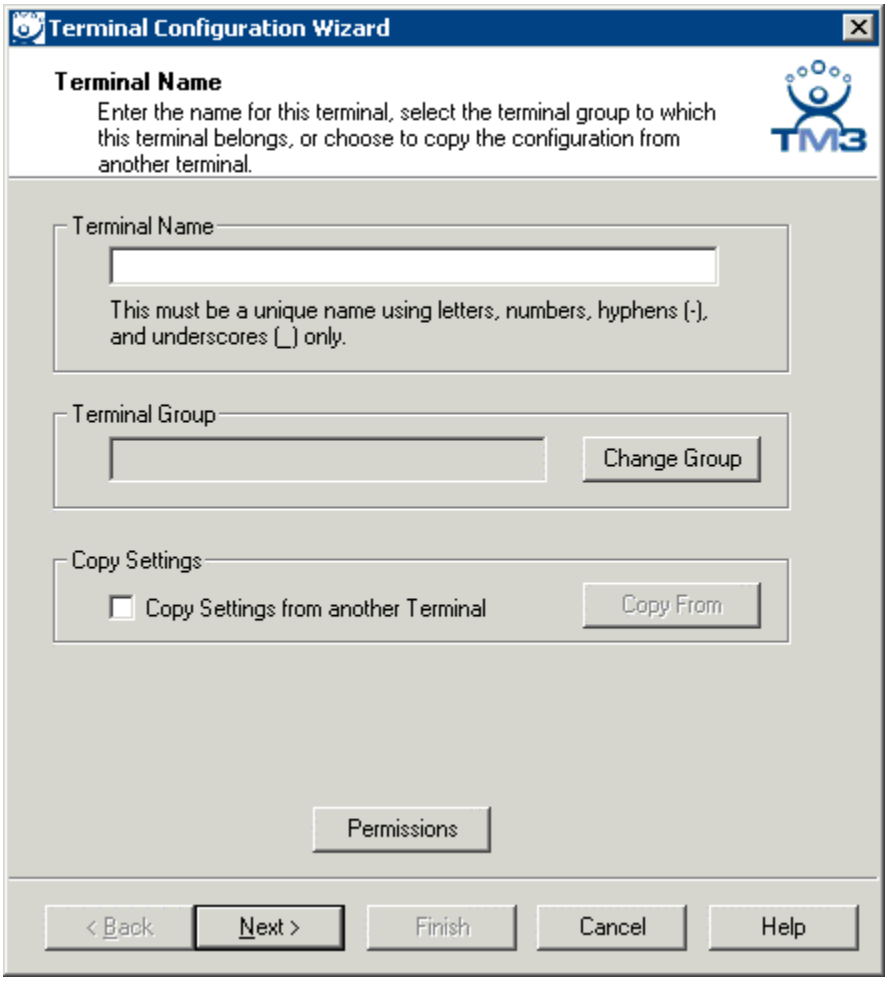
The Group Wizard will have ***Group Setting*** checkboxes for each setting. Selecting this checkbox will force that setting to be inherited by nested sub-groups and member terminals. This is a significant difference from early versions of ThinManager that allowed any Group Setting to be un-selected and individually configured for a terminal.

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.

The Terminal Creation Wizard can be launched by either:

- 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.

Terminal Name Page



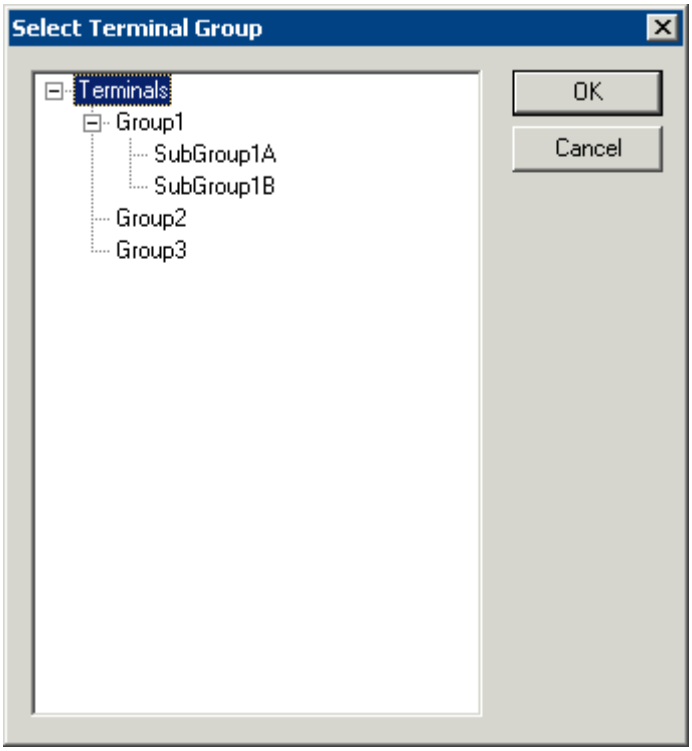
Terminal Configuration Wizard - Terminal Name

When a Terminal is first created, giving it a name is the first priority. Use numbers, letters, hyphens (-), and underscores (_), but don't use spaces or other characters.

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

The terminal can be added to a Terminal Group by selecting the ***Change Group*** button. Terminals added to a Group will be assigned the Group properties.

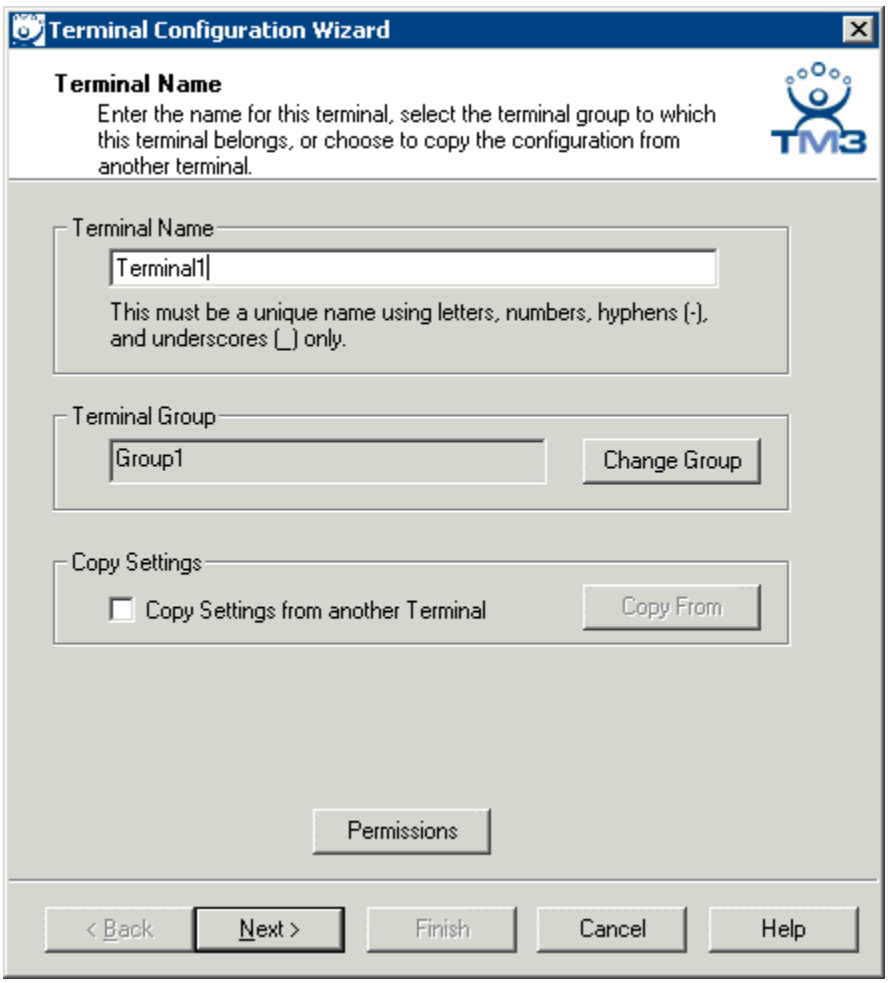
The ***Change Group*** button will launch a **Select Group** window.



Select 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 the highlighted group or select the ***Cancel*** button to quit without joining.

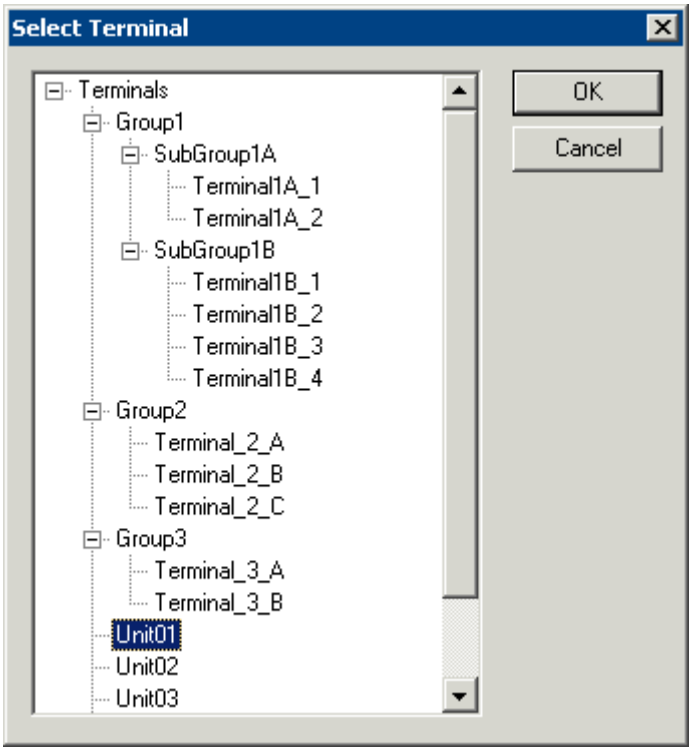
To remove a terminal from a group highlight **Terminals** and select the ***OK*** button.



Terminal Name Page - Group Membership

The Terminal Group you joined will now be displayed in the ***Group*** field.

The ***Copy Settings from another Terminal*** checkbox will copy an established configuration to the new terminal. Selecting the ***Copy Settings from another Terminal*** checkbox and clicking the ***Copy From*** button will launch the **Select Terminal** window that allows the terminal to copy settings from another terminal.



Select Terminal Window

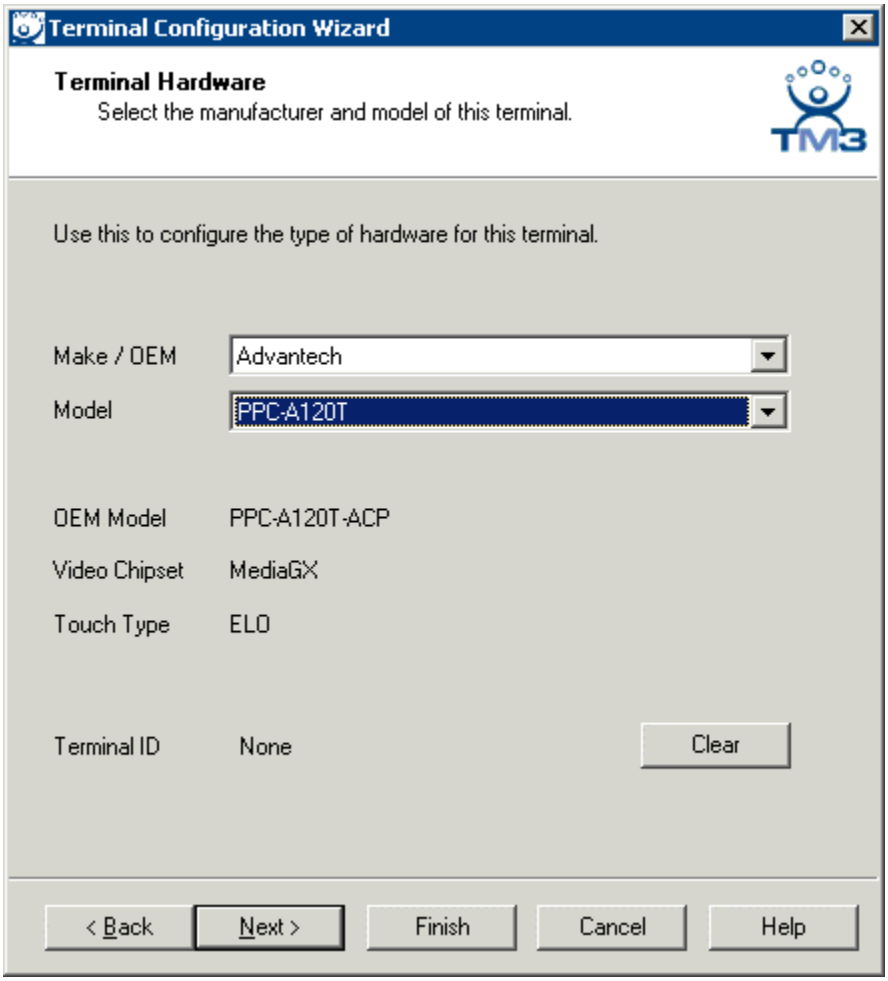
The **Select Terminal** window will show a tree of the configured Terminal Groups and terminals. Highlight the terminal that you wish to copy and select the ***OK*** button to load the settings and return to the Terminal Configuration Wizard.

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

The ***Permissions*** button will launch the **Permissions** window that allows Permissions to be set for TermSecure. See Permissions for details.

Select the ***Next*** button to continue or select the ***Cancel*** button to close the configuration wizard without saving.

Terminal Hardware Page



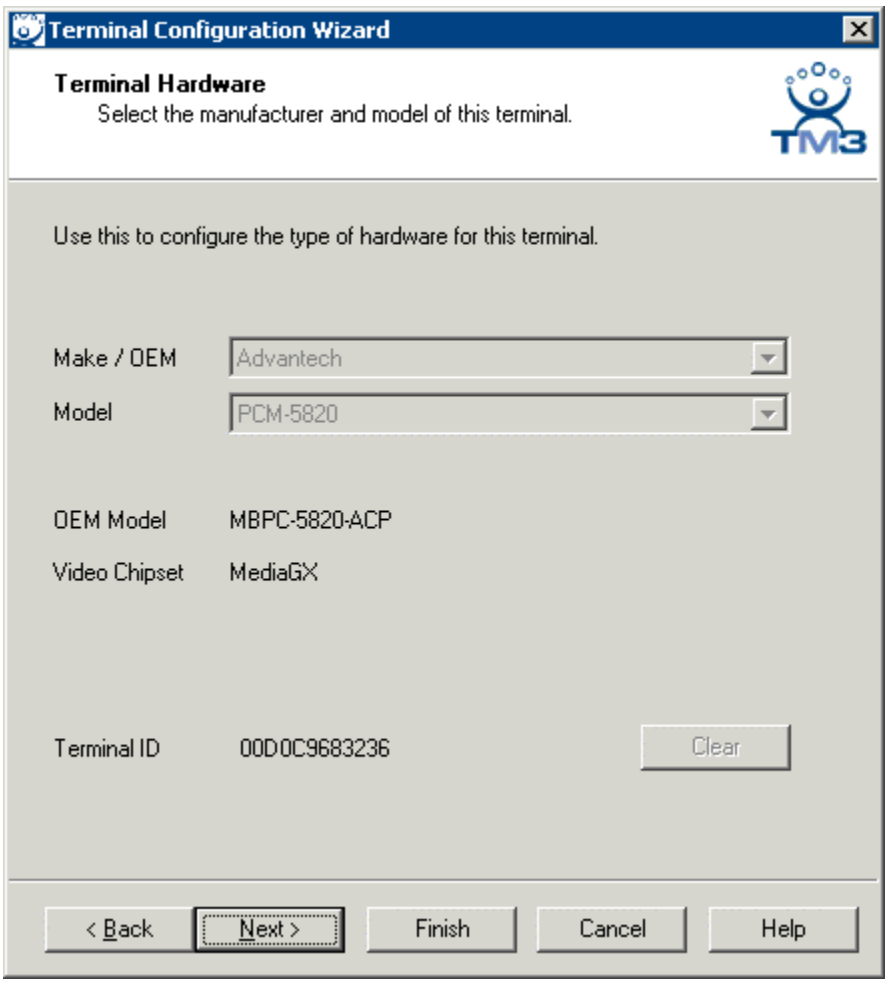
Terminal Configuration Wizard - Hardware Configuration

Select the make and model of the ThinManager Ready Thin Client from the drop-down boxes. These parameters are from the Terminal Capability database (TermCap data base). If the unit has an integrated flat panel, it will display the touch screen controller type.

If the make and model of your ThinManager Ready thin client does not appear in the list, download a new TermCap Database from www.thinmanager.com. See Install New TermCap Database for details.

If you do not know what model it will be, leave the default setting. When a terminal is connected and receives this configuration, ThinManager will update the hardware settings to match the actual hardware.

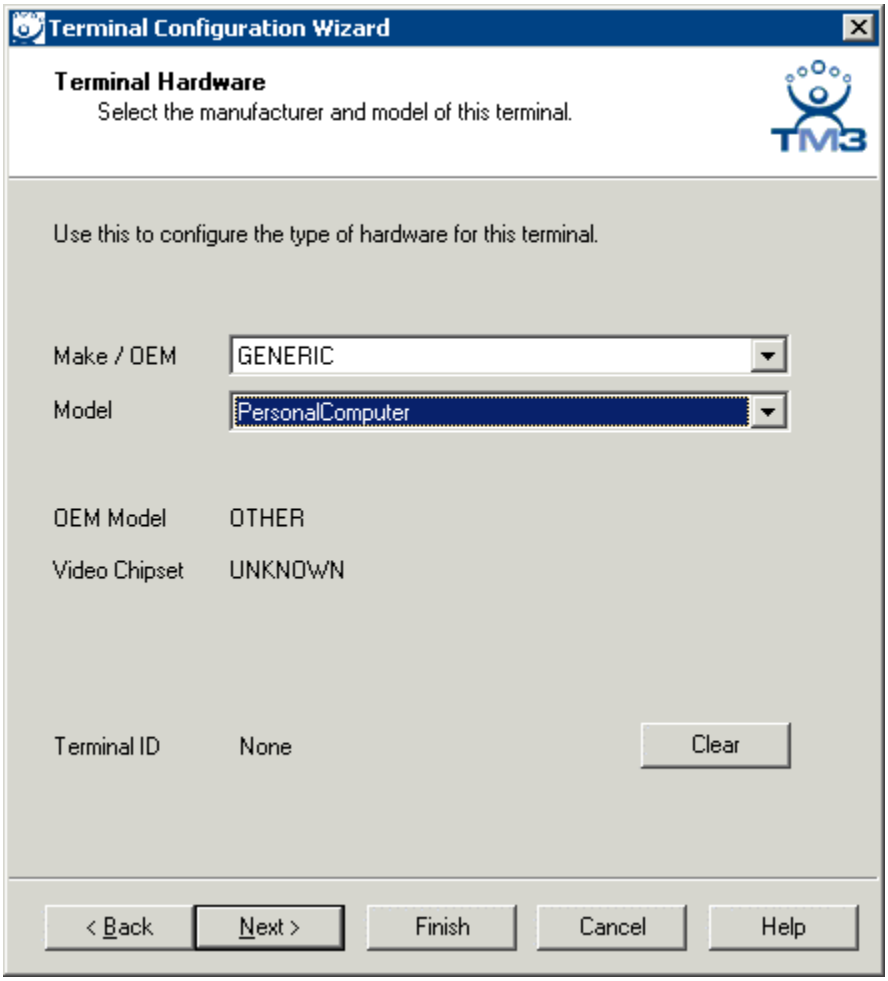
Note: The default ***Make*** and ***OEM Model*** is set to the oldest unit, the ACP **DC-30-100** because all following units exceed its capabilities. If you configure your units as a DC-30-100 you will want to adjust the video setting once the actual hardware is attached, as the DC-30-100 video is limited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



Terminal Configuration Wizard - Hardware Configuration – Added Hardware

When the hardware is added and tied to a configuration, the ***Make/OEM*** and ***Model*** fields will list the actual hardware type and cannot be changed unless the unit is turned off and the **Terminal ID** is cleared with the ***Clear*** button.

The ***Clear*** button will remove the **Terminal ID** identifier from the configuration of an inactive terminal. This 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.

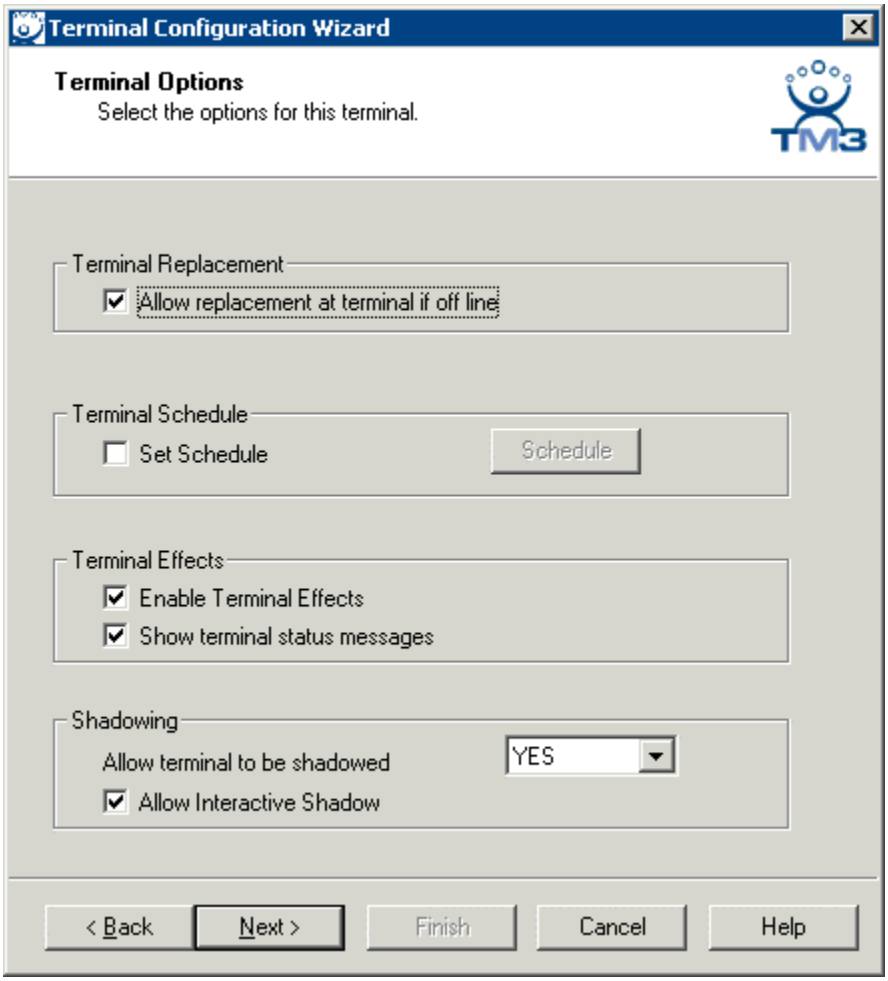


Terminal Configuration Wizard - WinTMC Setup

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

Select ***Next*** to continue.

Terminal Options



Terminal Options Page

Selecting the ***Allow replacement at terminal if offline*** checkbox will allow all members of the group to show up in the replacement list during a new terminal connection. See Replace or Create New Terminal Mode for details.

Set Schedule allows members of the group to be disabled, rebooted, or enabled on a schedule.

Select the ***Set Schedule*** checkbox and click the ***Schedule*** button to launch the **Schedule** window to configure the schedule for members of the group. See Terminal Schedule for details.

Enable Terminal Effects, when selected, will allow the desktops in MultiSession to slide smoothly into the desktop instead of appearing instantaneously.

Show terminal status messages, when selected, will allow the terminal to display status messages in the upper left corner of the screen. When unselected, incidental messages like Application Group switching and TermSecure logins will be suppressed and only critical messages like connection errors will be displayed.

The ***Allow terminal to be shadowed*** drop-down box allows the configuration of Shadowing Options.

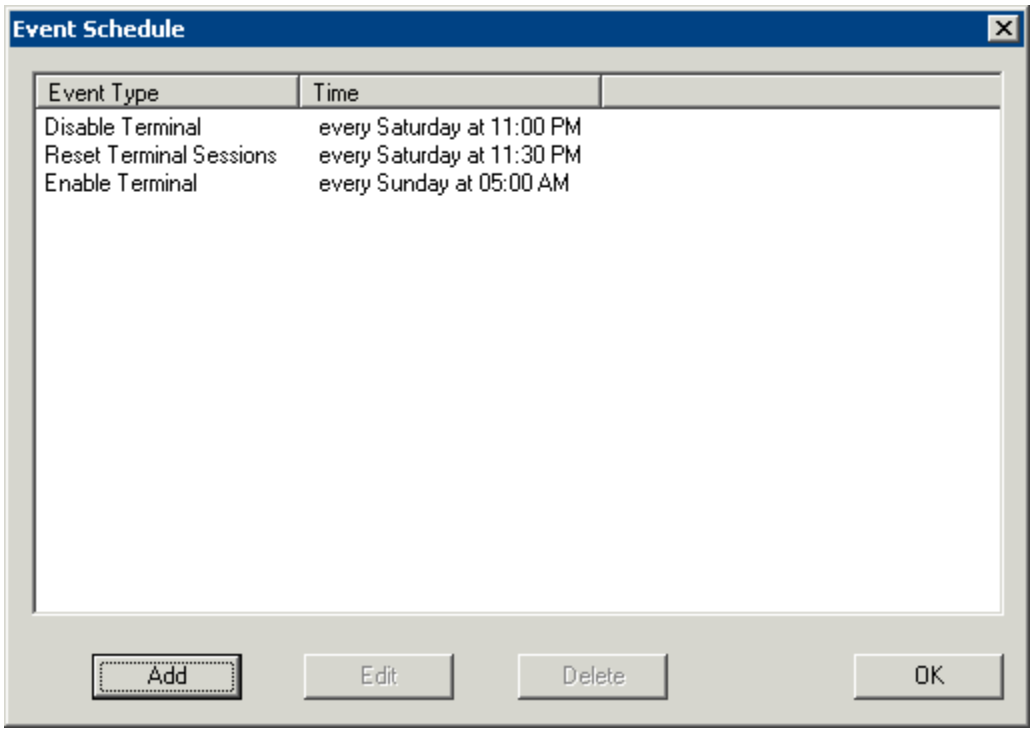
- ***No*** – Will prevent members of the Group from being shadowed.

- ***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*** – Will allow shadowing to occur without warning or recipient input.

Allow Interactive Shadow will allow members with Interactive Shadow privileges to shadow the terminal. Shadowing is initiated from the Shadow tab on the Details pane of the ThinManager program. Unselecting this will prevent shadowing from within ThinManager. See Shadowing and ThinManager Security Groups for details.

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.

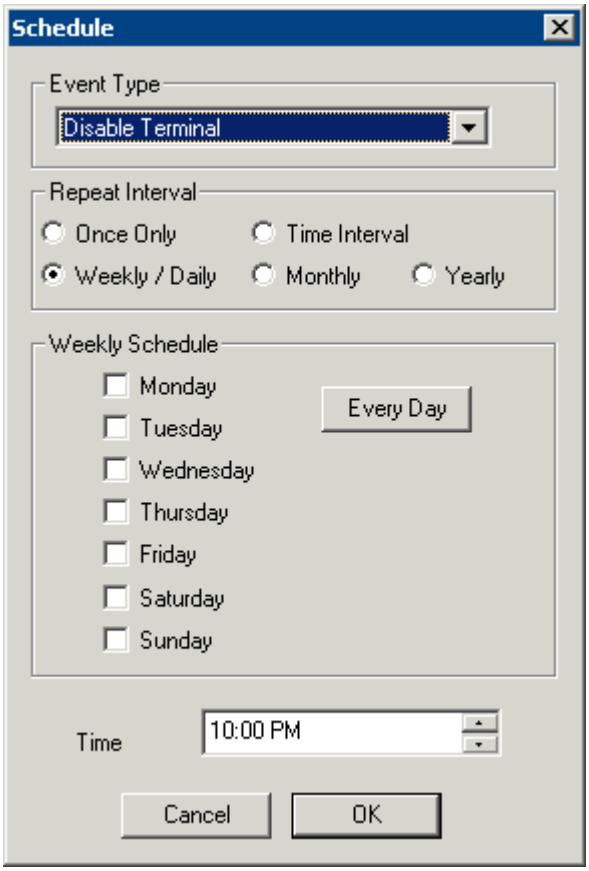


Event Schedule

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.

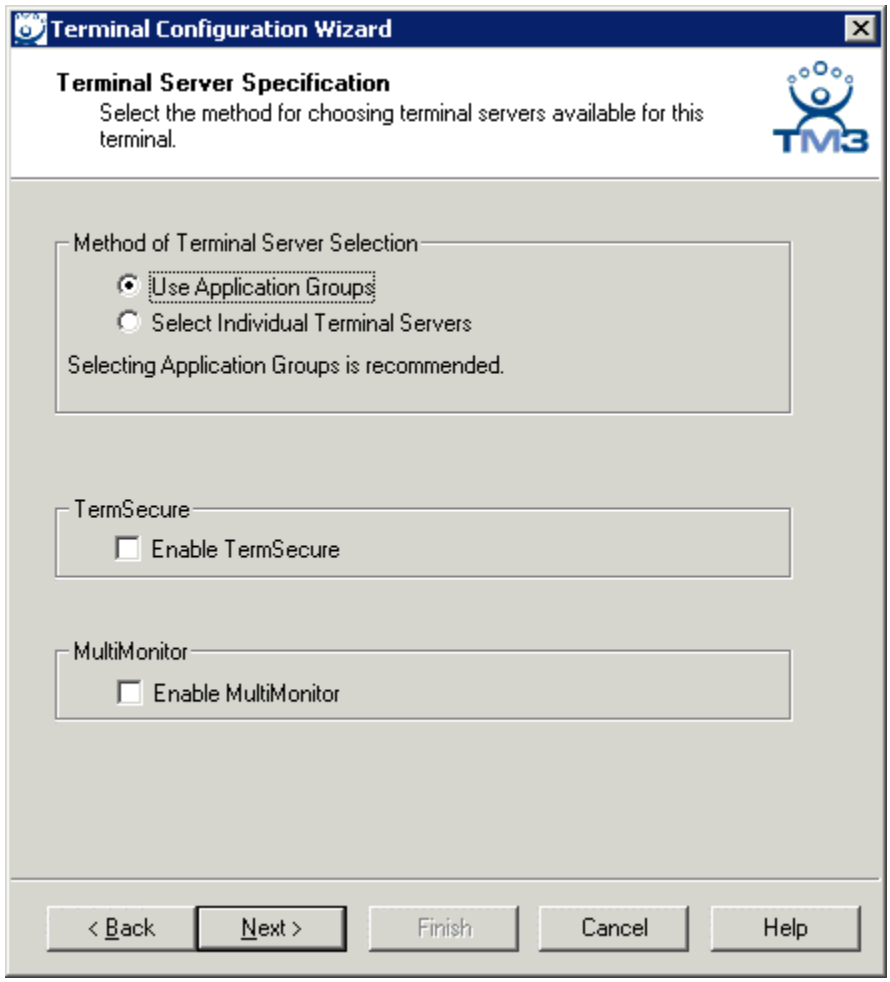
The **Repeat Interval** radio buttons allow the event in the **Event Type** drop-down to be run ***Once Only***, ***Weekly/Daily***, ***Monthly***, or ***Yearly***.

- 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.

Terminal Server Specification Page



Terminal Server Specification

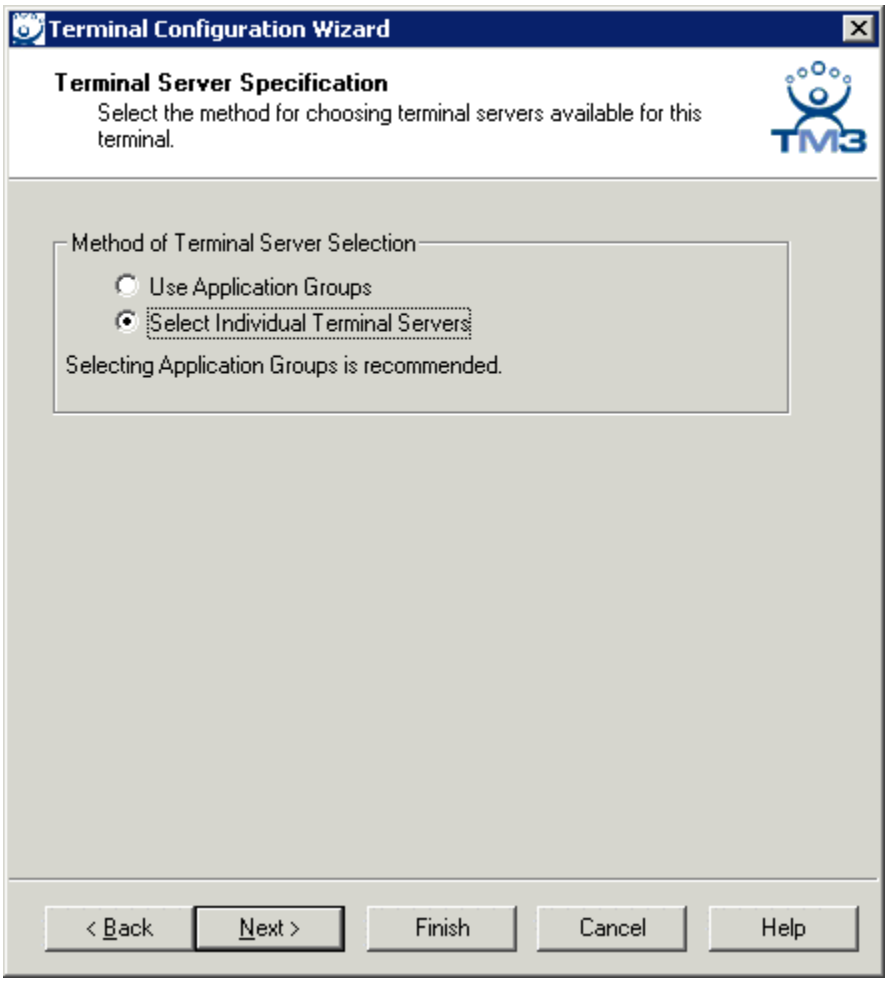
The ***Method of Terminal Server Selection*** radio button provides options for terminal server connections:

- ***Use Application Group s*** will allow terminals to connect to terminal servers in Application Groups for increased functionality like SmartSession load balancing, MultiSession, and Terminal-to-Terminal shadowing.
- ***Select Individual Terminal Servers*** will allow terminals to connect to a list of terminal servers as it has been done in earlier versions of ThinManager.
- If the ***Use Application Groups*** 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 ThinManager Ready thin client. Selecting this will allow the terminal to be configured for MultiMonitor. See MultiMonitor for details.

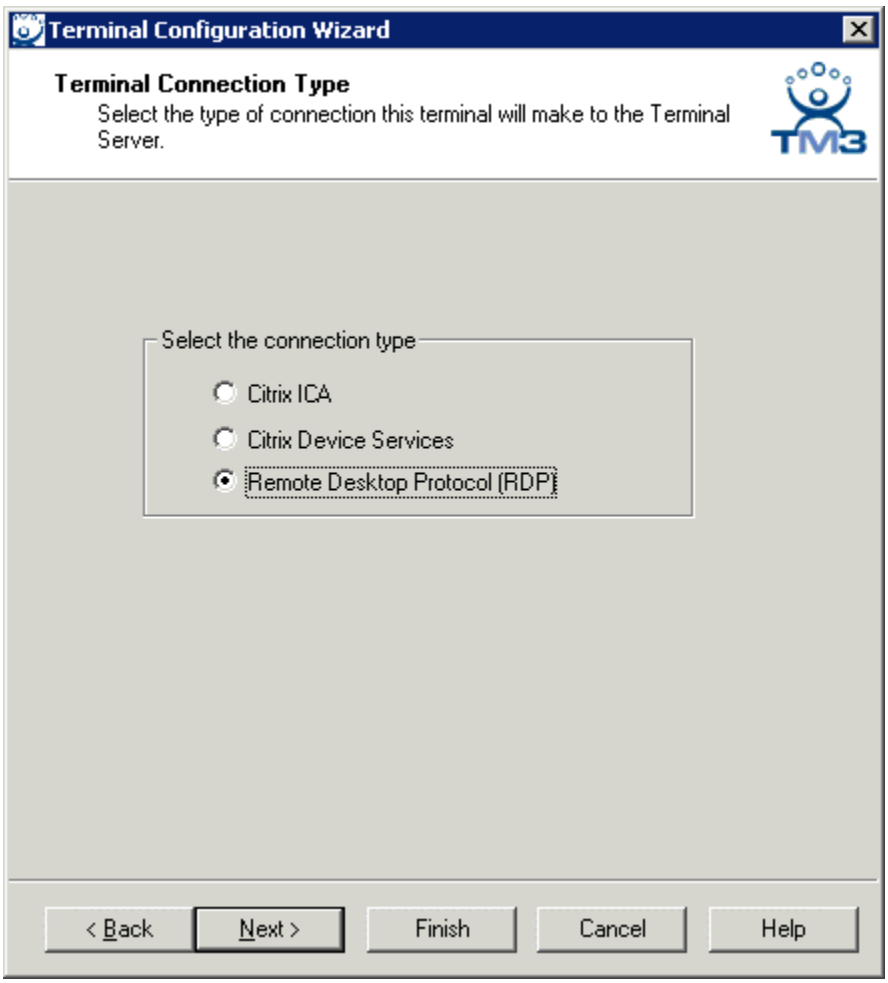
9.8.1. Terminals Using Individual Terminal Servers

Terminals may connect to a series of individual terminal servers by selecting the ***Select Individual Terminal Servers*** on the **Terminal Server Specification** page.



Terminal Configuration Wizard - Terminal Server Specification

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



Terminal Configuration Wizard - Connection Type

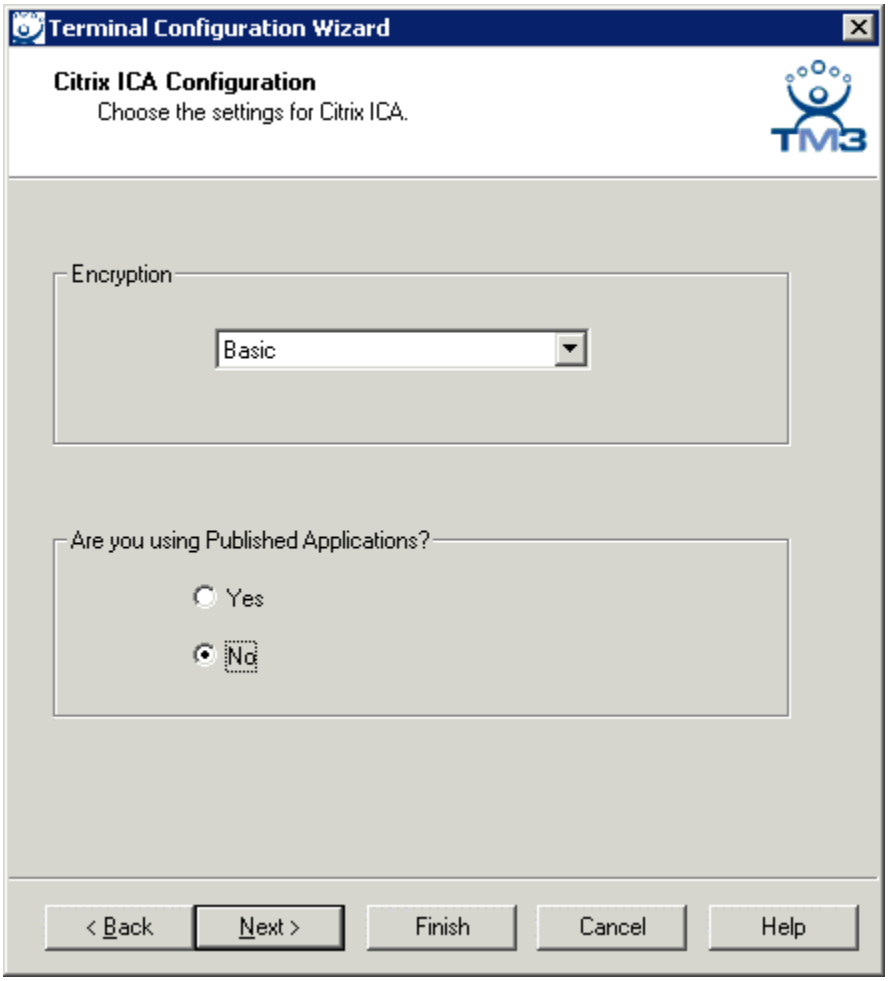
Thin clients use a client communication protocol to connect to the Terminal Servers. Select the correct protocol and select the ***Next*** button.

- Select the ***Citrix ICA*** radio button if an optional third-party Citrix product is to be used to provide the ICA protocol.
- Select the ***Citrix Device Services*** radio button if Citrix Device Services is to be used to provide the ICA protocol. Citrix Device Services is a legacy deployment of ICA for Windows 2000 Terminal Servers but is no longer supported by Citrix. ThinManager Ready 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 all Windows Terminal Servers. The ***Microsoft Remote Desktop Protocol (RDP)*** radio button is selected by default unless you choose another protocol.

Selecting ***Citrix ICA*** offers additional configuration options before displaying the Terminal Server Selection. Selecting ***Citrix ICA with Device Services*** and ***Remote Desktop Protocol (RDP)*** will jump to the Terminal Server Selection.

A Terminal using Citrix ICA as the Client Communication Protocol will be shown additional configuration screens beginning with the **Citrix ICA Configuration** page.

Citrix ICA Configuration Page



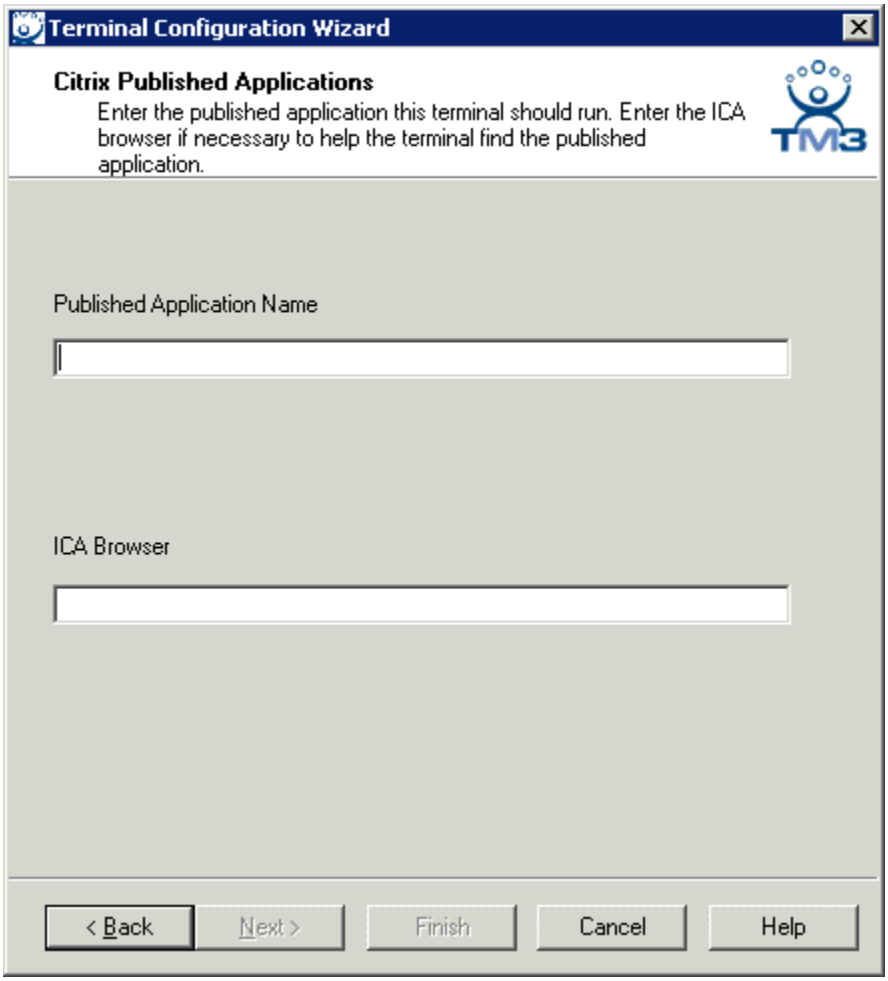
Terminal Configuration Wizard - Citrix ICA Configuration

The ***Encryption*** drop-down box allows the selection of the Citrix encryption level.

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.

Citrix Published Applications Page



Terminal Configuration Wizard - Citrix Published Applications

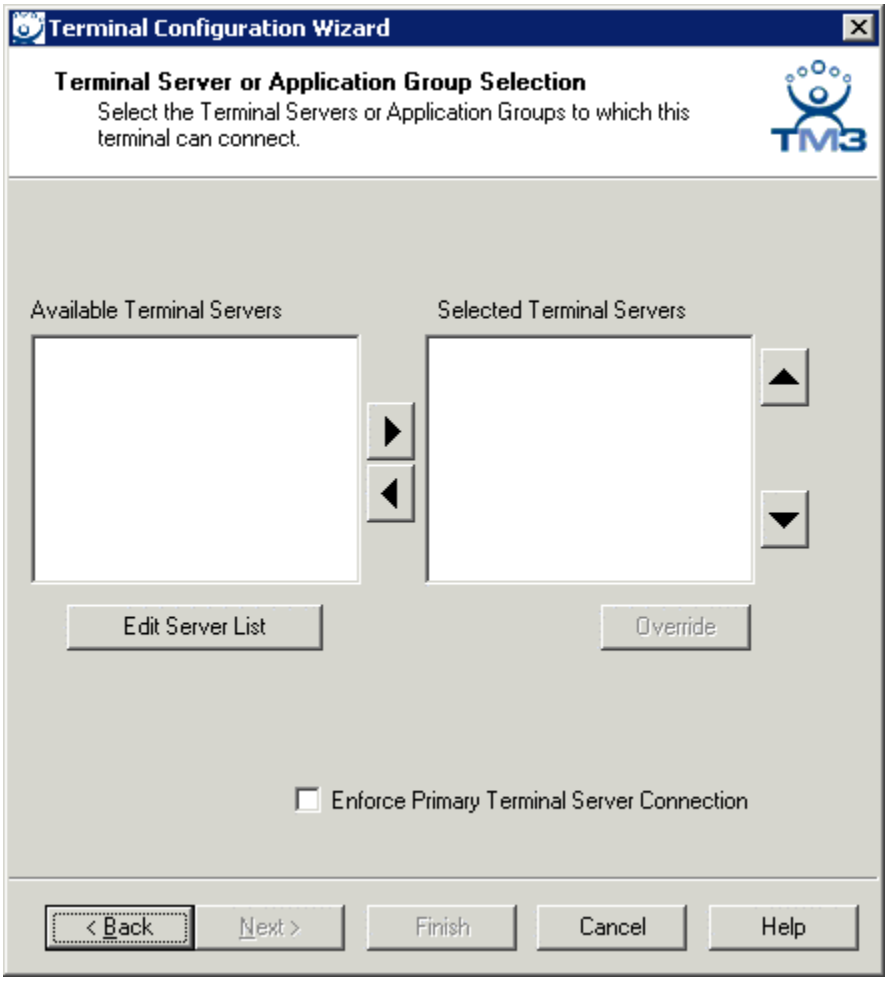
Enter the name of the desired Published Applications in the ***Published Applications Name*** field. Do not use spaces in the name when creating a Published Application for Terminal Services.

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.

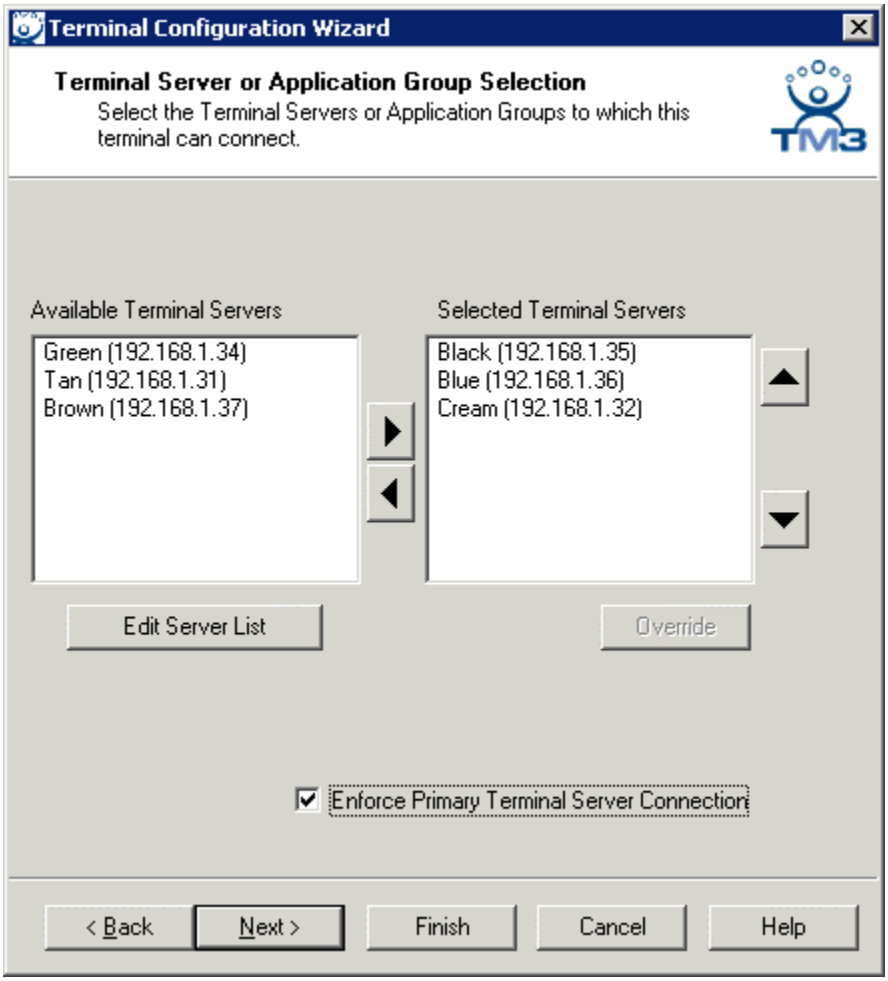
Terminal Server Selection Page



Terminal Server or Application Group Selection

If ThinManager Application Groups or Citrix Published Applications are not being used then the terminal will need to be assigned to a Terminal Server. The Terminal Server is a server that allows a terminal to logon and run applications in an independent session.

If the ***Available Terminal Servers*** column is empty, the **Terminal Server List** wizard needs to be run to add terminal servers to the ThinManager system. Select the ***Edit Server List*** button to launch the Terminal Server List Wizard as shown in Terminal Server List Wizard.



Terminal Configuration Wizard - Terminal Server Selection

Once the Terminal Server List wizard has run, each Terminal Server that is identified in the Terminal Server List Wizard will initially appear in the ***Available Terminal Servers*** box on the left side of the **Terminal Server or Application Group Selection** page.

To select a Terminal Server for the terminal, highlight it in the list on the left and click the ***Right*** arrow button. This will put the Terminal Server into the ***Selected Terminal Servers*** list on the right. The terminal will use all the Selected Terminal Servers as Terminal Servers in the order listed.

The Terminal Server on the top of the Selected Terminal Server List will be the **Primary Terminal Server**, the first Terminal Server that the terminal will attempt to login to. If the Primary Terminal Server fails, or is unavailable, the terminal will connect to the other terminal servers in the order that they are listed.

To change the order of the Terminal Servers in the Terminal Server Selection list, highlight a Terminal Server and use the ***Up*** arrow button and the ***Down*** arrow button to move it up or down in the list.

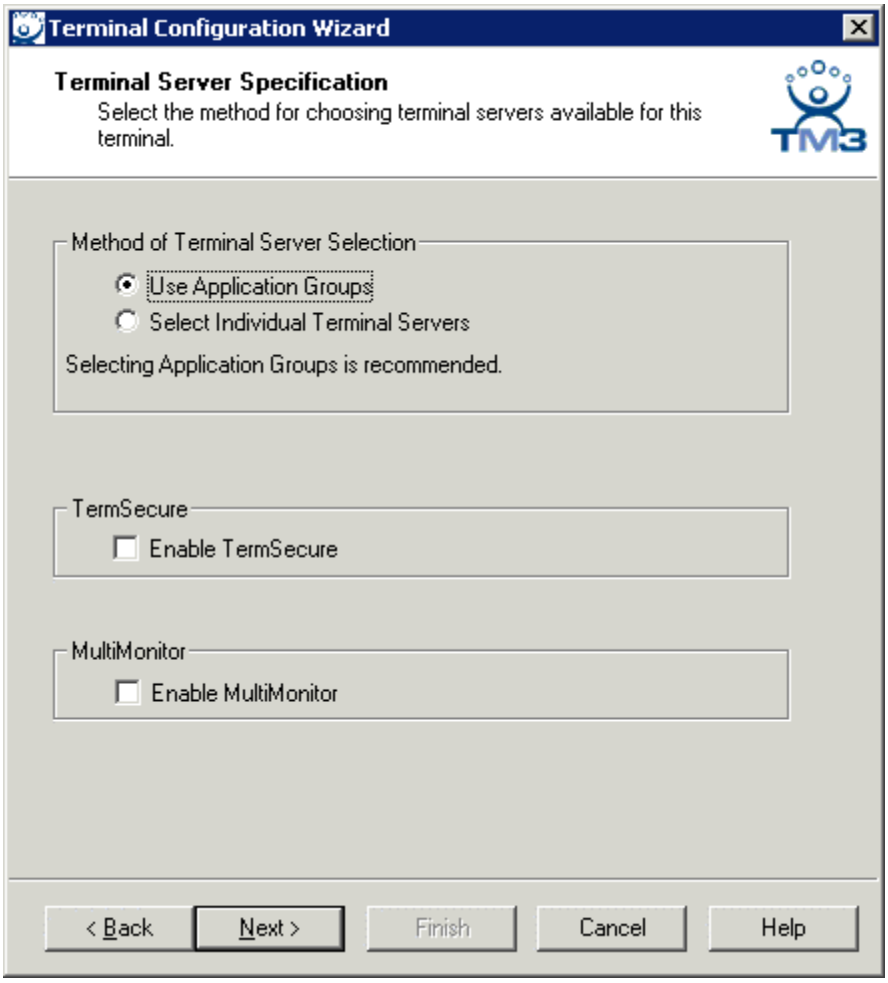
The ***Enforce Primary Terminal Server Connection*** will cause a terminal to return to the primary terminal server whenever that server is available.

Note: The Application Group ***Override*** button is unavailable for use with individual terminal servers.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the terminal configuration.

9.8.2. Terminals Using Application Groups

Terminals may connect to Application Groups by selecting the ***Use Application Groups*** on the **Terminal Server Specification** page instead of using the ***Select Individual Terminal Servers*** setting.



Terminal Configuration Wizard - Terminal Server Specification

If the ***Use Application Groups*** is selected, two other settings may become available:

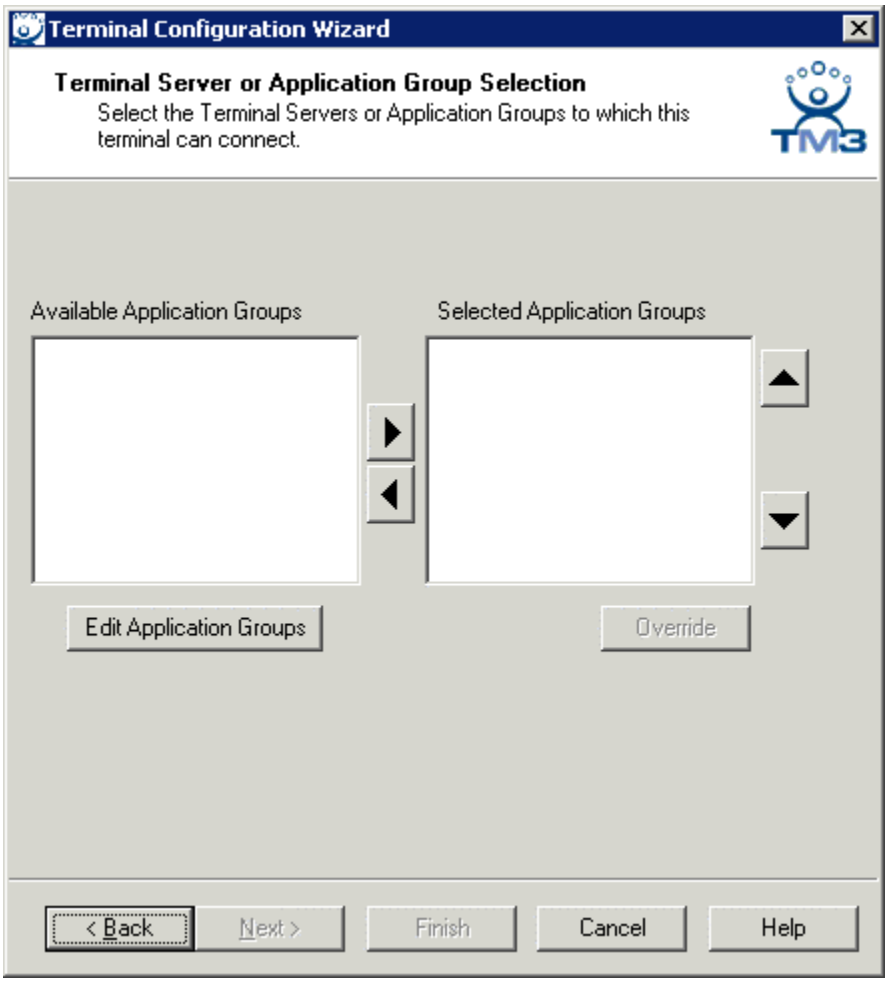
- ***Enable TermSecure***, when checked, will enable TermSecure functionality. This checkbox will only be displayed if the ThinManager Server has a TermSecure license installed. See TermSecure for details on this function.
- The ***Enable MultiMonitor*** checkbox will be displayed if the hardware selected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

Selecting this will allow the terminal to be configured for MultiMonitor. See MultiMonitor for details.

Select ***Next*** to continue configuration.

9.8.3. Application Group Selection

The ***Terminal Server Selection*** page is displayed next to allow the selection of the desired Application Groups.

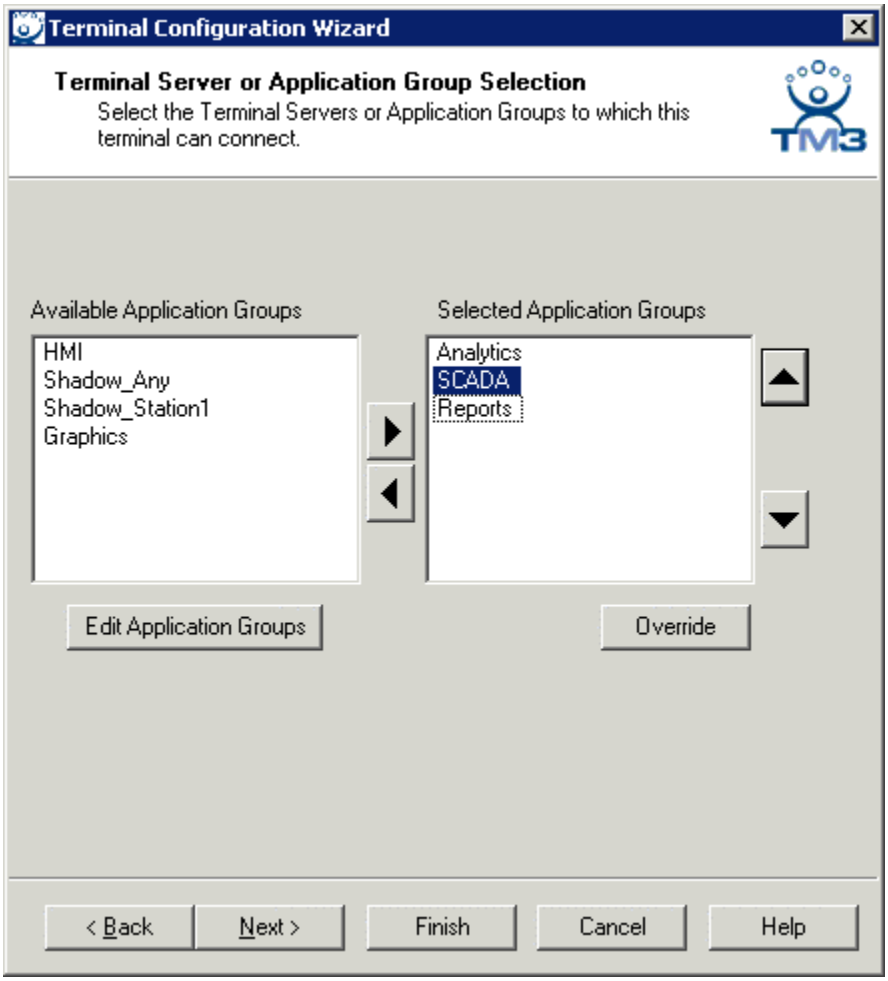


Terminal Configuration Wizard - Group Terminal Server Selection

The terminal will need to connect to Application Groups that contain terminal servers that will host the sessions.

If the ***Available Application Groups*** column is empty, the **Application Groups List Wizard** needs to be run to configure Application Groups. Select the ***Edit Application Groups*** button to launch the **Application Group List Wizard** as shown in Application Group List.

Application Groups Selection Page



Terminal Configuration Wizard - Terminal Server Selection

Once the ***Application Group*** wizard has run, each Application Group that is identified in the Application Group Wizard will initially appear in the ***Available Application Groups*** box on the left of the **Terminal Server Selection** page.

Note: The Available Application Groups will only list Application Groups that are appropriate. Only RDP Application Groups will be shown if the terminal is using RDP. If the ***Enable MultiSession*** checkbox was selected on the **Terminal Server Specification** page, only Application Groups with MultiSession capabilities are shown in the ***Available Application Groups*** list.

To select an Application Group for a terminal, highlight it in the list on the left and click the right arrow button. This will put the Application Group into the ***Selected Application Groups*** list on the right. The Group will use the Selected Application Groups for the terminal servers that it can login to.

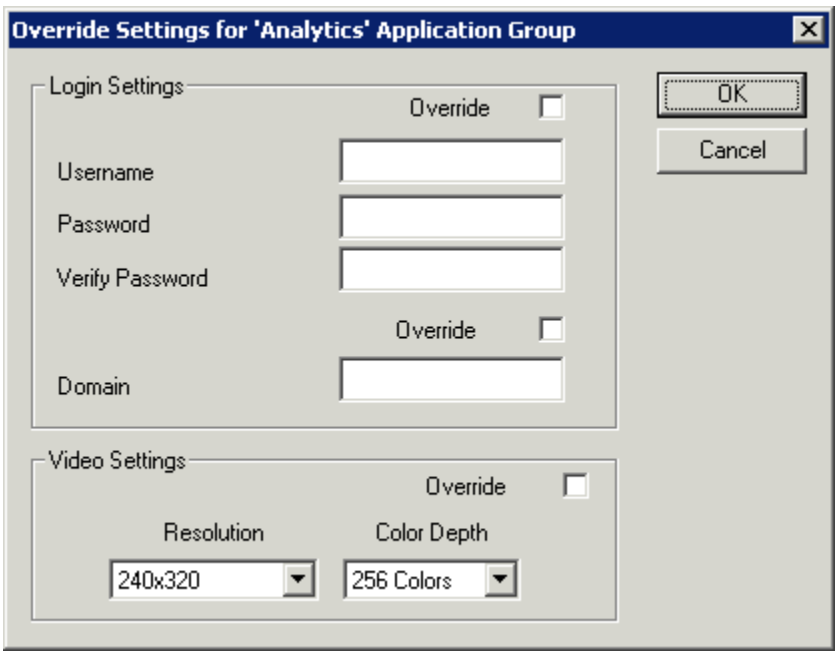
Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

Application Group Override

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

No Application Group Selected Dialog

If the ***Override*** button is selected without an Application Group highlighted then an error message will be displayed telling the user to select an Application Group.



Override Settings Window

The **Login Settings** allow the Application Group to login with a different Windows account than the terminal uses.

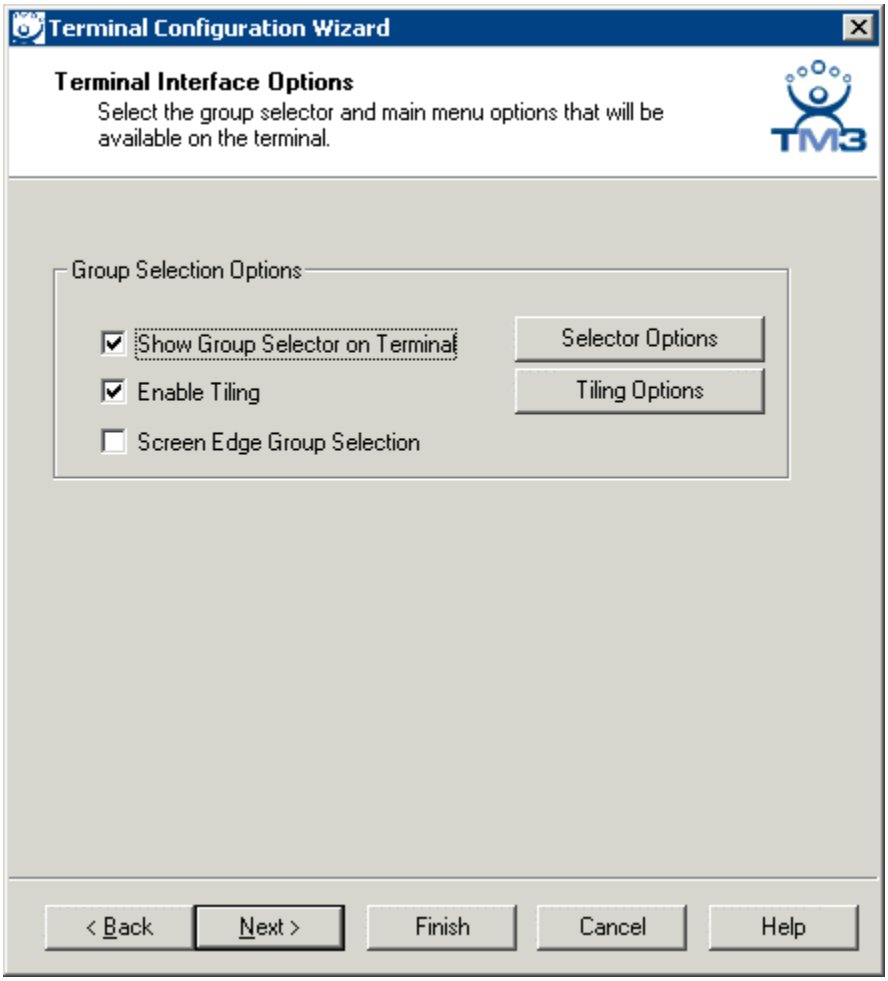
Select the Username, Password, and domain, if needed, and select the ***Override*** checkbox.

Note: The ***Override*** checkbox needs to be checked to enforce the override. This allows the use of blank ***Username/Password*** field to require a manual login.

The **Video Settings** can also be overridden with the ***Override*** checkbox. This is useful when a desired application has different resolution than the terminal.

Select ***OK*** to accept changes and select ***Cancel*** to close without changing.

Terminal Interface Options



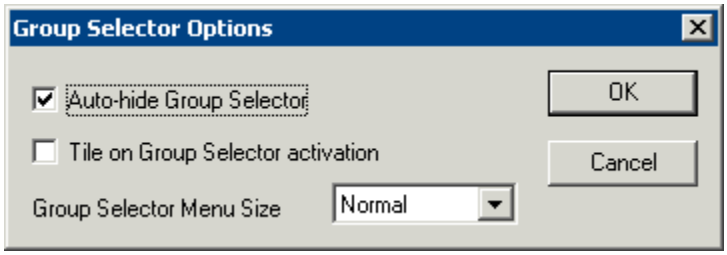
Terminal Interface Options Page

A terminal using MultiSession will need to have a method to switch between sessions. This is configured on the Terminal Interface Options page.

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 application groups to be tiled on the monitor to provide an overview of all the sessions at once. See Group Selection with SessionTiling 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.



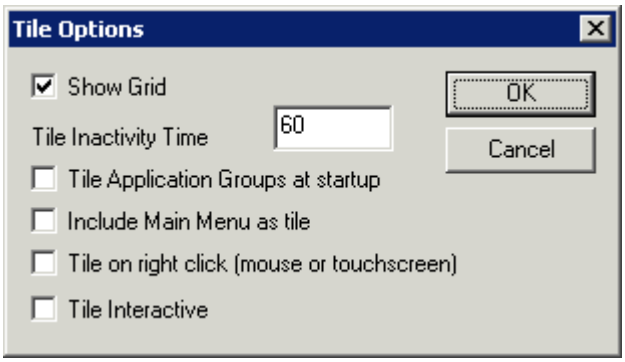
Group Selector Options Window

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 Application Groups 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.

The ***Tiling Options*** button will launch **the Group Selector Options** window that allows configuration of the on-screen Group Selector bar.



Tile Options

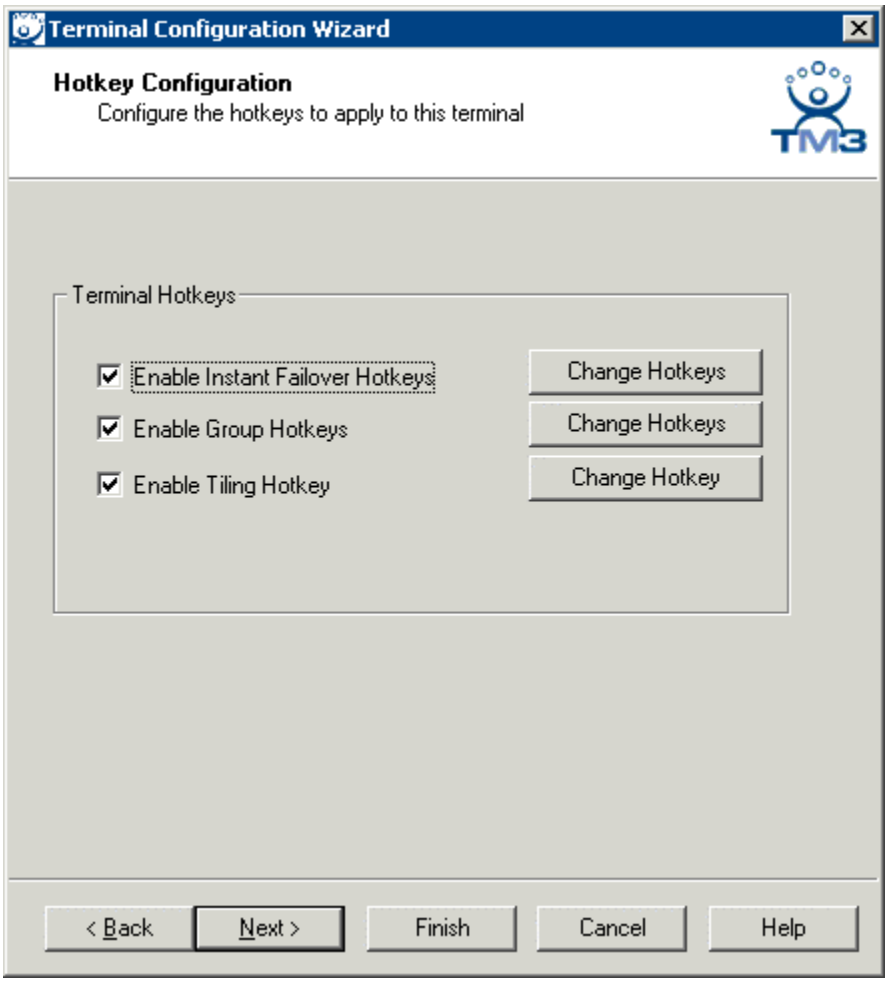
The **Tile Options** window has several settings.

- ***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 Application Groups 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.

Hotkey Configuration Page

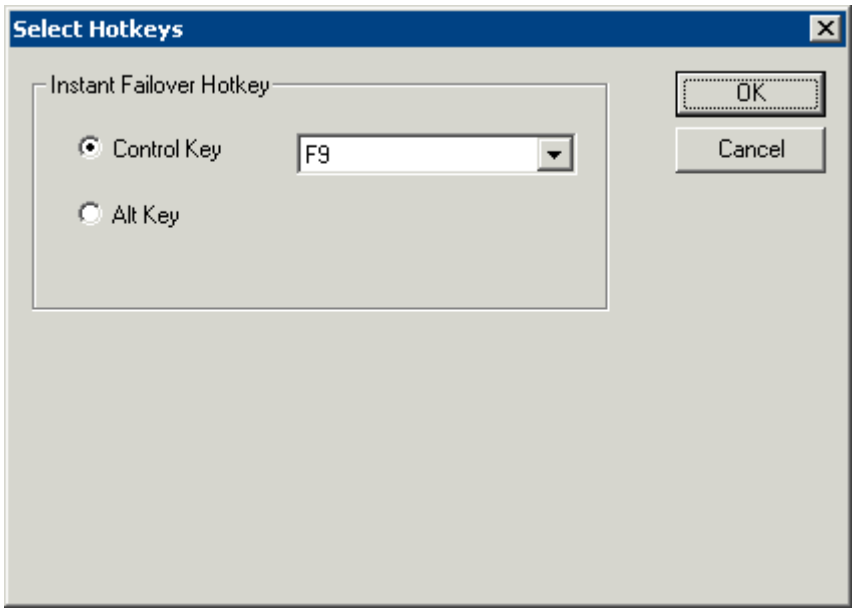


Hotkey Configuration Page

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 an Application Group 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.

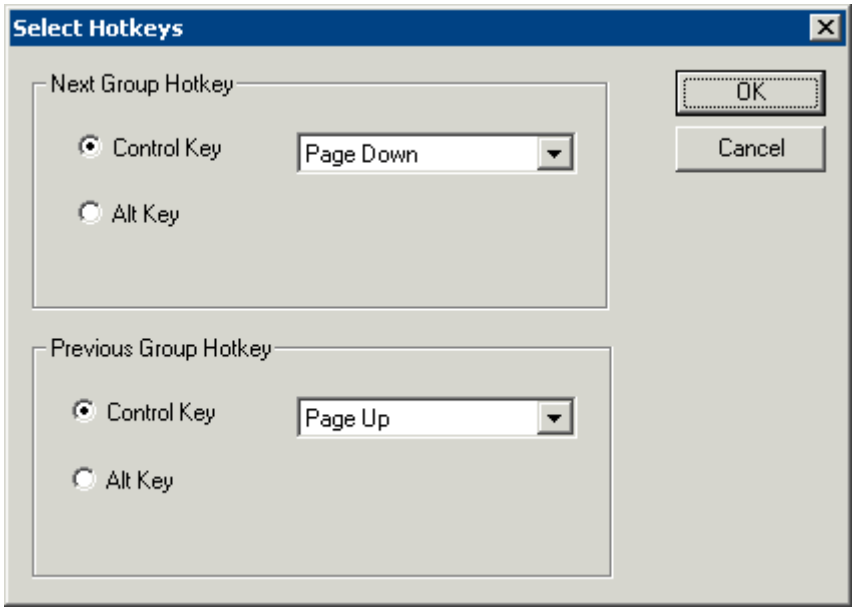
Selecting the ***Change Hotkeys*** button when ***Enable Instant Failover Hotkeys*** is selected will allow the hotkeys to be changed from the default.



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.

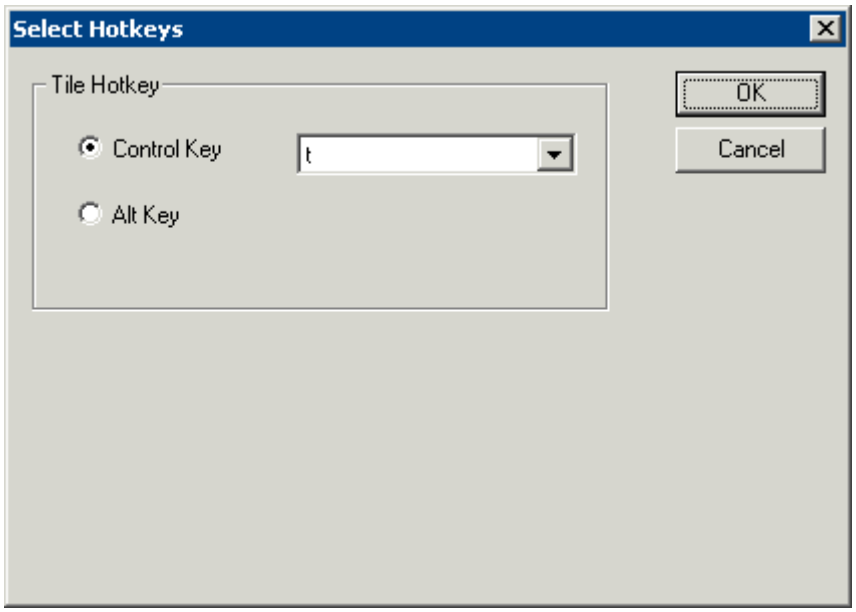
Selecting the ***Change Hotkeys*** button when ***Enable Group Hotkeys*** is selected will allow the MultiSession switching hotkeys to be changed from the default.



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.



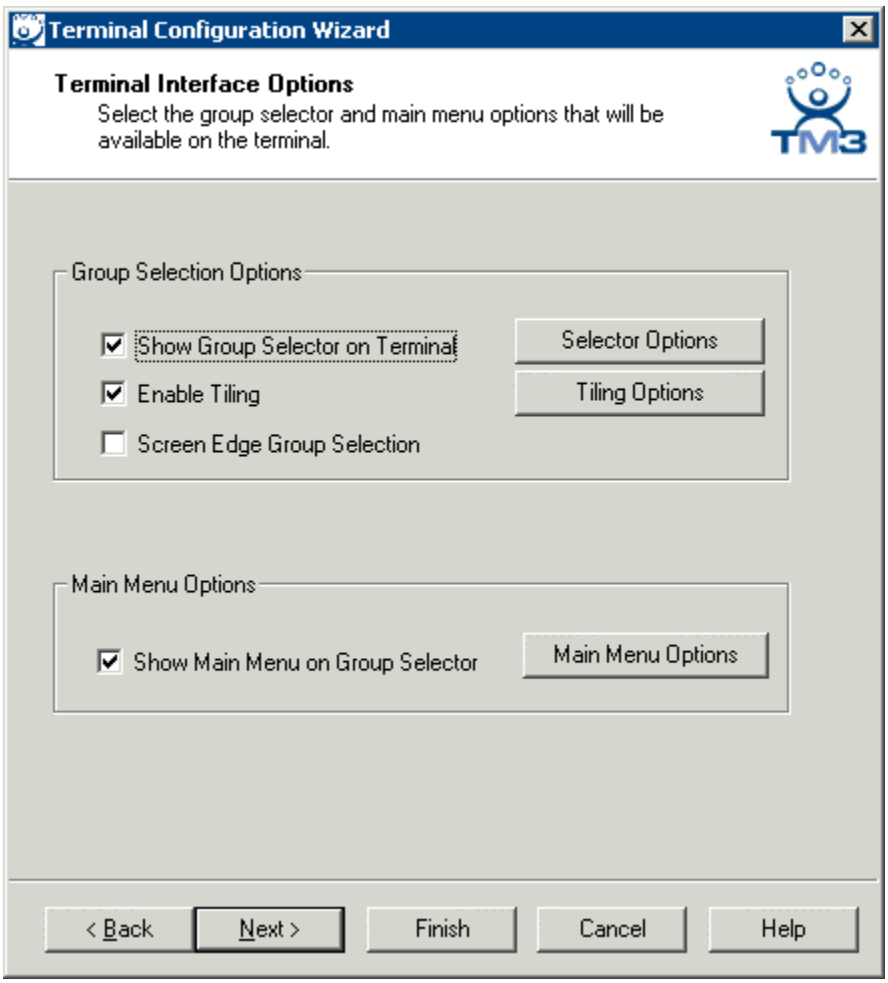
Select SessionTiling Hotkeys

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.

Additional TermSecure Options

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.

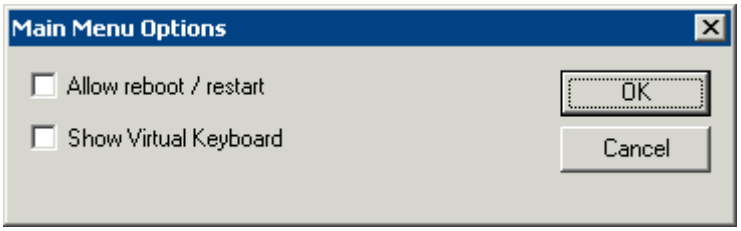


Terminal Interface Options – TermSecure Enabled

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

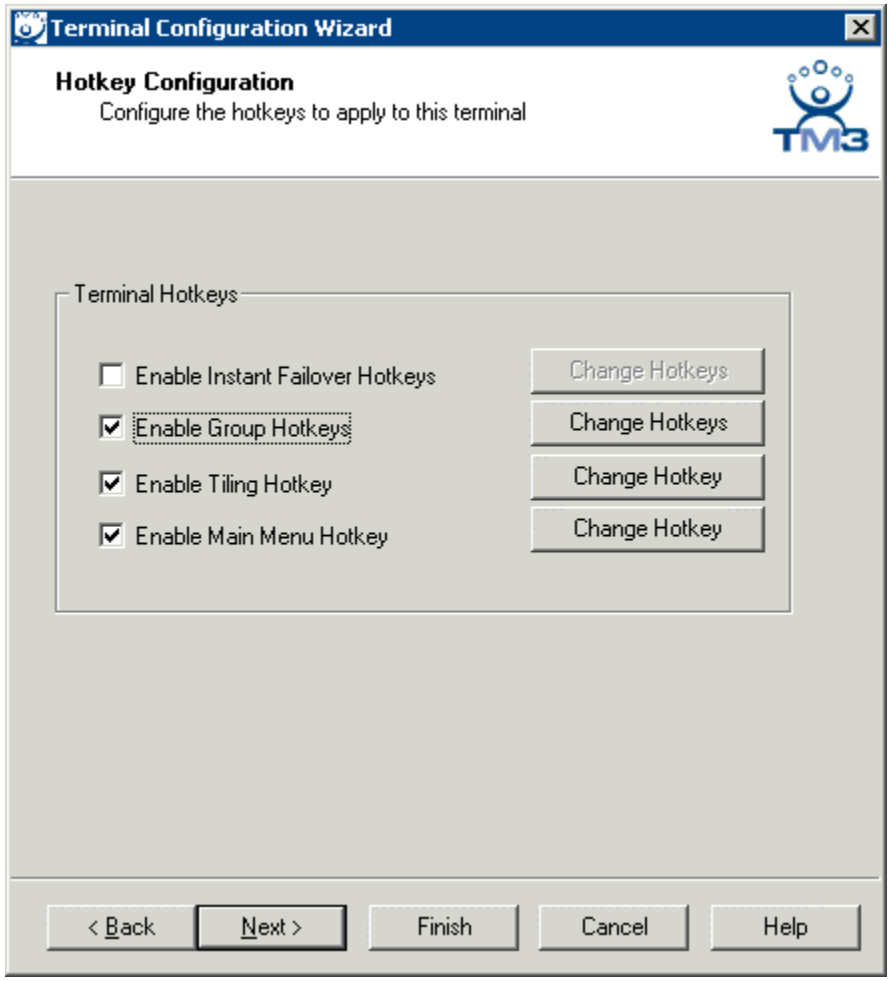
The Main Menu Options window has several settings.

- ***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.

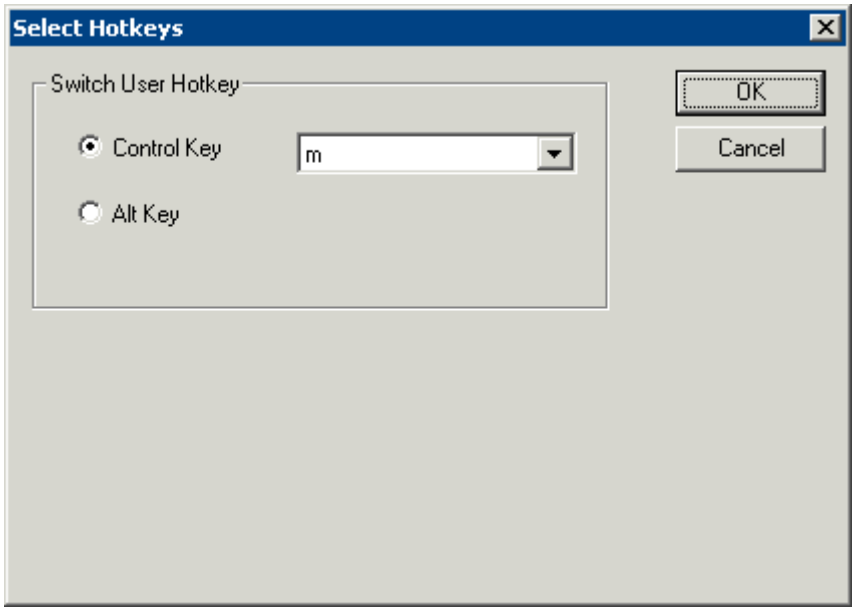
Select ***OK*** to save setting or ***Cancel*** to close without saving.

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.

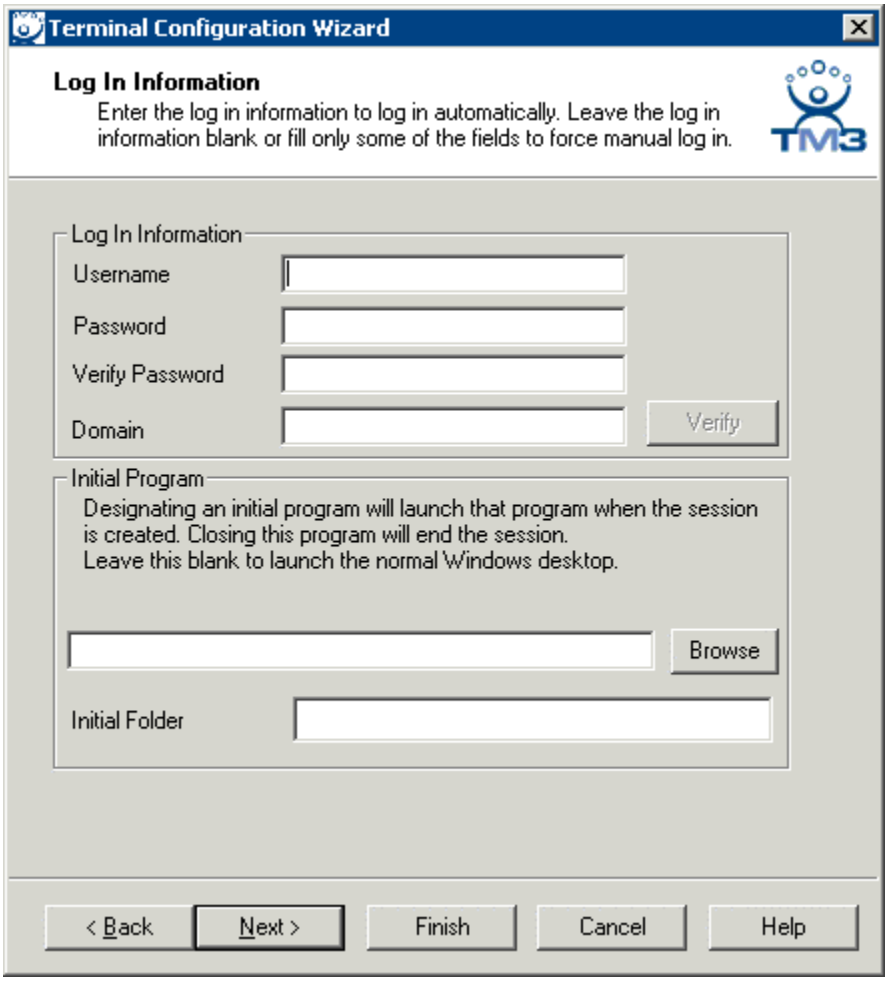
Select the ***OK* button** to continue or the ***Cancel*** button to close without accepting changes.

TermSecure is covered more thoroughly at TermSecure User Configuration Wizard.

9.8.4. Continuation of the Terminal Configuration

The configuration paths (Independent Terminal Servers vs. Application Groups, 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 Application Groups.

Login Information Page



Individual Terminal Servers - Login Information

It is recommended that each terminal should login to a Terminal Server with a unique profile.

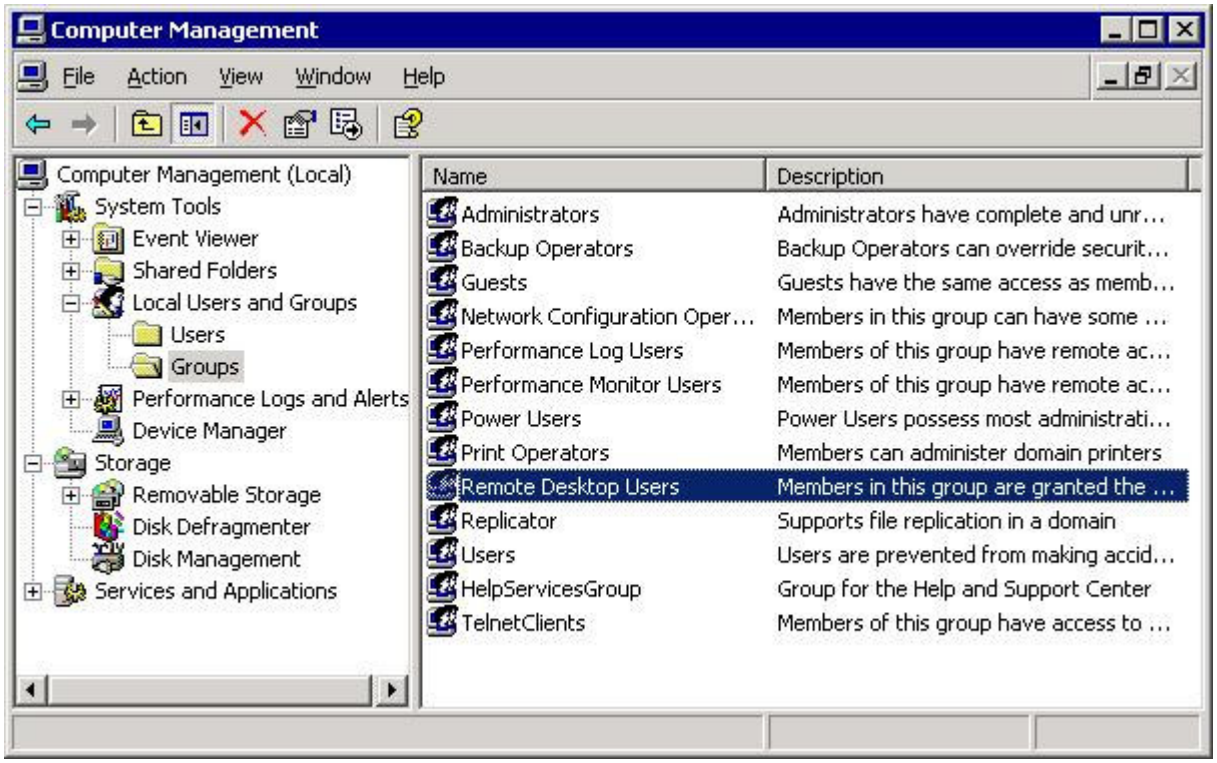
If the ***Username***, ***Password***, and ***Domain*** fields are filled with a valid Microsoft user account, ThinManager will pass this information to the Microsoft Terminal Server when the ThinManager Ready Thin Client connects, letting the terminal login automatically.

If the ***Username***, **Password**, and ***Domain*** fields are left blank, or are filled with invalid data, the Microsoft Windows login window will be presented on the terminal and the user will need to login manually.

Log In Information Settings for auto-logins:

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

Note: Users may need to be added to Microsoft's Remote Desktop Users Group when connecting to a Windows 2003 terminal server.

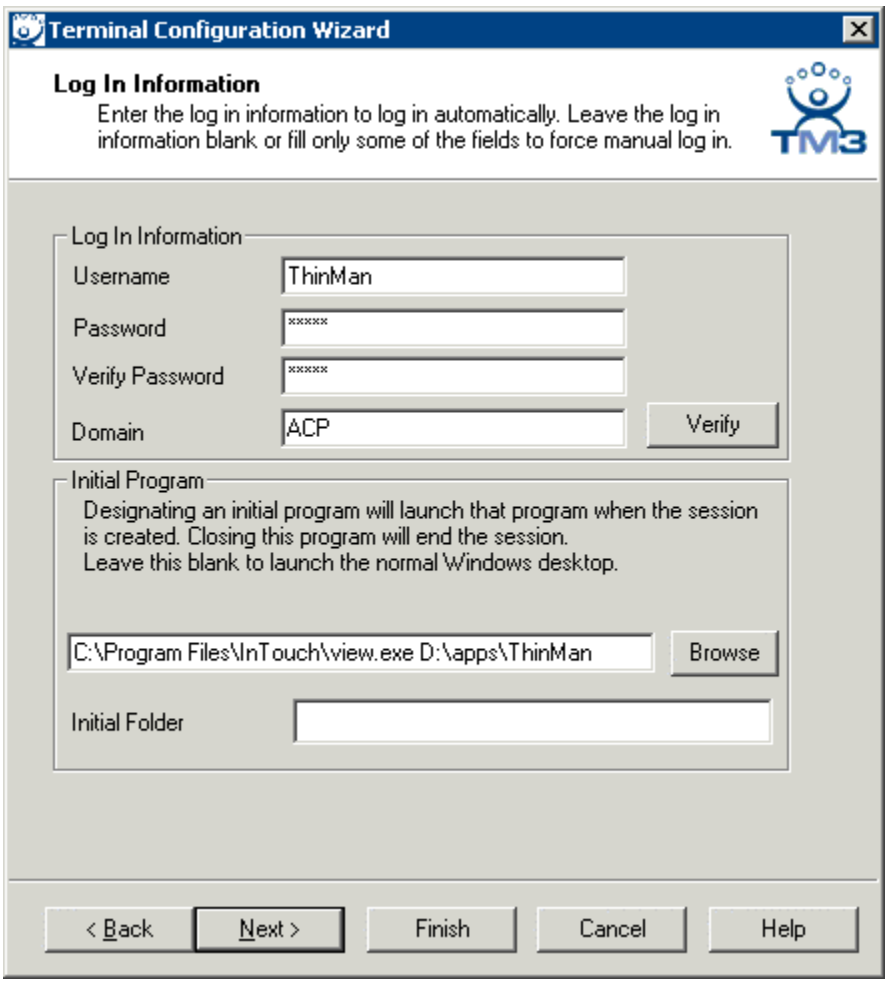


Windows 2003 Computer Management – Local Users and Groups

The ***Initial Program*** loads the designated program instead of the Windows desktop when the terminal connects to the Terminal Server. If a program is launched as the initial program, it is the only program that will run. This provides a level of security and control because that program is the only program that will run in that session. If the Initial Program is closed on the terminal, the session on the Terminal Server will close and the ThinManager Ready Thin Client will reconnect to the Terminal Server and re-launch the Initial Program. This effectively makes the Initial Program the only program. See Initial Program for details.

- ***Initial Program*** - Enter the path of the program that you want to start when the user logs on to the terminal server.
- ***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 is new to ThinManager 3.2 and may not be required.

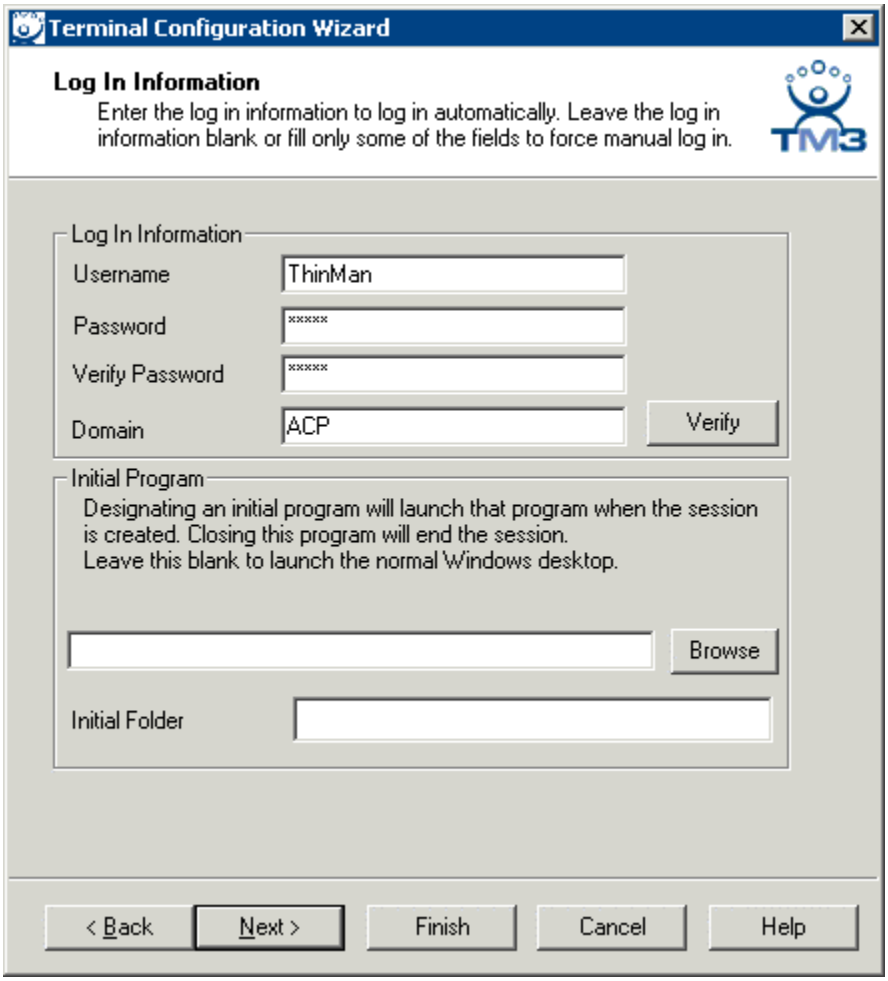
To use the Initial Program, enter the path to the program in the ***Initial Program*** field as shown in the example.



Initial Program

Note: When using the Initial Program with failover, the path must be identical on all terminal servers. If the path is different, use a batch file to launch the application.

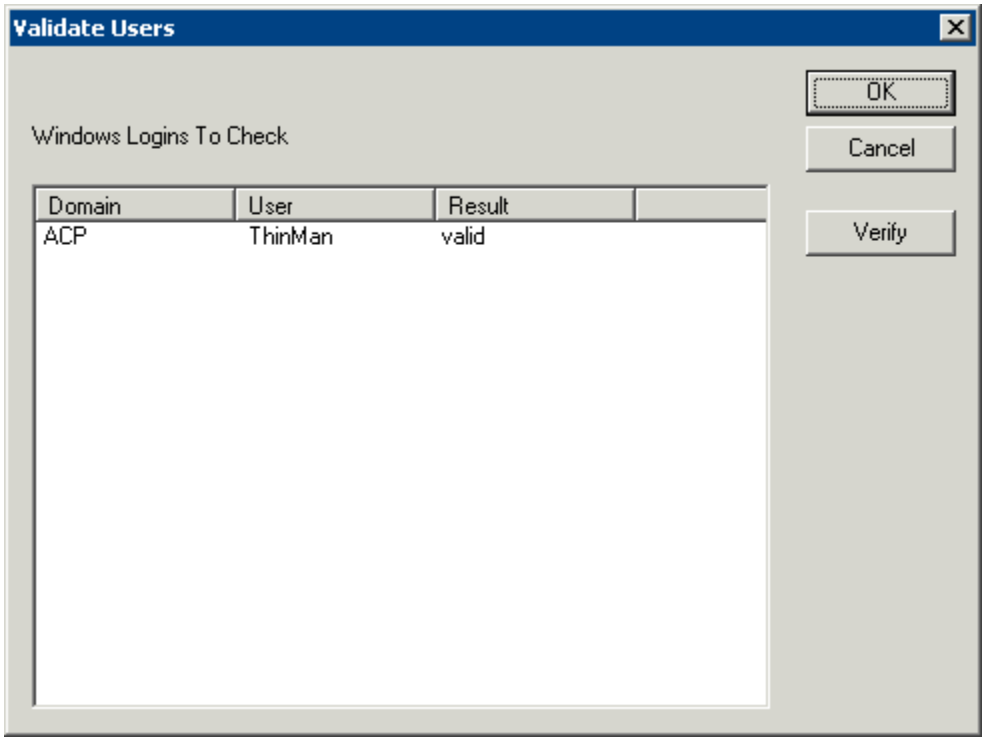
Login for Domain Users



Domain Member

If a domain name is entered in the ***Domain*** field, the ***Verify*** button becomes active to allow the user to be check for validity.

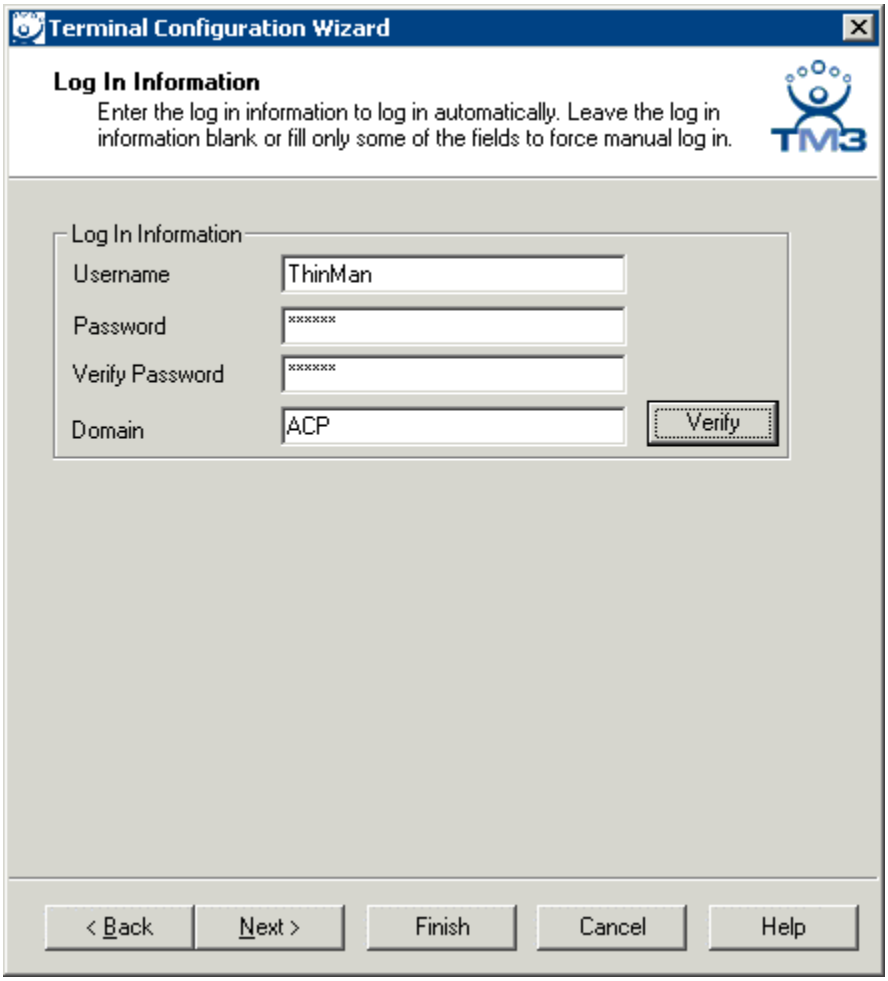
Select the ***Verify*** button to check the user.



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.

Login for Application Group Users

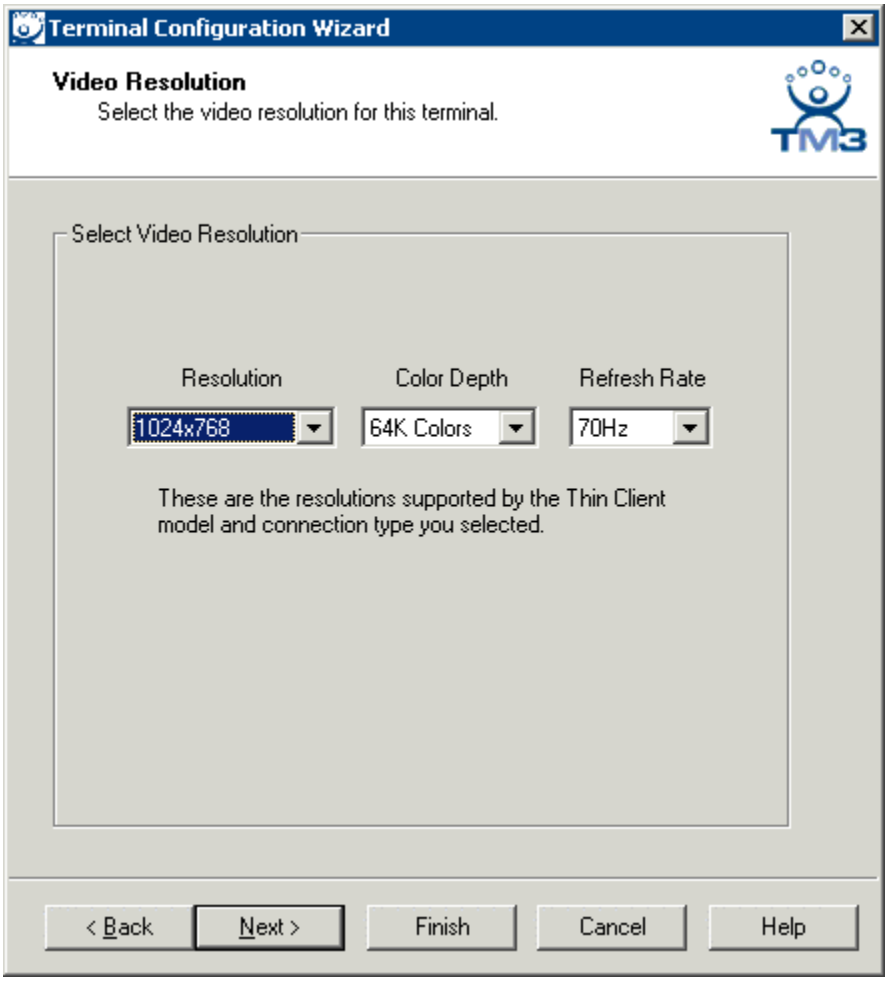


Login Information - Use Application Groups

Terminals using Application Groups do not display the Initial Program field. Use AppLink to provide the Initial Program function instead. See AppLink for details.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Terminal configuration.

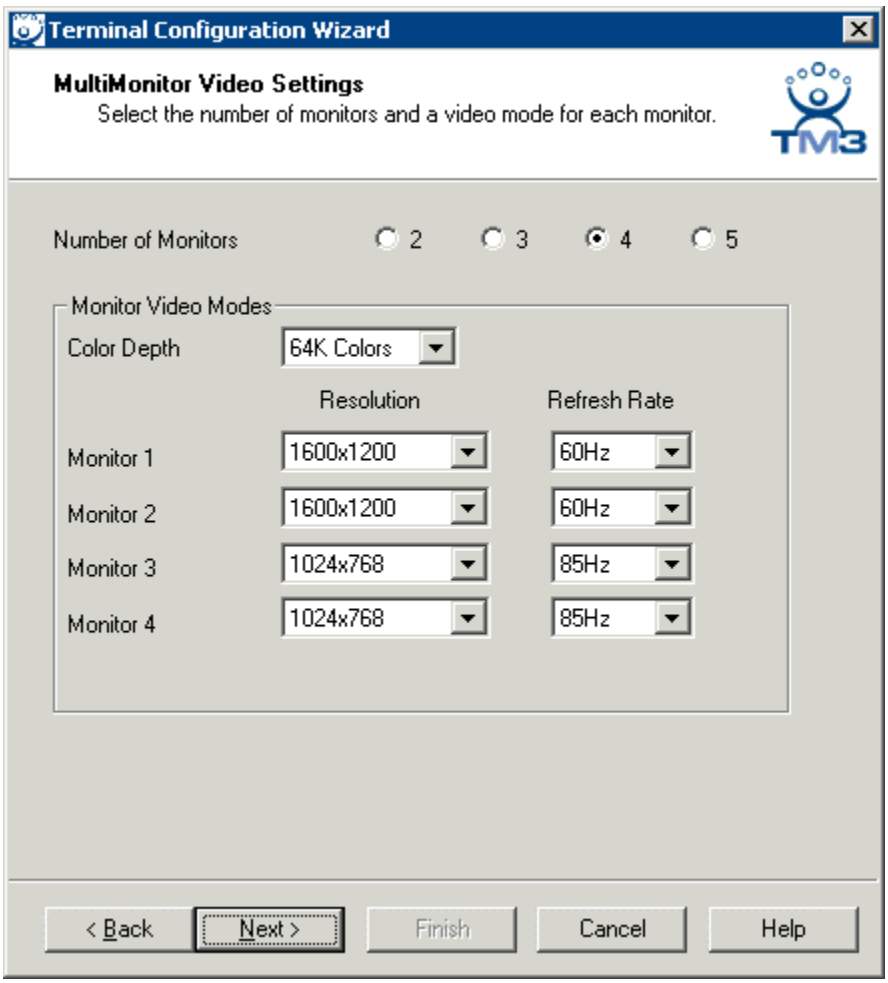
Video Resolution Page



Terminal Configuration Wizard - Video Configuration

The **Video Resolution Configuration** has drop-down boxes that allow the video resolution to be set for the terminal. The resolution levels and color depths are limited to what the selected is capable of using, as defined in the TermCap database. See TermCap Database for details.

The standard terminal connection to a Windows 2000 terminal server is limited to the 256-color depth. The RDP connection to a Windows 2003 terminal server can use the 64K-color depth.



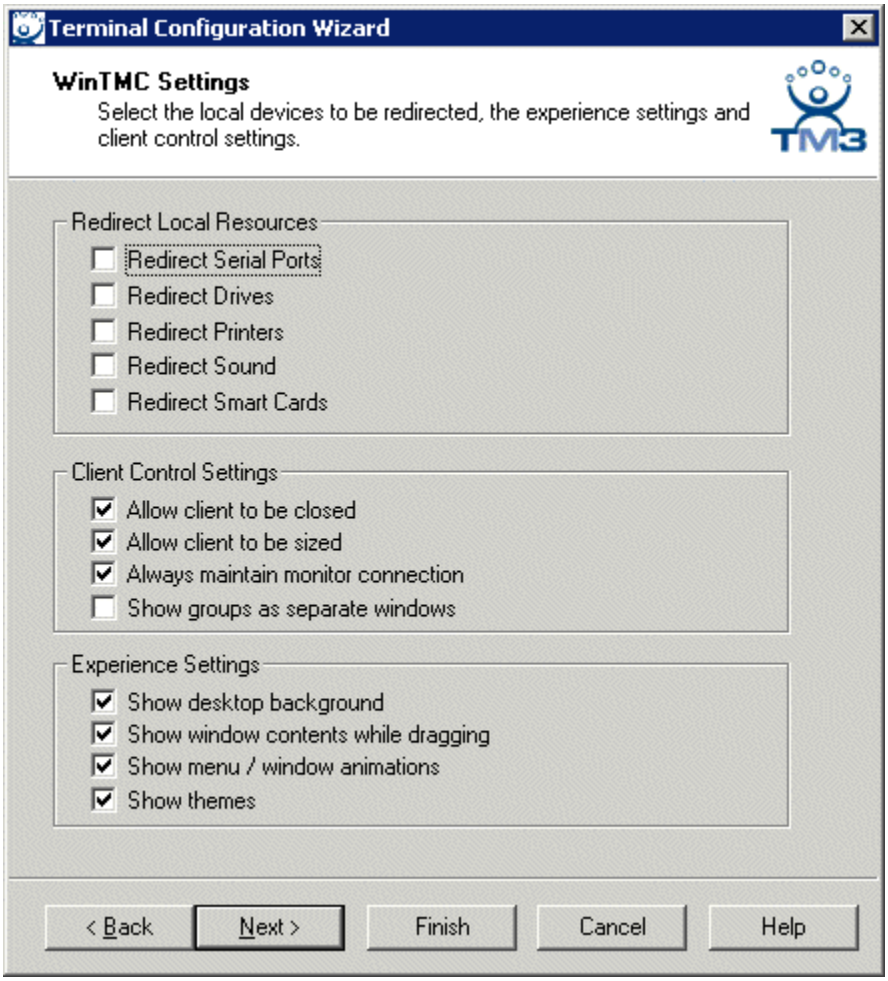
MultiMonitor Video Settings

The **MultiMonitor Video Settings** window will be displayed if the ThinManager Ready thin client hardware selected has MultiMonitor capability, and the ***Enable MultiMonitor*** checkbox is selected on the Terminal Server Specification page. The number of monitors and the resolution of each can be selected.

See MultiMonitor for details.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Terminal configuration.

WinTMC Settings Page



WinTMC Settings

If the terminal was defined as a ***GENERIC: PersonalComputer*** on the **Terminal Hardware** page, the terminal is configured as a WinTMC client and will display the **WinTMC Settings** page. These only apply to connections made by the WinTMC fat client.

Note: This page will only be shown if **GENERIC: PersonalComputer** is chosen for the ***Make/OEM*** and ***Model*** on the Terminal Hardware page.
See WinTMC for details.

See WinTMC Fat Client for details on the WinTMC client.

The settings include:

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 Application Groups as separate windows rather than in one window shell.

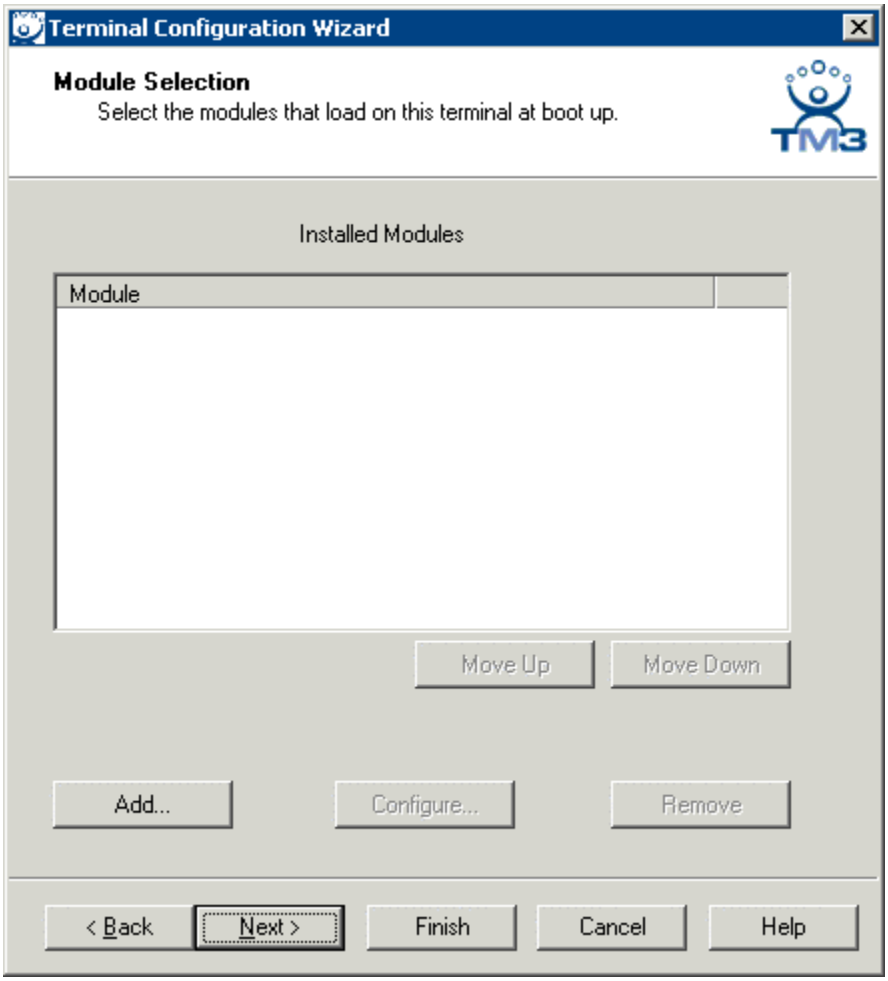
Experience Settings:

- **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.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

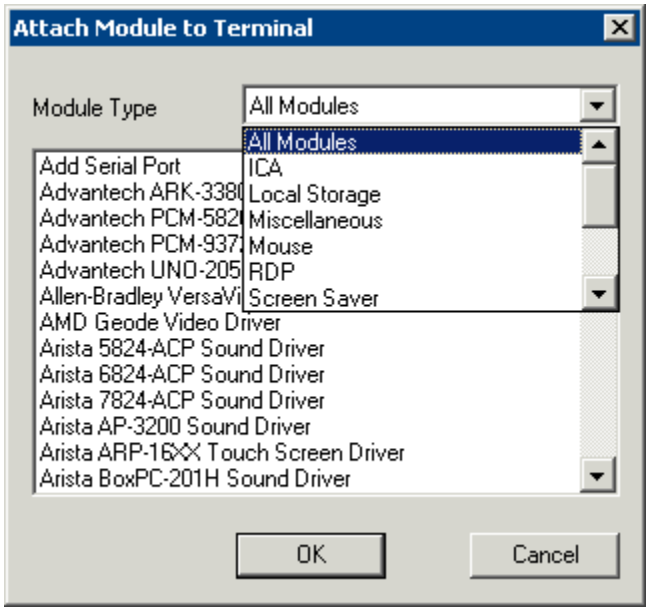
Terminal Module Selection Page



Terminal 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.

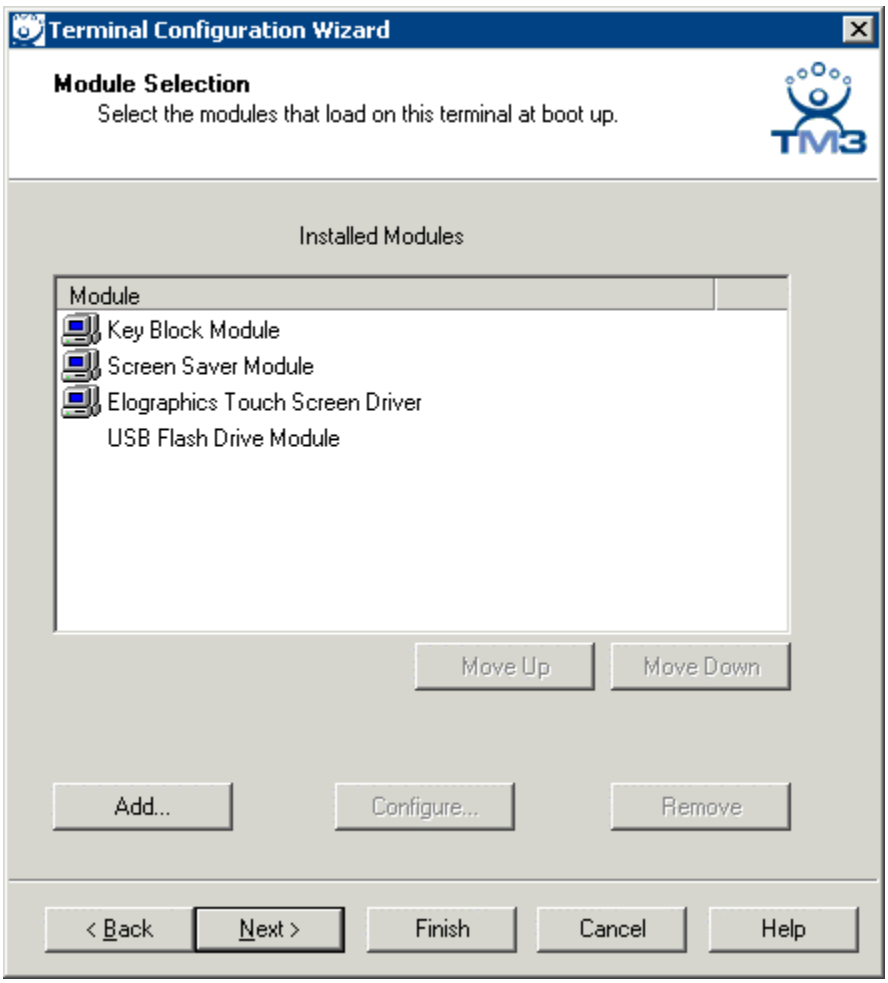
To add a Module to a Terminal, select the ***Add...*** button to launch the **Attach Module to Terminal** window.



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.

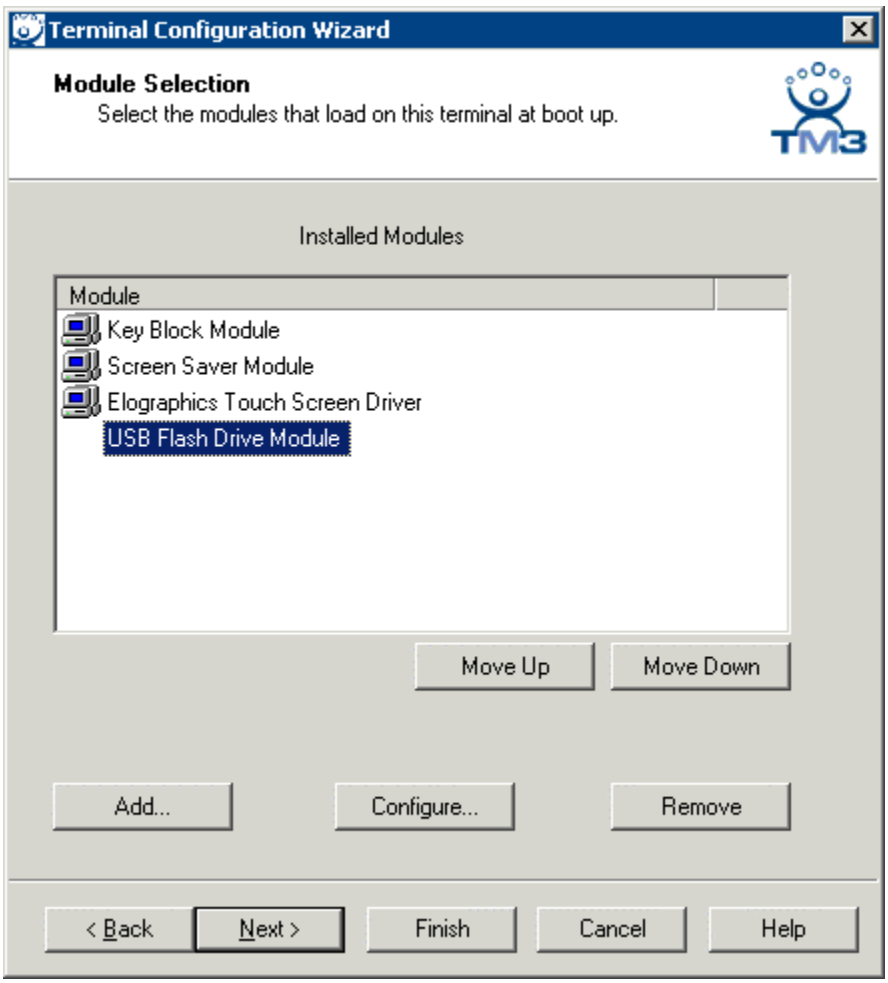
Highlight the desired module and select the ***OK*** button to add the module to the configuration.



Terminal Configuration Wizard - Module Selection

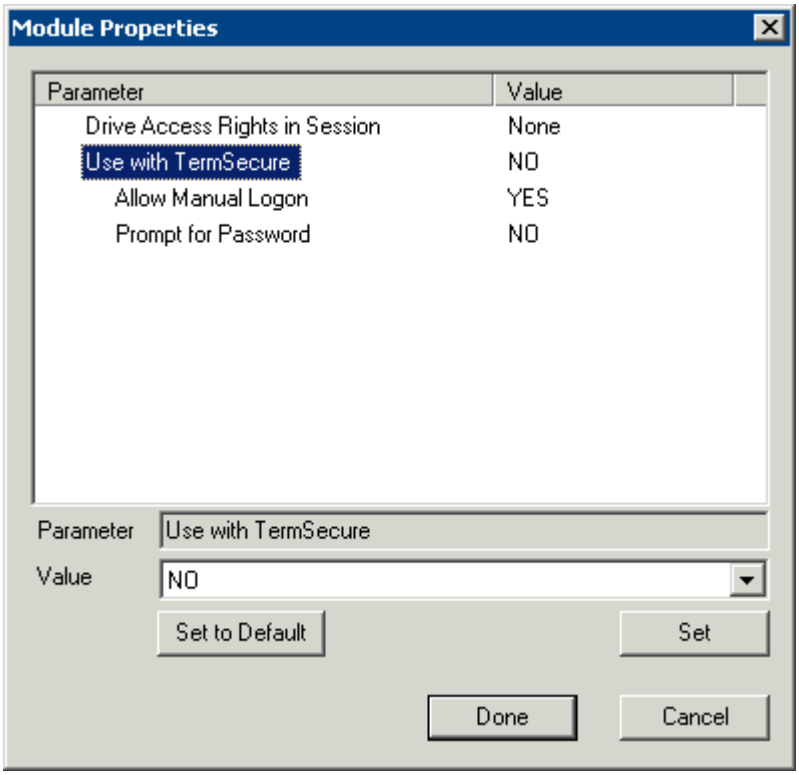
Terminals that are members of a Group may show icons to represent the properties of added modules.

-  The Group icon represents modules assigned to a parent Group.
-  The Group icon with yellow plus sign represents properties that are changed on the terminal from the Group settings. This is now limited to touch screen calibration.
- 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

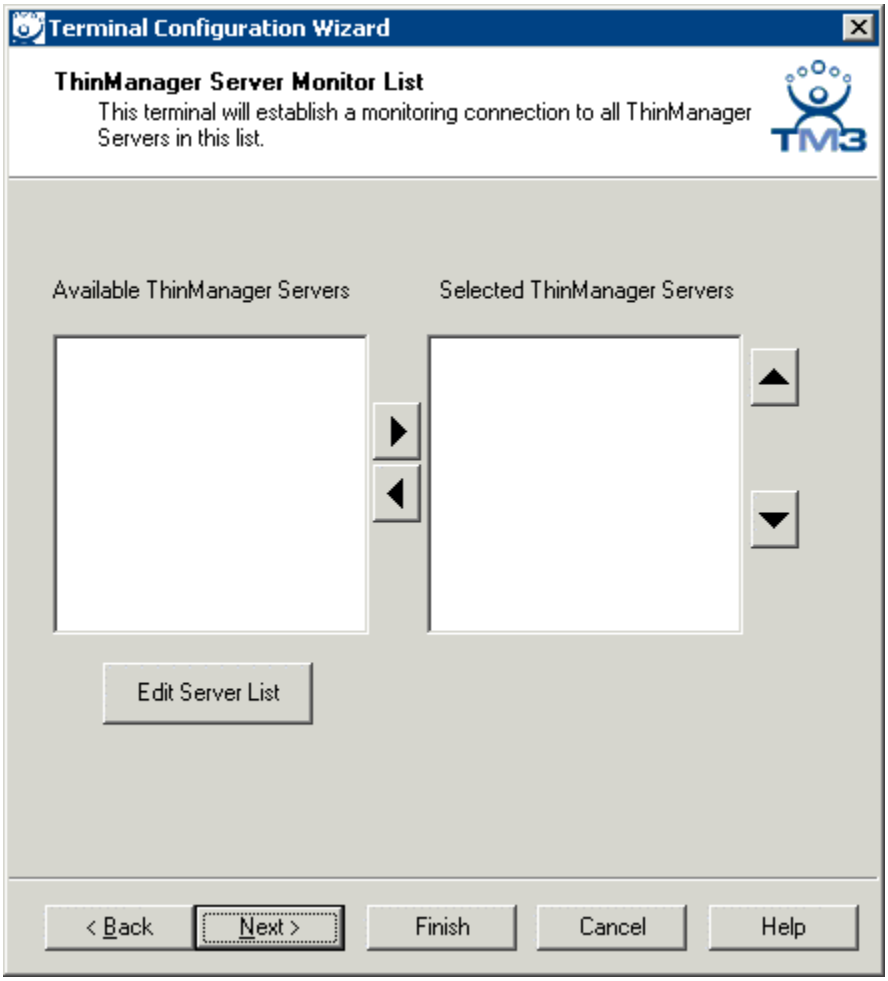
On the Modules Properties window, select the parameter to change, select the new value in the drop-down list, and click the **Set** button. This will change the setting.

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 the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Terminal configuration.

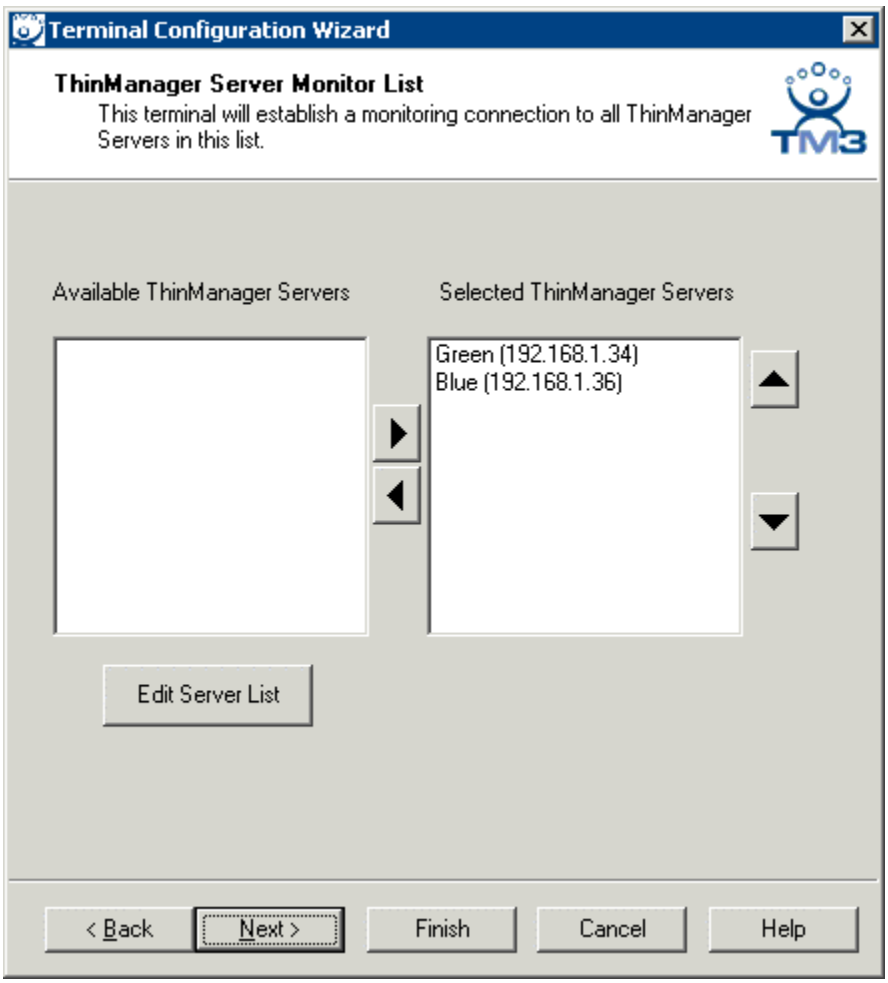
ThinManager Server Monitor List Page



Terminal Configuration Wizard - ThinManager Server Monitor List

The **ThinManager Server Monitor List** defines what Thin Manager Servers the terminal will communicate with to keep monitoring light status current. All ThinManager Servers defined in the ThinManager Server List Wizard will appear in the Available ThinManager Server column.

If the ***Available ThinManager Server*** column is empty, the ***ThinManager Server List Wizard*** needs to be run to define the ThinManager Servers. Select the ***Edit Server List*** button to launch the ***ThinManager Server List Wizard*** as shown in ThinManager Server List Wizard.



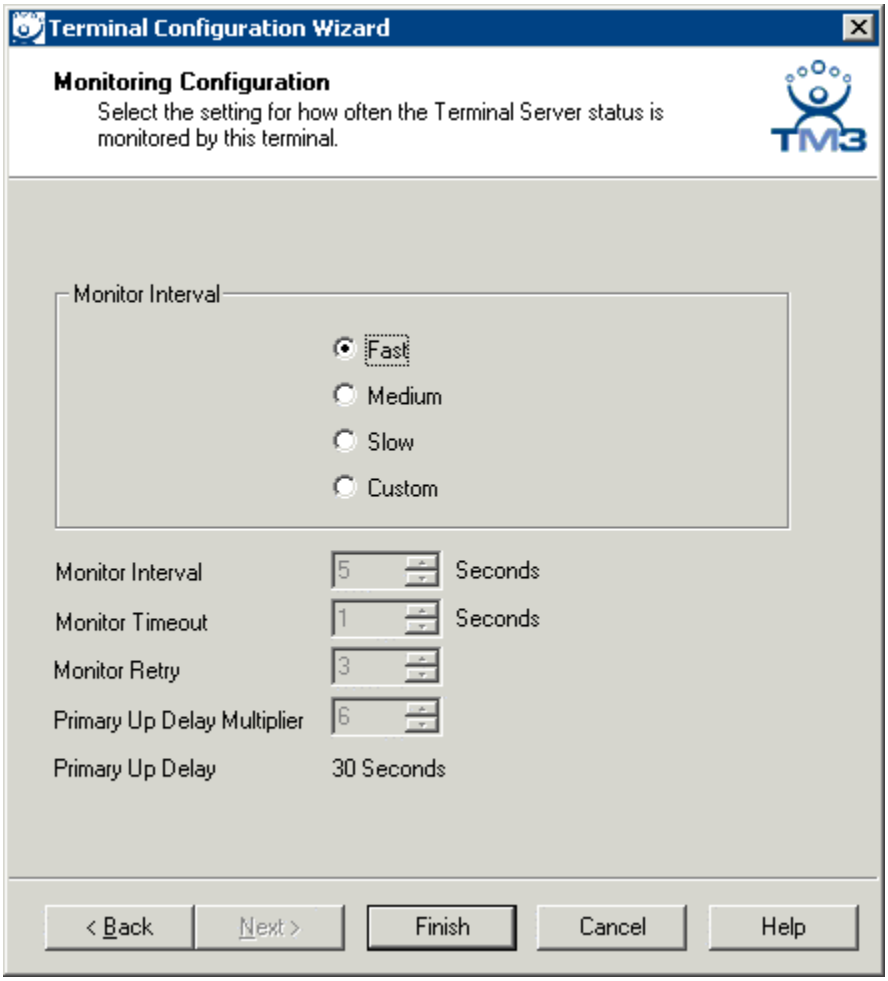
Terminal Configuration Wizard - ThinManager Server Monitor List

Once the ThinManager Server List wizard has run, each ThinManager Server that is identified in the ThinManager Server List Wizard will initially appear in the ***Available ThinManager Server*** box on the left of the Group Monitoring Configuration page.

To select a ThinManager Server for the terminal, highlight it in the ***Available ThinManager Server*** list on the left and click the right arrow button. This will put the ThinManager Server into the ***Selected ThinManager Server*** list on the right. The terminal will send connection status (red/green icon lights) to all ThinManager Servers in the ***Selected ThinManager Server*** list.

Select the ***Next*** button to continue configuration or select the ***Finish*** button to complete the Group configuration.

Monitoring Configuration Page



Terminal Configuration Wizard - Monitoring Configuration

ThinManager Ready Thin Clients continuously monitor the Terminal Server to make sure that it stays online. If the Terminal Server goes offline, the terminal will disconnect and connect to the next Terminal Server in the Group Terminal Server Selection. The Monitoring Connection sets the frequency that the monitor occurs.

Use the ***Monitor Interval*** radio buttons to use a default frequency or select ***Custom*** and choose a setting of your own.

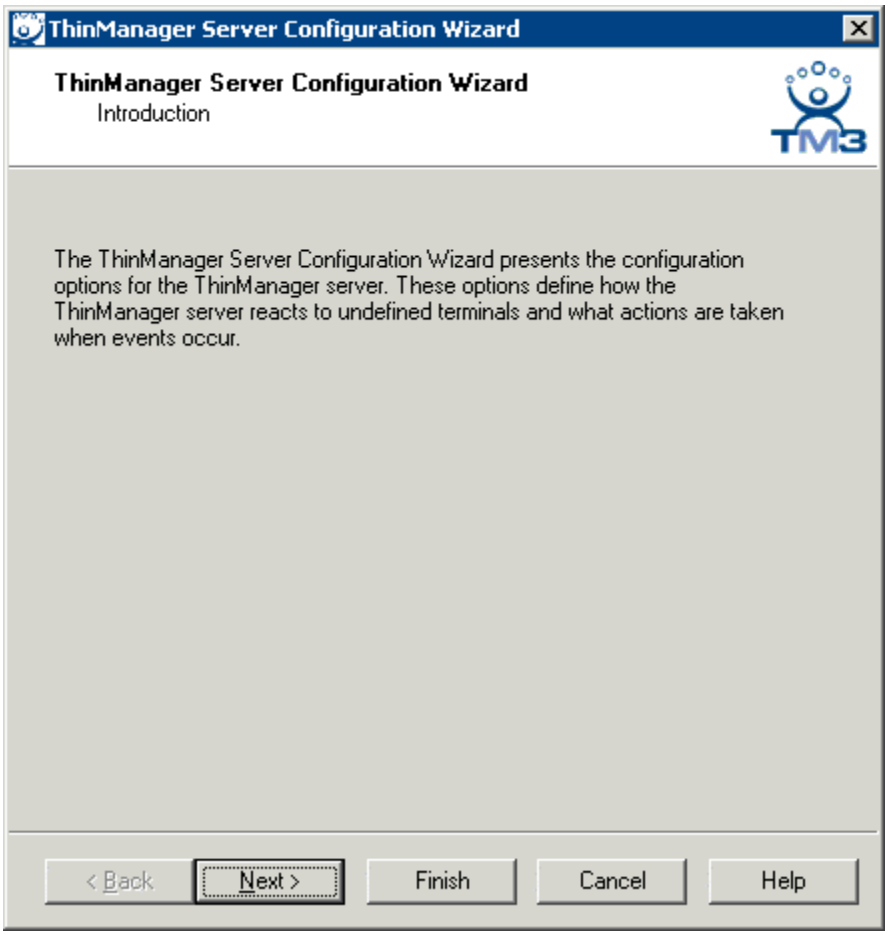
- ***Monitor Interval*** is the interval that the monitor checks occur.
- ***Monitor Timeout*** is the time the terminal will wait for a response from the terminal server.
- ***Monitor Retry*** is the number of times the monitor check will be tried.
- ***Primary Up Delay Multiplier*** is the number that generates the Primary Up Delay time.
- ***Primary Up Delay*** 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.

A **Fast** setting of the Monitor Connection will detect Terminal Server failure quickly. However, the faster the setting is, the more sensitive it is and it may drop the Terminal Server when the network is busy but not offline. Setting the Monitoring Connection to a slower setting gives the terminal server more time to respond when it is busy.

Select the ***Finish*** button to complete the terminal configuration.

9.9. ThinManager Server Configuration Wizard

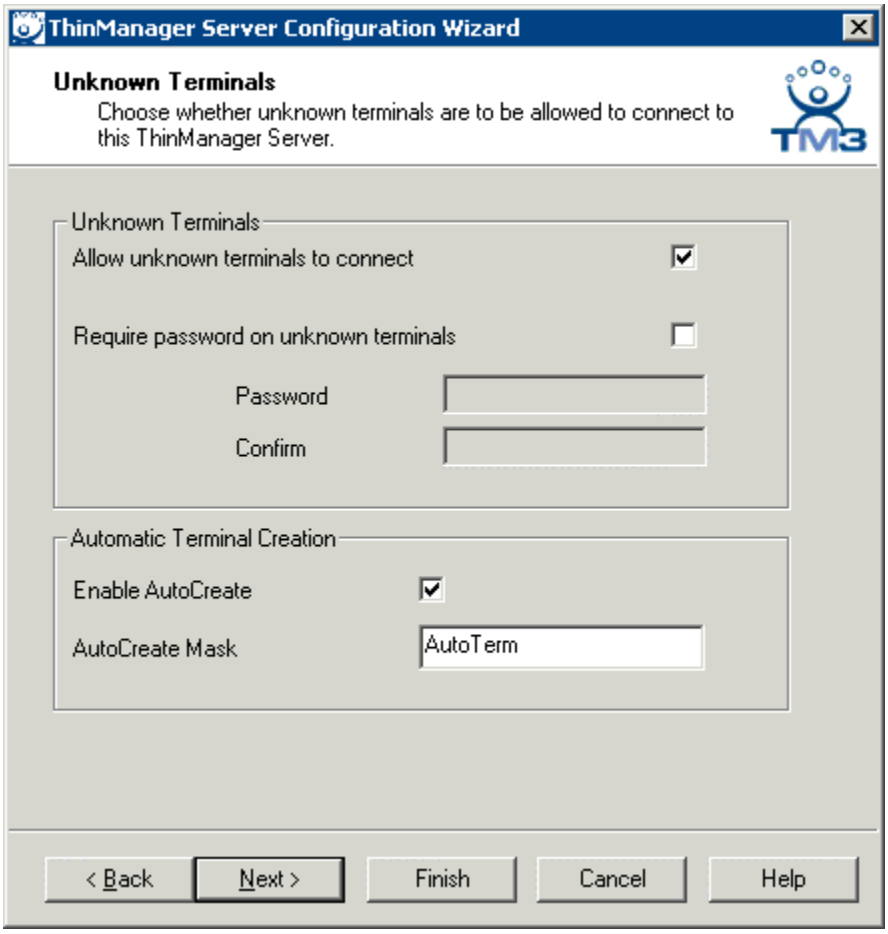
Selecting ***Edit > Modify*** while the ThinMan icon is highlighted in the ThinManager tree will launch the ThinManager Server Configuration wizard that allows the configuration of global ThinManager settings. The ThinManager Server Configuration wizard is also accessible by double-clicking on the ThinManager icon in the tree, or by right clicking the icon and selecting ***Modify***.



ThinManager Server Configuration Wizard

Select ***Next*** to Configure the ThinManager Server settings.

Unknown Terminals Page

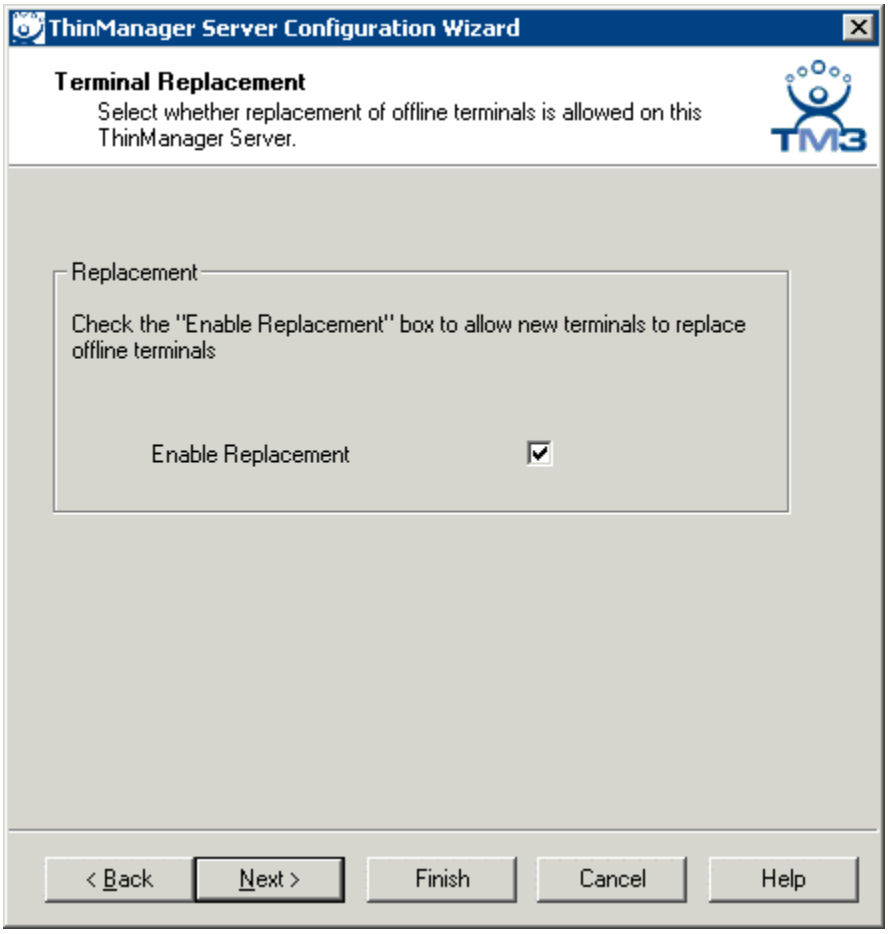


Unknown Terminals

- ***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.

Select the ***Next*** button to continue.

Terminal Replacement Page

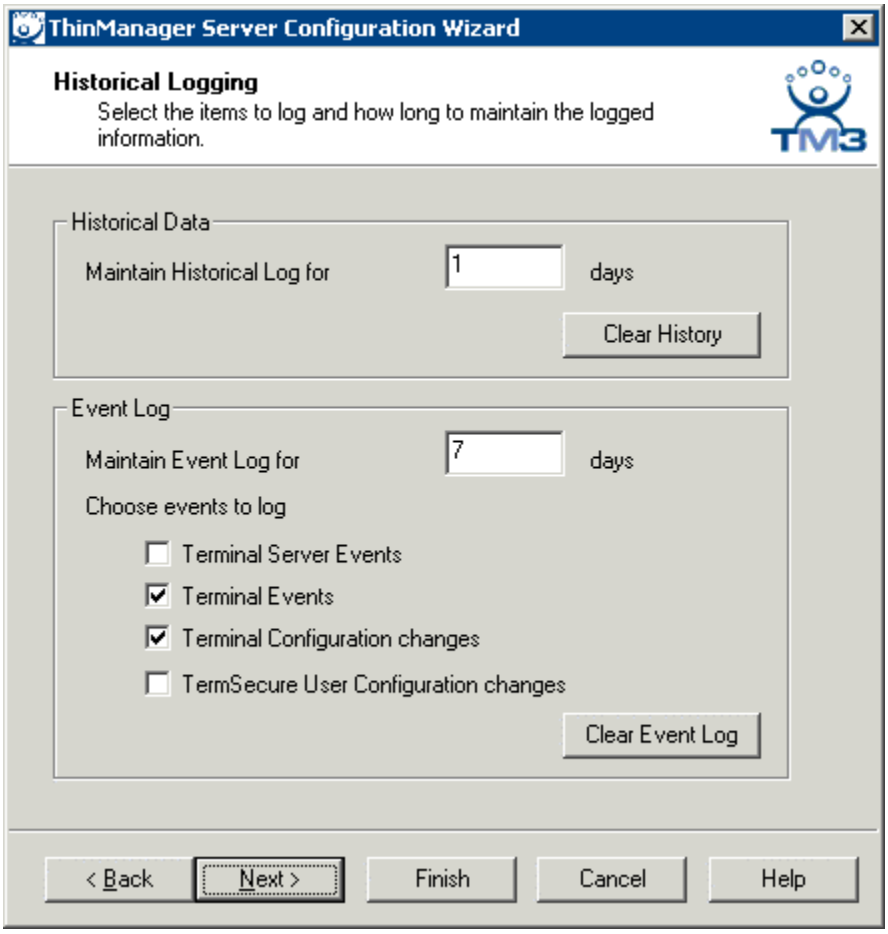


Terminal Replacement

The ***Enable Replacement*** 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.

Select the ***Next*** button to continue.

Historical Logging Page



Historical Logging

The **Historical Logging** page allows the **Historical Log** and **Event Log** parameters to be set.

Historical Data

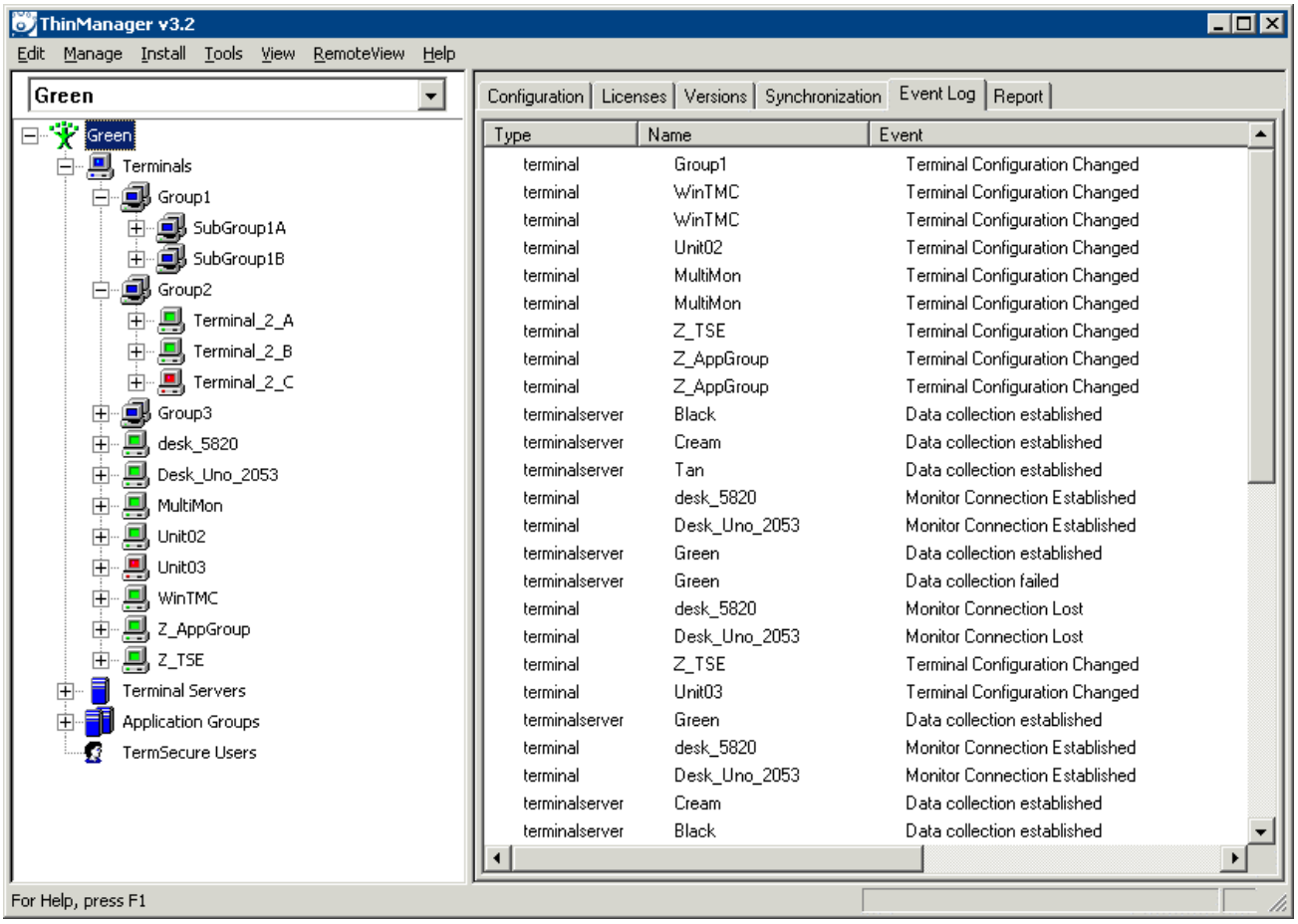
- ***Maintain Historical Log for X days*** - This field determines the length of time that the terminal server CPU and memory data from the **Terminal Server Graph** tab is stored. See Details Pane for an example of the graph.
- ***Clear History*** - This button will erase the Historical log.

Event Log

- ***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.

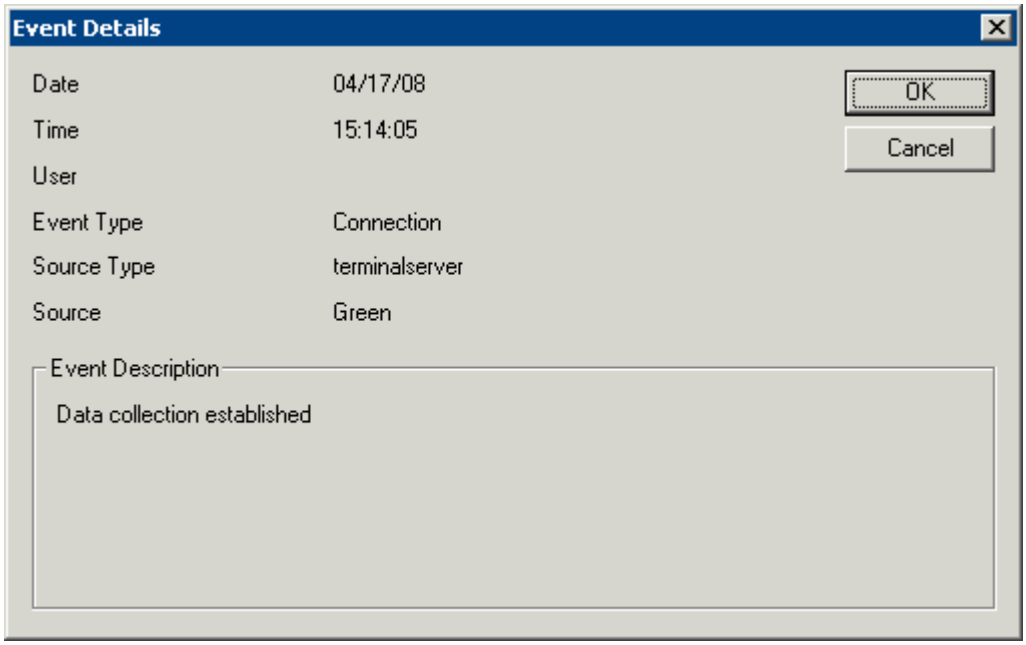
- **User Configuration Changes -** This checkbox, when selected, records changes to the TermSecure User configuration.

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.

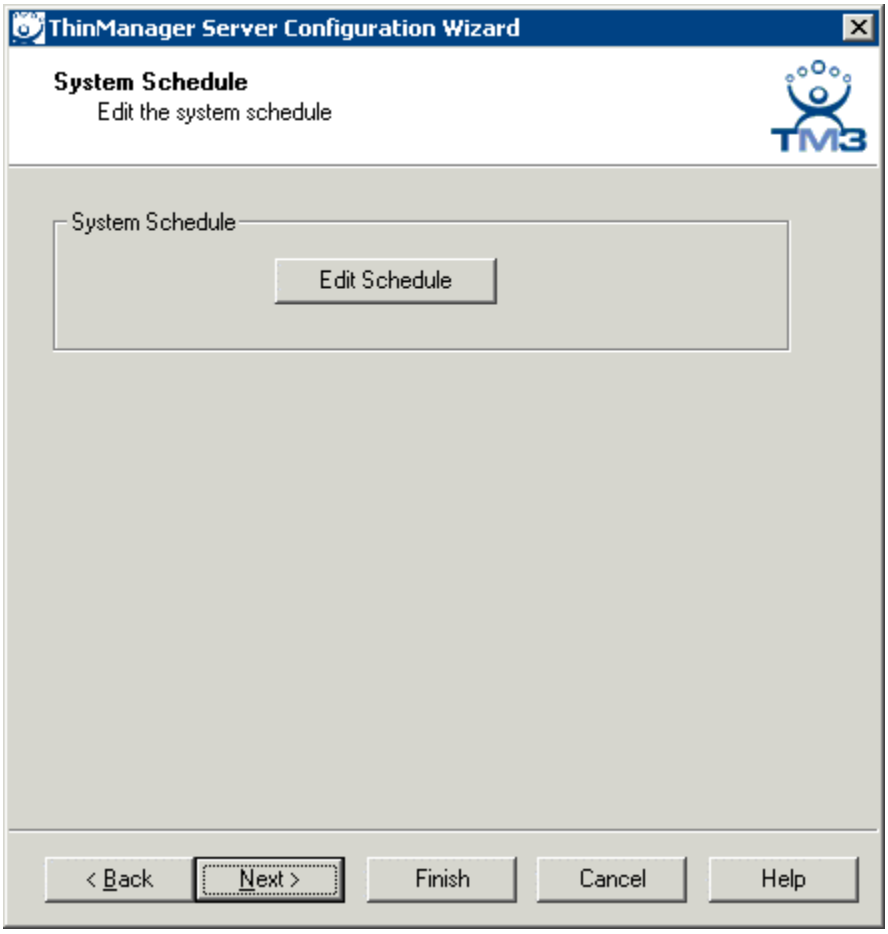


Event Detail

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

Select ***Next*** to continue the **ThinManager Server Configuration Wizard**.

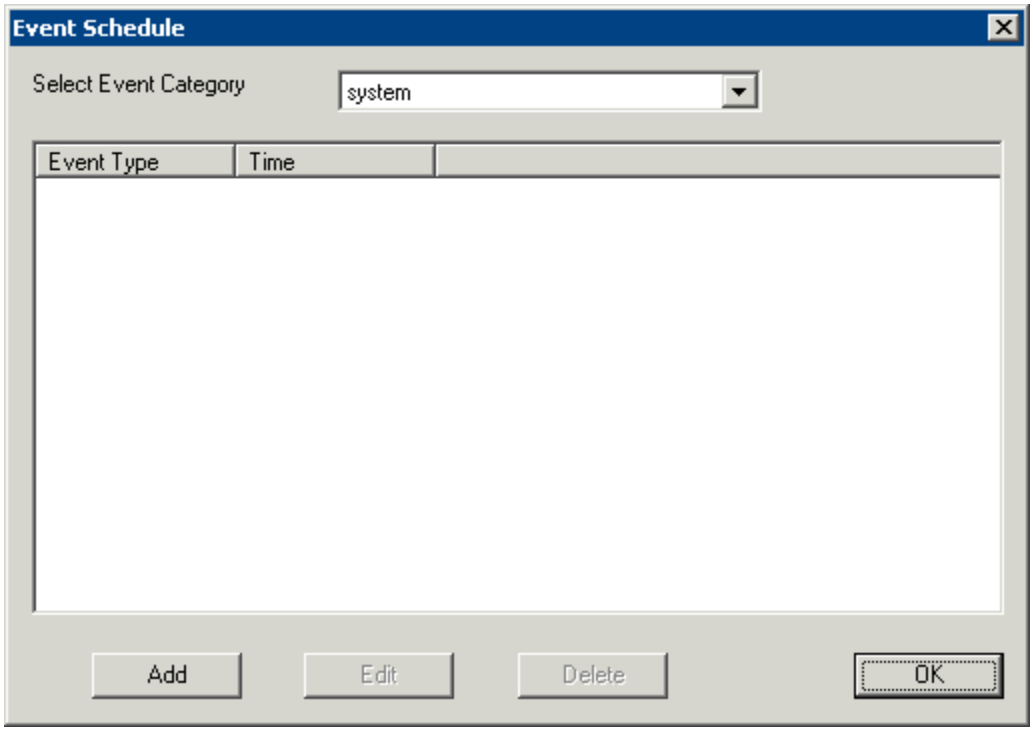
System Schedule



System Schedule

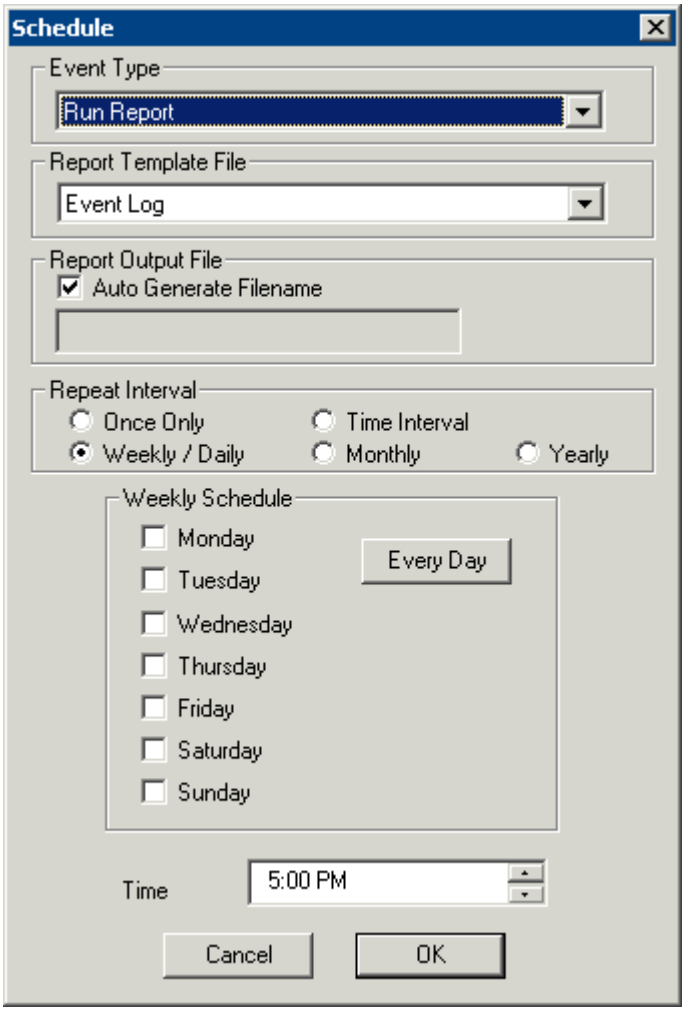
The next page of the **ThinManager Server Configuration Wizard** is the **System Schedule** page. This allows tasks to be scheduled for the ThinManager Server.

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

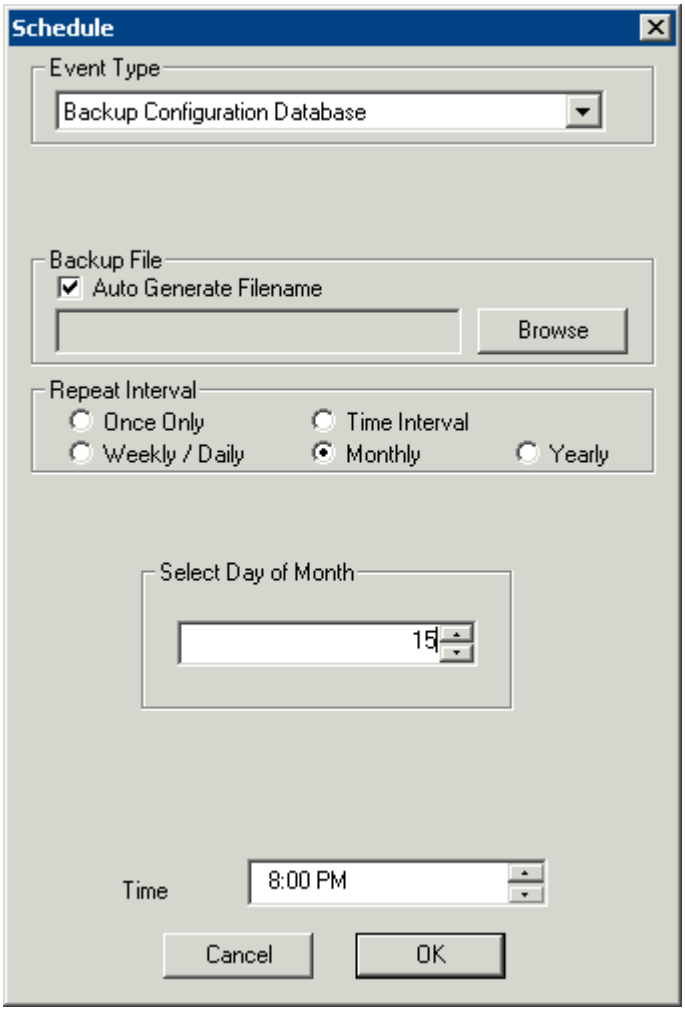
The **Schedule** dialog allows events to be scheduled for the ThinManager. The two main events are ***Run Report*** and ***Backup Configuration Database***.

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.

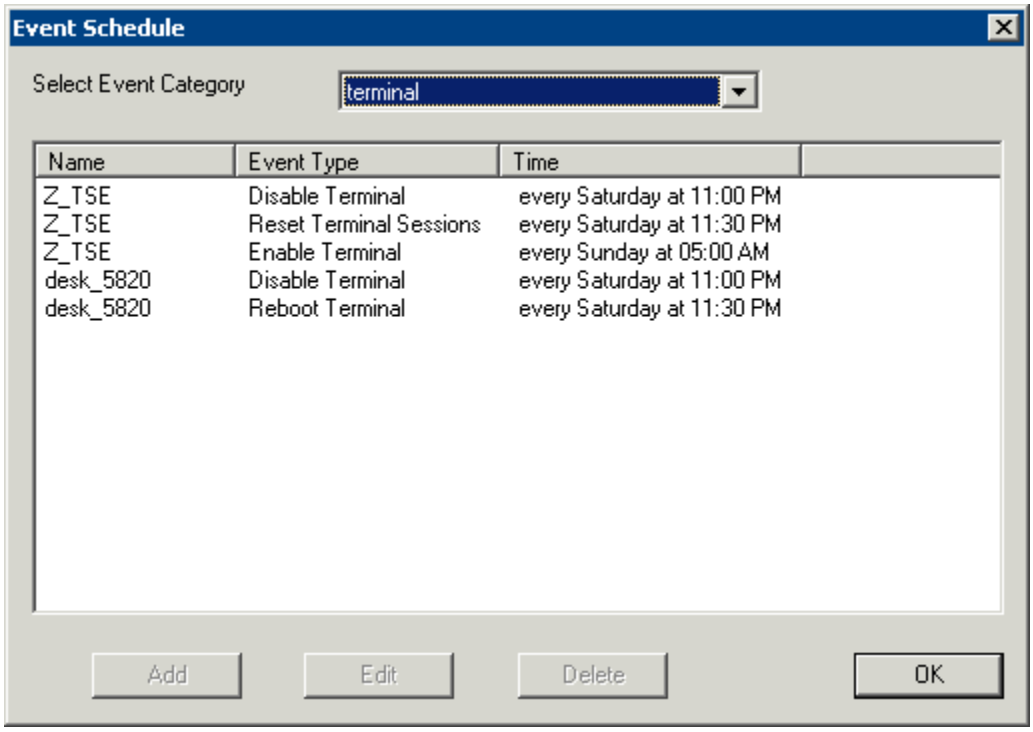
The ***Repeat Interval*** radio buttons control the frequency of the event. The time selection varies with the ***Repeat Interval*** chosen.



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

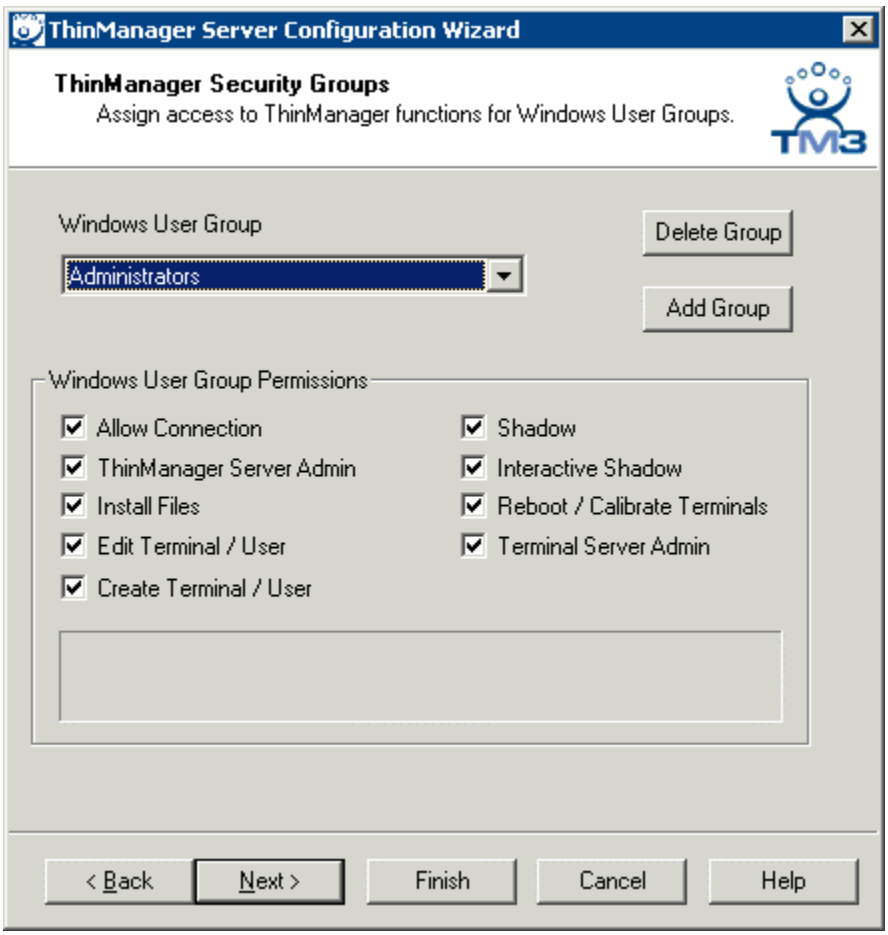
New events cannot be added for the non-system categories, but existing events can be changed by highlighting an event and selecting the ***Edit*** button. Events can be deleted by selecting the ***Delete*** button.

The ***OK*** button accepts the changes and closes the window.

Selecting the ***Next*** button on the **System Schedule** page will open the **ThinManager Access Permissions** page of the **ThinManager Server Configuration Wizard**.

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 3.1 comes with privileges pre-defined for seven 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.**
- **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.

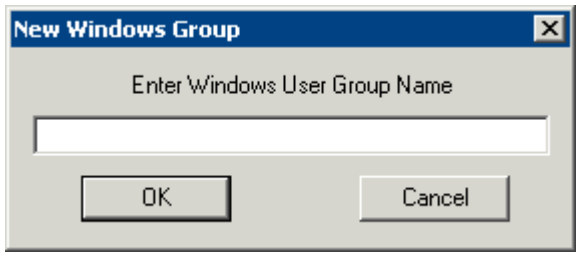
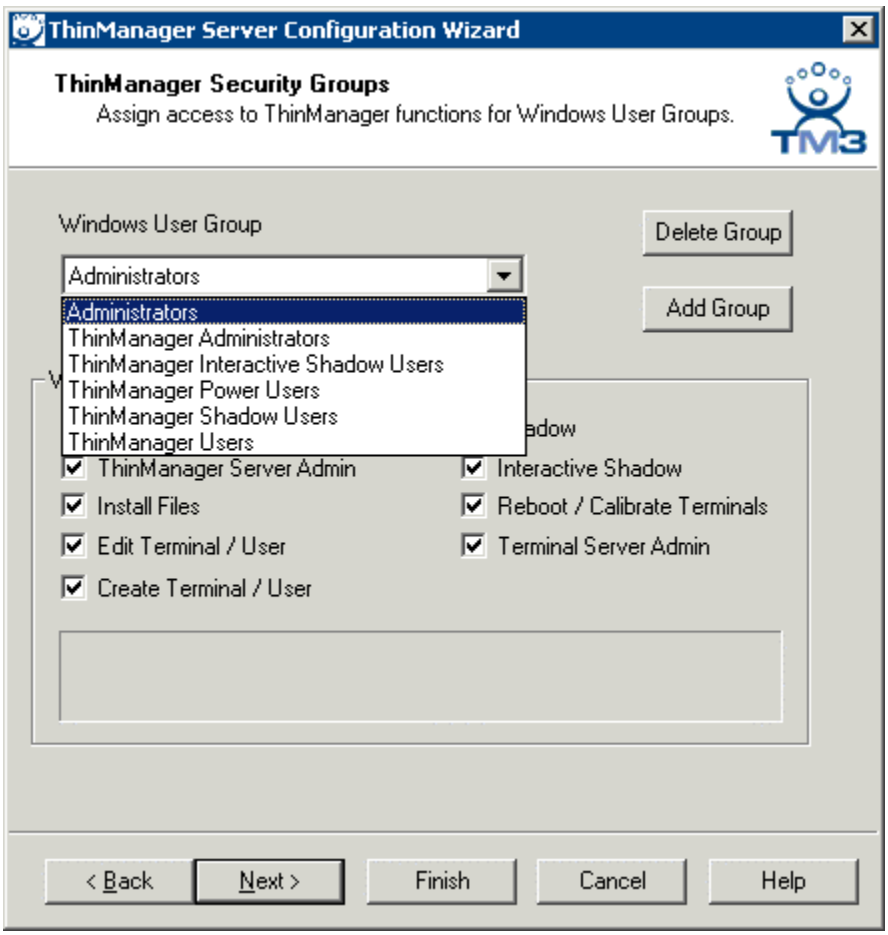


Figure 1 - New Window User Group Window

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.

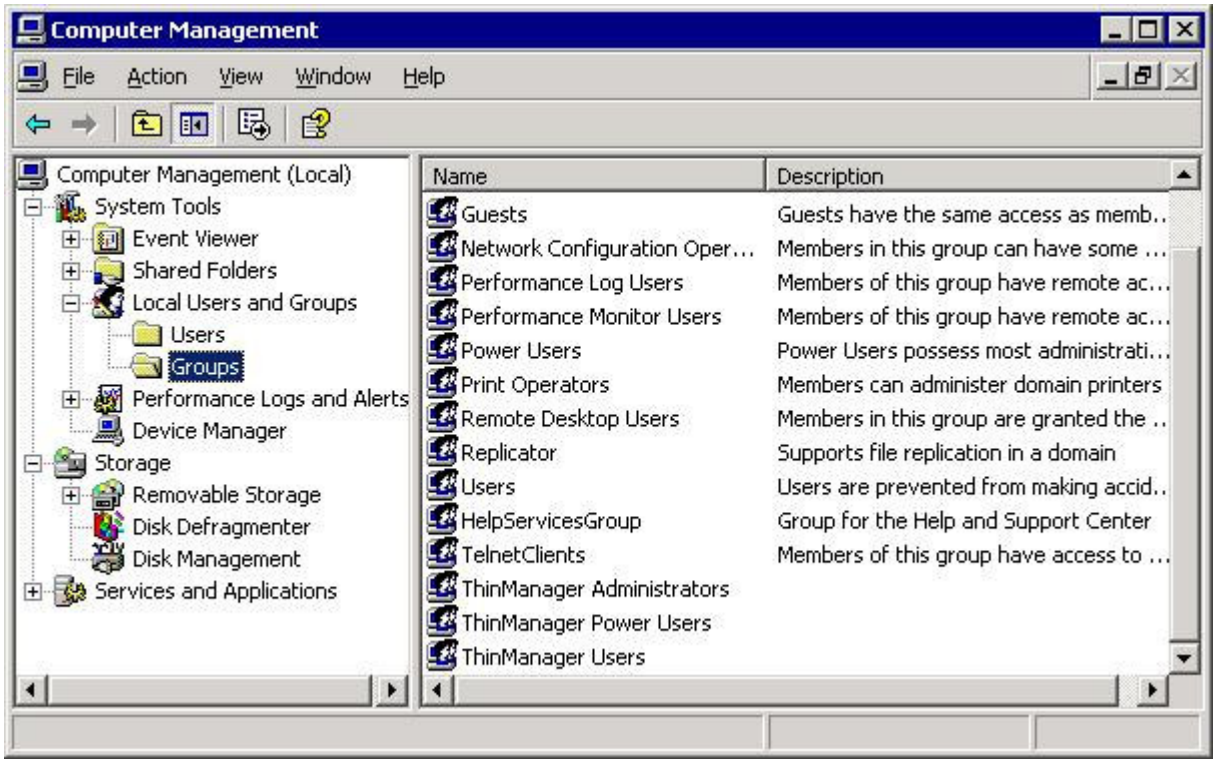


ThinManager Security Groups Page

Select the group from the **Windows Users Group** drop-down. Choose the permissions you want to grant to the group by selecting and unselecting the ***Windows Users Group Permissions*** checkboxes. Members of the Windows User Group will have the selected permissions the next time they login.

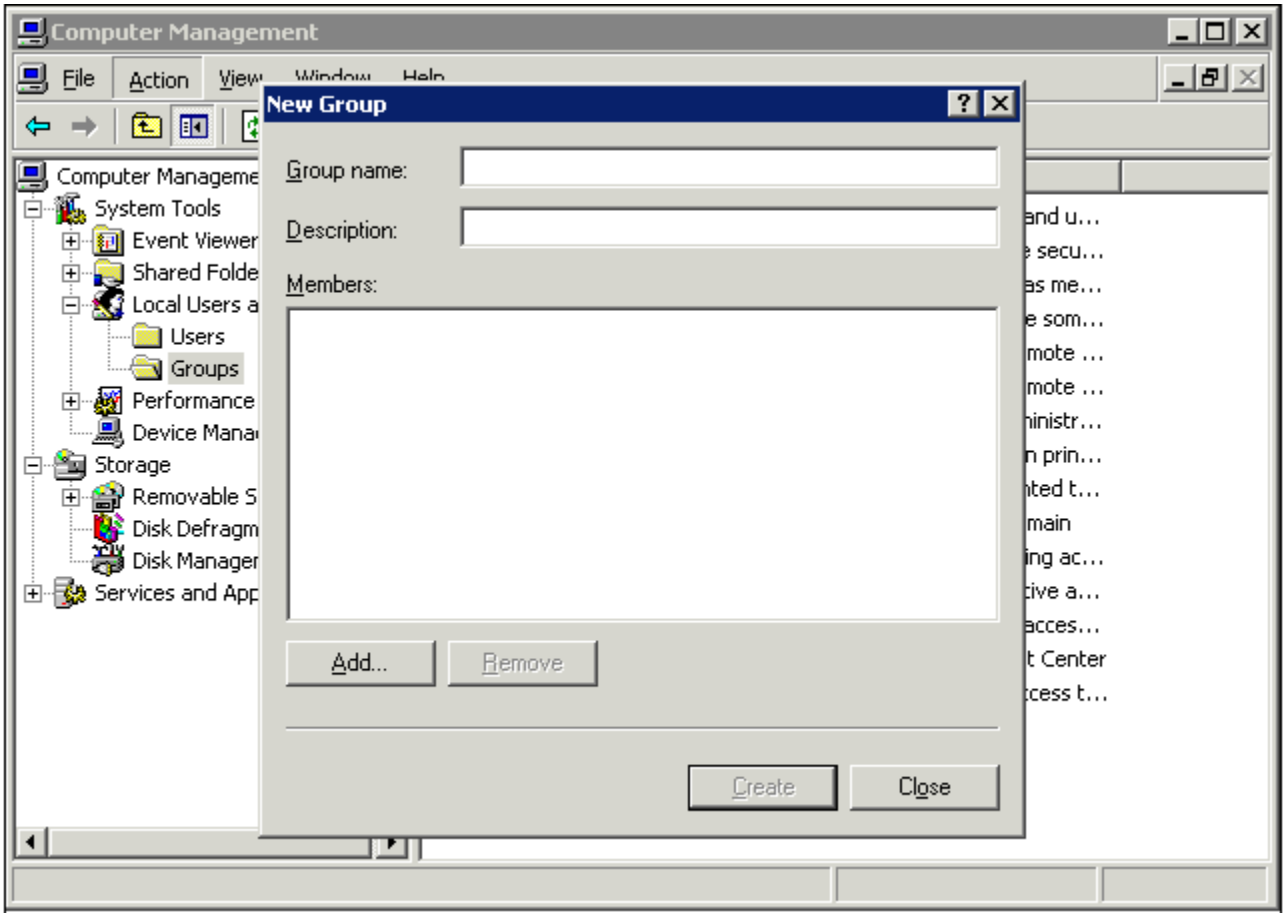
Although ThinManager has Windows User Groups pre-configured with privileges, these groups have not been created on the terminal servers.

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

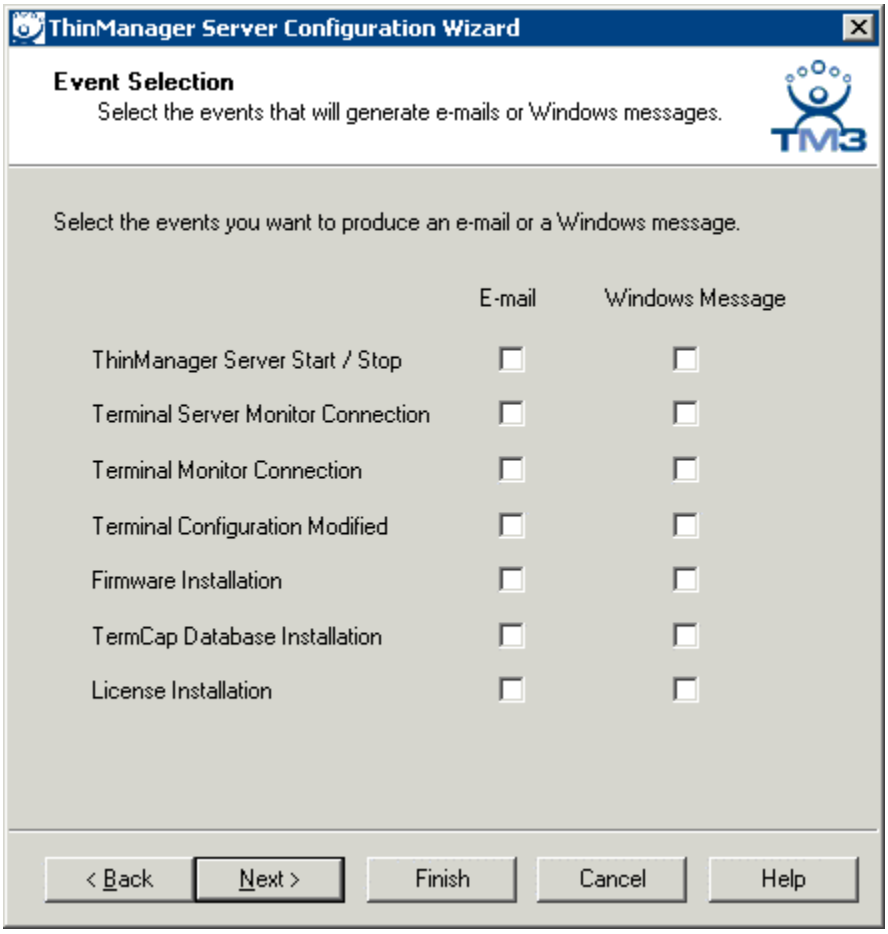
Enter the group name in the ***Group name*** field.

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.

Select ***Next*** to continue the **ThinManager Server Configuration Wizard**.

Event Selection Page

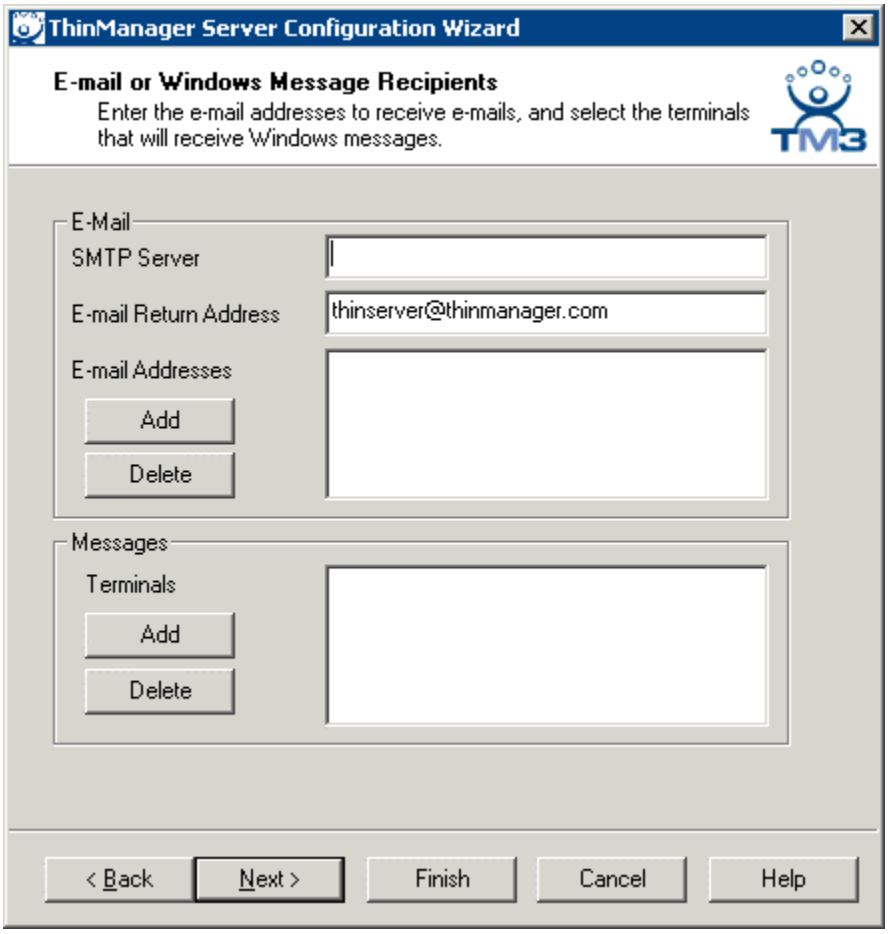


Event Selection

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

Check the desired events, the method of notification, and select ***Next*** to proceed.

E-Mail or Windows Message Recipients Page

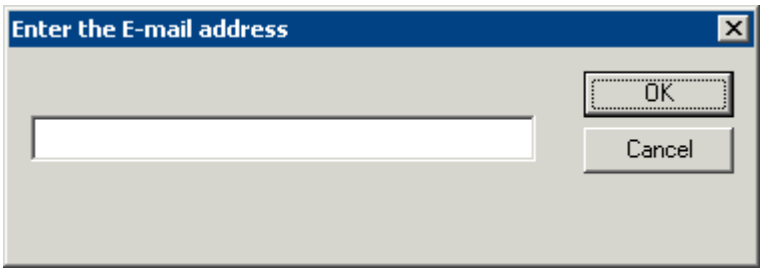


Email or Windows Messaging Recipients

The desired recipients of the event information can be specified on the ***Email or Windows Messaging Recipients*** page.

E-Mail:

- ***SMTP Server*** - Enter the SMTP (Simple Mail Transfer Protocol) server 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.
- ***Add*** - Select this button to add e-mail addresses through the **Enter the E-mail address** window.



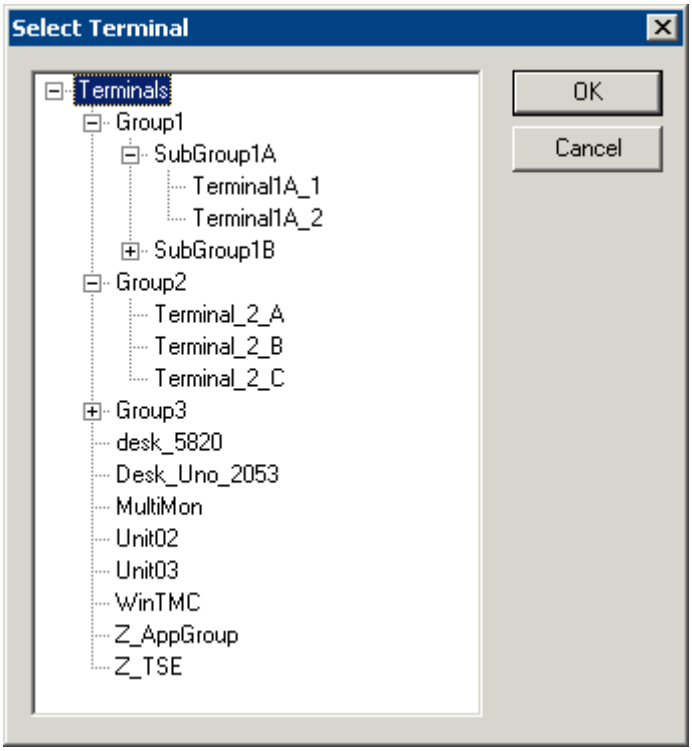
Enter the E-mail Address Window

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

- **Delete** - Select this button to delete a highlighted e-mail address from the **E-mail Addresses** list.

Messages:

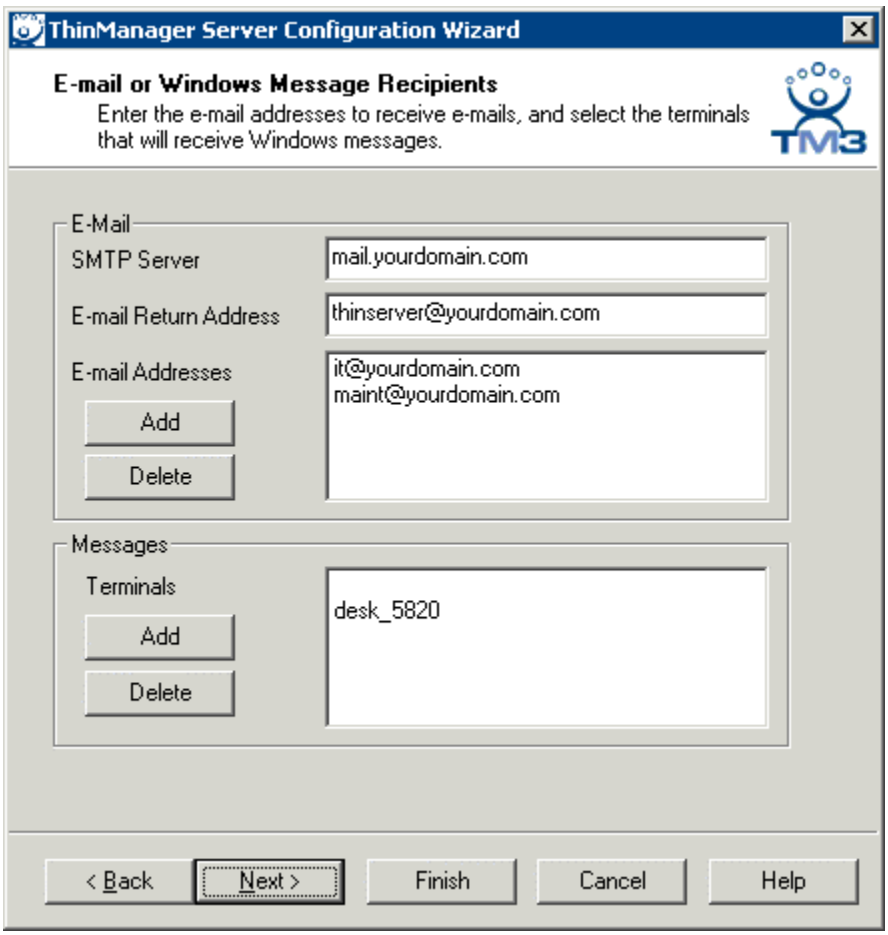
- ***Terminals*** - ThinManager will send a message to the terminals in this text box when an event selected on the **Event Select** page occurs.
- ***Add*** - Select this button to add a terminal through the **Select Terminal(s)** window.



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.

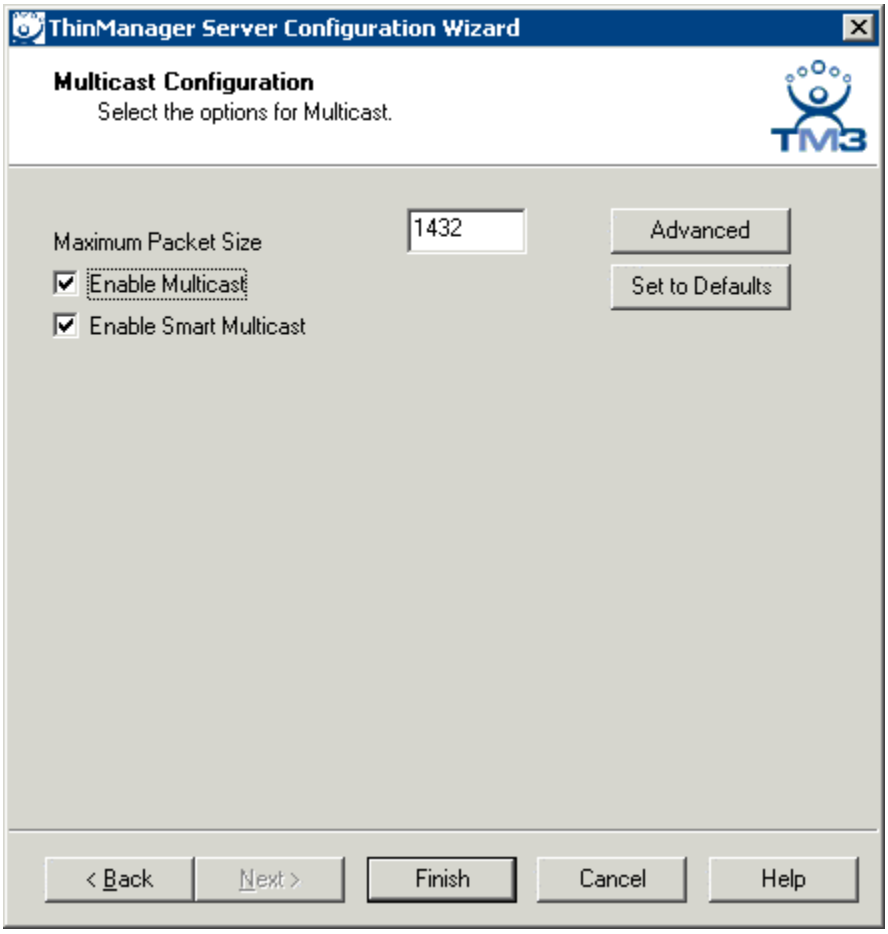
- **Delete** - Select this button to delete a highlighted terminal from the **Terminals** list.



Email or Windows Messaging Recipients

When the addresses are configured as desired, select the ***Next*** button to configure the ThinManager Server for Multicast or select ***Finish*** to accept configuration.

Multicast Configuration Page



Multicast Configuration Page

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.

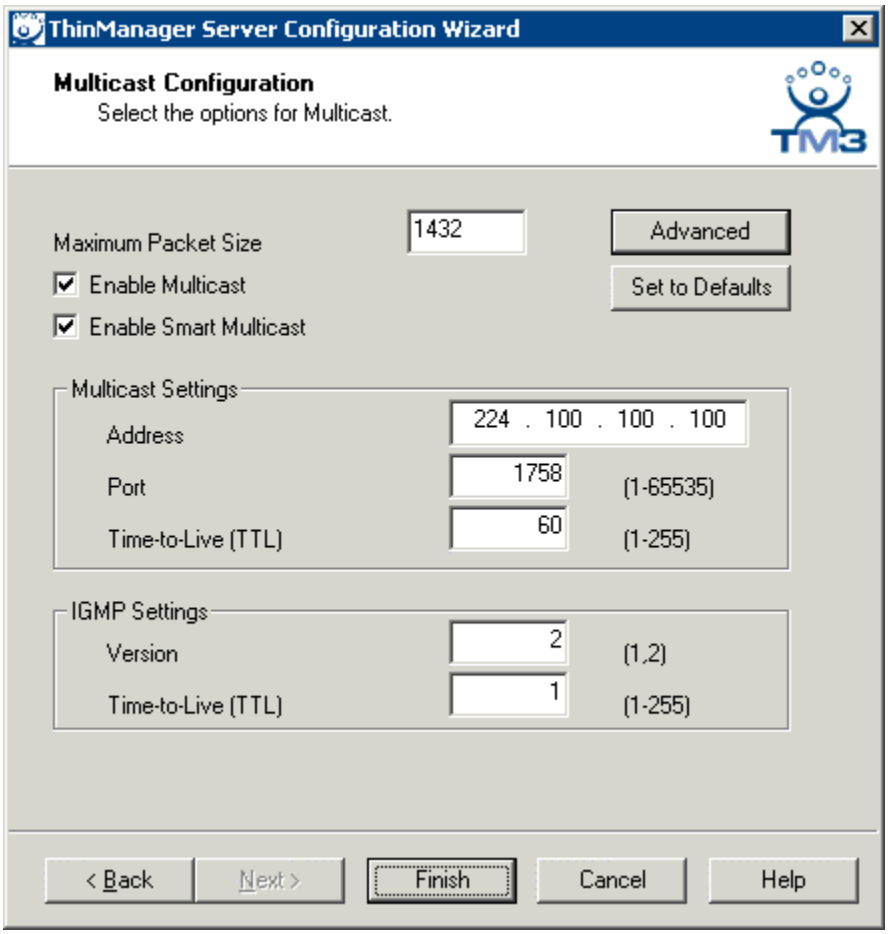
Smart Multicast allows the terminal firmware to be sent directly to the terminal while a single terminal is booting. If additional terminals request the terminal firmware during this time, the firmware will be multicast so that all terminals can receive the firmware from a single data stream. If Smart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

There are two Multicast checkboxes and two buttons.

- ***Maximum Packet Size*** – This allows the firmware download packet size to be changed, if needed.
- ***Enable Multicast*** - This checkbox, if selected, enables Multicast.
- ***Enable Smart Multicast*** - This checkbox, if selected, enables Smart Multicast.
- ***Advanced*** - This button, if selected, displays the advanced settings.

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



Advanced Multicast Options

The Advanced settings are provided for advanced users.

Note: If you do not understand these settings, we recommend that you use the default settings.

Multicast Settings

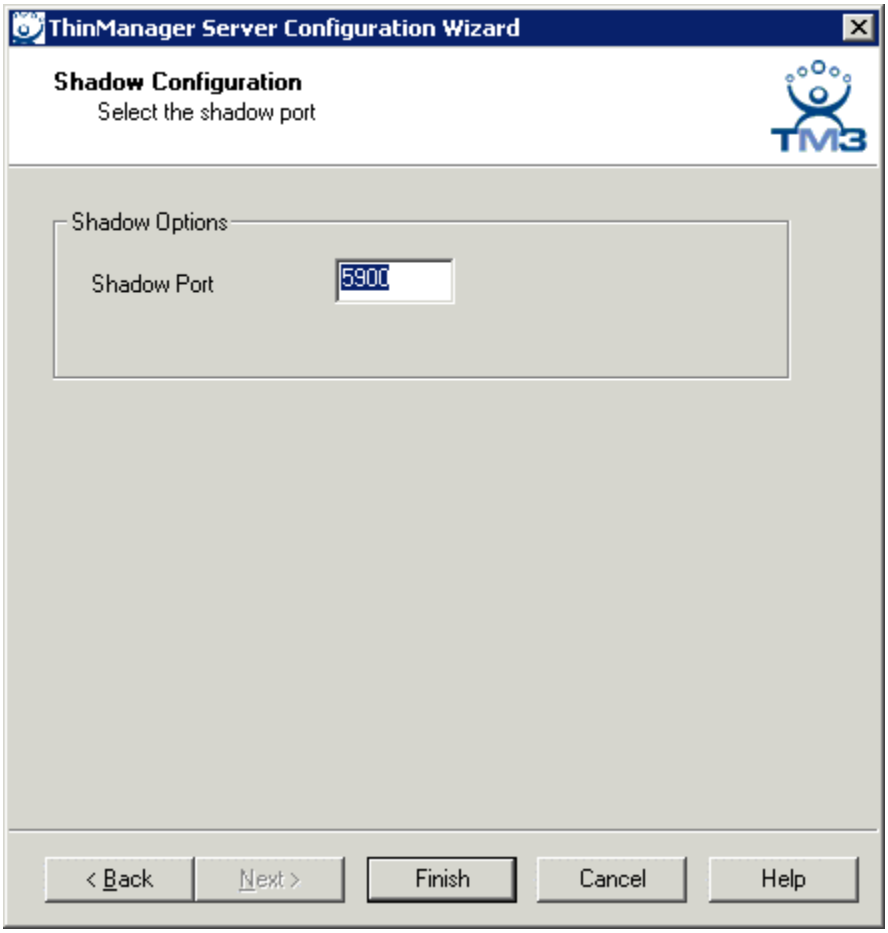
- ***Address*** – This is the IP address that will be used for Multicast transmissions.
- ***Port*** – This is the destination port that will be used for Multicast transmissions.
- ***Time-to-Live (TTL)*** – This is the maximum number of router hops for Multicast packets. Setting this value to 255 allows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

Shadow Configuration Page

ThinManager allows the port used for shadowing to be configured.



Shadow Configuration 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.

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

10. Application Groups (Formerly Terminal Server Groups)

10.1. Application Group/Terminal Server Group Name Change

ThinManager 2.5 introduced Terminal Server Groups; collections of terminal servers that could be load balanced with SmartSession or used to deploy applications with AppLink.

ThinManager 3.2 expands this functionality to allow terminal-to-terminal shadowing as a group. This additional function is better defined as an Application Group and not a Terminal Server Group. ThinManager 3.2 introduces a new naming convention where the term Application Groups describes either Application Groups or Shadowing groups.

Application Groups come in two types.

- ***Terminal Services*** – This creates an application group that allows 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 Application Group configuration and options.
- ***Terminal Shadow*** – creates an application group that allows a terminal to shadow another terminal.

Terminal Services Groups are explained here in the Terminal Services Groups section. Terminal Shadow Groups are explained in Terminal Shadow Application Groups. Configuration of Application Groups is covered in Terminal Services Application Groups.

10.2. Terminal Services Groups

The types of Terminal Services Application Groups include:

- A **standard Application Group** has the terminal servers listed in a pre-defined order. The terminal connects to the first available member of the group.
- The **SmartSession** option of Terminal Services Groups provides load balancing by using CPU availability, memory, and the number of sessions on the member terminal servers to determine the resource availability on member terminal servers. A

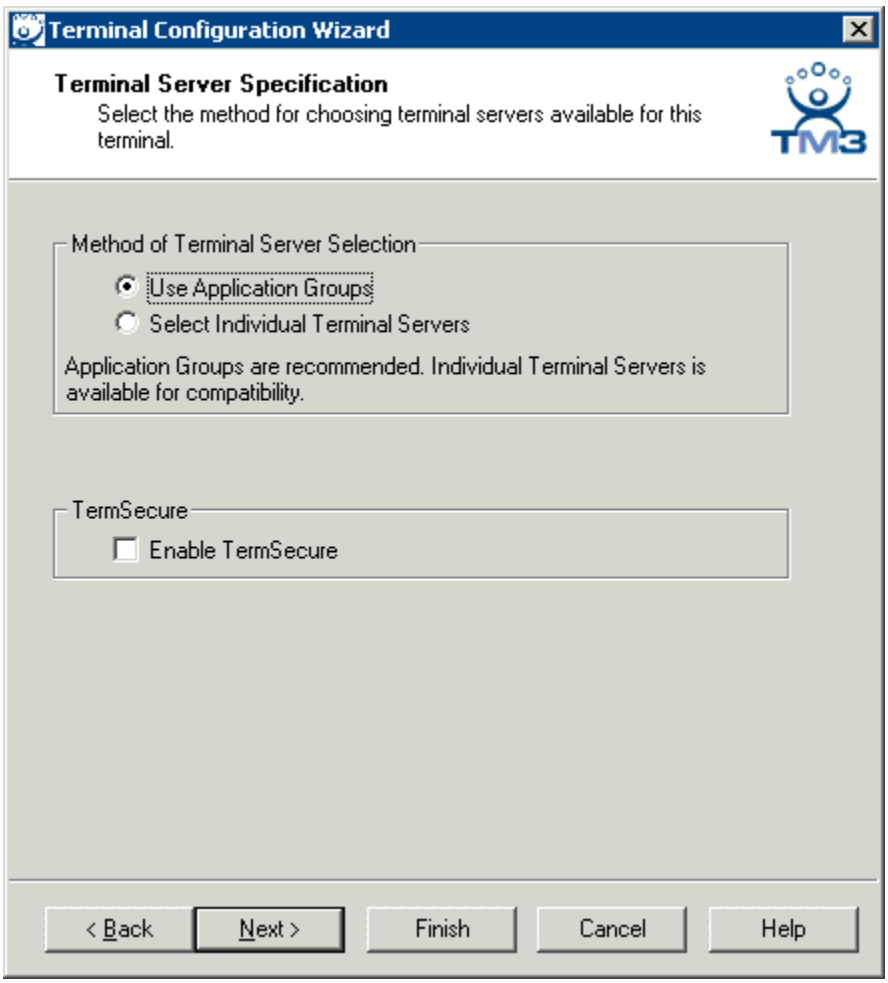
ThinManager Ready thin client connects to the terminal server in the Application Group with the most available resources.

- The **AppLink** option provides the Initial Program function to members of an Application Group. When specifying the Initial Program function, a program is started instead of the desktop. Closing the program will terminate the connection.
- The **Instant Failover** option allows a terminal to connect to two terminal servers within an Application Group. 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 is immediately displayed, eliminating any downtime due to terminal server failure.

MultiSession is a terminal configuration that allows a ThinManager Ready thin client to connect to multiple terminal servers from multiple Application Groups. The user can switch between groups using an on-screen menu or hot keys. These groups may be standard Application Groups, Application Groups with SmartSession, AppLink, and/or Application Groups with Instant Failover.

Note: **MultiSession** is no longer considered an Application Group function but is now considered a terminal function. The ability to display multiple Application Groups is configured on the terminal by adding two or more Application Groups.

These Application Group options can be combined on the same Application Group. For example, an Application Group could use SmartSession to choose the server connection order, Instant Failover to maintain a backup, while using AppLink to limit the terminal to a single application. Additionally, a terminal server may be a member of several Application Groups.



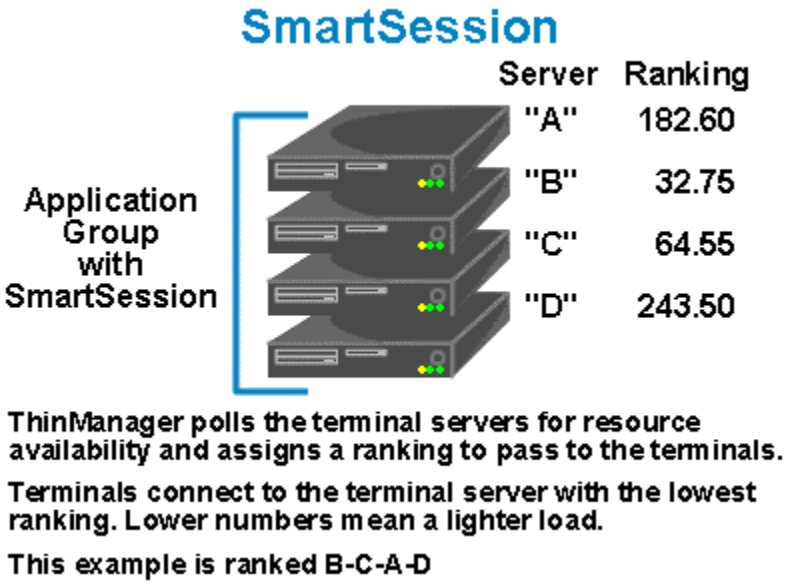
Terminal Configuration Wizard - Terminal Server Specification Page

A terminal will use Application Groups when the ***Use Application Groups*** radio button on the **Terminal Server Specification** page of the **Terminal Configuration Wizard** is selected.

10.3. SmartSession

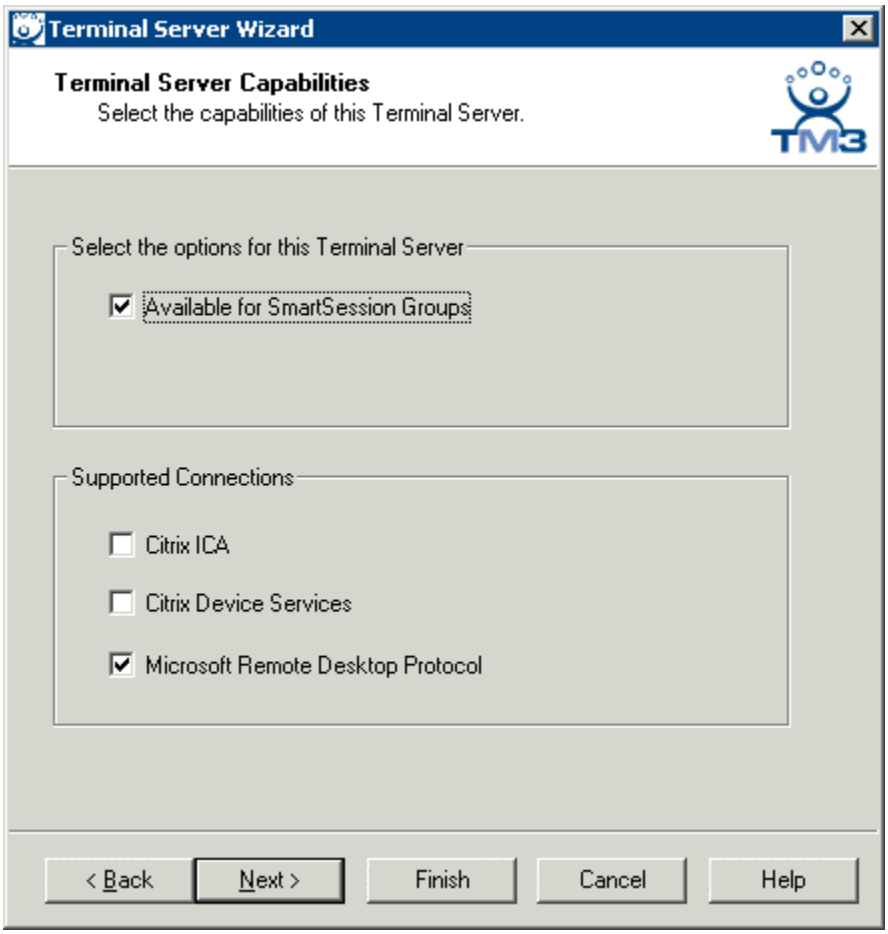
See Terminal Services Application Groups for details on configuring Application Groups.

SmartSession is a load balancing strategy that allows terminals to connect to the member of an Application Group 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 ThinManager Ready thin client connects to a member of an Application Group with SmartSession, the terminal connects to the terminal server with the lightest load.



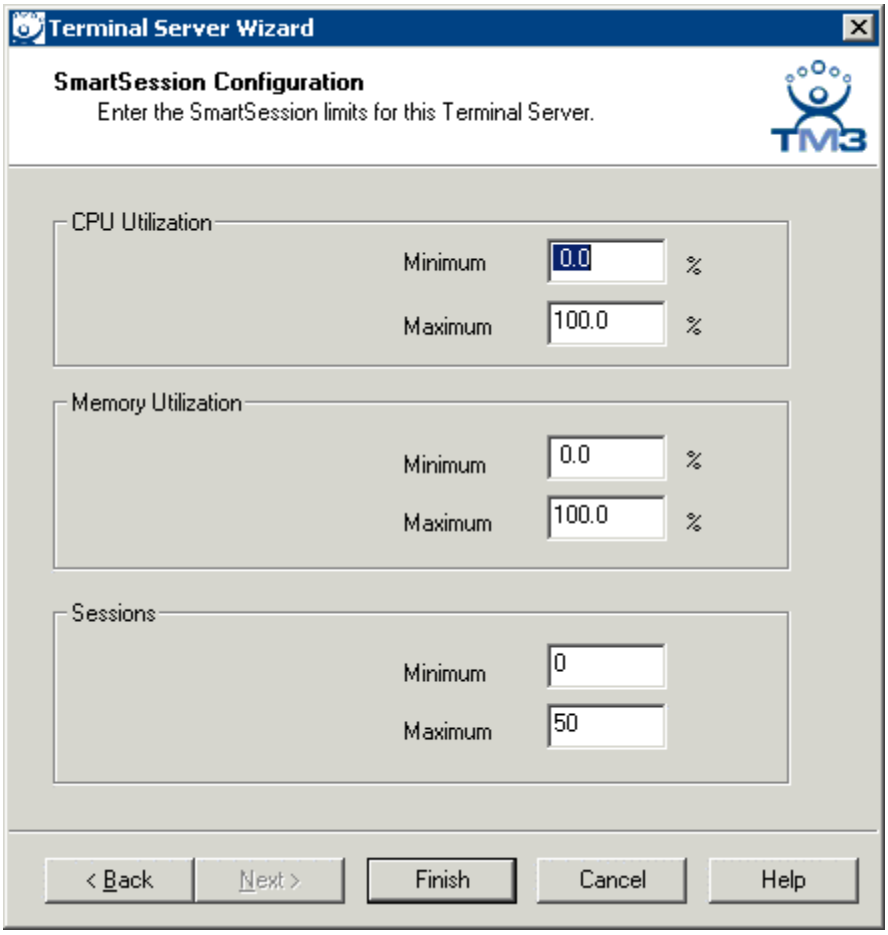
SmartSession

Each member terminal server needs **SmartSession** configured in the **Terminal Server List Wizard**. See the Terminal Server List Wizard for details.



Terminal Server Wizard – Terminal Server Capabilities

Selecting the ***Available for Smart Session Groups*** checkbox on the **Terminal Server Capabilities** page of the Terminal Server List Wizard allows the Terminal Server to become a member of an Application Group using SmartSession.



Terminal Server List Wizard - SmartSession Configuration

The **SmartSession Configuration** page allows the configuration of the three parameters that ThinManager uses to determine resource availability. ThinManager determines the availability of a terminal server by measuring:

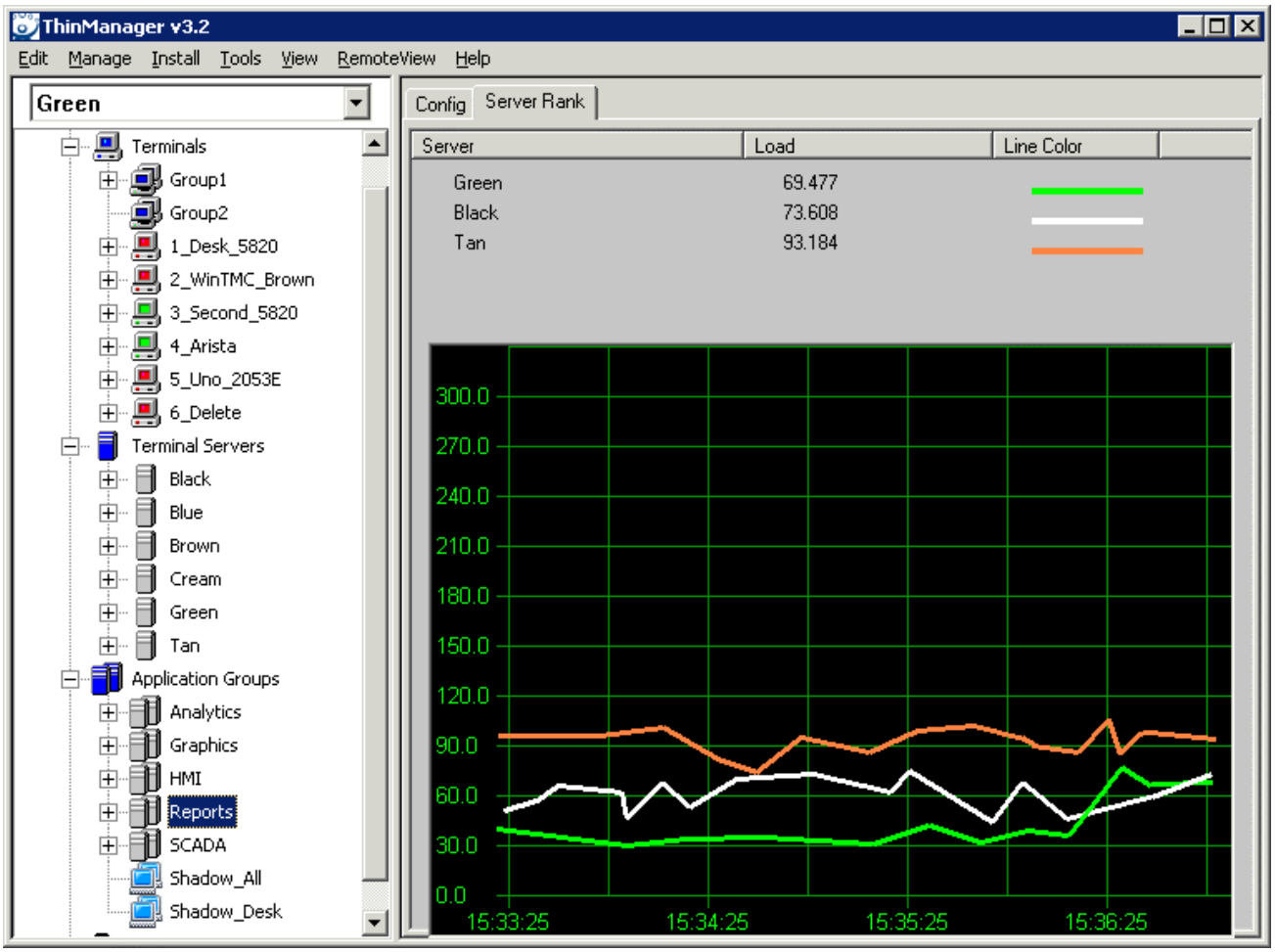
- CPU Utilization
- Memory Utilization
- Number of Sessions

ThinManager uses these values to rank the SmartSession server loads, with a lower number representing a smaller load and greater resources.

Each parameter has two settings that set the range that ThinManager uses:

- The ***Minimum*** field is the value that ThinManager will consider the parameter to be unused.
- The ***Maximum*** field is the value that ThinManager will consider a parameter exceeded and unavailable.

Once ThinManager has polled the terminal servers and established the availability of their resources, ThinManager passes the **Server Ranking** to the ThinManager Ready thin clients for its connection instructions.



ThinManager Interface – Server Rank Tab

The Server Rankings are displayed on the Server Rank tab when an Application Group is highlighted in the ThinManager tree. In the example above a ThinManager Ready thin client would connect to Green because it has the lowest load.

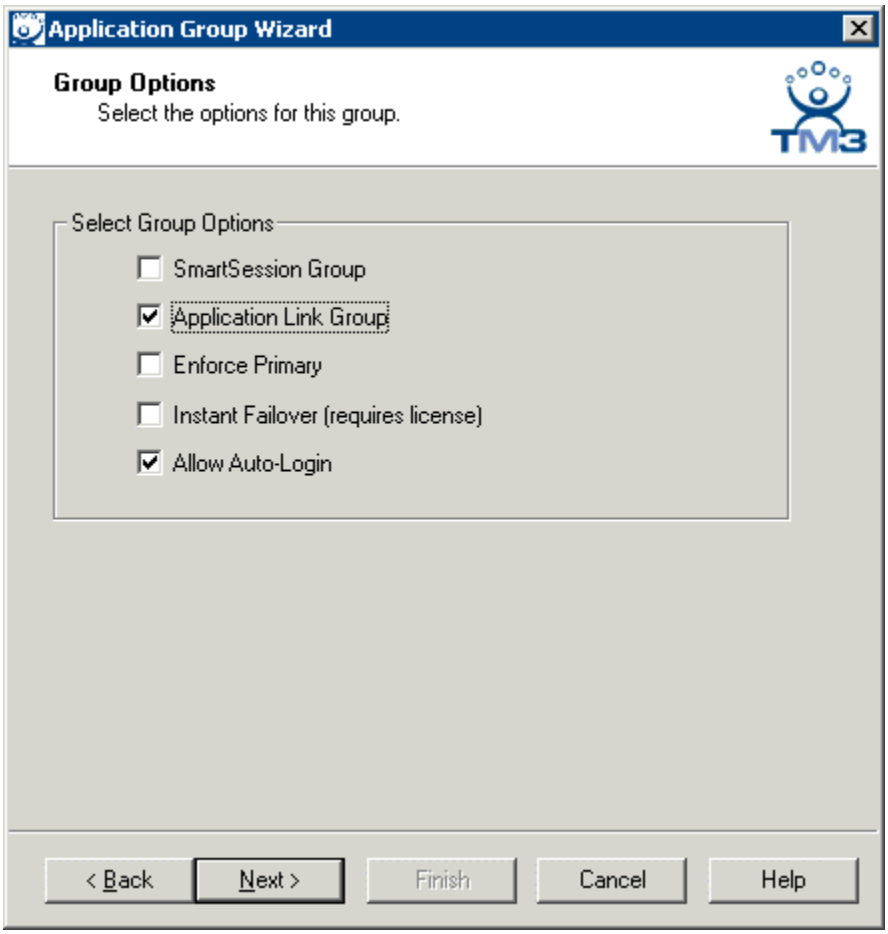
10.4. AppLink

See Terminal Services Application Groups for details on configuring Application Groups.

AppLink provides the ***Initial Program*** functionality to an Application Group. If AppLink is enabled, the path to an Initial Program is entered into the **Application Group Wizard**. This program will be the only program to run in that session. See the Login Information Page for details.

Note: If the Application Group functionality (AppLink) is not used then the Application Group session will display a desktop.

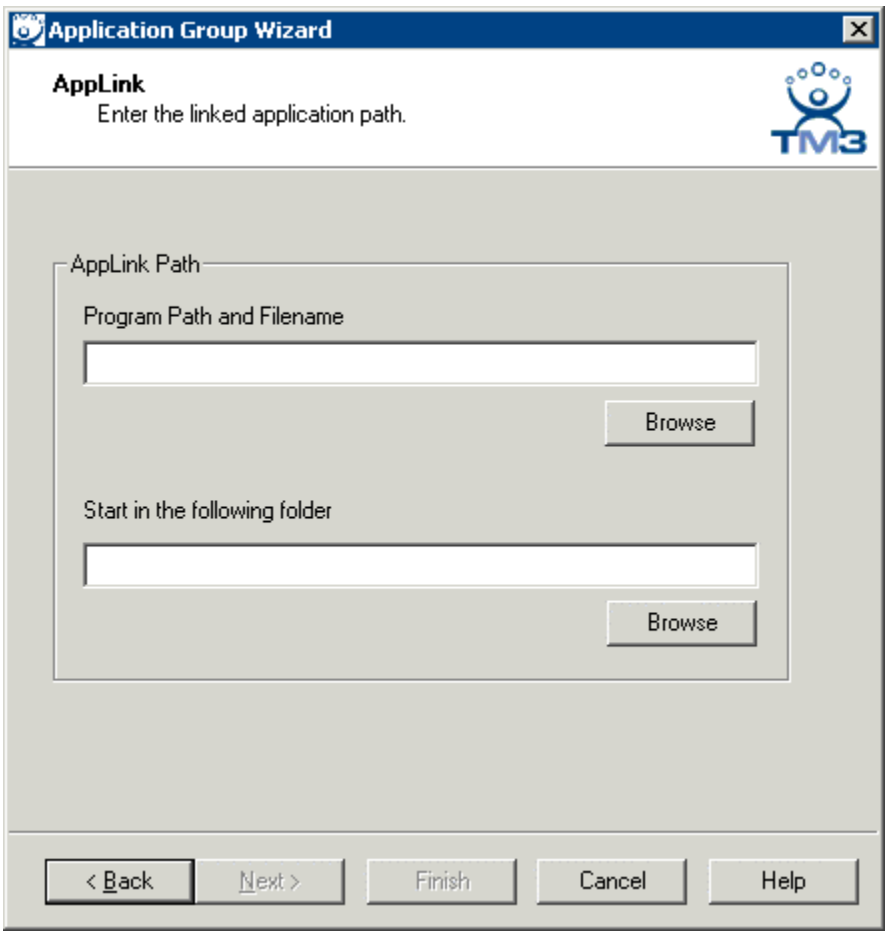
AppLink is configured on the **Group Options** page of the **Application Group Wizard**. See Application Group List for details.



Application Group Wizard – Group Options

Selecting the ***Application Link Group*** checkbox will make the Application Group an **AppLink Group**.

Selecting ***Next*** will allow the designation of the Initial Program after the member servers are selected.



Application Group Wizard – Linked Application

The **AppLink** page of the Application Group Wizard has a field for the path to the **Initial Program** This may require the use of quotation marks if there are spaces in the path name.

- ***Initial Program*** - Enter the path of the program that you want to start when the user logs on to the terminal server.
- ***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 is new to ThinManager 3.2 and may not be required.

The ***Browse*** button will launch a Browse window that will allow the ***Program Path and Filename*** field to be filled in by ThinManager instead of typing the path manually.

The AppLink Application Group may be a single terminal server or may contain many terminal servers. These may be Standard Groups, SmartSession Groups, or MultiSession Groups.

Note: If the AppLink Group contains several terminal servers, the path must be valid for all members of the Application Group. If different members of the AppLink group have different paths to the desired program, write a batch file to open the program.

10.5. Instant Failover with Application Groups

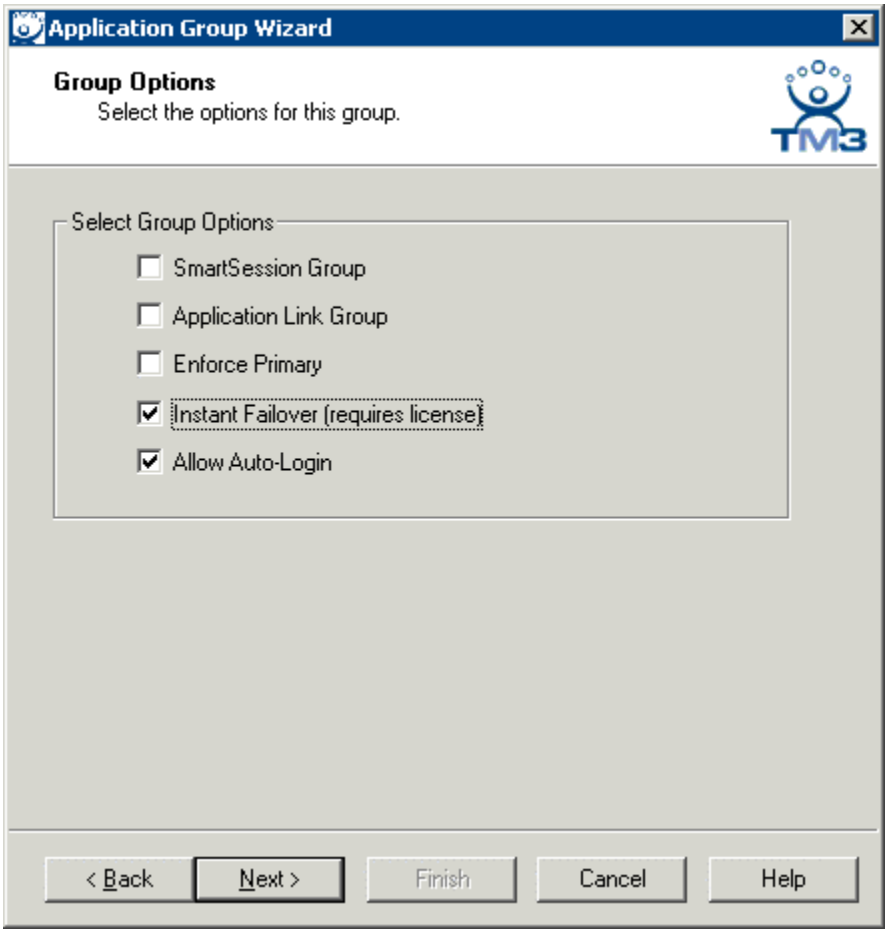
See Terminal Services Application Groups for details on configuring Application Groups.

See Instant Failover for details on Instant Failover.

Application Groups 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.

The Instant Failover function requires an Instant Failover license for each terminal that uses it.



Application Group Wizard – Group Options

Instant Failover is configured by selecting the ***Instant Failover*** checkbox on the **Group Options** page of the **Application Group Wizard**,

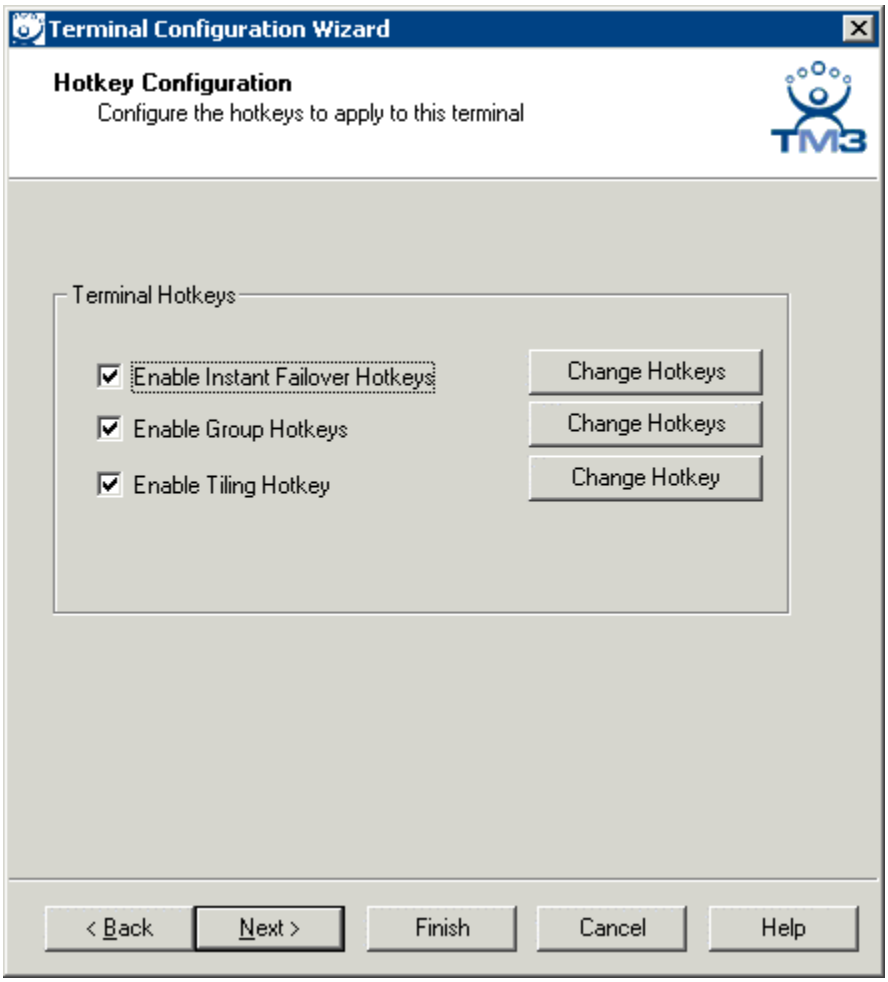
Instant Failover works within an Application Group, not between Application Groups.

Note: Do not use the Instant Failover Module when using Instant Failover in an Application Group.

In a **standard Application Group**, the terminal will use the first listed terminal server as the primary session and will use the second listed terminal server as the secondary session.

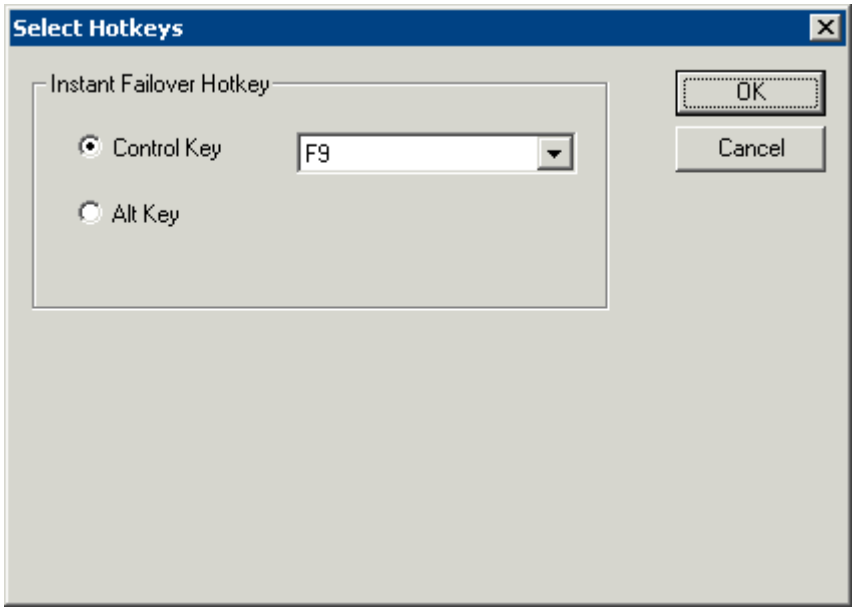
In an Application **Group with SmartSession**, the primary session will be on the server with the lightest load and the backup session will be on the terminal server with the second lightest load.

Instant Failover Hotkeys



Terminal Configuration Wizard – Terminal Interface Options

It is possible to switch between the sessions using Instant Failover on the terminal. Check the ***Enable Instant Failover Hotkeys*** checkbox on the **Terminal Interface Options** page of the **Terminal Configuration Wizard** for the desired terminal to activate the hotkeys to switch between sessions.



Select Hotkeys Window

The default hotkeys to switch between Instant Failover sessions is ***CTL+F9***. This can be changed by selecting the ***Change Hotkeys*** button on the **Hotkey Configuration** page to launch **the Select Hotkeys** window.

Change the Instant Failover hotkey by selecting a different value in the drop-down box and/or selecting the ***Alt Key*** radio button.

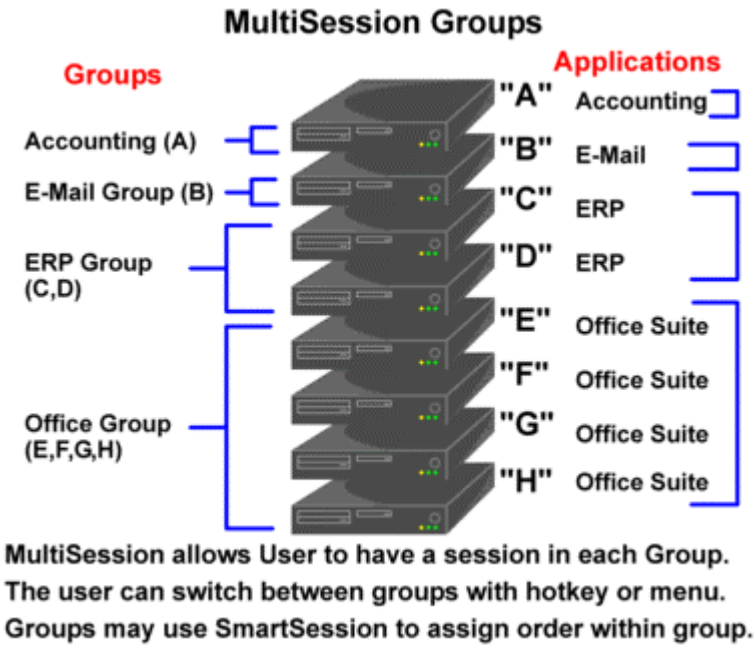
See Terminal Interface Options for details.

10.6. MultiSession

See Terminal Services Application Groups for details on configuring Application Groups.

MultiSession allows a user to login to multiple terminal groups and switch between the various sessions. The user will have one session for each group that they have selected. This lets a user have access to several terminal servers through Application Groups. These Application Groups can be Terminal Shadow groups, standard Terminal Services groups or combinations of SmartSession, AppLink, and Instant Failover.

Note: Users can cut and paste between sessions even when they are on different terminal servers when using RDP.



Sample MultiSession Groups

MultiSession is useful in large installations with many servers. Instead of installing every application on every server, individual terminal servers or groups of terminal servers can be dedicated to a single application, a small collection, or a suite. This simplifies maintenance, upgrading, and security, while limiting the number of conflicts between programs.

Terminals can use MultiSession to access the Application Groups that they need. The groups can be standard Application Groups, or combinations of the various options like SmartSession, Instant Failover, and AppLink.

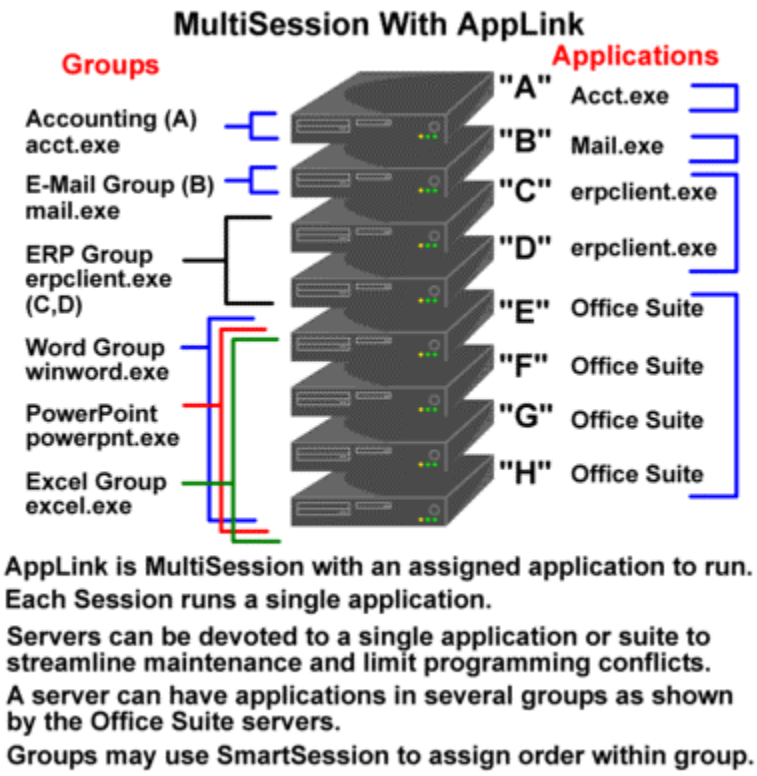
Enabling MultiSession is a two-step process.

- First, add MultiSession licenses for each terminal that will be using MultiSession
- Second, add two or more Application Groups to the terminal or terminal group. When the terminal boots it will use one of the installed MultiSession licenses in addition to a terminal connection license.

10.6.1. AppLink and MultiSession

See XXX for details on configuring Application Groups.

MultiSession receives a major increase in functionality in combination with AppLink. Without AppLink, MultiSession deploys only multiple desktops. With AppLink, one can deploy a variety of specific applications. The user can switch between multiple applications as they switch between AppLink sessions in the different Application Groups. This allows terminal servers to be set up and maintained by application instead of having every application installed on every terminal server.



AppLink Servers

AppLink is configured on the **Group Options** page of the **Application Group Wizard**. See XXX for details.

MultiSession Selection

Since MultiSession allows several sessions to run on a terminal the user needs to be able to switch between the sessions. The terminal may have one or all methods configured.

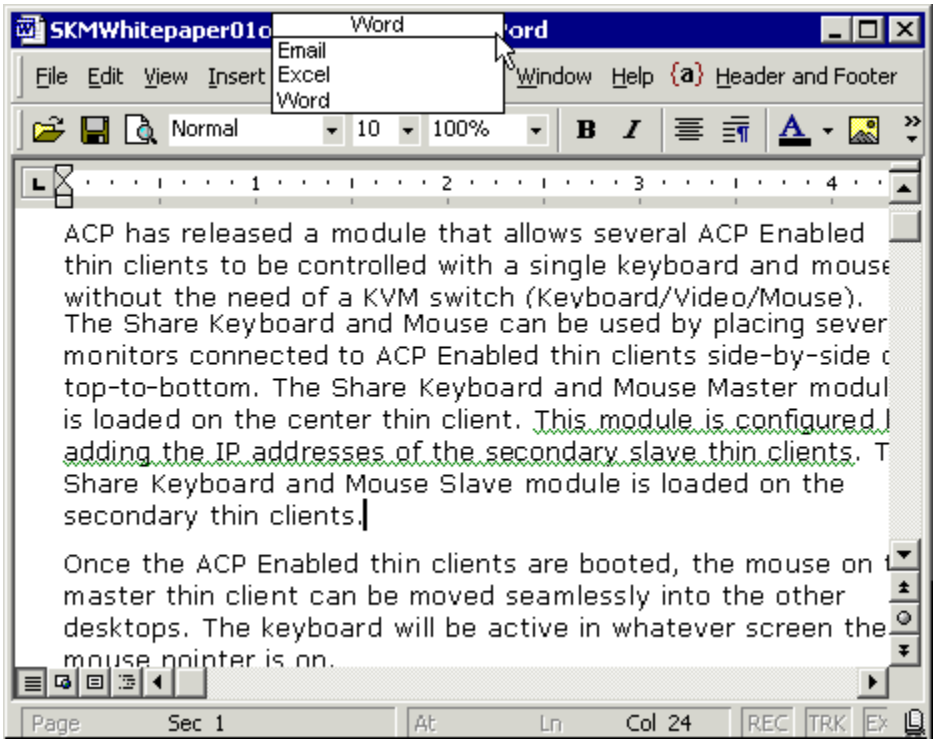
MultiSession Selection Options include:

- Group Selector Dropdown
- Screen Edge Mouse-over
- Hotkeys
- Tiling

Theses are configured in the **Terminal Configuration Wizard** or the **Terminal Group Configuration Wizard**.

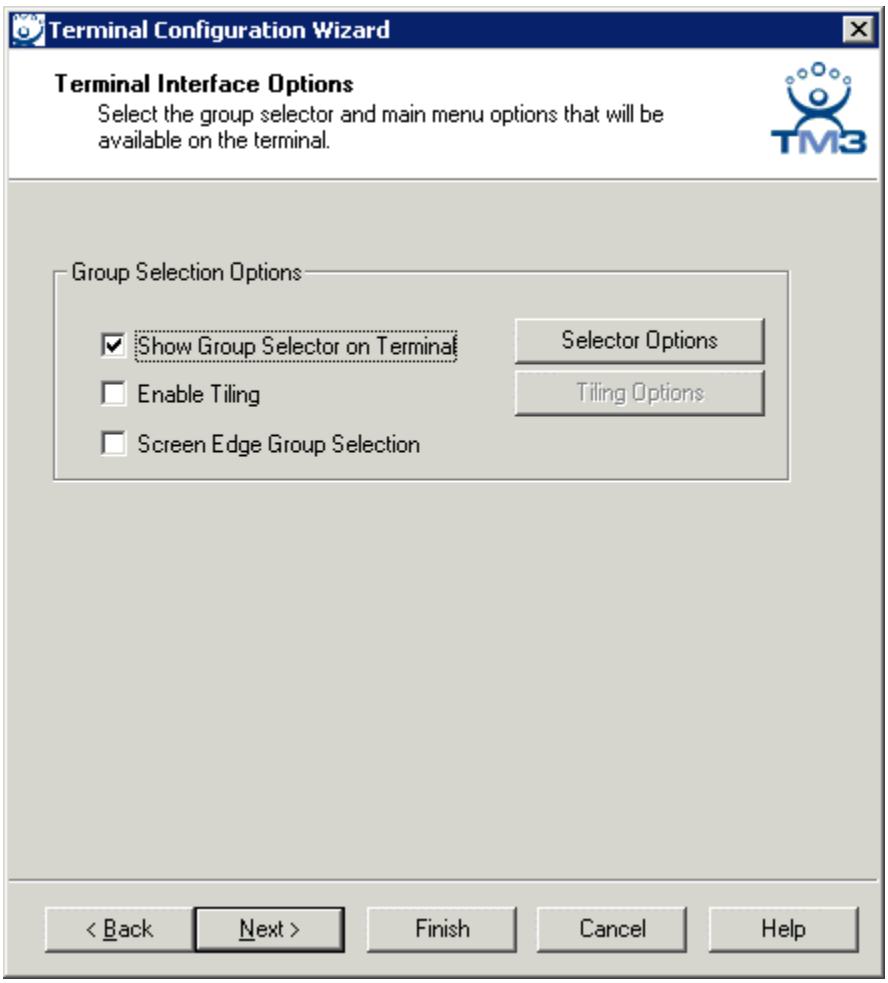
Group Selector Dropdown

Users can switch between sessions using an onscreen **Group Selector**.



Group Selector on Terminal

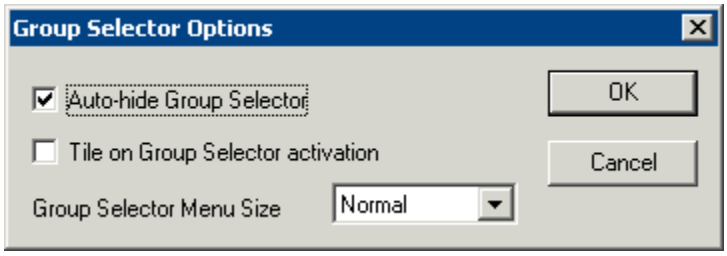
The **Group Selector** shows the Application Group that the terminal is currently displaying. When activated by the mouse it shows a dropdown list of available Application Groups.



Terminal Interface Options Page

The terminal will display a ***Group Selector*** menu at the top edge of the session when it boots if the ***Show Group Selector on Terminal*** checkbox was selected in the **Terminal Interface Wizard** of the Terminal Configuration Wizard.

The ***Selector Options*** button will launch the **Group Selector Options** window that allows configuration of the on-screen Group Selector dropdown.



Group Selector Options Window

The Group Selector Options window has several settings.

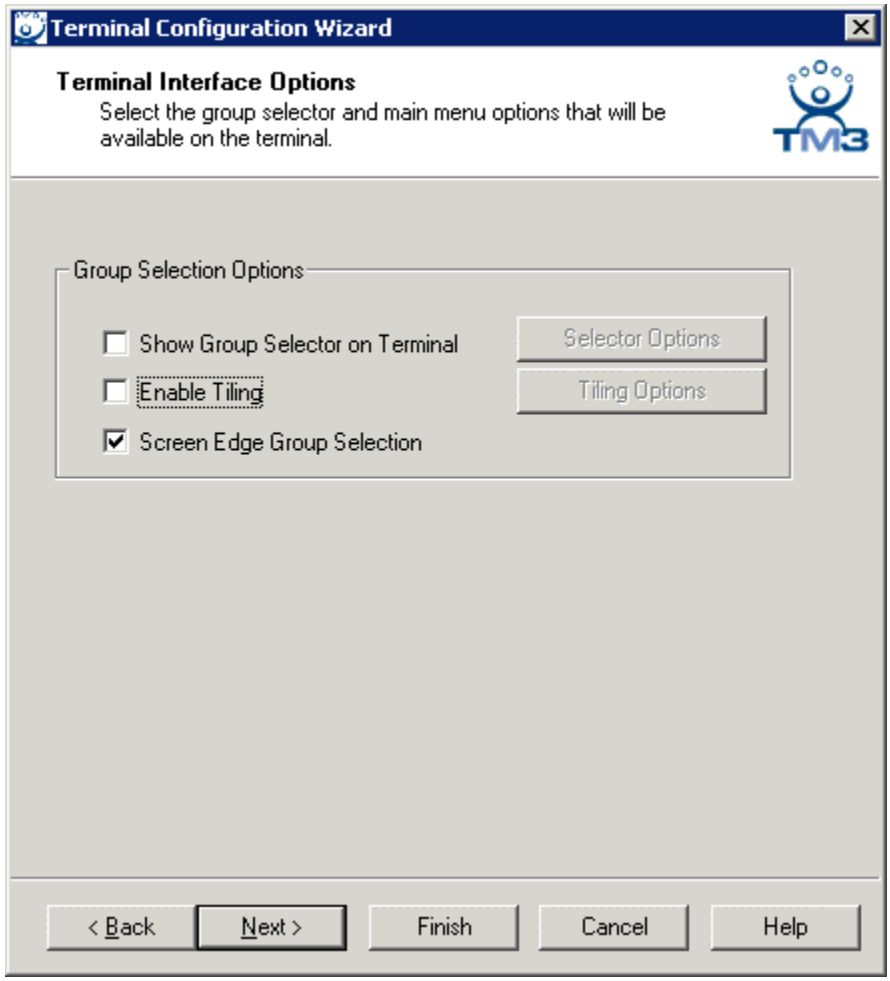
- The ***Auto-hide Group Selector*** checkbox will hide the Group Selector until the mouse is moved to that space.

- The ***Tile on Group Selector*** checkbox, when selected, will tile the Application Groups 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.

Screen Edge Group Selection

Terminals can be configured to switch between sessions when the mouse is moved to one side or the other on the screen.

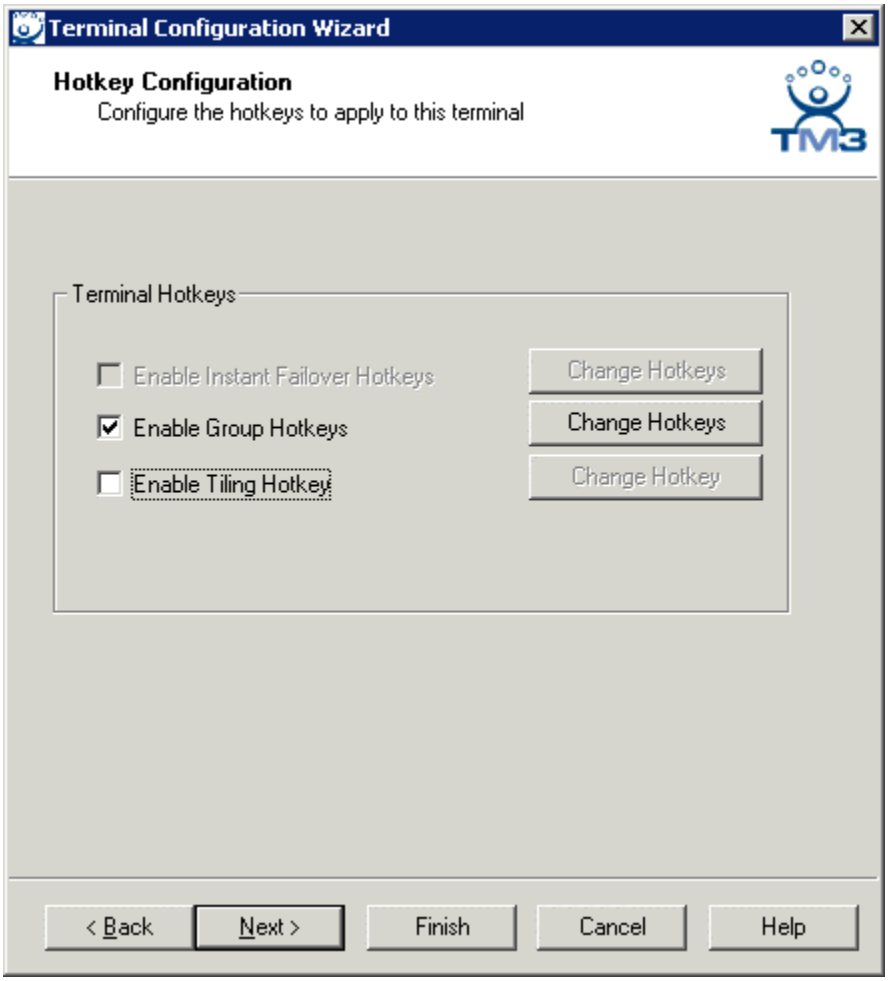


Terminal Interface Options Page

Select the ***Screen Edge Group Selection*** checkbox to enable this method of session selection.

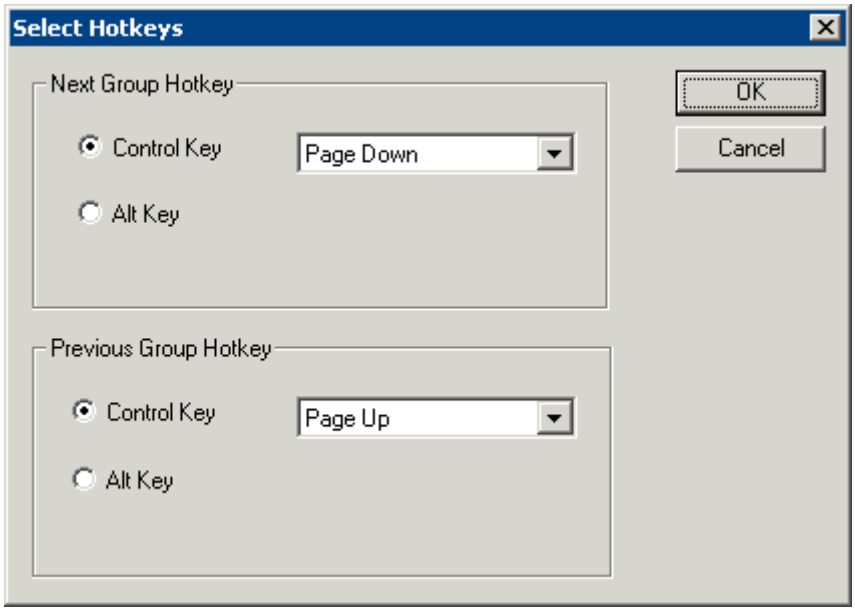
The Application Group sessions can be switched by moving the mouse to the extreme left or right edge of the screen.

MultiSession Selector Hotkeys



Terminal Configuration – Hotkey Configuration

Hotkeys can be used to switch between the Application Groups if the ***Enable Group Hotkeys*** checkbox is selected on the **Hotkey Configuration** page of the **Terminal Configuration** wizard. The choice of the hot keys used can be set by selecting the ***Change Hotkeys*** button to launch the **Select Hotkeys** window.

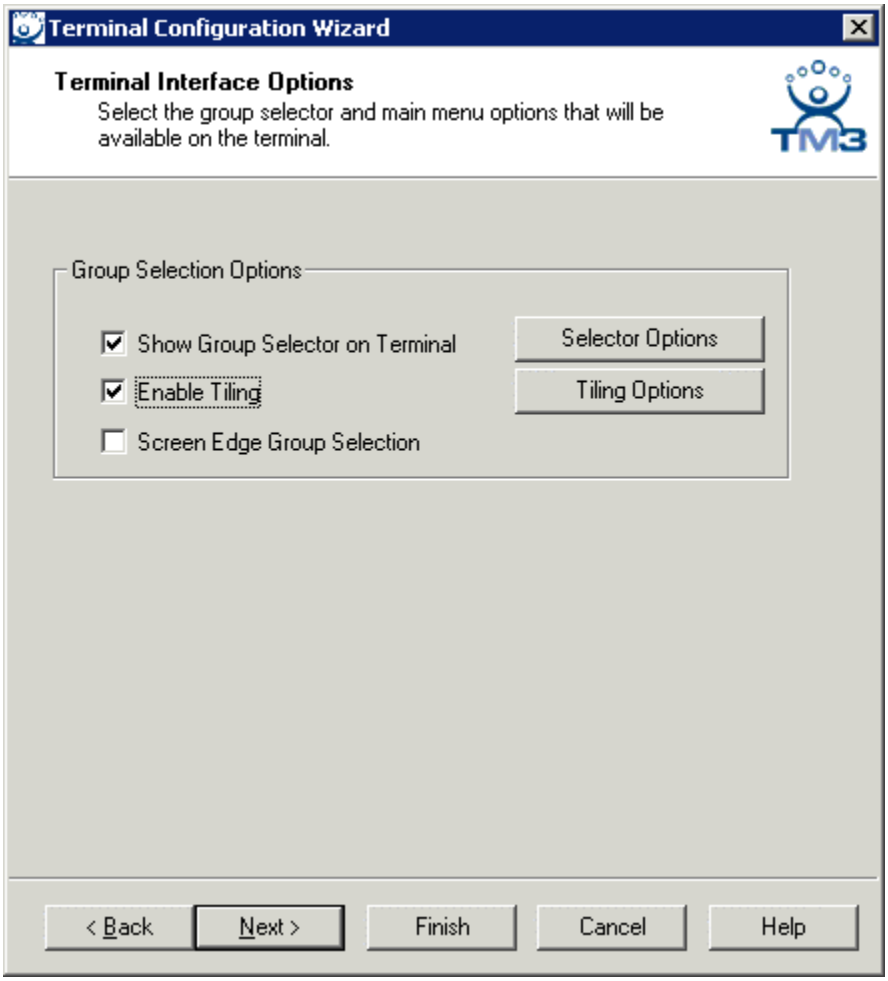


Terminal Configuration Wizard - Select Hotkeys Page

The default hotkeys are ***CTRL+Page Down*** and ***CTRL+Page Up***. These can be changed by selecting the ***Alt Key*** radio button or selecting a different key in the dropdown box.

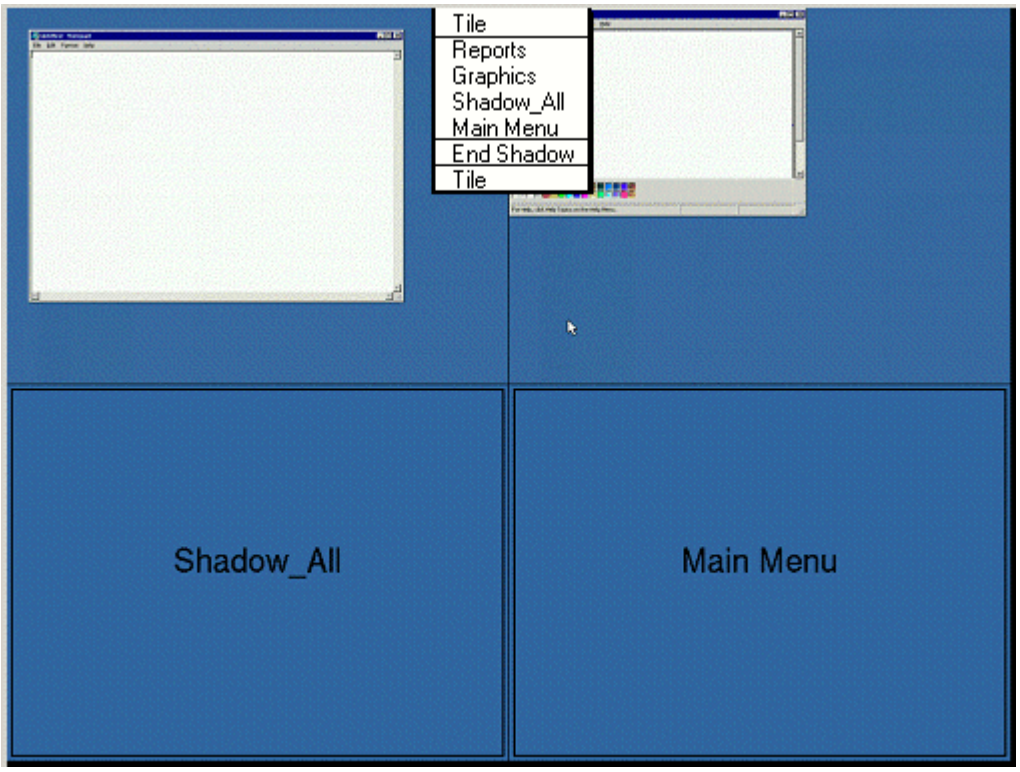
Group Selection with SessionTiling

Application Group selection can be enabled through tiling. When the sessions are tiled the operator can see all the sessions to make their choice. This is configured by enabling tiling on the **Terminal Interface Options** page of the **Terminal Configuration** wizard



Terminal Configuration – Terminal Interface Options

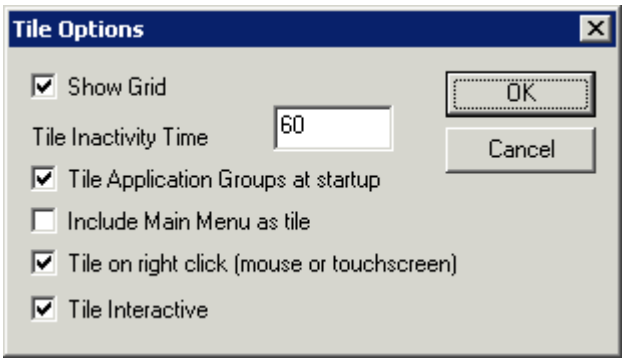
Selecting the ***Enable Tiling*** checkbox on the **Terminal Interface Options** page of the **Terminal Configuration** wizard will allow the sessions to be tiled for selection.



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.

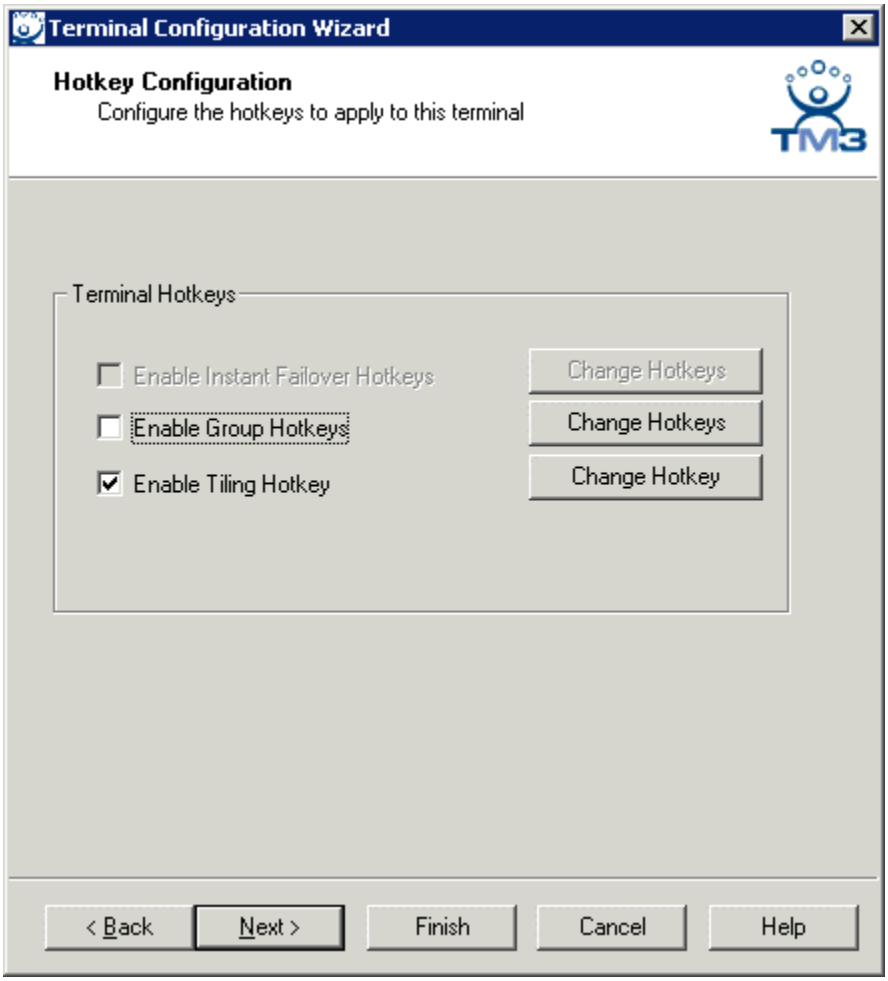


Tile Options

The **Tile Options** window is launched by selecting ***Enable Tiling*** checkbox on the **Terminal Interface Options** page of the **Terminal Configuration** wizard and then selecting the ***Tile Options*** button.

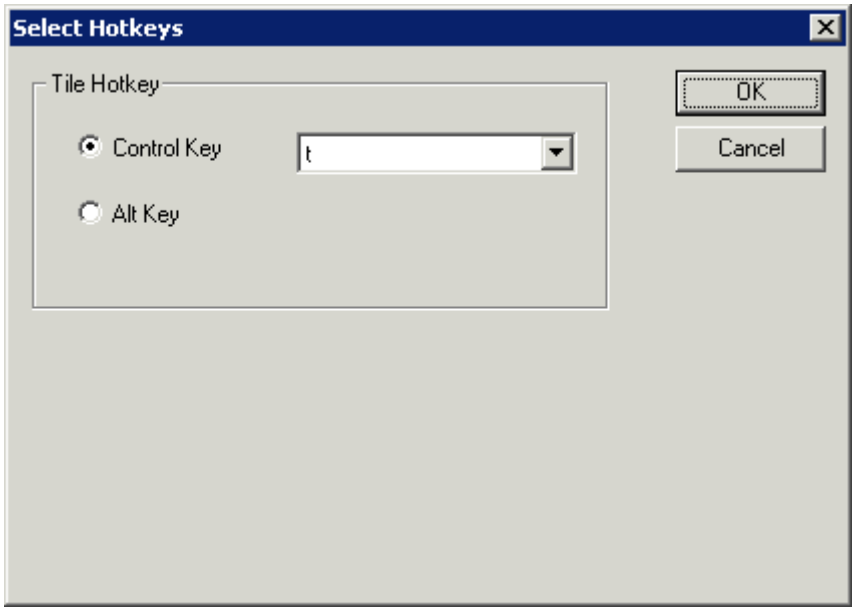
SessionTiling Hotkeys

The sessions can be tiled with a hotkey combination.



Terminal Configuration – Hotkey Configuration

Selecting the ***Enable Tiling Hotkey*** checkbox on the **Hotkey Configuration** page of the **Terminal Configuration** wizard will allow the sessions to be tiled with a hotkey.



Terminal Configuration Wizard - Select Hotkeys Page

The default hotkey combination for tiling is ***CTL+t***. This can be changed on the **Select Hotkeys** window by selecting the ***Change Hotkey*** button when the ***Enable Tiling Hotkey*** checkbox is selected.

11. Failover and Instant Failover

11.1. 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 ThinManager Ready thin client. This is covered in Failover.

Instant Failover: Instant Failover is the ability of ThinManager Ready 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.

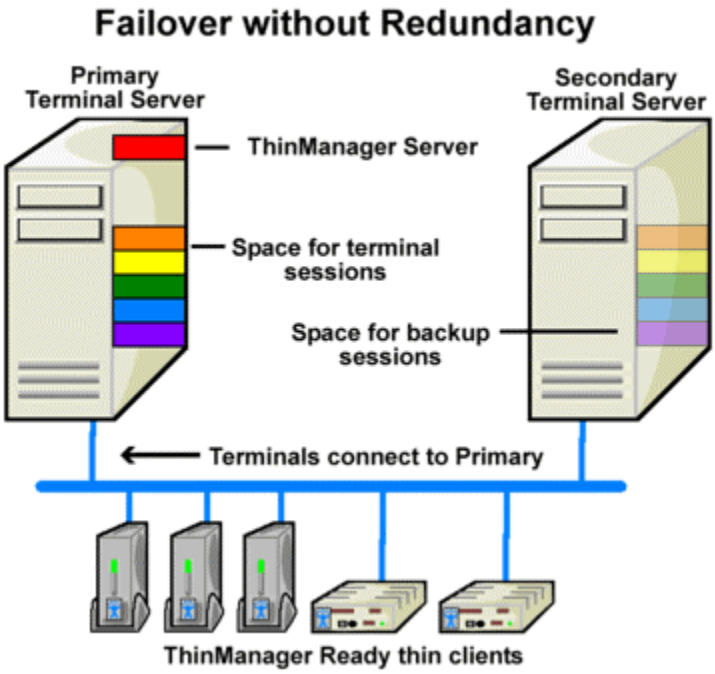
Redundancy: Redundancy refers to multiple ThinManager Servers. ThinManager Ready thin clients are not dependent on ThinManager after booting and will continue to run if the ThinManager Server fails. However, rebooted terminal will wait until the ThinManager Server is restored until it boots and receives its configuration. For this reason many people use a backup, or Redundant ThinManager Server. This is covered in Redundancy Overview.

11.2. Failover

Every ThinManager Ready 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.

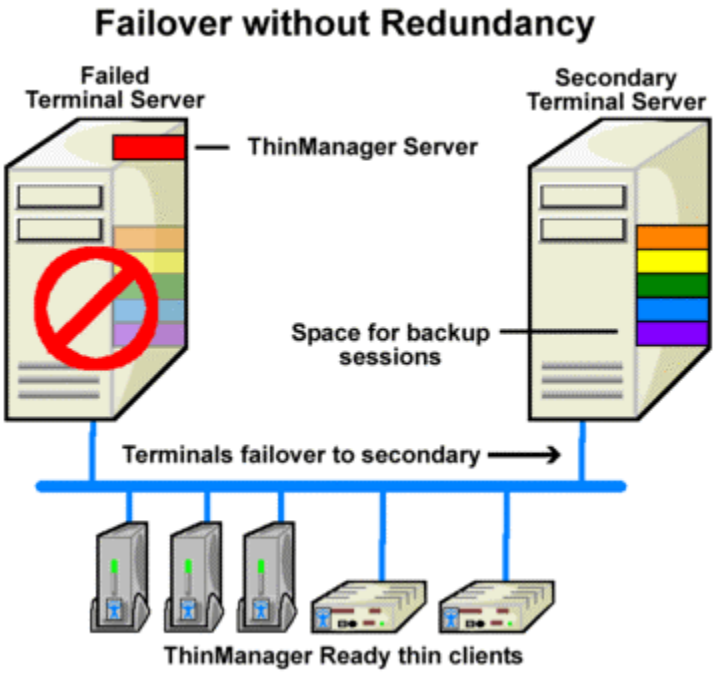
Failover requires:

- 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



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.



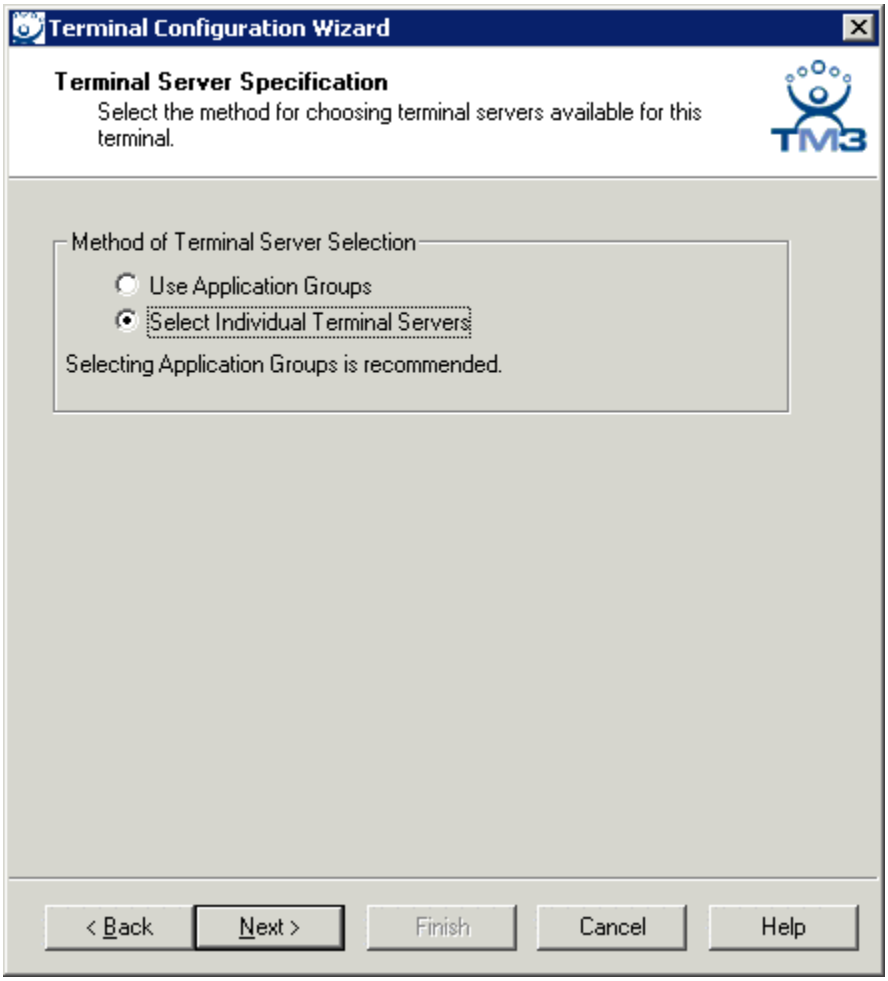
Simple Failover, After Failure

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.

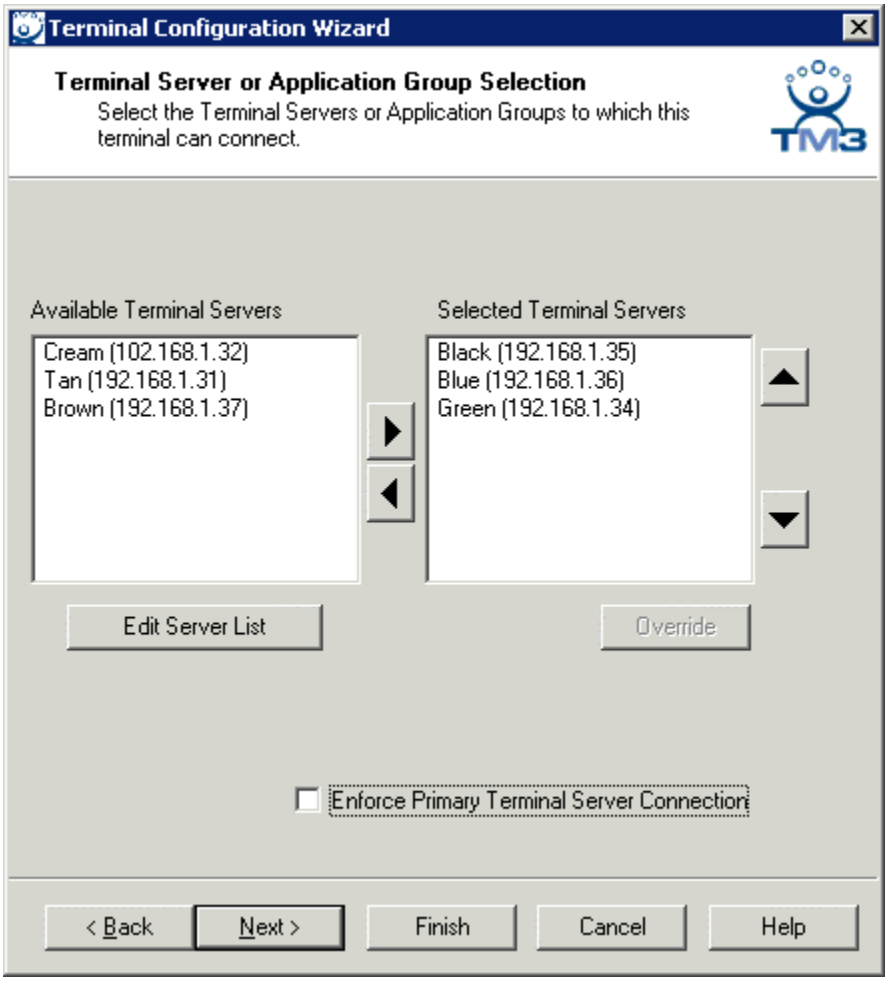
11.2.1. Failover Setup using Individual Terminal Servers

Failover is configured in the Terminal Configuration Wizard. It is configured differently when using individual terminal servers and Application Groups.



Terminal Configuration Wizard - Select Individual Servers

If individual terminal servers are to be used, select the ***Select Individual Terminal Servers*** radio button on the **Terminal Server Selection** page.



Terminal Configuration Wizard - Terminal Server Selection

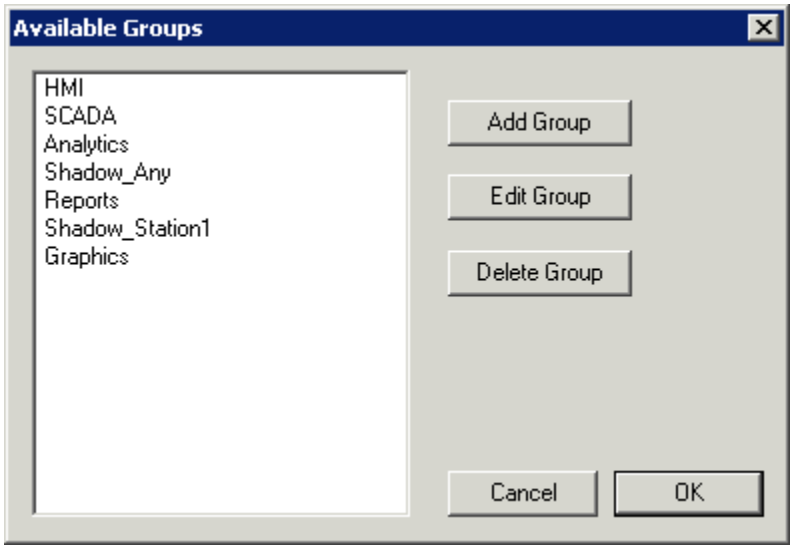
Configure failover on the Terminal Server Selection page by adding two or more terminal servers in the ***Selected Terminal Servers*** field. Upon boot up, the terminal will connect to the first terminal server in the list, considered the primary terminal server. If the primary fails, the terminal will connect to the next terminal server in the list. The terminal will use each of the terminal servers in the list, if needed.

The ***Enforce Primary Terminal Server Connection*** checkbox will keep the terminal monitoring the first terminal server in the list, even if it has failed. If the terminal detects that the primary terminal server is back on line, it will drop its connection to the backup and reconnect to the primary terminal server.

11.2.2. Failover Setup using Application Groups

Application Groups allows a terminal to connect to a group of servers. The Application Group will have Failover within that group if the Application Group has two or more terminal servers added to it. This is configured in the Application Group Wizard.

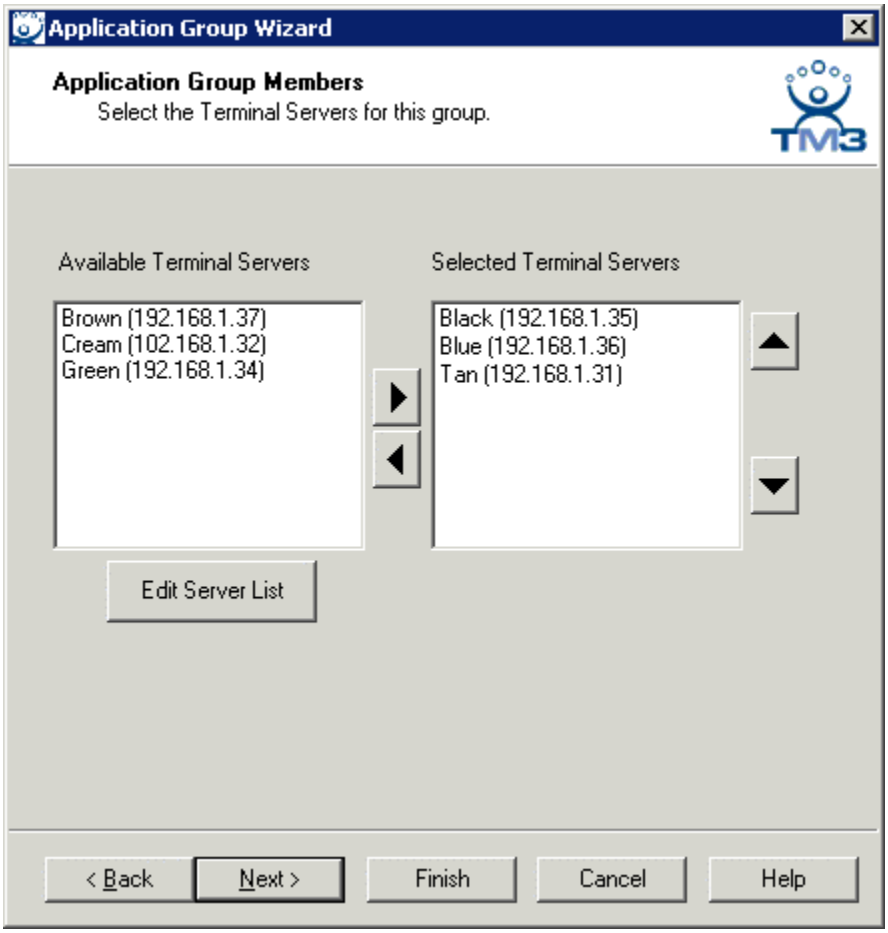
Launch the Application Group Wizard by selecting ***Manage > Application Group List*** from the ThinManager menu. This is detailed in Application Group List.



Application Group List

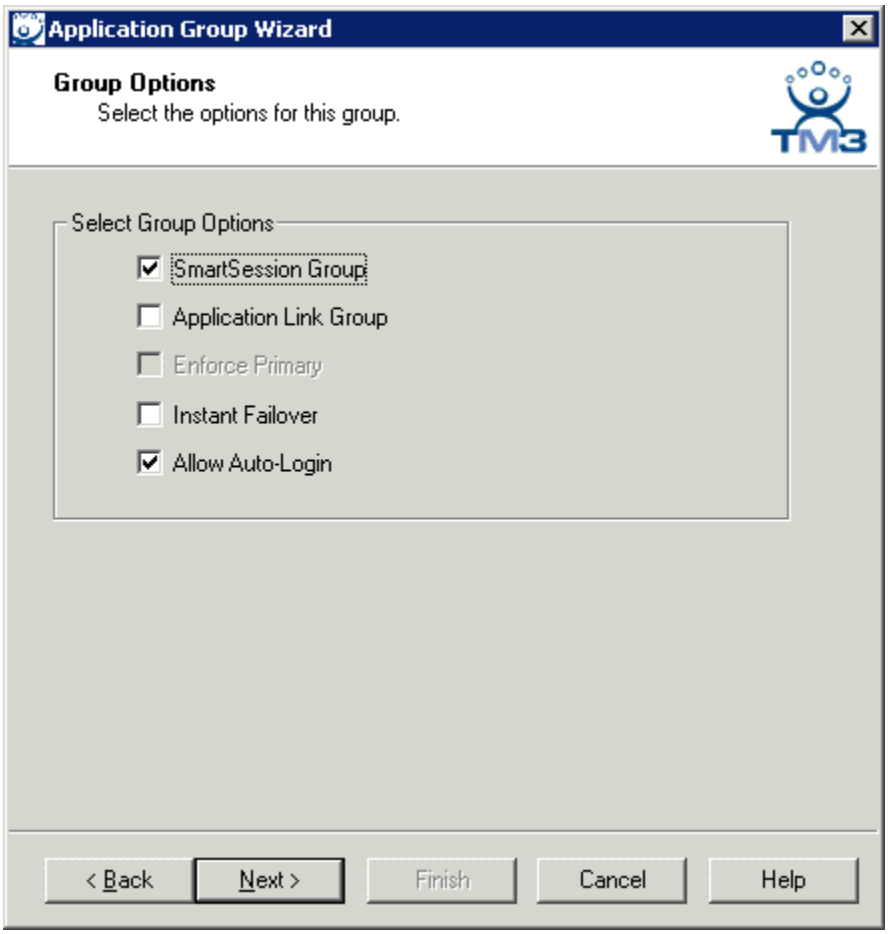
If the ***Available Groups*** box is empty, select the ***Add Group*** button to launch the Application Group Wizard.

If the ***Available Groups*** box has groups, select the ***Add Group*** button to add a new group, or highlight an existing group and select the ***Edit Group*** button.



Application Group Wizard - Application Group Members

Member terminal servers are added to the group on the Application Group 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 Application Group is using SmartSession.



Application Group Wizard - Group Options

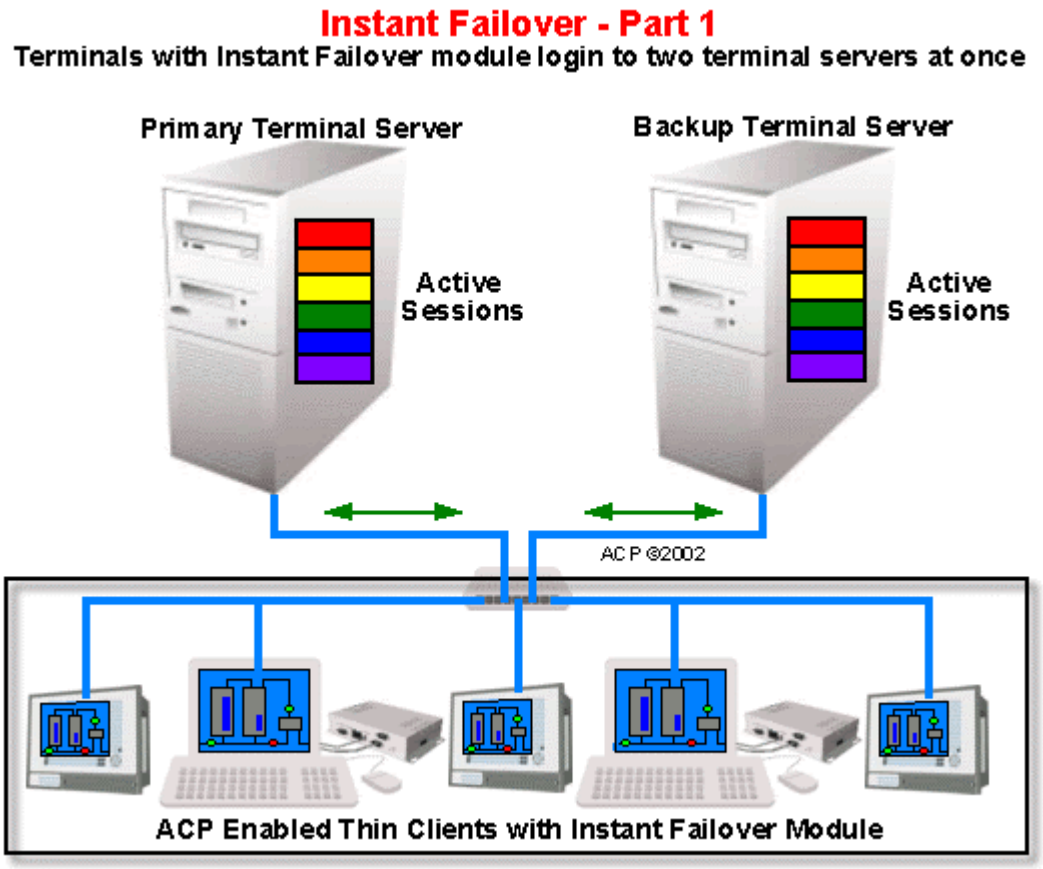
SmartSession uses the CPU usage, Memory usage, and the number of sessions on a terminal to determine its load. Terminals connecting to an Application Group with SmartSession will connect to the server with the lightest load, instead of the order listed.

Selecting the ***SmartSession Group*** checkbox on the **Group Options** page of the **Application Group Wizard** configures SmartSession. When SmartSession is used the ***Enforce Primary*** checkbox is no longer relevant.

11.3. Instant Failover

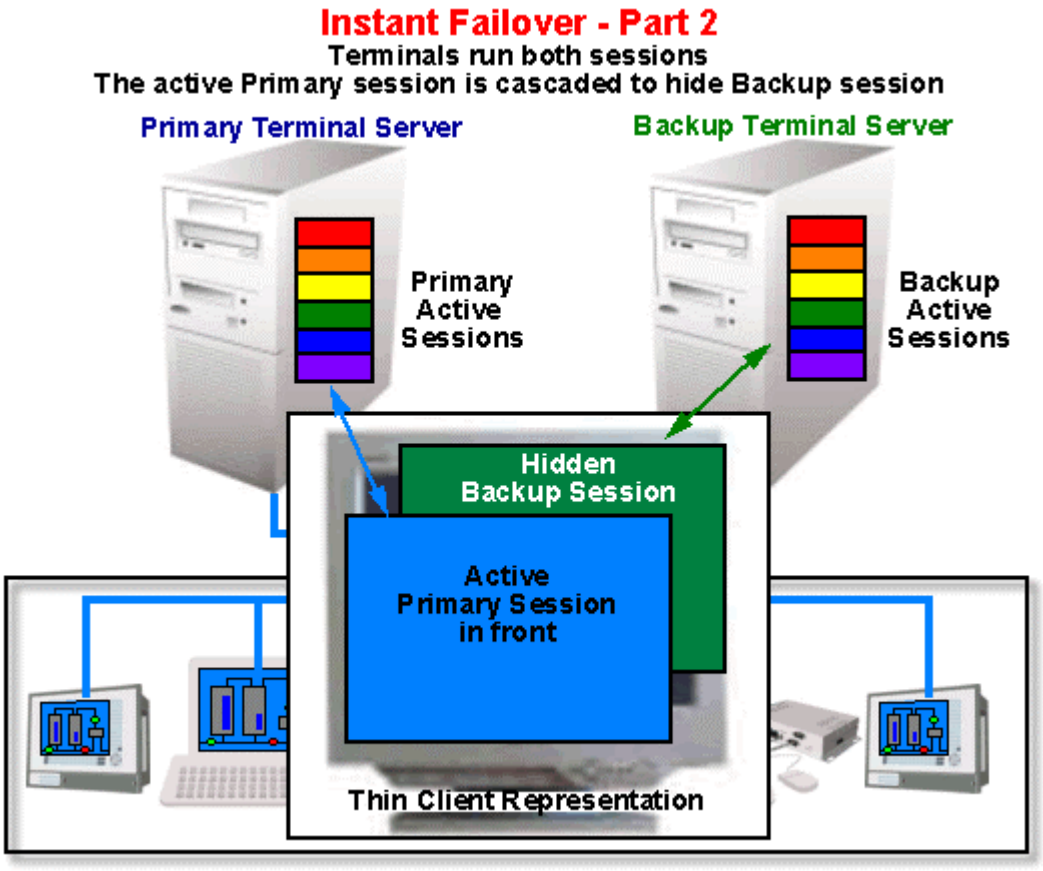
Basic failover is built into every ThinManager Ready thin client. Detecting that the primary server is down and connecting to a backup server is usually achieved in 5 to 15 seconds, depending on the monitoring configuration. Once the session is connected, it may take an additional 15-60 seconds to launch 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 ThinManager Ready 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.



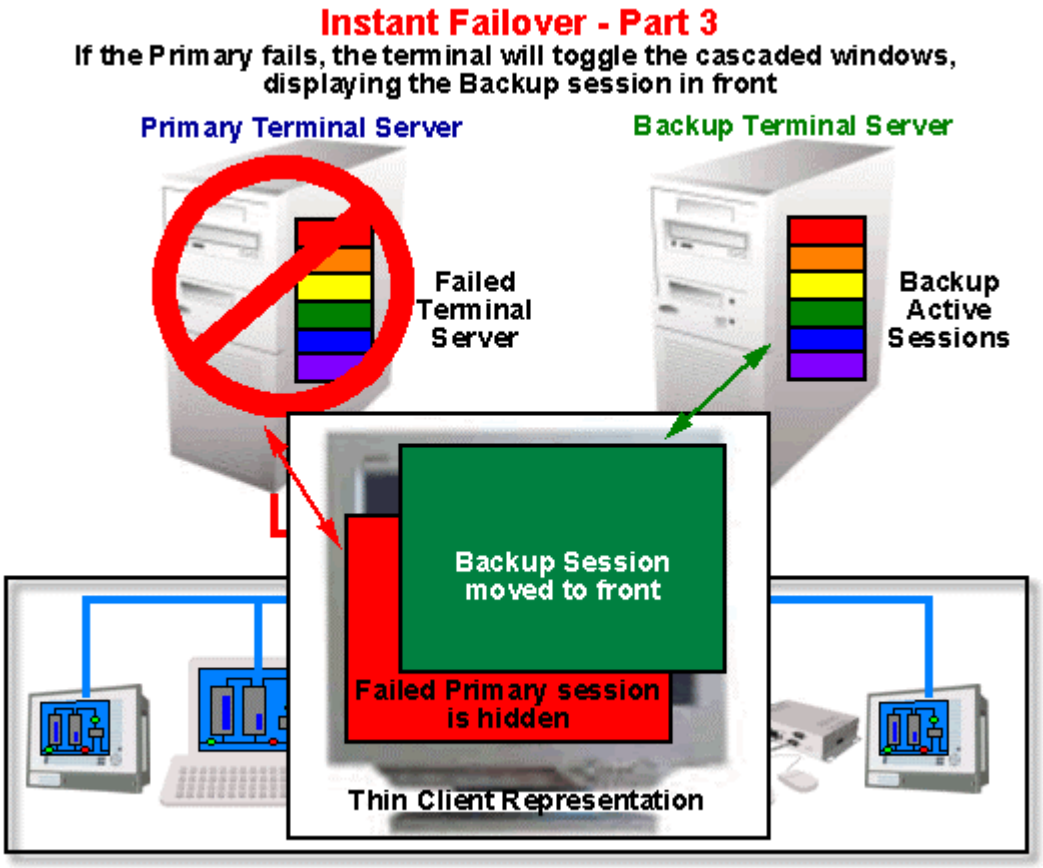
Instant Failover, Part 1

When a ThinManager Ready thin client using Instant Failover boots, it connects to two terminal servers, logs in, and starts two sessions.



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 a optional hot key toggle available to allow toggling between sessions. See Instant Failover Module for details..



Instant Failover, Part 3

If the primary server fails, the thin client monitoring program 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 ThinManager Ready 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: ThinManager Ready thin clients that use instant failover may require 64 MB of memory.

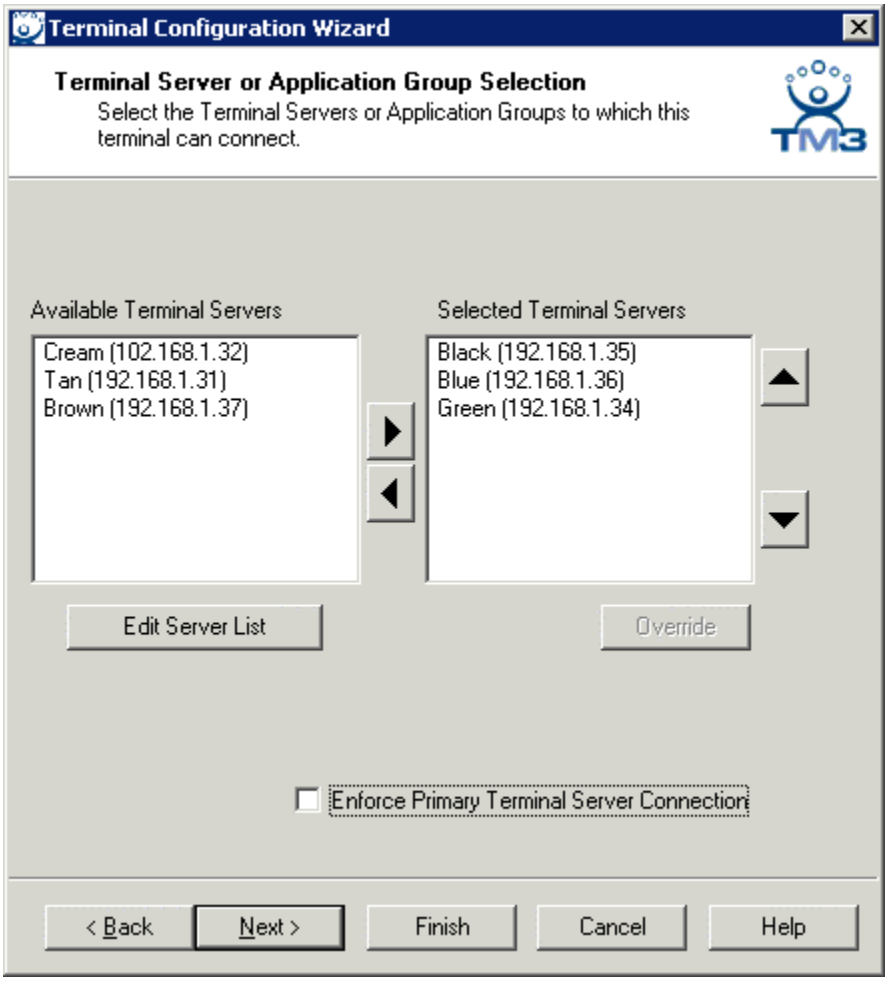
11.4. Instant Failover Configuration

Instant Failover is initiated by the Instant Failover Module if a ThinManager Ready thin client is using individual terminal servers, or is configured as part of Application Groups if Application Groups are used.

11.4.1. Instant Failover Setup using Individual Terminal Servers

The Instant Failover Module initiates instant Failover if a ThinManager Ready thin client is using individual terminal servers.

Run the **Terminal Configuration Wizard** for the terminal or Group that needs instant failover and proceed to the **Terminal Server or Application Group Selection page** of the Terminal Configuration Wizard.



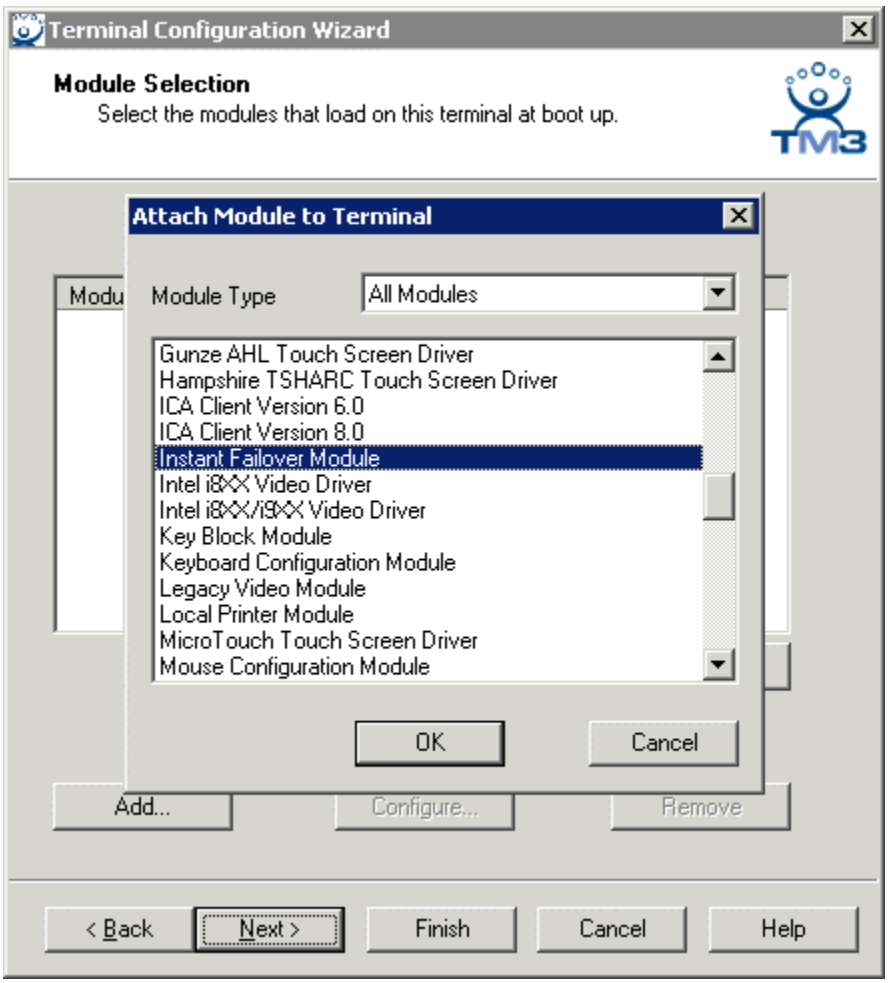
Terminal Configuration Wizard - Terminal Selection Page

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*** buttons.

When Instant Failover is initiated the thin client will connect to 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.

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.

Proceed to the **Module Selection** page of the **Terminal Configuration Wizard** to add the Instant Failover module.



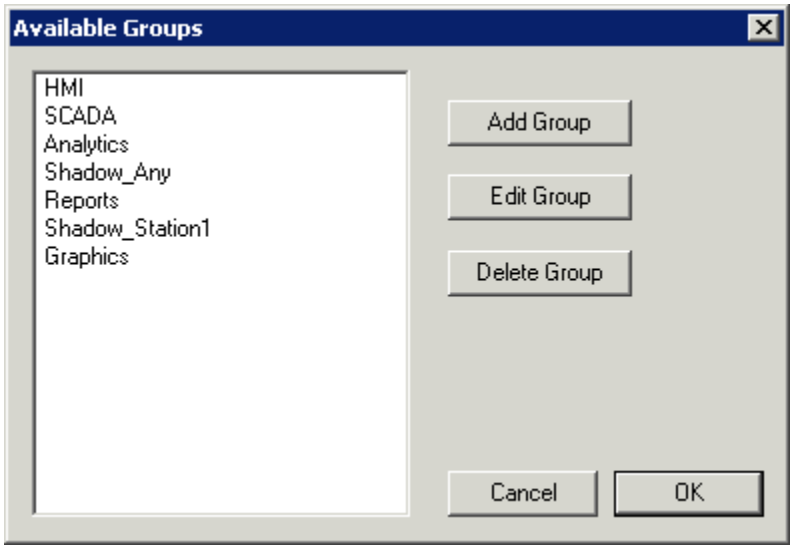
Module Selection Page - Attach Module to Terminal Window

On the Module Selection page of the Terminal Configuration Wizard, select the ***Add*** button to launch the **Attach Module to Terminal** window. Highlight the **Instant Failover Module** and select ***OK***. This will apply Instant failover to the Group or thin client when it reboots.

11.4.2. Instant Failover Setup using Application Groups

Application Groups allows a thin client to connect to a group of servers. Instant Failover can be applied to this Application Group in the Application Group List.

Launch the Application Group List Wizard by selecting ***Manage > Application Group List*** from the ThinManager menu.



Application Group List

The **Application Group List** will show created Application Groups. Select the ***Add Group*** button to create a new Application Group or highlight a group and select the ***Edit Group*** button to configure an existing group.

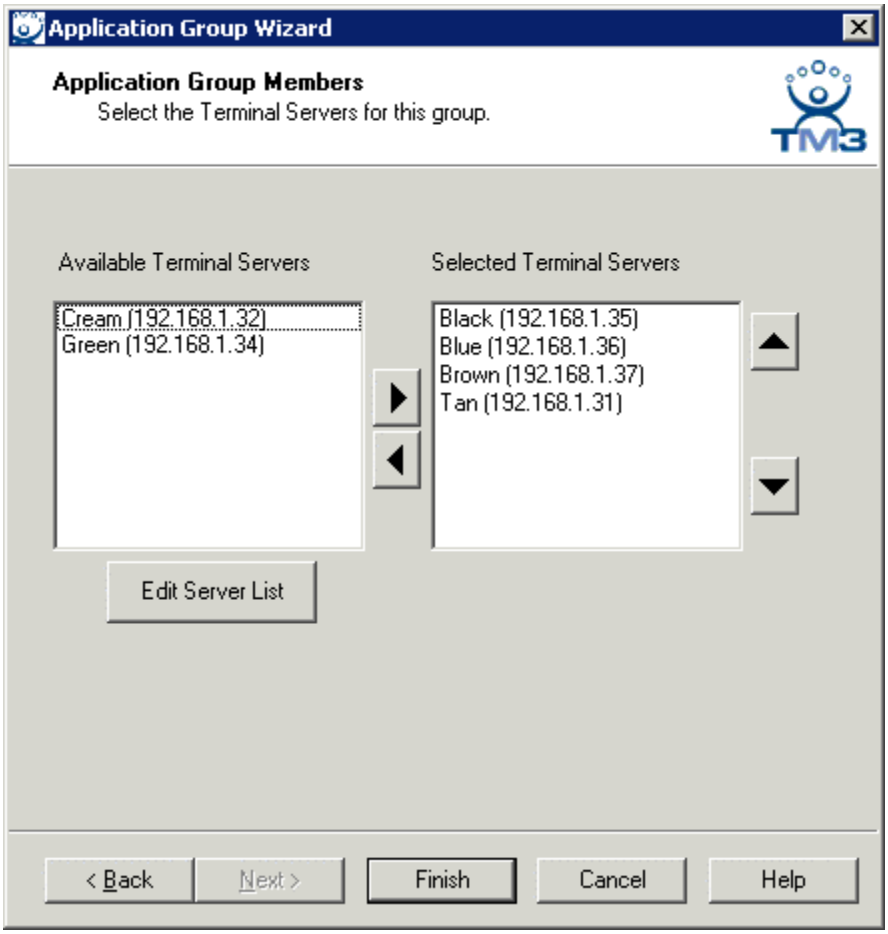
Application Group Wizard - Group Options Page

Select the ***Instant Failover*** check box on the **Group Options** page to enable instant failover for the Application Group.

Note: Do not use the Instant Failover Module when using Instant Failover within Application Groups

The Group Options allows the configuration of other Application Group parameters in addition to the Instant Failover such as SmartSession and AppLink. See the Group Options Page for details.

Each Application Group needs two or more terminal servers to get Instant Failover to function. This is done on the **Application Group Members** page of the Application Group Wizard.



Application Group Wizard - Application Group 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 connect to 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.

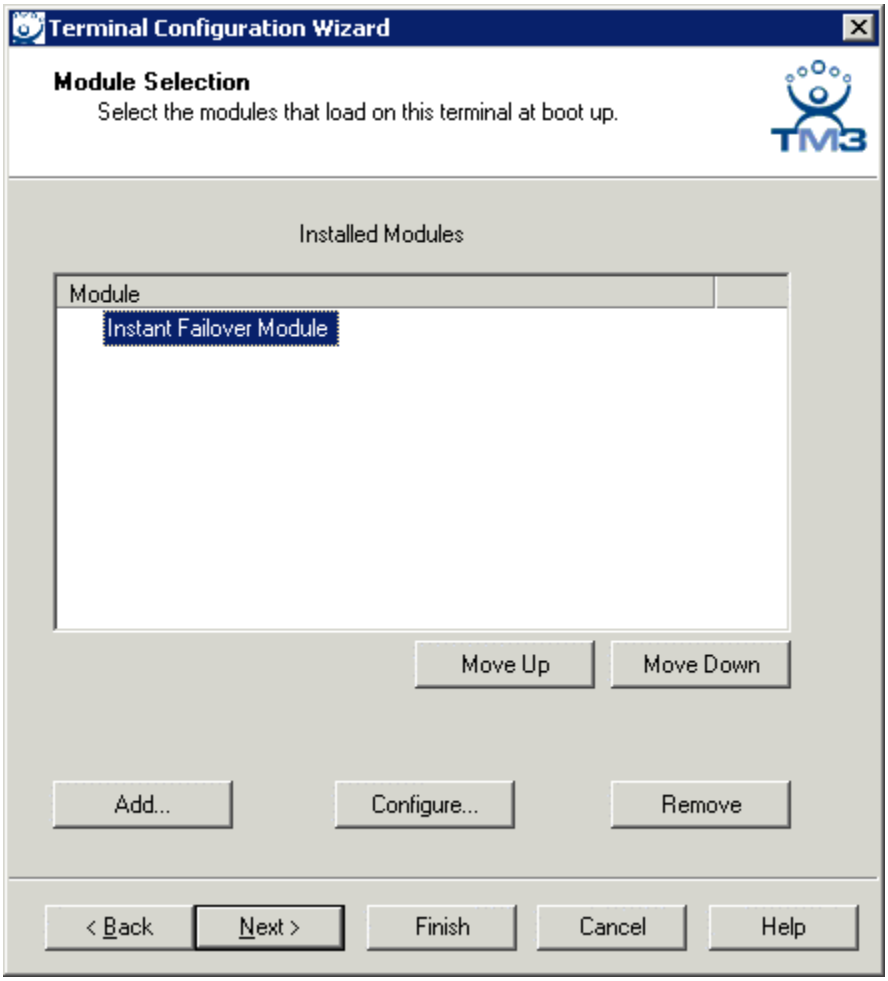
If more than two terminal servers are selected, the thin client will connect to the other terminal servers if one of the other terminal servers fails.

11.5. 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 Application Groups.

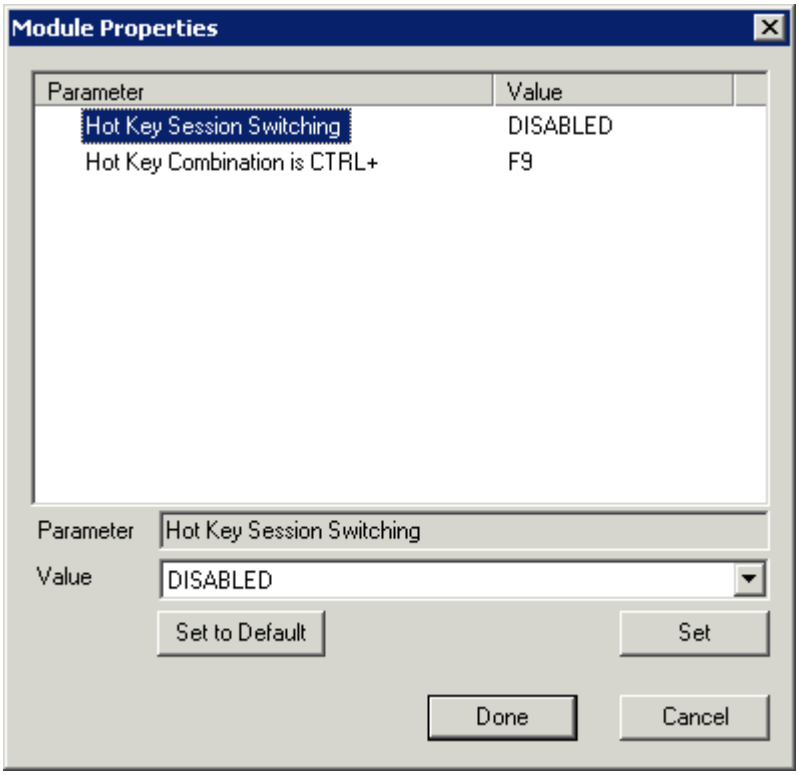
11.5.1. Switching Between Sessions using Individual Terminal Servers

Instant Failover can be configured in the Instant Failover Module to allow a user to toggle between the two instant failover sessions when the thin client connects to individual terminal servers. Run the **Terminal Configuration Wizard** for the thin client or Group that needs instant failover and proceed to the **Module Selection page**. See Instant Failover Module for details.



Terminal Configuration Wizard - Module Selection Page

Highlight the Instant Failover Module and select the ***Configure...*** button to launch the **Module Properties** window.



Modules Properties Window

To enable hot key switching between sessions, highlight the **Hot Key Switching** parameter, select the **Enabled** value from the ***Value*** drop down and select the ***Set*** button.

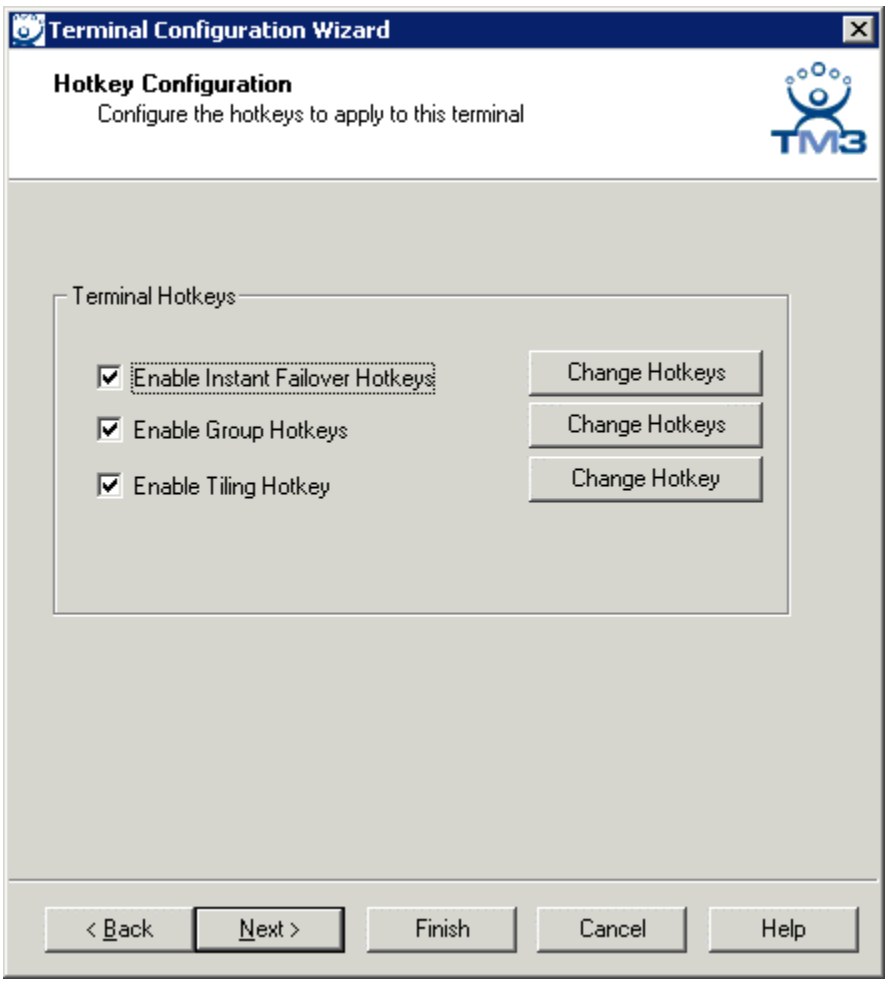
The hot key combination can be changed by selecting the **Hot Key Combination is CTRL+** parameter, changing the key in the ***Value*** drop down and selecting the ***Set*** button.

Select the ***Done*** key when finished, close the wizard, and reboot the thin client.

The thin client will toggle between the instant failover sessions when the configured hot key combination is selected.

11.5.2. Switching Between Sessions with Application Groups

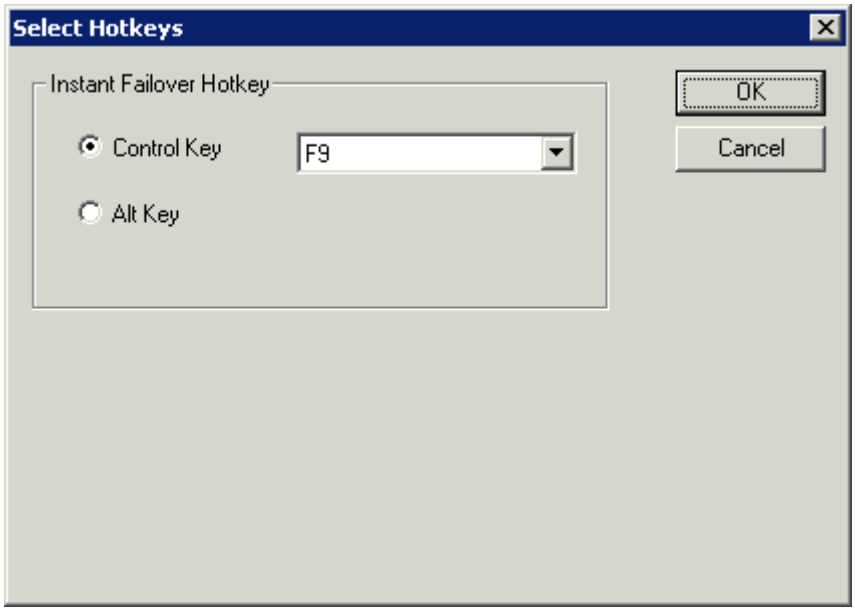
Instant Failover can be configured to allow a user to toggle between the two instant failover sessions when the thin client is using Application Groups. To configure this, run the Terminal Configuration Wizard for the thin client or Group that is using an Application Group with Instant Failover and proceed to the **Hotkey Configuration** page.



Terminal Configuration Wizard – Hotkey Configuration Page

When a thin client is using Application Groups, 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.

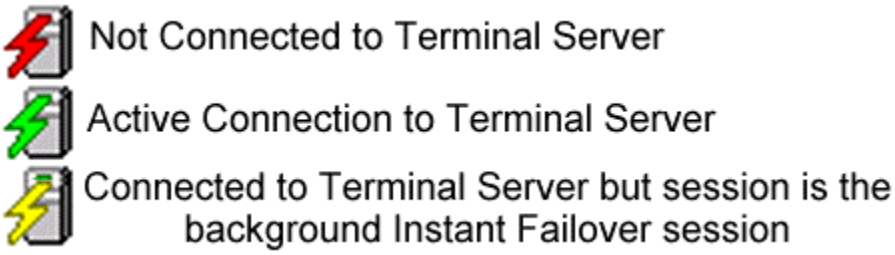


Select Hotkeys Windows

The hot keys needed to switch between instant failover sessions on using Application Groups 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.

11.5.3. 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.

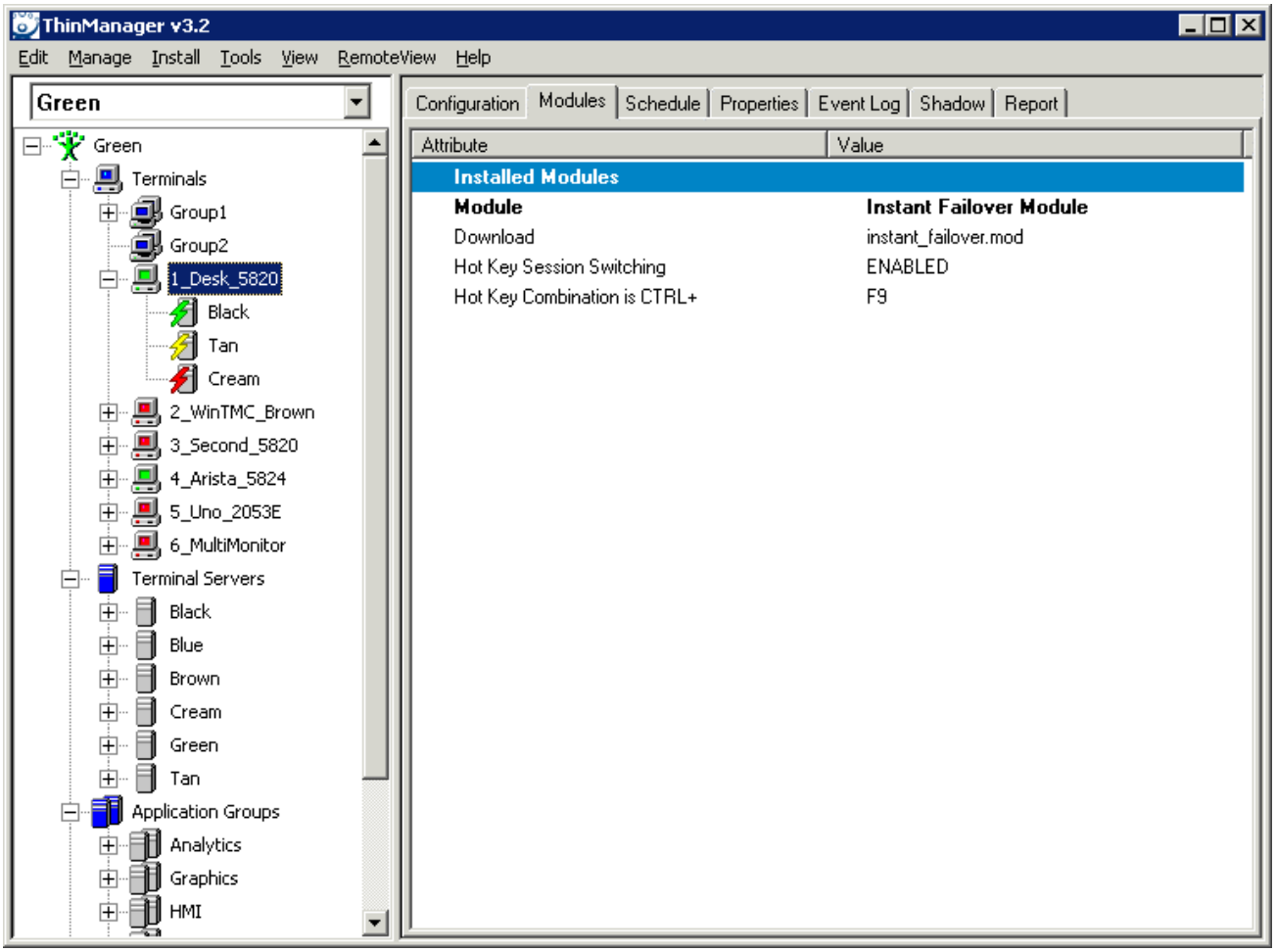


Terminal Server Connection Icons

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.

12. Modules

12.1. 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. Some modules are included with ThinManager and are registered automatically during ThinManager installation. Other modules are obtained separately from Automation Control Products and need to be installed.

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 3.2. 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 v3.2 firmware.

12.1.1. 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:

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
- Keyboard Configuration 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
- Local Printer Module
- MultiMonitor Module
- Redundant Ethernet Module
- TermMon ActiveX Configuration
- Terminal Shadow Module
- Time Zone Redirection Module
- User Override 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

Screen Saver - See Screen Saver Modules

- MultiSession Screen Saver Module
- Screen Saver Module

Sound - See Sound Modules

- Advantech ARK-3380 Sound Driver
- Advantech PCM-5820 Sound Driver

- Advantech PCM-9372 Sound Driver
- Advantech UNO-2053E 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 BoxPC-201H Sound Driver
- Arista BoxPC-240 Sound Driver
- DC_30_100 Sound Driver
- DC_40_100 Sound Driver
- Gigabyte TA3LB Sound Driver
- NTA-6020 Sound Driver
- TC3000 Sound Driver
- TC3500 Sound Driver
- TeleVideo TC7X30 Sound Driver
- Xycom XA1300 Sound Driver

TermSecure - See TermSecure Modules

- RF Ideas pcProx Module
- TermMon ActiveX Configuration Module
- USB Flash Drive Module
- Wavetrend Tag Reader

Touch Screen - See Touch Screen Modules

- Arista ARP-16XXXAP-ACP Touch Screen Driver
- CarrollTouch Touch Screen Driver
- Contec 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 TouchhSet Touch Screen Driver
- PenMount Touch Screen Driver
- Ronics Touch Screen Driver
- Touch Control Touch Screen Driver

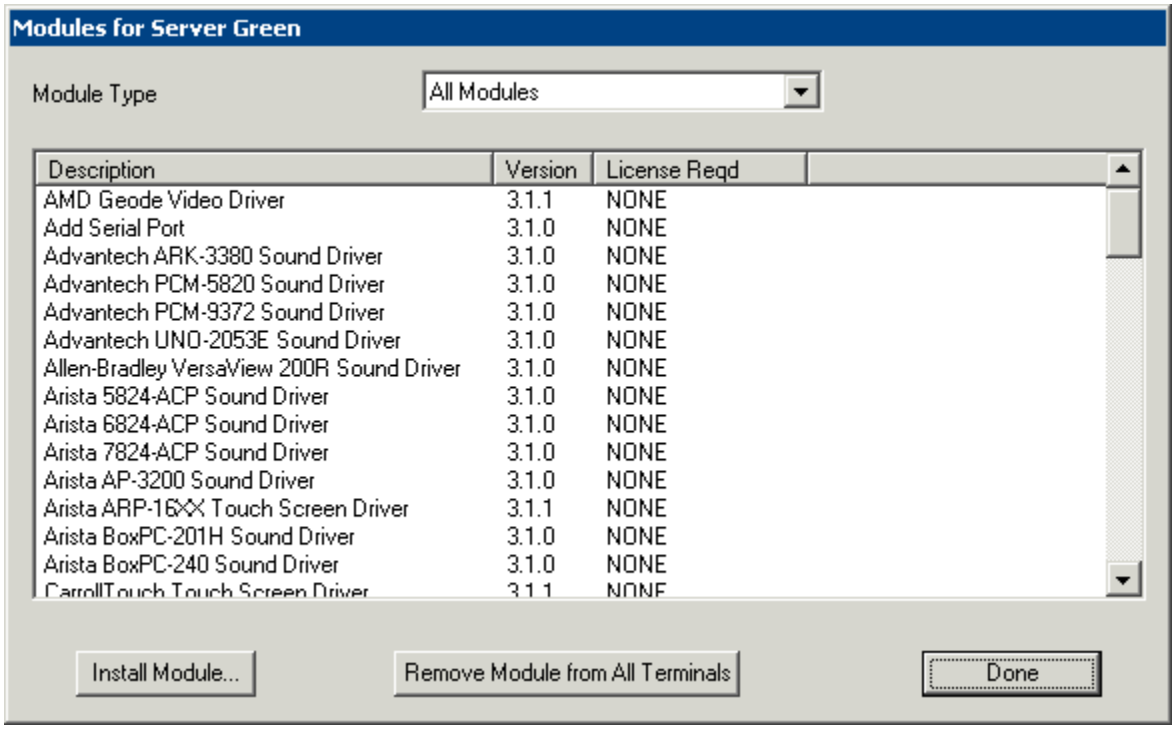
- Touch International IR Touch Screen Driver
- USB Touch Screen Driver
- Xycom 33XX Touch Screen Driver

Video Driver - See Video Driver Modules.

- AMD Geode Video Driver
- Core Video Driver
- Geode Video Driver
- Intel i8XX Video Driver
- Intel i8XX//i9XX Video Driver
- Legacy Video Driver
- MultiMonitor Video Driver
- S3 Savage Video Driver
- VIA CLE266 Video Driver
- VIA Unichrome Video Driver

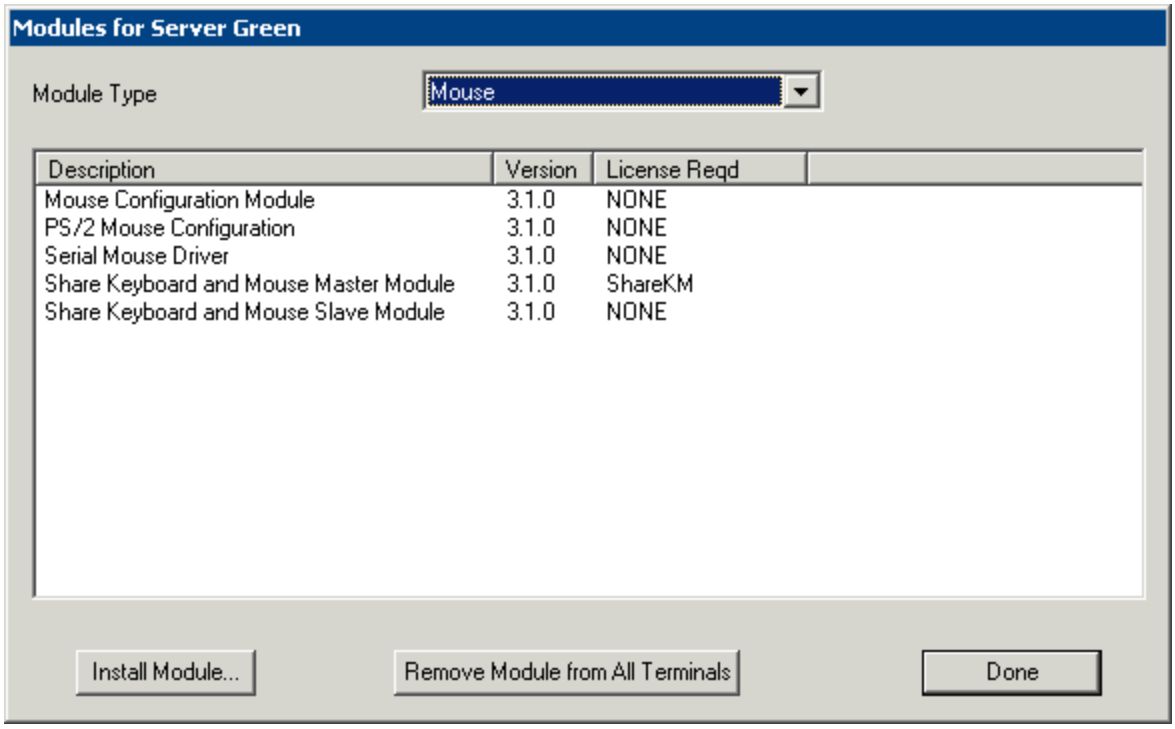
12.2. Installing a Module

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

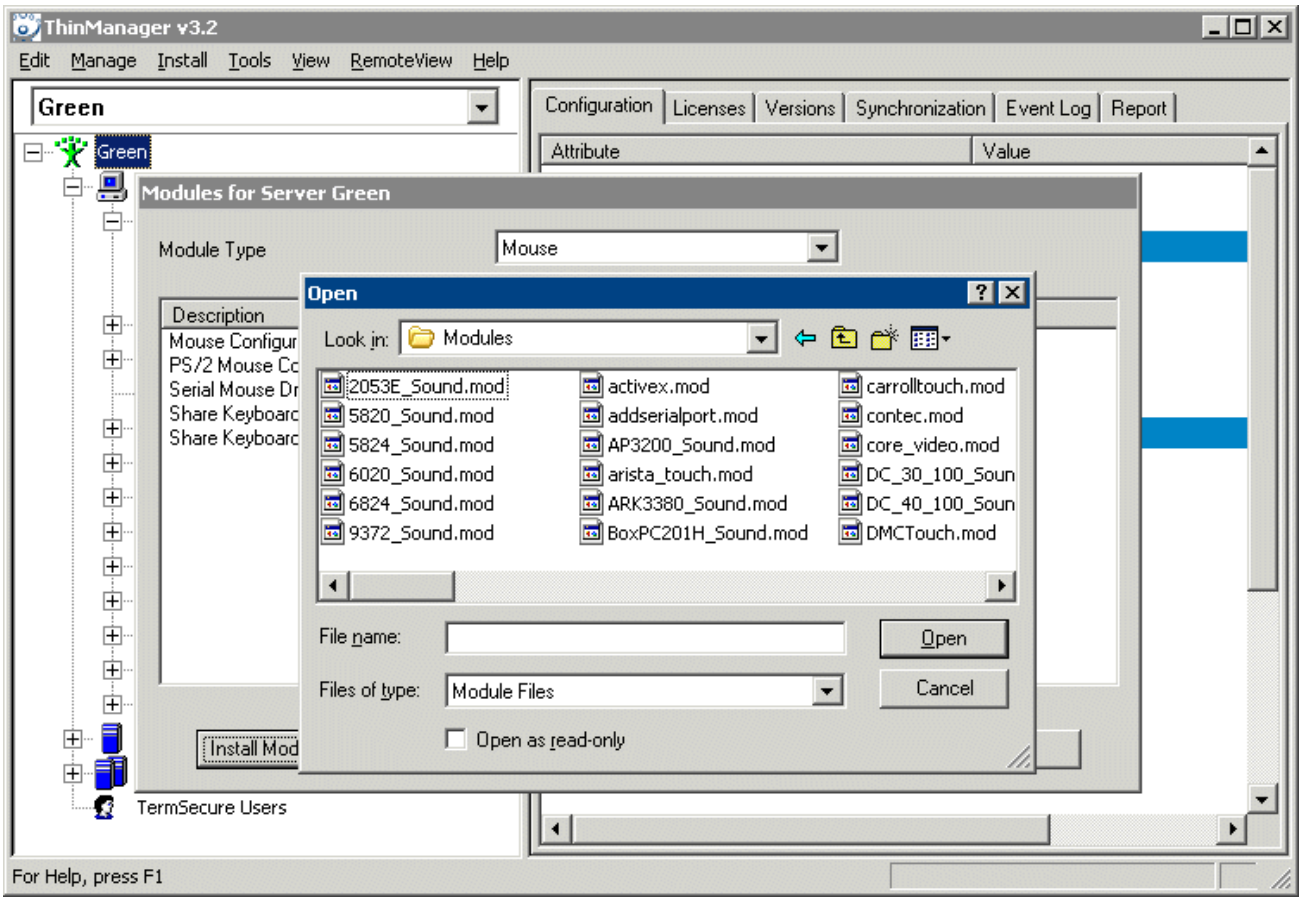
The **Module** window shows all of the modules installed on the ThinManager Server.



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

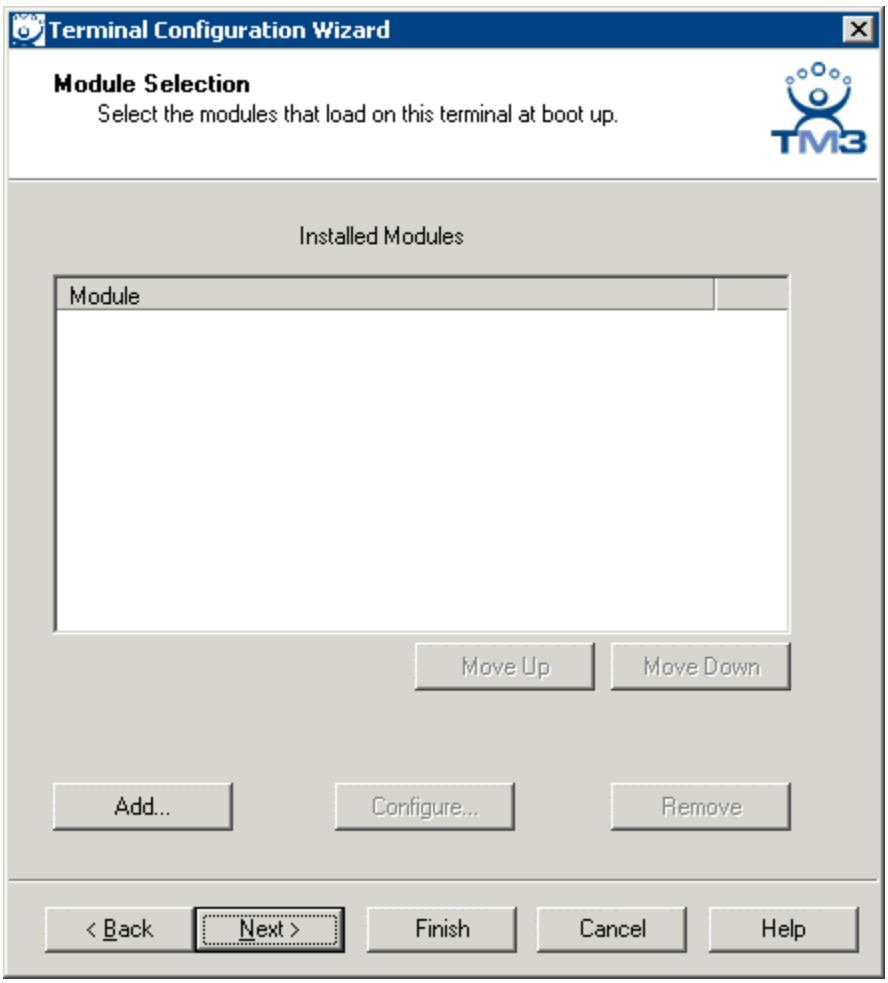
Browse to the new module, usually downloaded from the ThinManager web site (www.thinmanager.com). Highlight the new module, and select the ***Open*** button. This will add the new module to the list of modules.

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.

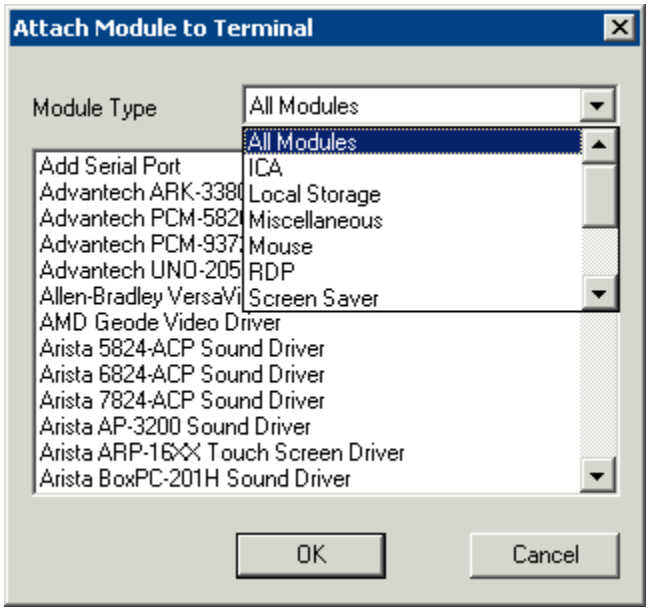
12.3. Adding a Module to a Group or Terminal

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

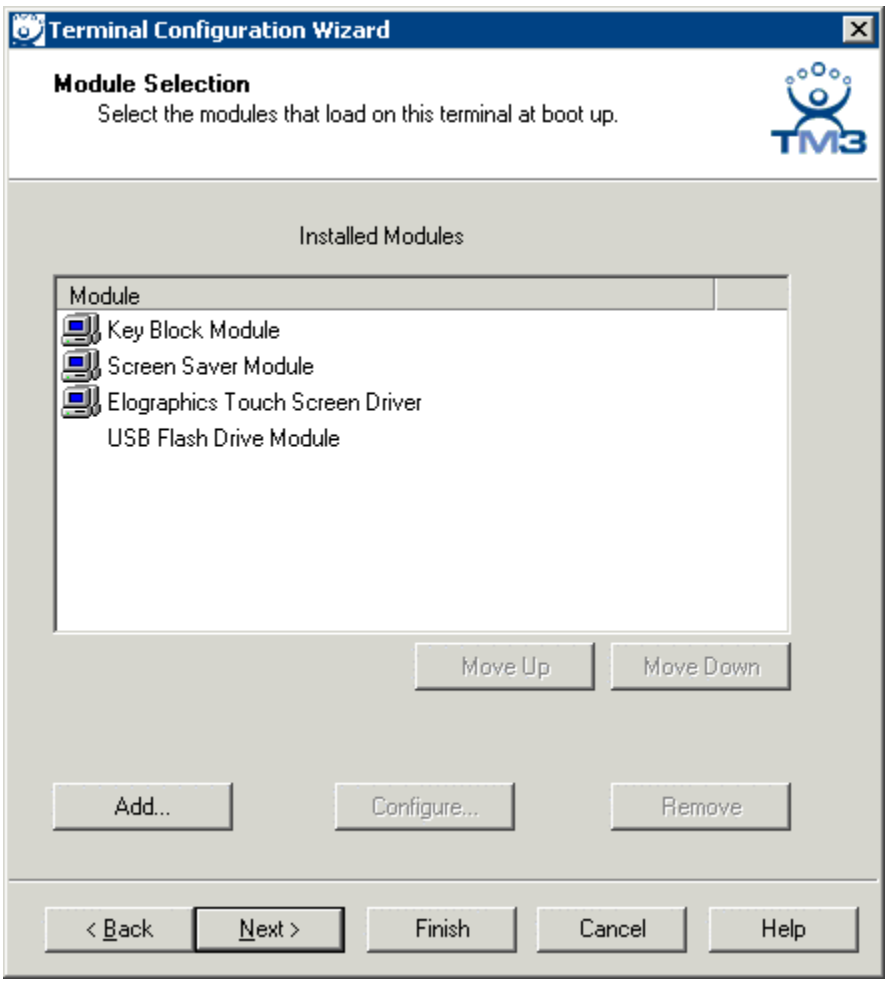
To add a Module to a Terminal, select the ***Add...*** button to launch the **Attach Module to Terminal** window.



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.



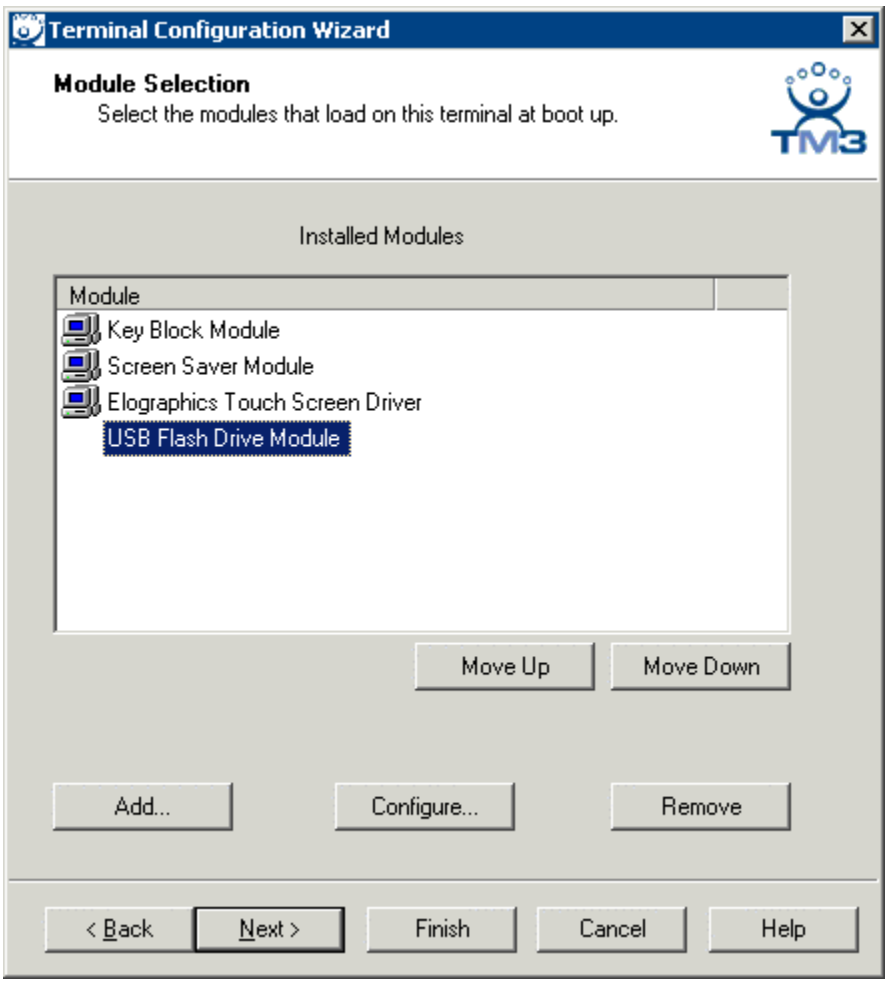
Terminal Configuration Wizard - Module Selection

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.
-  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.

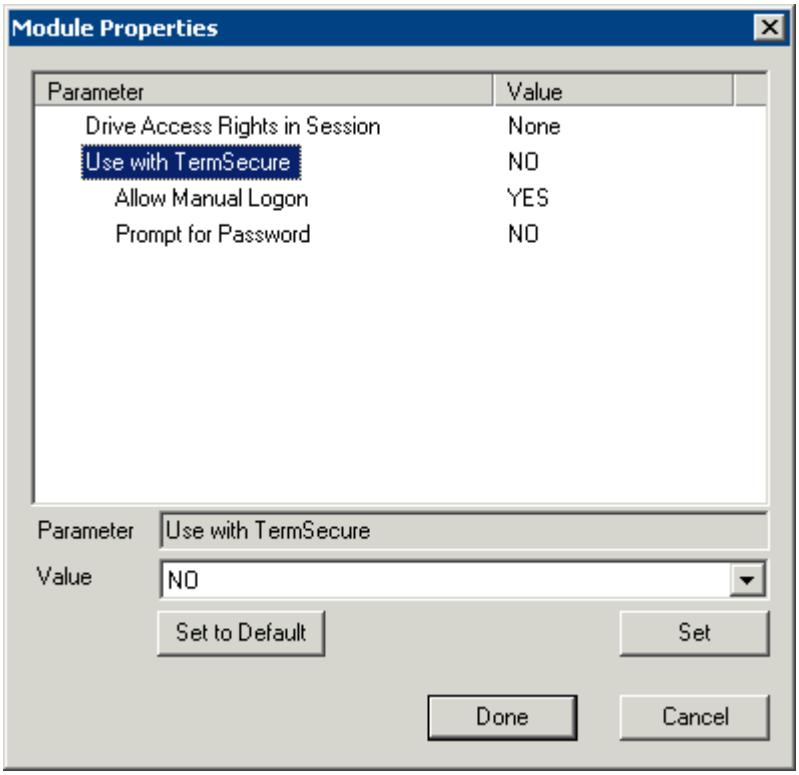
12.4. Changing Module Parameters

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.



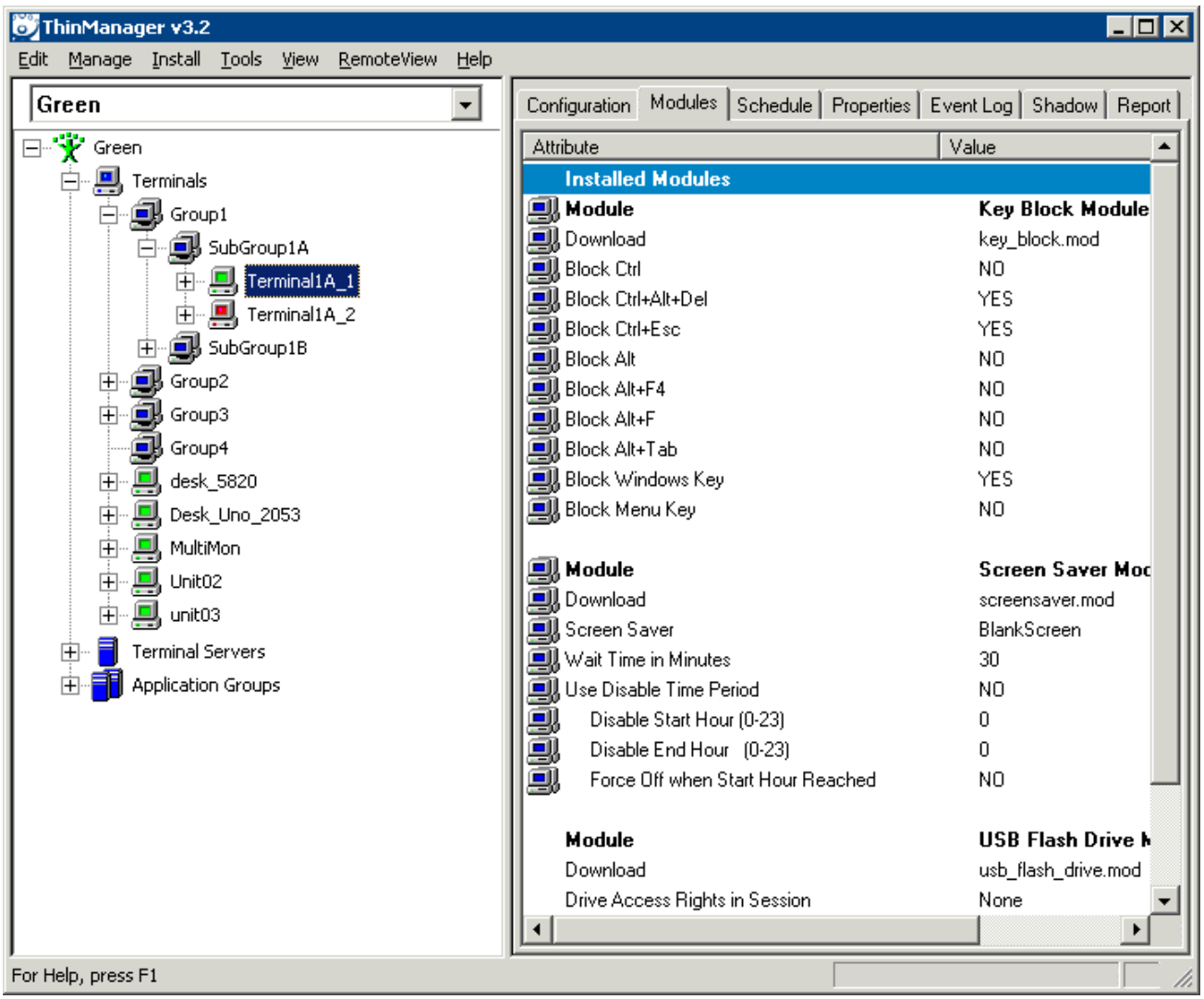
Module Properties

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.

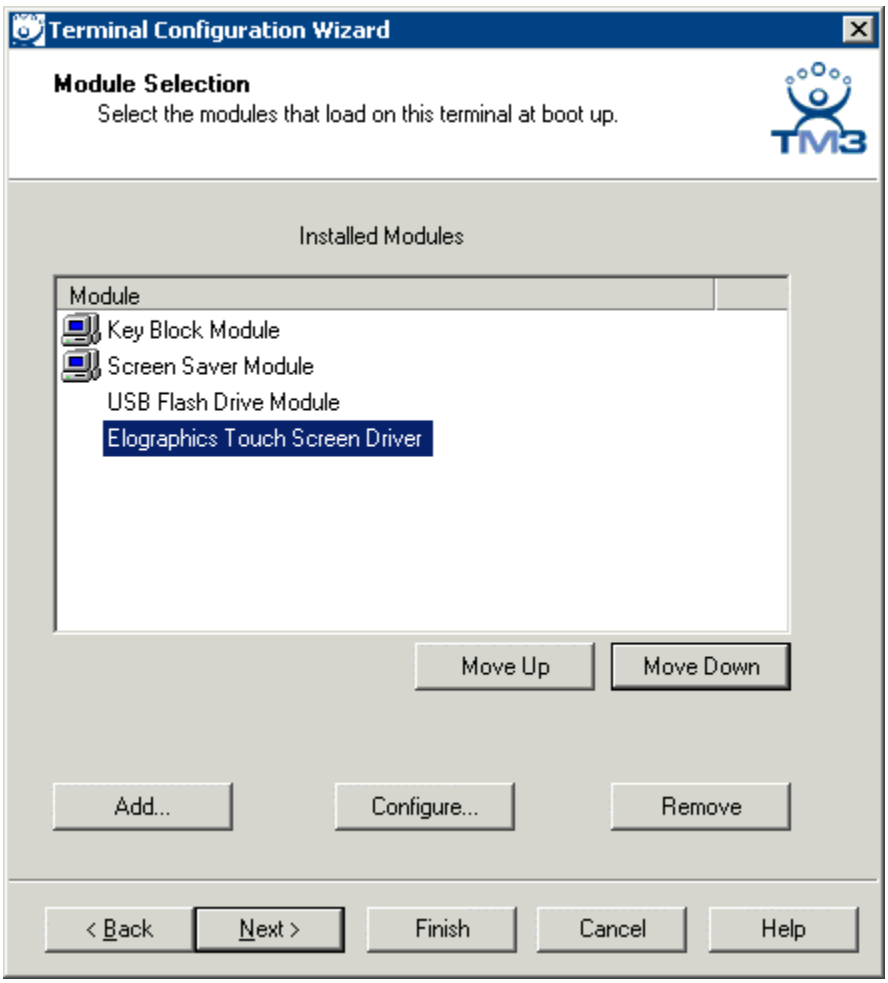


Module Icons in ThinManager

The status of the modules is displayed on the ***Modules*** tab of the **Details** pane of ThinManager.

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.

12.5. 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.**

12.6. ICA Modules

The ICA Modules are advanced modules for advanced users of the ICA client communication protocol.

12.6.1. 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**.

12.6.2. 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.

12.6.3. 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.

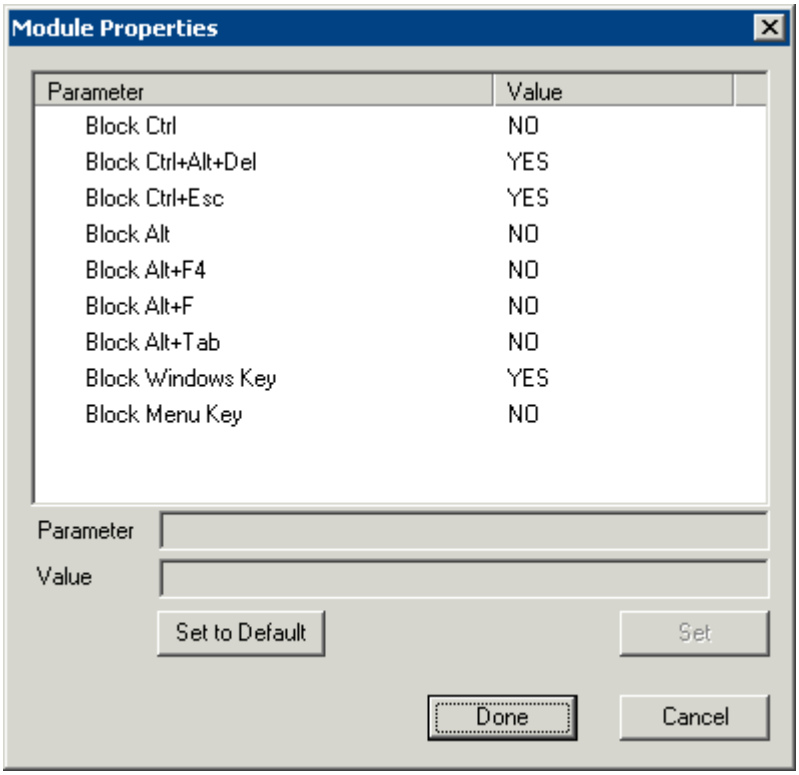
If a user wants to use the 6.0 version of the ICA protocol they will need to add the **ICA Client Module Client Version 6.0 t**o the terminal.

12.7. Keyboard Modules

The Keyboard Modules are modules used to control or alter keyboard behavior.

12.7.1. Key Block Module

The Key Block module traps certain keystrokes and prevents them from being sent to the terminal server for processing.



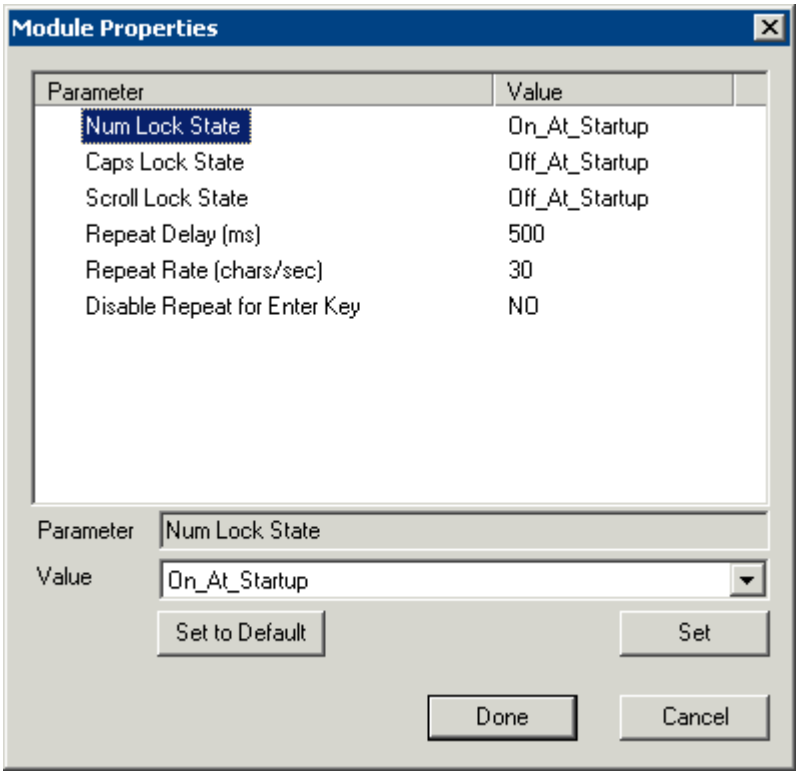
Key Block Module

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.

12.7.2. Keyboard Configuration Module

The Keyboard Configuration Module allows key settings on a keyboard attached to a ThinManager Ready thin client to be set.



Keyboard Configuration Module Parameters

The Keyboard Configuration parameters include:

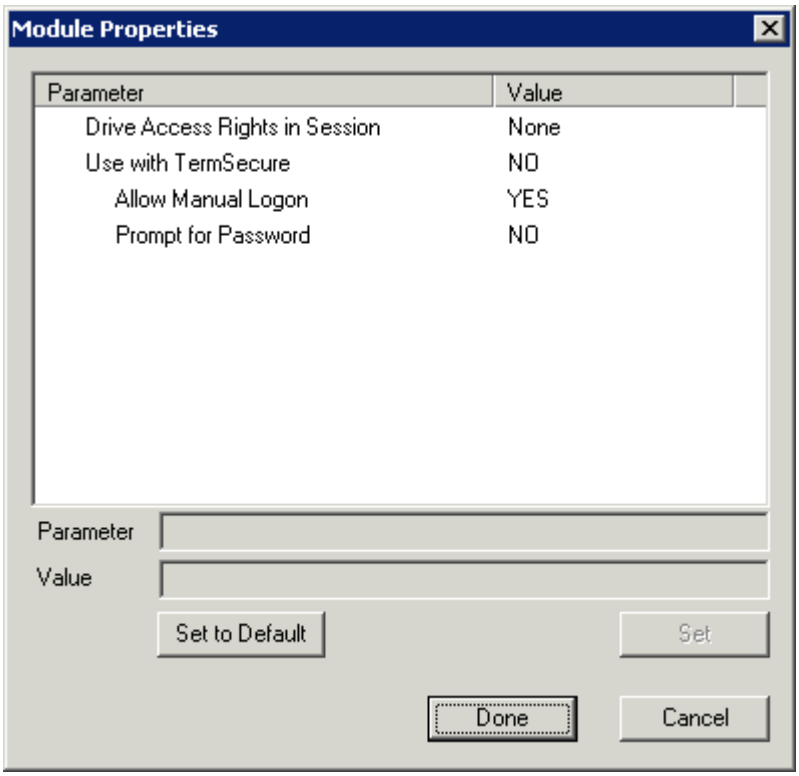
- ***Num Lock State*** – This allows the Number Lock to be set to **On** at startup, **Off** at startup, always **On**, or always **Off**.
- ***Cap Lock State*** – This allows the Caps Lock to be set to **On** at startup, **Off** at startup, always **On**, or always **Off**.
- ***Scroll Lock State*** – 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.

12.8. Local Storage Modules

The Local Storage modules allow the use of USB ports on ThinManager Ready thin clients. The USB ports are not active by default for security.

12.8.1. 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.

12.8.2. 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.

12.9. Miscellaneous Modules

These are modules that don't fit in other categories.

12.9.1. 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.

12.9.2. Firmware Update (Disk On Chip / Compact Flash) 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.

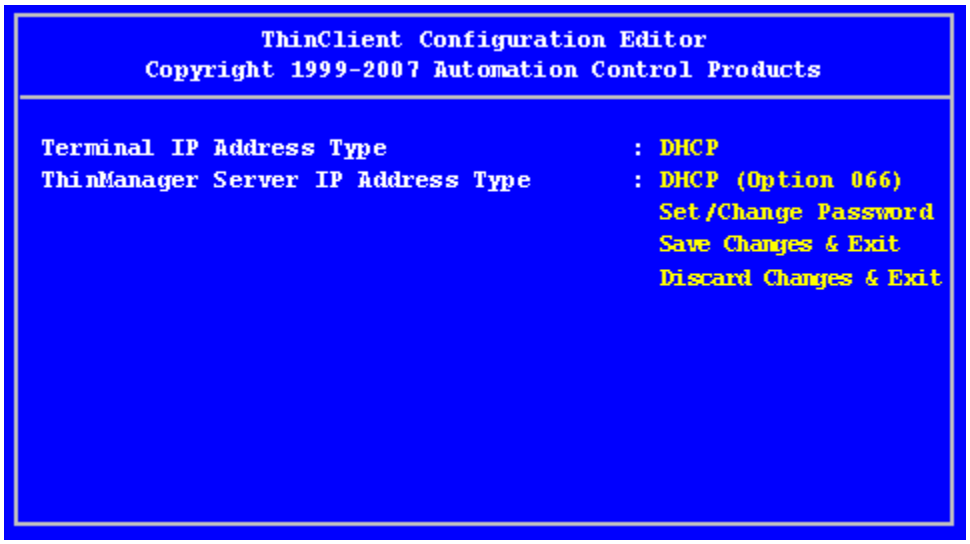
Firmware Update Program

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.

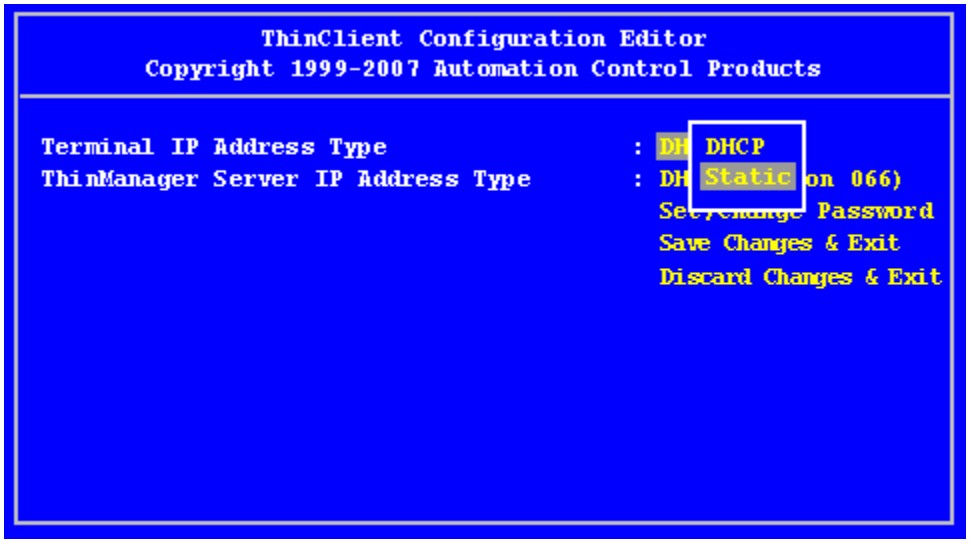
Stored Firmware Terminal Configuration

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.



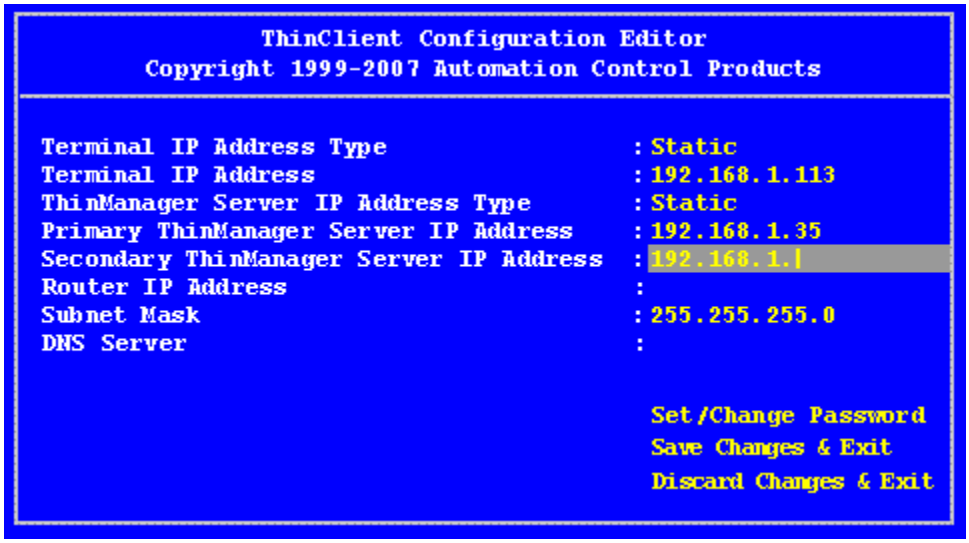
ThinClient Configuration Editor – Default Values

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.

12.9.3. Instant Failover Module

The **Instant Failover Module** 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.

The Instant Failover module is used if the terminal is connecting to individual terminal servers. If Application Groups are being used, Instant Failover is an Application Group option. Instant Failover works within an Application Group, not between Application Groups.

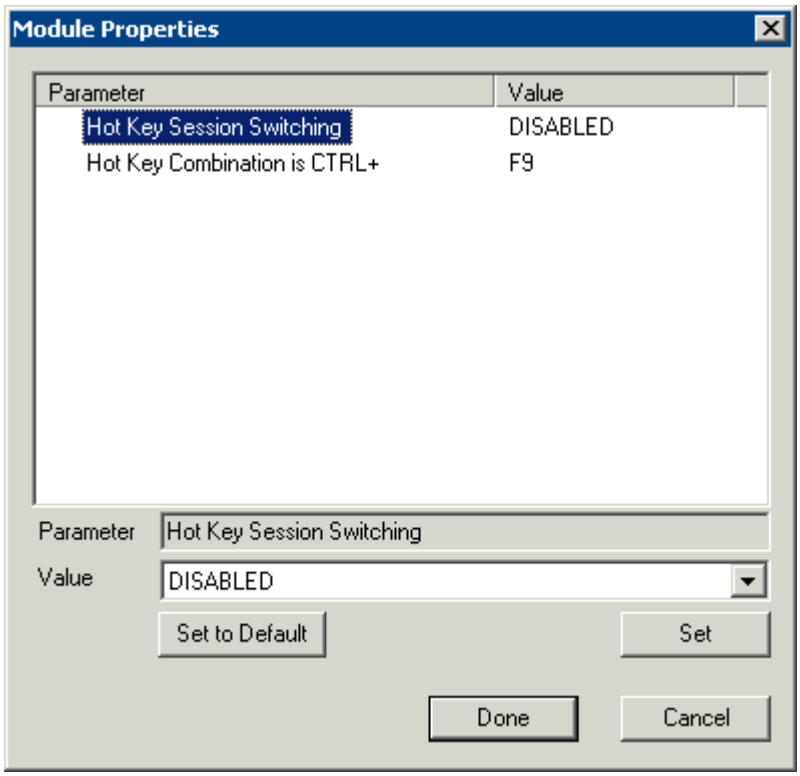
Note: The Instant Failover Module is only used with terminals using Individual Terminal Servers. (See Terminal Server Specification Page).
Terminals using Application Groups use a checkbox to enable Instant Failover. (See Instant Failover with Application Groups).
Do not use this module while using Application Groups.

The Instant Failover function requires an Instant Failover license for each terminal that uses it.

The ThinManager Ready 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 Configuration When Using Individual Terminal Servers

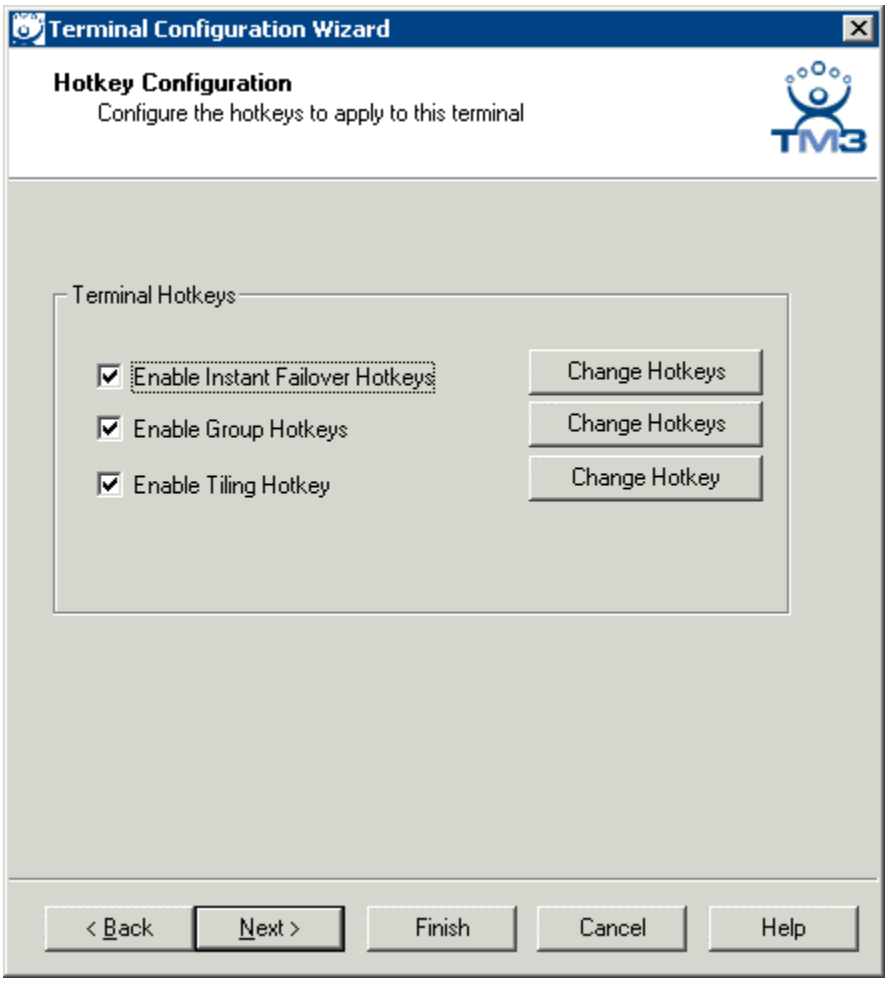
If using the **Instant Failover** module, the switching between sessions is configured in the module properties.



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.

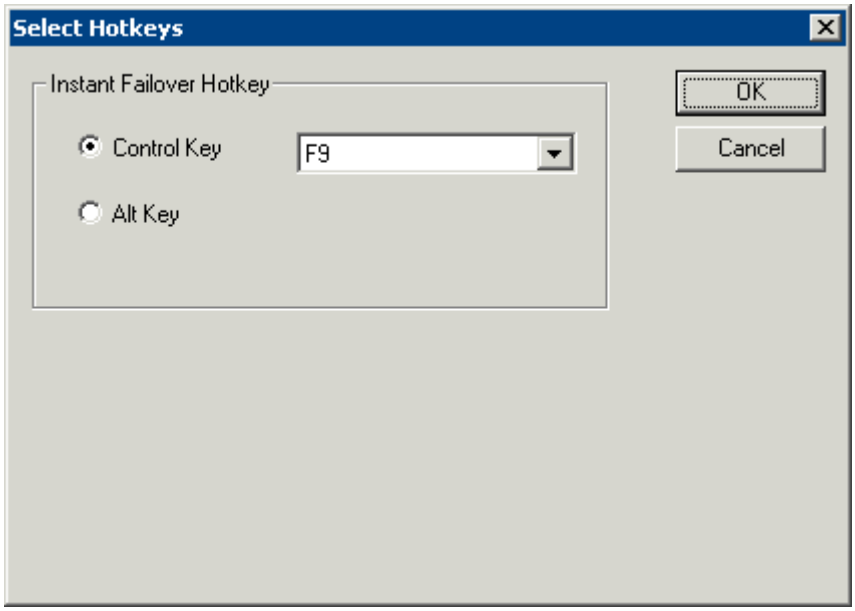
Instant Failover Configuration When Using Application Groups



Application Group Options - Instant Failover Hotkey Configuration

If using a **Application Group with Instant Failover**, the hotkey is enabled on the **Hotkey Configuration Options** page of the **Terminal Configuration Wizard** by selecting the ***Enable Instant Failover Hotkeys*** checkbox.

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

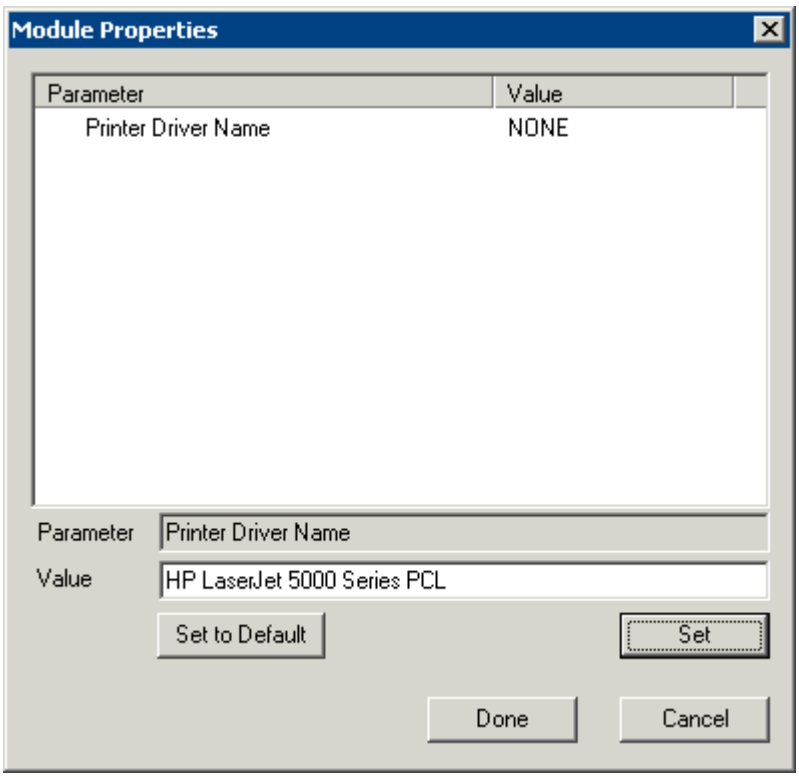
The default hotkey for Instant Failover switching is set to ***Control+F9***. This can be changed by selecting the ***Alt Key*** radio button or using the drop-down to select another function key.

12.9.4. Local Print Module

The Local Print Module simplifies printing through the parallel port on ThinManager Ready thin clients.

There are three steps:

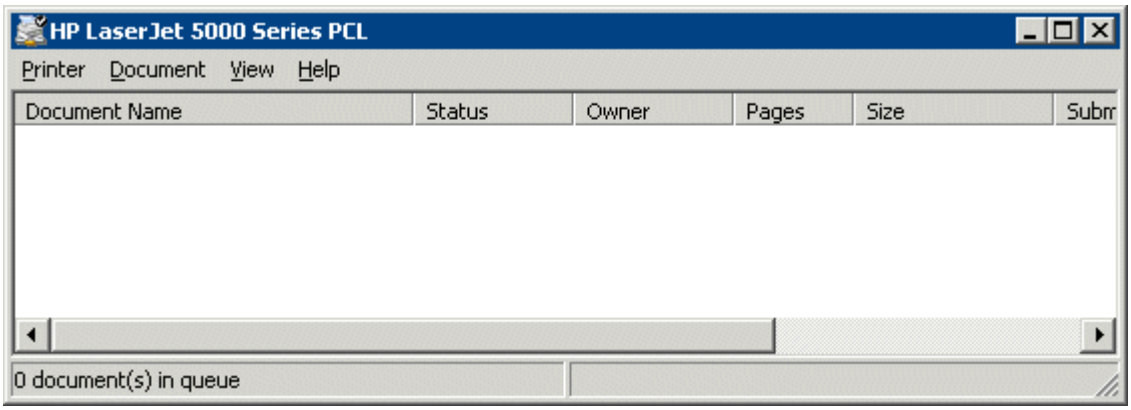
1. Install the print driver on the terminal servers that the client will connect to.
2. Add the **Local Print Module** to the ThinManager Ready thin client as described in Adding a Module to a Group or Terminal.
3. Configure the ***Print Driver Name*** parameter in the module to contain the print driver's name.



Local Print Module Properties

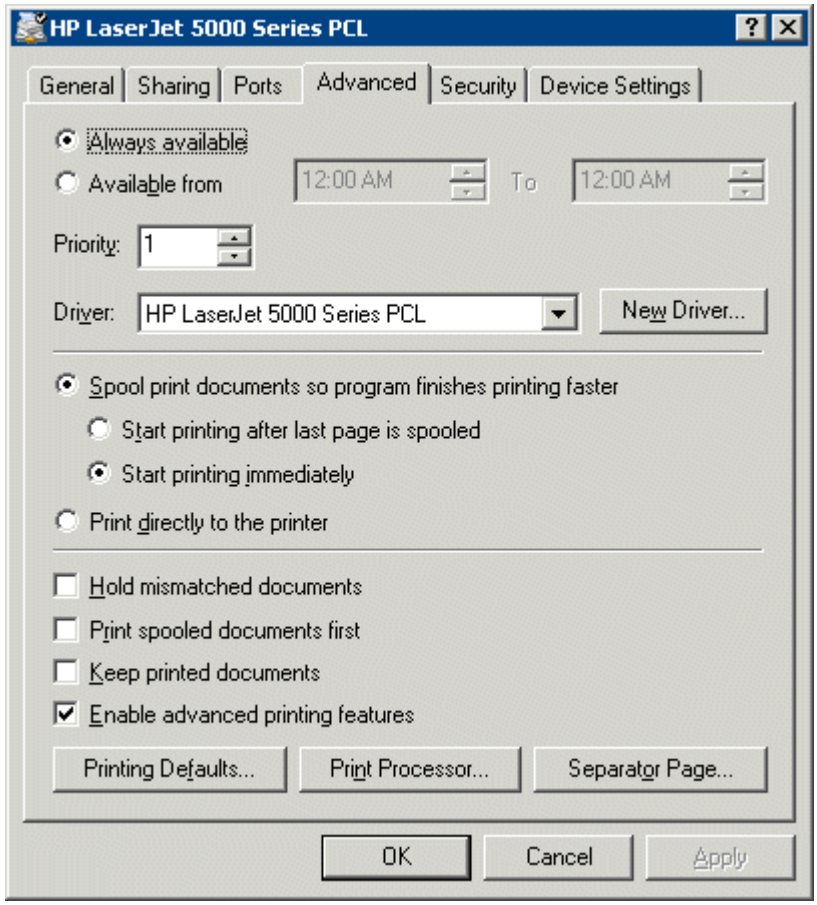
- ***Printer Driver Name*** - The Local Print module works when the name of the print driver is entered in the ***Value*** field for the **Printer Driver Name**. The Print Driver name is provided by the properties page for the printer.

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.



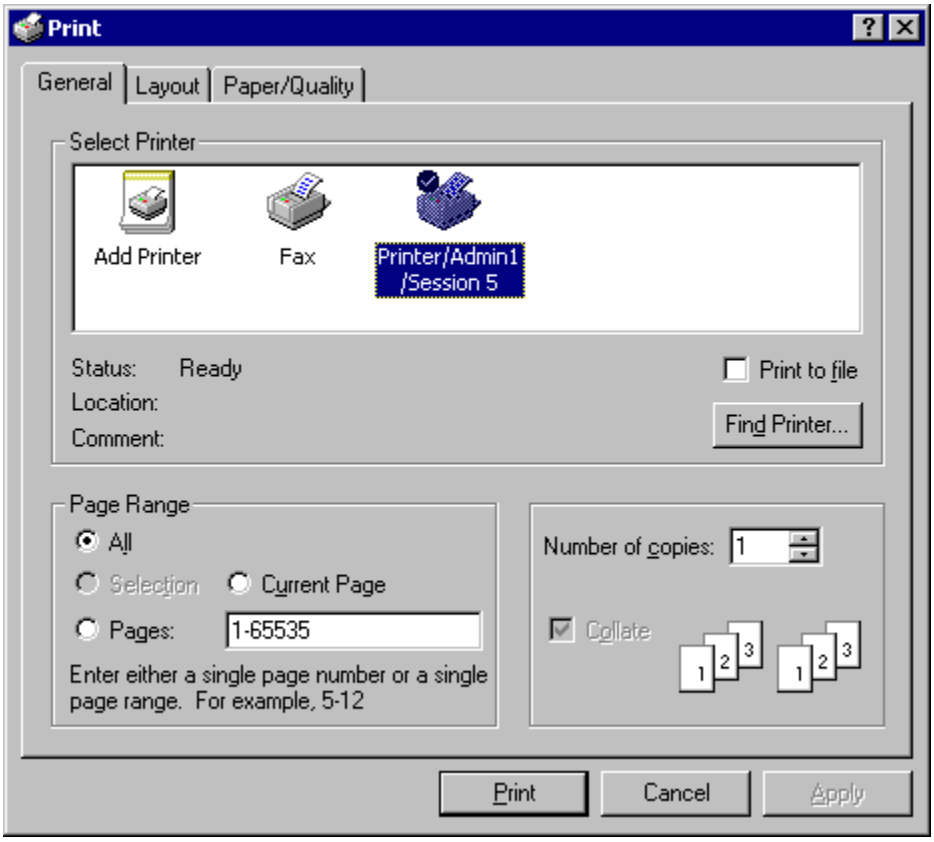
Printer Queue window

Select ***Printer > Properties*** to launch the **Printer Properties** page.



Advanced Printer Properties

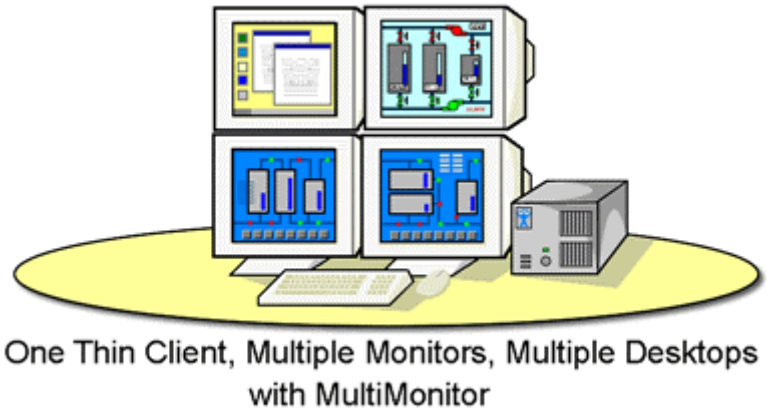
The **Printer Property** page shows the Print Driver name on the ***Advanced*** tab. This is the name that needs to be entered into the Local Print Module.



Client Print Window

When printing from the client, the printer will be displayed as **Printer/username/session number** as shown in the example.

12.9.5. MultiMonitor Module

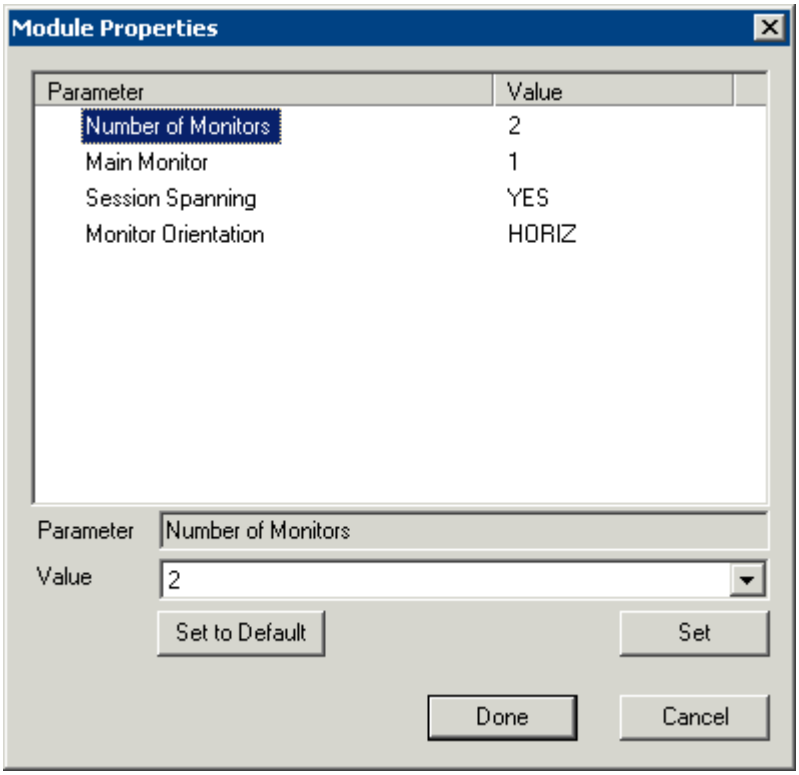


MultiMonitor

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.



MultiMonitor Module Parameters

The MultiMonitor Module has four parameters:

- ***Number of Monitors*** – This allows the terminal to be configured for the number of monitors attached.
- ***Main Monitor*** – This selects which monitor will receive the login window and messages.
- ***Session Spanning –*** This setting, if set to ***Yes***, allows the monitors to be merged into a single desktop. The maximum size is 4096x2048 pixels.
- ***Monitor Orientation –*** This sets the monitor configuration to ***HORIZ*** (horizontal) for side-by-side, ***VERT*** (vertical) for stacked, or ***SQUARE*** for a grid.

12.9.6. Redundant Ethernet Module

Some ThinManager Ready thin clients have two network ports. The Redundant Ethernet module allows the ThinManager Ready thin client to use both ports with one 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 ThinManager Ready thin client to activate and switch to the backup (LAN2) port in a seamless fashion.

12.9.7. TermMon ActiveX Configuration Module

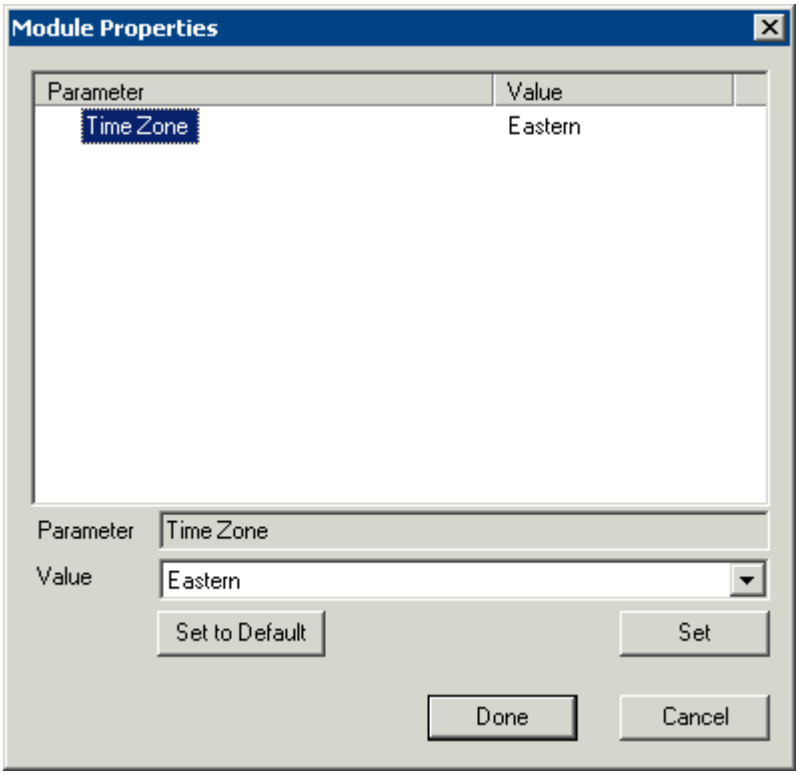
This configures the TermMon ActiveX control that collects terminal information and can perform terminal functions. It is listed as both a Miscellaneous Module and a TermSecure Module but is described in the TermSecure section.
See TermMon ActiveX Control for details.

12.9.8. 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.

12.9.9. Time Zone Redirection Module

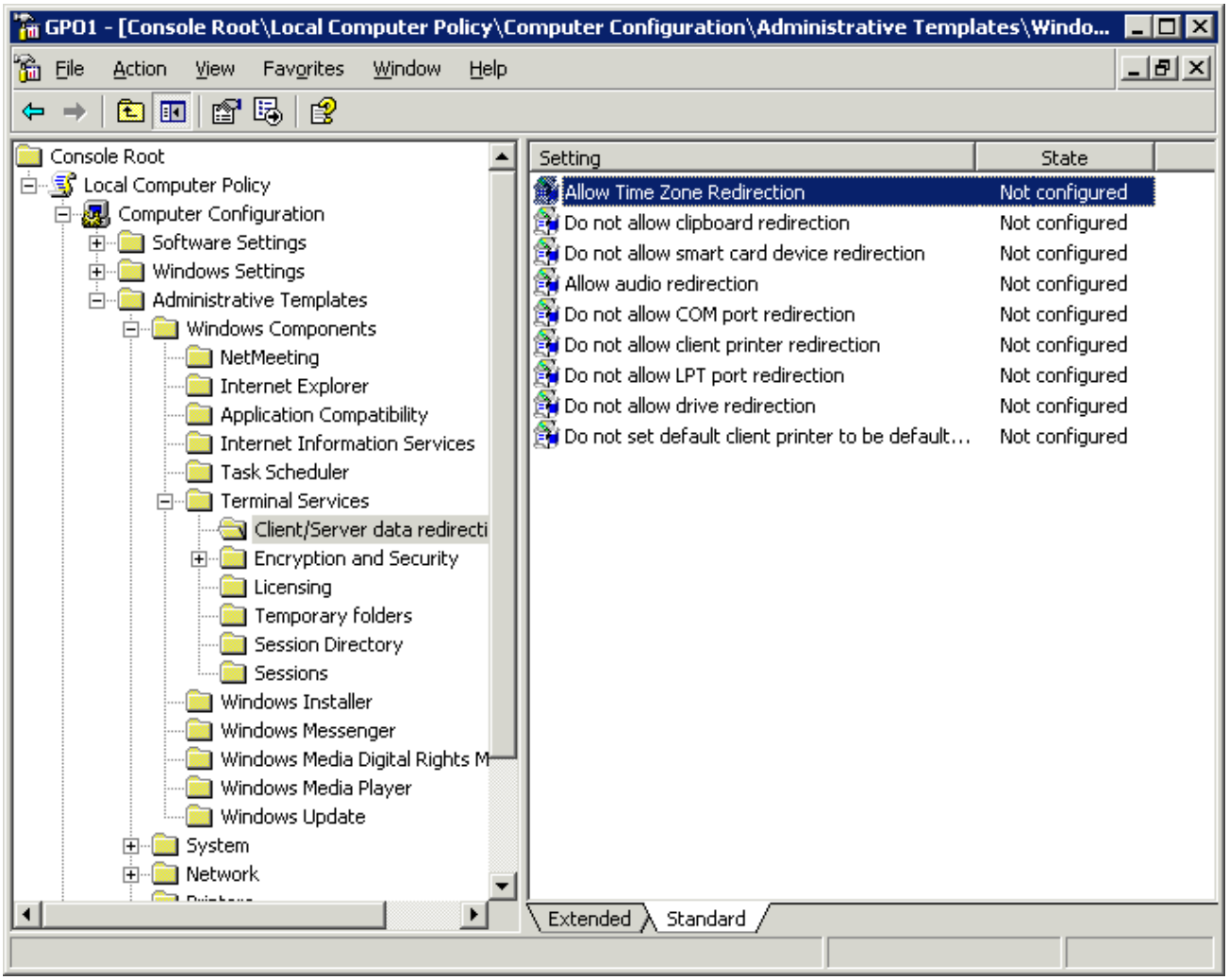
The Time Zone Redirection Module allows a terminal to display local time when it is connected to a terminal server in another time zone.



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.

12.9.10. 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 Application Group Override for the current method of User Override.

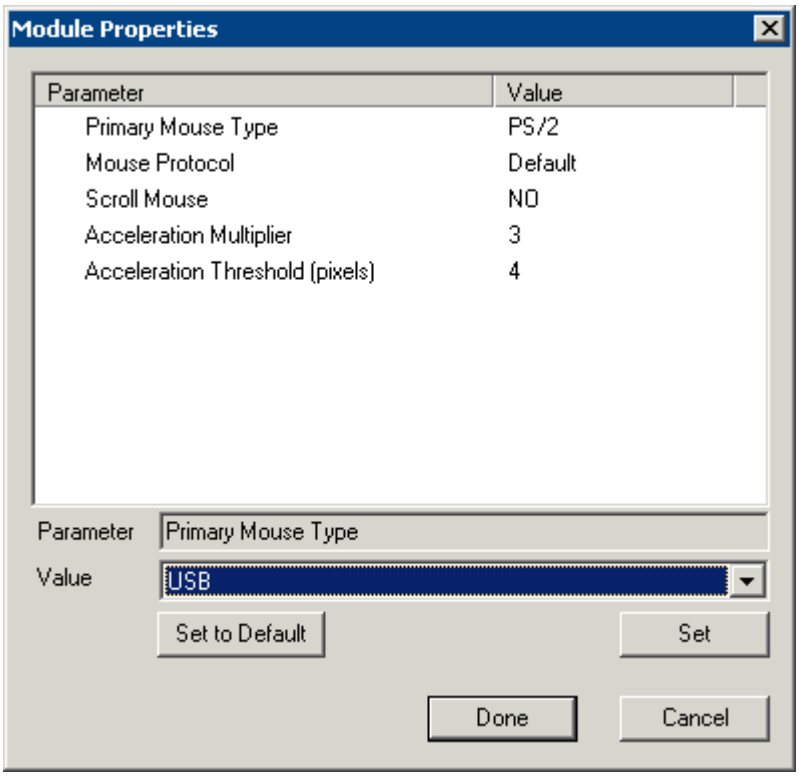
12.10. Mouse Modules

12.10.1. 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 ThinManager Ready 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.

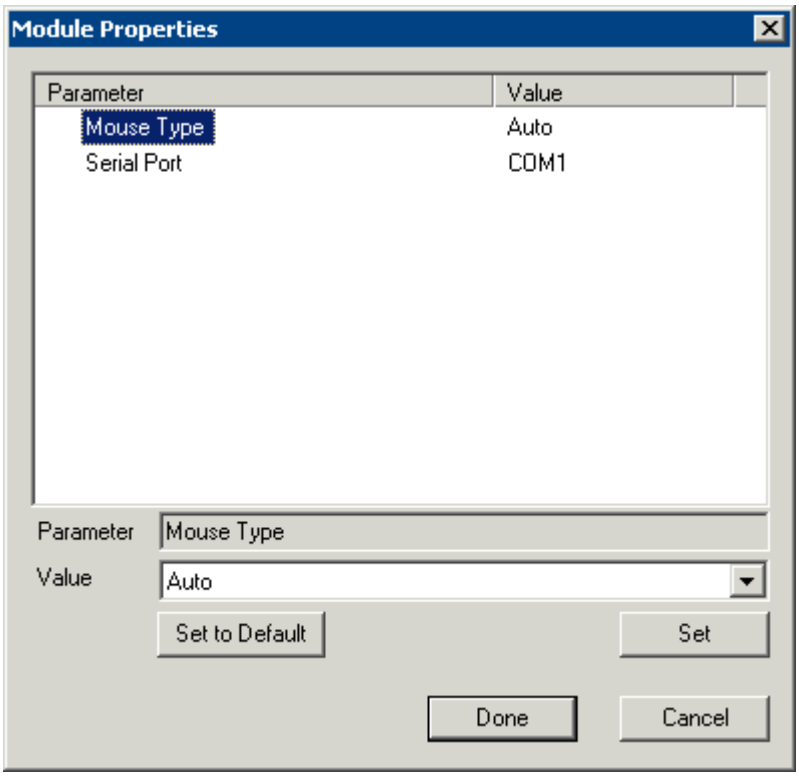
12.10.2. PS/2 Mouse Module

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.

12.10.3. Serial Mouse Driver

The Serial Mouse Driver allows a serial mouse to be used with ThinManager Ready thin clients.



Serial Mouse Module

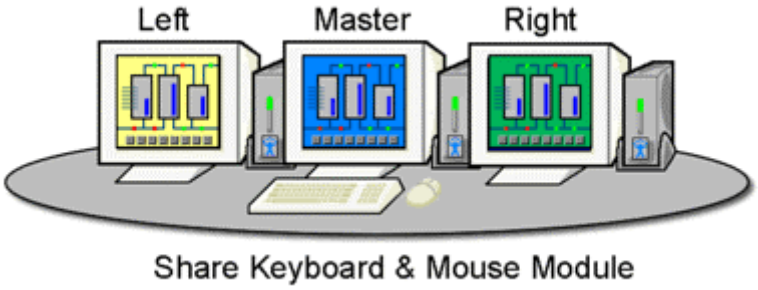
Mouse Type - This value defines what type of mouse is used.

Serial Port – Set this value to the serial port number used for the mouse.

12.10.4. Share Keyboard and Mouse Modules

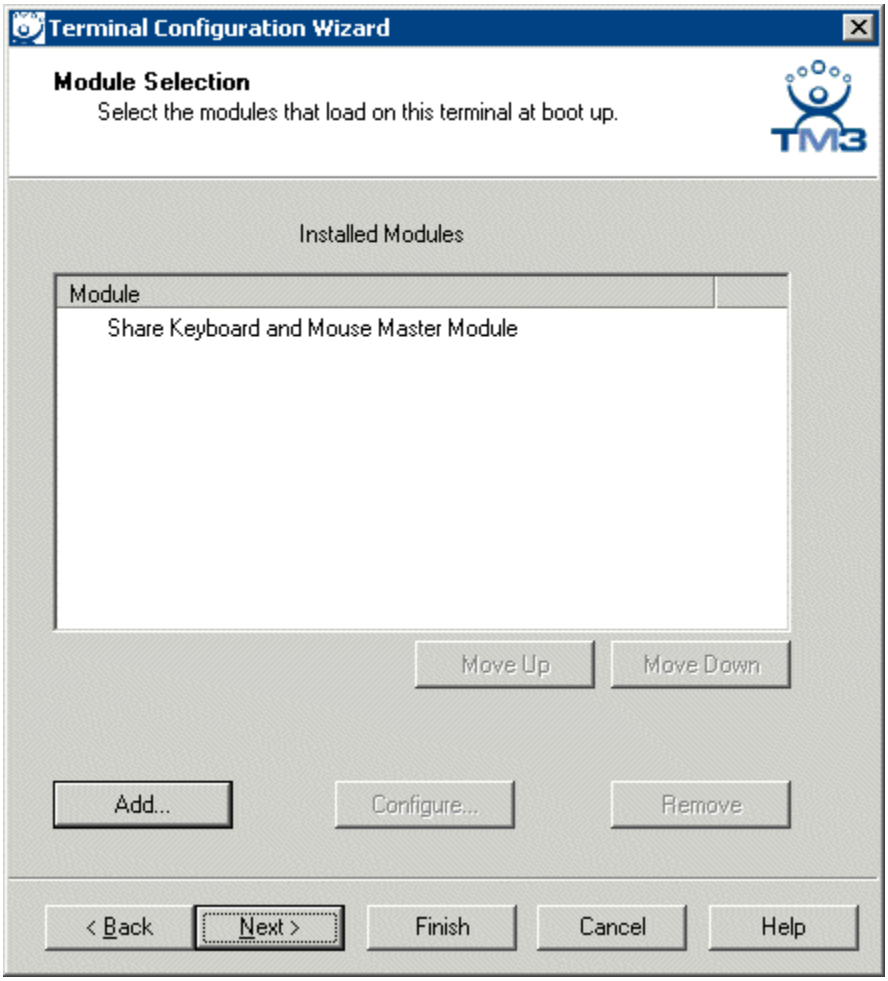
The **Share Keyboard and Mouse** module allows several ThinManager Ready thin clients to be controlled with a single keyboard and mouse without the need of a KVM switch (Keyboard/Video/Mouse).

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.



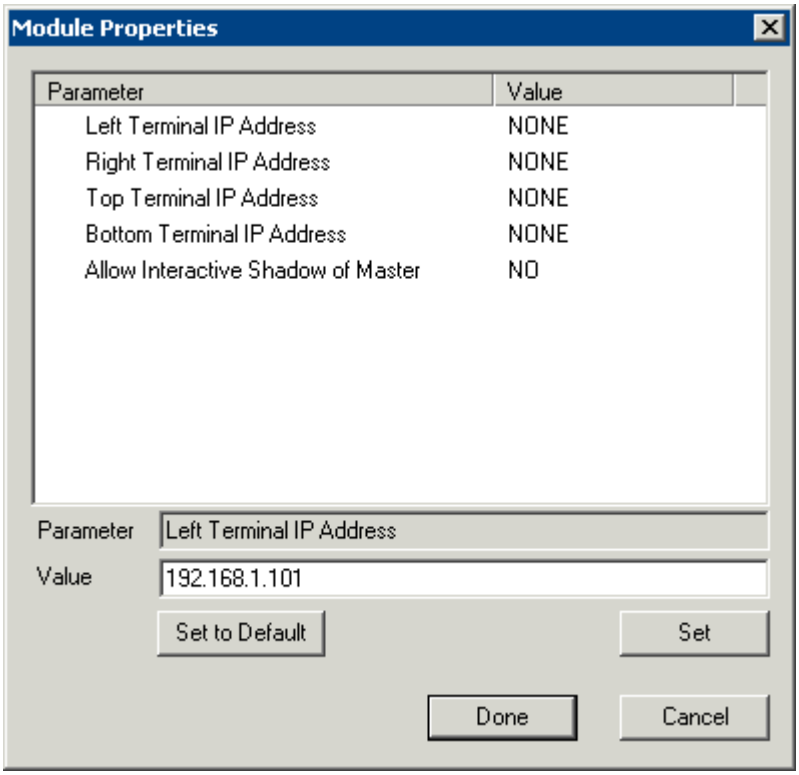
Shared Keyboard and Mouse Layout

The Share Keyboard and Mouse can be used by placing several monitors connected to ThinManager Ready 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

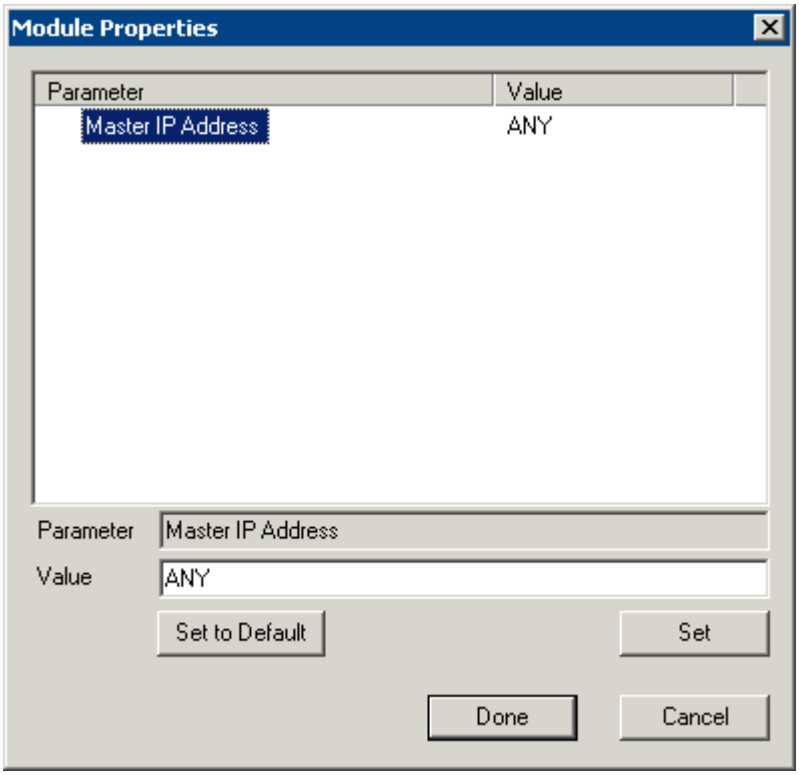
Once the ***Share Keyboard and Mouse Master Module*** is added to a terminal, it can be configured by highlighting it in the ***Installed Module*** window and selecting the ***Configure*** button.



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.

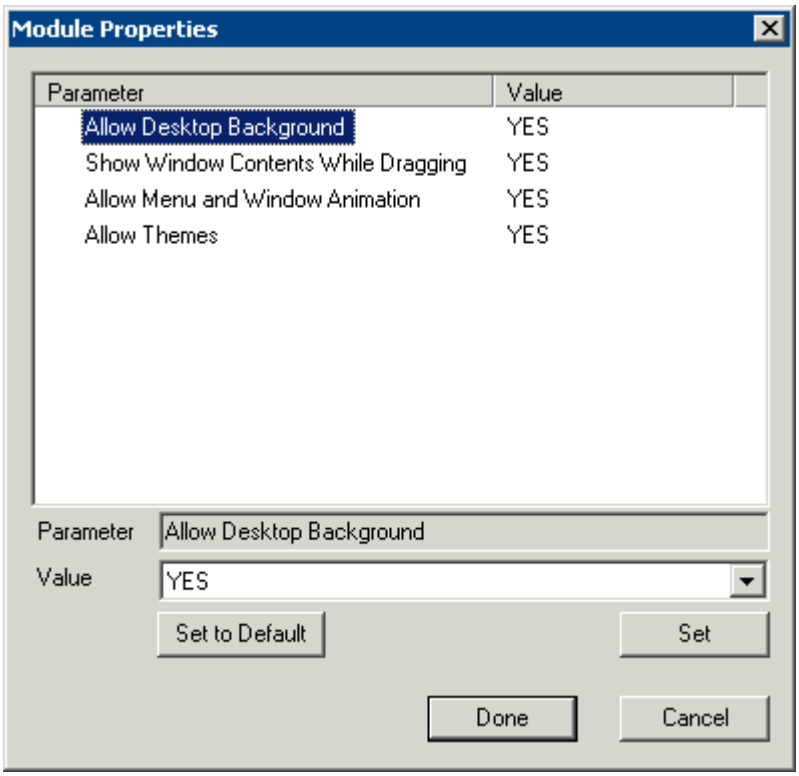
The keyboards and mice for the slave thin clients can be left attached but stowed away until a multi-user configuration is needed.

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.

12.11. RDP Modules

12.11.1. 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.

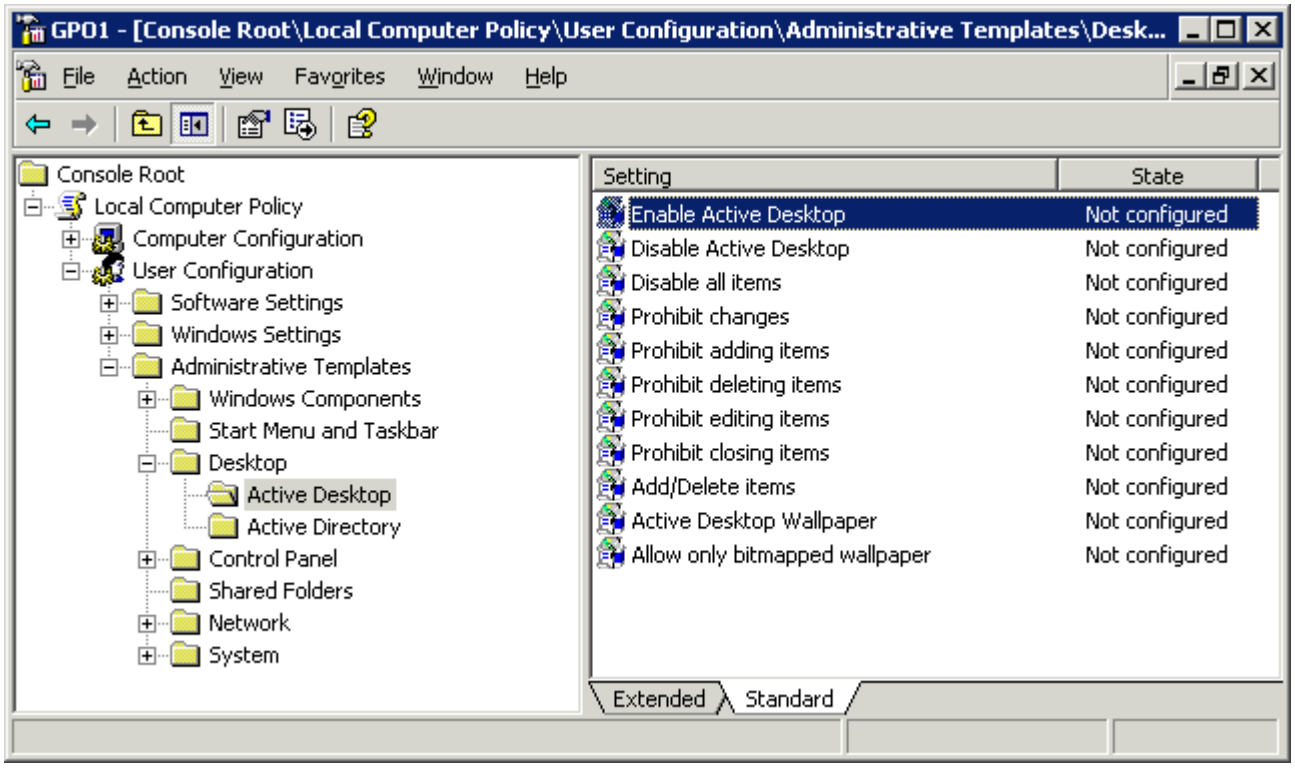


RDP Experience Module Parameters

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.

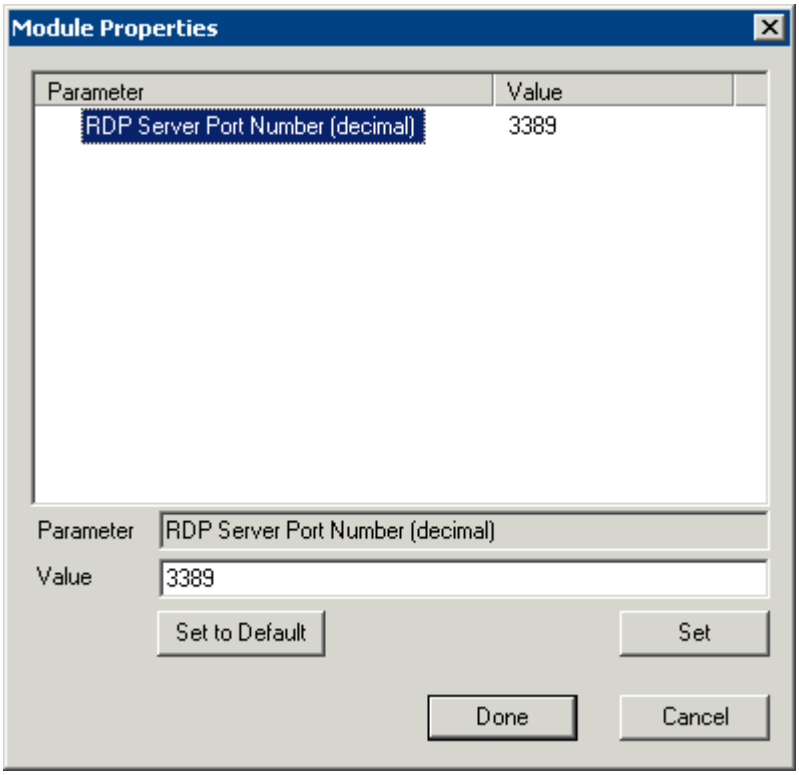
12.11.2. RDP Module for ThinManager v2.4 and Older

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.

12.11.3. 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

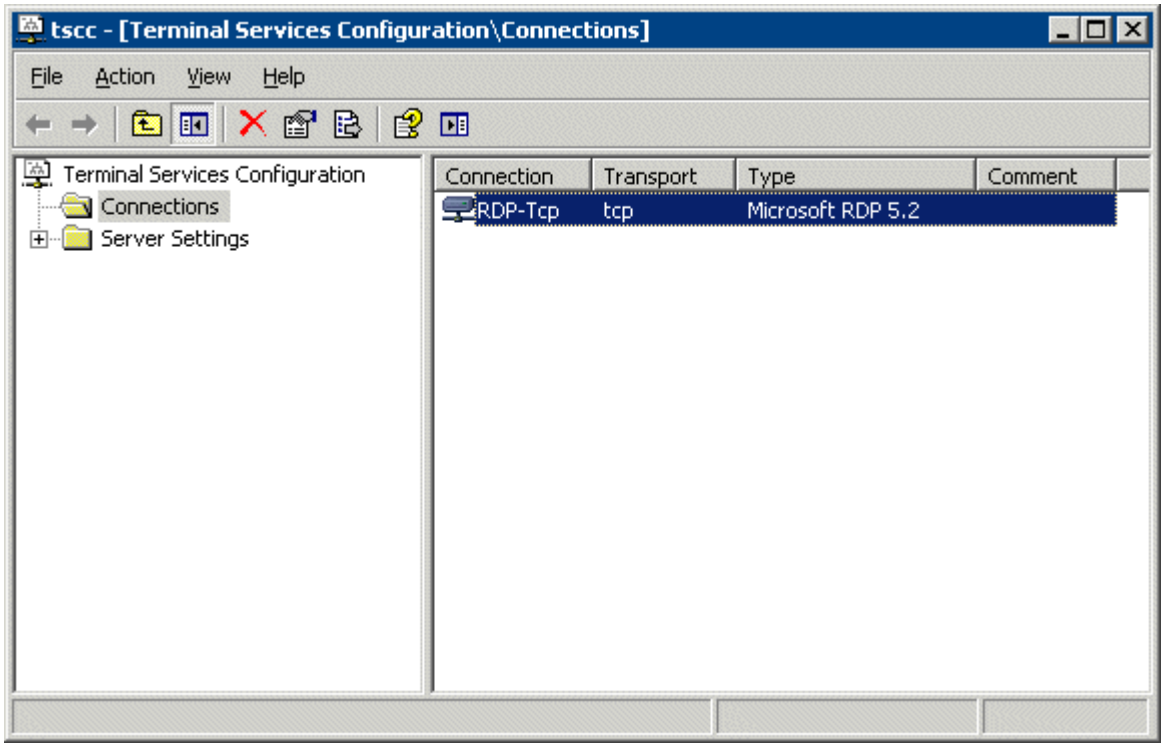
The RDP Port Module allows the port that RDP uses to be changed from the default 3389.

- ***RDP Server Port Number (decimal)*** - Enter the new port number for RDP in this value.

12.11.4. RDP Serial Port Redirection Module

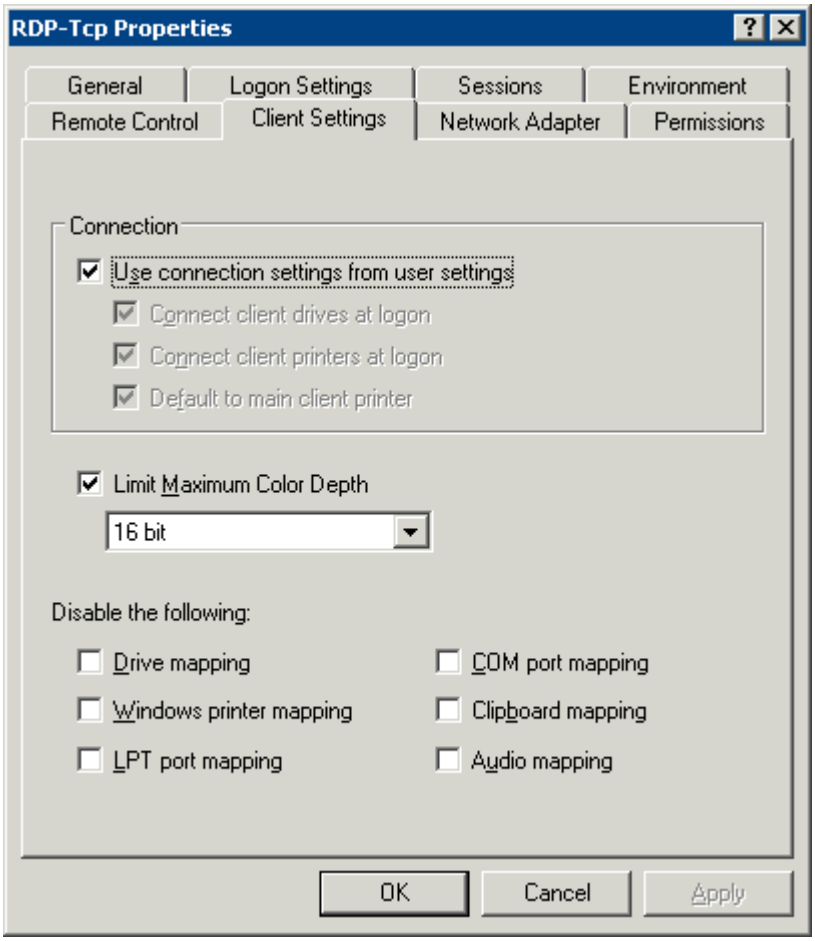
The serial ports on a ThinManager Ready thin client can be remapped by adding the **RDP Serial Port Redirection module** to the thin client without additional configuration. Once the thin client is booted, the COM1 in the session will refer to the COM1 on the terminal, while the COM2 in the session will 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.



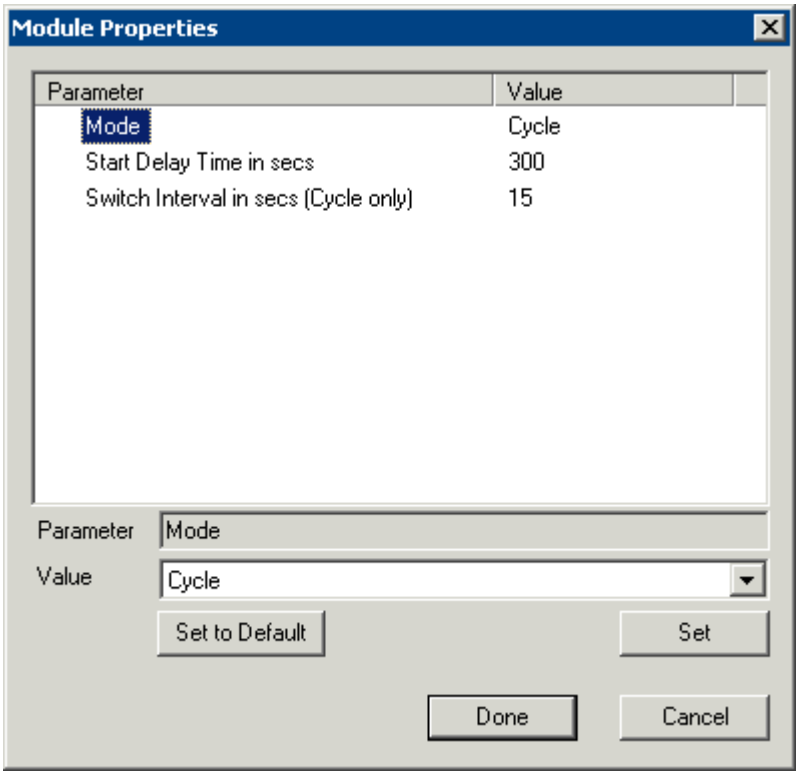
COM Port Mapping Allowed

The ***Com port mapping*** checkbox must be unselected to allow the **RDP Serial Port module** to function on the Windows 2003 terminal server.

12.12. Screen Saver Modules

12.12.1. MultiSession Screen Saver Module

The **MultiSession Screen Saver Module** is a screen saver for use on terminals configured with MultiSession. See MultiSession for details.



MultiSession Screen Saver Module Parameters

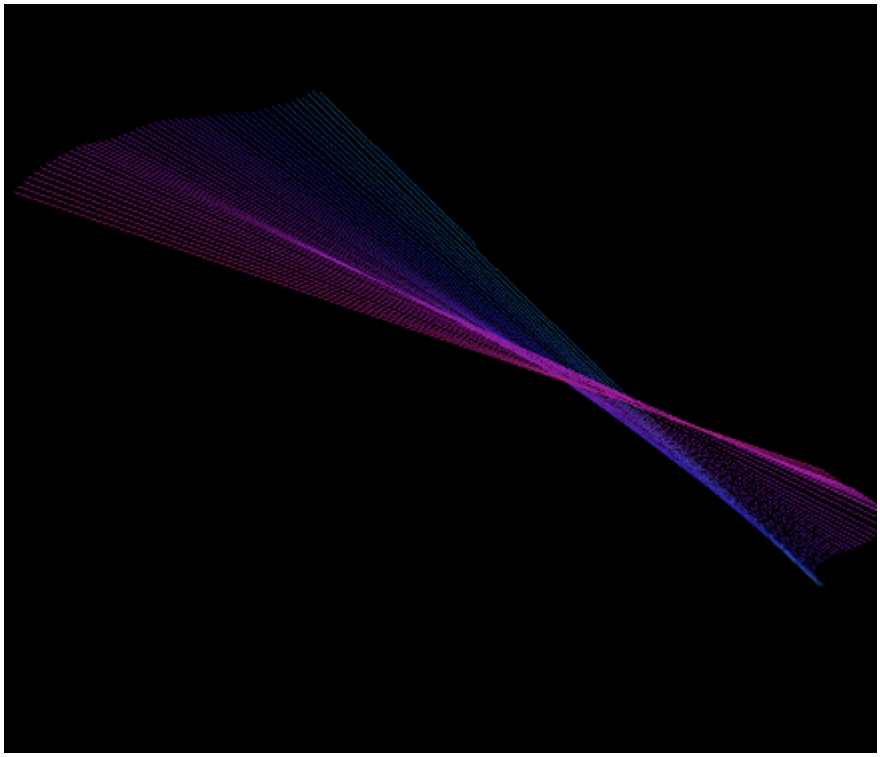
The **MultiSession Screen Saver Module** has two modes. It can be set to cycle through the MultiSession windows when the terminal is inactive, or it can be set to return to the main MultiSession screen when the terminal is inactive.

The parameters are:

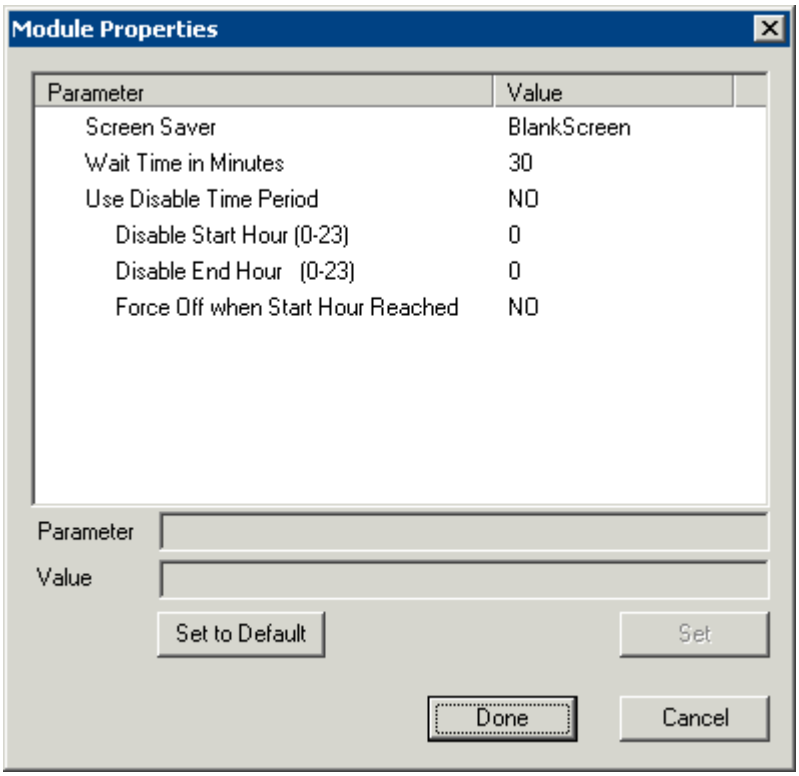
- **Mode** - The **Cyclic** mode will switch between all active sessions on the terminal. The **GotoFirstGroup** mode will switch the terminal to the main session when it is inactive.
- **Start Delay Time in secs** - This is the number of seconds of inactivity that the terminal will allow before starting 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.

12.12.2. 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



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.

12.13. Sound Modules

The use of sound from a ThinManager Ready thin client requires four things:

- ThinManager Ready hardware with a Line Out plug
- An amplified speaker
- The appropriate sound module
- Either a Windows 2003 Server terminal server or ICA protocol.

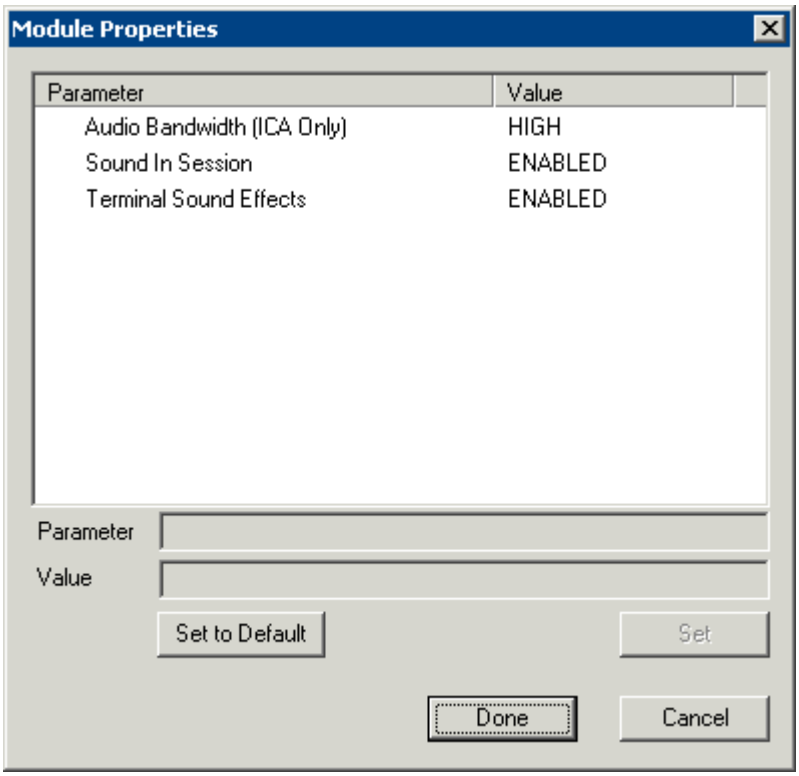
Plug the speaker(s) into the Line Out plug on the terminal, add the module, and connect to the terminal server.

Note: Some thin clients, like the Advantech PCM-5820, may require that a sound harness be plugged into the motherboard.

Current sound modules include:

- Advantech ARK-3380 Sound Driver
- Advantech PCM-5820 Sound Driver
- Advantech PCM-9372 Sound Driver
- Advantech UNO-2053E 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 BoxPC-201H Sound Driver
- Arista BoxPC-240 Sound Driver

- DC_30_100 Sound Driver
- DC_40_100 Sound Driver
- Gigabyte TA3LB Sound Driver
- NTA-6020 Sound Driver
- TC3000 Sound Driver
- TC3500 Sound Driver
- TeleVideo TC7X30 Sound Driver
- Xycom XA1300 Sound Driver



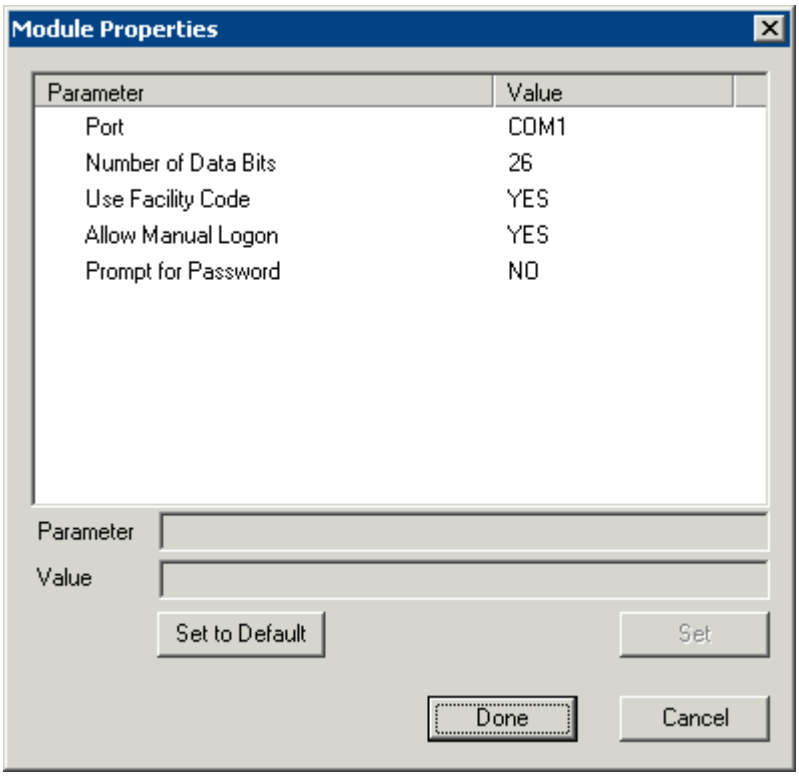
Sound Module Parameters

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.

12.14. TermSecure Modules

12.14.1. RF Ideas pcProx Module



RF Ideas pcProx Module Parameters

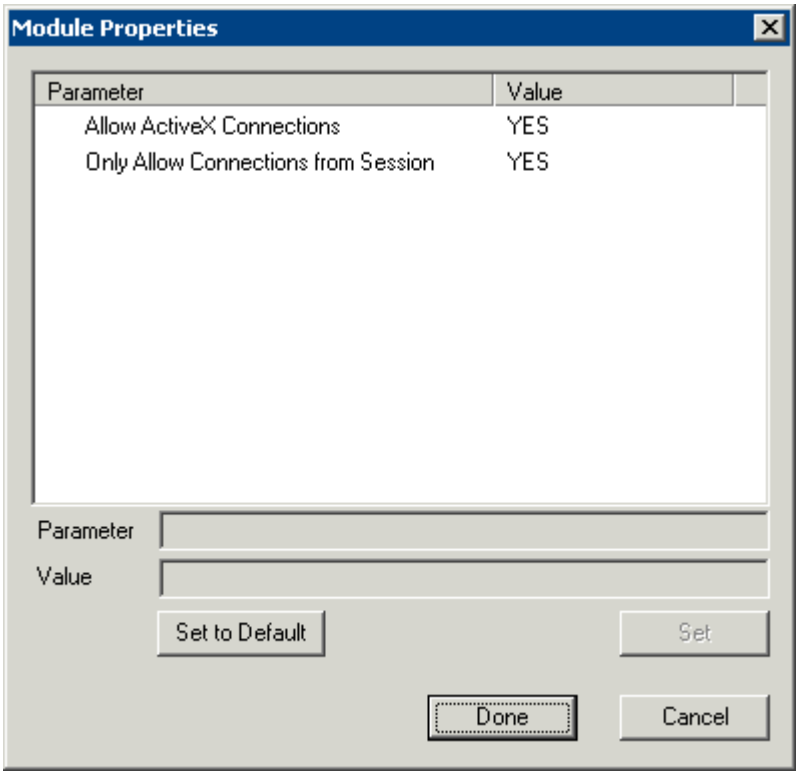
The **RF Ideas pcProx Module** allows a terminal to use RF Ideas pcProx cards as TermSecure ID cards. The parameters are:

- **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.

See Card and Badge Configuration for a TermSecure User for details.

12.14.2. 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.

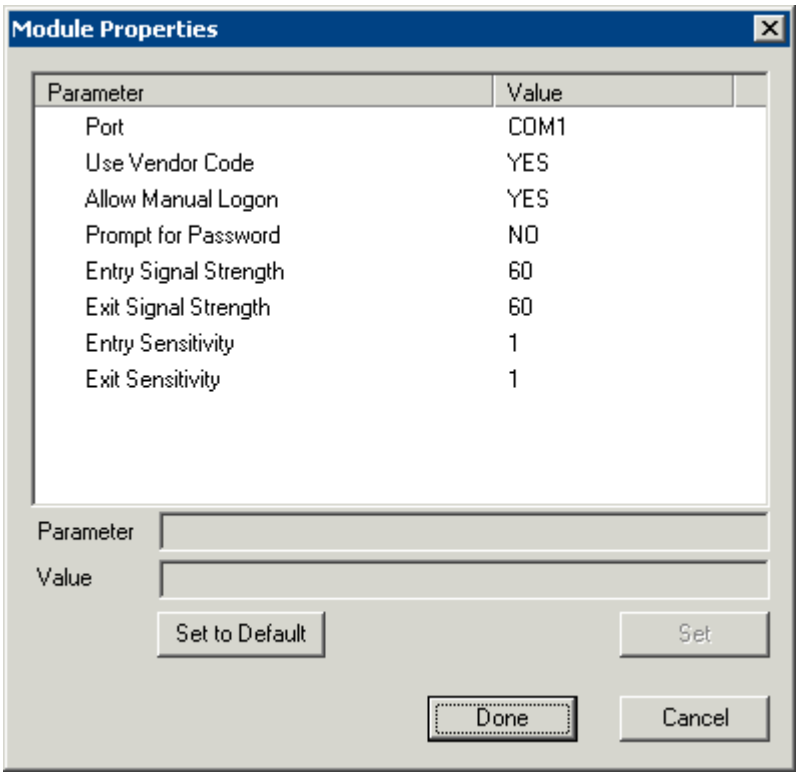
12.14.3. USB Flash Drive Module

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.

12.14.4. 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 ThinManager Ready 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.

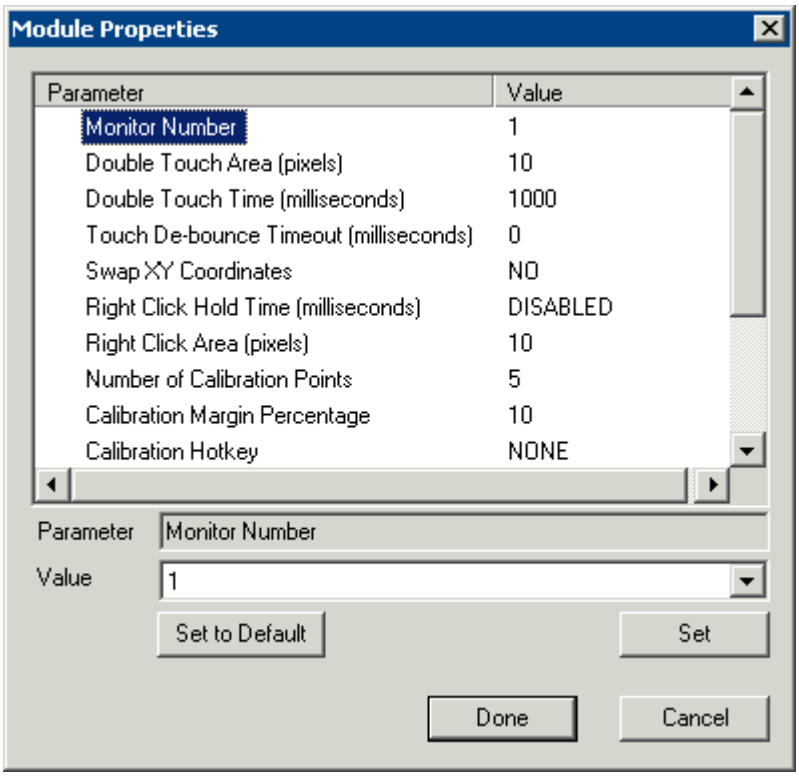
Exit Signal Strength - The signal strength required to register the card as out of range.

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”.

12.15. Touch Screen Modules

- Arista ARP-16XXXAP-ACP Touch Screen Driver
- CarrollTouch Touch Screen Driver
- Contec 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 TouchhSet 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.

12.15.1. 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 ThinManager Ready thin client.

12.16. 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.

In ThinManager 3.2, like 3.0, 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 3.2. See Installing a Module to see how to update or add new modules.

The current video driver list includes:

- AMD Geode Video Driver
- Core Video Driver
- Geode Video Driver
- Intel i8XX Video Driver
- Intel i8XX//i9XX Video Driver
- Legacy Video Driver
- MultiMonitor Video Driver
- S3 Savage Video Driver
- VIA CLE266 Video Driver
- VIA Unichrome Video Driver

Note: Users with ThinManager 2.6 and earlier may need to add the individual video module to the terminal if using certain models of ThinManager Ready thin clients. This doesn't apply to ThinManager 3.0 and later.
See http://www.thinmanager.com/support/downloads.shtml for details.

13. WinTMC Fat Client

13.1. WinTMC Overview

WinTMC is a ThinManager Client for PCs running Windows NT/2000/XP operating systems. WinTMC provides similar functionality to that of a ThinManager Ready 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.

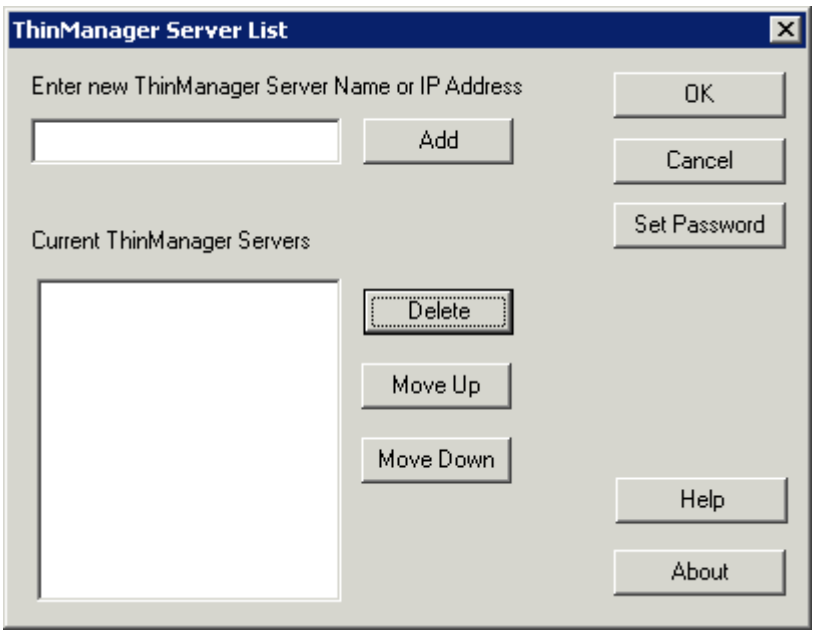
See WinTMC Installation for details on installation.

13.2. 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.

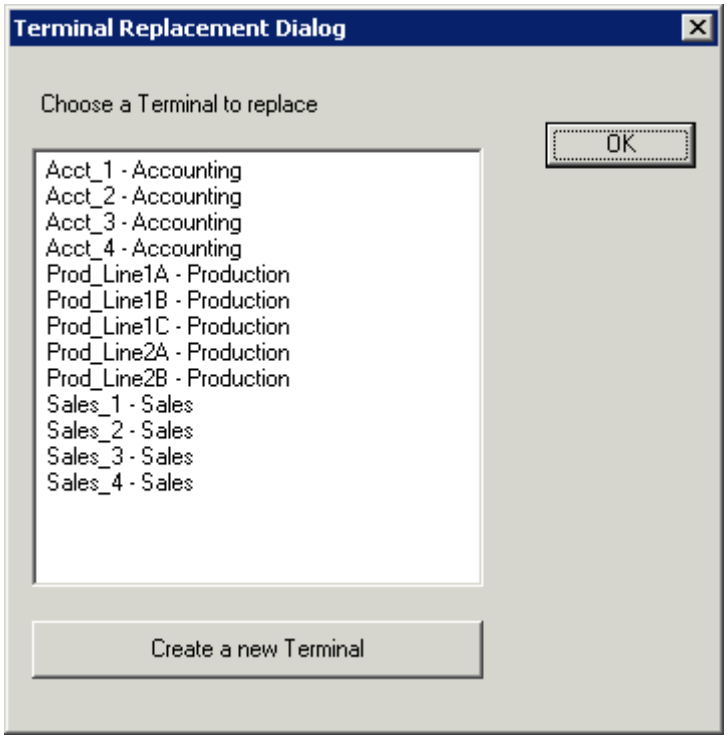
Unneeded ThinManager Servers can be removed with the ***Delete*** button.

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.

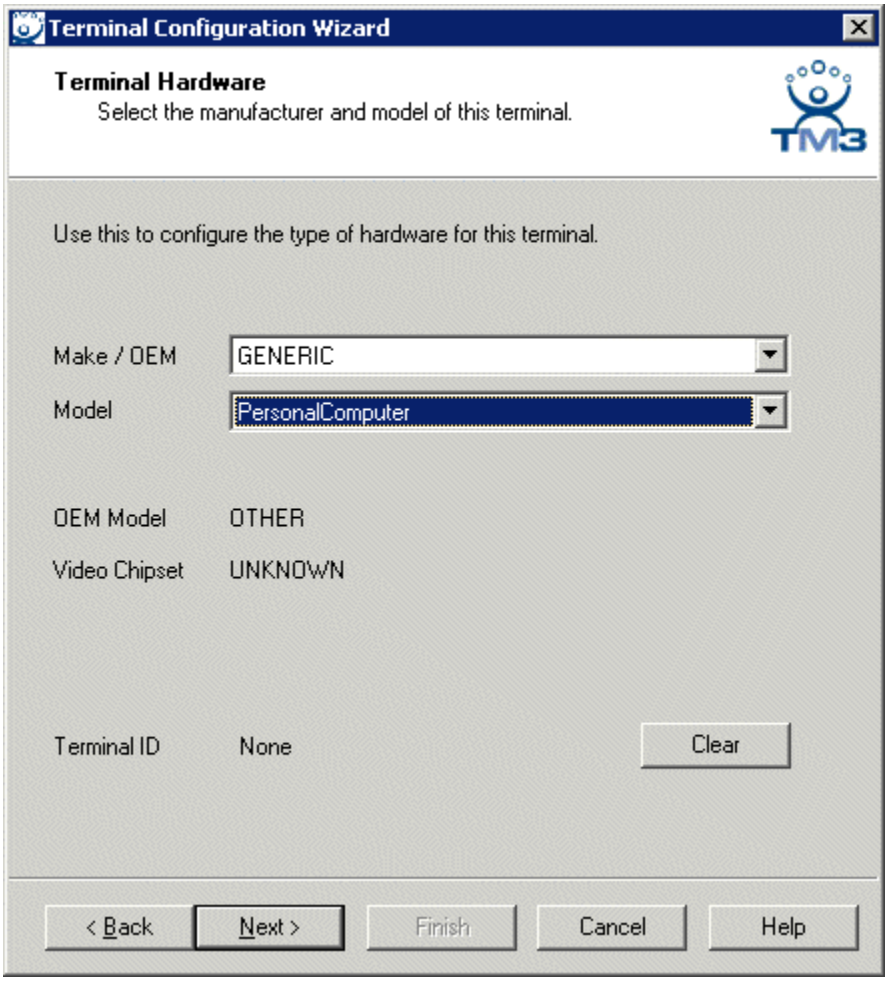
This functionality is similar to that of the create/replacement menu on a ThinManager Ready Thin Client. See Replace or Create New Mode for details on that method.

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.

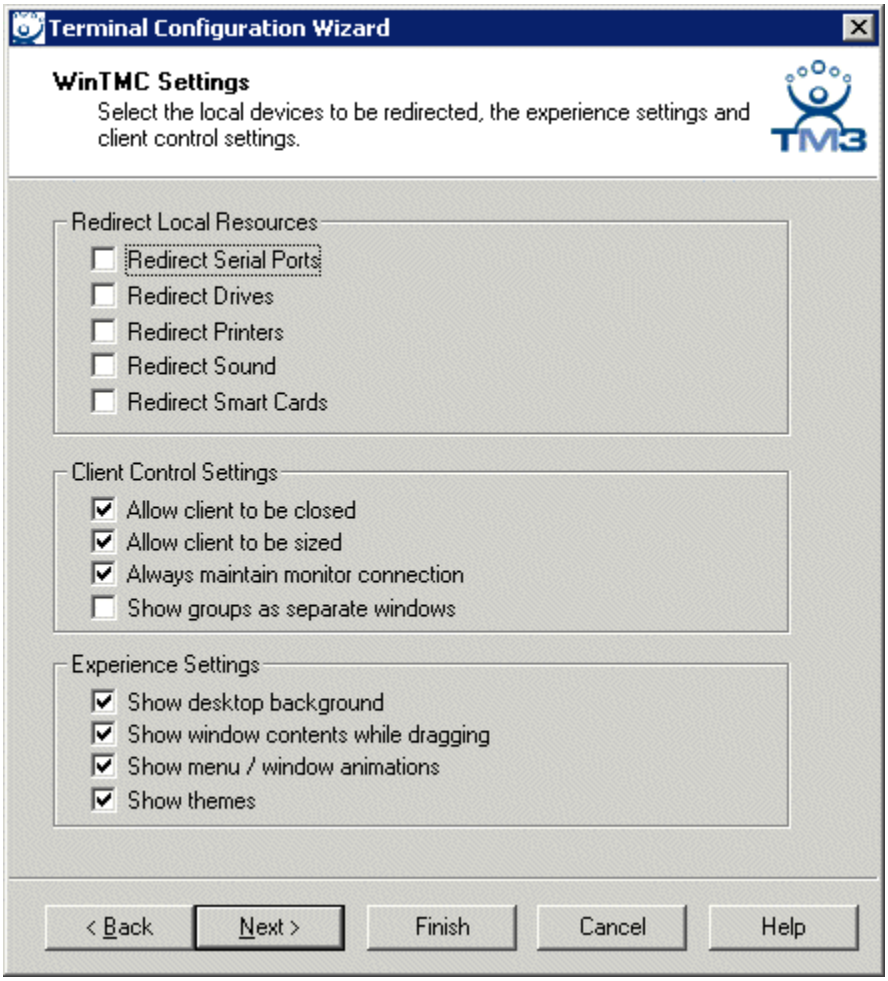
13.3. WinTMC Configuration in ThinManager

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.



WinTMC Settings in Terminal Hardware

The **Terminal Configuration Wizard** includes a **WinTMC Settings** page.



WinTMC Settings

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.

13.3.1. 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.

Instant Failover is an exception. Adding the Instant Failover module to a WinTMC configuration will allow the WinTMC client to use instant failover. This module is not needed if one is using application Groups with instant failover.

13.3.2. WinTMC Licensing

WinTMC requires a Terminal/WinTMC connection license. Existing Terminal Connection Licenses can be upgraded to support WinTMC connections. For customers using ThinManager Enterprise Class licenses, a WinTMC Connection License is required.

See WinTMC Licensing for details.

14. Multiple Monitors

14.1. 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 ThinManager Ready 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.

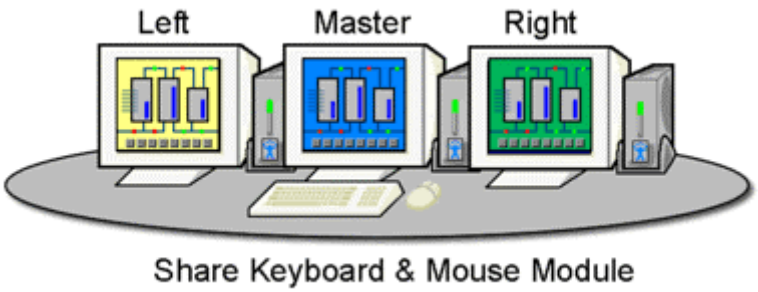
The **MultiMonitor** method uses specific ThinManager Ready thin clients that have multiple video ports built into the hardware. Each MultiMonitor thin client can have from two to five monitors attached. These monitors can be configured to merge into an expanded desktop (called “spanned” by ACP) or can display individual desktops (called “screened” by ACP), or combinations of “spanned” and “screened” sessions.

See MultiMonitor for details on deployment.

14.2. Share Keyboard and Mouse Modules

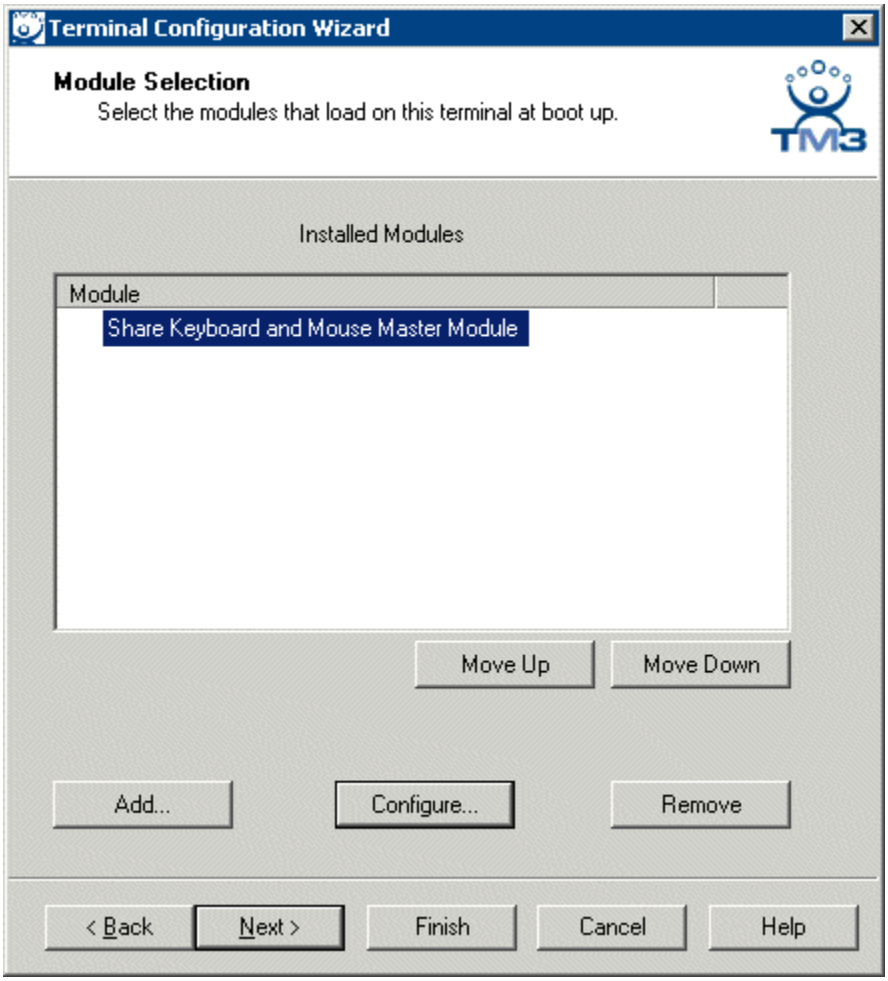
The **Share Keyboard and Mouse** module allows several ThinManager Ready thin clients to be controlled with a single keyboard and mouse without the need of a KVM switch (Keyboard/Video/Mouse).

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.



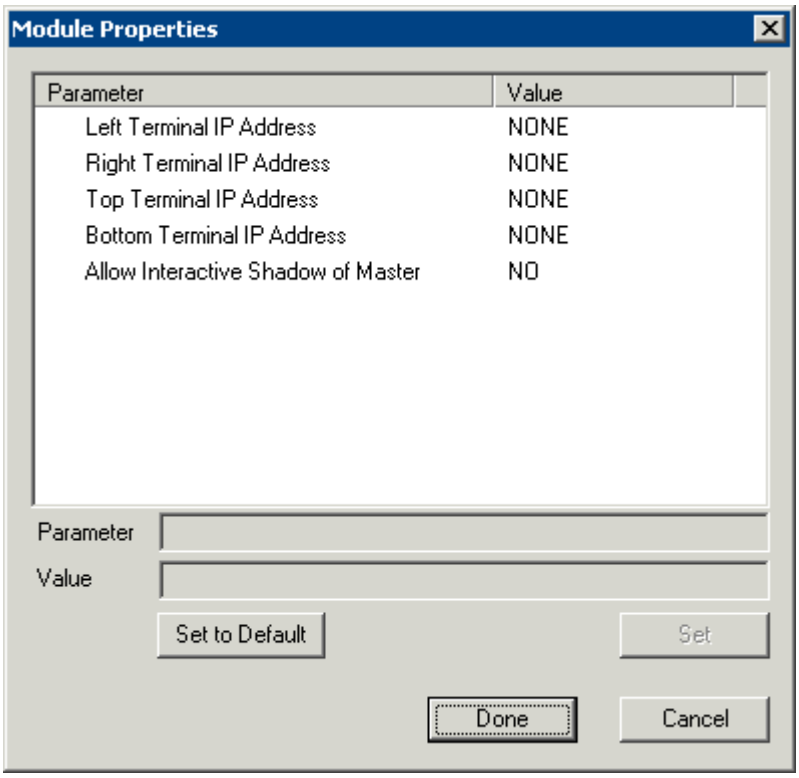
Shared Keyboard and Mouse Layout

The Share Keyboard and Mouse can be used by placing several monitors connected to ThinManager Ready 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

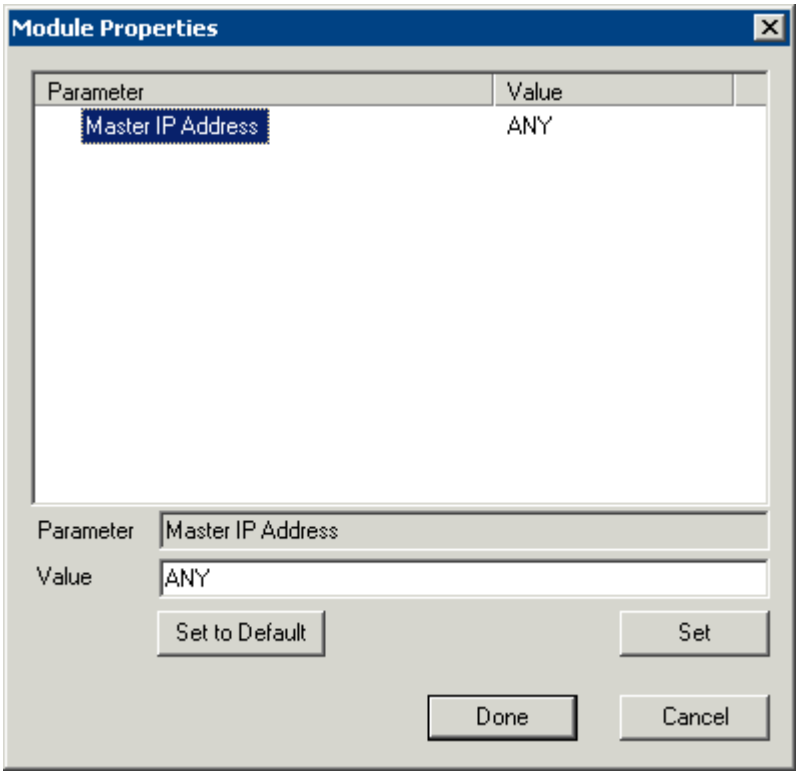
Once the ***Share Keyboard and Mouse Master Module*** is added to a terminal, it can be configured by highlighting it in the ***Installed Module*** window and selecting the ***Configure*** button.



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.

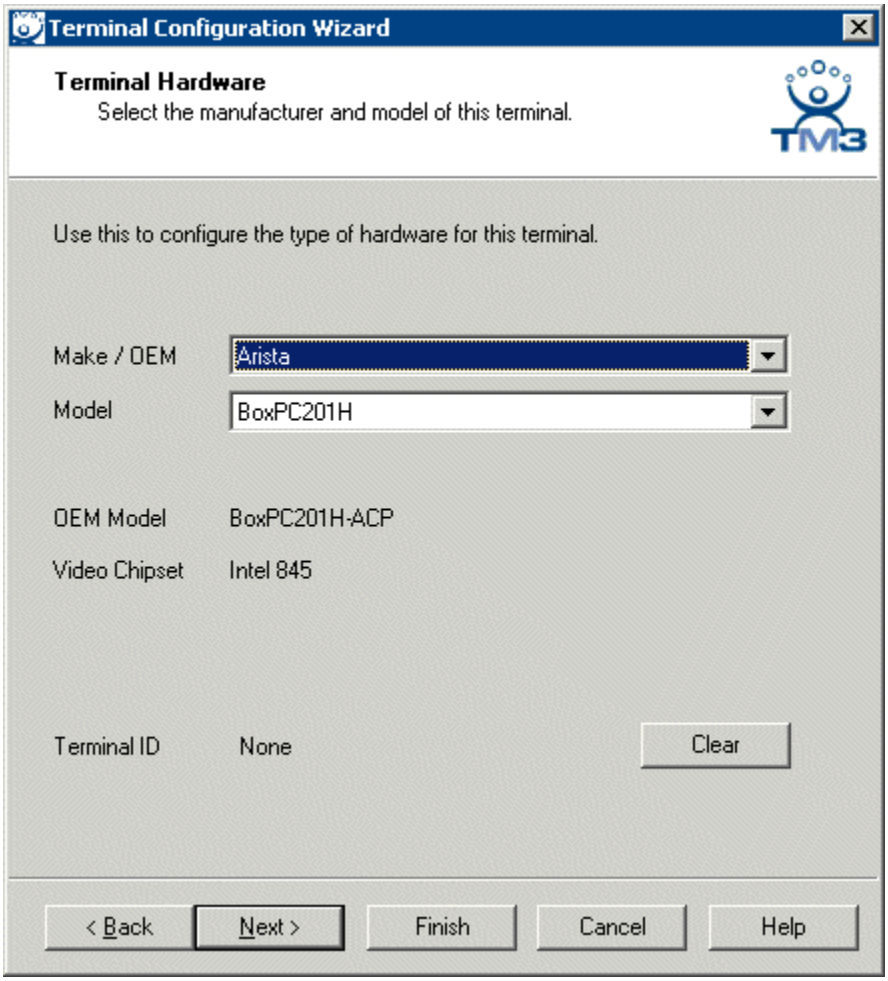
The keyboards and mice for the slave thin clients can be left attached, but stowed away until a multi-user configuration is needed.

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.

14.3. MultiMonitor

MultiMonitor is configured in the **Terminal Configuration Wizard** or the **Group Configuration Wizard**.

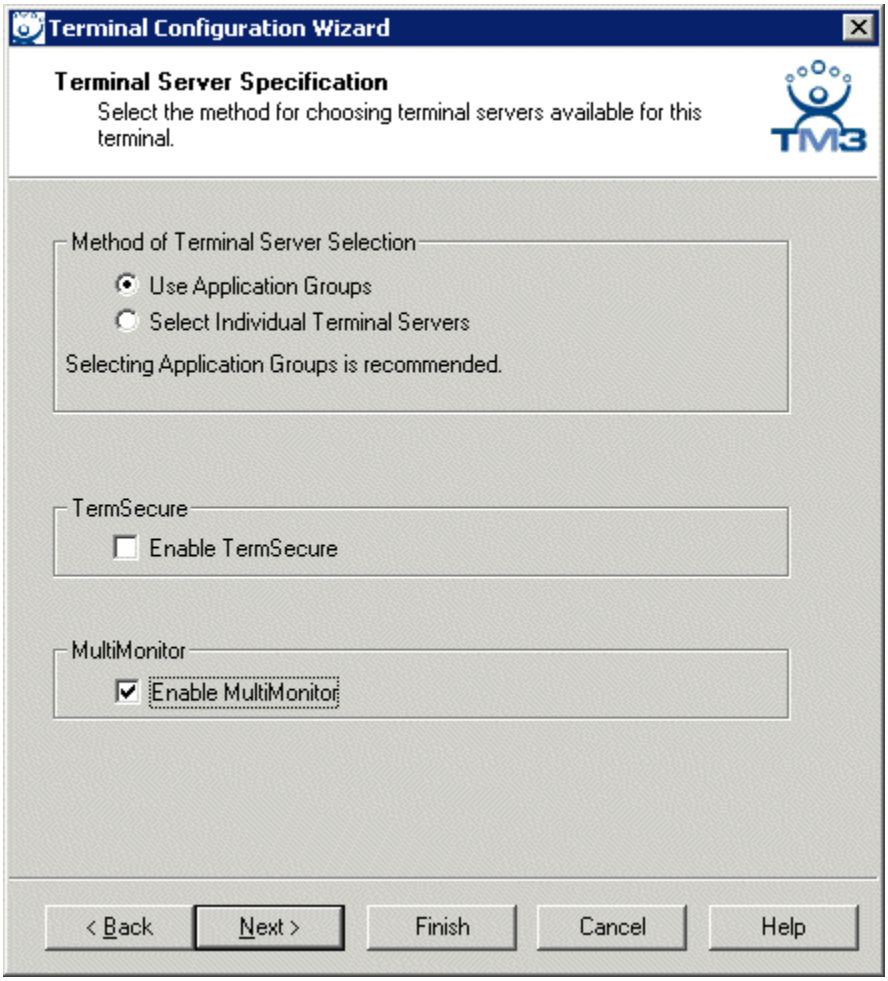
MultiMonitor Hardware Specification



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.



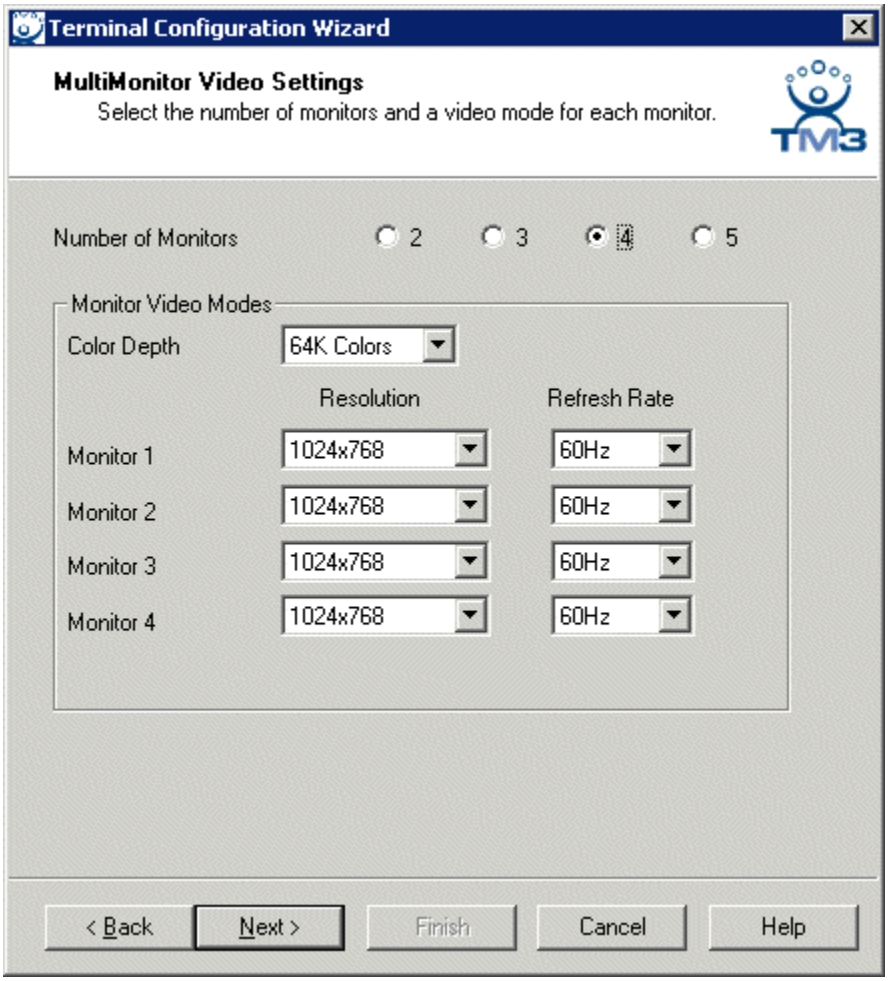
MultiMonitor – Enable MultiMonitor

MultiMonitor requires the use of Application Groups. Once the ***Use Application Groups*** checkbox is selected on the **Terminal Server Specification** page the ***Enable MultiMonitor*** checkbox becomes visible.

Select the ***Use Application Groups*** and the ***Enable MultiMonitor*** checkboxes, and then select the ***Next*** button.

Select the ***Next*** button to continue.

MultiMonitor Monitor Configuration

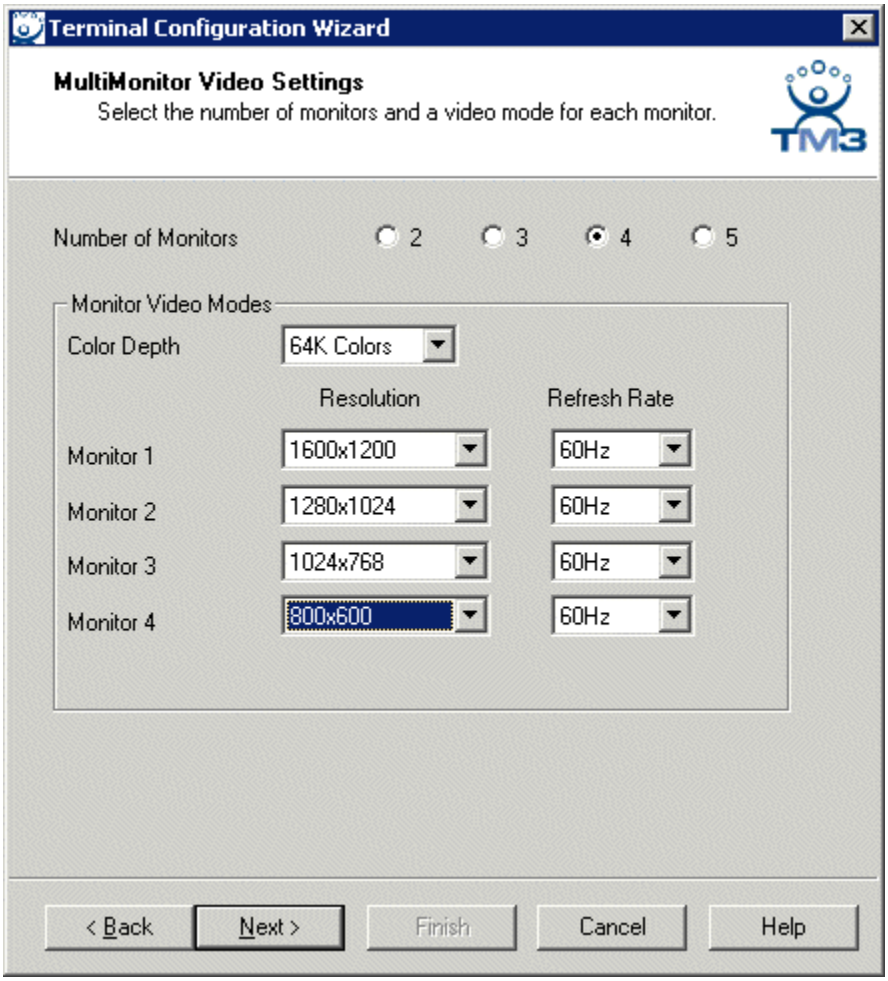


MultiMonitor – Video Settings

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.

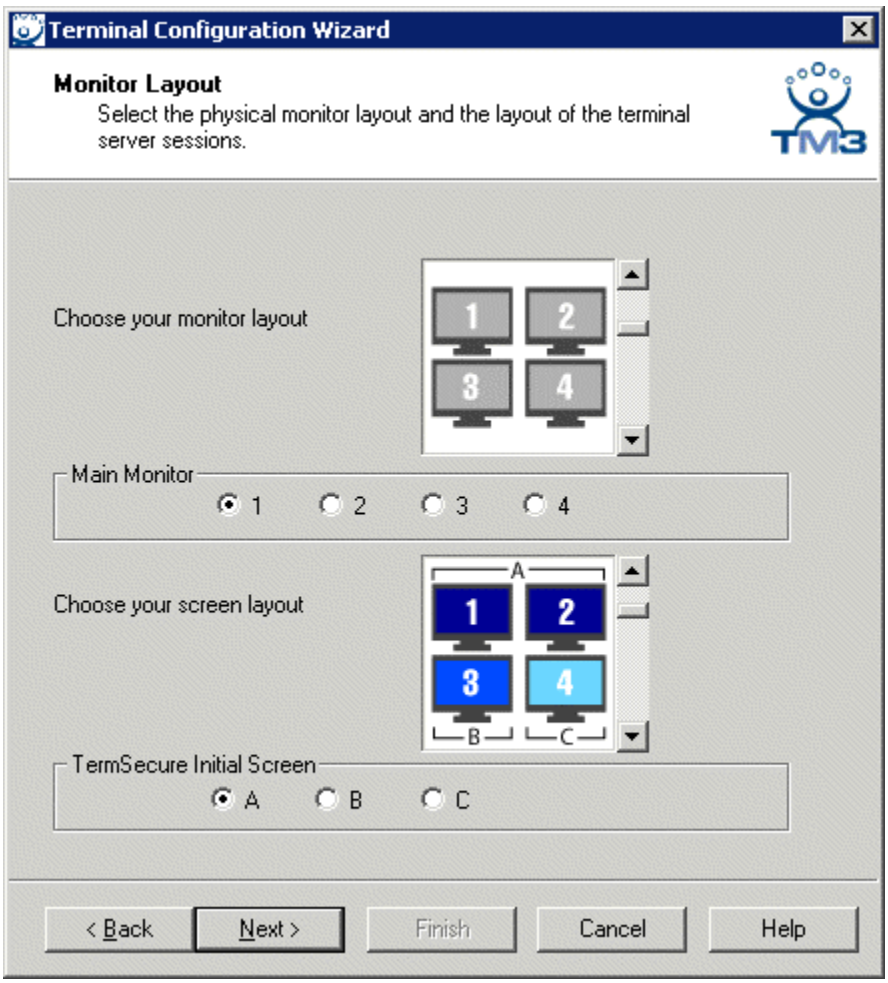
The **Color Depth** dropdown allows the color depth to be set for all the monitors.

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.



MultiMonitor – Monitor Layout

The Monitor Layout page allows the configuration of the MultiMonitors.

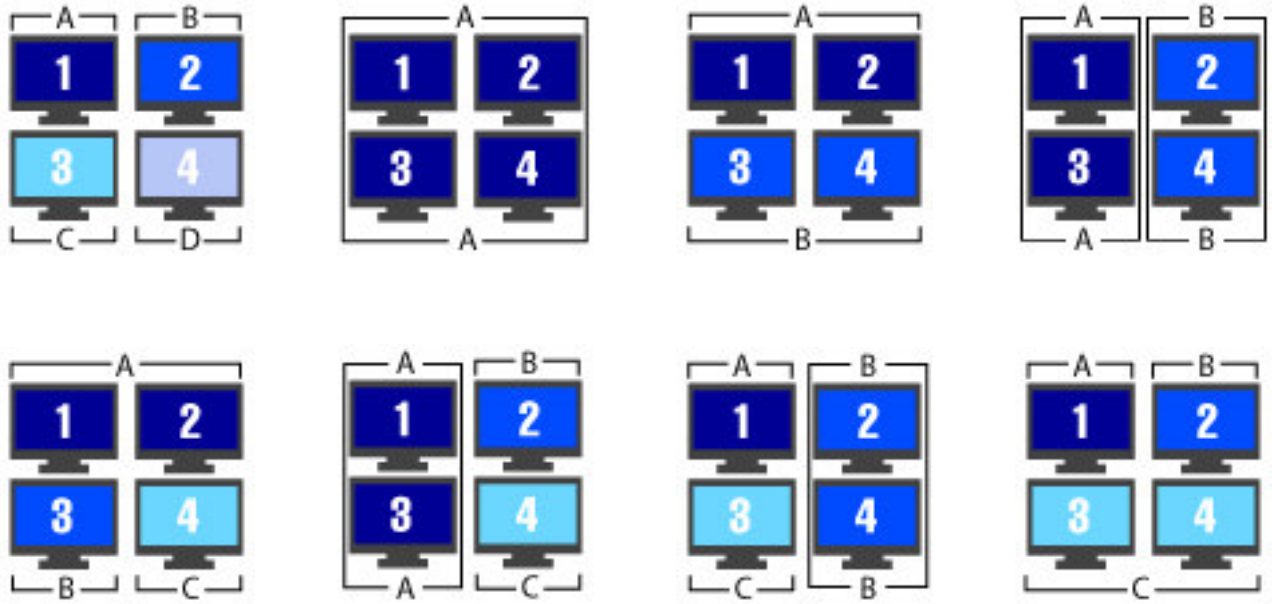
The ***Choose your monitor layout*** dropdown will display the various physical arrangements that the monitors can be placed in. Select the layout that matches your layout.

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 with 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.

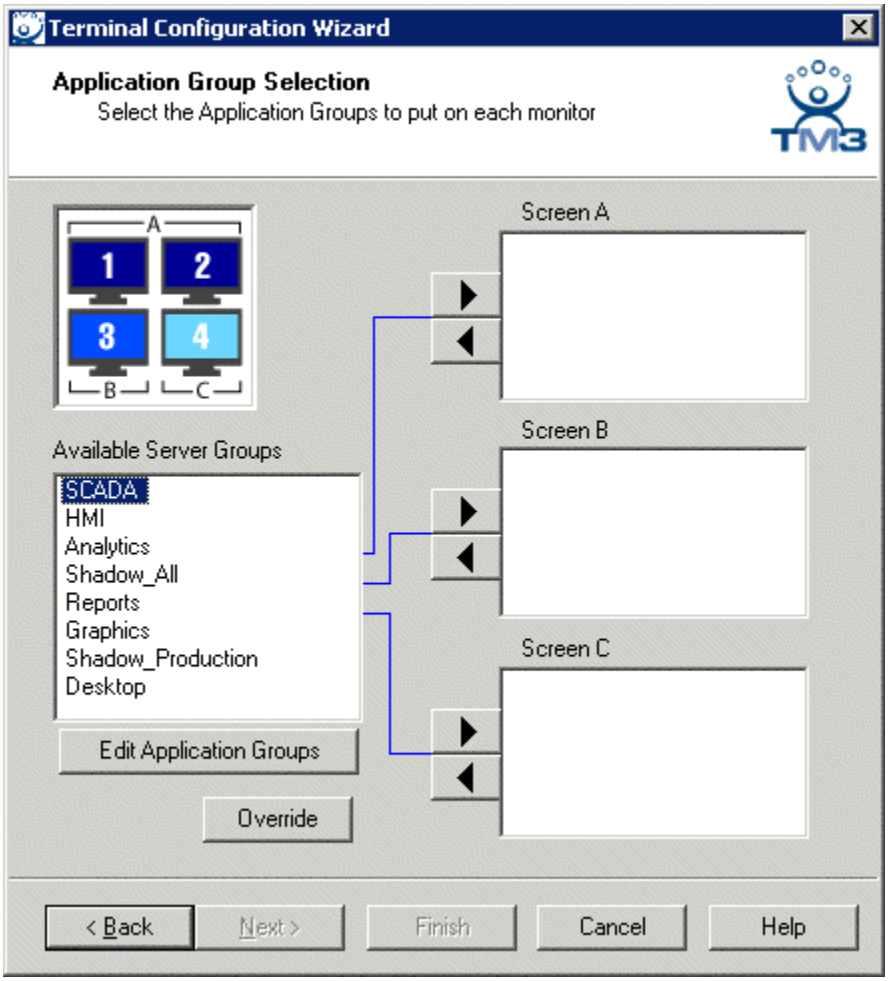


Samples of Four-Monitor Configurations

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.

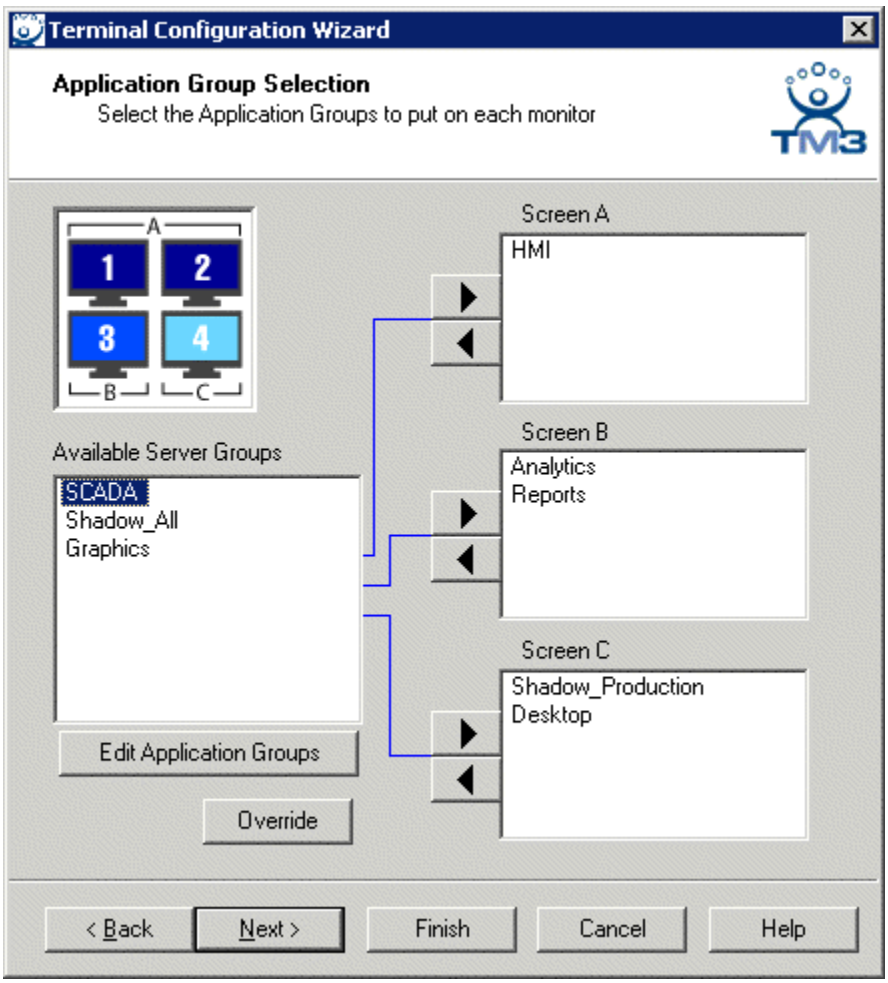
The ***TermSecure Initial Screen*** radio button determines which screen is considered the main monitor for TermSecure. This monitor will display the TermSecure Main Menu window and messages.

Select the ***Next*** button to continue.



MultiMonitor – Application Group Selection

The **Application Group Selection** page allows Application Groups to be assigned to each monitor group.



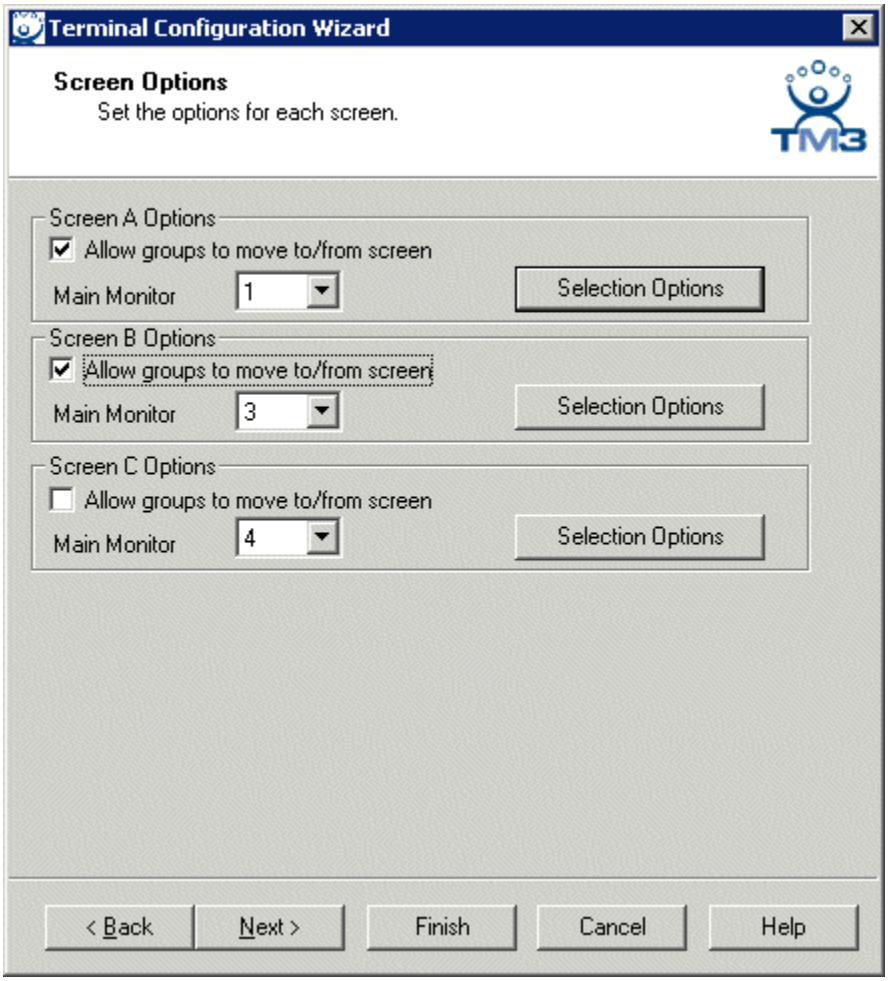
MultiMonitor – Application Group Selection

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 monitor can have more than one Application Groups.

Select the ***Next*** button to continue.

MultiMonitor Selection Configuration

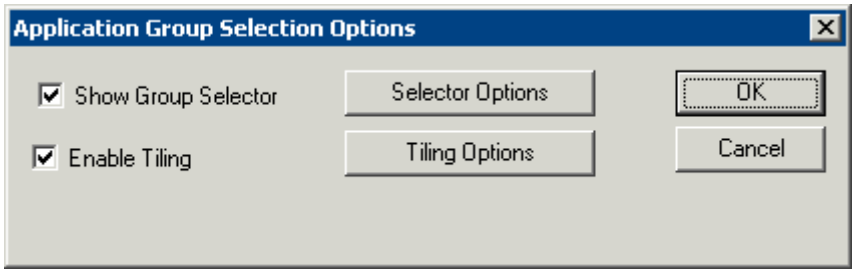


MultiMonitor - Screen Options

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 Application Group Selector menu.
- ***Selector Options*** – This button launches the **Group Selector Options** window to allow configuration of the Application Group selector.

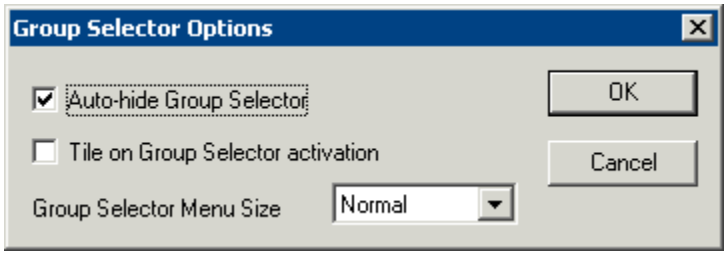


Group Selector Options Window

The Group Selector Options allows configuration of the Application Group selection when using MultiSession.

- ***Show Group Selector*** – This checkbox, if selected, will display the Application Group 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.

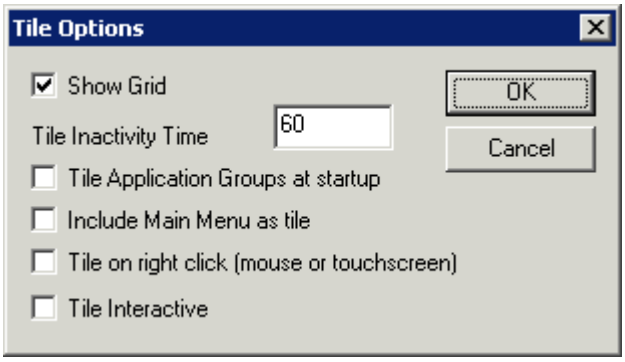


Group Selector Options Window

The **Group Selector Options** Window has three settings.

- ***Auto-hide Group Selector*** – This checkbox, if selected, will hide the drop-down Application Group selector unless the mouse is hovering over the top center of the screen. This checkbox, if unselected, will show the drop-down Application Group 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.



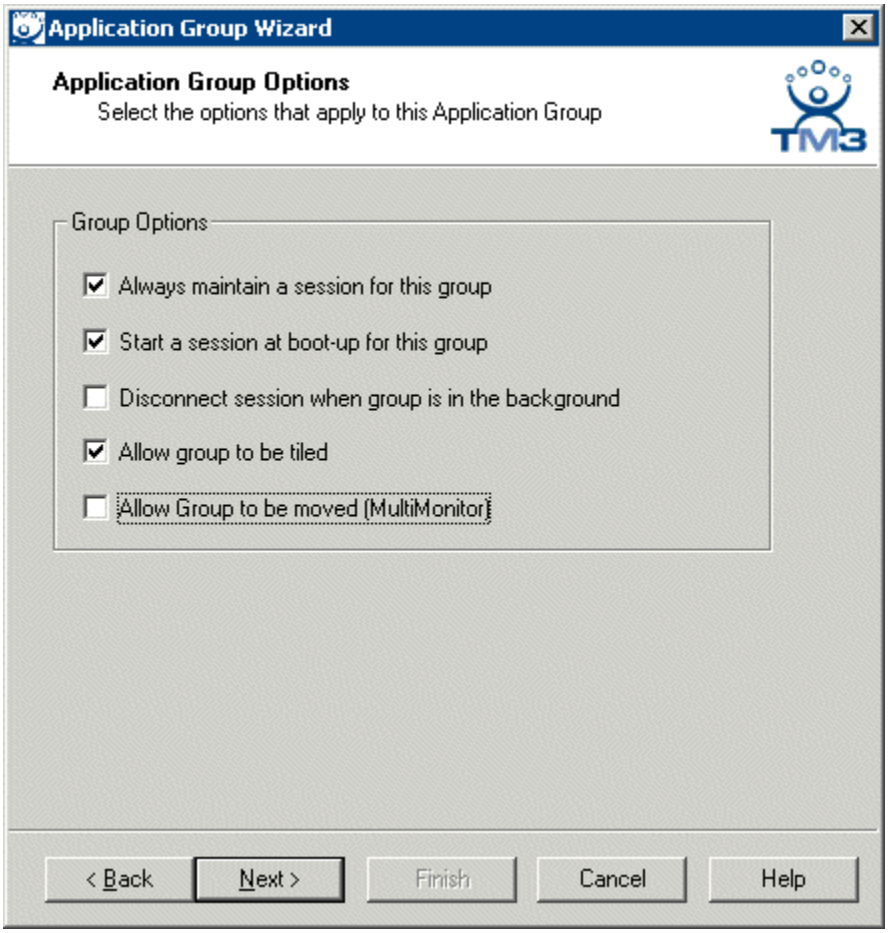
Tile Options Window

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 Application Groups at startup*** – This checkbox, when selected, will tile the application groups 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.

Allow Group to Move Configuration

Each Application Group that is to be allowed to move needs to have this property configured in the **Application Group Wizard**. Open the **Application Group Wizard** for the desired Application Group and navigate to the **Application Group Options** page.



Application Group Wizard – Application Group Options

To configure an Application Group 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 Application Group List for details on the Application Group Wizard.

15. Reports

15.1. New Feature

ThinManager 3.1 introduced 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.

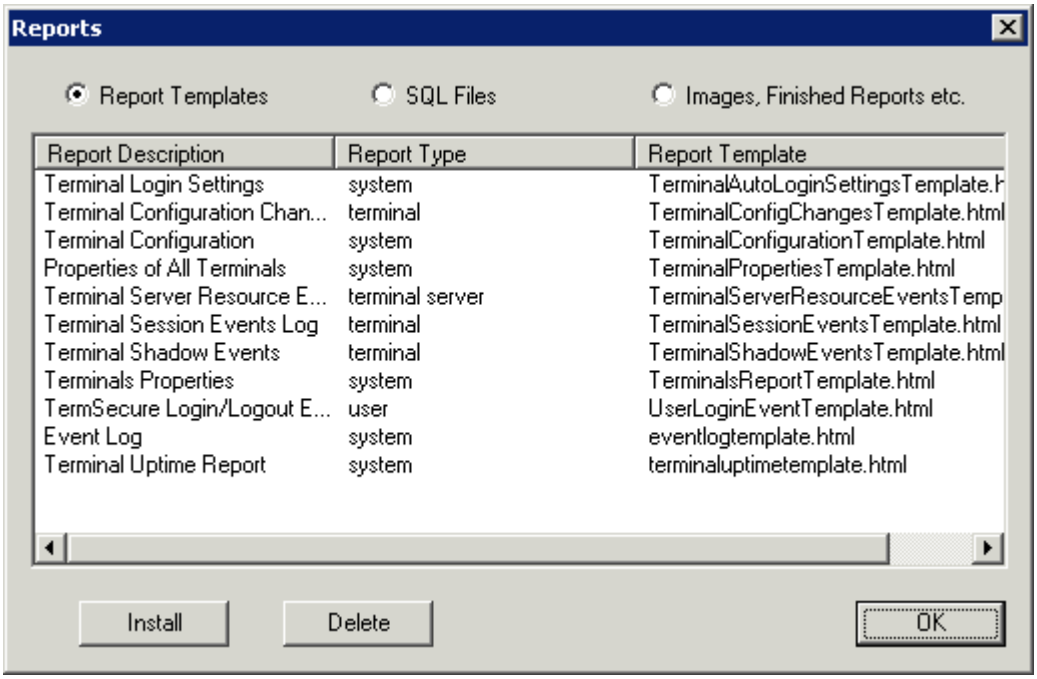
Reports can be scheduled to be run and saved as **`*.html`** files for storage or further analysis.

15.2. 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.

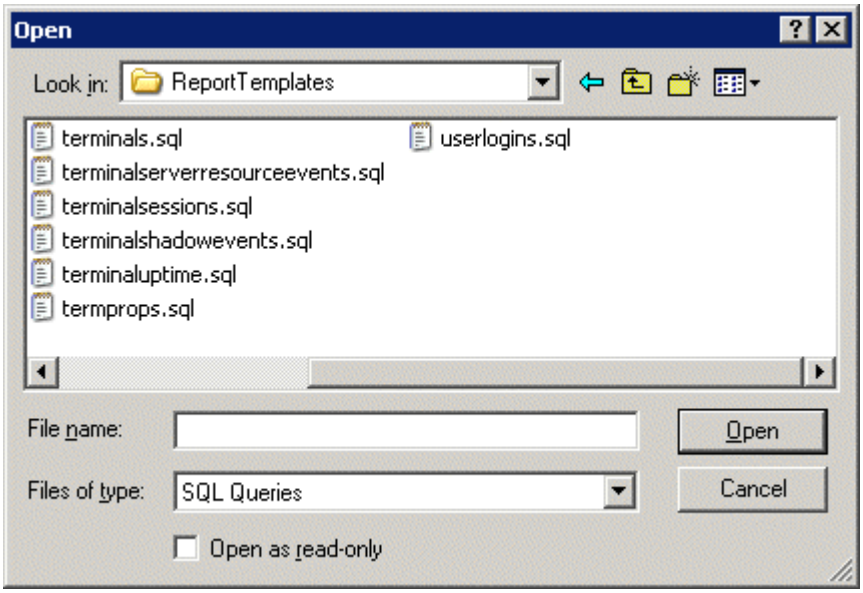
New reports are installed by selecting ***Install > Reports*** from the ThinManager menu. This launches the **Reports** window.



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.

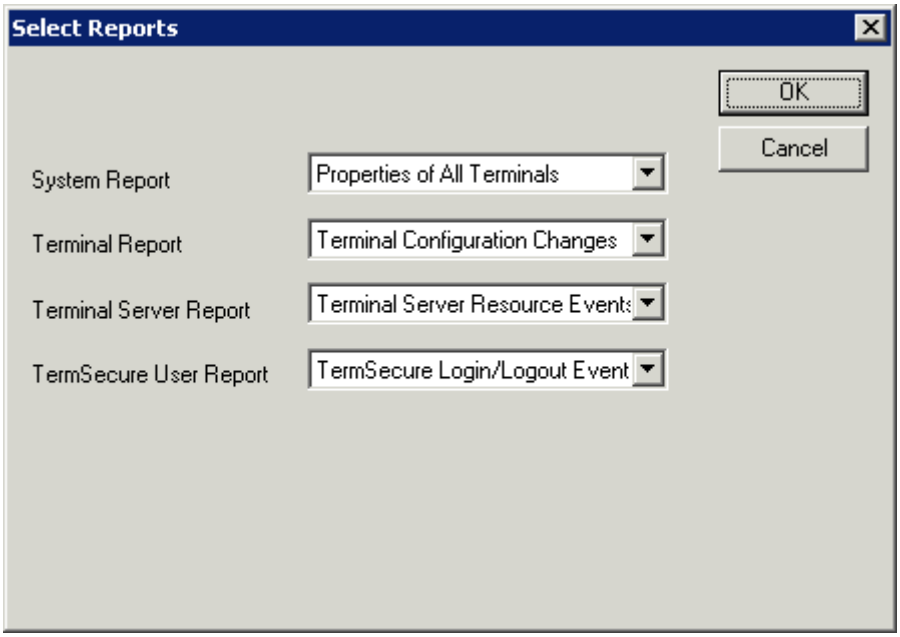


File Browser

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.

15.3. 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

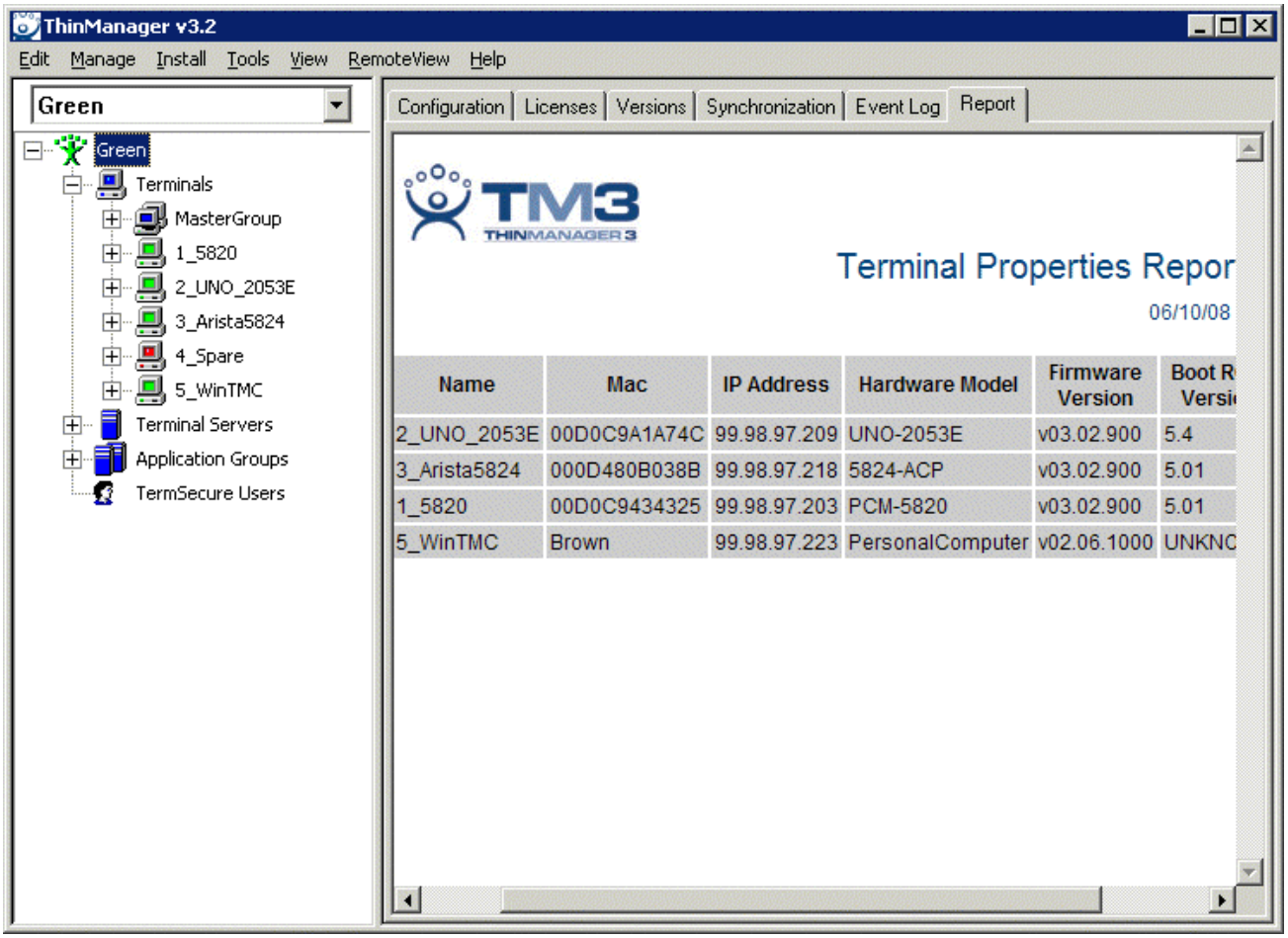
The **Select Reports** window has four fields that determine which report is displayed on the report tab.

- ***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.

15.4. Report Tab

The reports selected in the **Select Reports** window will be displayed on the **Report** tab in ThinManager.

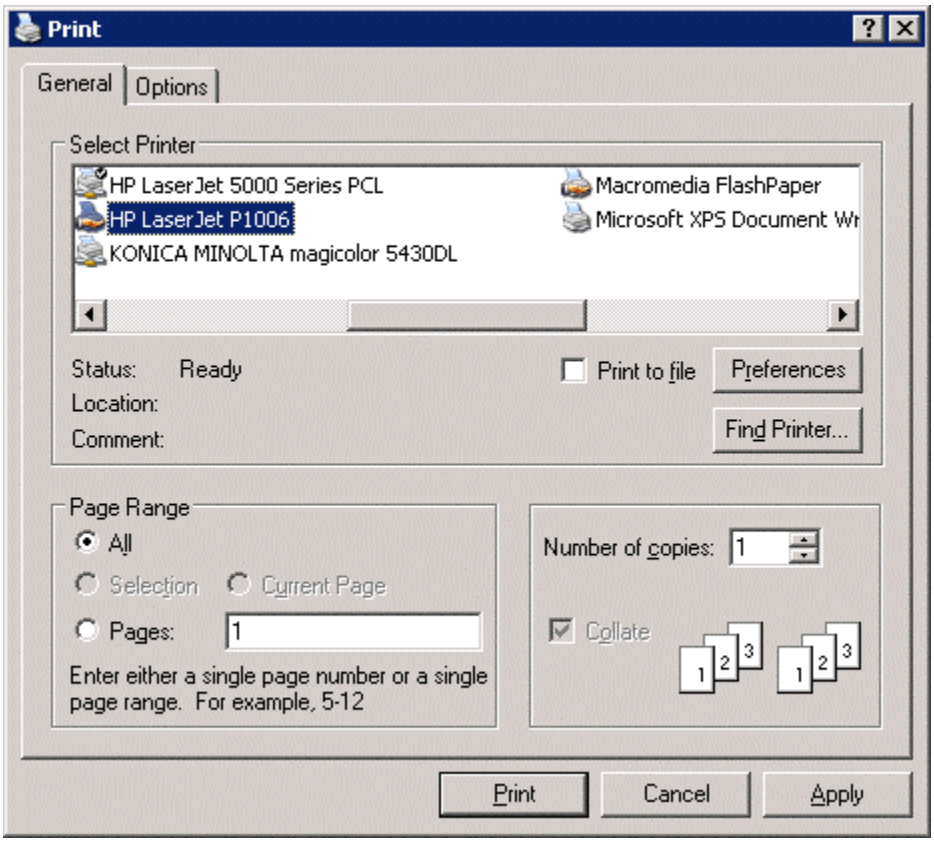


Report Tab

Highlight the desired ThinManager Server, terminal, terminal group, terminal server, TermSecure user, or TermSecure group, then select the **Report** tab to display the report.

15.5. 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.



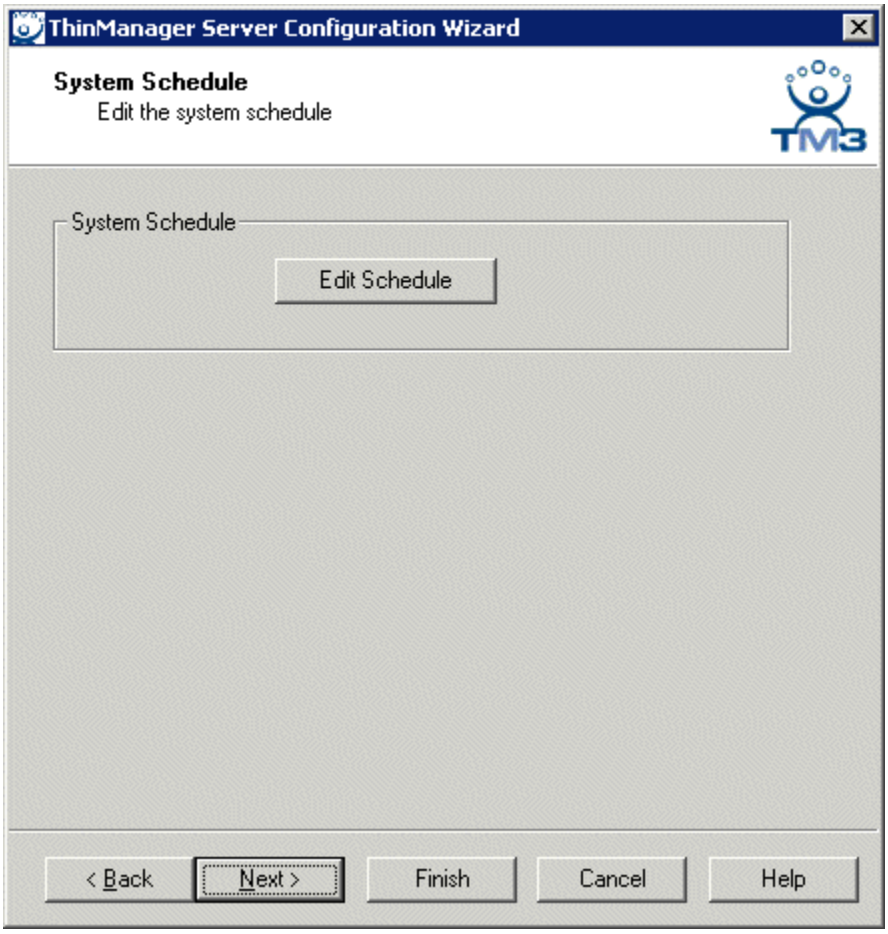
Print Window

Highlight the desired printer and select the ***Print*** button to print the report.

15.6. Scheduling Reports

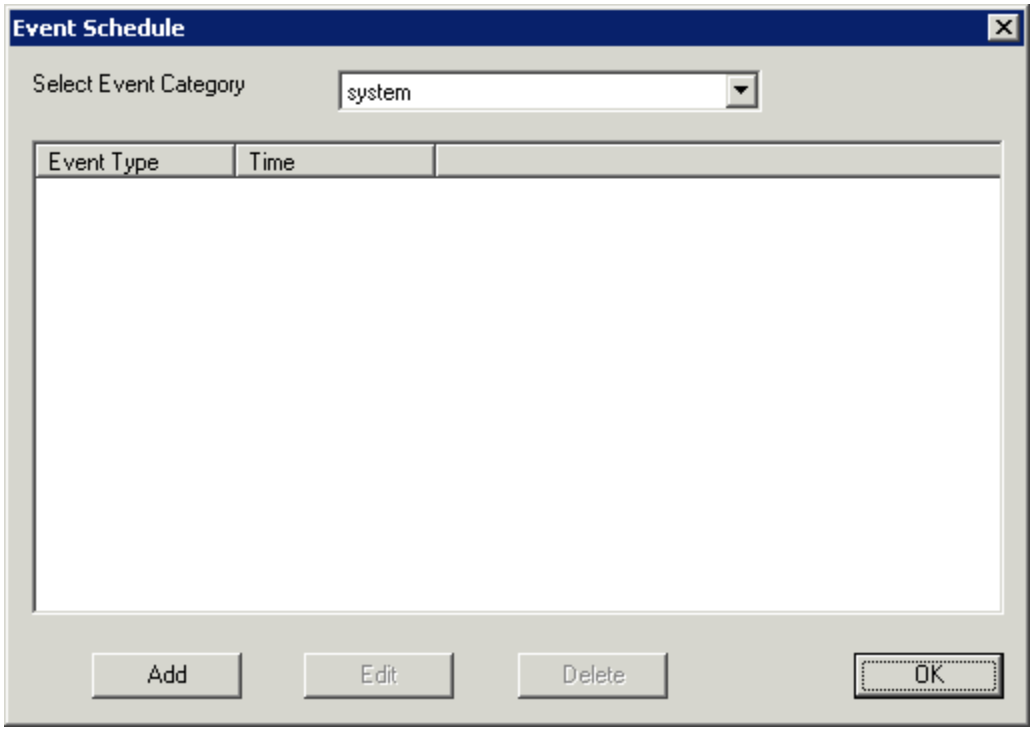
Reports can be scheduled to be run once at a specified time or to be run regularly at a specific time. The reports are saved as **`*.html`** files for storage or further analysis.

To schedule report generation open the **ThinManager Server Configuration Wizard** by highlighting the ThinManager Server and selecting ***File > Modify***.



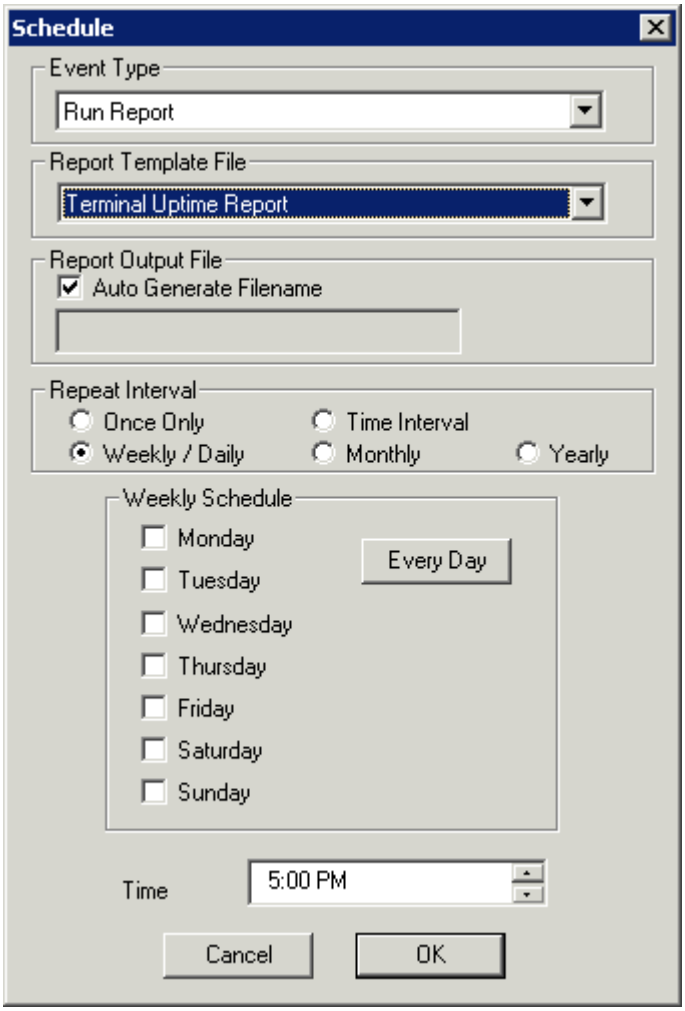
ThinManager Server Configuration Wizard – System Schedule

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

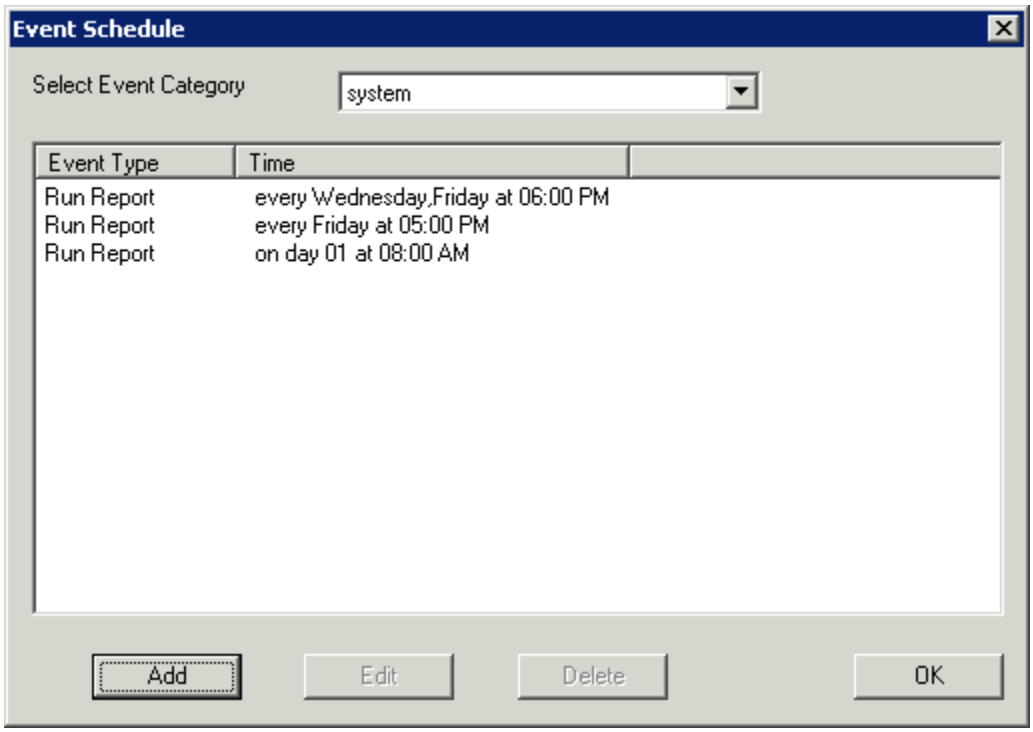
The Schedule window allows system events to be configured.

- ***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.

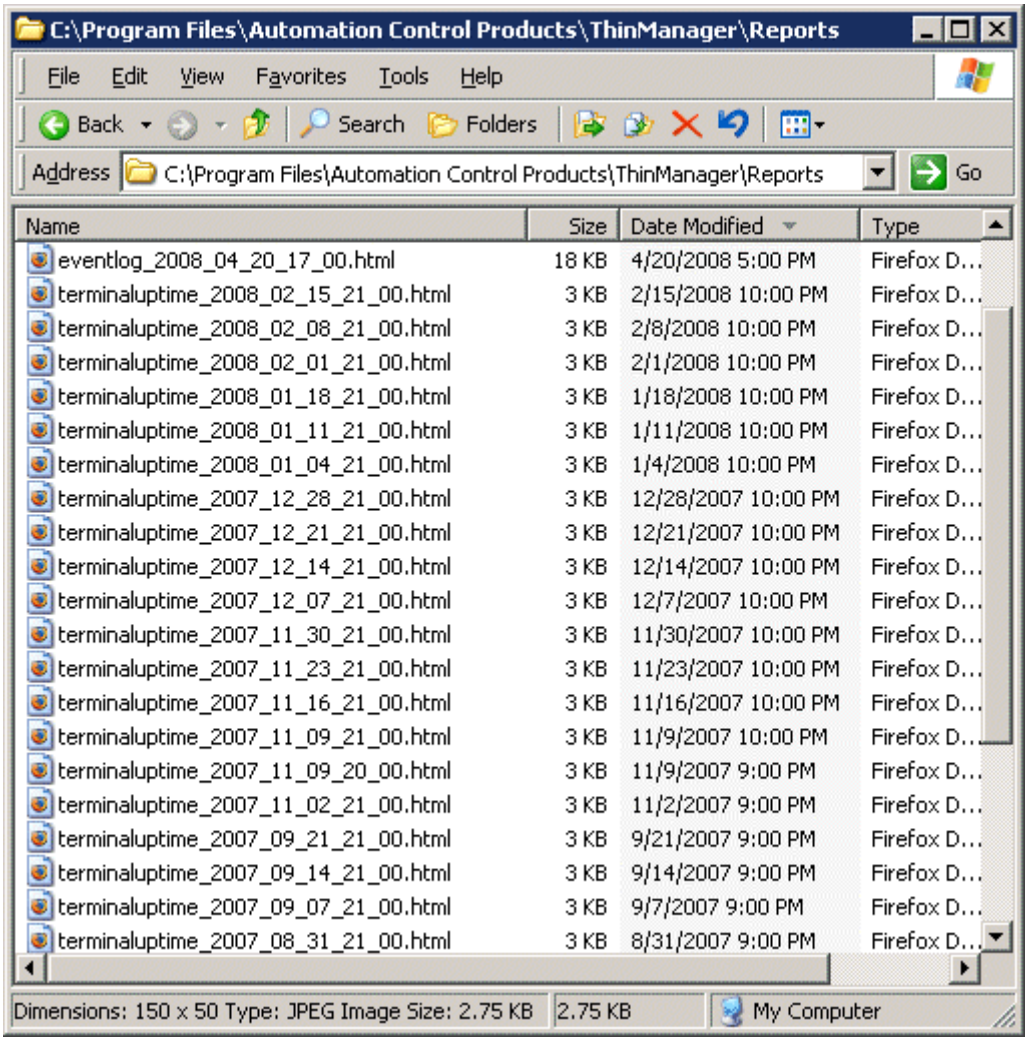


Event Schedule

The scheduled report will be displayed in the Event Schedule window.

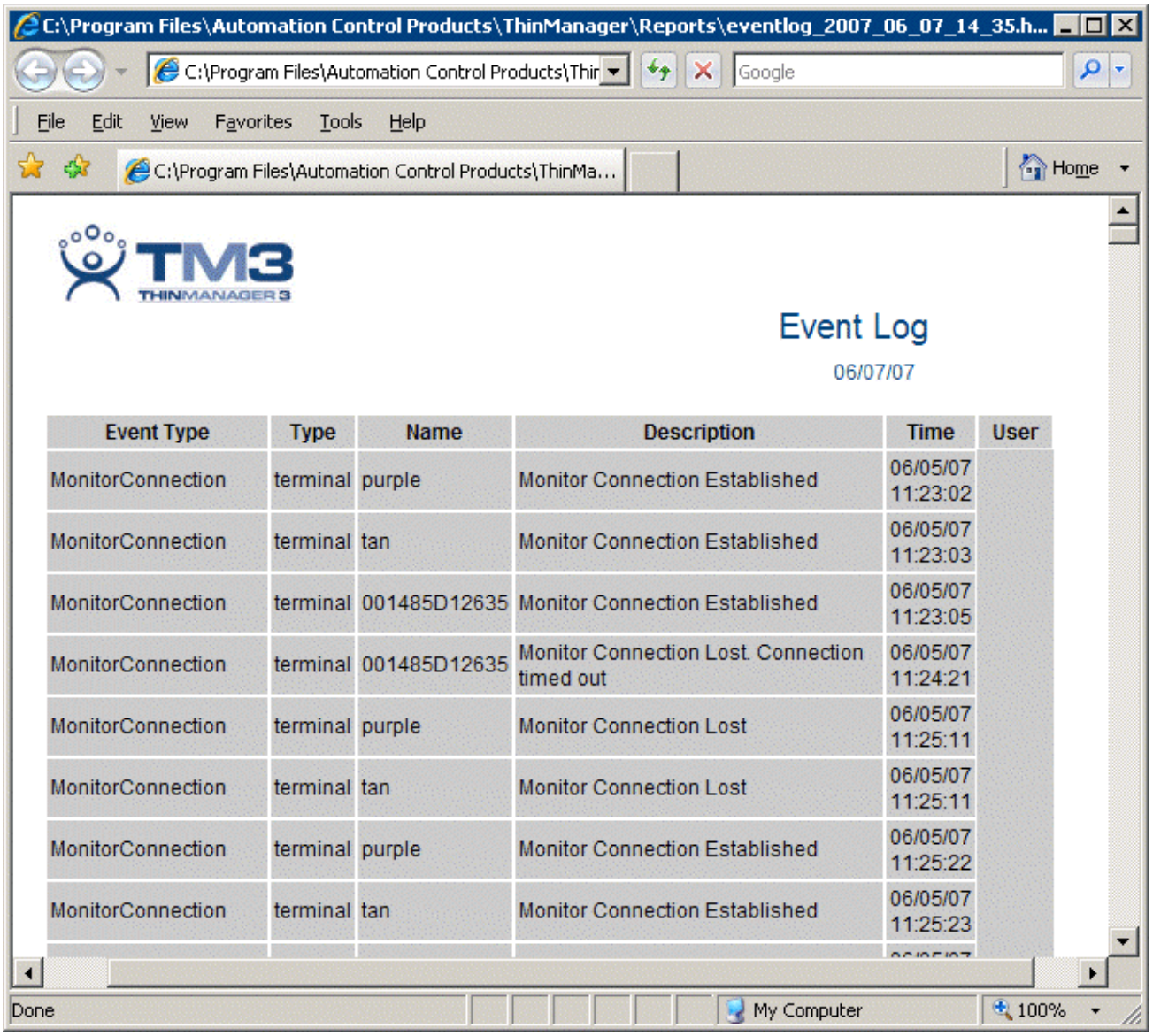
- Select ***Add*** to add another report schedule.
- Select ***Edit*** to edit the schedule of a highlighted report.
- Select ***Delete*** to delete the schedule of a highlighted report.
- Select ***OK*** to accept the schedules and close the window.

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.



Event Type	Type	Name	Description	Time	User
MonitorConnection	terminal	purple	Monitor Connection Established	06/05/07 11:23:02	
MonitorConnection	terminal	tan	Monitor Connection Established	06/05/07 11:23:03	
MonitorConnection	terminal	001485D12635	Monitor Connection Established	06/05/07 11:23:05	
MonitorConnection	terminal	001485D12635	Monitor Connection Lost. Connection timed out	06/05/07 11:24:21	
MonitorConnection	terminal	purple	Monitor Connection Lost	06/05/07 11:25:11	
MonitorConnection	terminal	tan	Monitor Connection Lost	06/05/07 11:25:11	
MonitorConnection	terminal	purple	Monitor Connection Established	06/05/07 11:25:22	
MonitorConnection	terminal	tan	Monitor Connection Established	06/05/07 11:25:23	

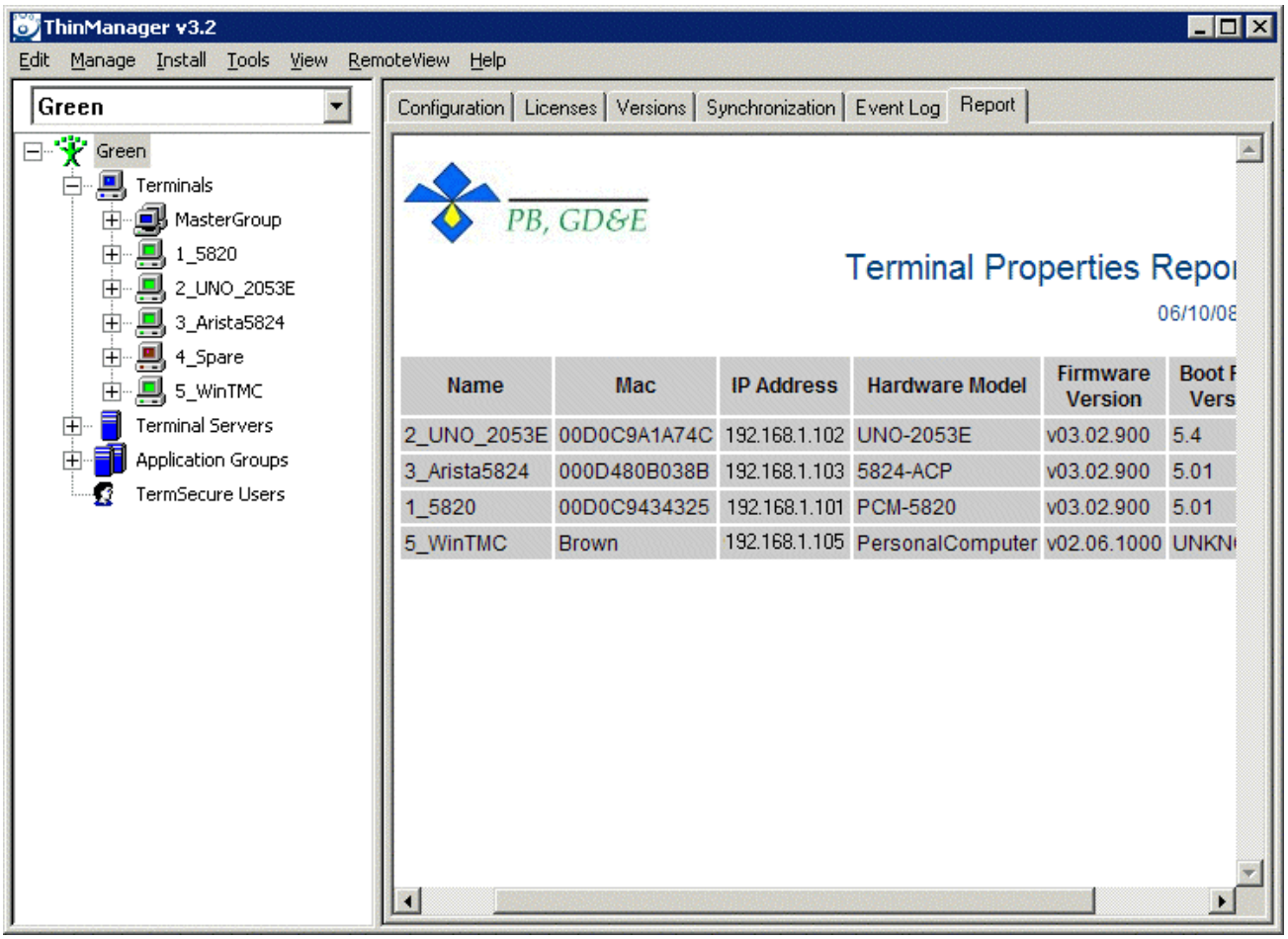
Report Shown in Internet Explorer

Once the report is generated the data can be saved or reformatted as desired using standard HTML tools.

15.7. 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.

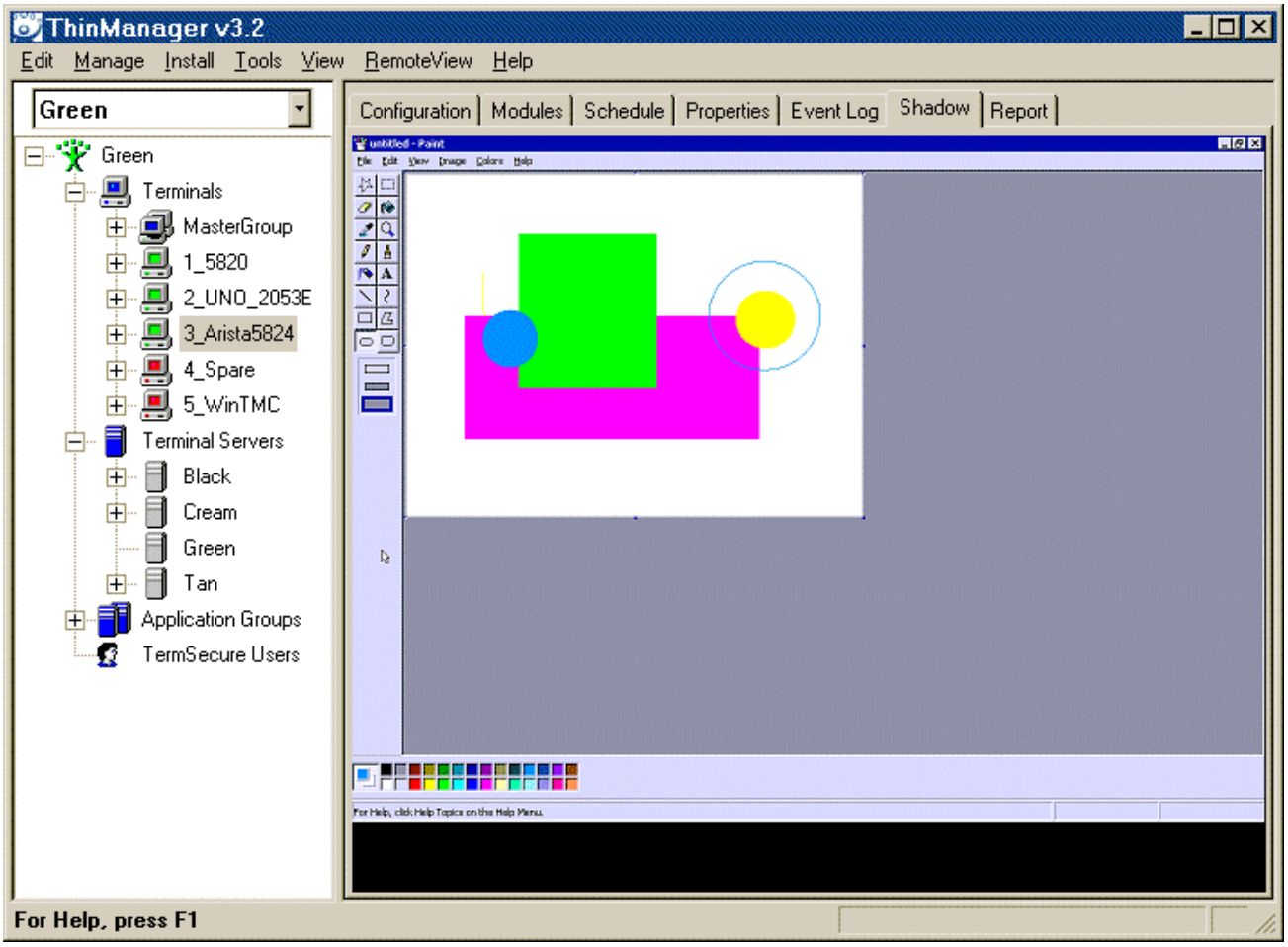
16. Shadowing

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

16.1. ThinManager Shadow

Shadowing of a ThinManager Ready 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.

16.1.1. 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.

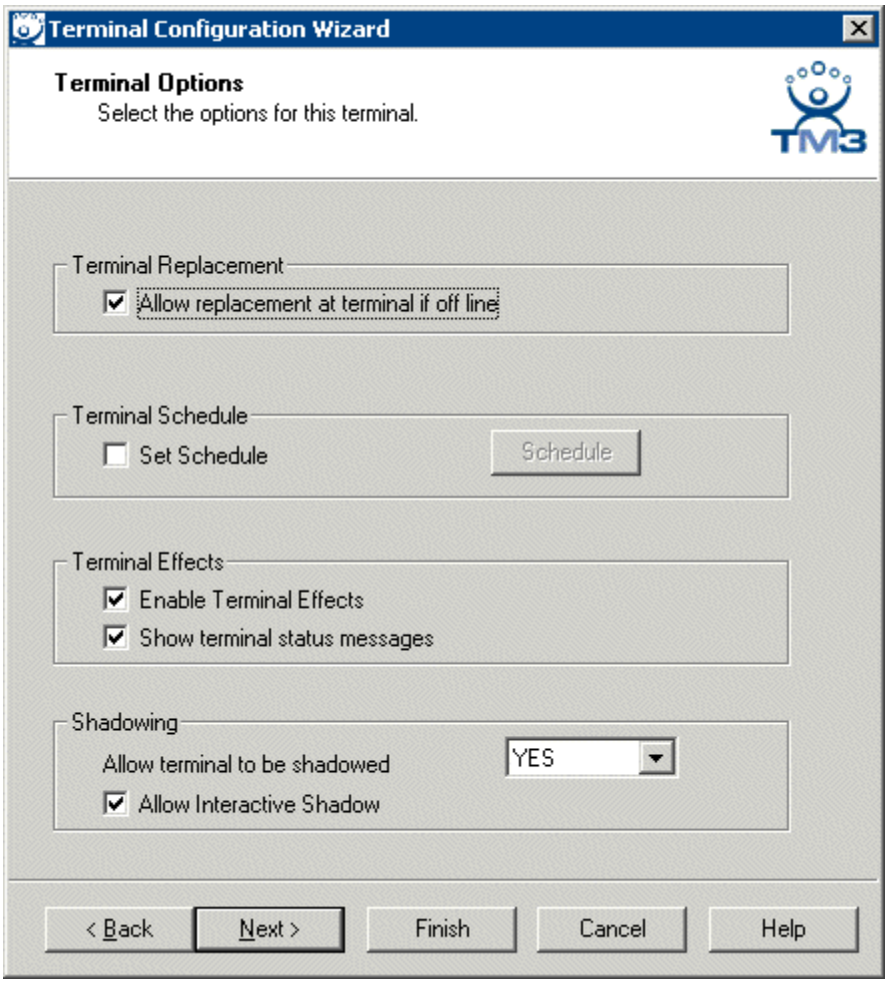
. See ThinManager Security Groups for details.

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.

16.1.2. 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.

16.1.3. Shadow Keystrokes

Because the **CTL+ALT+DEL** and the **CTL+ESC** keystrokes can't be sent to the local machine to the shadowed ThinManager Ready 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.

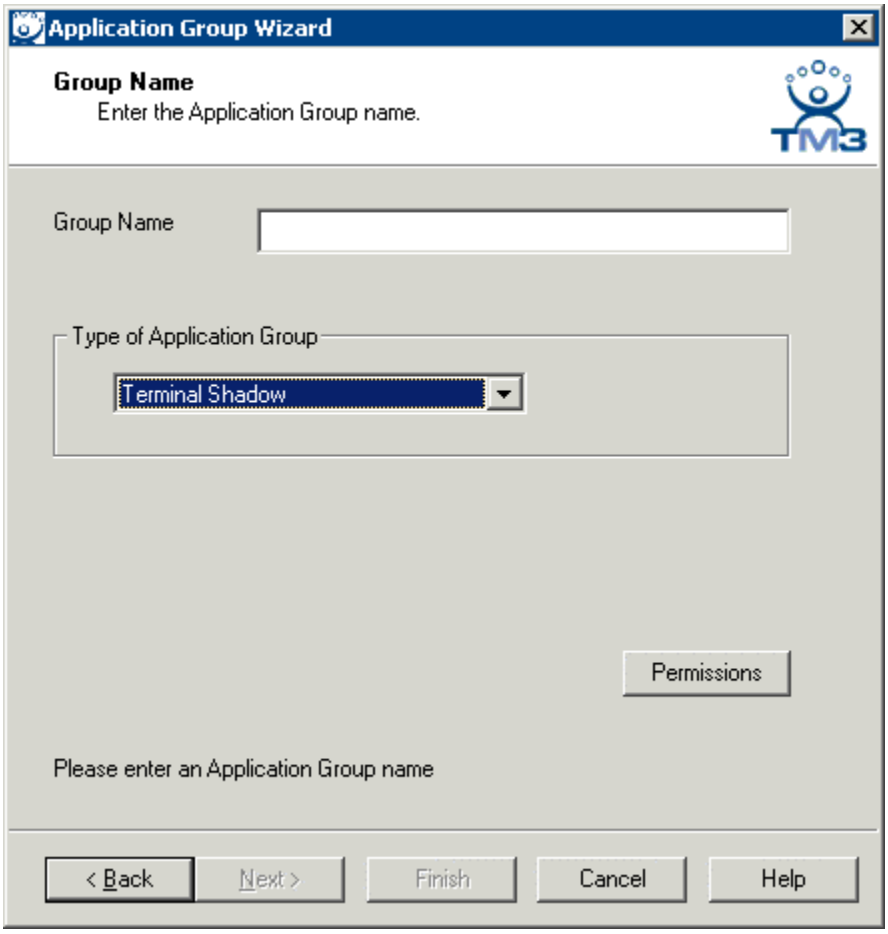
Changing the tab or selecting another tree icon will break the shadow connection.

16.1.4. 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 Application Groups for details on configuring Terminal Shadow application groups

Terminal Shadow Application Group



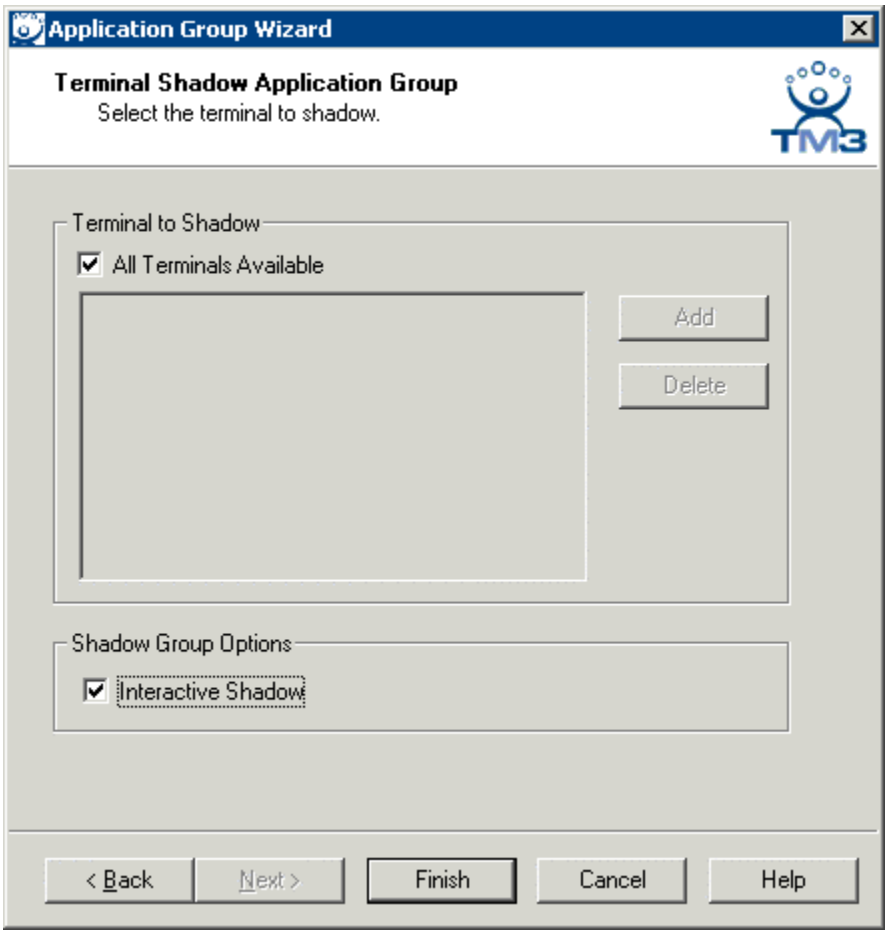
Terminal Shadow Application Group - Group Name Page

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.

Terminal Shadow Configuration

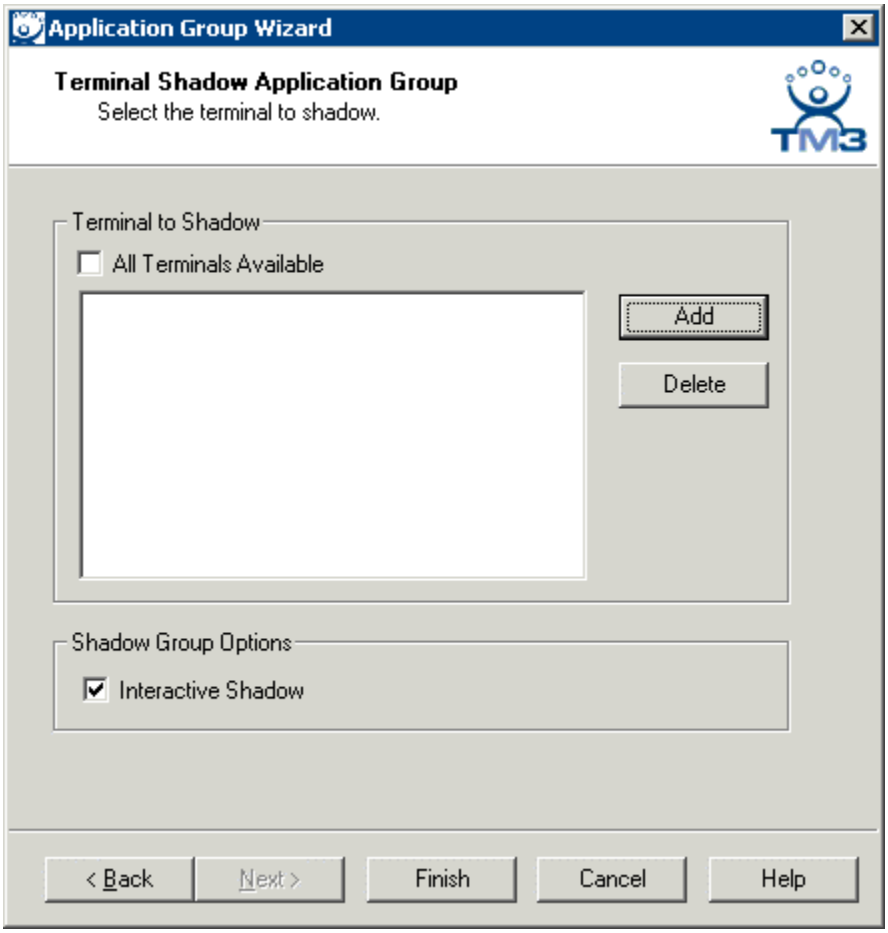
The Terminal Shadow Application Group page allows the selection of the terminal or terminals to be shadowed.



Terminal Shadow Application Group – All Terminals Available

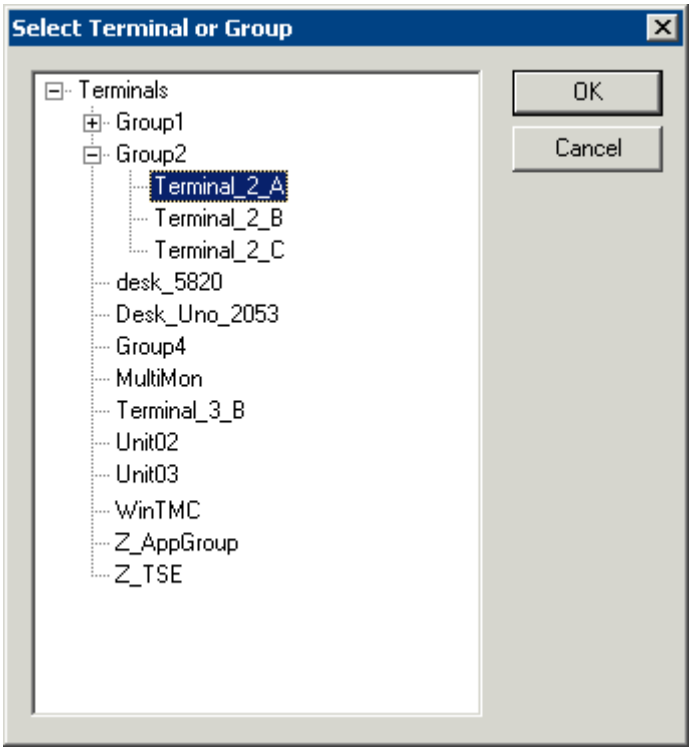
By default the Shadow Group is configured to allow all terminals to be shadowed.

Unselecting the ***All Terminals Available*** checkbox will allow the designation of specific terminals.



Terminal Shadow Application Group –Select Terminals

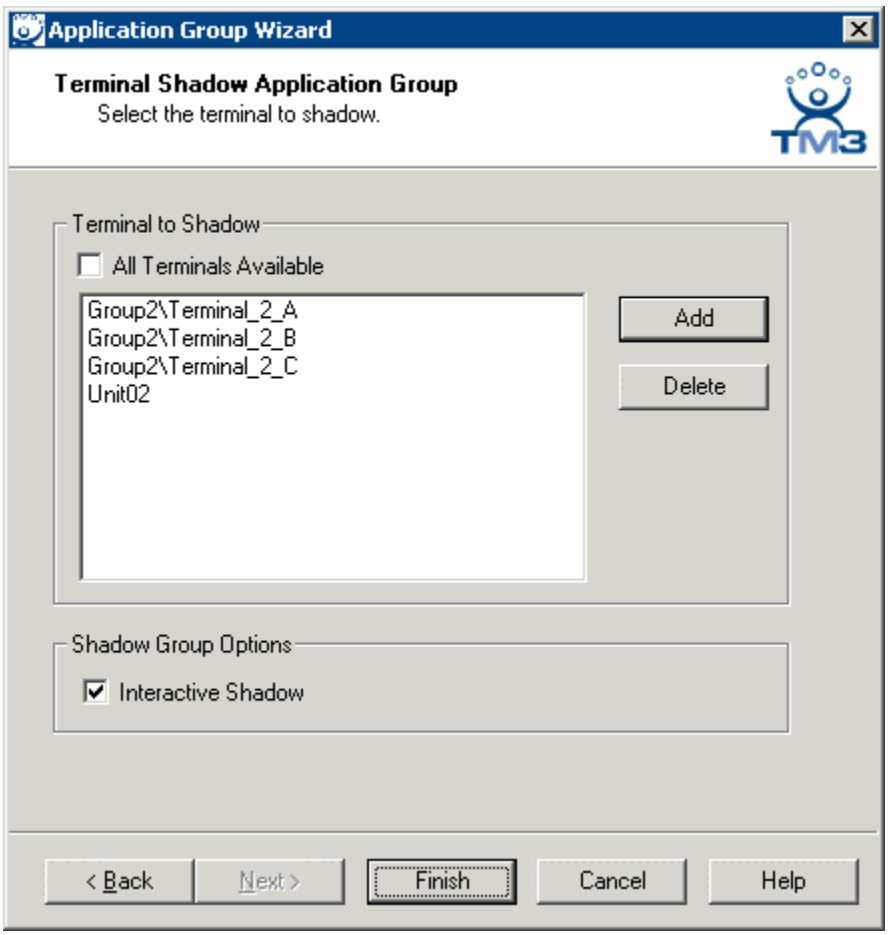
Select the ***Add*** button to launch the terminal selection window.



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**.

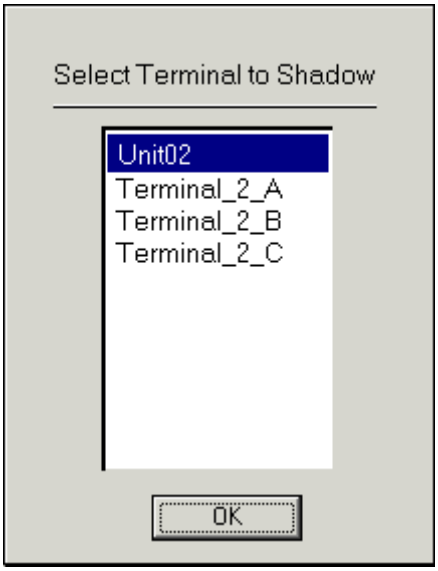


Terminal Shadow Application Group – Selected Terminals

The Terminals to Shadow textbox will display the terminals added to the list.

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.



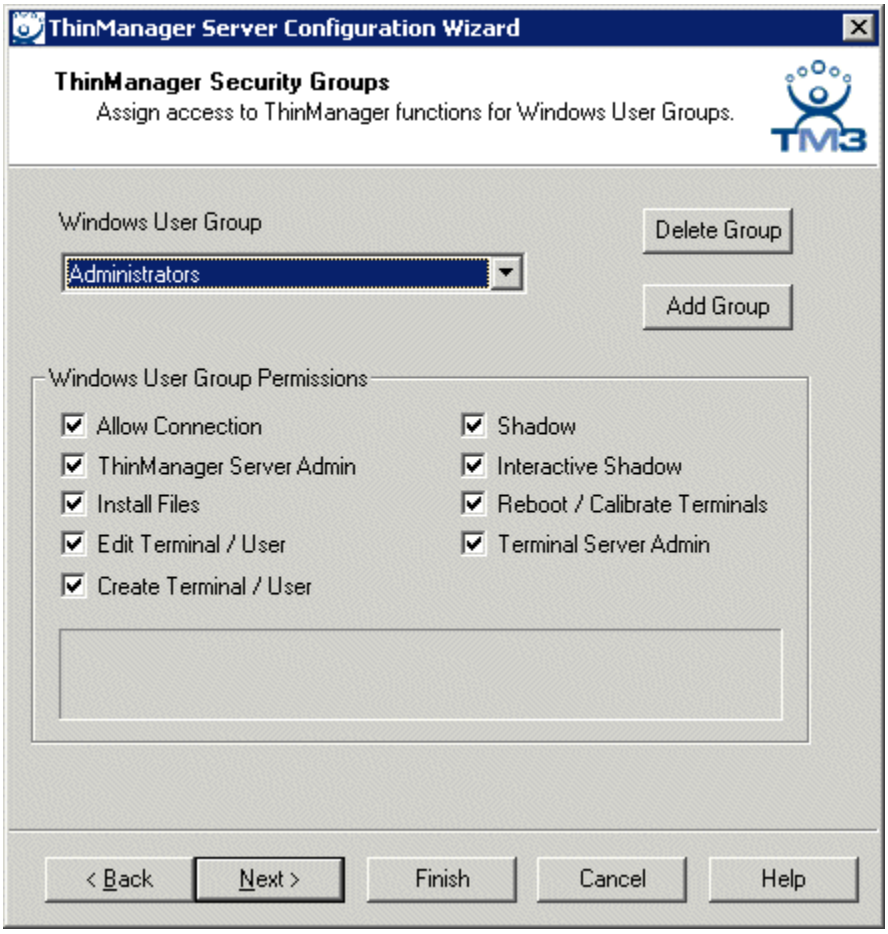
Terminal Selector

Highlight the desired terminal and select the ***OK*** button.

17. ThinManager Security

17.1. ThinManager Security Groups

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



ThinManager Security Groups

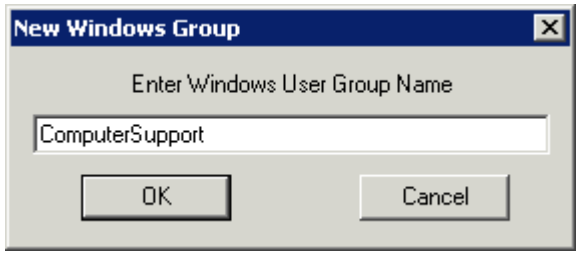
ThinManager allows different levels of access and functionality based on standard Windows groups.

Standard Windows Groups can be created in the Computer Management console and given different privileges in ThinManager.

ThinManager 3.2 comes with privileges pre-defined for six groups:

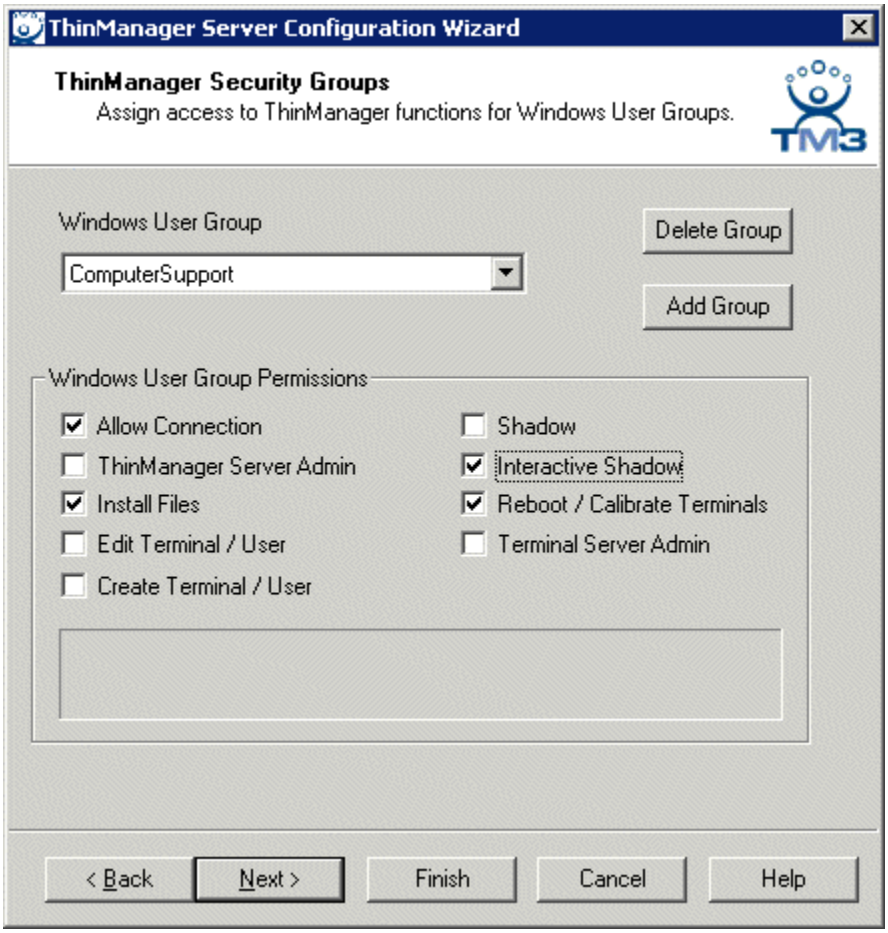
- **Administrators -** The Microsoft defined Administrator group is given all privileges by default in ThinManager. This may be denied by unselecting the various Windows User Group Permissions.
- **ThinManager Administrators** have full permission to do anything within ThinManager including the power 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.
- **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.



New ThinManager Security Group

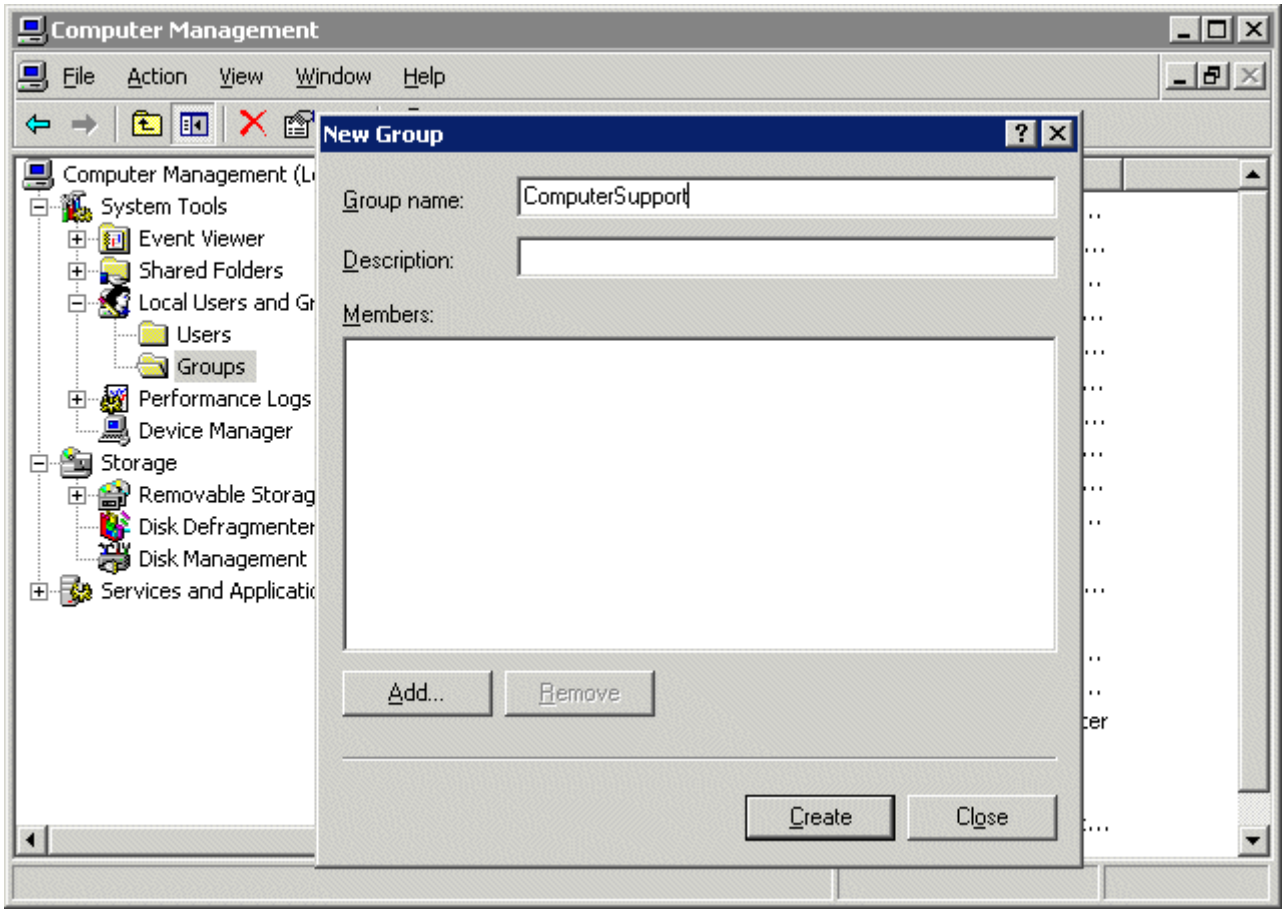
Select the group from the **Windows Users Group** drop-down.

Choose the permissions you want to grant to the group by selecting and unselecting the ***Windows Users Group Permissions*** checkboxes.

Members of the **Windows User Group** will have the selected permissions the next time they login.

Note: 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.

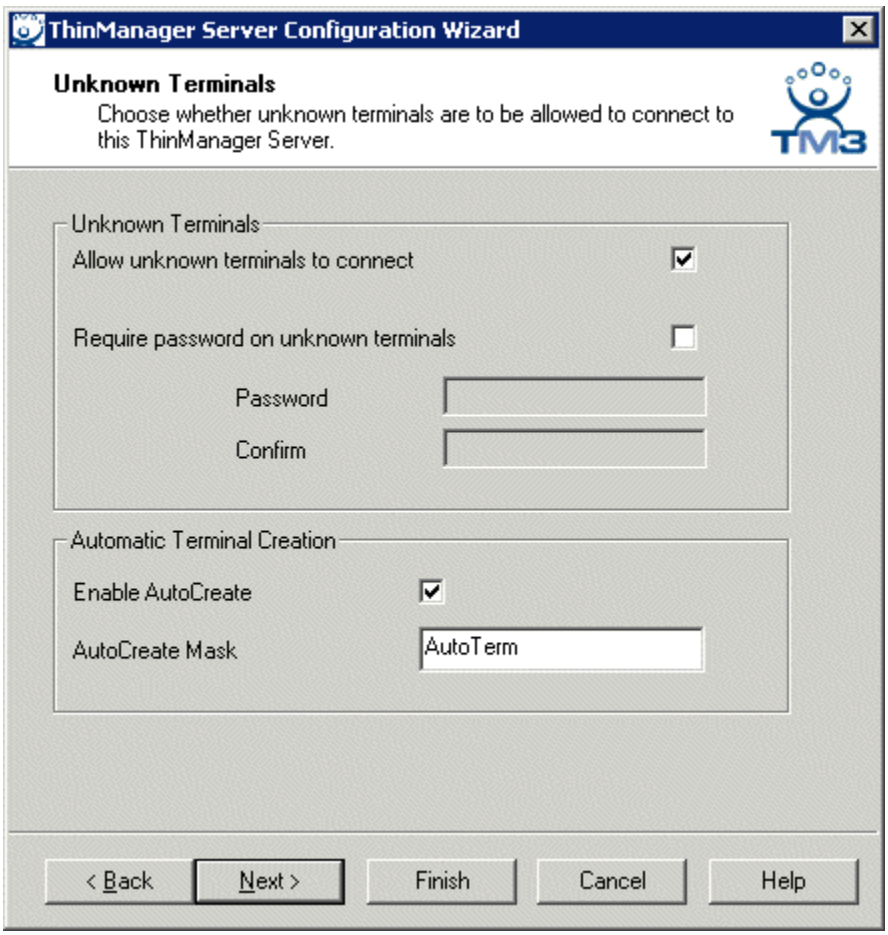
Members of the Windows User Group will have the selected permissions the next time they login.

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.

17.2. 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.

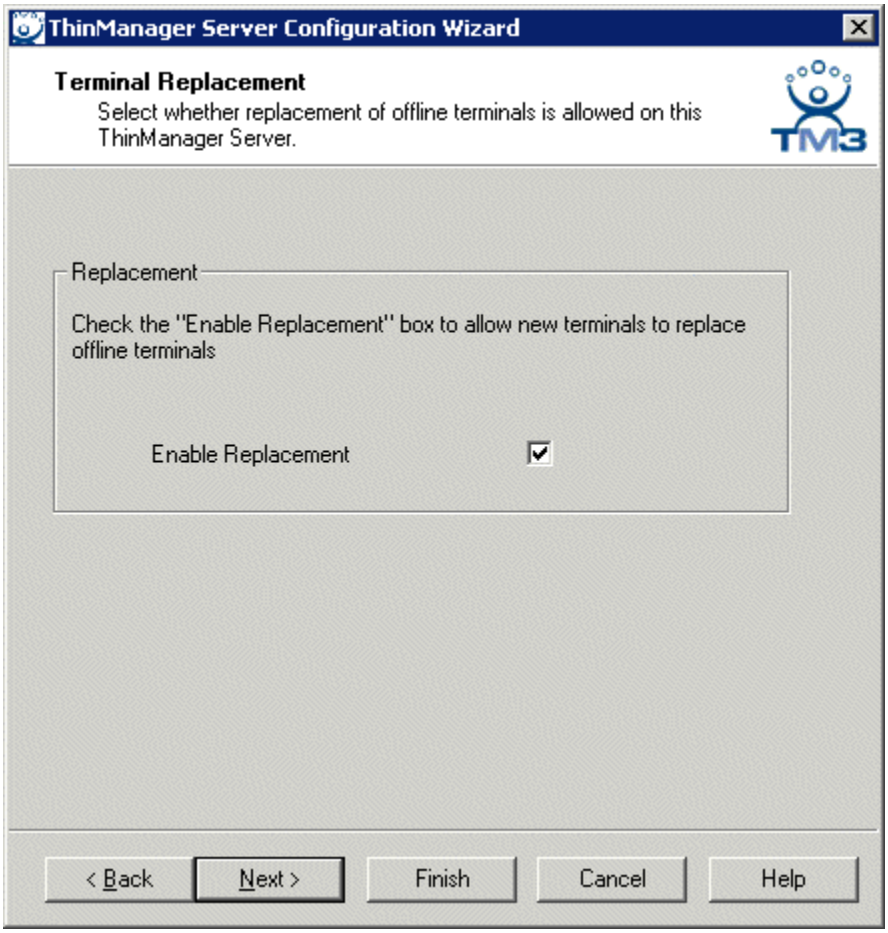


ThinManager Server Configuration Wizard

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.

17.2.1. Windows Security

The ACP ThinManager system delivers a Windows 2000/2003 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 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.

18. TermSecure

18.1. TermSecure Overview

TermSecure is a ThinManager feature that allows users to logon to a ThinManager Ready thin client and access user-specific or terminal-specific Application Groups. This does not replace the Windows logon, but adds an additional layer of security and control. Terminals and Application Groups can be assigned TermSecure Access Group permissions. A TermSecure User can use those terminals and Application Groups only if the TermSecure User has been assigned to the same Access Group.

TermSecure has two main strategies:

- **SecureAccess** or **Terminal-specific Applications:** Manages user access to terminal servers and sessions through ThinManager authentication and group permissions.
  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:** Allows the movement of the display of a TermSecure User's terminal server sessions between multiple ThinManager Ready 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.
  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 control with Permissions.

SmartContext or **User-specific Applications** are controlled by adding the Application Group to the TermSecure User configuration.

Note: TermSecure requires the usage of Application Groups instead of using individual terminal servers.

18.2. Users

There are three types of users in a ThinManager system. **Windows Users** and **TermSecure Users** are important to TermSecure.

18.2.1. 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.

18.2.2. TermSecure Users

TermSecure Users are users who can go to a ThinManager Ready thin client and receive access to specific Application Groups 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 Application Groups but a Windows User login is still required to actually logon to the terminal server.

18.2.3. 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.

18.3. Deploying TermSecure

TermSecure may require a number of steps to configure and deploy TermSecure:

1. TermSecure Access Groups can to 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. Application Groups can be assigned TermSecure Access Groups to limit access to specific users (optional).
   See Permission Groups for Application Groups 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 ThinManager Ready 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 Application Groups that share the same TermSecure Access as the TermSecure User, and is denied access to Application Groups that they don't share a TermSecure Access Group membership.

18.4. TermSecure User Configuration Wizard

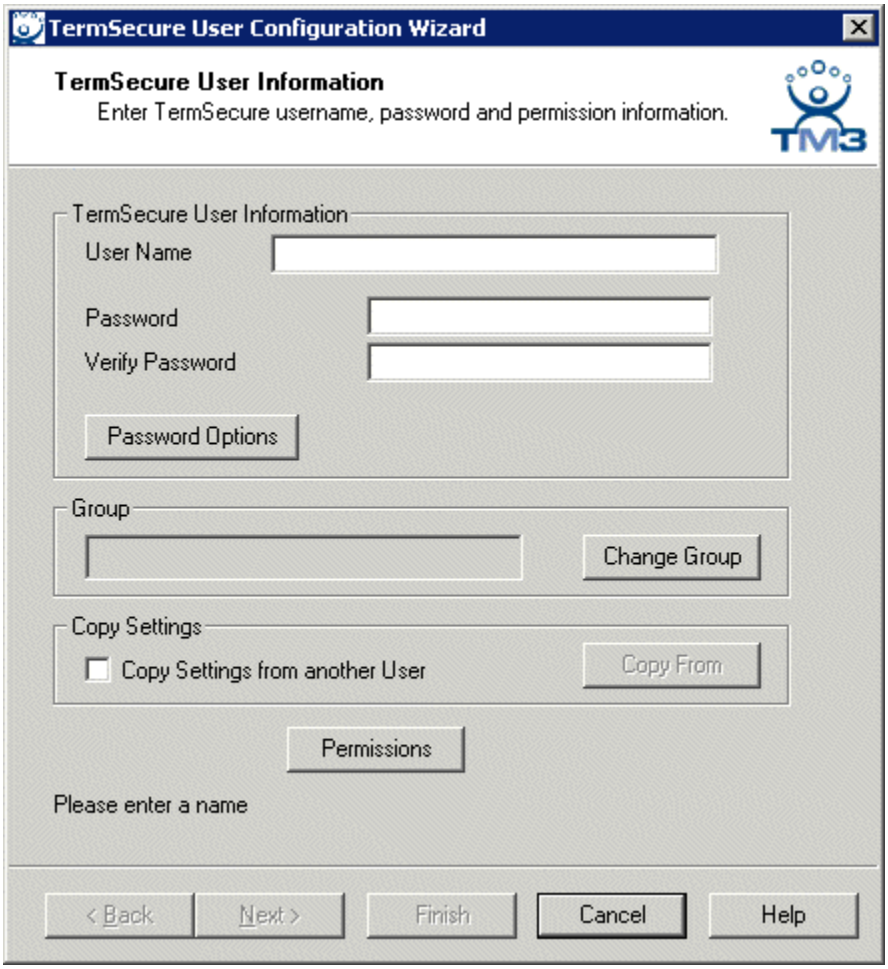
A TermSecure User can be configured with a user name, password, and user-specific Application Groups. When the user logs into a terminal with that identity, TermSecure will allow the user access to the personalized Application Groups for that user in addition to the Application Groups already assigned to the terminal.

Note: The TermSecure Users branch of the ThinManager tree will not be visible unless a valid TermSecure 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***.

TermSecure User Information

The first page of the **TermSecure User Configuration Wizard** is the **TermSecure User Information** page.

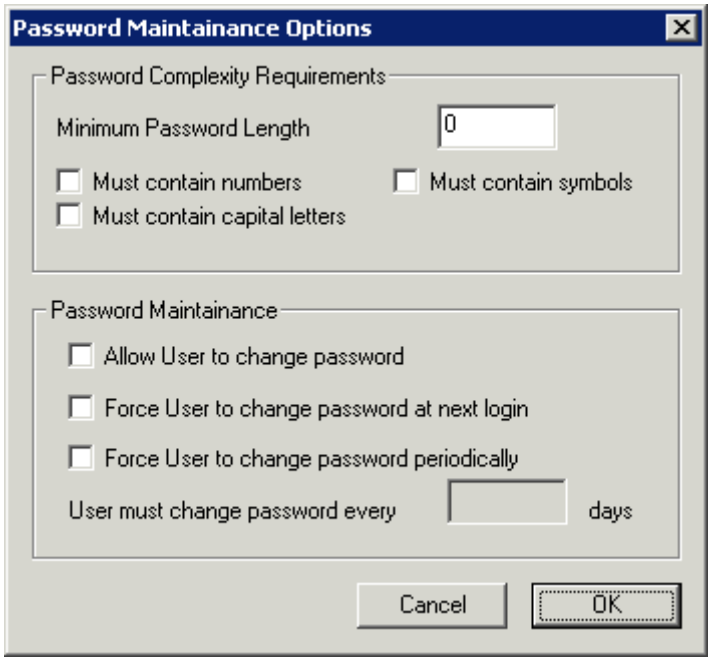


ThinManager User Information

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.

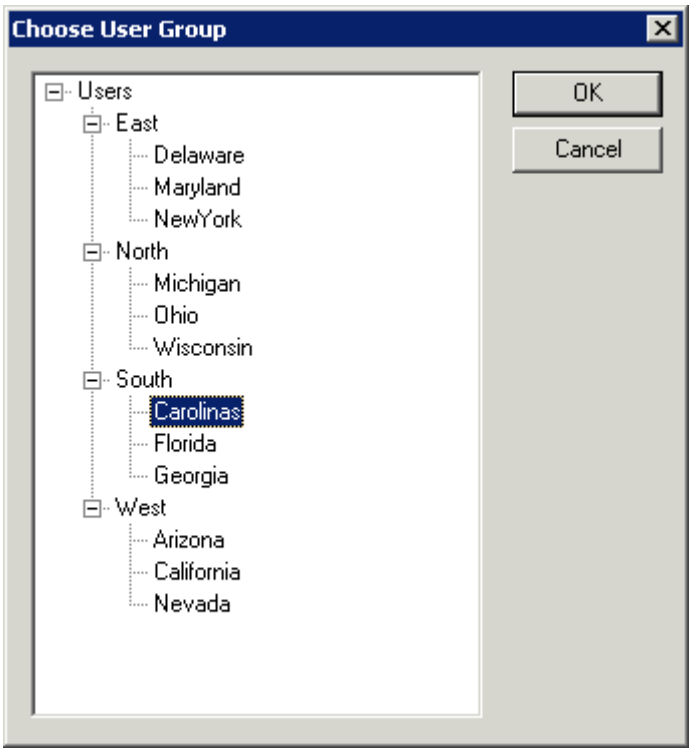
Password Maintenance:

- ***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

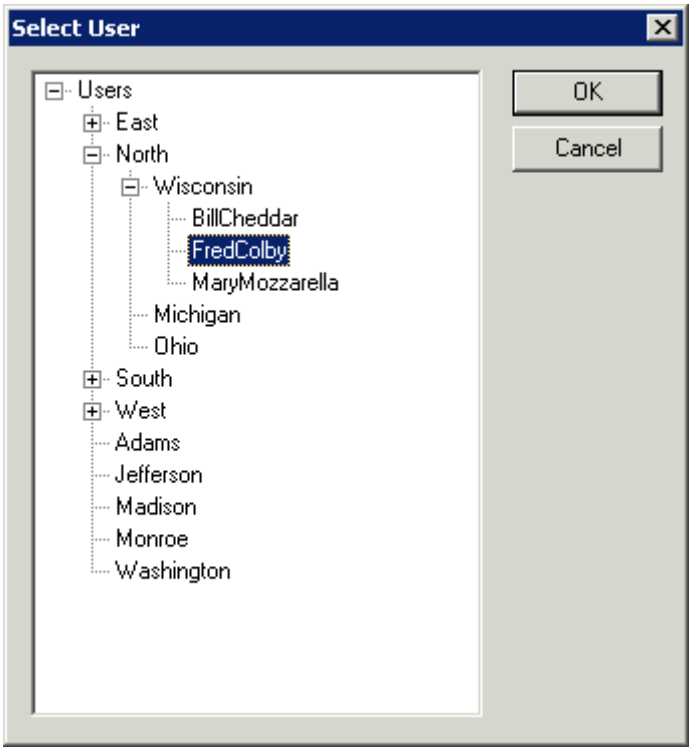
If TermSecure User Groups have been created, the **Choose User Group** window will display the TermSecure User Group branch of the ThinManager tree.

- 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.



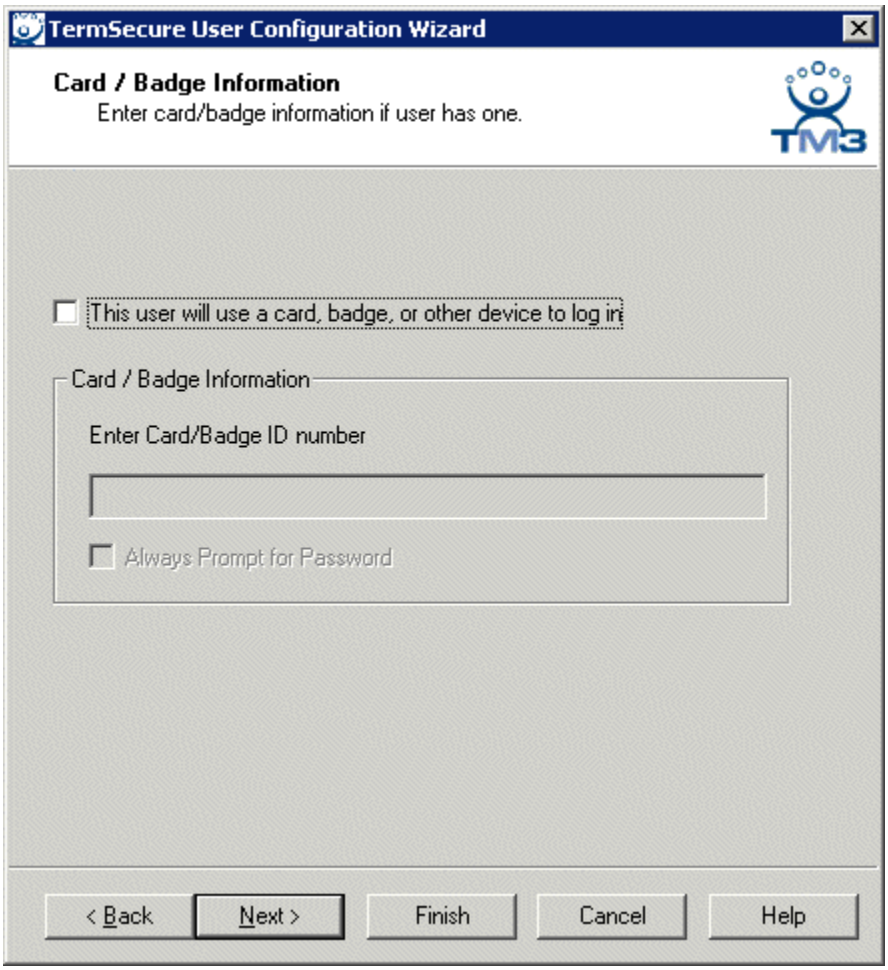
Select User Window

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.

Card / Badge Information

The next page of the **TermSecure User Configuration Wizard** is the **Card/Badge Information** page.



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

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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.

Application Group Selection

The next page of the **TermSecure User Configuration Wizard** is the **Application Group Selection** page.

Application Group Selection

The **Application Group Selection** page allows Application Groups to be assigned to the TermSecure User. When the TermSecure User logs onto a terminal, these Application Groups will be available on the terminal for him.

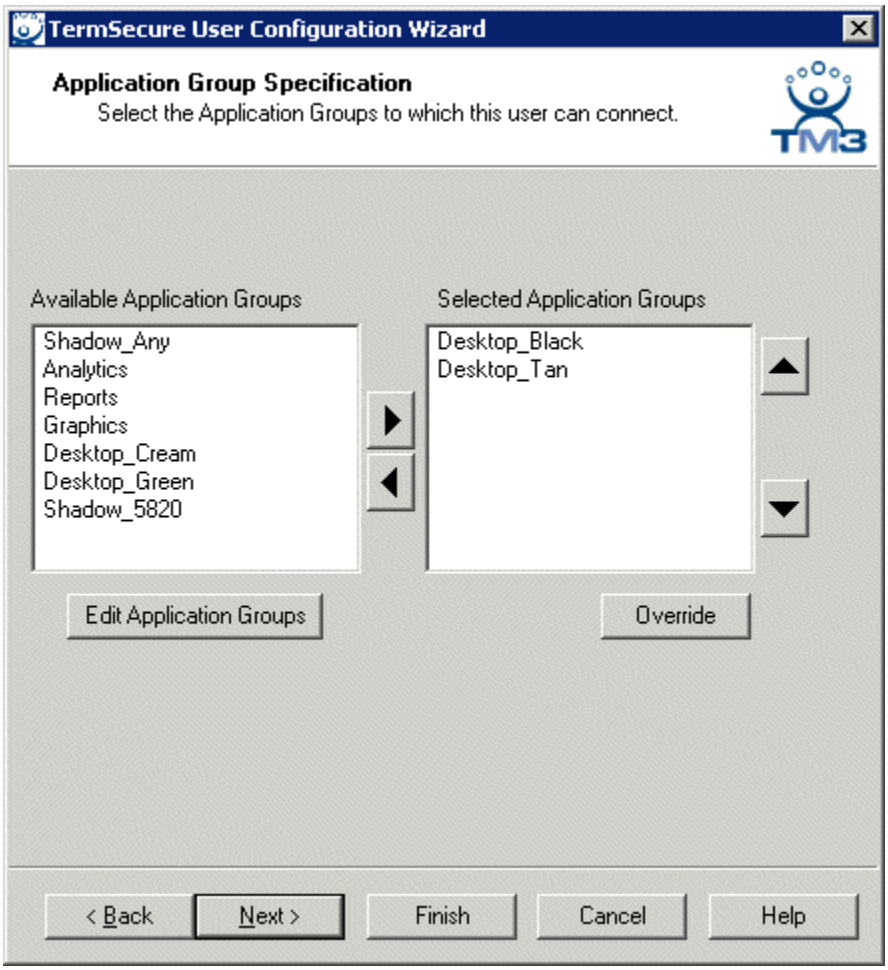
Add User specific Application Groups? - This setting, if set to ***Yes***, will allow the selection of Application Groups for the TermSecure User that will be added to the terminal when the TermSecure User logs in top the terminal. This provides the user-specific application groups.

This setting, if set to ***No***, will rely on Permissions to grant access to terminal-specific application groups.

Select the ***Next*** button to continue with the configuration.

Application Group Specification

The next page of the **TermSecure User Configuration Wizard** is the **Application Group Specification** page.



Application Group Specification Page

The **Application Group Specification** page allows Application Groups to be assigned to the TermSecure User if the ***Add User specific Application Groups?*** radio button is set to ***Yes***.

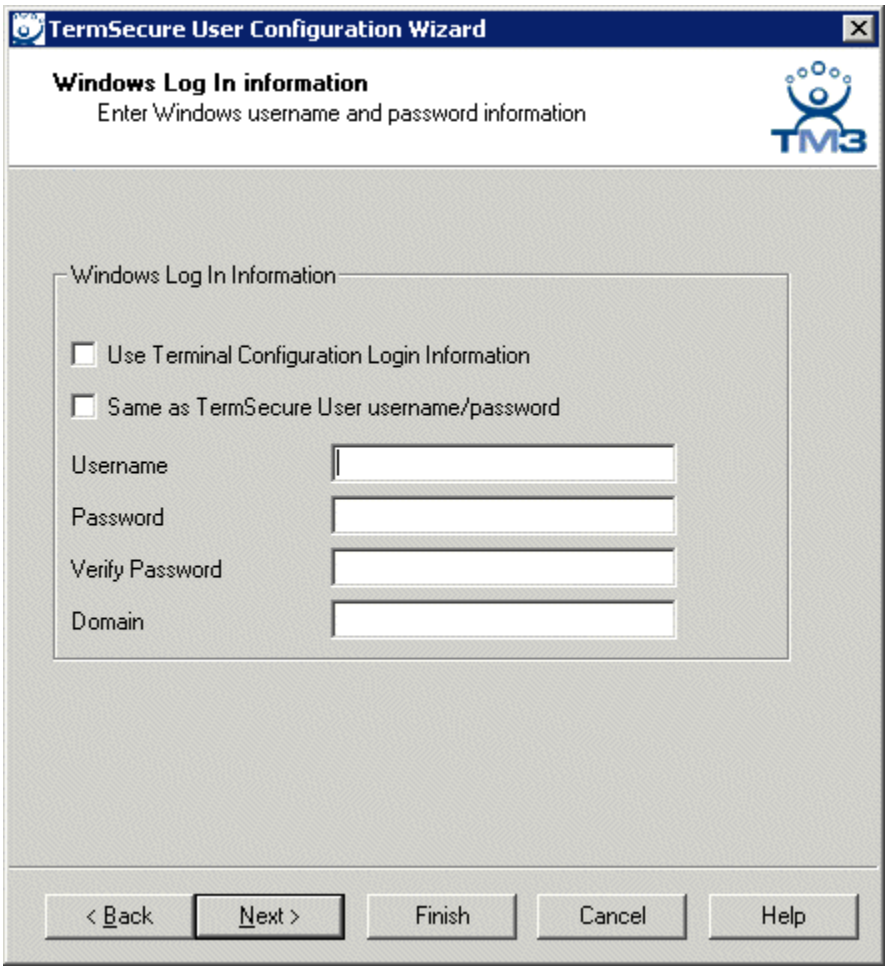
Move an Application Group you want the TermSecure User to use into the ***Selected Application Groups*** list by double-clicking on it in the **Available Application Groups** list or by highlighting it and clicking the ***Right Arrow*** button.

To add a new Application Group, select the ***Edit Application Groups*** button to launch the Application Group Wizard. See Application Group List for details.

Select the ***Next*** button to continue with the configuration.

Windows Login Information

The next page of the **TermSecure User Configuration Wizard** is the **Windows Log In Information** page.



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.

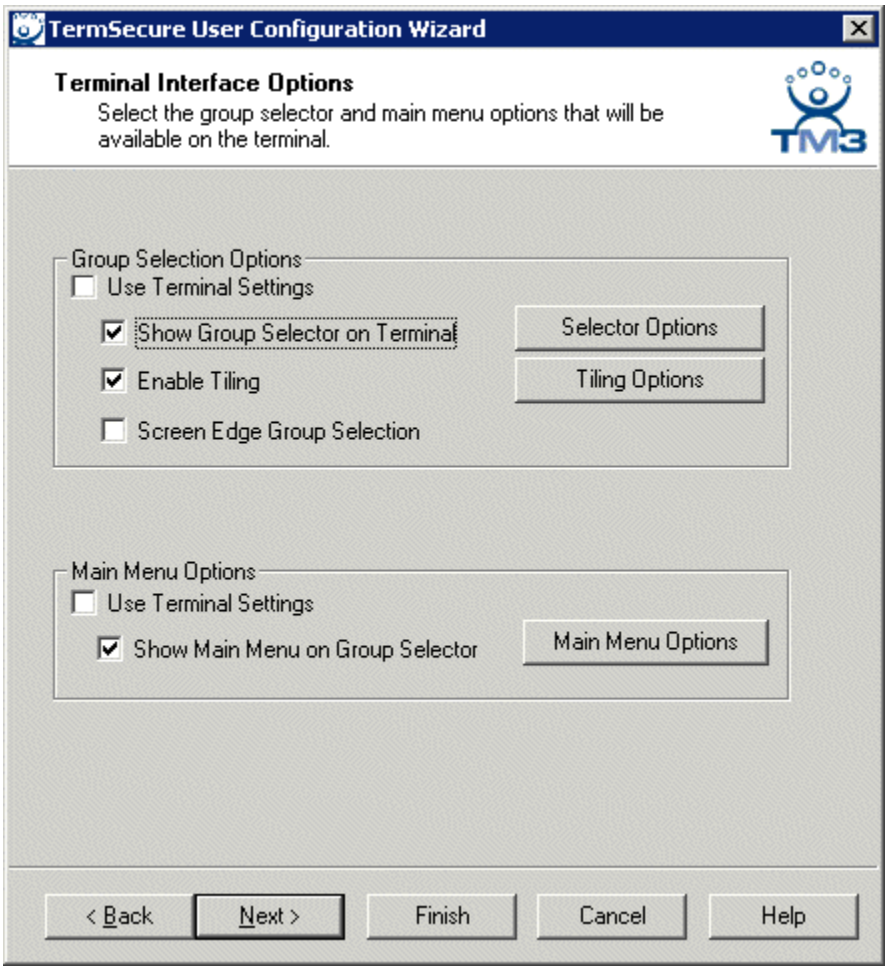
1. The TermSecure User can use the terminal's username and password to auto-log on to the terminal server. To do this, check the ***Use Terminal Configuration Login Information*** checkbox
2. The TermSecure User can use the TermSecure User username and password to auto-log on to the terminal server. 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.

Terminal Interface Options

The next page of the **TermSecure User Configuration Wizard** is the **Terminal Interface Options** page.



Terminal Interface Options

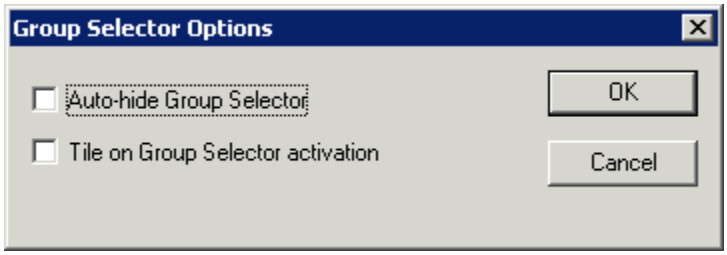
The **Terminal Interface Options** page sets the menus and hotkeys for the TermSecure User so a terminal using MultiSession will need to have a method to switch between sessions.

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.



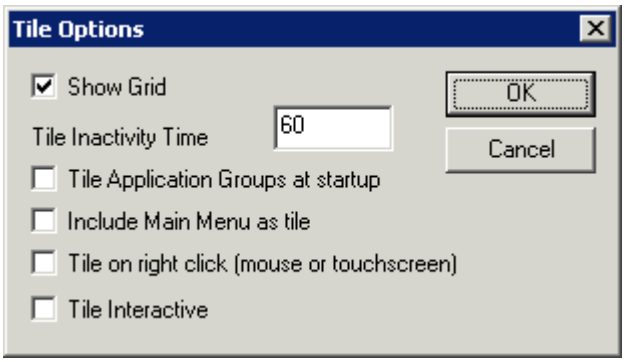
Group Selector Options Window

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 Application Groups when the auto-hid 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

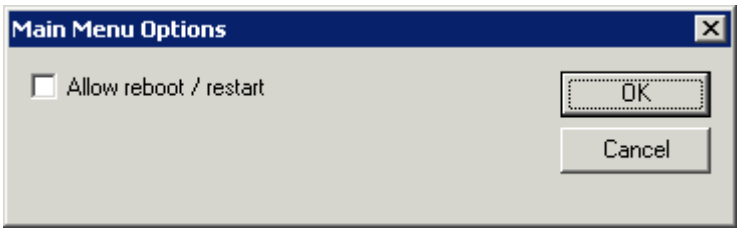
The **Tile Options** window has several settings.

- ***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 Application Groups 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.

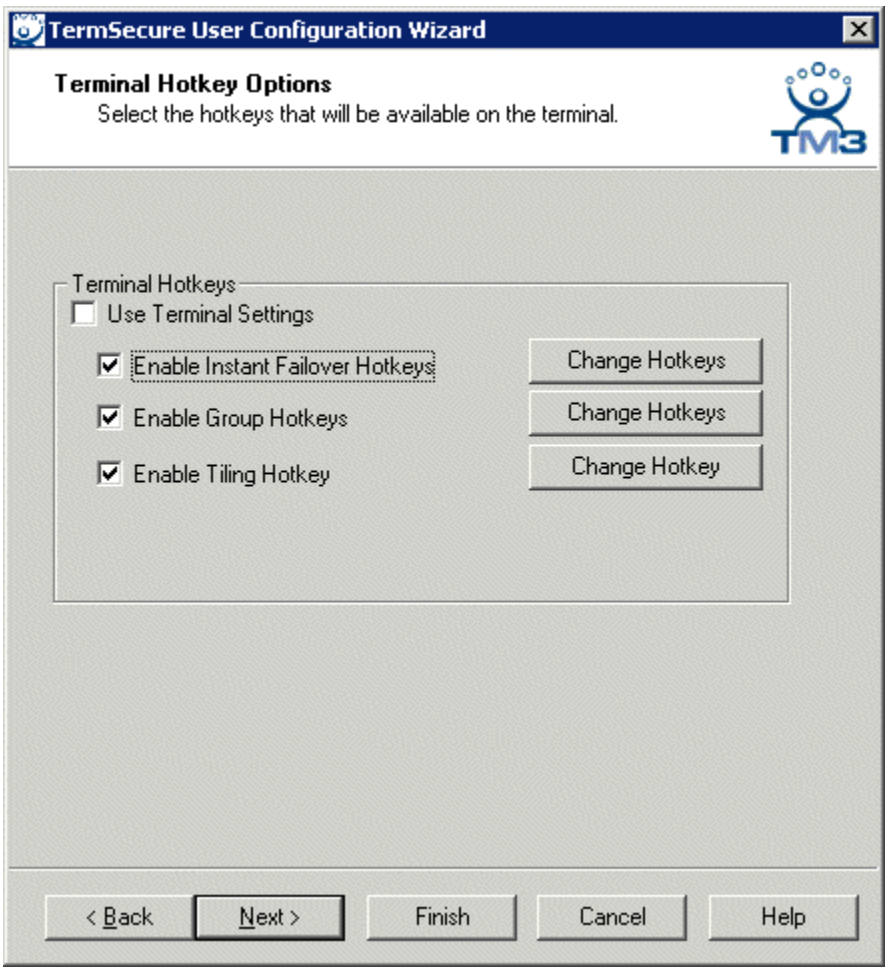


Main Menu Options Window

The Allow Reboot/Restart checkbox, if selected, will add a Reboot and Restart button to the main menu.

Terminal Hotkey Options

The next page of the **TermSecure User Configuration Wizard** is the **Terminal Hotkey Options** page.



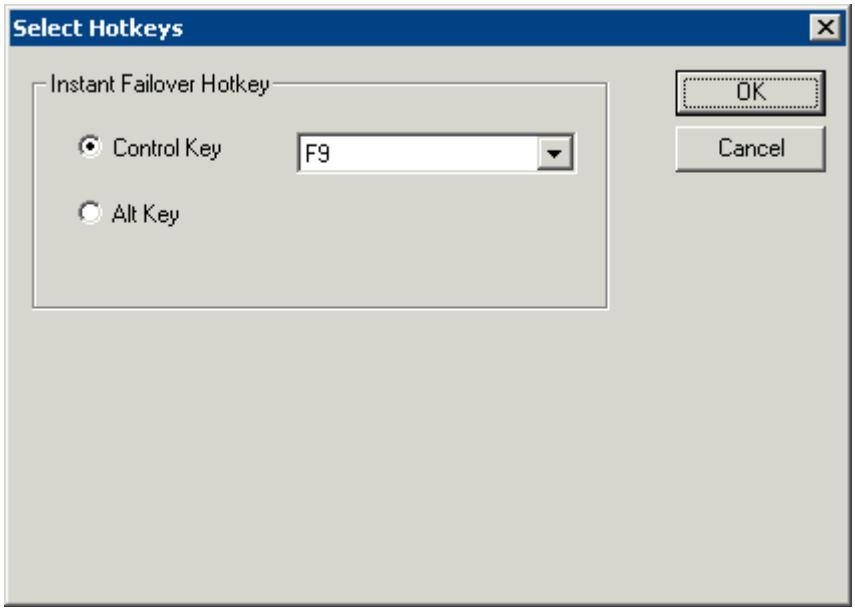
Terminal Hotkey Options

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 an Application Group 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.

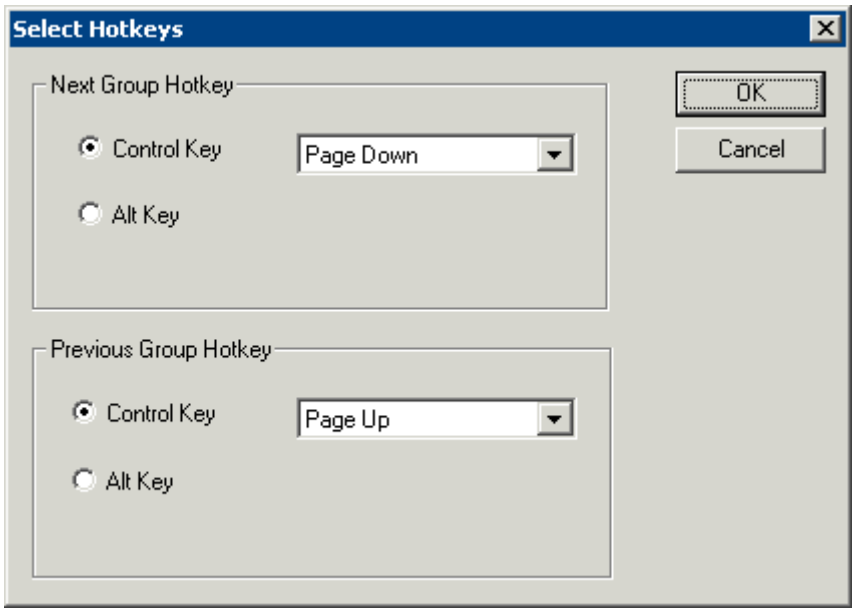
Selecting the ***Change Hotkeys*** button when ***Enable Instant Failover Hotkeys*** is selected will allow the hotkeys to be changed from the default.



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.

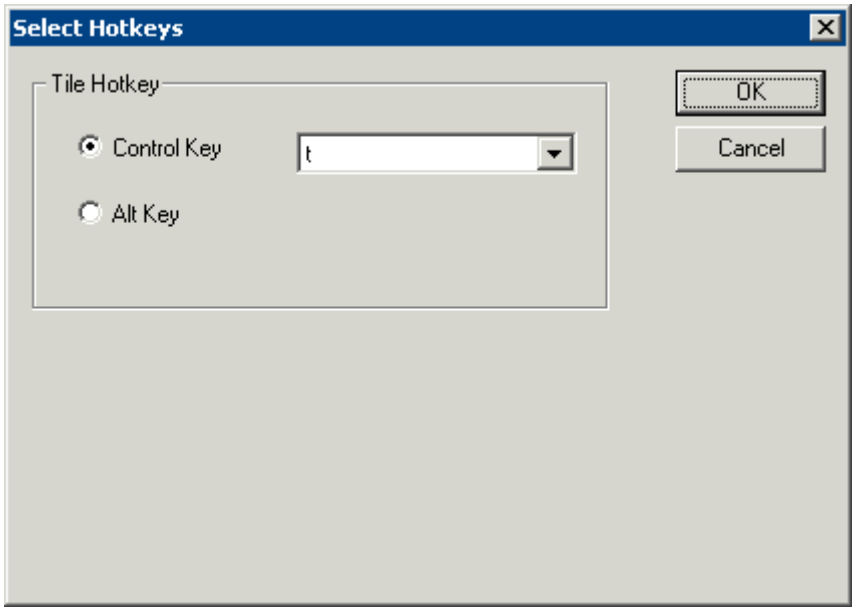
Selecting the ***Change Hotkeys*** button when ***Enable Group Hotkeys*** is selected will allow the MultiSession switching hotkeys to be changed from the default.



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.



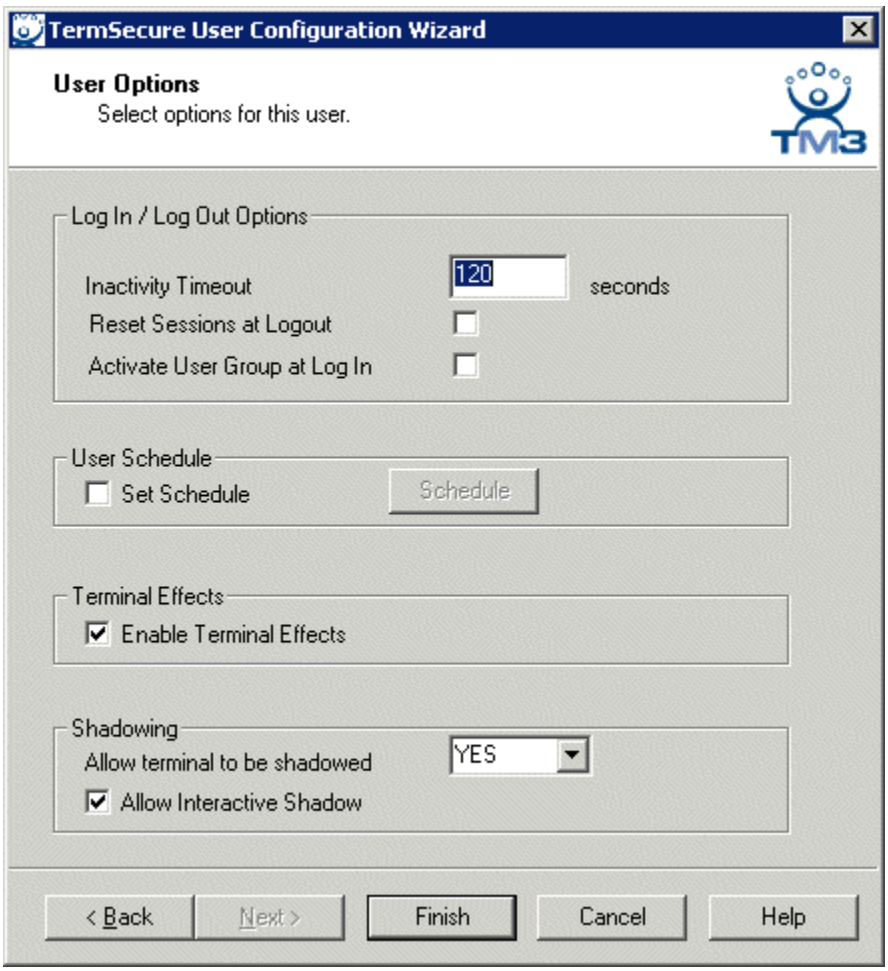
Select SessionTiling Hotkeys

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.

User Options

The final page of the **TermSecure User Configuration Wizard** is the **User Options** page.



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 Application Group 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.

18.5. TermSecure Users Group Configuration Wizard

TermSecure Users can be organized into TermSecure User Groups, just as Terminals can be organized into Terminal Groups. This Section will show the configuration of a TermSecure User Group.

The **TermSecure Users Group Configuration Wizard** can be launched by right clicking on the **TermSecure User**s branch of the tree and selecting ***Add TermSecure User Group***.

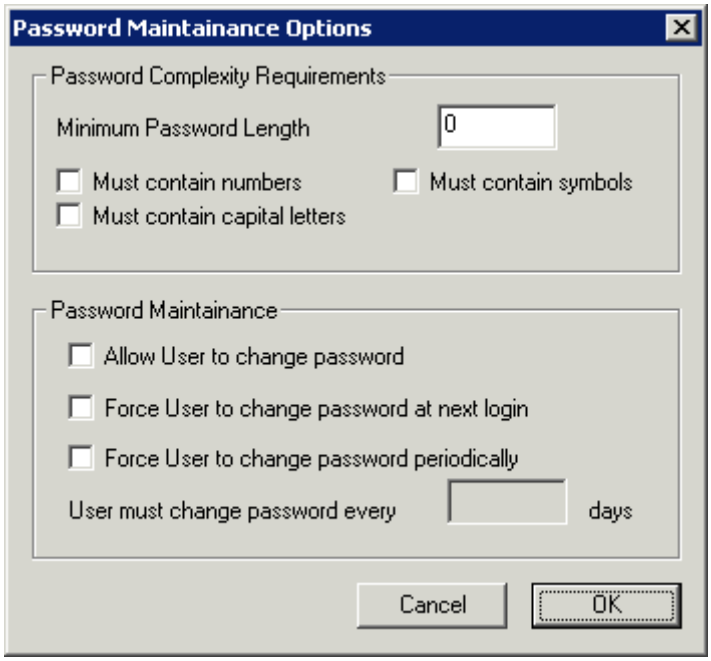
TermSecure User Group Information

The first page of the **TermSecure Group Configuration Wizard** is the **TermSecure User Group Information** page.

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.
- **Password** - This field is unused since each TermSecure User will login as a separate entity.
- **Verify Password** This field is unused.
- **Password Options** - This button launches the **Password Maintenance Options** window that regulates rules for the ThinManager User password.
- **Group Setting** - This checkbox, if selected, applies this configuration to all members of the group.



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.

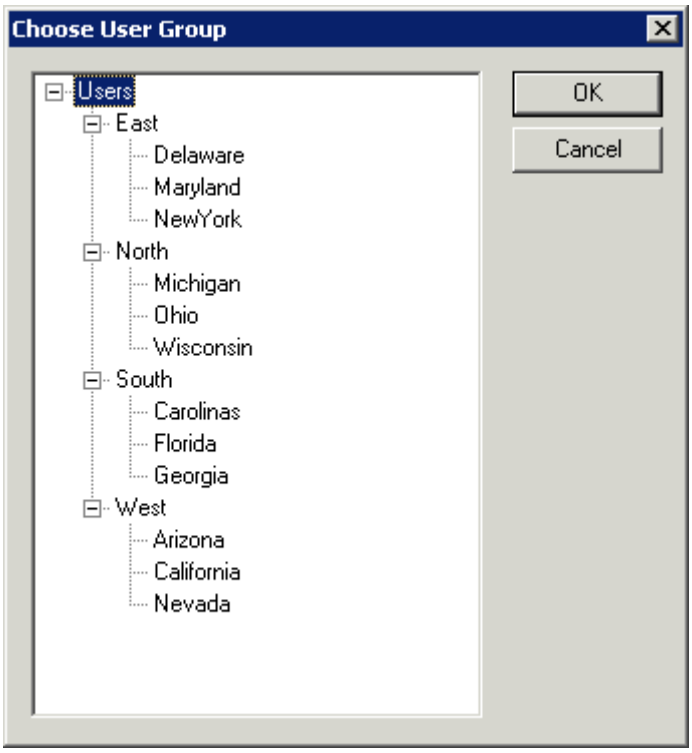
Password Maintenance:

- ***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 TermSecure Users Group 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 Group to another TermSecure Users Group, highlight the desired TermSecure Users Group and select the ***OK*** button.
- To move the TermSecure User Group to a different TermSecure Users Group, highlight the desired TermSecure Users Group and select the ***OK*** button.
- To remove the TermSecure User Group 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.

Select ***Next*** to continue.

TermSecure Group - Application Group Selection

The next page of the **TermSecure Group Configuration Wizard** is the **Application Group Selection** page.

Application Group Selection

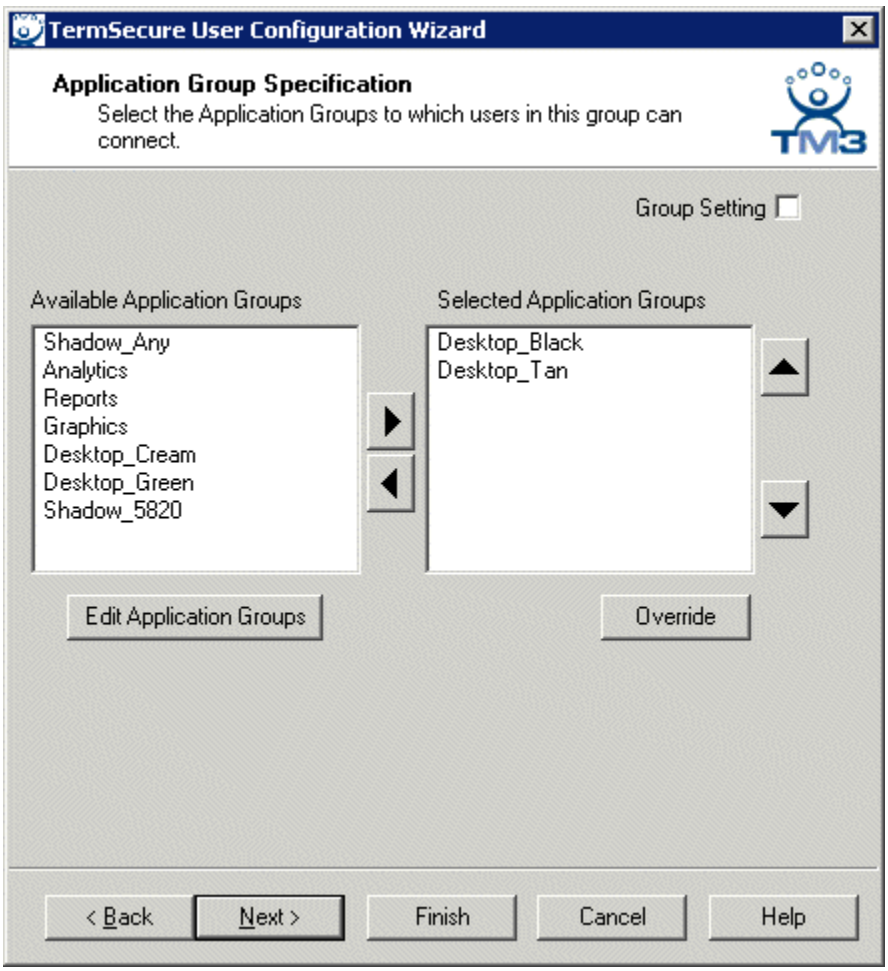
The Application Group Selection page allows Application Groups to be assigned to the TermSecure User. When the TermSecure User logs onto a terminal, These Application Groups will be available on the terminal for him.

- ***Add User specific Application Groups?*** - This setting, if set to ***Yes***, will allow the selection of Application Groups for the TermSecure User that will be added to the terminal when the TermSecure User logs in top the terminal.
- **Group Setting** - This checkbox, if selected, applies this configuration to all members of the group.

Select the ***Next*** button to continue with the configuration.

TermSecure Group - Application Group Specification

The next page of the **TermSecure Group Configuration Wizard** is the **Application Group Specification** page.



Application Group Specification Page

The **Application Group Specification** page allows Application Groups to be assigned to the TermSecure User Group if the ***Add User specific Application Groups?*** radio button is set to ***Yes***.

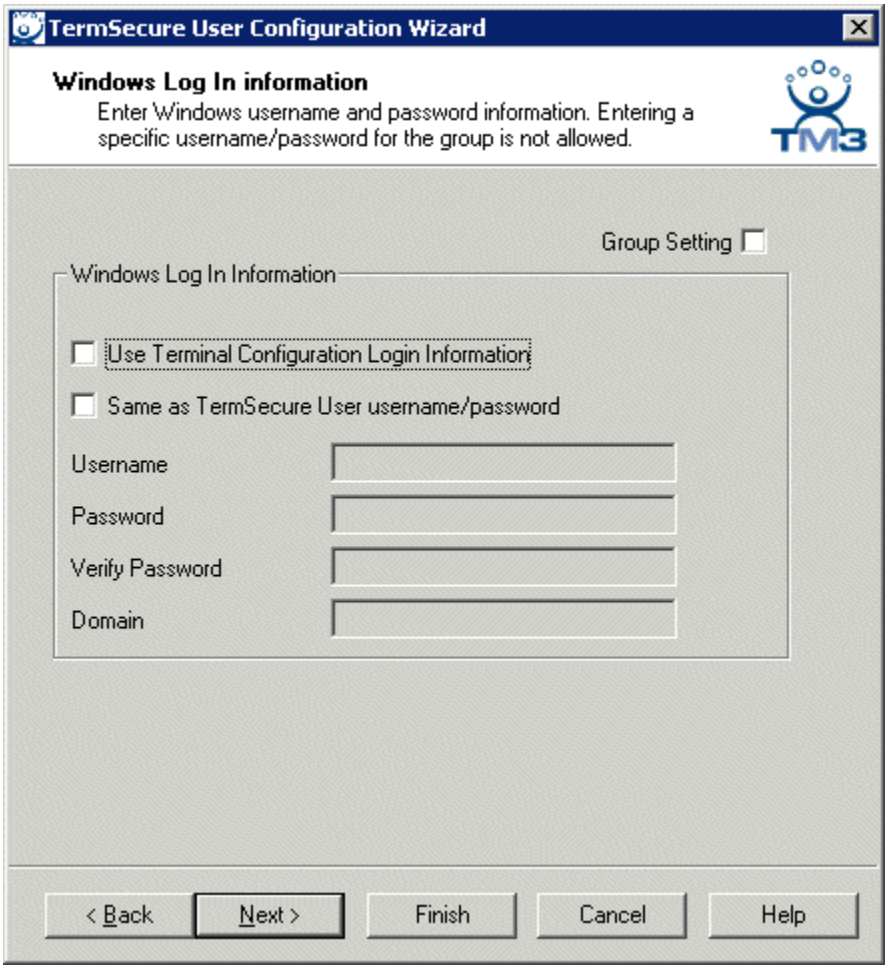
Move the Application Groups you want the TermSecure User Group into the ***Selected Application Groups*** list by double-clicking on it in the ***Available Application Groups*** list or by highlighting it and clicking the ***Right Arrow*** button.

To add a new Application Group, select the ***Edit Server Groups*** button to launch the Application Group Wizard. See Application Group List for details.

Select the ***Next*** button to continue with the configuration.

TermSecure Group - Windows Login Information

The next page of the **TermSecure Group Configuration Wizard** is the **Windows Log In Information** page.



Windows Login Information

The **Windows Log In Information** page allows the configuration of how the members of the TermSecure User Group will log on to the Windows terminal servers.

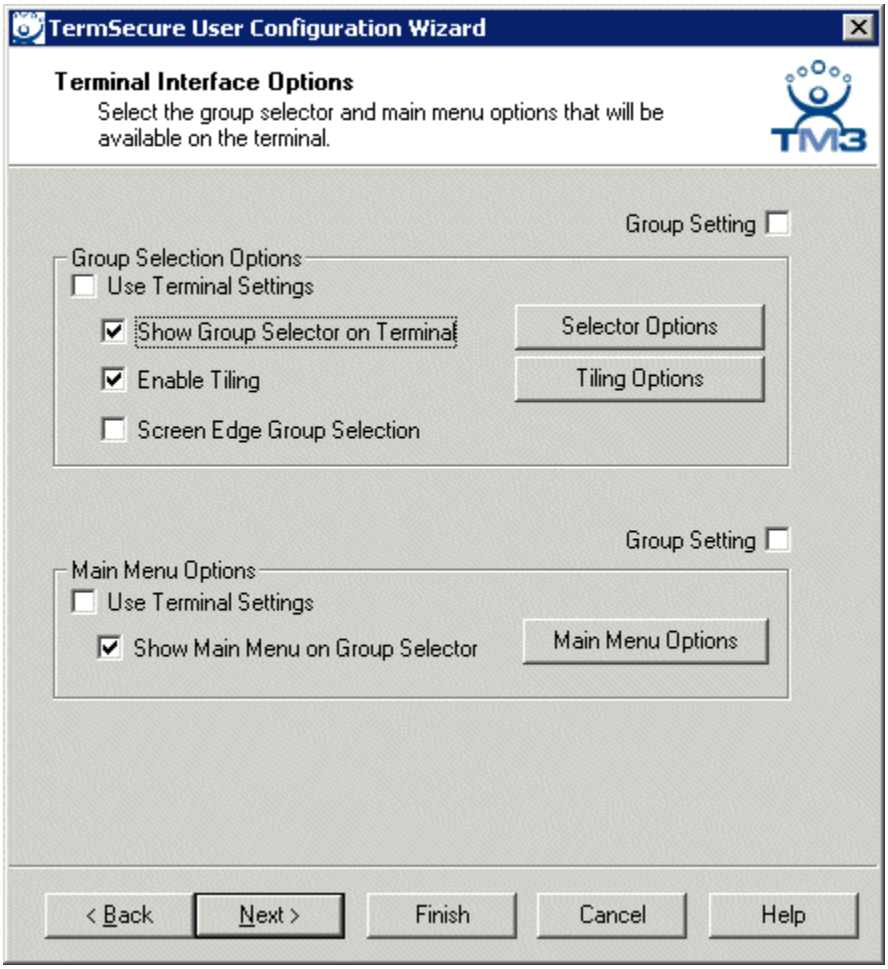
There are several Windows login options for the TermSecure User Group.

1. The members of the TermSecure User Group 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 members of the TermSecure User Group 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.
3. The members of the TermSecure User Group can use a separate username and password to auto-log on to the terminal server. Because each user should logon with a unique user name and password, the ***Username***, ***Password***, ***Verify Password*** and ***Domain*** fields are inactive for the members of the TermSecure User Group.
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.

TermSecure Group - Terminal Interface Options

The next page of the **TermSecure Group Configuration Wizard** is the **Terminal Interface Options** page.



Client Interface Options

The **Terminal Interface Options** page sets the menus and hotkeys for the TermSecure User because a terminal using MultiSession will need to have a method to switch between sessions.

Group Selector Options allow on-screen switching of sessions.

Group Setting - This checkbox, if selected, applies this configuration to all members of the group.

Use Terminal Settings - This checkbox, when selected, will let the TermSecure User inherit the hotkeys 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.
- ***Screen Edge Group Selection*** - This checkbox, if selected, will activate a feature that will switch windows if the mouse is moved off screen.
- ***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.

- ***Selector Options*** - This button, if selected, will launch the Group Selector Options window as described in XXX.
- ***Tiling Options*** - This button, if selected, will launch the **Tile Options** window as described in XXX.

Main Menu Options configures the TermSecure Main Menu.

Group Setting - This checkbox, if selected, applies this configuration to all members of the group.

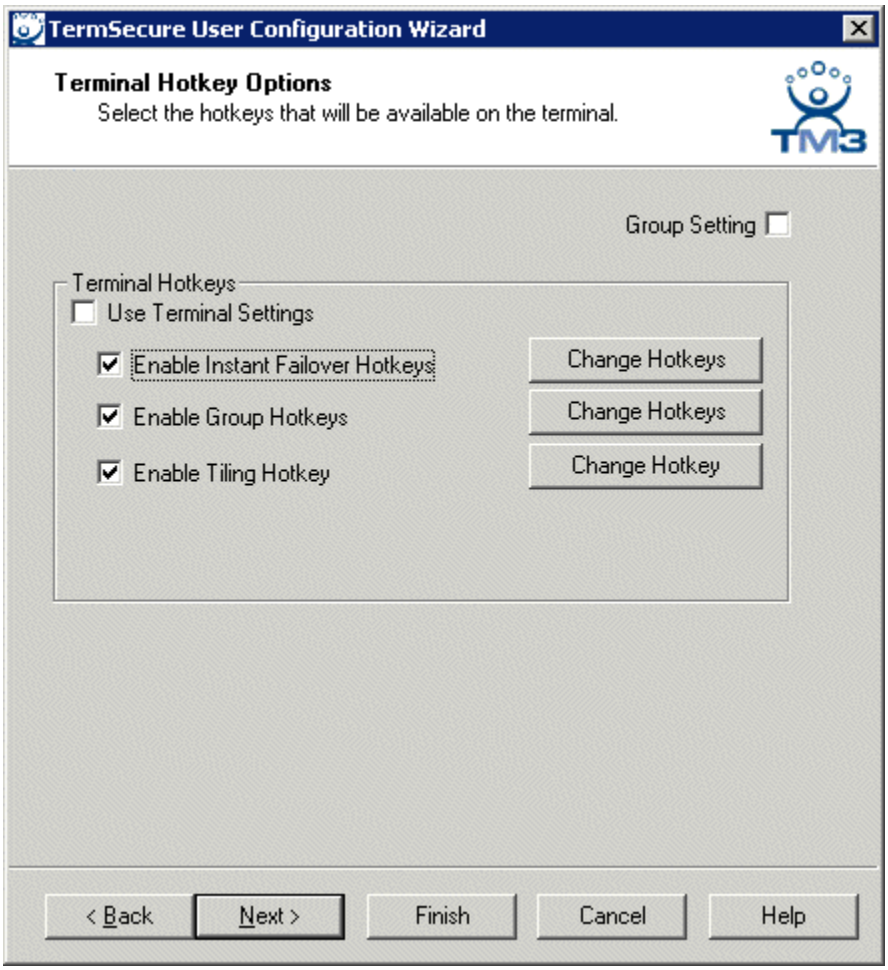
Use Terminal Settings - This checkbox, when selected, will let the TermSecure User inherit the hotkeys that were configured for use with the terminal.

- ***Show Main Menu on Group Selector*** – This checkbox, if selected, will agg the Main Menu as an option on the group selector drop-down.
- The ***Main Menu Options*** button will launch the **Main Menu Options** window that allows configuration of the TermSecure Main Menu.

Select the ***Next*** button to continue with the configuration.

TermSecure Group - Hotkey Options

The next page of the **TermSecure Group Configuration Wizard** is the **Terminal Hotkey Options** page.



Terminal Hotkey Options

Terminal Hotkeys on the **Terminal Hotkey Configuration** page allows the selection of keyboard combinations that allow switching between sessions.

Group Setting - This checkbox, if selected, applies this configuration to all members of the group.

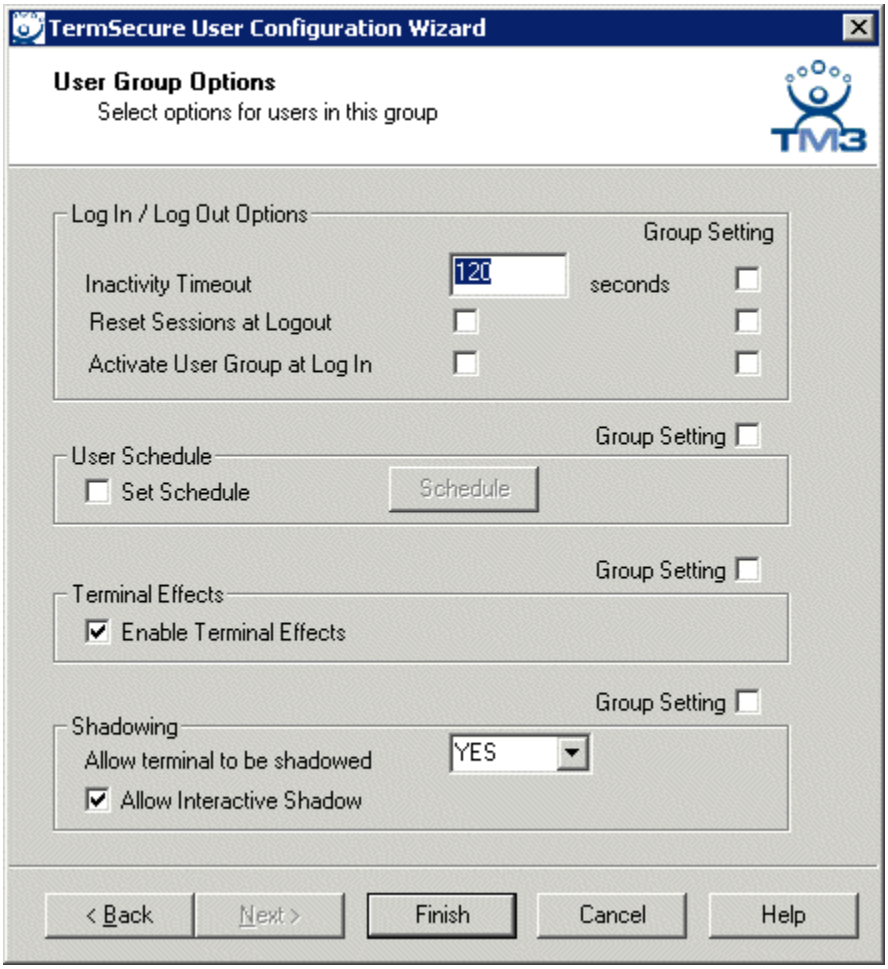
Use Terminal Settings - This checkbox, when selected, will let the TermSecure User inherit the properties that were configured for use with the terminal.

- ***Enable Instant Failover Hotkeys*** - This checkbox, if selected, allows the hot key switching between the two active sessions of an Application Group 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 as described in XXX.

TermSecure Group - User Options

The next page of the **TermSecure Group Configuration Wizard** is the **TermSecure User Group Information** page.



User Group Options

The **User Group Options** page has settings that configure several features.

Log In / Log Out Options

- **Group Setting** - This checkbox, if selected, applies this configuration to all members of the group.
- ***Inactivity Timeout*** - TermSecure will log a member of the TermSecure Users Group off the terminal after this much inactive time has passed. Setting this to "**0**" will prevent it from logging off.
- ***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 Application Group when the user logs in to the terminal.

User Schedule

- **Group Setting** - This checkbox, if selected, applies this configuration to all members of the group.
- ***Set Schedule*** -Selecting the ***Schedule*** button will launch the **Event Schedule** window and allow a schedule to be created for terminal events.

Terminal Effects

- **Group Setting** - This checkbox, if selected, applies this configuration to all members of the group.
- ***Enable Terminal Effects*** - This enables terminal effects that currently include sliding windows and rollup message boxes.

Shadowing

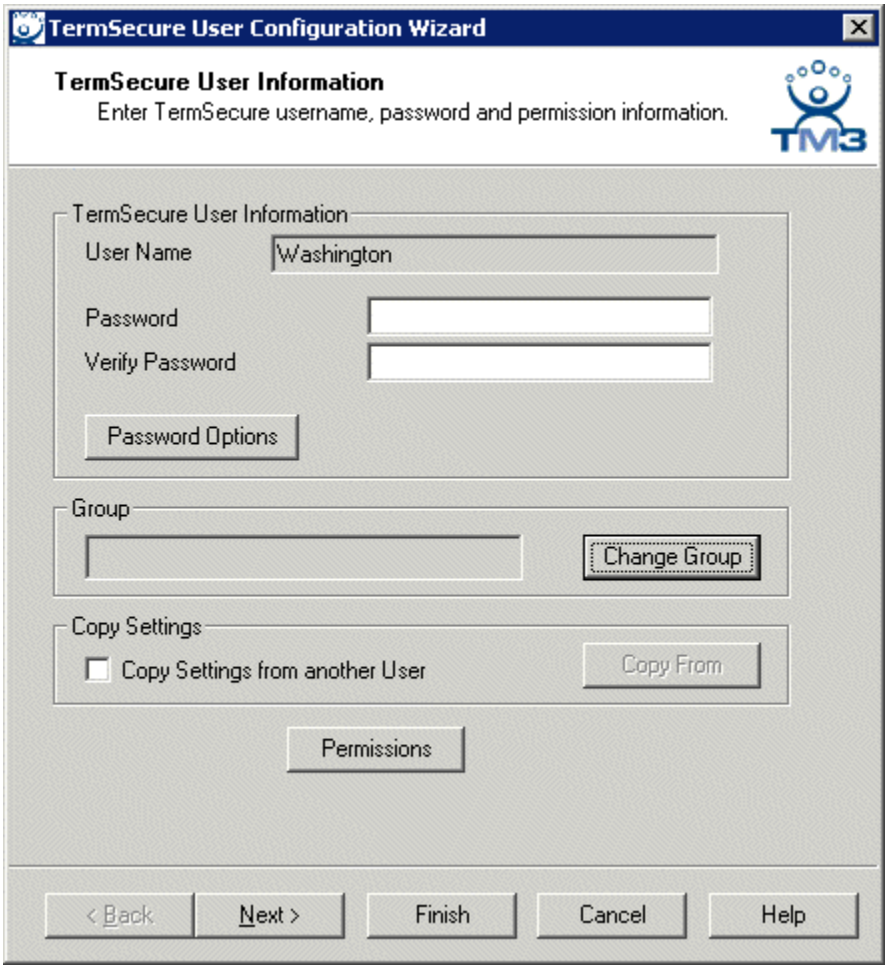
- **Group Setting** - This checkbox, if selected, applies this configuration to all members of the group.
- ***Allow terminal to be shadowed*** - This drop-down box allows the configuration of Shadowing Options.
    - ***No*** - Prevents the TermSecure Users from being shadowed.
    - ***Ask*** - Will 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 complete the configuration.

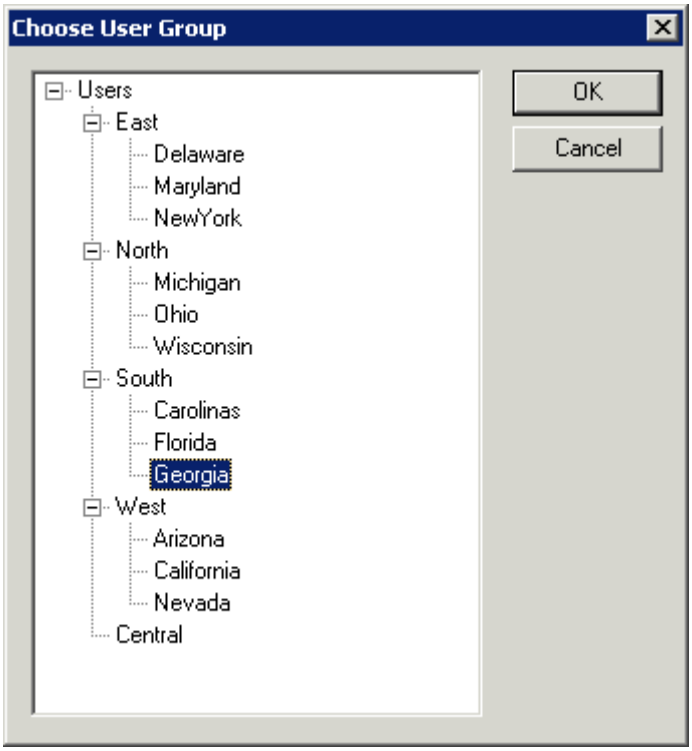
18.6. Adding a TermSecure User to the TermSecure User Group

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.



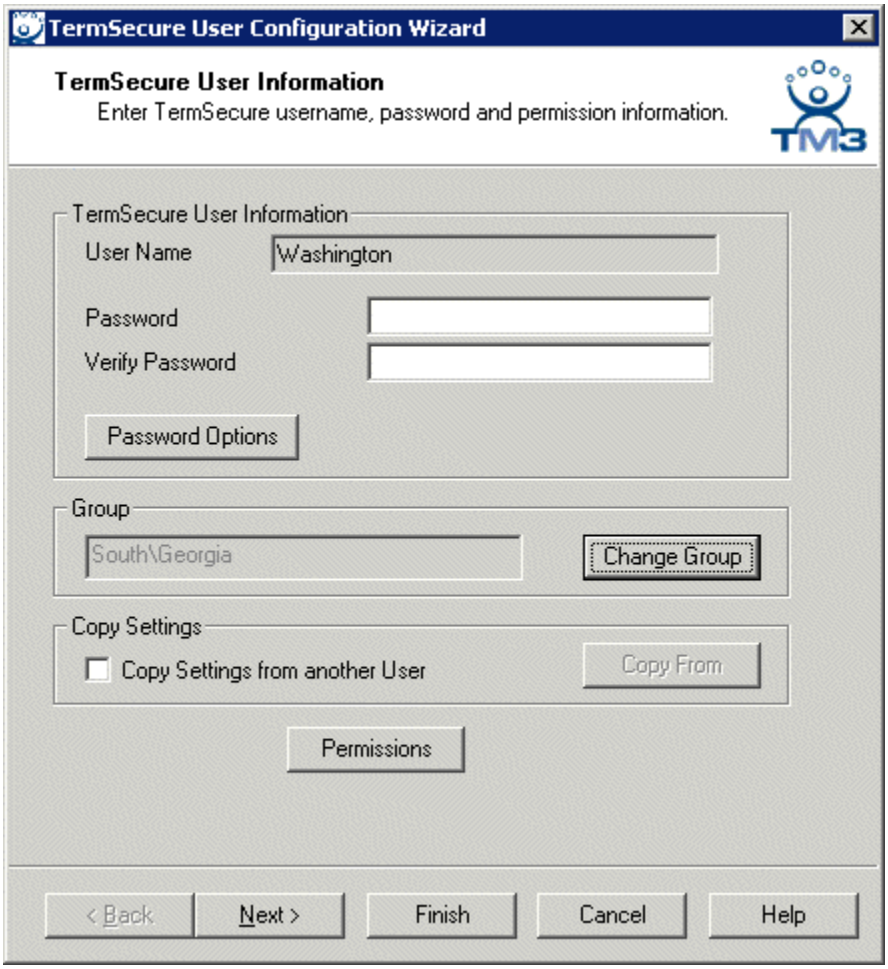
TermSecure User Information Page

Select the ***Change Group*** button. This will launch the **Choose User Group** window.



Choose User Group Window

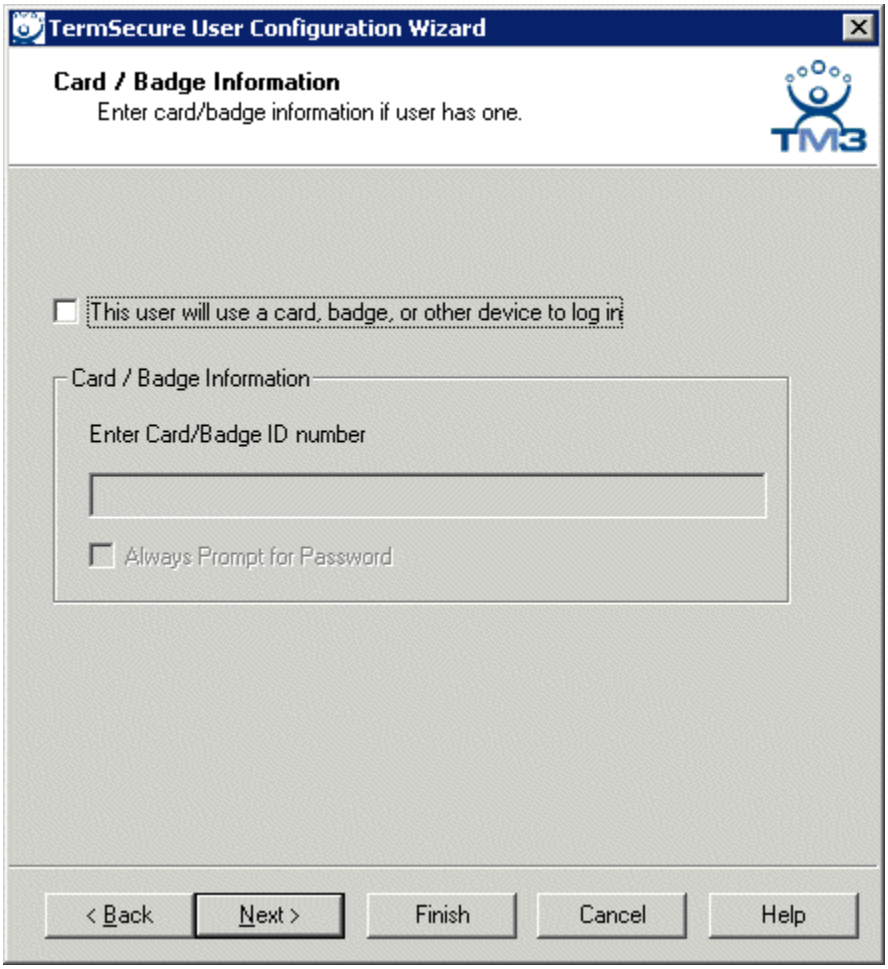
Highlight your TermSecure Users Group and select **OK**. This will accept the changes and close the window.



TermSecure User Information Page

The **TermSecure User Group** will now be displayed in the ***Group*** field.

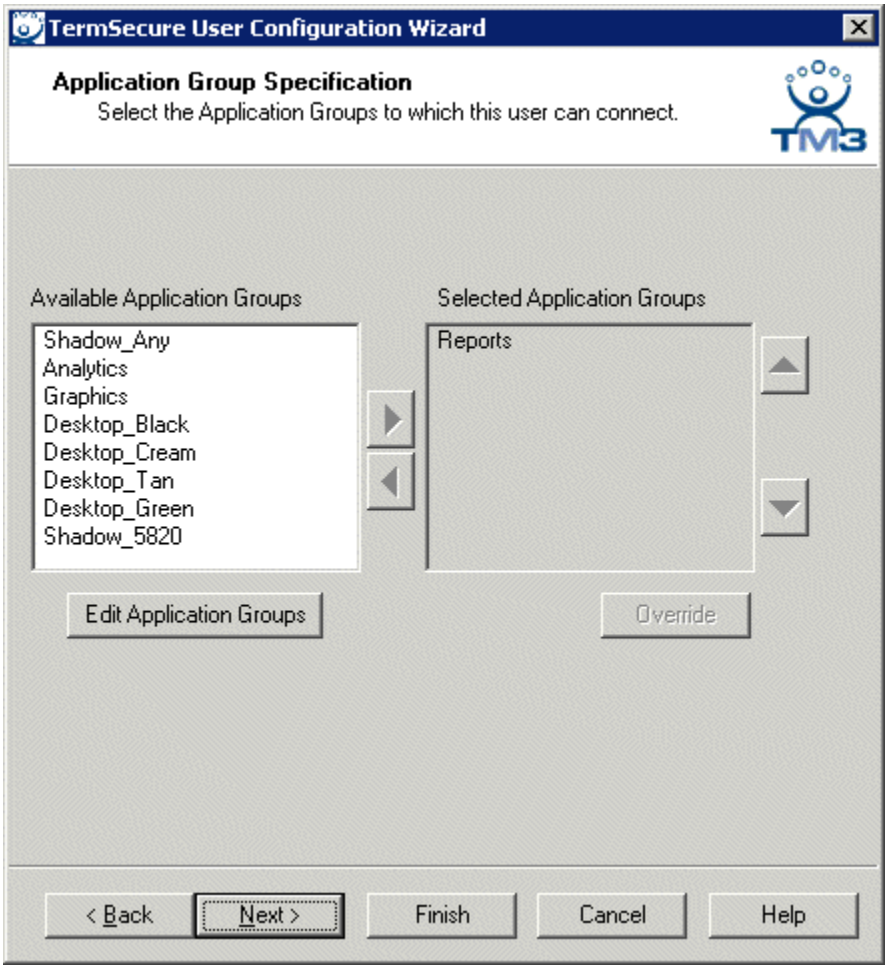
Select ***Next*** to continue.



Card/Badge Information

The Card/Badge Information options are available because these are individual settings, not group settings.

Select ***Next*** to continue.



Application Group 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.

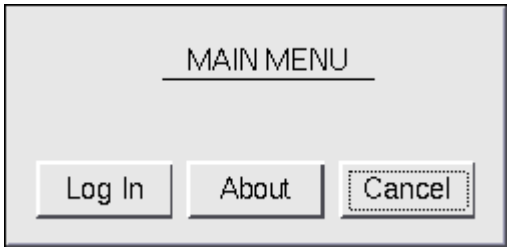
Select the ***Finish*** button to accept the configuration.

18.7. 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.

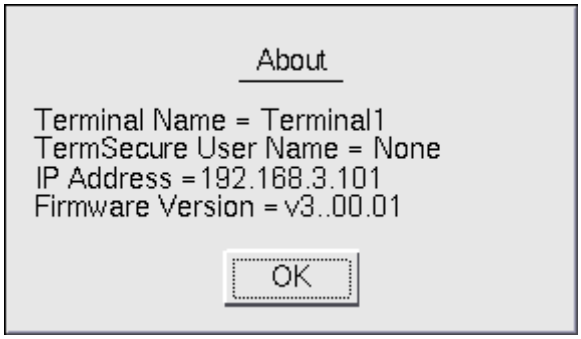
Type the default **CTL+m** or other designated hotkey at the keyboard or select from group selector

The Main Menu will be displayed on the terminal.



TermSecure Main Menu

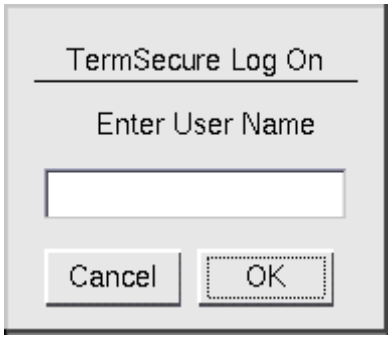
The ***About*** button to see details about the terminal.



About Menu

Select ***OK*** to close the **About** window.

Select the ***Log In*** button to login.



TermSecure Log On Screen

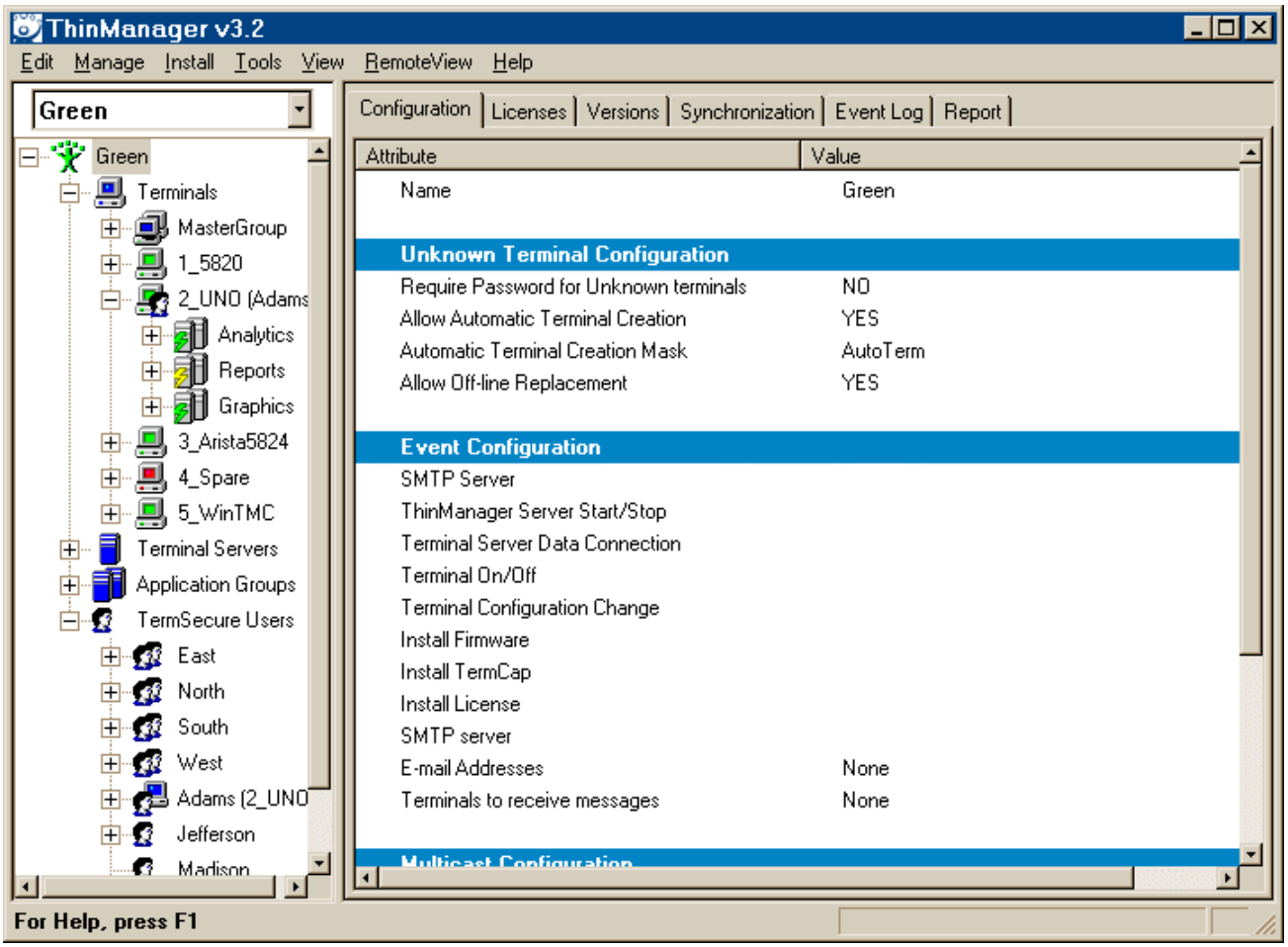
Enter your TermSecure User user name in the ***Enter User Name*** field.

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.

18.7.1. Logging Out

The TermSecure User can be logged out by:

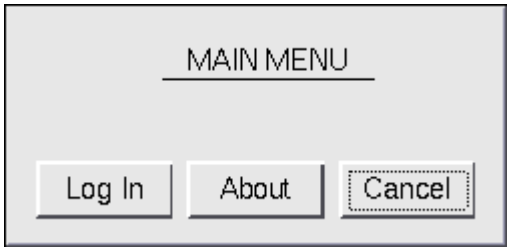
- Opening the **TermSecure Main Menu** (type ***CTL+m***) on the terminal and selecting the ***Log Off*** button.
- Right clicking on the TermSecure User in the ThinManager tree and selecting ***Logoff User***.
- Restarting or Rebooting the terminal that has a TermSecure User logged in.

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 of the TermSecure User and return to the terminal's display.

18.8. TermSecure Menu

The **TermSecure Menu** that is displayed on a terminal that allows TermSecure Users to manually log on to a ThinManager Ready terminal is configurable for use with TermSecure. This menu is generated from the terminal and not the terminal server session.

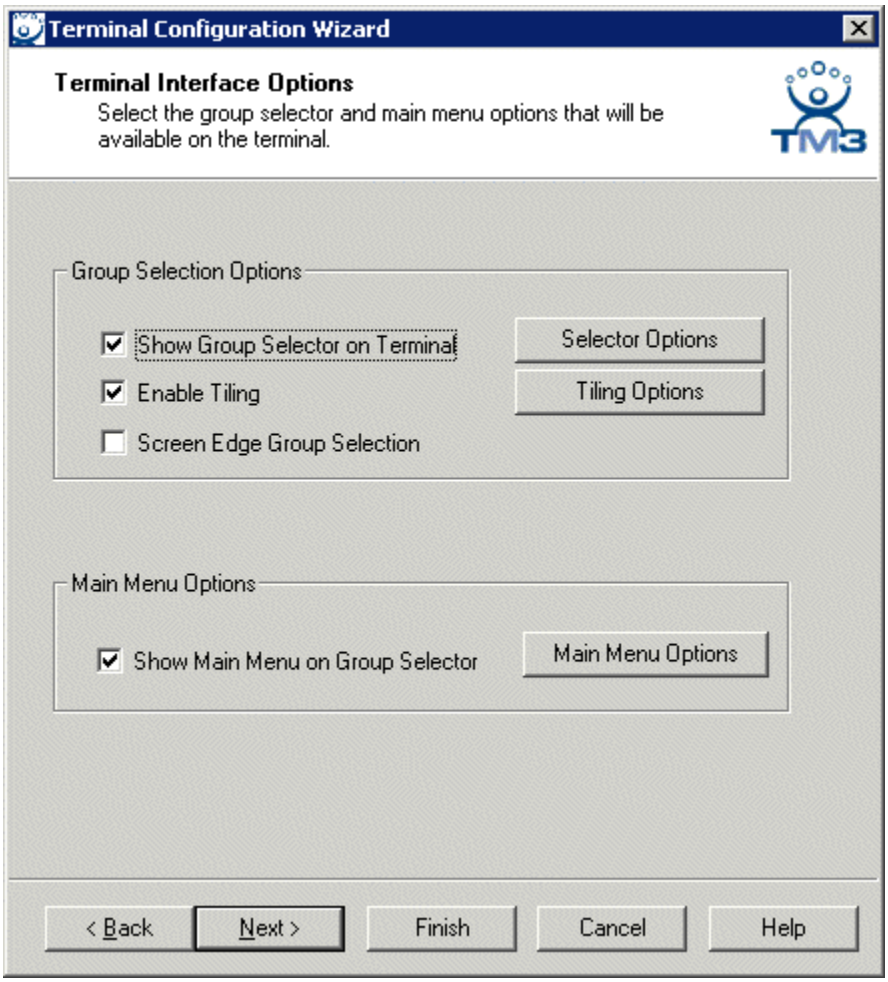


Basic TermSecure Menu

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**.

Open the **Terminal Configuration Wizard** by double clicking on the desired terminal in the ThinManager tree. Terminals using Application Groups will display the **Terminal Interface Options** page. This page will display Main Menu options when TermSecure is enabled for the terminal.

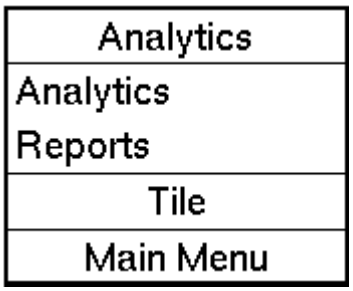


Terminal Interface Options Page

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.

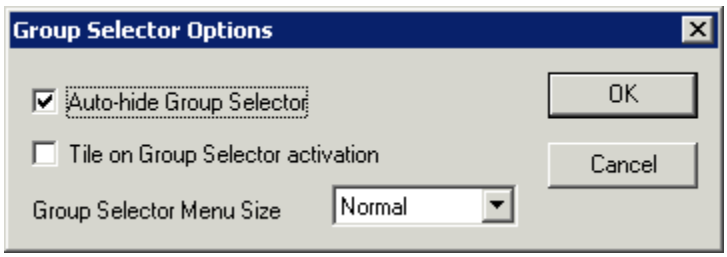
Group Selector Options allow on-screen switching of sessions.

- ***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

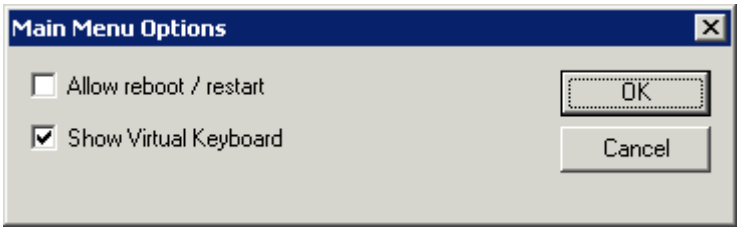
The ***Auto-hide Group Selector*** checkbox, if selected, will hide the Group Selector until the mouse is move to that space.

The ***Tile on Group Selector activation*** checkbox, when selected, will tile the Application Groups 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

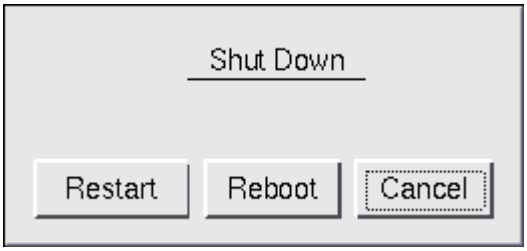
The Main Menu Options window has several settings.

- ***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

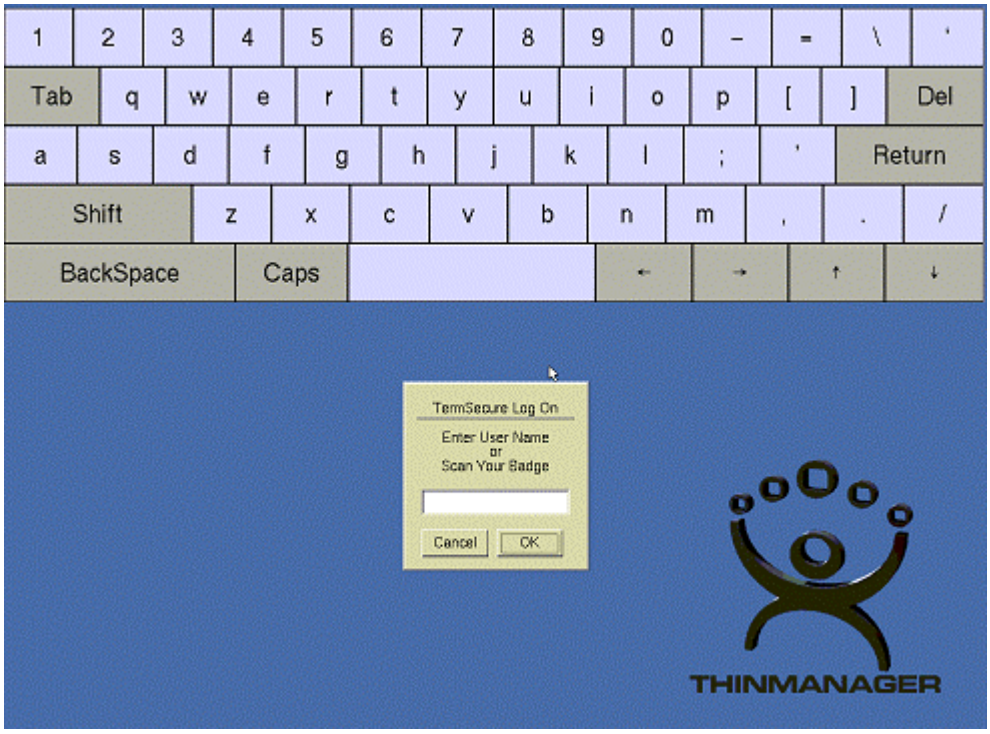
Once the user logs out, a ***Shut Down*** button will appear on the Main Menu. Selecting the ***Shut Down*** button will launch the **Shut Down Menu**.



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.



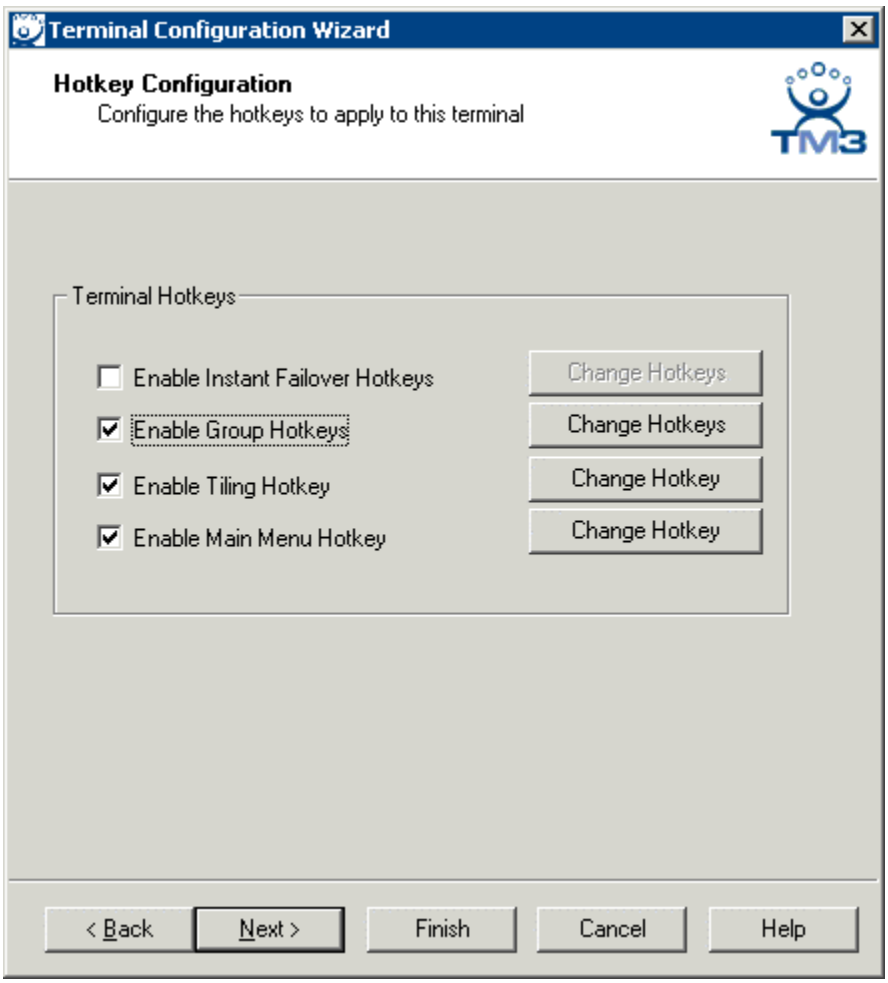
Terminal Virtual Keyboard

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.

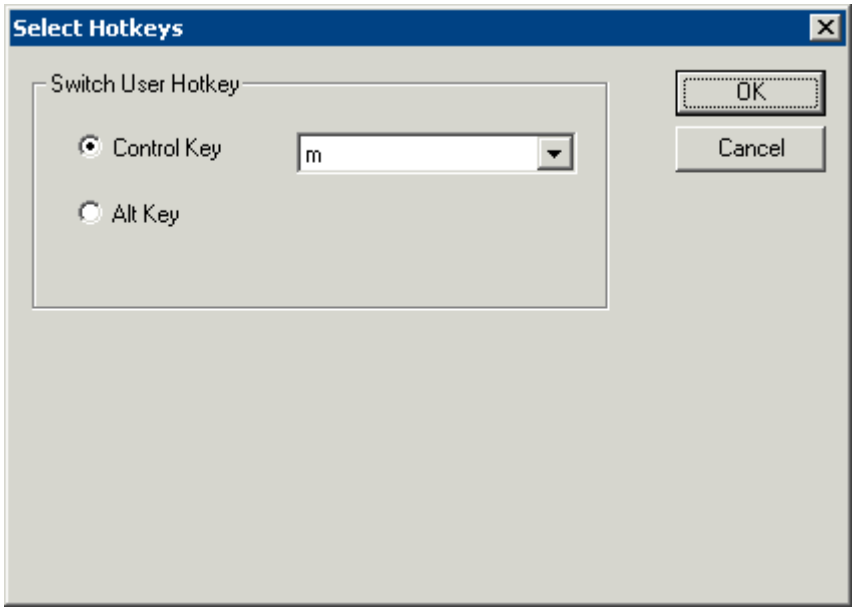
Main Menu Hotkey - Terminal Configuration Wizard

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

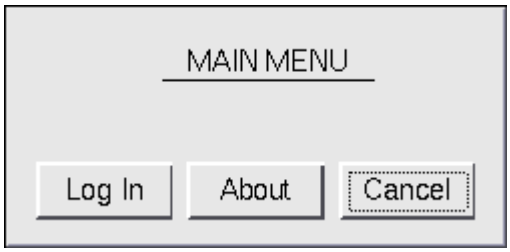
The ***Enable Main Menu Hotkey*** checkbox, when selected, will allow the TermSecure Main Menu to be launched with a hotkey combination. The Change Hotkey button allows the default ***CTL+m*** combination to be changed.



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.

19. Permissions

19.1. 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 **Application Group Wizard**, the **TermSecure User Wizard**, or the **TermSecure Users Group Wizard** to set these up.

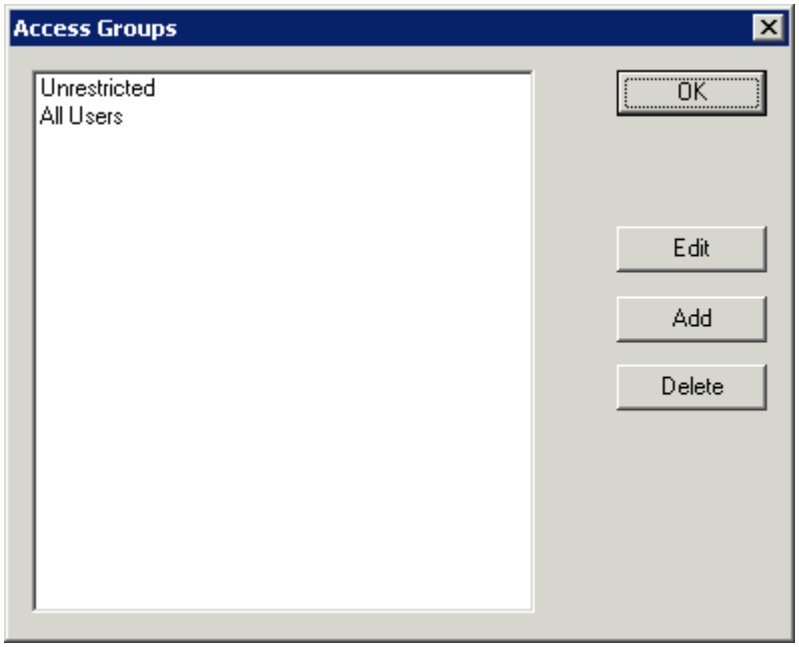
- **Terminal Permissions** is the list of named permission groups whose members may access a terminal. The **Unrestricted** group does not require a membership to access.
- **Terminal Group Permissions** is the list of named permission groups whose members may access a terminal belonging to the Terminal group. The **Unrestricted** group does not require membership to access.
- **Application Group Permissions** is a list of named permission groups whose members may access and view an Application Group. 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 an Application Group when they share membership in a TermSecure Access Group.

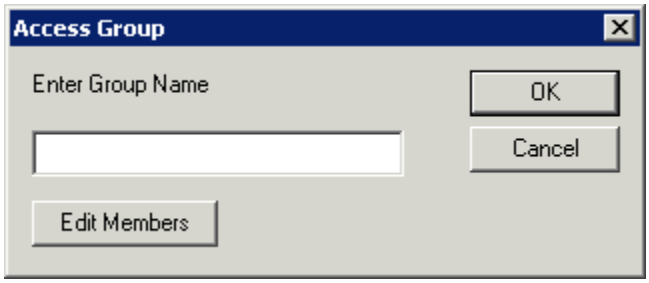
Creating a TermSecure Access Group

Selecting ***Manage > TermSecure Access Groups*** from the ThinManager menu will launch the **Access Groups** window.



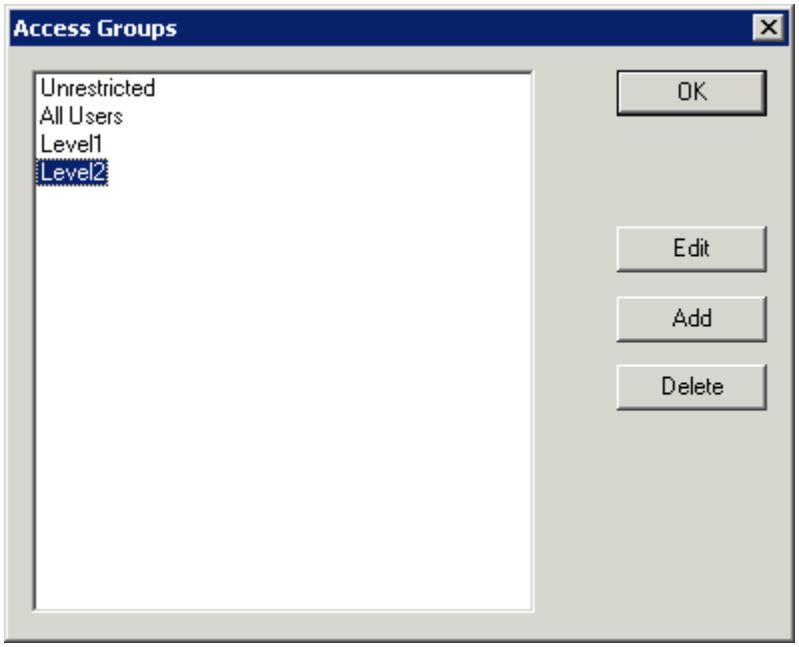
Access Groups Window with Default Groups

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.



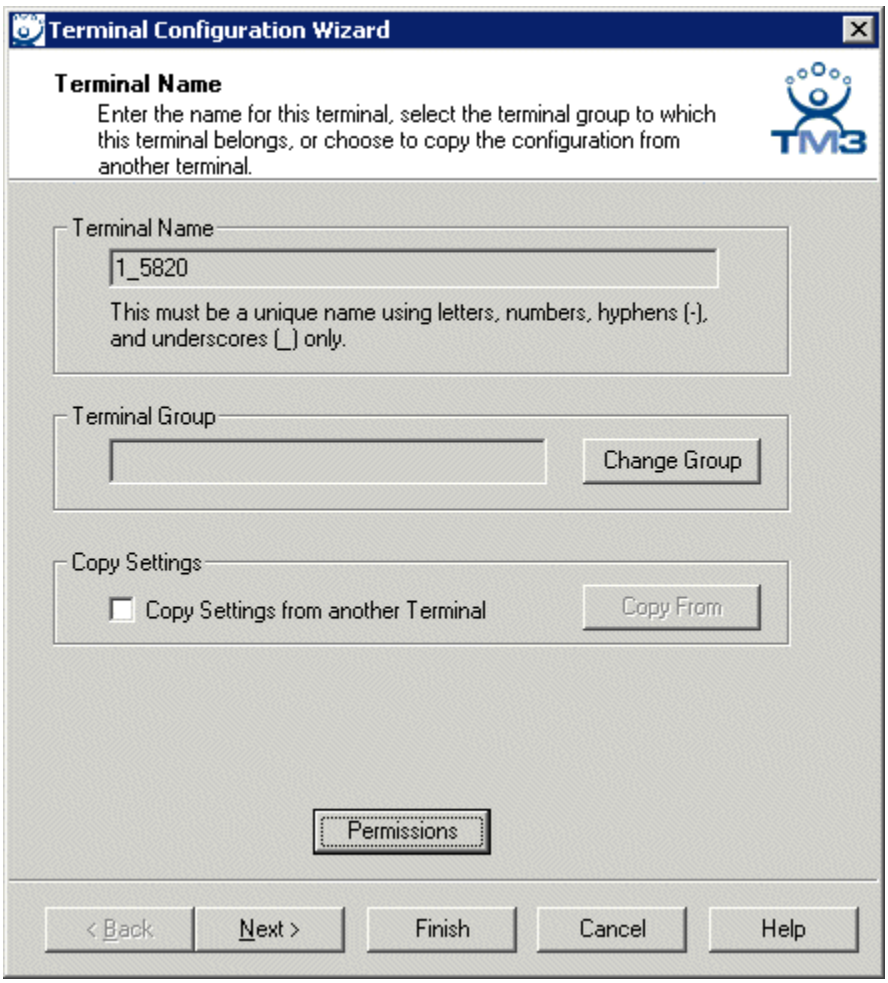
Additional TermSecure Access Groups Created

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.

19.2. Permission Groups for Terminals

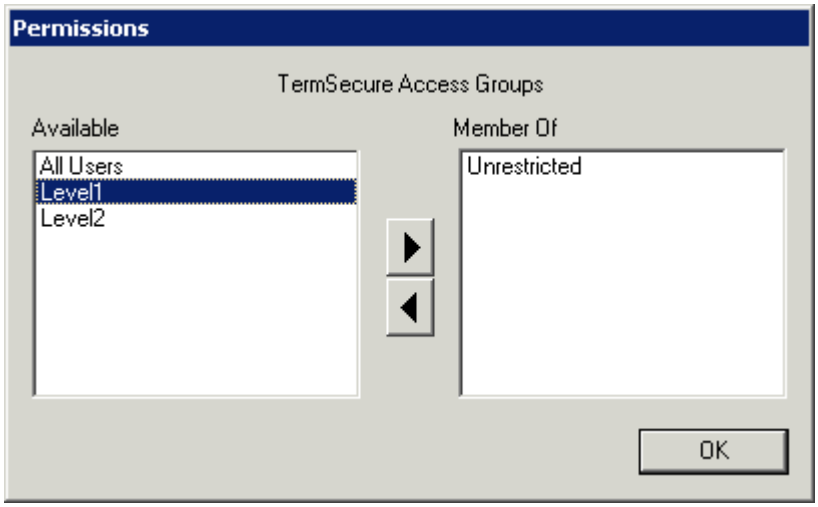
TermSecure Access Groups are assigned to a terminal on the first page of the **Terminal Configuration Wizard**.

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

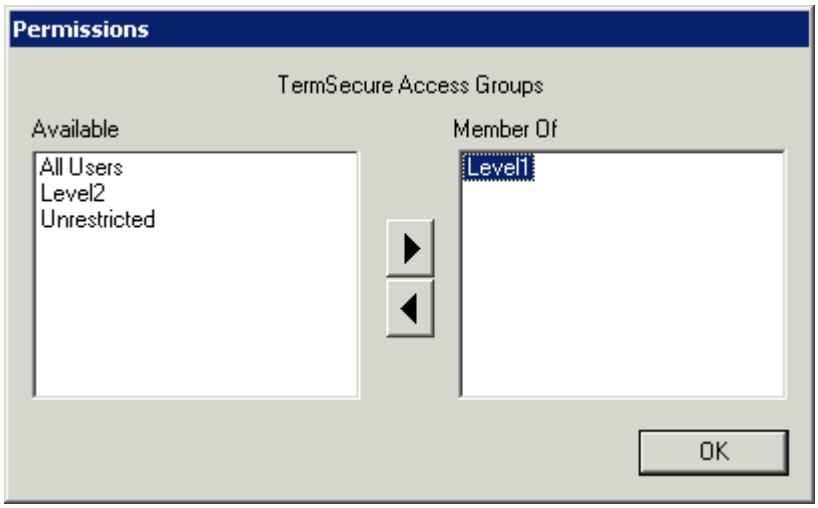
Select the ***Permissions*** button on the first page of the Terminal Configuration Wizard to launch the **Permissions** window to apply the TermSecure Access Groups to the terminal.



Permissions Window

By default, the terminal uses the **Unrestricted** access group, allowing anyone access to the Application Groups 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.

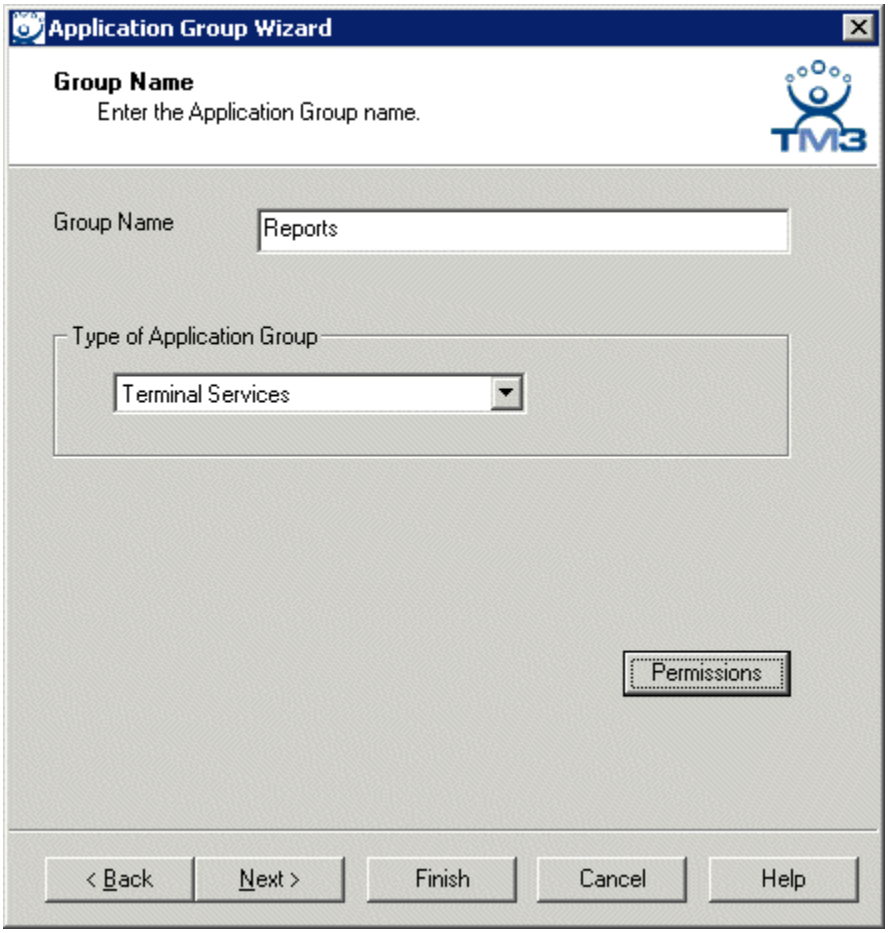
Note: Removing the Unrestricted group from a terminal and adding a different group will render the terminal functionless until a member of the group logs in.

Select ***OK*** to close the Permissions window.

19.3. Permission Groups for Application Groups

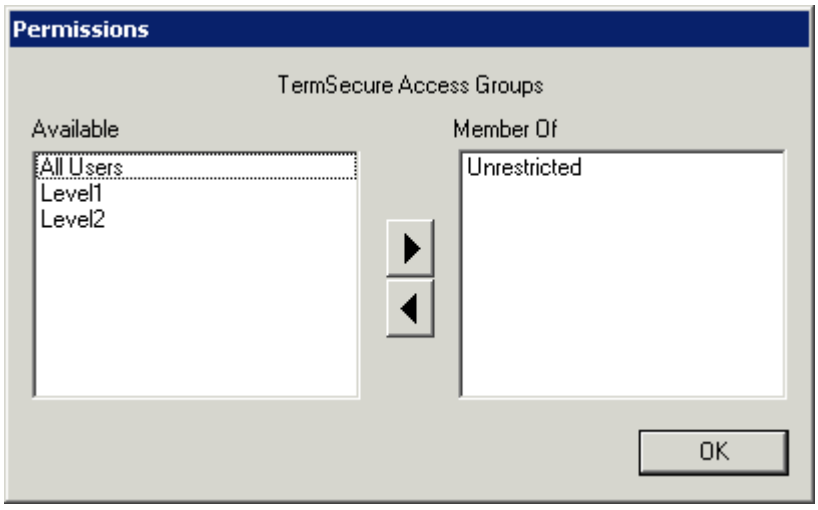
TermSecure Access Groups are assigned to an Application Group on the first page of the **Application Group Wizard**.

Open the Application Group Wizard for an existing Application Group by double clicking on it in the tree. Start the Application Group Configuration Wizard for a new Application Group by right clicking on the Application Group branch icon and selecting ***Add Application Group***.



Application Group Configuration Wizard

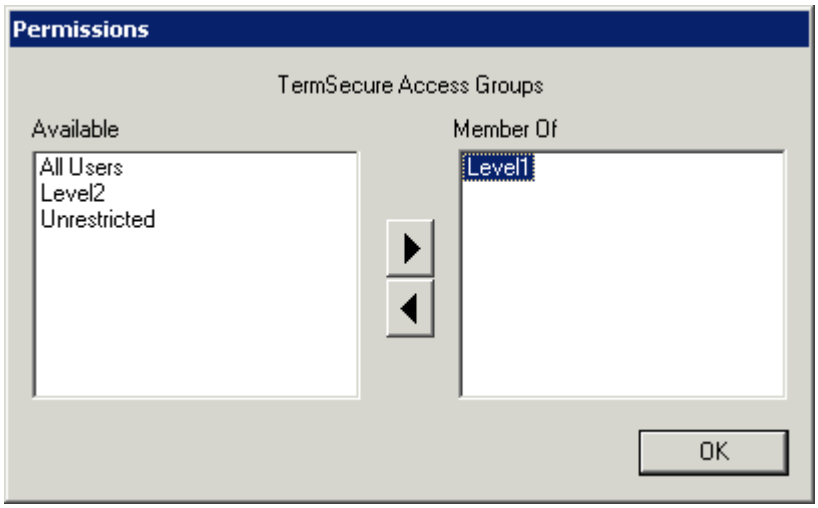
Select the ***Permissions*** button on the first page of the Application Group Configuration Wizard to launch the **Permissions** window to apply the TermSecure Access Group to the Application Group.



Permissions

By default, the Application Group 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 Application Group 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 Application Group functionless until a member of the group logs in.

Select ***OK*** to close the Permissions window.

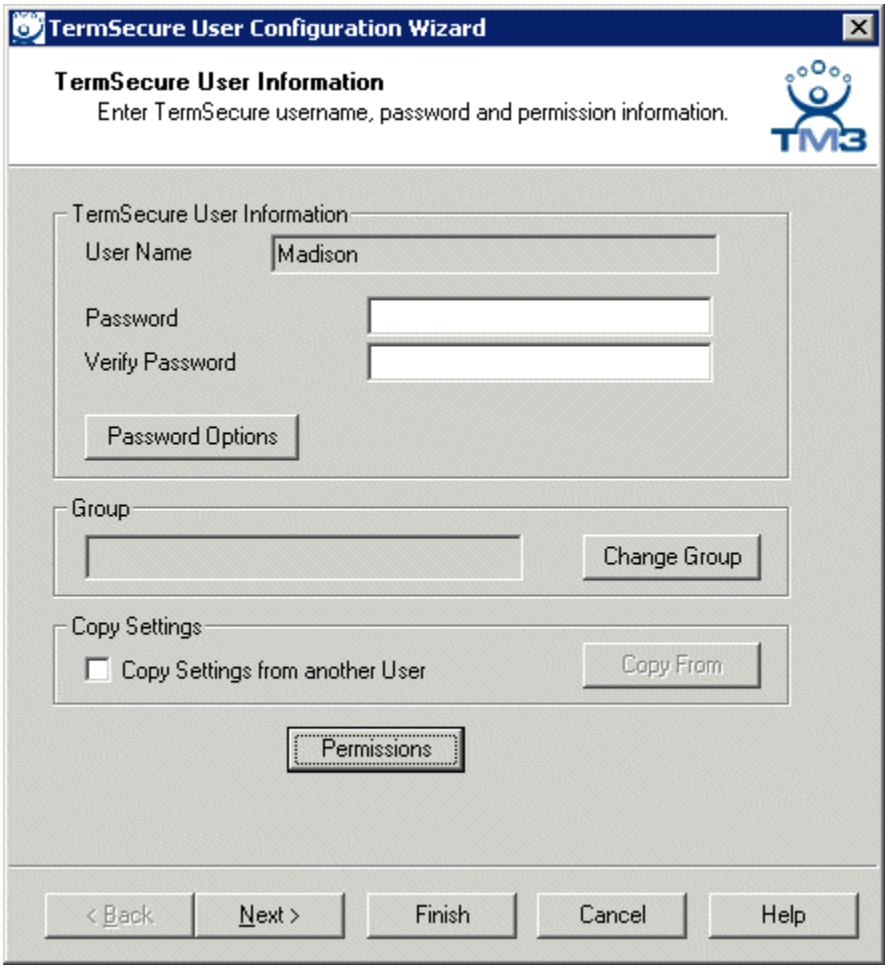
19.4. Permission Groups for TermSecure Users

TermSecure Access Group permissions can be applied to TermSecure Users.

Open the TermSecure User Configuration Wizard by double clicking on a TermSecure User icon or by right clicking on the TermSecure User branch of the ThinManager tree and selecting ***Add TermSecure User***.

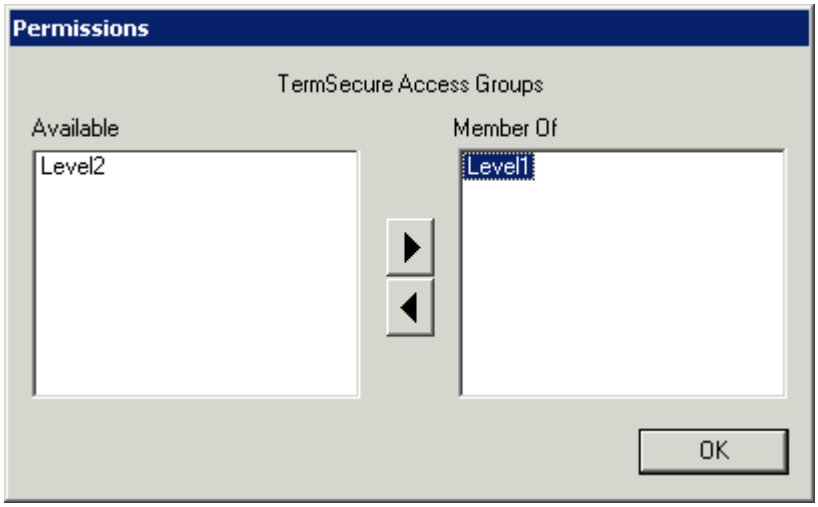
TermSecure Access Groups are configured on the first page of the wizard by selecting the ***Permissions*** button.

TermSecure User Information



TermSecure User Information

Selecting the ***Permissions*** button will open the **Permissions** window that allows the assignment of a TermSecure Access Groups.



Permissions

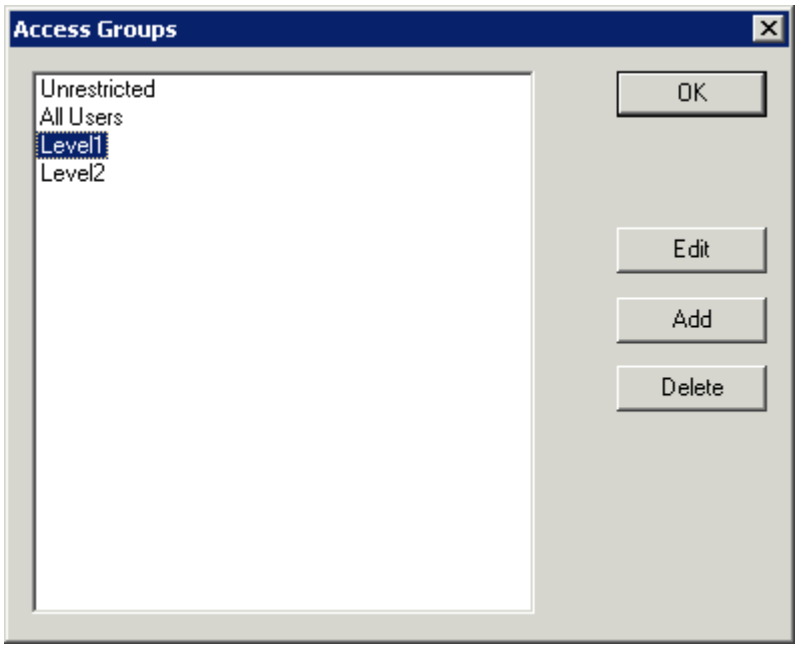
The **Permissions** window for TermSecure Users does not show the **Unrestricted** or the **All Users** groups, just the created groups. Access can be granted or denied by moving the Access Groups into or out of the **Member Of** list by double clicking or highlighting the desired group and selecting an arrow.

Select ***OK*** to close the Permissions window.

19.5. Shortcut Method of Adding TermSecure Access Groups

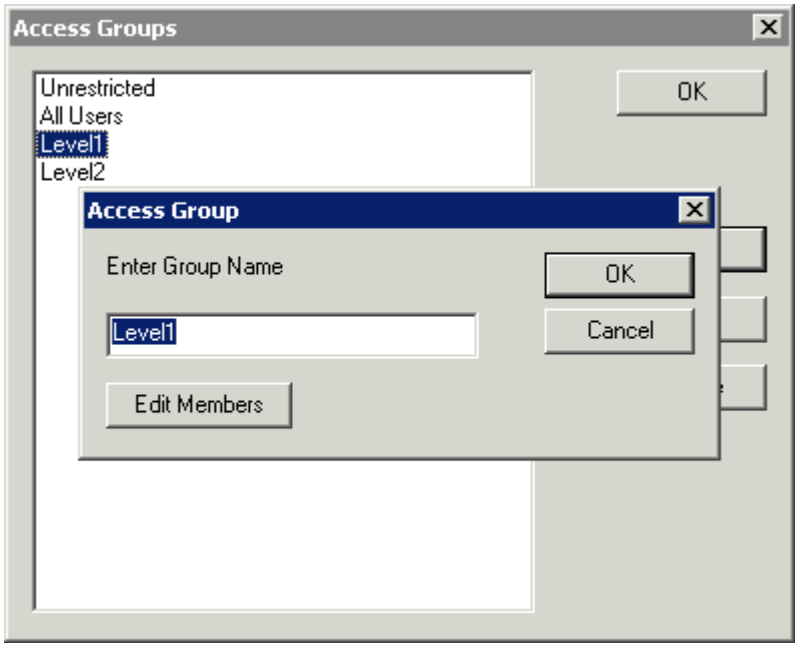
Members can be added to TermSecure Access Groups quickly through the TermSecure Access Group Wizard.

Open the TermSecure Access Group Wizard by selecting ***Manage > TermSecure Access Groups*** from the ThinManager menu. This will launch the Access Groups window.



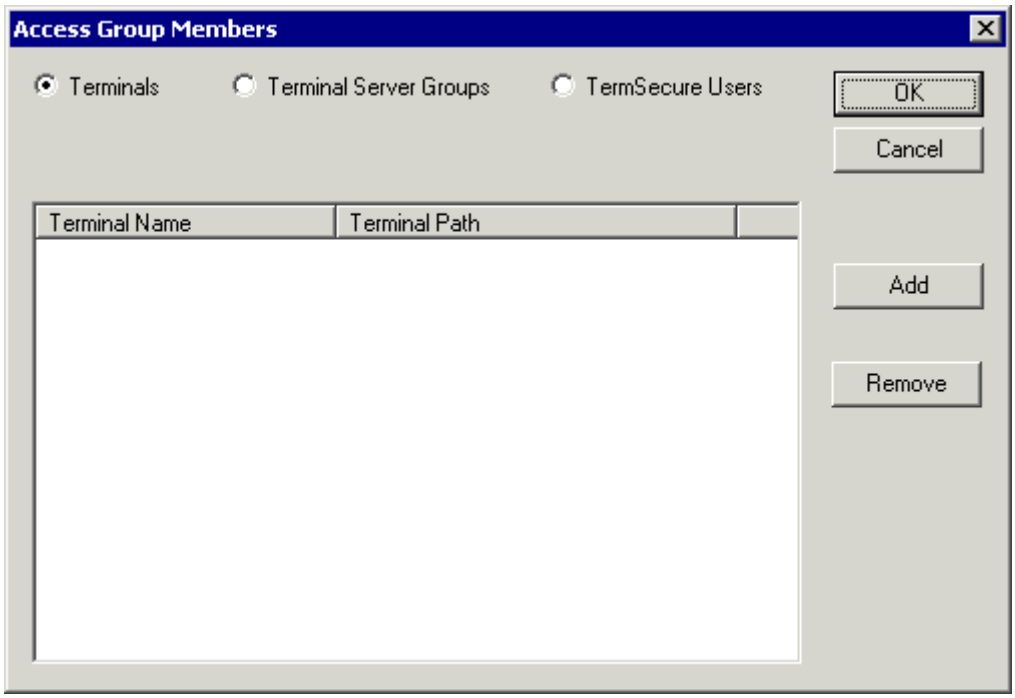
Access Groups Window

Highlight the desired TermSecure Access Group and select the ***Edit*** button.



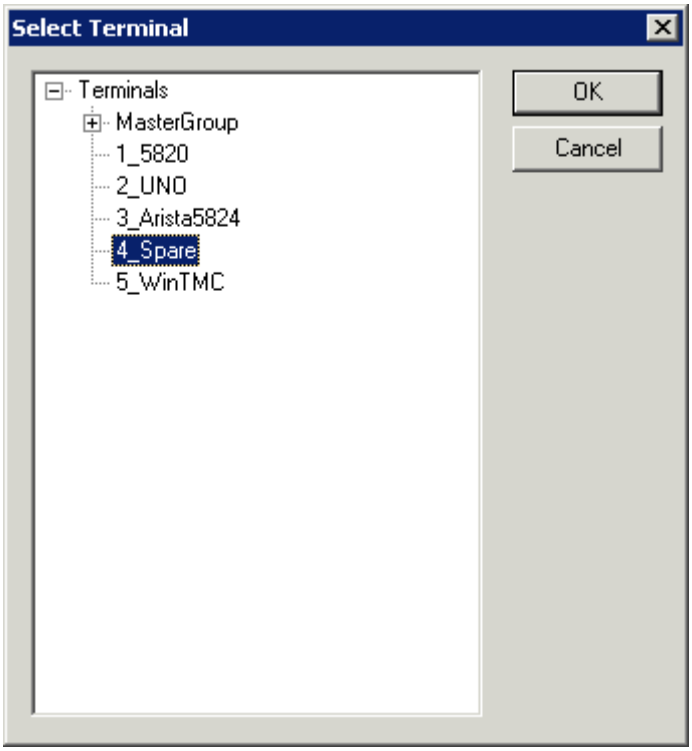
Access Group Window

Select the ***Edit Members*** button to launch the **Access Group Members** window.



Access Group Members Window

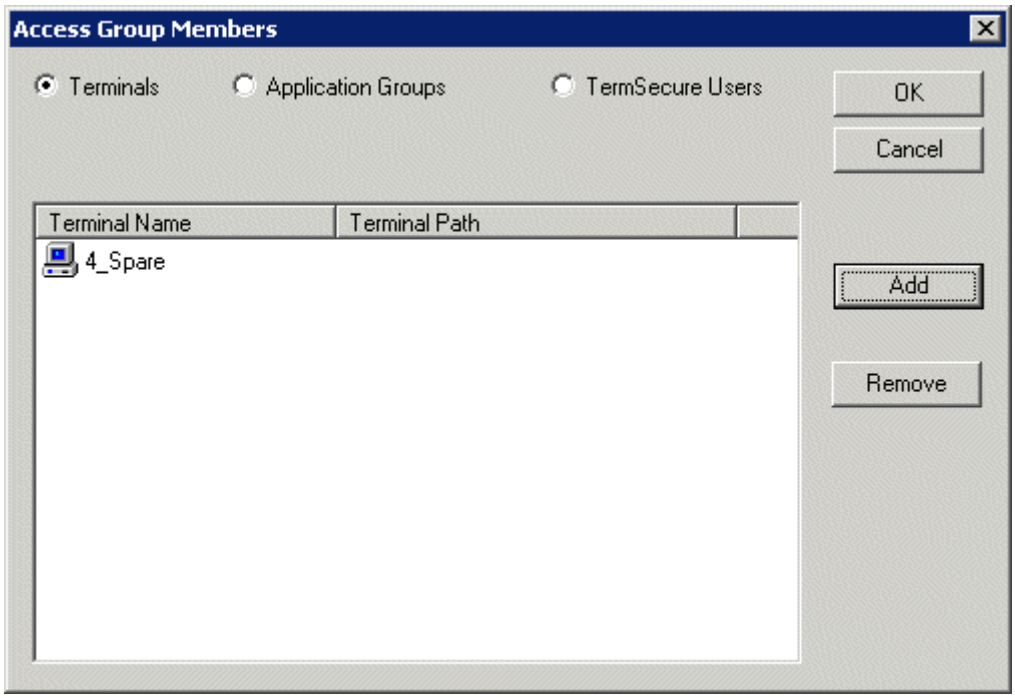
Select the **Terminals**, **Application Groups**, or **TermSecure Users** radio button to configure that category and select the ***Add*** button.



Select Terminal Window

A **Select Terminal** window will be displayed with a tree of the configured terminals and terminal groups.

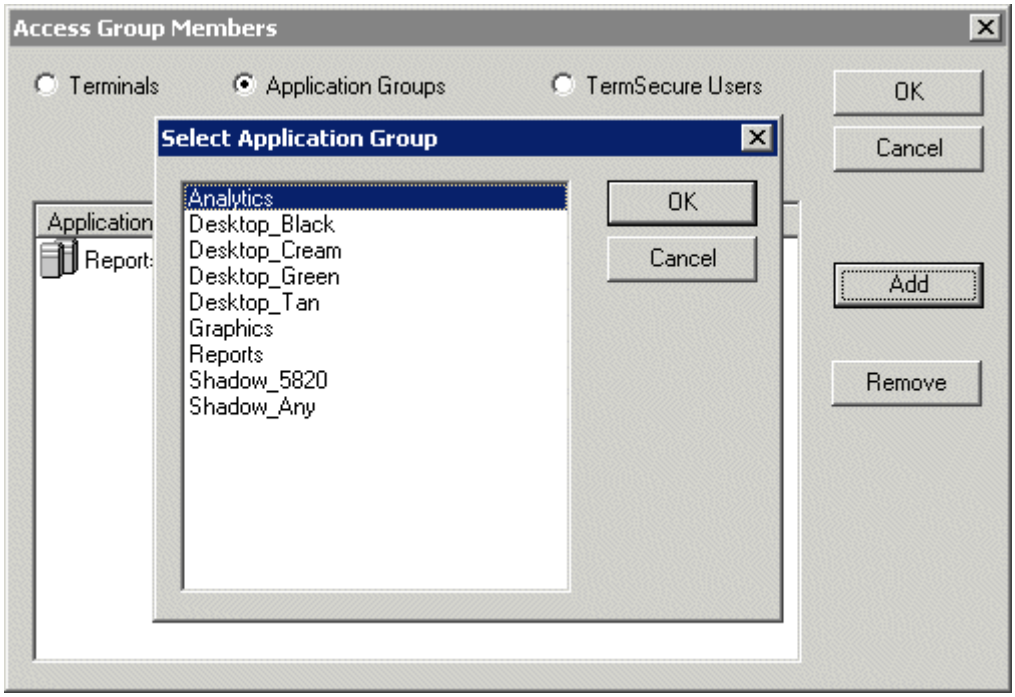
Select the desired terminals and terminal groups and select ***OK*** for each addition.



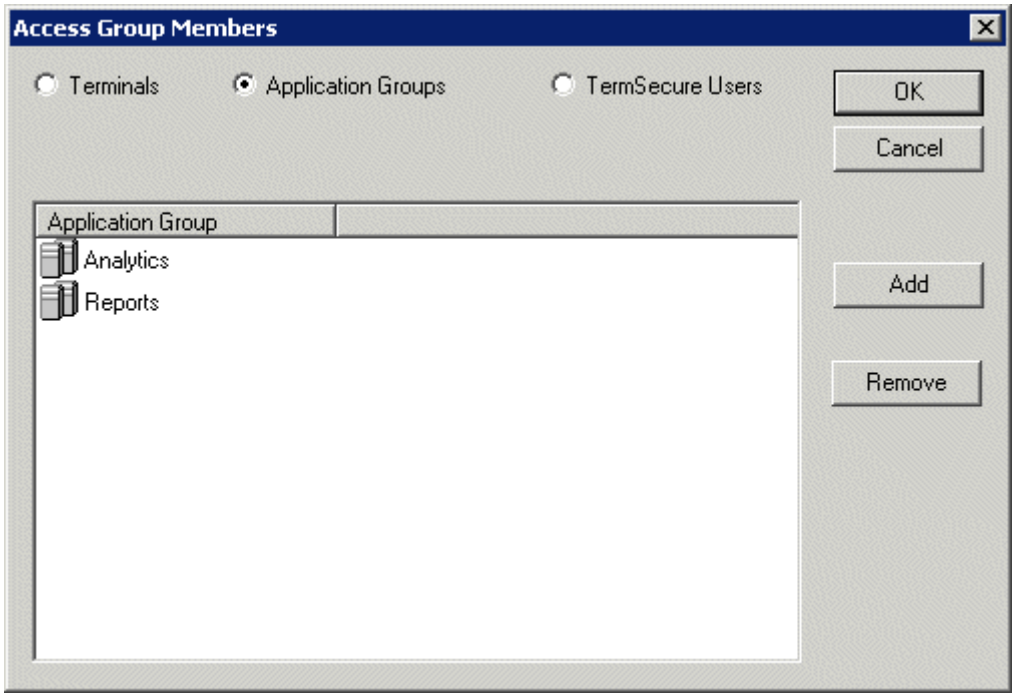
Access Group Members

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.

Application Groups and **TermSecure Users** can be added by the same process of adding by selecting the appropriate radio button.



Application Group Selection

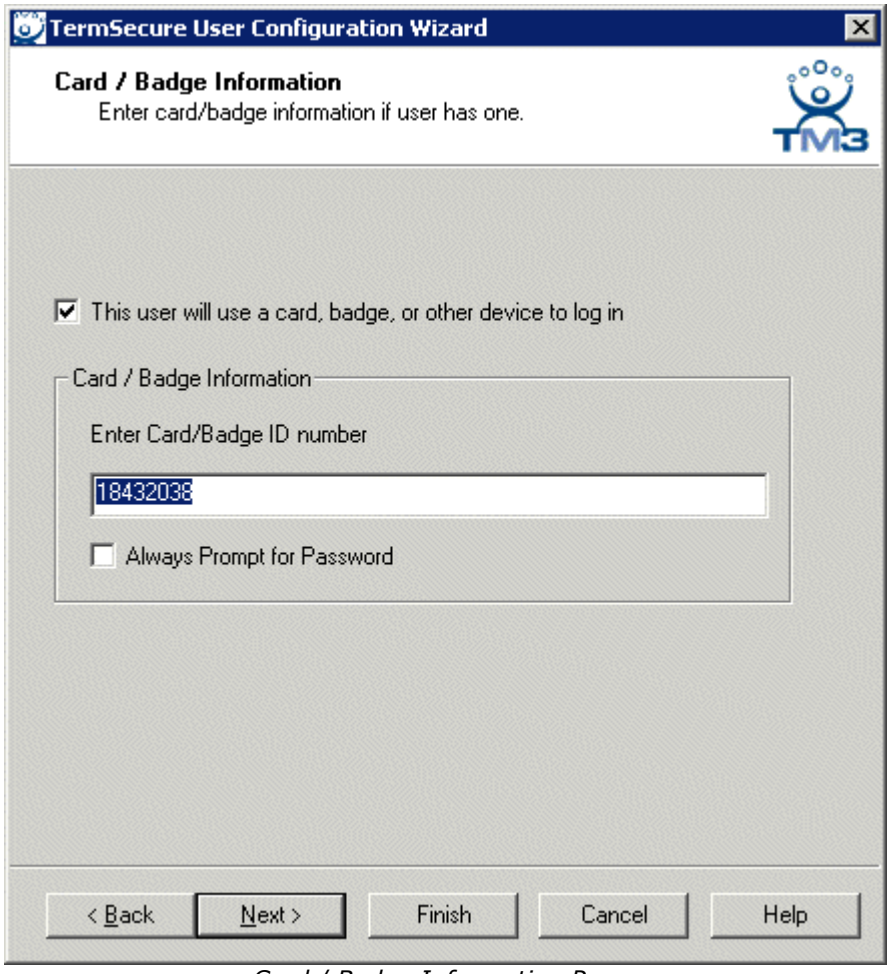


Member Application Groups

Members can be removed by highlighting them and selecting the ***Remove*** button.

19.6. 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 User**s branch of the tree and selecting ***Add TermSecure User***.



Card / Badge Information Page

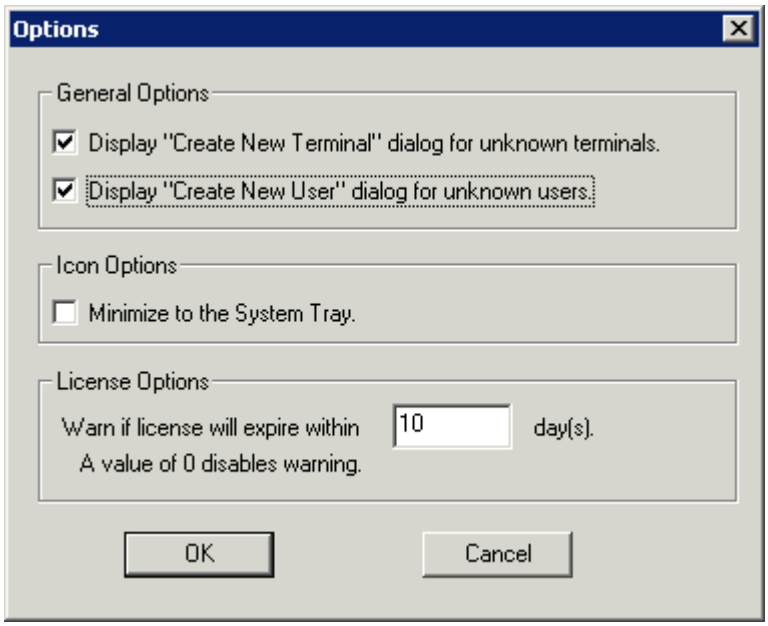
- ***This user will use a card, badge, or other device to log in*** - This checkbox, if selected, enables the use of a USB device, card or badge to login to a terminal.
- ***Enter Card/Badge ID number*** - This field is for the unique identification number of the ID device. This can be filled manually 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.

19.6.1. 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.

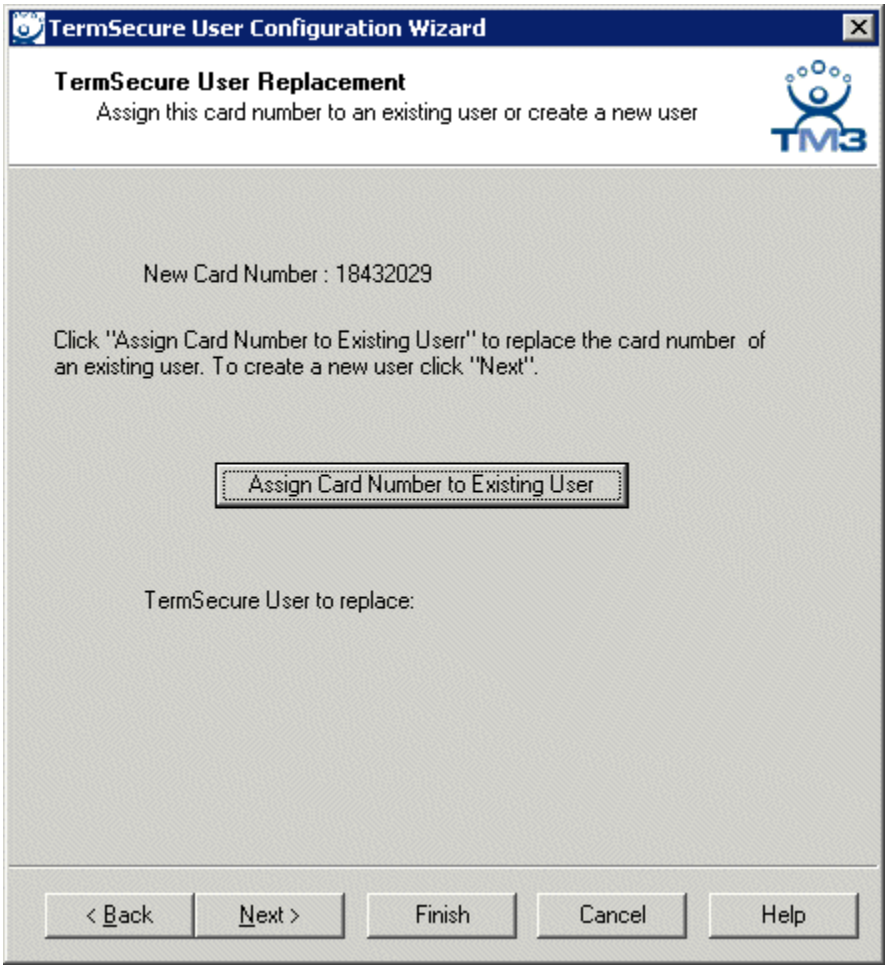
- The *Display "Create New User" dialog for unknown users* check box on the Options page must be selected.
- The terminal must use Application Groups.
- The terminal needs the *Enable TermSecure* checkbox on the Terminal Specification page of the Terminal Configuration Wizard.
- The USB Drive module, 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** W**izard** 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.

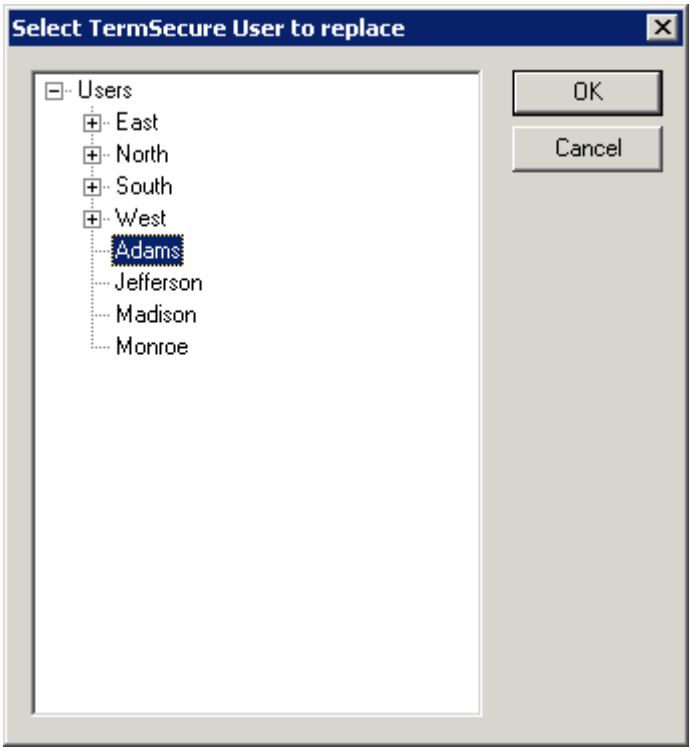


TermSecure User Configuration – TermSecure User Replacement

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.

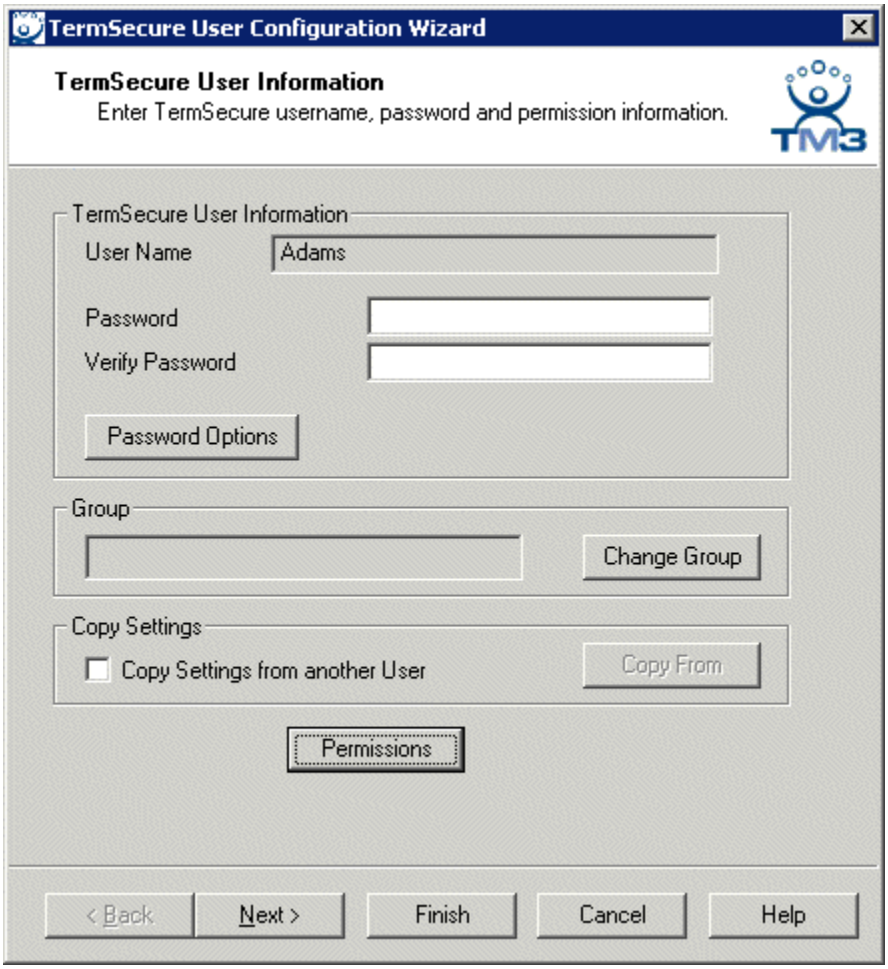
Selecting ***Next*** will open the TermSecure User Configuration Wizard and allow a new TermSecure user to be configured.

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

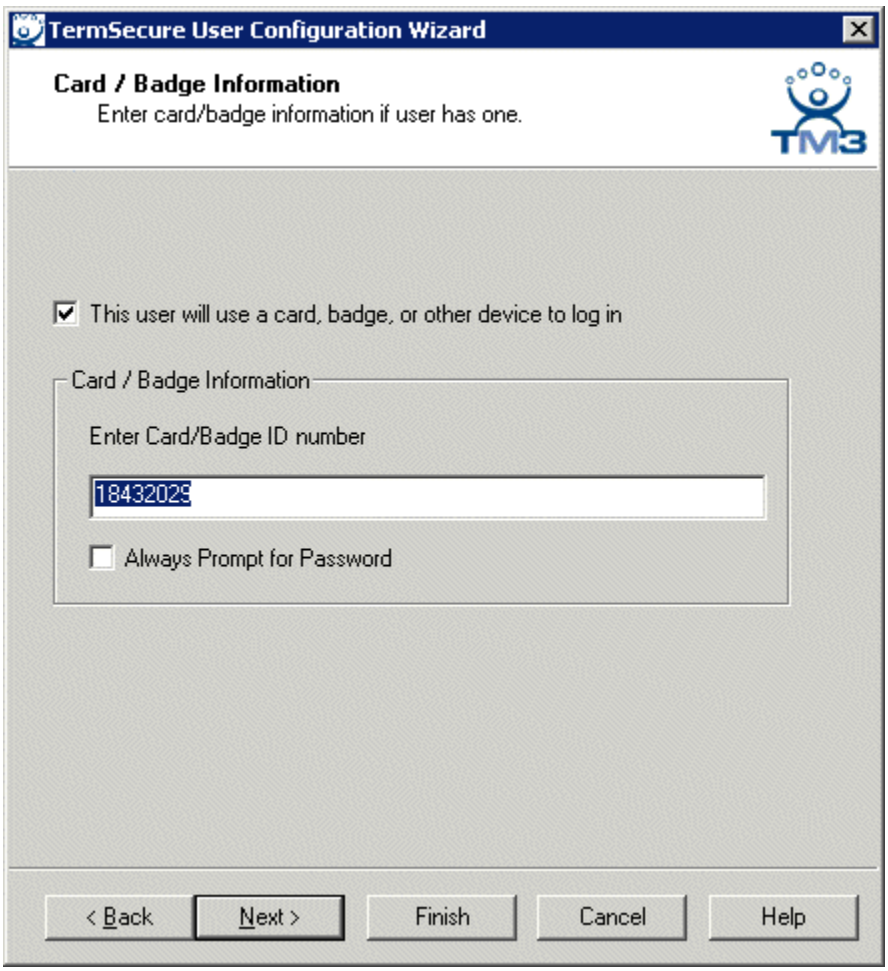
Highlight the desired TermSecure user and select ***OK***. The wizard will display the **TermSecure User Information** page with the selected user entered.



TermSecure User 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.



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.

19.6.2. 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.

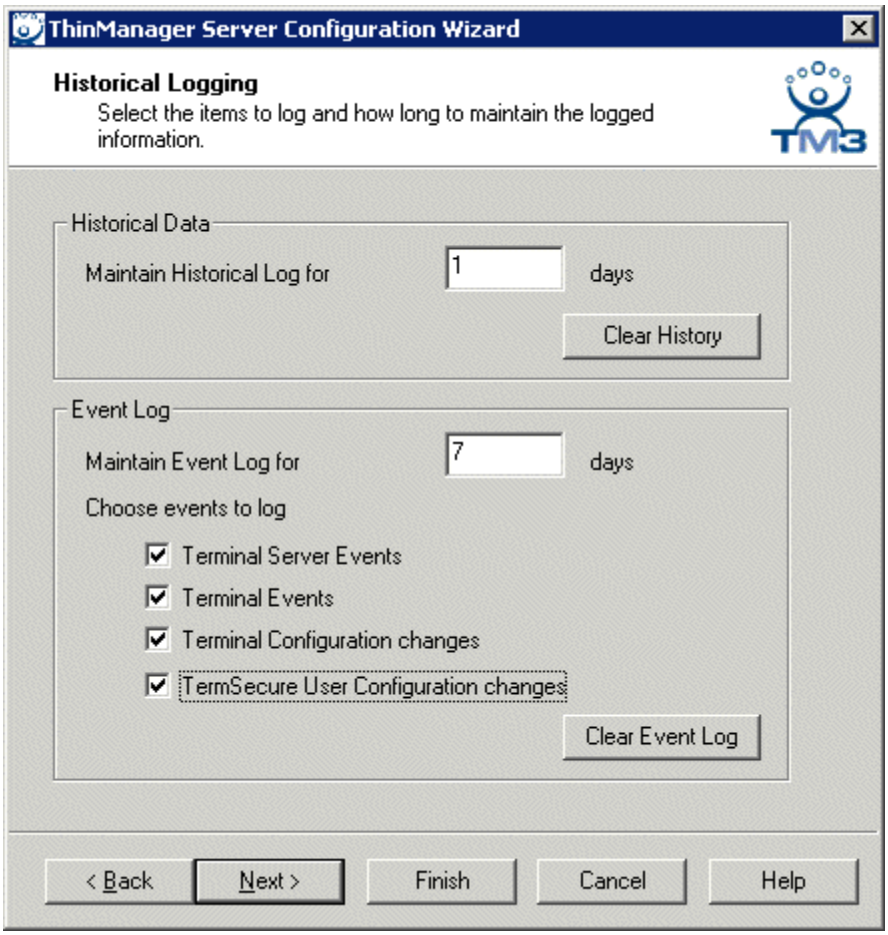
- Use the device once to have the device's identifier entered to the event log.
- Open the **TermSecure User Configuration Wizard** and enter the ID number to tie the TermSecure User to the device.
- Login with the ID device.

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.

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.

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.

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.

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

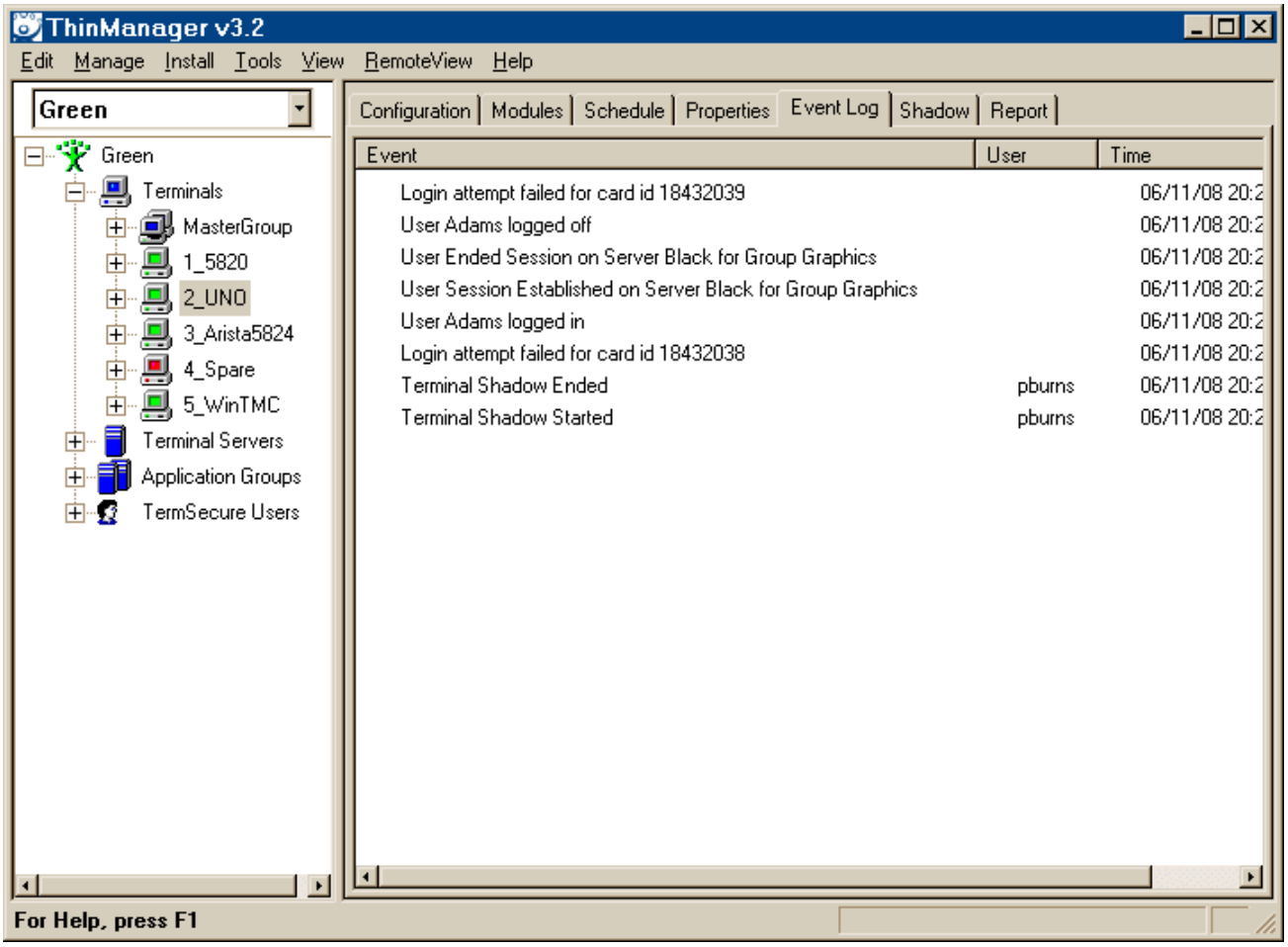
The ID device will not work so the terminal will send a message with the ID device's identifier number.

- 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.

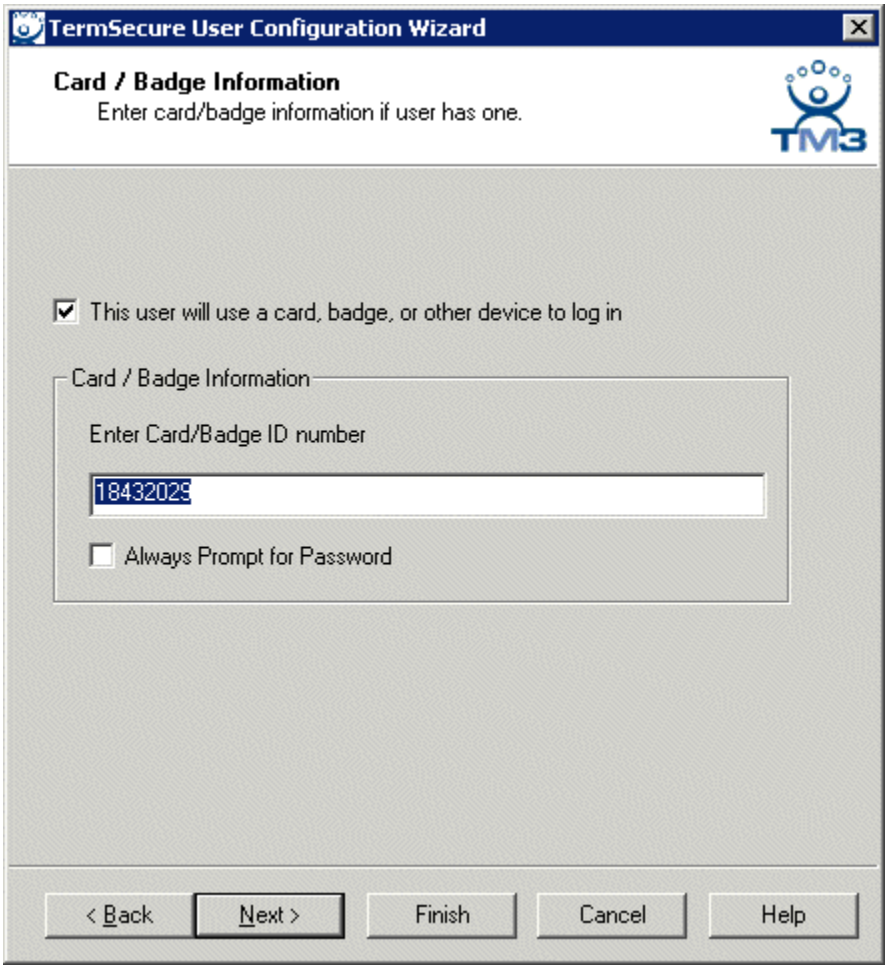
The ID for the device is entered in the log.



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

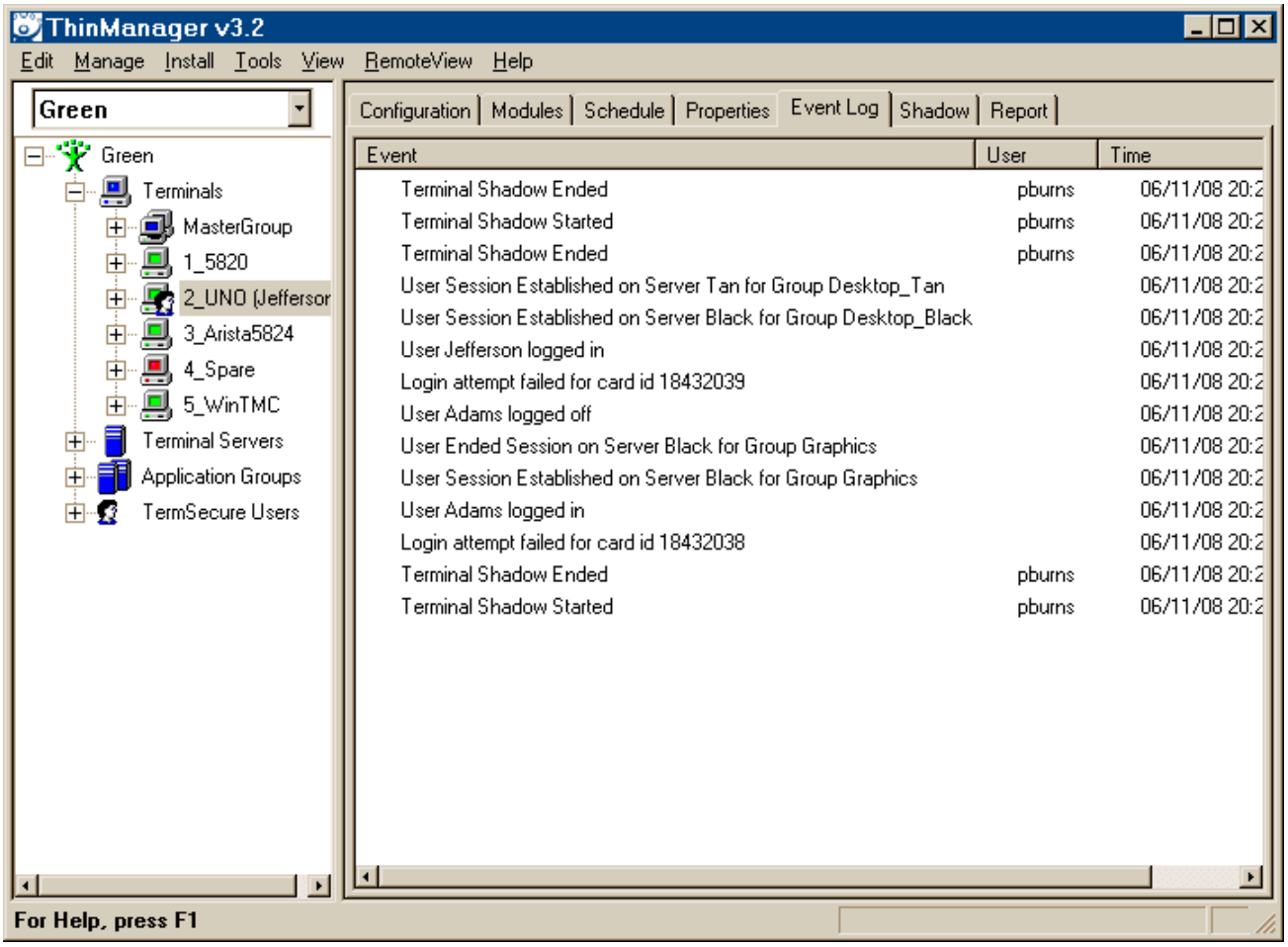
- Select the This user will use a card, badge, or other device to log in checkbox.
- Enter the ID Identifier from the earlier steps into the Enter Card/Badge ID number field.
- Select the Always Prompt for Password, if desired.

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 ThinManager Ready 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.

20. 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.

20.1. 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>`**.

20.2. Using the Control

20.2.1. 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***.

20.2.2. 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 Application Groups currently running on the terminal.
- **ConnectionState** - This is the Control's connection state with the terminal.
- **CurrentTerminalServerGroup** - This is the Application Group 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***.

20.2.3. 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.

20.2.4. 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

20.2.5. 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 Application Group.
    - **SwitchToPrevGroup** - This command will switch to the previous Application Group.
    - **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 Application Group which is assigned to the terminal. If no Application Groups 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 Application Group which is assigned to the terminal. If no Application Groups 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 Application Groups on the current Screen.
- **TileEnd** - This command will untile the Application Groups 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 Application Group currently displayed on the terminal. This method requires one parameter which is the name of the Application Group 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 Application Group is currently on for MultiMonitor configurations. This method requires one parameter which is the name of the Application Group.
- **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 specifed in the TermSecure user configuration. This is only required for Application Groups assigned to the TermSecure User.
    - **TermMonConst.NoWindowsPassword** - This TermSecure user does not have a Windows Password specifed in the TermSecure user configuration. This is only required for Application Groups assigned to the TermSecure User.

20.2.6. 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

20.3. 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>

21. Non-ThinManager Components

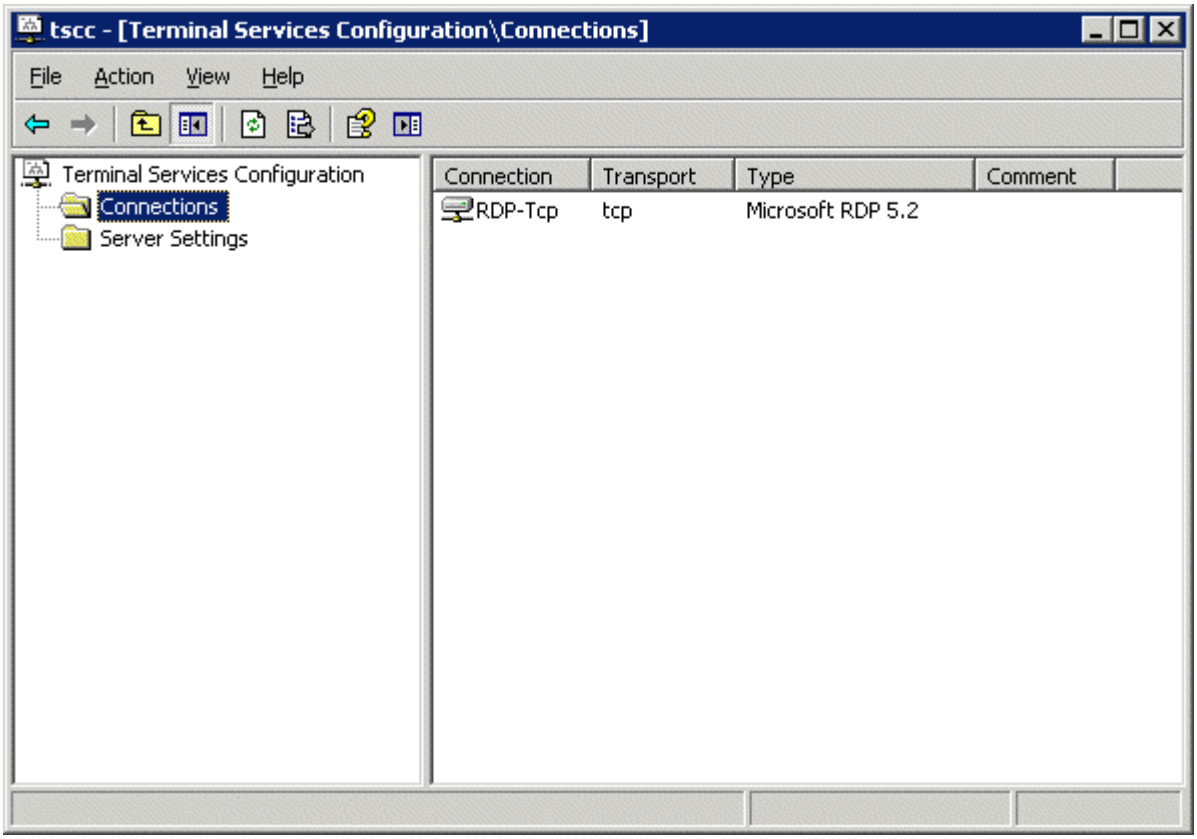
21.1. Terminal Services Configuration

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 divisions, Connections and Server Settings.

21.1.1. Terminal Services Connections

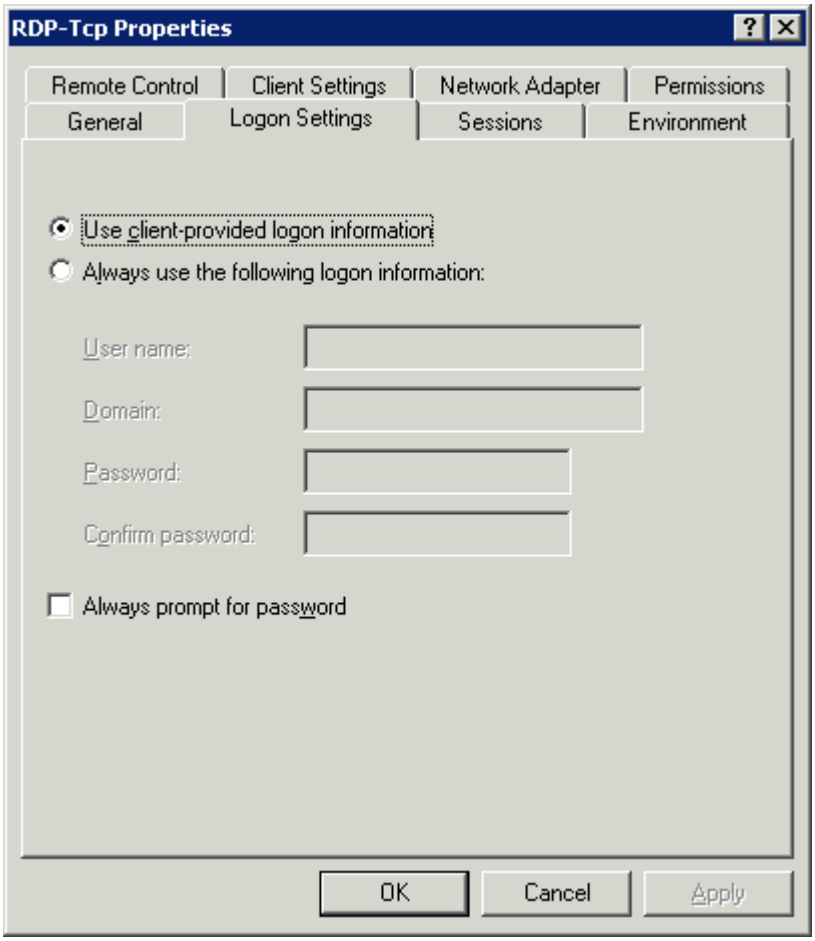
The **Terminal Services Configuration** tree has a **Connections** folder. Highlighting this folder will display the installed client communication protocols.



Terminal Services Configuration\\Connections Console - Connections

Double clicking on the RDP-tcp icon on the right will launch the RDP-tcp Properties

RDP-tcp Login Settings

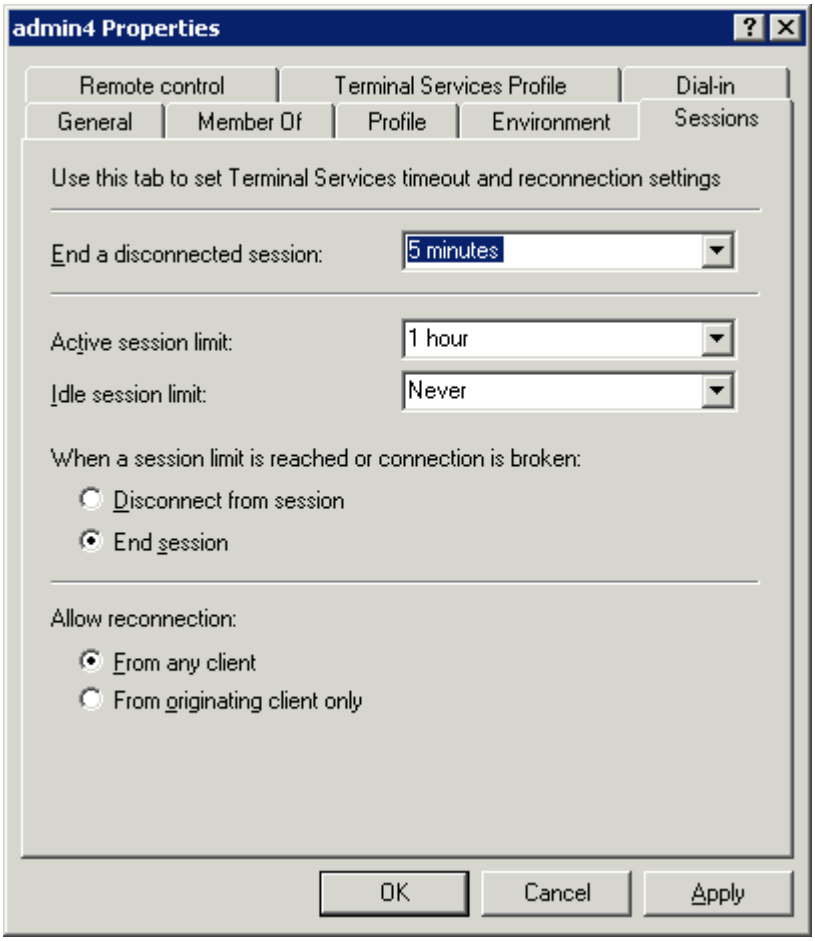


RDP-tcp Login Settings

The **Login Settings** should use the ***Use client-provided logon information*** radio button so that each user will login with a unique account.

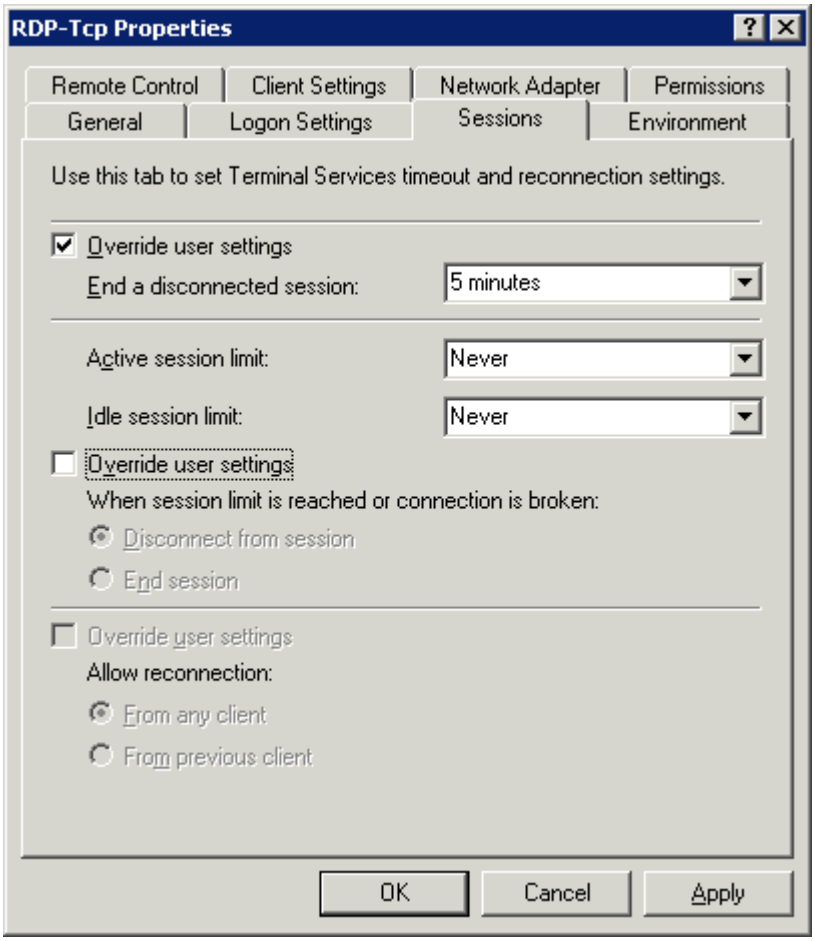
The ***Always prompt for password*** should be unselected to allow auto-logins.

RDP-tcp Sessions Settings



Individual User Account Sessions Configuration

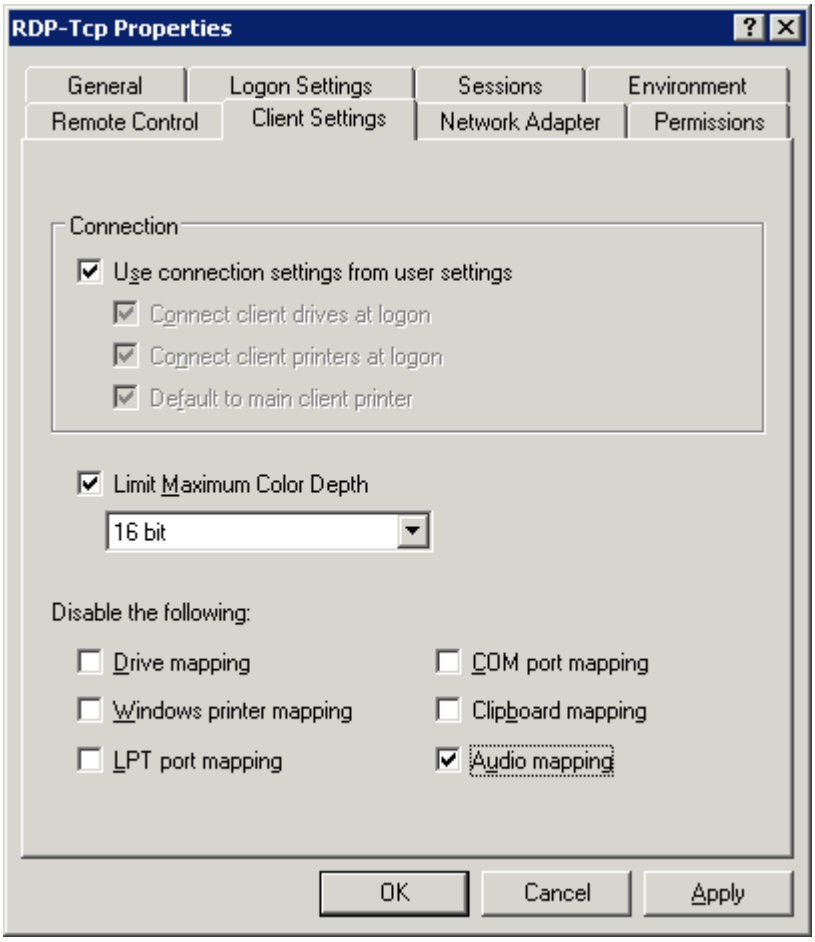
Each user account can be configured individually in the Computer Management interface. These can be set to end a disconnected session or an idle session after a period of time. The **Terminal Services Configuration Console** allows these settings to be made for every user of the terminal server, speeding 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.

RDP-tcp Client Settings

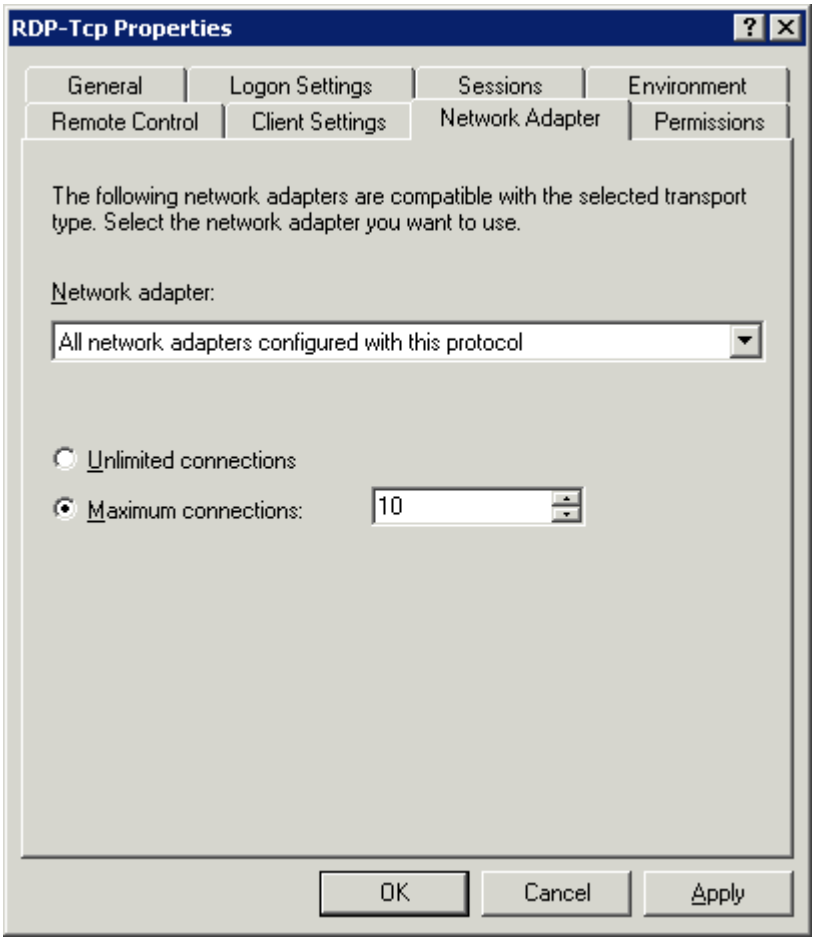


RDP-tcp Client Settings

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.

RDP-tcp Network Adapter Settings

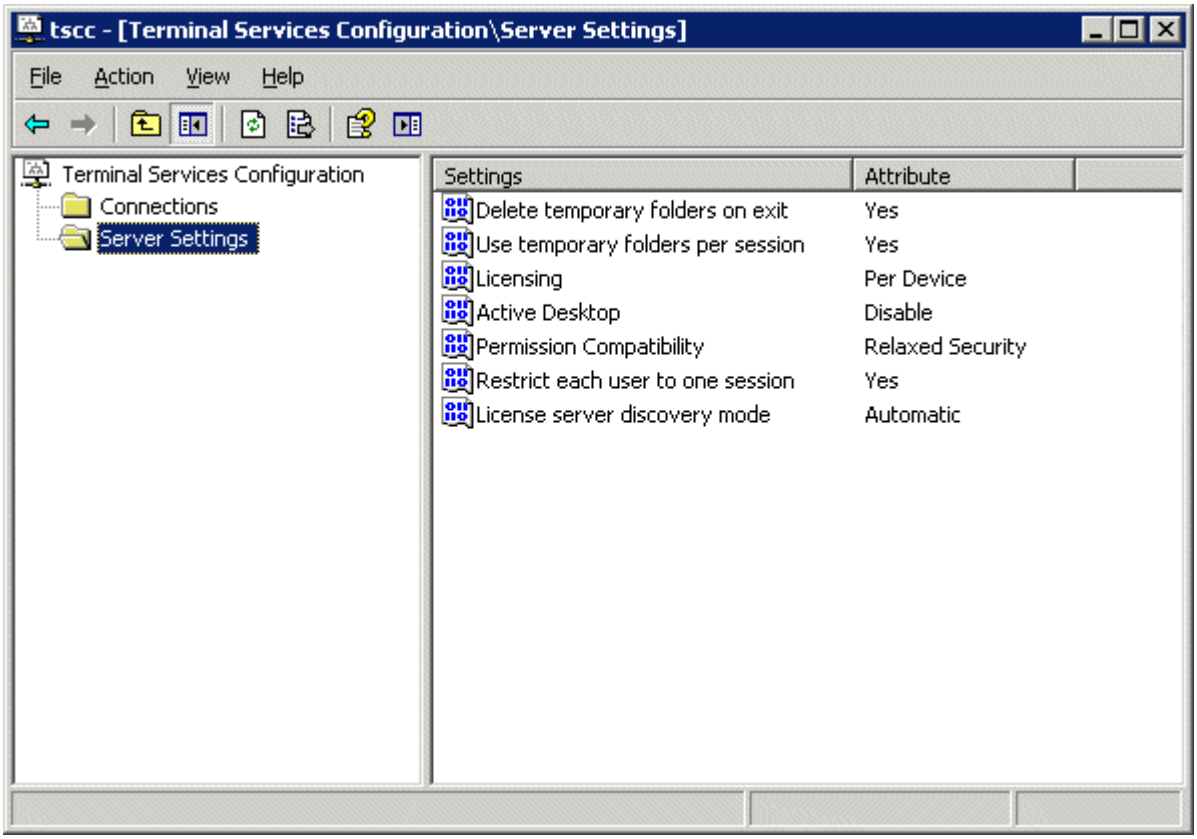


RDP-tcp Network Adapter Settings

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.

21.1.2. 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

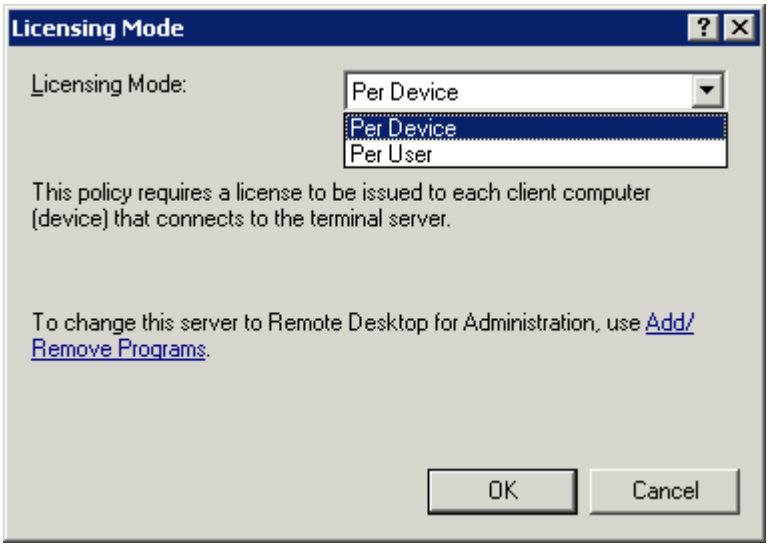
The Server Settings have several settings that can control the terminal services experience.

21.1.3. Licensing Mode

Microsoft has expanded the Terminal Server 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 for any user to connect to Microsoft Terminal Servers. This functions like the previous Windows 2000 TS CAL.
- The TS User CAL licenses one user for any device to connect to Microsoft Terminal Servers.

To change between the ***Per Device*** licensing and ***Per User*** licensing, double-click ***Licensing*** to launch the **Licensing Mode** window.

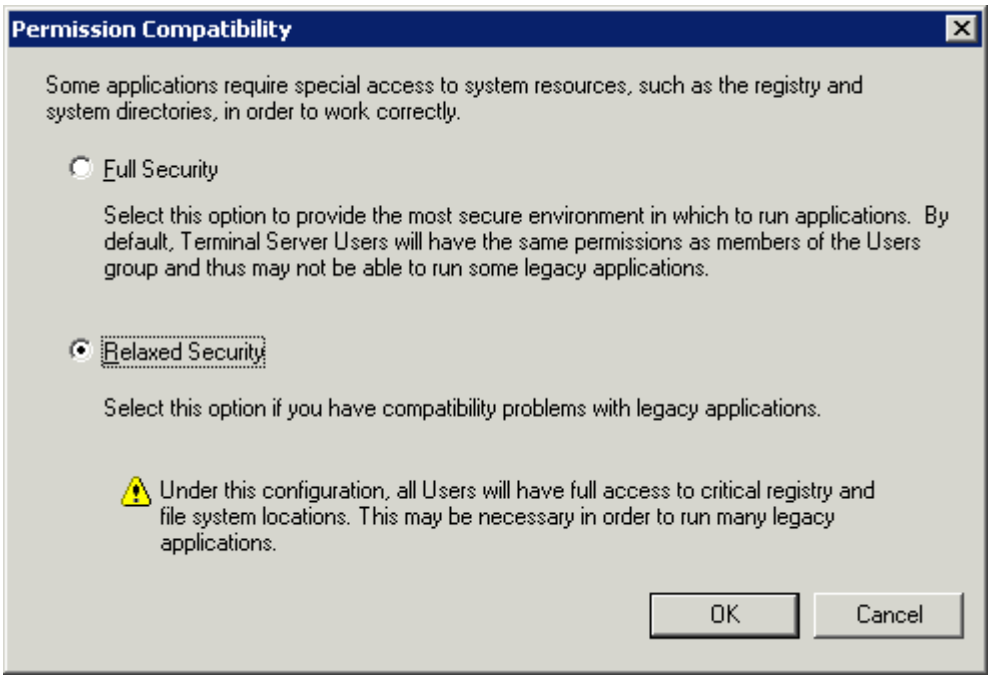


Terminal Services Configuration Console- Licensing Mode

Select the desired mode from the ***Licensing Mode*** dropdown box and click ***OK***.

21.1.4. 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.



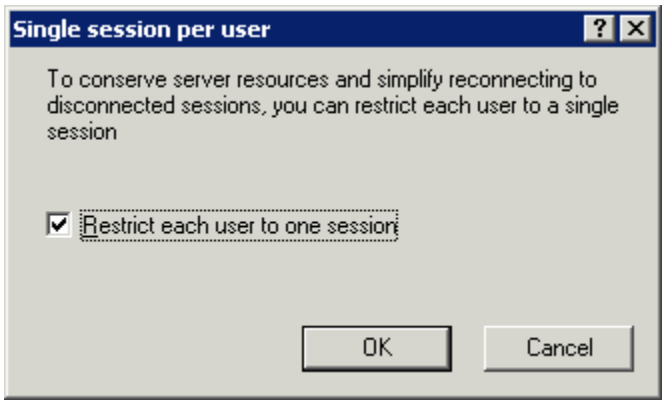
Terminal Services Configuration Console- Permission Compatibility

Launch the **Permission Compatibility** window by double-clicking on the ***Permission Compatibility*** setting. Select the ***Relaxed Security*** radio button and select the ***OK*** button.

21.1.5. 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.



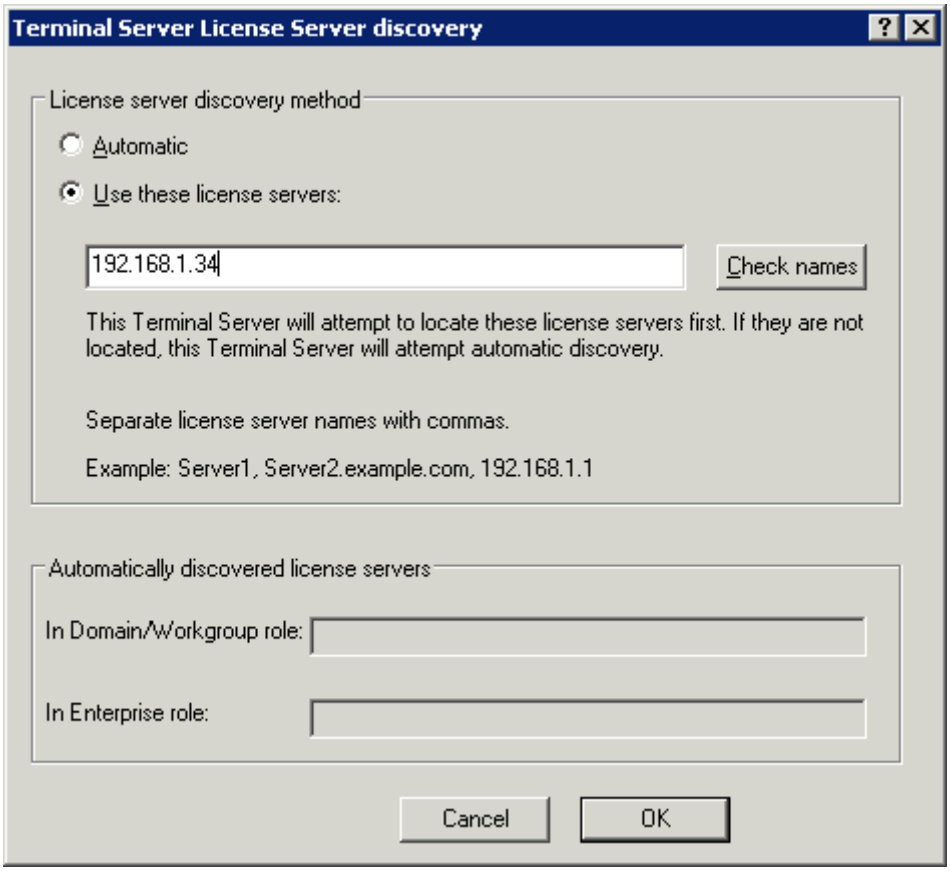
Terminal Services Configuration Console- Single Session Per User

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.

21.1.6. 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.

21.2. 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` *`username`* "*`message`*"	Sends a message to a user. ***username*** is the NT/2000 user name that the person or terminal is logged in as. "***message***" 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

21.3. Alternative Terminal Keystrokes

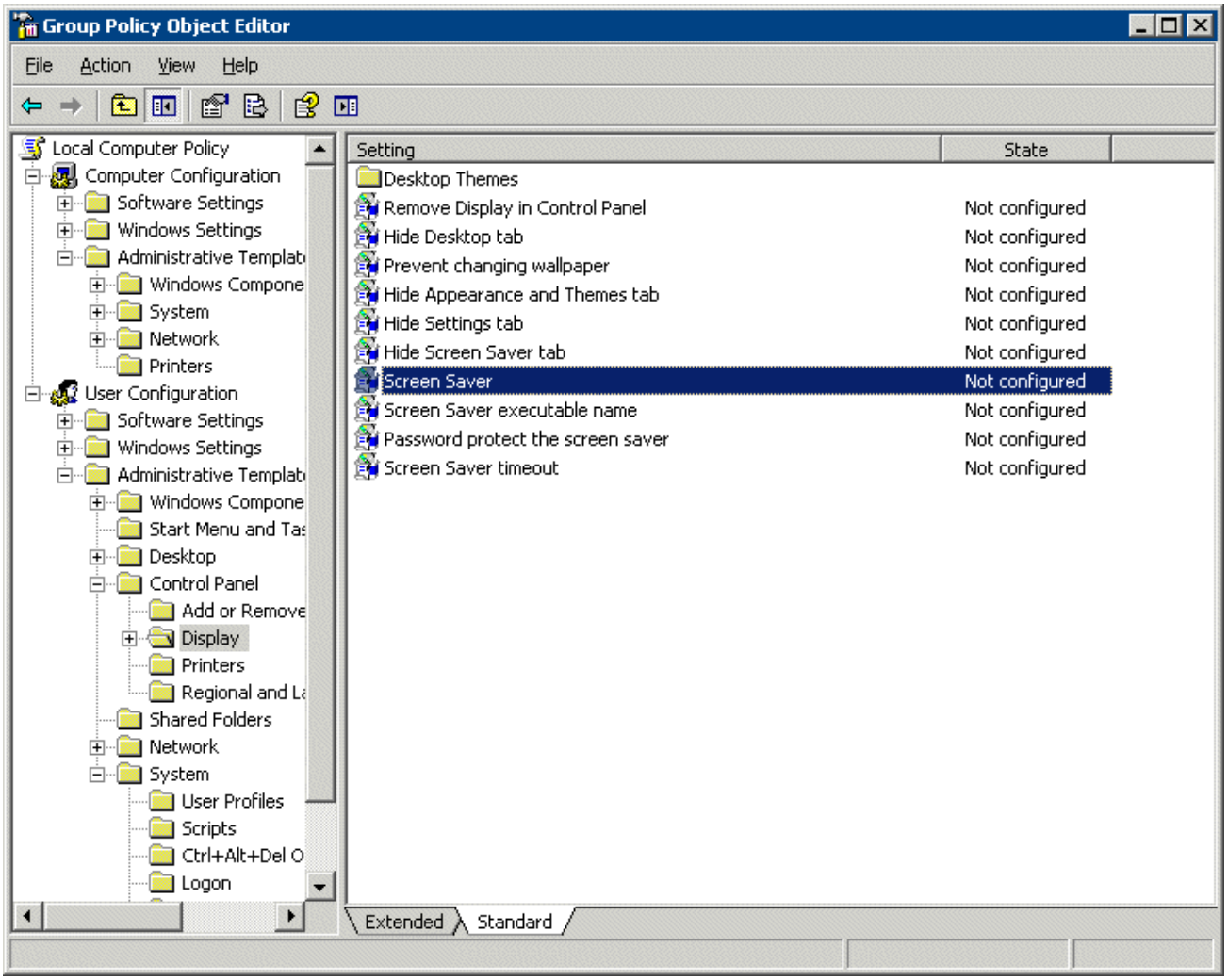
Certain keystrokes are not available in a terminal session. Microsoft has provided these alternatives.

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.)

21.4. Group Policy

Windows 2003 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.

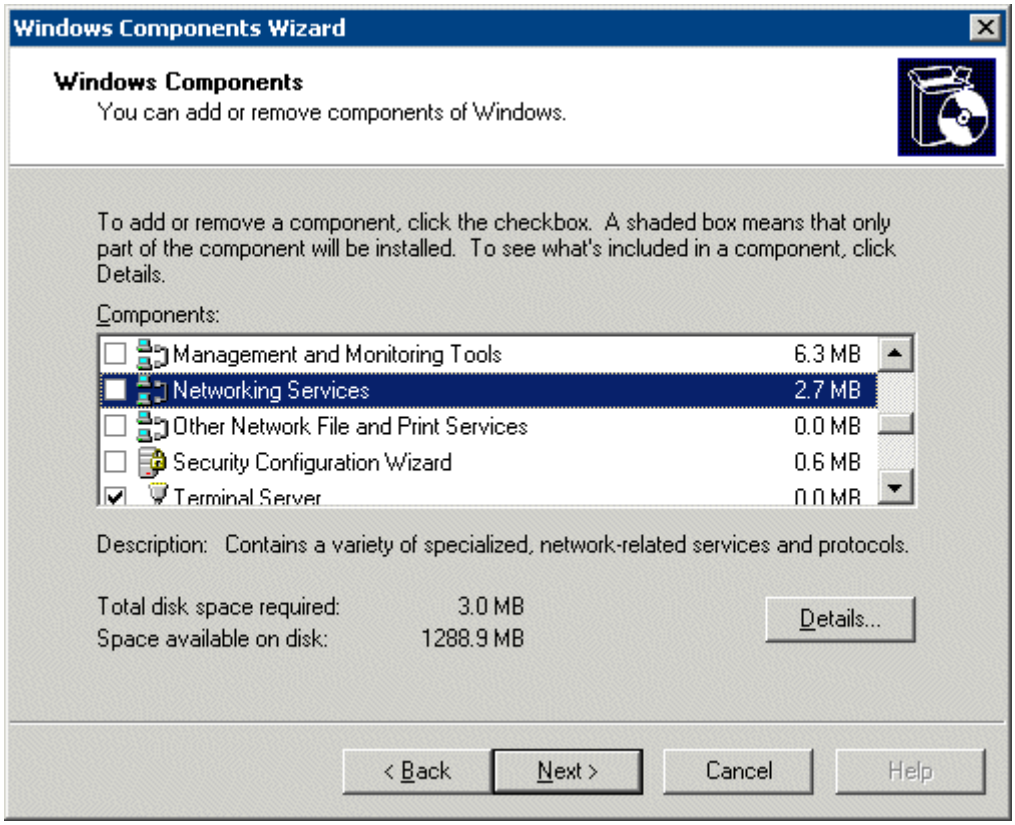
Please refer to Microsoft documentation for information on using these features.

21.5. DHCP Server Setup

Dynamic Host Configuration Protocol (DHCP) is a program that assigns IP addresses to devices on a network. Since a DHCP server can be used to provide IP addresses to ThinManager Ready thin clients, the instructions for configuring the Windows 2000 DHCP Server are provided.

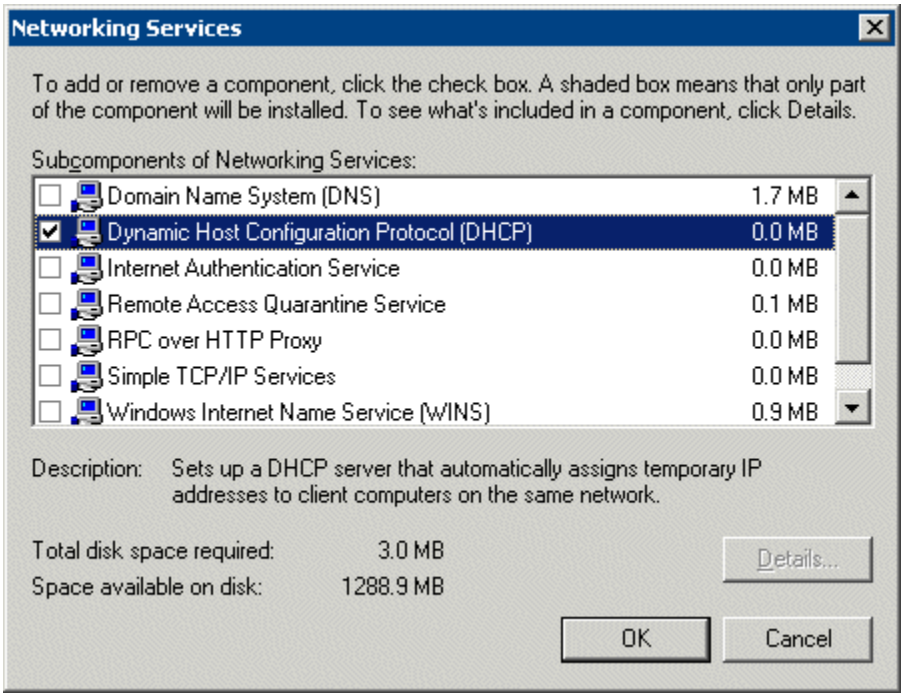
Note: The information included here is for your convenience. Because this information can change, please see Microsoft at www.microsoft.com for up-to-the-minute details.

To add DHCP to a Windows Server after installation select ***Start > Settings > Control Panel > Add/Remove Programs > Add/Remove Windows Components***. A Windows Configuration Wizard will launch.



Windows Components Wizard

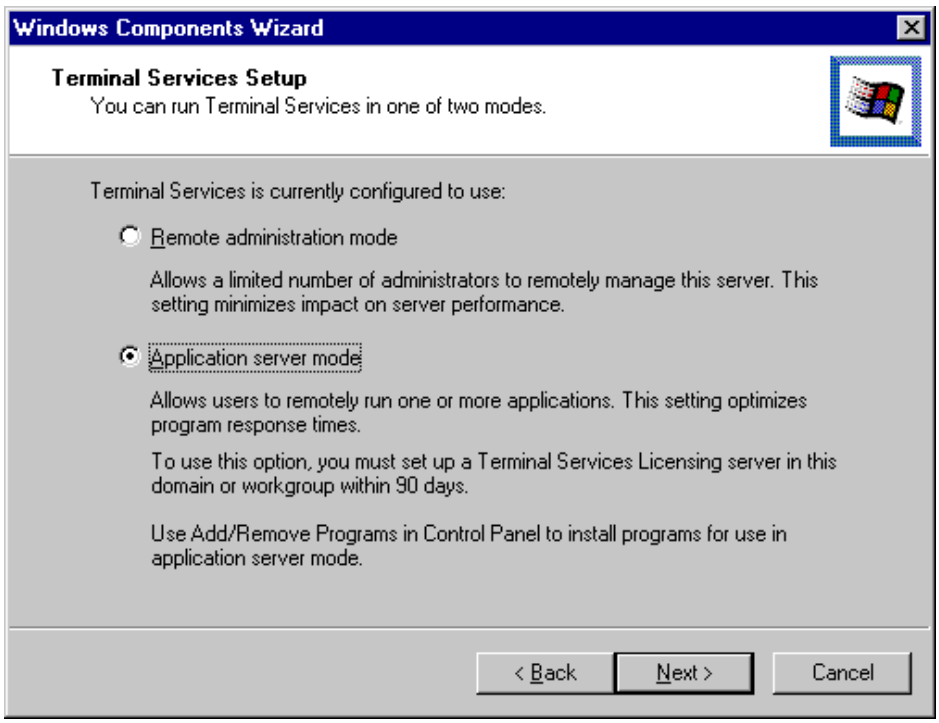
Highlight ***Networking Services*** in the list window and select the *Details* button.



Networking Services

Check the ***Dynamic Host Configuration Protocol (DHCP)*** check box and select the ***OK*** button.

The wizard will install the DHCP server.



Application Server Mode

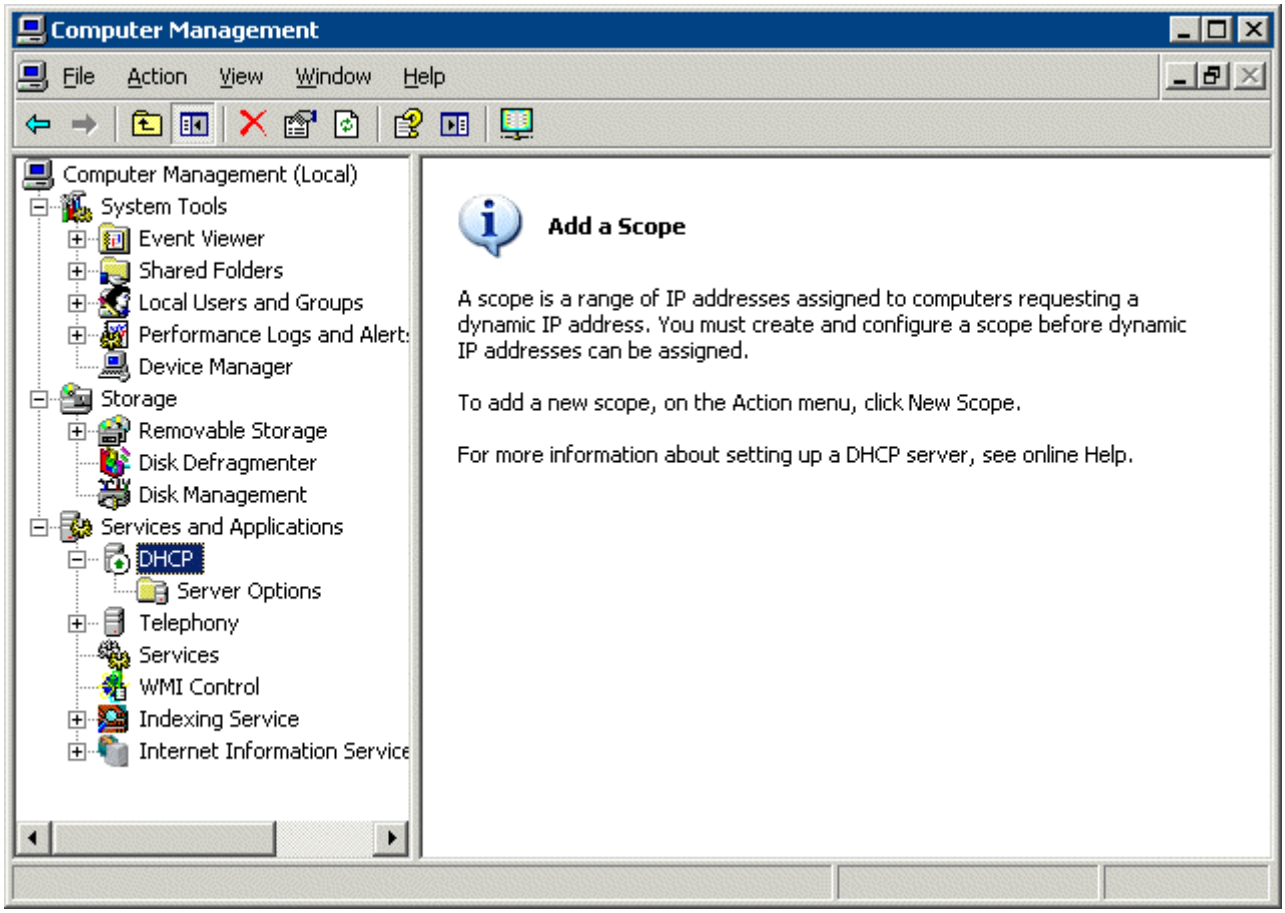
As part of the Windows Components Wizard, you may be asked to confirm the terminal service mode. The terminal server needs to run in application server mode to work with thin clients.

DHCP Scope Configuration for Microsoft DHCP Server

A DHCP server, in its simplest form, will assign an IP address to a computer that joins a network and requests one. A DHCP scope is a range of IP addresses that are available for assignment.

ACP Enabled thin clients need more information from the DHCP server than just an IP address. They need the IP address of the ThinManager server (Option 066) and the name of the firmware (Option 067) to download. This information needs to be added to the DHCP scope in the form of options.

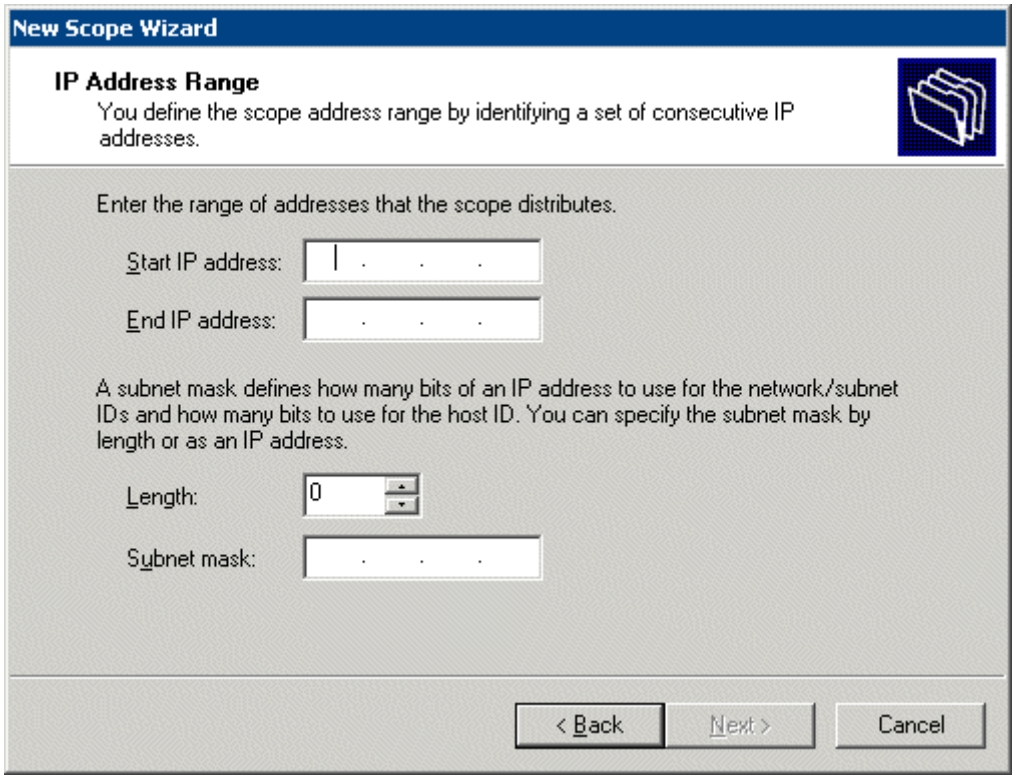
To establish a DHCP scope, open the Computer Management Console by selecting ***Start > Programs > Administrative Tools > Computer Management***.



Create a DHCP Scope

Highlight DHCP in the Services and Applications folder of the tree pane and select ***Action > New Scope***.

A New Scope Wizard will launch that will guide the process of creating the scope.

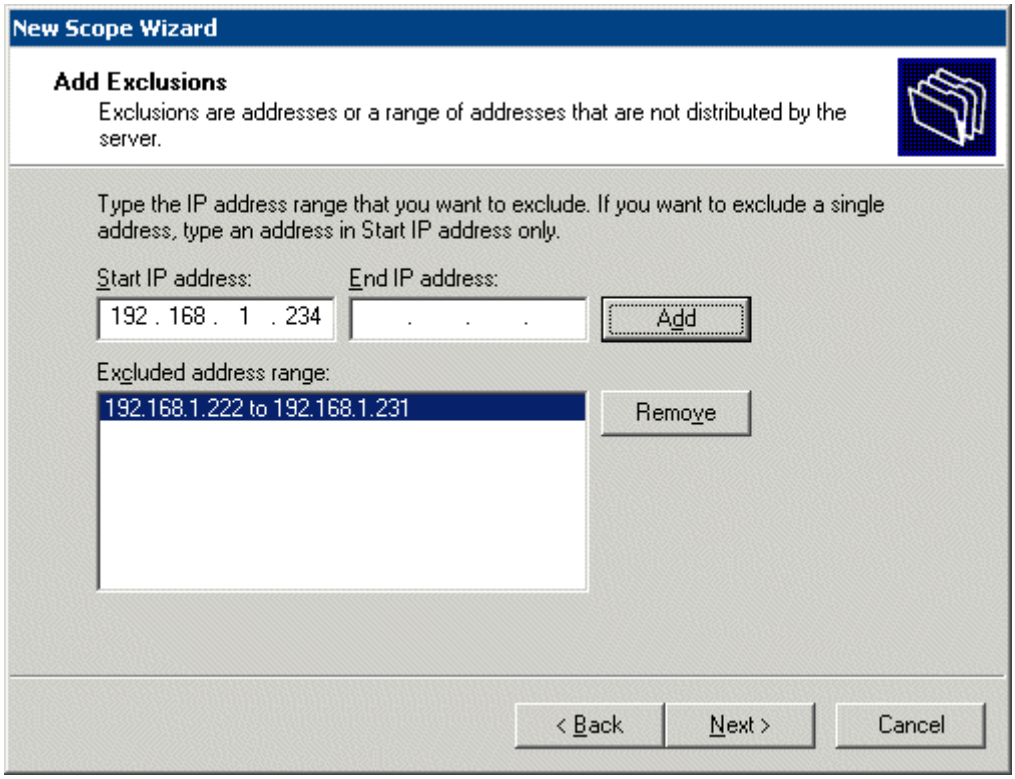


Scope Range

Set the range of IP addresses by entering the starting IP address for the scope and the ending IP address of the scope.

Enter the desired subnet mask.

Select the ***Next*** button to continue.

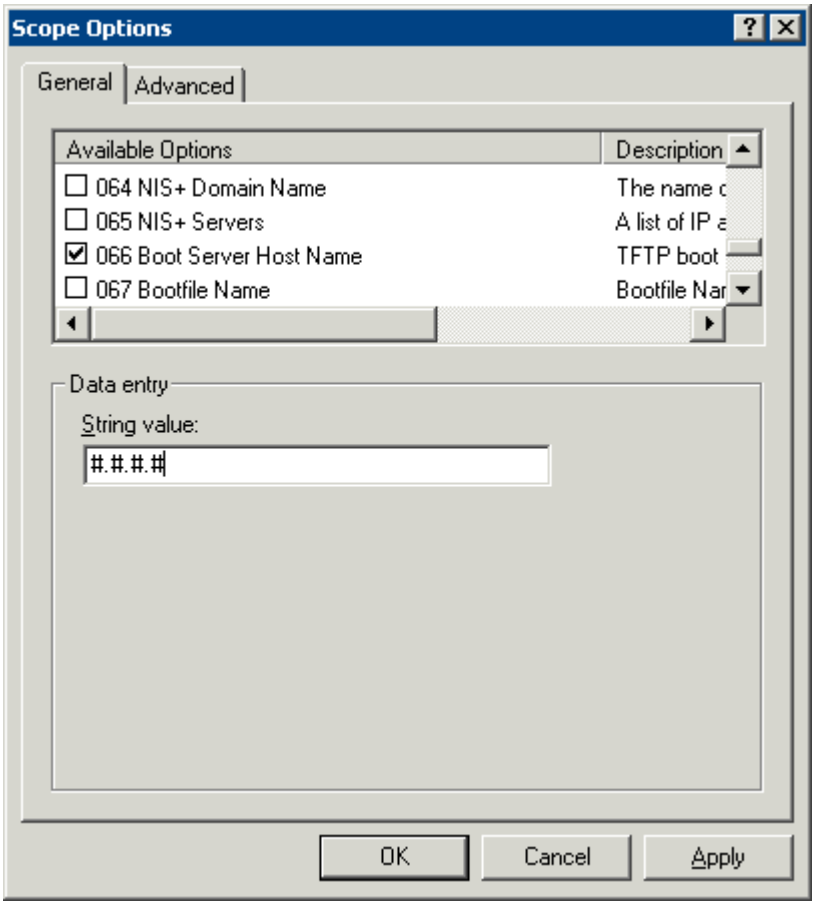


Scope Exclusions

If computers are already assigned IP addresses in the scope range, they can be excluded from the range by adding the IP address(s) and selecting the *Add* button.

Scope Options

The DHCP Server needs two options configured before it will provide all the information that the terminal needs to boot. These options are **Option 066** and **Option 067**.



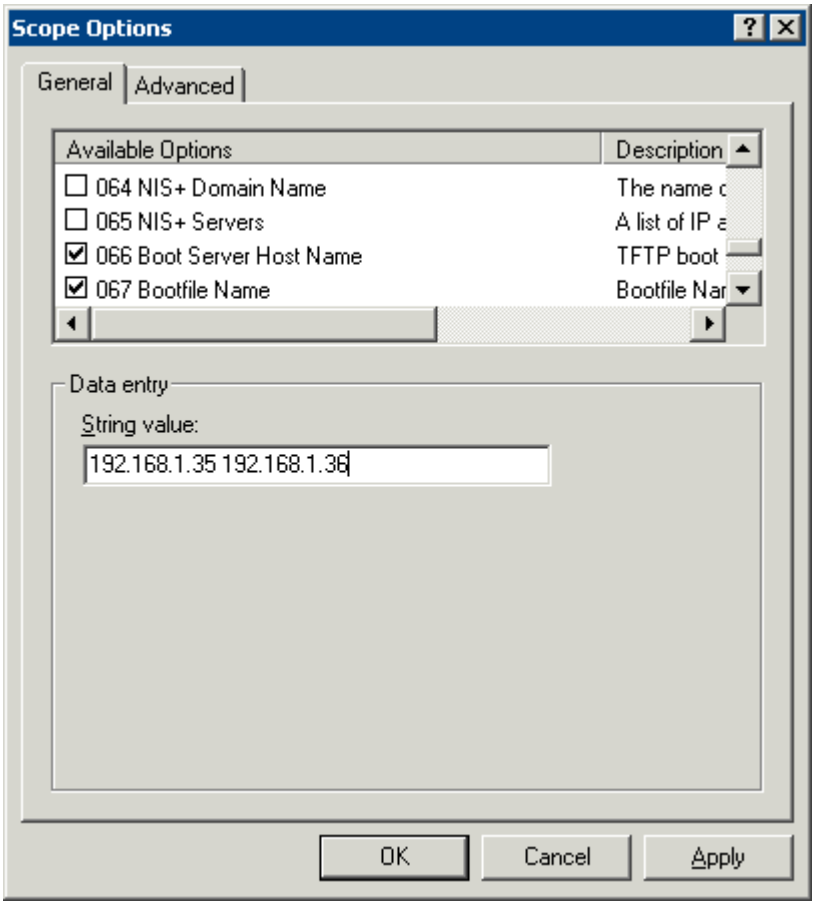
Boot Server Host Name

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.

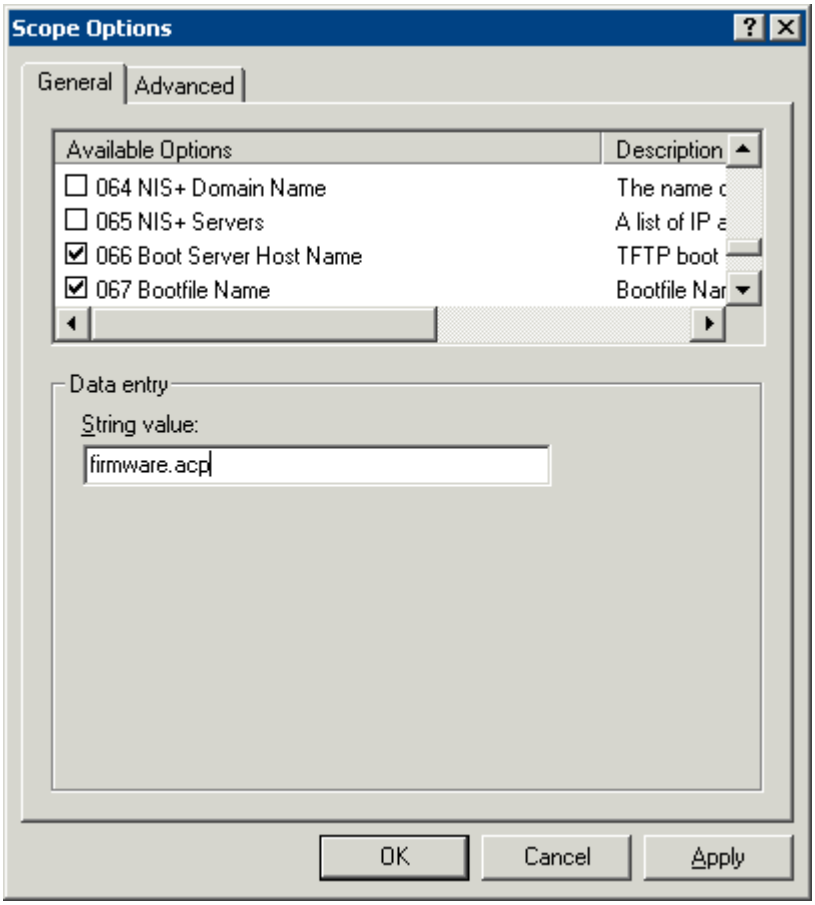
Enter the IP address of the desired ThinManager server in the ***String Value*** field.



Boot Server Host Name for Dual ThinManager Servers

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.

Do not select the ***OK*** button yet.



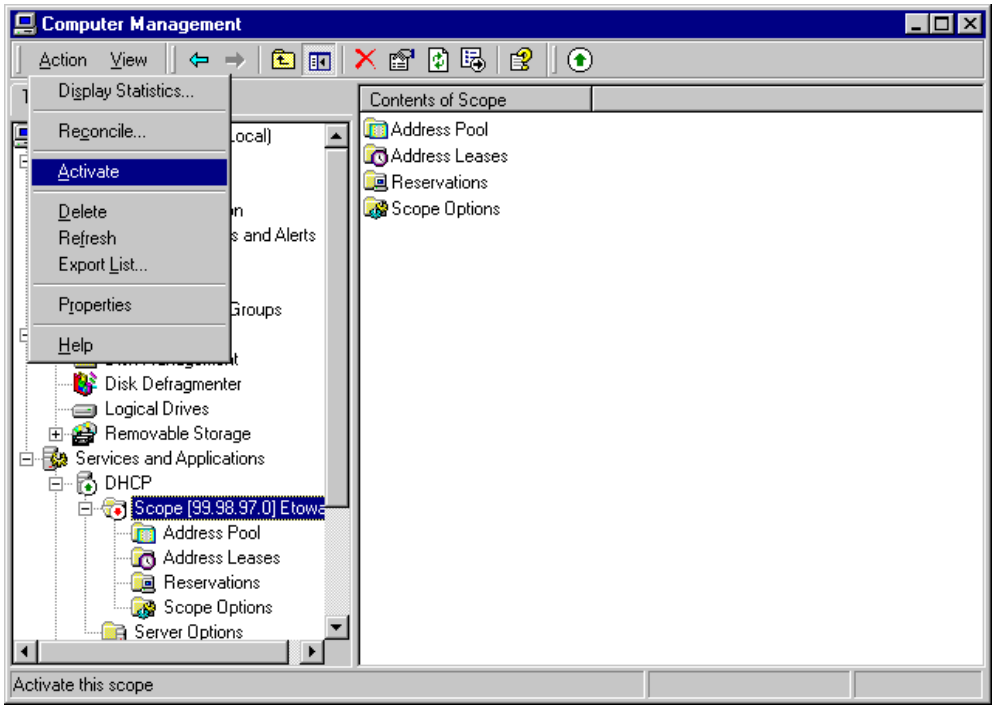
DHCP Options

The **Option 067**, **Bootfile Name**, tells the terminal what file to download during the boot process.

Scroll through the list window and check the ***Option 067*** check box.

Enter **`firmware.acp`** in the **String Value** field.

Select the ***OK*** button to accept the configuration of options.



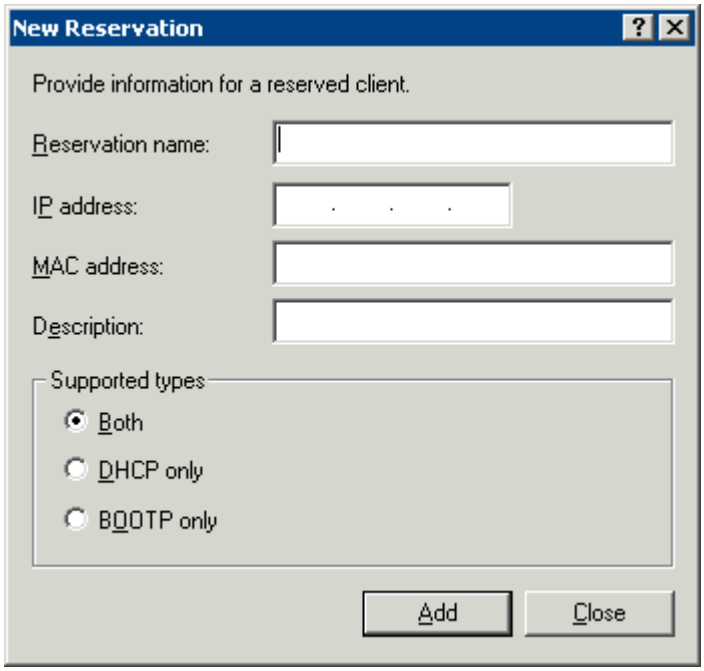
Completed Scope

Once the scope is added, the range is set, and the options are configured, it needs to be activated.

Highlight the scope in the tree pane of the Computer Management Console. Select ***Action > Activate***. The scope is now active.

Scope Reservation

Reservations allow an IP address to be reserved for a specific terminal instead of being assigned randomly. An IP address can be matched with a MAC address to create a reservation. This allows DHCP to assign a "static" IP address.



Scope Reservation

The New Reservation window is launched by selecting the Reservation folder in the tree pane of the Computer Management Console under the Services and Application / DHCP folder and selecting ***Action > New Reservation***.

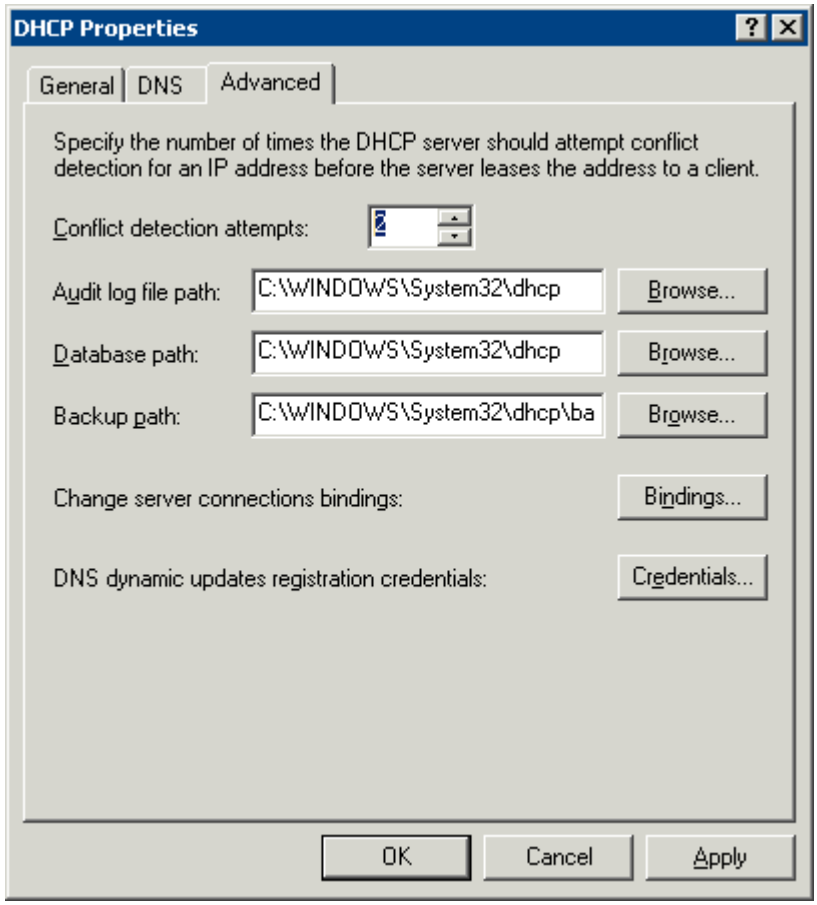
The MAC address of a terminal is displayed in the details-view pane of ThinManager.

Enter a **Reservation Name**, the desired **IP address**, and the **MAC address** from the terminal. Select ***OK*** to finish.

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

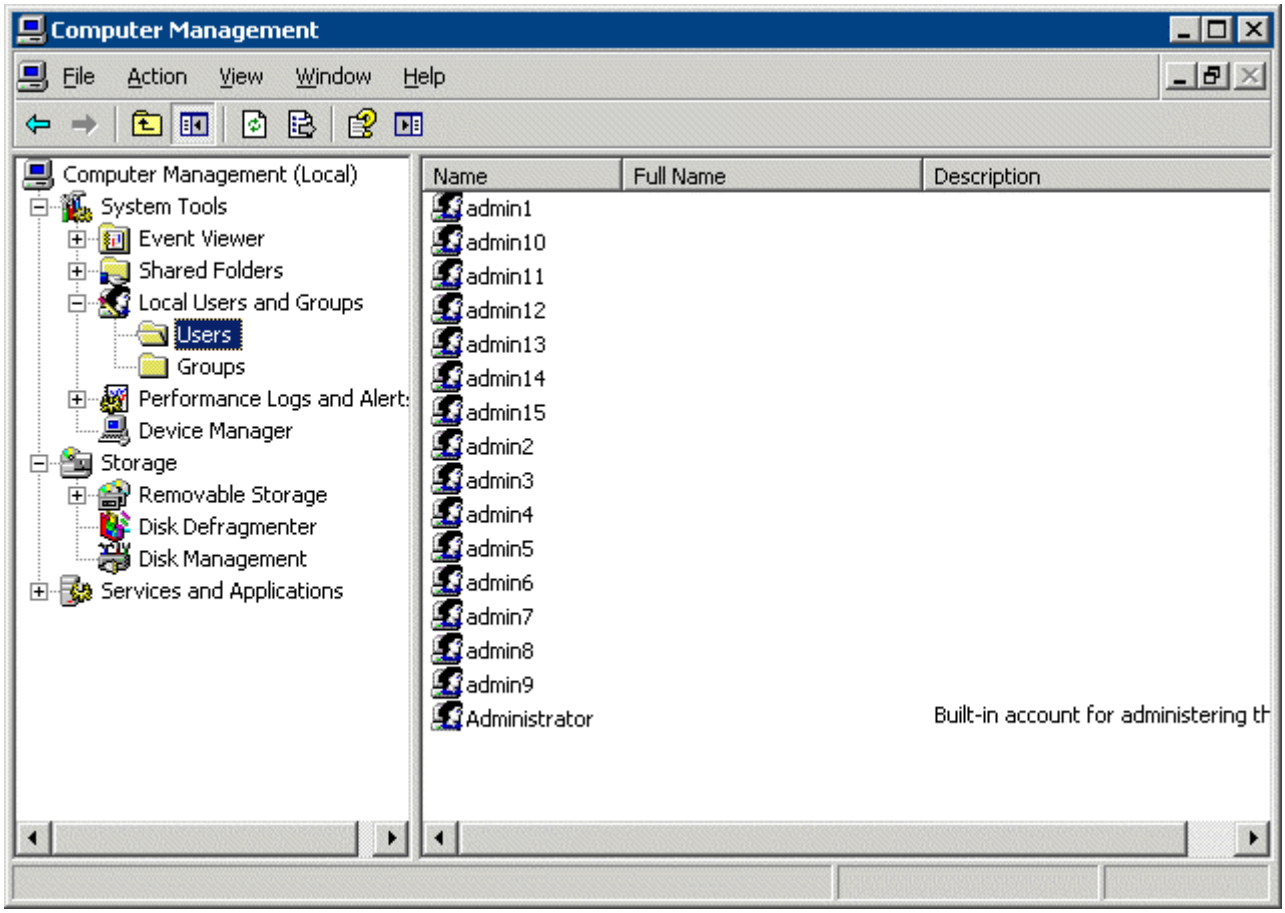
Select the ***Advanced*** tab. Replace the zero in the ***Conflict detection attempts*** field with an integer. This will prompt the DHCP Server to check for duplicate IP addresses before assigning an IP address.

Select ***OK*** when finished.

21.6. Creating Microsoft User Profiles

A terminal needs a valid Windows 2000/Windows 2003 User Profile to log onto a terminal server.

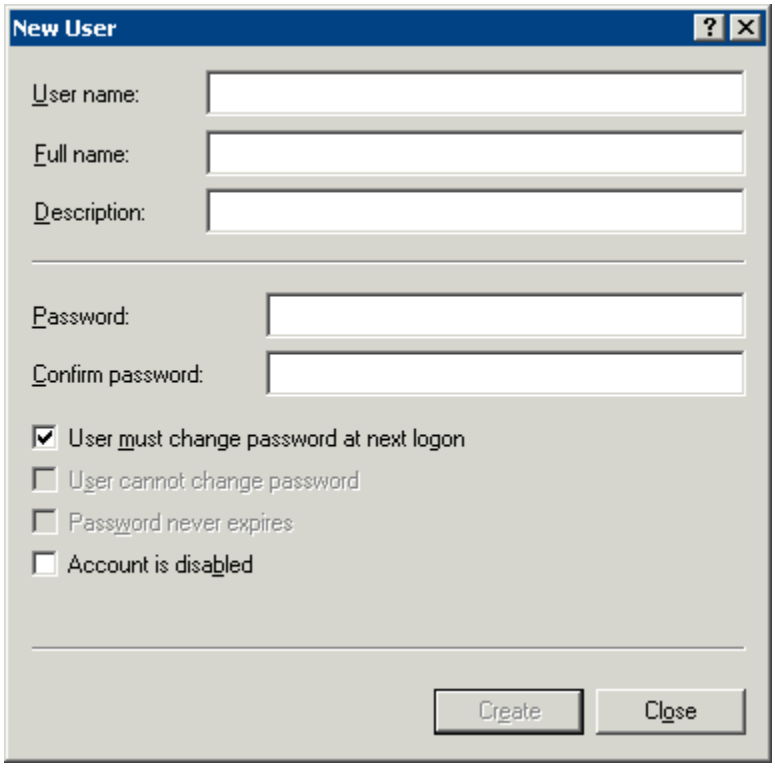
To create a user profile open the **Computer Management Console** by selecting ***Start > Programs > Administrative Tools > Computer Management*** in Windows 2000 or by selecting ***Start > Administrative Tools > Computer Management*** in Windows 2003.



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.



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.

21.7. Microsoft TS CALs – Terminal Server Client Access Licenses

21.7.1. Microsoft Client Access Licenses (CALs)

ACP Enabled Thin Clients require a terminal server with **Windows 2000 Server** with **Terminal Services** enabled, or **Windows 2003 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.

21.7.2. Microsoft Terminal Server Client Access Licenses (TS CALs)

Terminals, such as thin clients and fat clients, require an additional license, the **Microsoft Terminal Server Client Access License (TS CAL)** to connect to the server using either RDP or ICA. This licensing is **per seat**; ten terminals would require ten TS CALs, even if only two were connected at a time.

Windows NT 4.0 Terminal Server Edition was sold with TS CALs. These were installed on each NT 4.0 Terminal Server. Additional TS CALs are available from Microsoft.

Windows 2000 and Windows 2003 have an improved method of license management. All TS CALs are installed on a Terminal Services Licensing Server. This acts as a repository for all TS CALs. The terminal servers request TS 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 but can be run on any Windows 2000 or 2003 server, including Windows 2000/2003 Terminal Servers.

In Windows 2000, Microsoft requires that the Terminal Server Licensing Server be installed on the Primary Domain Controller in a domain.

The Terminal Services Licensing server is activated through the Internet by connecting to the Microsoft Certificate Authority and License Clearinghouse.

Windows 2000/2003 Server with Terminal Services enabled will issue 90-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 2000/2003 Server is not normally sold with TS CALs. These need to purchased separately and installed on the Terminal Services License server.

21.7.3. Windows 2003 TS CALS

Microsoft has expanded the Terminal Server 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 for any user to connect to Microsoft Terminal Servers. This functions like the previous Windows 2000 TS CAL.
- The TS User CAL licenses one user for any device to connect to Microsoft Terminal Servers.

To change between the ***Per Device*** licensing and ***Per User*** licensing, double-click ***Licensing*** to launch the **Licensing Mode** window.

21.8. Microsoft Terminal Server Licensing Activation

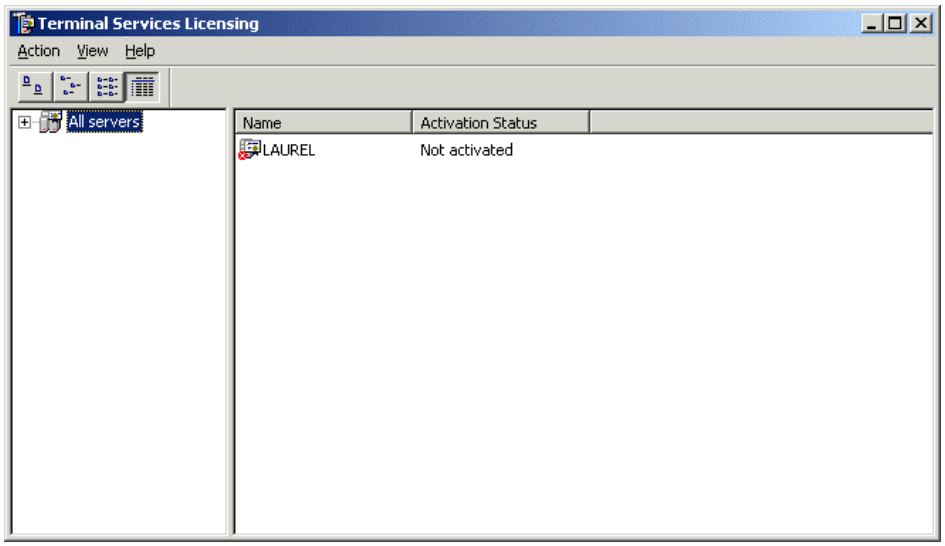
In Windows 2000 and 2003, all the TS CALs are installed on a single Terminal Server Licensing Server. This allows a single site for management and authentication of terminal server connections. A server becomes a Terminal Server Licensing Server by selection of the option during the installation phase or by selecting ***Add/Remove Programs > Add/Remove Windows Components*** from the Control Panel and selecting the Terminal Services Licensing.

Note: The information included here is for your convenience. Because this information can change, please see Microsoft at www.microsoft.com for up-to-the-minute details.

The licensing of the Microsoft components of a Windows 2000 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.

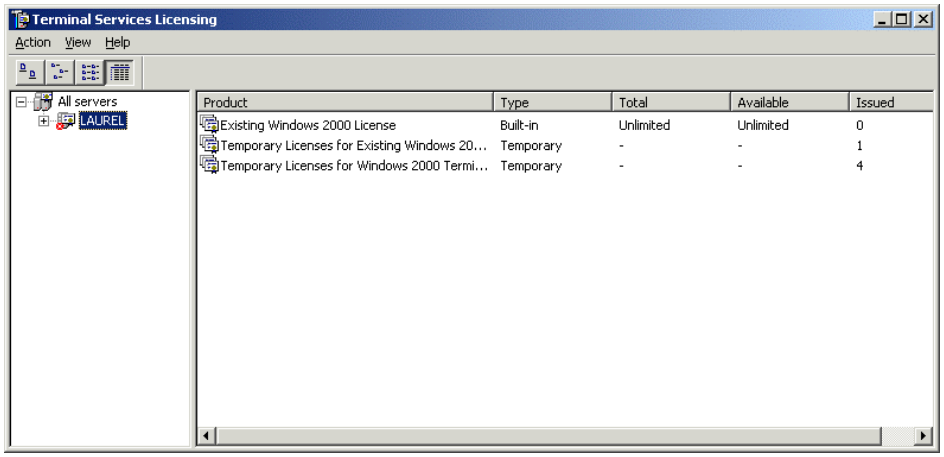
Note: The Terminal Server Licensing Server does not need to be a separate computer but is usually installed on a Terminal Server. Microsoft requires that the Terminal Server Licensing Server be installed on the Primary Domain Controller in a 2000 domain.

To begin the process select ***Start > Programs > Administrative Tools > Terminal Server Licensing*** on the Terminal Server Licensing Server.



Terminal Services Licensing

Highlight desired server.



Selected Terminal Server

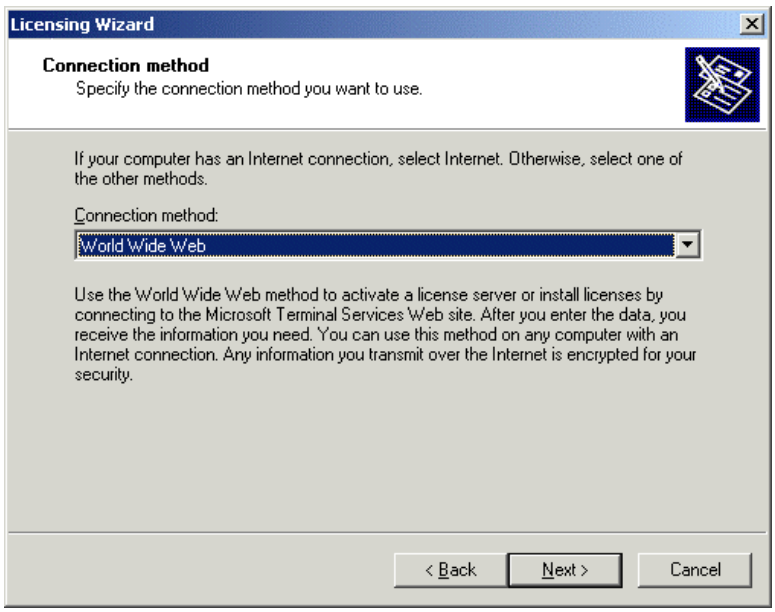
Select ***Action > Activate Server*** from the menu bar.

Licensing wizard

The Licensing Wizard will launch.

Follow the steps of the wizard by selecting ***Next***.

Note: The ID numbers shown on screens have been changed to "1234". Please use the appropriate numbers that apply to your server and licenses.



Connection Method

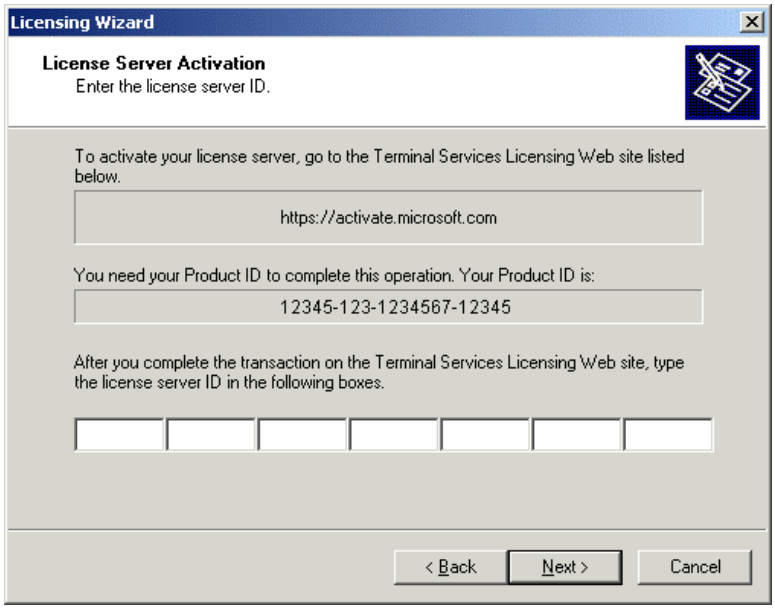
There are several methods for connecting to the Microsoft License Clearinghouse.

- **Internet** - Allows activation through a direct connection to Microsoft. The Licensing Server must have Internet access.

- **World Wide Web** - Allows activation at Microsoft's web site through a web browser.
- **Fax** - Allows activation through faxes to Microsoft.
- **Telephone** - Allows activation through the telephone.

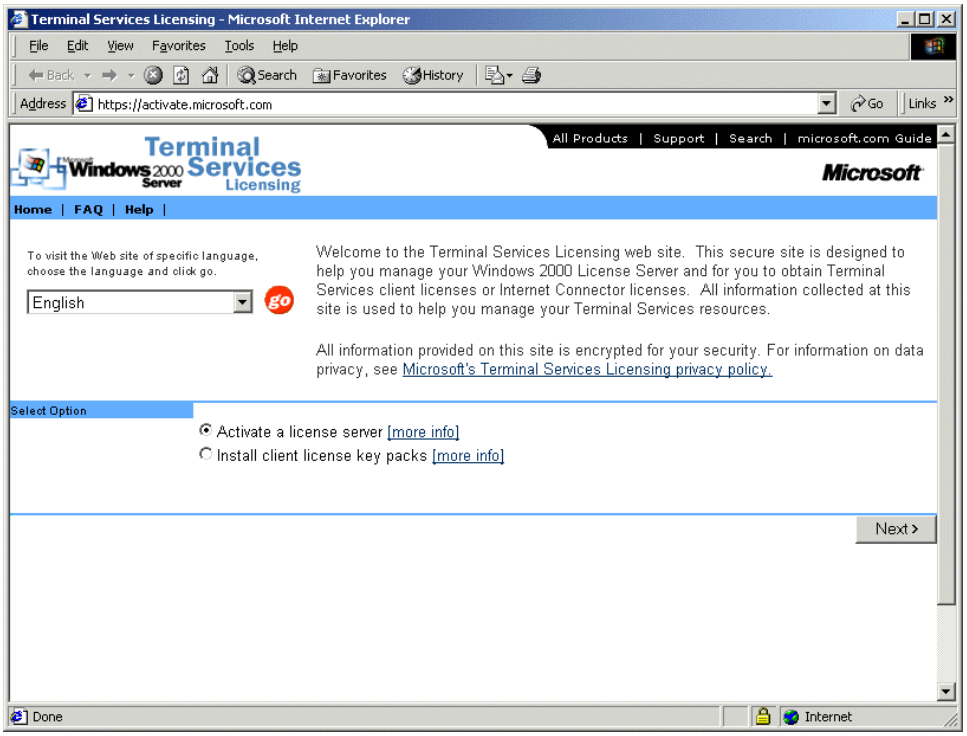
Select the desired method from the drop-down box and select ***Next***.

Note: This section will detail the World Wide Web method.



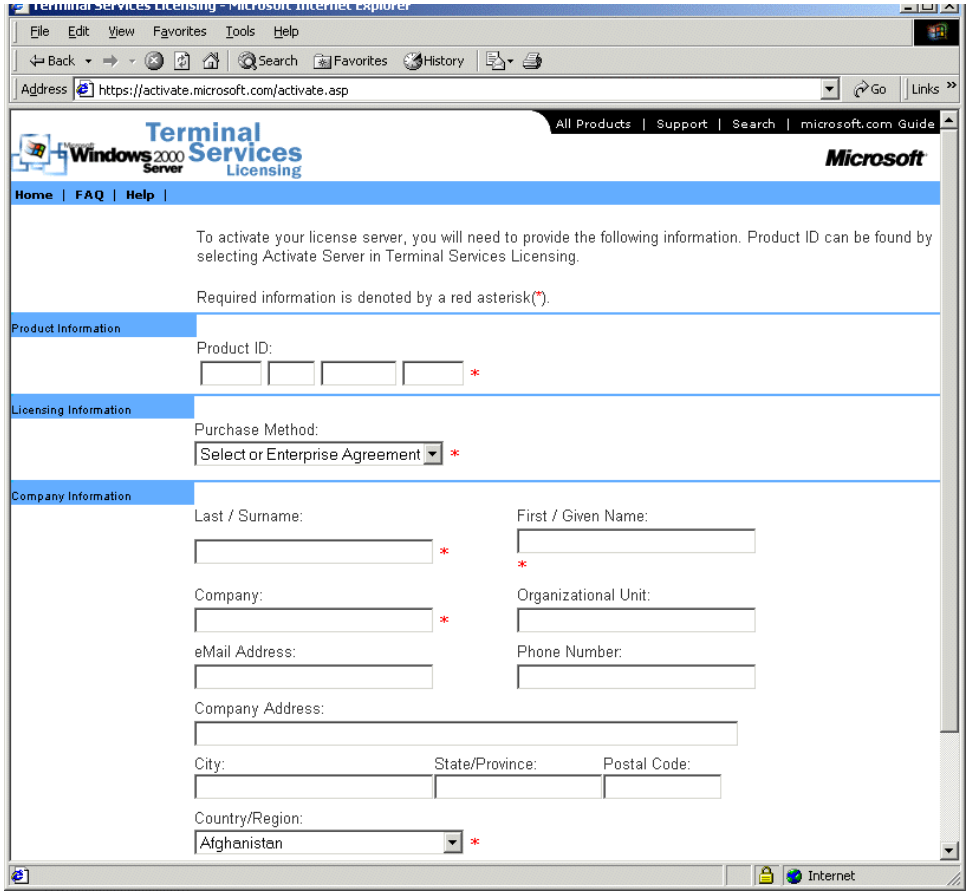
License Server Activation

The server needs a License Server ID for authorization. This is done on the Microsoft web site. Go to the https://activate.microsoft.com site mentioned in the dialog box.



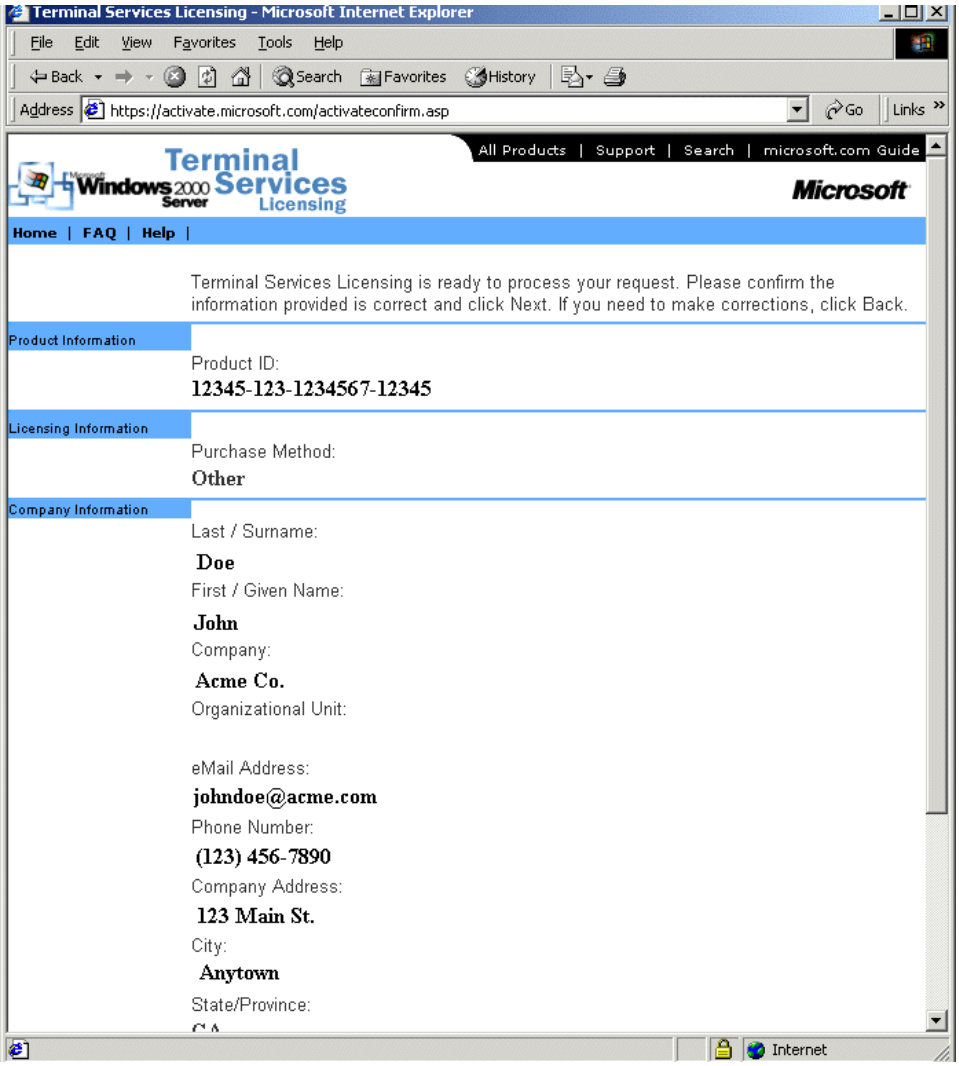
Microsoft Terminal Services Licensing Web Site

Select ***Activate a license server*** and select ***Next***.



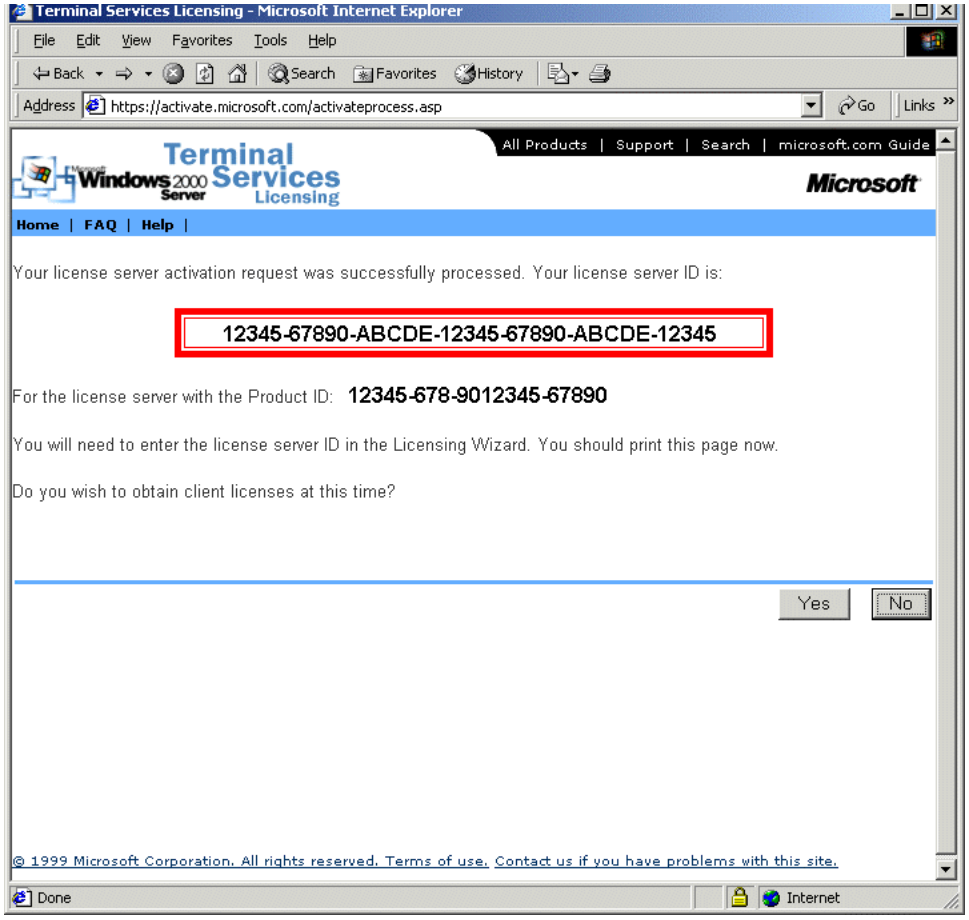
Customer Information Entry Form

Fill out the information forms and select ***Next***. The Product ID is supplied by the Licensing Wizard.



Customer Information

Continue with web-based wizard. Verify the data and select ***Next***.



Server Activation Number

Microsoft will provide the License Server ID.

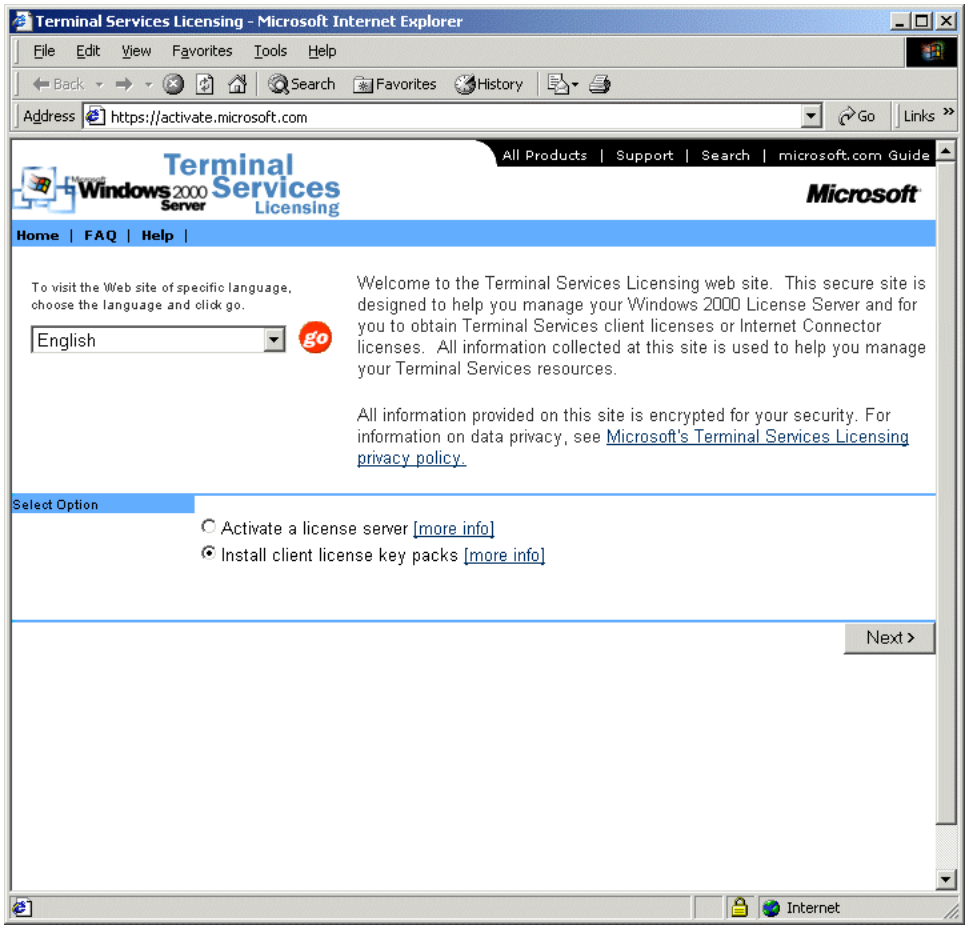
Add this number to the form in the Licensing Wizard.

Wizard Completion

Once the License Server ID is placed in the appropriate fields on the Licensing Wizard, you will have a choice to continue and activate the license packs or to stop with the server activation.

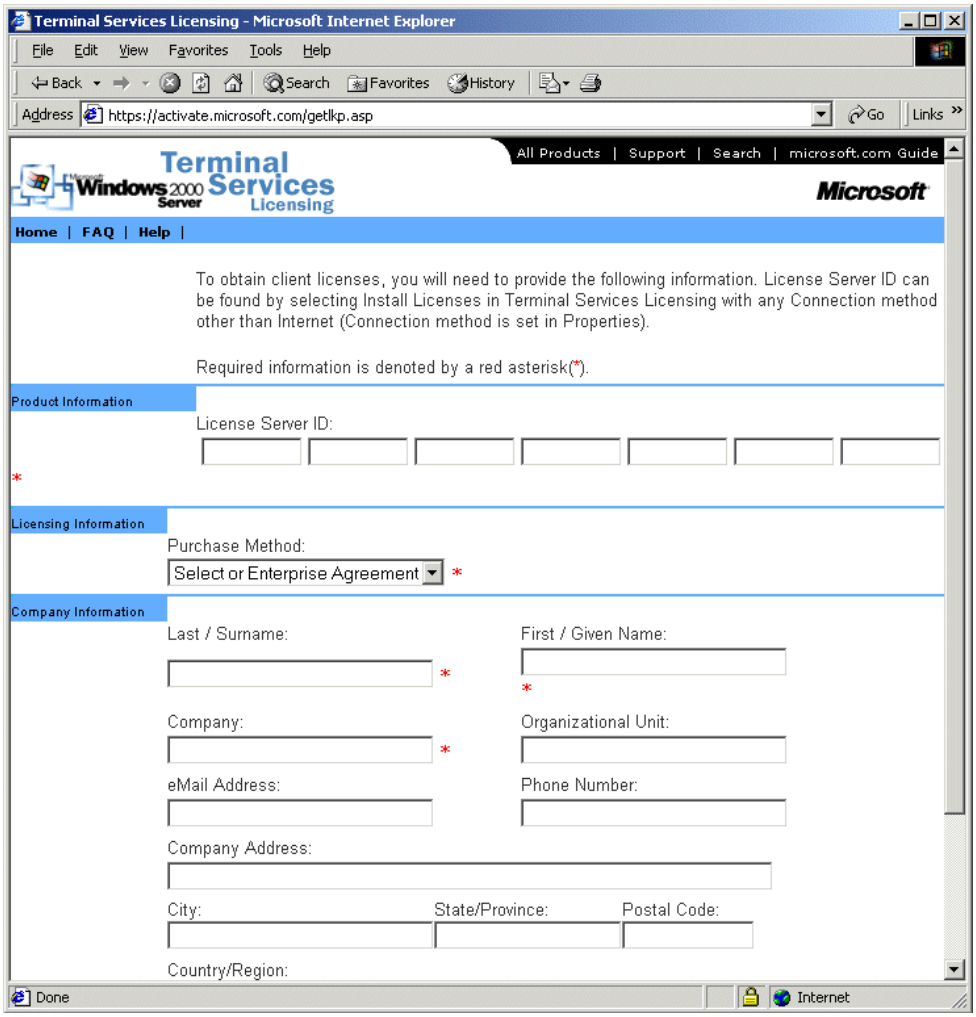
21.8.1. Microsoft TS CAL License Authorization

To continue adding license packs, return to the https://activate.microsoft.com web site.



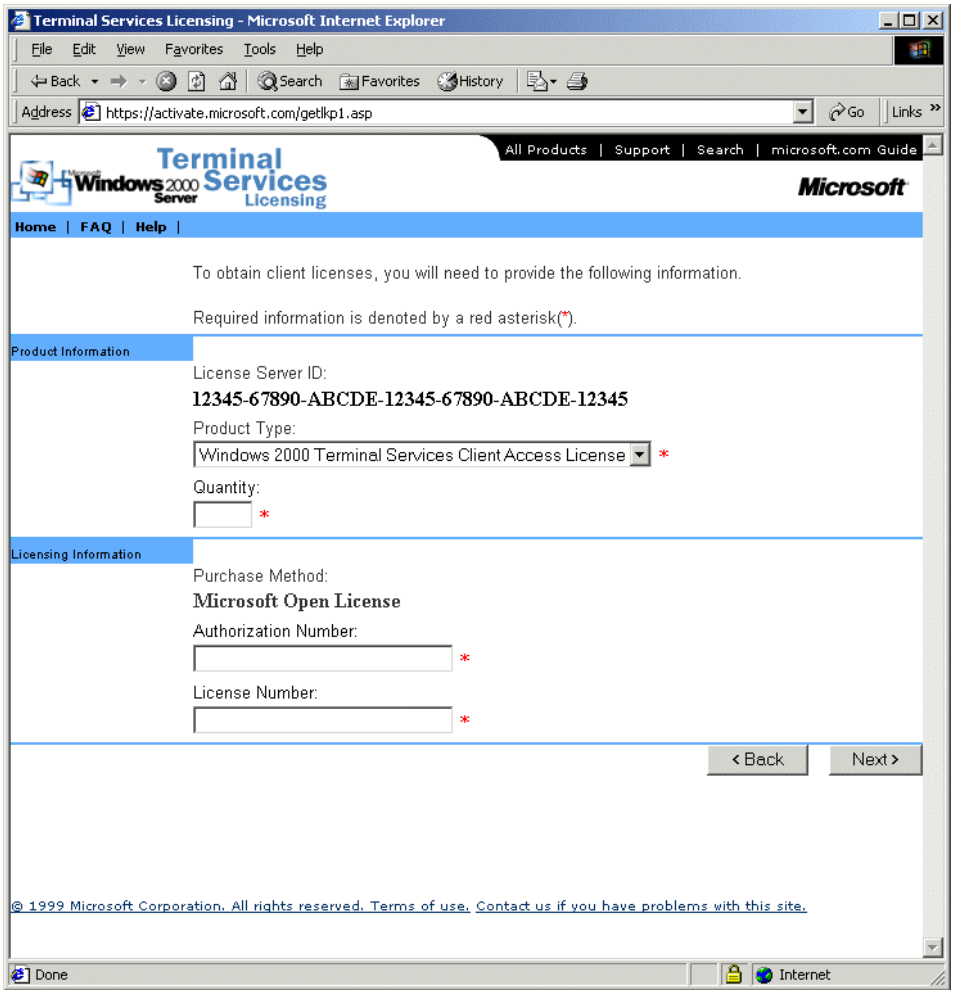
Microsoft Terminal Services Licensing Web Site

Select the Install client license key packs and select ***Next***.



Customer Information

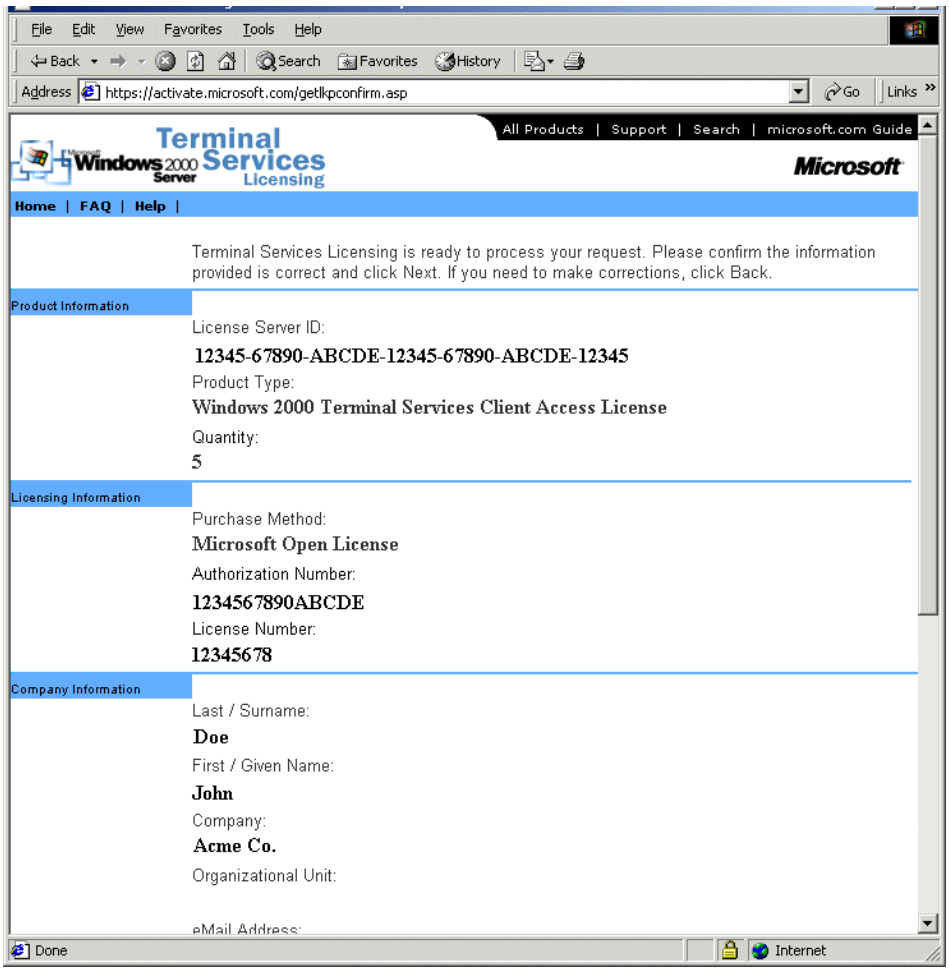
Fill out the form and select ***Next***.



TS CAL Information

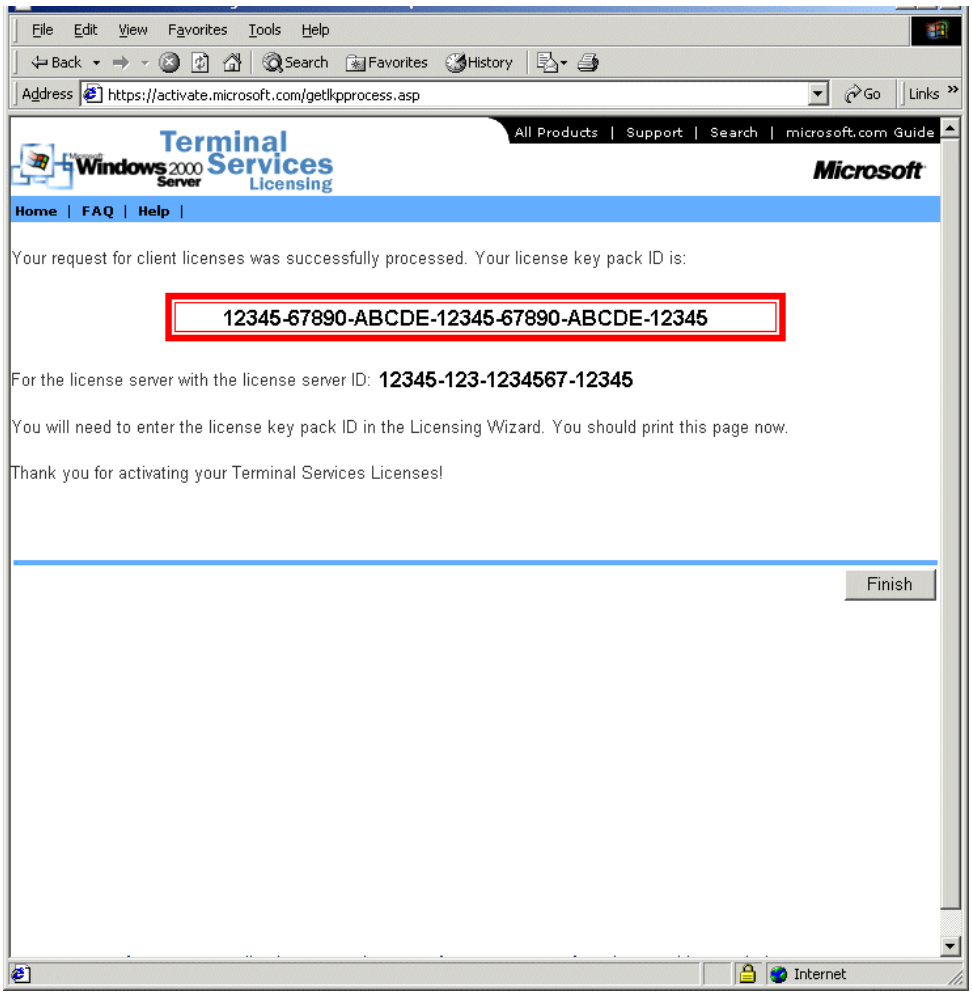
Select the Product Type and fill in the fields with the Quantity, Authorization Number, and License Number from the Licensing Certificate that was included with the purchase of the licenses.

Select ***Next*** to continue.



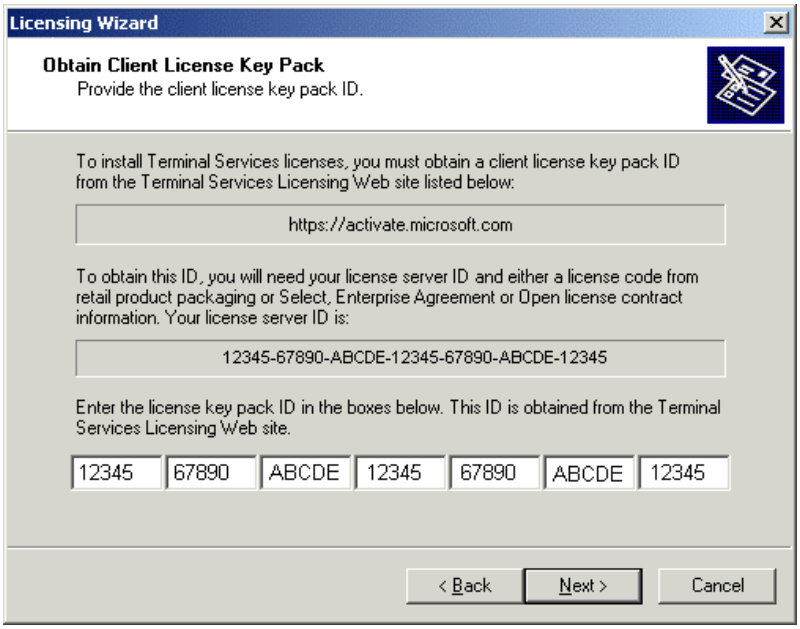
License Information

Verify that the information is correct and select ***Next*** to continue.



License Key Pack ID

The Microsoft site will provide the License Key Pack ID. This needs to be installed in the Licensing Wizard.



License Key Pack ID Fields

Fill in the fields of the Licensing Wizard with the License Key Pack ID from the Microsoft site and select ***Next***.

Licensing Completion

The licenses will be added and will be displayed in the Terminal Services Licensing window.

21.9. Software Installation On Windows 2000/2003

Microsoft Windows 2000 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.

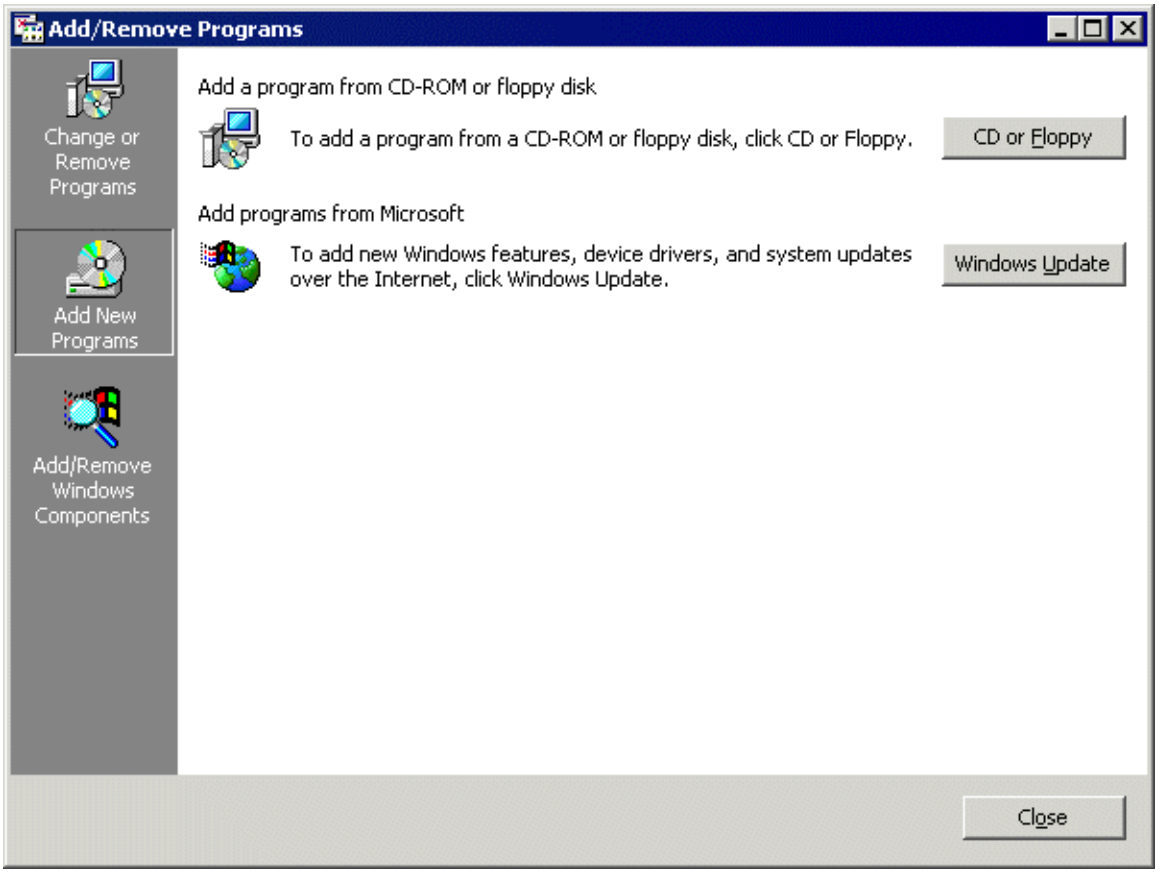
Note: Some software, especially downloaded software, doesn't allow the installer to install it through the Add/Remove Programs tools. To manually put the machine into the install mode open a command prompt and type:

```
change user /install
```

This command sets the machine to install mode. When finished, type:

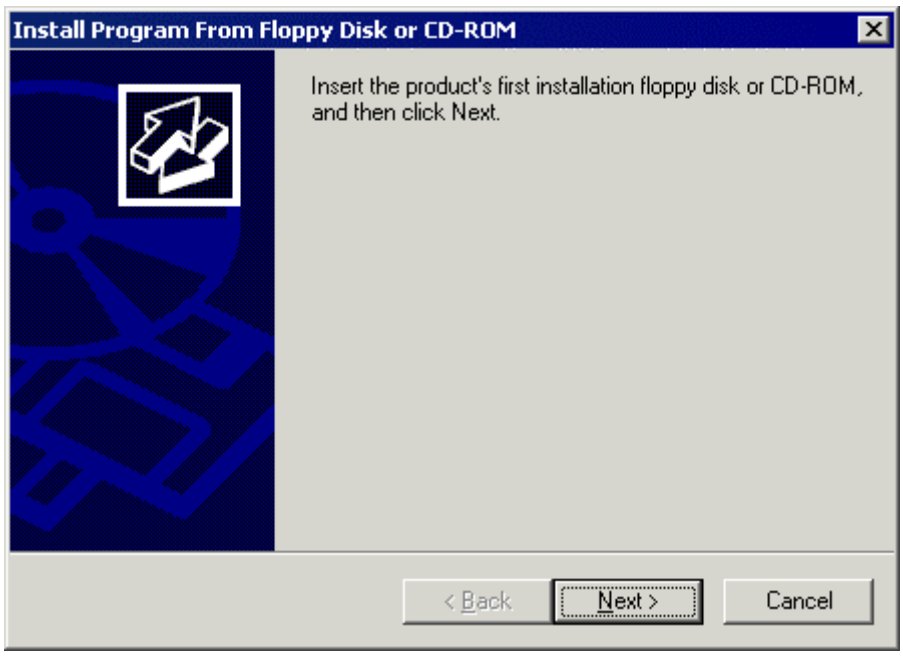
```
change user /execute
```

This command returns the machine to the normal run mode.



Add/Remove Programs

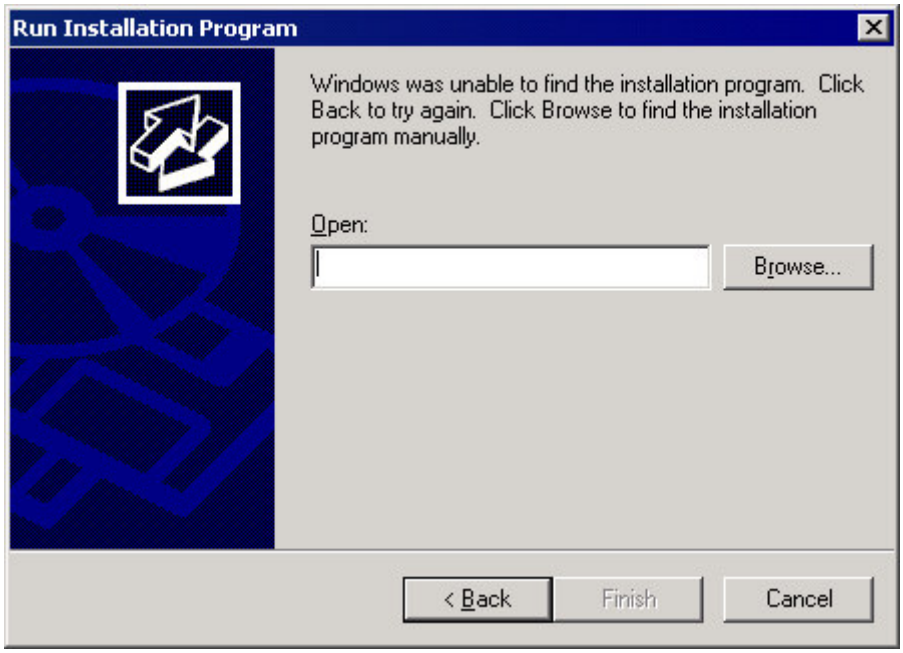
Select the ***CD or Floppy*** button on the **Add/Remove Programs** dialog box to open the Installation wizard.



Install Program Window

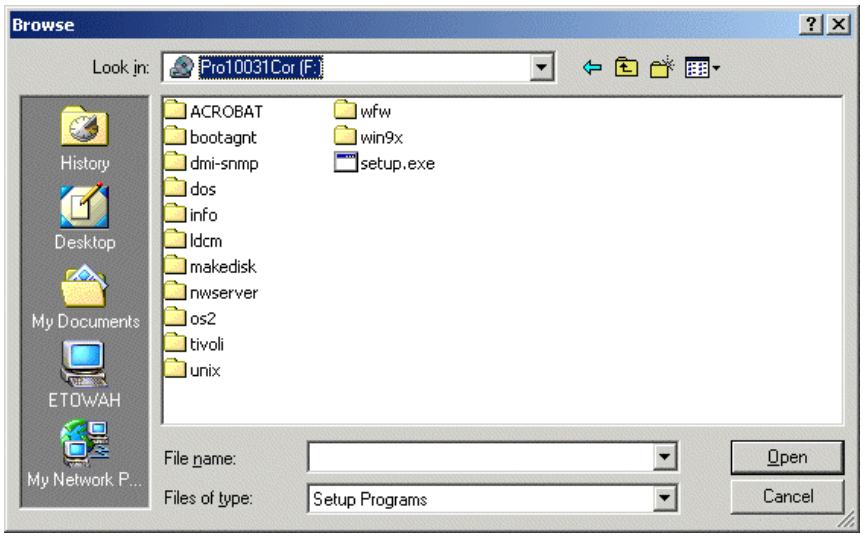
The wizard will prompt for the installation of the software disk. Select ***Next*** to display the **Run Installation Program** dialog box.

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.



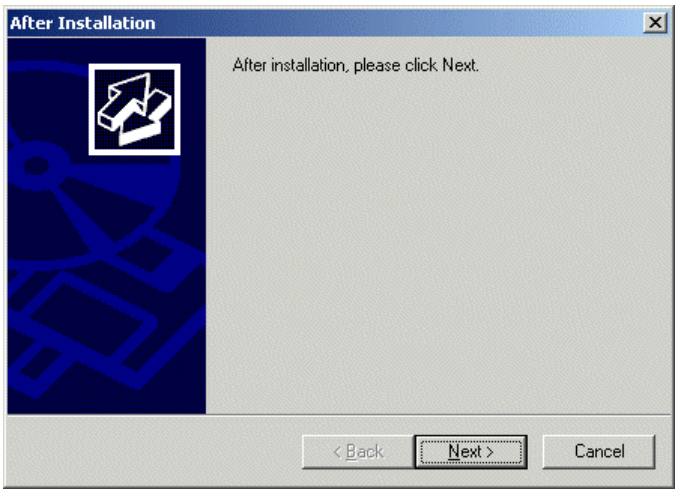
Run Installation Program

Enter the command line of the installation program and select ***Finish***, or select the ***Browse*** button to select the installation file.



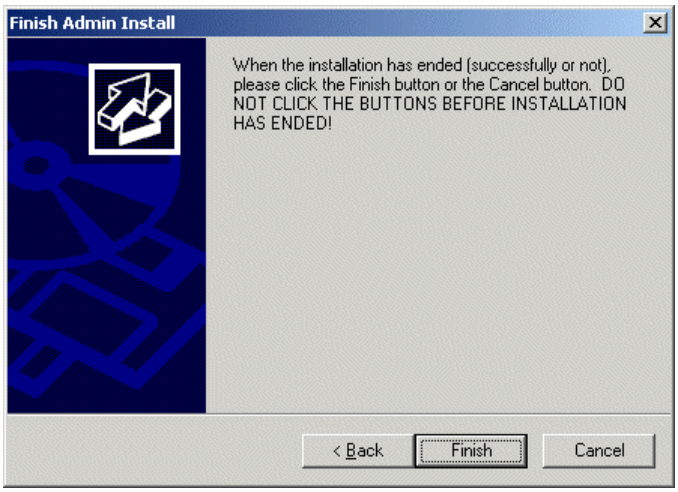
Browse File Window

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.

22. 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.)

22.1. 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 ThinManager Ready 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.
- 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%

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 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.

22.2. Section 2 - Thin Client has Booted and is Running a Session on the Terminal Server

9) Disconnects randomly

- Make sure each user is logging on with a unique user name. Windows 2003 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 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 ThinManager Ready thin client that has sound capability
- Use the Sound Module for that specific thin client
- Connect a powered speaker to the "Line Out" plug. Line Out isn't amplified so it requires a powered speaker.
- Properly working sound will play a drip sound 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 ***ThinManagerServer >Synchronize*** in the ThinManager menu bar.

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) WTSAPI32.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.

23. Glossary of Terms

Access Groups

Access groups are used to limit access to a terminal or Application Group 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

The new name of the Terminal Server Group. A managed collection of terminal servers that a terminal can connect to.

AppLink

A function that applies the Initial Program to a Application Group.

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.

Classic Mode

The method of configuring Groups and Terminals using property tabs that was introduced in ThinManager 1.0. See also Wizard Mode.

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.

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 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.

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 singe 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.

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 monitors attached to the thin client.

MultiSession

A function that allows a terminal to connect to several Application Groups at one time and to switch between sessions.

MultiSession License

A license that allows a server to be added to a Application Group that uses the MultiSession function.

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.

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 NT/2000/2003 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 computer that holds 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.

Share Keyboard and Mouse

A module that allows several thin client to share a keyboard and mouse.

SmartSession

A function that allows a Application Group 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.

SmartSession License

A license that allows a server to be added to a Application Group that uses the SmartSession function for load balancing.

Standard Group

A Application Group without additional options. The terminal servers are listed in a pre-defined order and a terminal connects to the first available terminal server in the order specified by the group.

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 Group

The former name of Application groups.

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

A 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 NT 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.

USB

Universal Serial Bus. A data port that allows peripherals to connect to a PC.

WinTMC

A terminal server client application that can be installed on a PC. It can be controlled, configured, and managed through ThinManager.

Wizard Mode

A method of configuring Groups and Terminals using a Wizard that was introduced in ThinManager 2.4. See Classic Mode.

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