
ThinManager 2.6

User's Manual



Copyright © 1999-2005
Automation Control Products
Rev. 1, January 18, 2005
All Rights Reserved

Contents

Introduction	1
ACP ThinManager	1
What's New in Version 2.6.....	2
New - WinTMC ThinManager Client for Windows	2
New - SmartSession Queuing.....	2
New - Multicast	2
New - Terminal Server Session	2
New - Terminal Server Performance Graphs	2
New - Touch Screen Calibration	2
New - Browse Button for Initial Programs.....	3
New - RDP Experience Module	3
New - Time Zone Redirection Module	3
Improved - Share Keyboard and Mouse Master Module.....	3
Improved -Share Keyboard and Mouse Slave Module.....	3
 Quick Start, Components, and System Configuration	 5
Quick Start Checklist.....	5
Required Components	7
Windows Terminal Server Operating System.....	7
Client Communication Protocol.....	7
ThinManager Administrative Software	7
ThinManager Ready Thin Client Hardware	8
Standard TCP/IP Network Infrastructure	8
Network Overview.....	9
Connection Overview	11
Terminal Server Group Overview	12
Failover Overview	13
 Installation and Licensing of ThinManager	 15
Standard ThinManager Installation On Windows 2000/2003 Server.....	15
ThinManager or WinTMC Installation	16
WinTMC Installation.....	18
Trialware ThinManager Installation.....	20
ThinManager Licensing.....	21
ThinManager License File Download	22
ThinManager License File Installation	31
ThinManager Module Licensing.....	33
WinTMC Licensing.....	33
 ThinManager Interface	 35
Opening ThinManager	35
ThinManager Graphic User Interface.....	36
Tree Pane	38

Icons.....	39
Tree Icons	39
Details Pane.....	47
Changing a Terminal's Group.....	56
Modifying a Terminal.....	56
Deleting a Terminal.....	56
Rebooting a Terminal.....	56
Renaming a Terminal.....	57

Menu Items 59

<u>E</u> dit	59
Add <u>T</u> erminal.....	59
Add <u>G</u> roup.....	59
Add ThinManager <u>S</u> erver.....	59
Delete.....	61
M <u>o</u> lify.....	61
R <u>e</u> name.....	62
L <u>o</u> ck.....	62
U <u>n</u> lock	63
F <u>i</u> nd	63
Find <u>N</u> ext.....	63
<u>T</u> hinManager Server	63
L <u>i</u> censing	63
M <u>o</u> dules.....	63
Install New <u>T</u> ermCap Database	65
Install New <u>F</u> irmware	65
Server List Management.....	66
Terminal Server List.....	66
Terminal Server Group List.....	74
ThinM <u>a</u> nager Server List.....	83
D <u>N</u> S Configuration	88
R <u>e</u> store Configuration	91
B <u>a</u> ckup Configuration.....	91
S <u>y</u> ncronize Configuration.....	92
S <u>e</u> ttings	95
Configure Default Terminal	102
R <u>e</u> connect.....	103
D <u>i</u> sconnect	103
<u>T</u> ools	103
Restart Terminals.....	103
Calibrate Touch Screen	103
D <u>i</u> sable Terminals	104
Enable Terminals	106
<u>V</u> iew	106
S <u>t</u> atus Bar	106
Use <u>W</u> izards.....	106
Show <u>C</u> onected Only	107
O <u>p</u> tions.....	107
<u>R</u> emoteView.....	108
Interactive Shadow	108
Scaled to Window	108
Go <u>F</u> ullScreen	108
Connect <u>O</u> ptions	108
Send <u>K</u> ey.....	109
<u>H</u> elp.....	110

Help Topics	110
About ThinManager	110
Right Click Menus in the Tree Pane	110
Right Click on the ThinManager Servers Icon	110
Right Click on a ThinManager Server Icon	110
Right Click on a Group Icon	111
Right Click on a Terminal Icon	111
Right Click on a Terminal Server Icon	111

Adding Thin Client Hardware 113

The Boot Process.....	113
IP Address Assignment.....	115
DHCP	115
Static IP	116
Configuring New Hardware	119
Create New Terminal Mode	119
Replace or Create New Terminal Mode	120
Auto-Creation of Terminals	120

Configuration Wizards 123

Introduction to Wizards	123
List Wizards.....	124
Terminal Server List Wizard.....	124
Terminal Server Group List.....	131
ThinManager Server List.....	140
DNS Configuration	144
Group Configuration Wizard	147
Groups Using Individual Terminal Servers	148
Groups Using Terminal Server Groups	154
Continuation of the Group Configuration	158
Terminal Configuration Wizard	168
Terminals Using Individual Terminal Servers	173
Terminals Using Terminal Server Groups	179
Continuation of the Terminal Configuration	183

Terminal Server Groups 195

Terminal Server Group Overview	195
SmartSession.....	197
Instant Failover with Terminal Server Groups	201
MultiSession.....	203
AppLink	207
AppLink and MultiSession.....	209

Additional ThinManager Functionality 215

ThinManager to Terminal Server Connection.....	215
Permission Setup	215
Data Display.....	217
Remote Connection	222
Module Overview	227
Module List.....	227
Installing a Module	231
Changing Module Parameters	232
Disk-On-Chip.....	237

Disk-On-Chip Configuration	237
Updating Disk-On-Chip	237
Disk-On-Chip Update Module	238
Disk-On-Chip Update Program	239
Initial Program	240
Browse Button	242
Failover	243
Instant Failover	245
Key Block Module	250
Local Print Module	251
Mouse Modules	254
Mouse Configuration Module	254
PS/2 Mouse Module	255
Serial Mouse Driver	255
RDP Experience Module	256
Screen Saver Module	258
Share Keyboard and Mouse Module	259
Time Zone Redirection Module	262
USB Memory Card Reader Module	263
X Terminal Module	264
ThinManager Security	265
ThinManager Security Groups	265
ThinManager Server Security	266
Windows Security	267
Shadowing	268
Shadow Access	268
Disable Shadow	269
Shadow Keystrokes	269
Serial Communications	270
RDP Serial Port Redirection Module for Windows 2003	270
Serial Port Mapping with ICA	271
High Speed Serial Driver	273
Installation Requirements	273
High-Speed Serial Driver Installation	273
High-Speed Serial Driver Configuration	273
ThinAdapter and the ThinAdapter Plus	275
ThinAdapter Plus	275

WinTMC Fat Client 276

WinTMC Overview	276
Local WinTMC Configuration	276
WinTMC Licensing	281

Non-ThinManager Components 283

Configuring RDP for Auto-Login	283
Configuring Windows 2003 Terminal Services for Multiple Logins	285
Single Session Per User	285
Licensing Mode	286
Permission Compatibility	286
Command Prompt	288
Group Policy	289
DHCP Server Setup	294
Creating Microsoft User Profiles	304
Microsoft TS CALs – Terminal Server Client Access Licenses	306

Microsoft Client Access Licenses (CALs)	306
Microsoft Terminal Server Client Access Licenses (TS CALs).....	306
Windows 2003 TS CALS	306
Microsoft Terminal Server Licensing Activation.....	307
Microsoft TS CAL License Authorization	314
Software Installation On Windows 2000/2003	321

Glossary of Terms	325
--------------------------	------------

Index	333
--------------	------------

Introduction

ACP ThinManager

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.

Note: All trademarks, service marks, and copyrights belong to their respective company.

Microsoft, Windows, Windows XP, Windows 2000, Windows 2000 Server, Windows 2003, and Windows 2003 Server are trademarks of the **Microsoft Corporation**, Redmond, Washington.

Citrix, MetaFrame, ICA, and Citrix Device Services are trademarks of **Citrix Systems**, Fort Lauderdale, Florida.

ACP, ACP Enabled, ThinManager, ThinManager Ready, ThinServer, SmartSession, MultiSession, and AppLink are trademarks of **Automation Control Products**, Atlanta, Georgia.

What's New in Version 2.6

New - WinTMC ThinManager Client for Windows

ACP has released WinTMC, a ThinManager compatible client for Microsoft Windows operating systems. It provides personal computers with the same functionality as ThinManager Ready Terminals.

See WinTMC Fat Client for details.

New - SmartSession Queuing

ACP has improved its SmartSession load balancing by adding Queuing so that ThinManager Thin Clients will switch to backup SmartSession terminal servers in an orderly fashion.

See SmartSession for details.

New - Multicast

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 functionality is especially useful for low bandwidth connections and highly utilized networks.

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

See MultiCast Configuration for details.

New - Terminal Server Session

Selecting a terminal server in the ThinManager tree and the **Connect** tab in the Details pane will automatically start a session on the terminal server. This can be used to administer a terminal server from within ThinManager. The configuration for this feature is accessed in the RemoteView drop down menu by selecting Session Options. Options include video mode, color depth, auto login, and access to local drives.

See Remote Connection for details.

New - Terminal Server Performance Graphs

Selecting a terminal server in the ThinManager tree and the **Graph** tab in the Details pane will display a graph of terminal server memory and CPU usage. When a Terminal Server Group is selected in the tree, selecting the **Server Rank** tab will display a graph of terminal server load for all terminal servers in the group.

Up to 1 hour of historical load information is stored for each server.

See Data Display for details.

New - Touch Screen Calibration

Touch Screen Modules now include a Five Point Touch Screen Calibration for greater accuracy.

See Calibrate Touch Screen for details.

New - Browse Button for Initial Programs

The selection of Initial Programs and AppLink programs are made easier with the addition of a Browse button for program selection.

See Initial Programs for details.

New - RDP Experience Module

This module allows the user to set the RDP Experience options when using Windows 2003 terminal servers.. Options include: **Allow Desktop Background**, **Show Window Contents While Dragging**, **Allow Menu and Window Animation**, and **Allow Themes**. In order to use these features, they must be enabled by using the Windows Group Policy Editor.

See RDP Experience Module for details.

New - Time Zone Redirection Module

This module allows the correct local time to be displayed based on the time zone where the terminal is located. This module should be used when the terminal server is located in a different time zone than the terminal and the correct local time is desired.

See Time Zone Redirect Module for details.

Improved - Share Keyboard and Mouse Master Module

The Share Keyboard and Mouse Master module has been modified to allow for interactive shadowing of the master terminal. While the master is being shadowed, sharing of the local keyboard and mouse will be disabled during the shadow period.

See Share Keyboard and Mouse Module for details.

Improved -Share Keyboard and Mouse Slave Module

The user can explicitly enter which terminals can be used as a master terminal.

See Share Keyboard and Mouse Module for details.

Quick Start, Components, and System Configuration

Quick Start Checklist

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.

Create a Licensing Server and add a TS CAL (Terminal Server Client Access License) for each thin client.

See Microsoft Terminal Services Licensing Activation.

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 or XP Workstation. The clients will connect to the ThinManager Server and download the firmware and configuration.

See ThinManager Installation.

Install a ThinManager License for each ThinManager Ready thin client.

See ThinManager Licensing.

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

Note: Citrix no longer licenses Citrix Device Services. ThinManager will connect to terminal servers with existing Device Services licenses, but no new ones can be created.

See Client Communication Protocol.

Create a Microsoft user profile for each user on the terminal server or the domain.

See Creating Microsoft User Profiles.

Apply appropriate security to each user profile using the standard Microsoft techniques.

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.

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.

Required Components

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

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

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 have 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.

Client Communication Protocol

The second component is the Client Communication Protocol. This can be either the ICA protocol available from Citrix or the RDP protocol that is installed by default with any Windows Terminal Server operating systems.

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 Terminal Servers and Windows 2003 Terminal Servers. The RDP connection to a Windows 2000 Terminal Server is limited to a 256-color depth (8-bit) while the Windows 2003 Server connection can be made at a higher color depth.

The **ICA (Independent Computer Architecture) Protocol** is available by installing **Citrix MetaFrame** on the Terminal Servers.

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 and 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.

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 display the ThinManager Ready sticker. The ACP website (<http://www.thinmanager.com>) has links to the ACP Partners.



ThinManager Ready Logos

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.

Network Overview

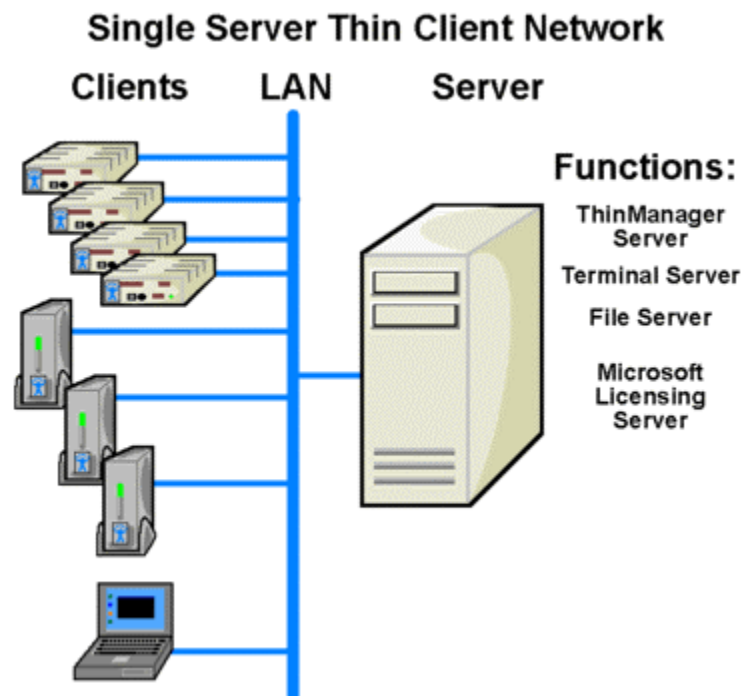
The simplest thin client network consists of a single computer, configured as a terminal server, with the TS CALs, ThinManager, ThinServer, and the applications installed on it. All the ThinManager Ready thin clients connect to this single computer.

A more common scenario includes the use of multiple computers. These might be additional terminal servers for failover functionality, additional terminal servers for 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.

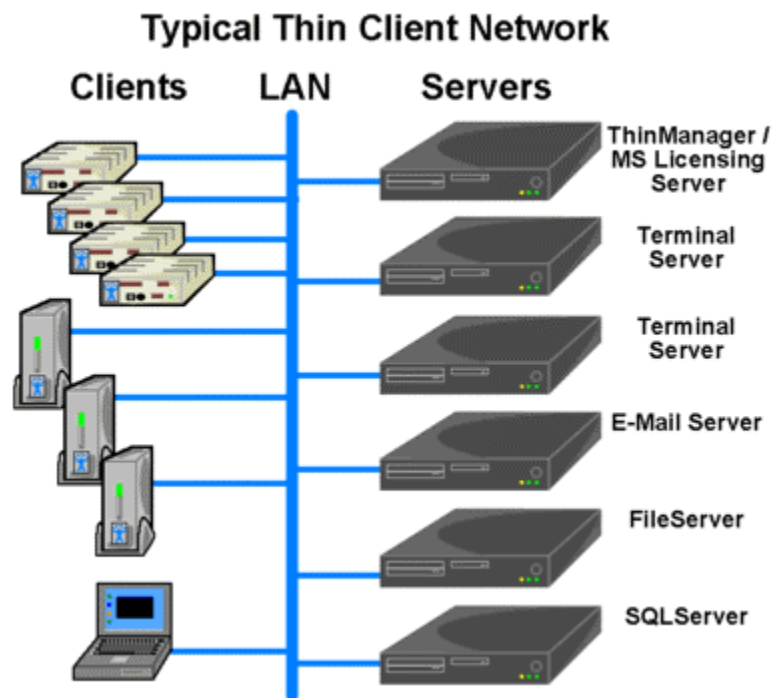
ACP Networks require:

1. **A ThinManager Server**, that is, a computer running ThinManager. This does not have to be a “server”, but can be any Windows computer, including a workstation.
2. **A Microsoft Terminal Server** with a Client Communication Protocol and all desired applications. This computer may also be the ThinManager Server.
3. **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.
4. **A DHCP Server** or **Static IP addresses** for the thin clients.
5. **ThinManager Ready Thin Client** hardware.
6. A standard **Ethernet** network.

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

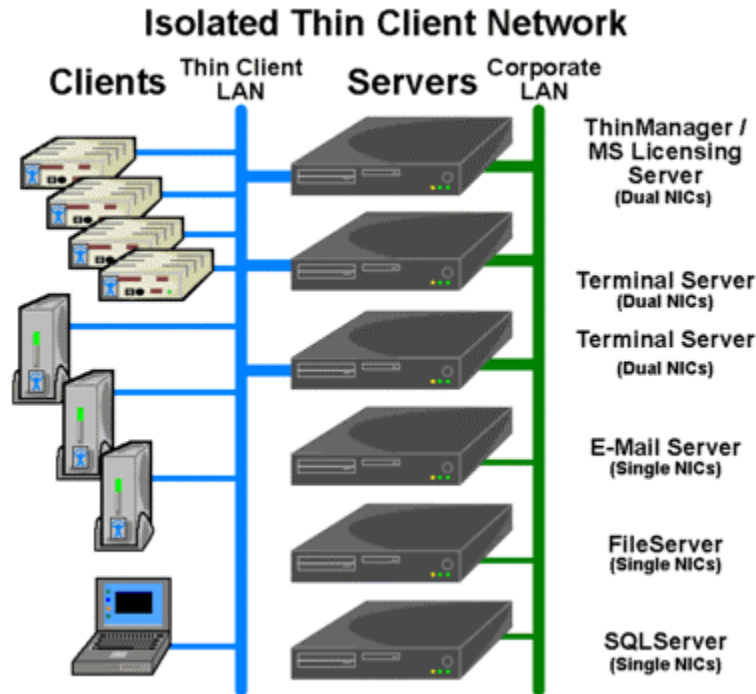


When a single server is used for the ThinManager Ready thin client network, all components need to be installed on the single computer, including ThinManager, Microsoft Terminal Services Licensing, Terminal Services, applications, and a DHCP server, if desired.



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.

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 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 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. Terminal Server Groups are groups of terminal servers that have added functionality for the thin client.

Terminal Server Group Overview

Terminal Server Groups are collections of Terminal Servers. A ThinManager Ready thin client can connect to one or more terminal servers that are members of a Terminal Server Group. Instead of specifying individual terminal server that a terminal will connect to a terminal server defined in a terminal server group. The specific terminal server that the terminal connects to is based on the Terminal Server Group configuration and options.

- A **standard Terminal Server 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 Terminal Server Group with the most available resources.
- The **Instant Failover** option allows a terminal to connect to two terminal servers within a Terminal Server 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 a Terminal Server 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 Terminal Server Groups. The user can switch between groups using an on-screen menu or hot keys. These groups may be standard Terminal Server Groups, Terminal Server Groups with SmartSession, AppLink, and/or Terminal Server Groups with Instant Failover.

These Terminal Server Group options can be combined on the same Terminal Server Group, for example a Terminal Server 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 Terminal Server Groups.

See Terminal Server Groups for details.

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 a Client Communication Protocol and appropriate licenses added.
- **Sufficient Memory:** The second 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 user profiles and permissions. The terminals will not log into a secondary session unless it has a user profile on that server.
- **IP Addressing In ThinManager:** When configuring the terminal, 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

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.

Note: ThinManager can be installed on any computer including the terminal servers, domain controllers, file servers, or workstations.

See Failover for further details.

Installation and Licensing of ThinManager

Standard ThinManager Installation On Windows 2000/2003 Server

In Microsoft Windows 2000 and Windows 2003 with Terminal Services enabled, 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

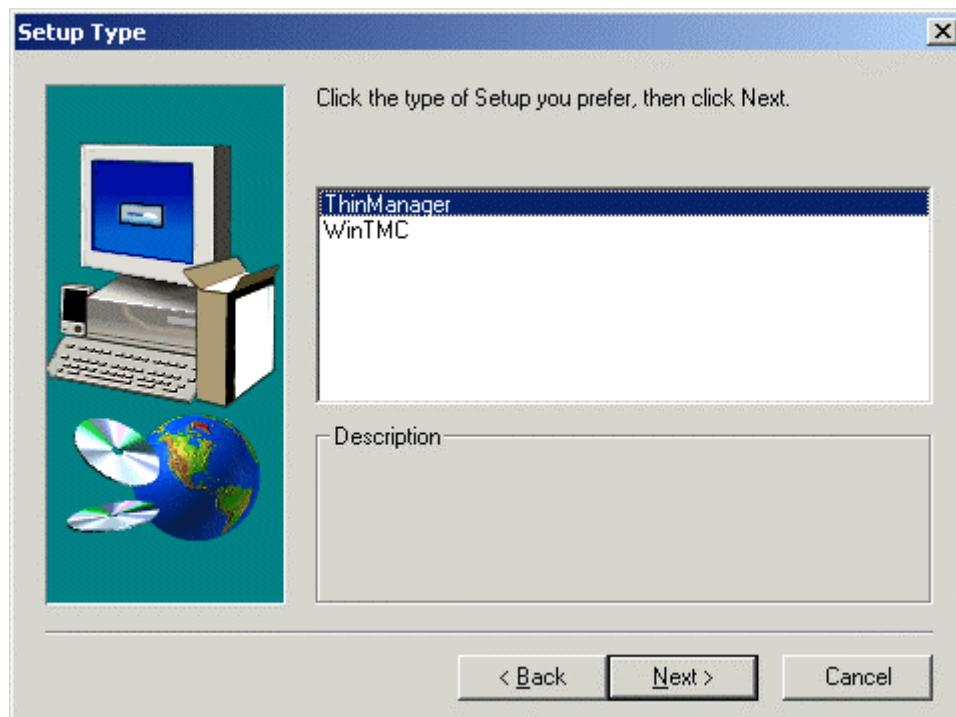
will ask for the path to the setup program. The setup program path is **X:\setup.exe**, where “X” is the CD-ROM drive that contains ThinManager.

Enter the path, or select the Browse button and select **setup.exe** through Explorer, and continue with the wizard.

Note: ThinManager does not need to be reinstalled to add more licenses. Add additional licenses as described in ThinManager Licensing.

ThinManager or WinTMC Installation

The ThinManager Install CD contains the installation for the ThinManager program and the WinTMC fat client. Once the ThinManager installer is launched, the **Setup Type** window allows the user to choose which program to install.



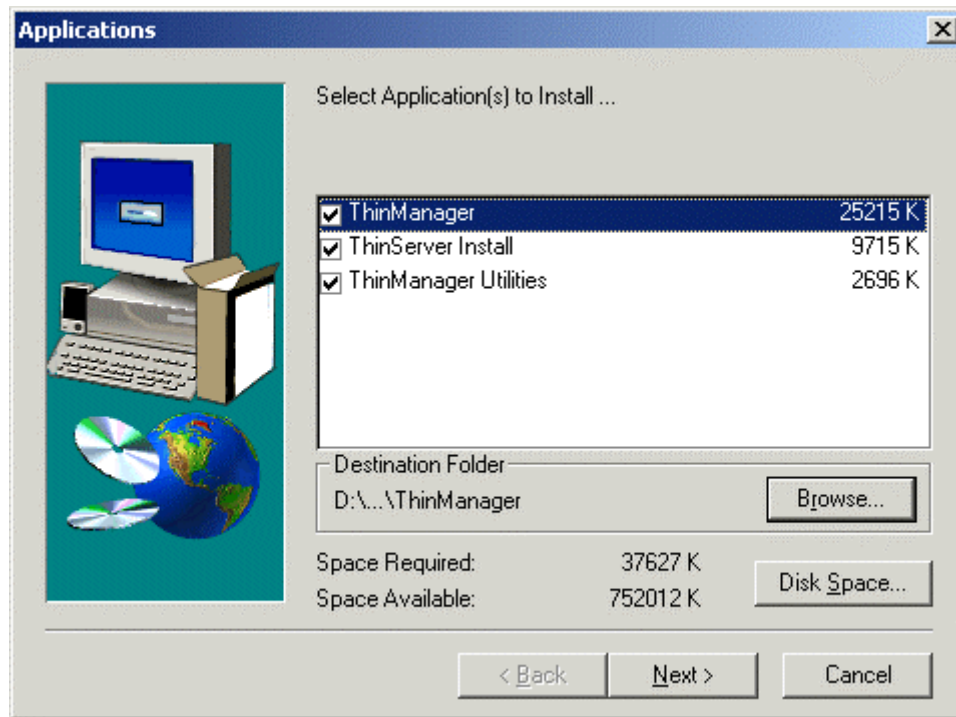
ThinManager Installation – Application Selection

The user can choose either:

- ThinManager - the Thin Client control and management program
- WinTMC - the fat client program that turns PCs into terminals controlled and managed by ThinManager.

If ThinManager is chosen to install ThinManager, an Application dialog box will open that displays the available software programs on the ThinManager CD.

Although ThinManager appears to be a seamless program, it has two major components.



ThinManager Installation – Application Selection

An Application dialog box will open that displays the available software programs on the ThinManager CD. Although ThinManager appears to be a seamless program, it has two major components.

- **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.

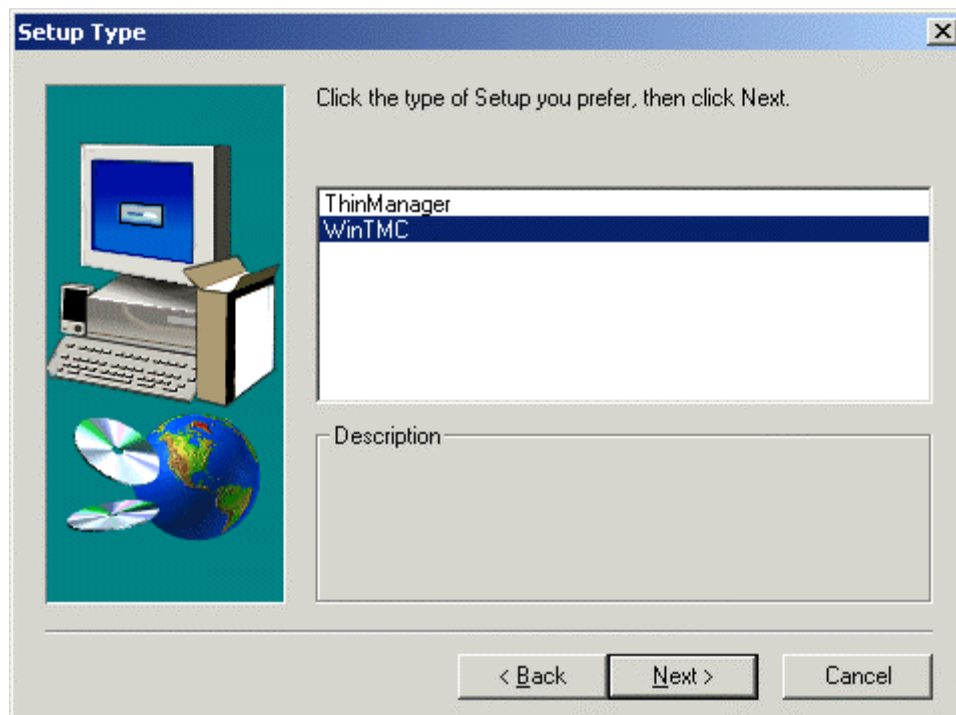
Check the desired components and select **Next**.

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.

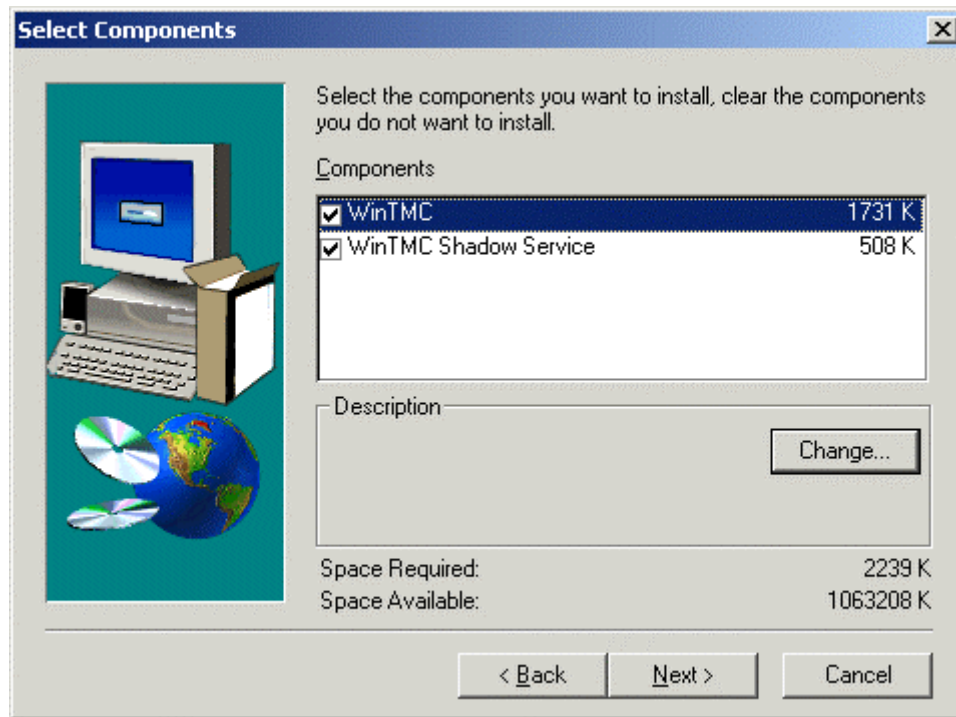
The WinTMC client needs to be installed on each PC that it is run on. Insert the ThinManager CD and launch the setup.exe file.

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



ThinManager Installation – Application Selection

The ThinManager installation provides a choice of programs to install. Choose **WinTMC** and select the **Next** button.



WinTMC Components

The WinTMC installation program has two options.

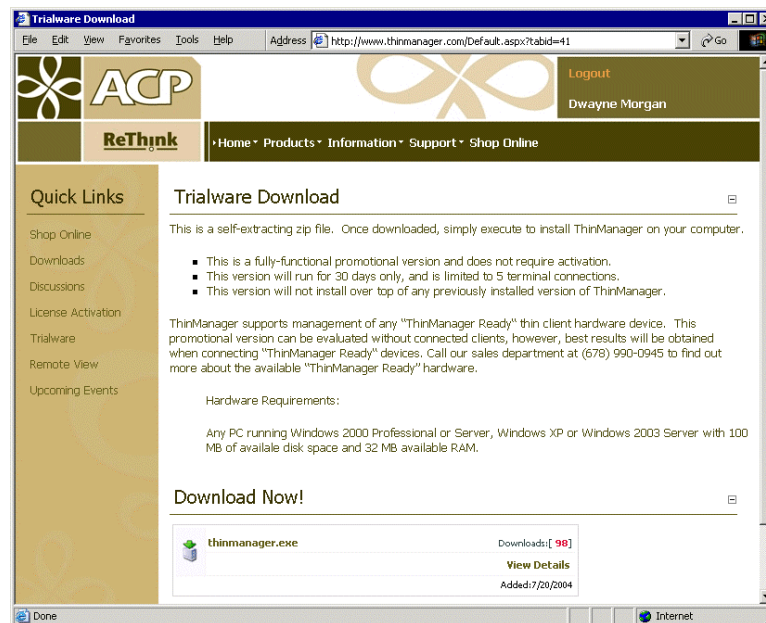
- WinTMC - This is the client application that needs to be installed to use the client.
- WinTMC Shadow Service - This optional program allows the PC to be shadowed from within ThinManager by authorized users. This will work even when the WinTMC isn't active.

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

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 replaced with the standard ThinManager version to become a regularly licensed program.

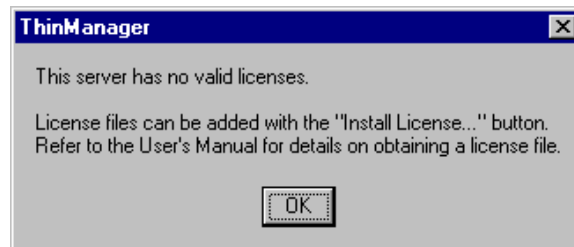


Trialware Download at www.thinmanager.com

ThinManager Licensing

ThinManager will allow a single client to connect without a license as Demo Mode, but will require a ThinManager license for more than one terminal. This license is included with the purchase of ThinManager software. Activation of this license is done within the ThinManager web site at <http://www.thinmanager.com>.

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 two licensing modes, Standard and Enterprise. Several Terminal Server 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.

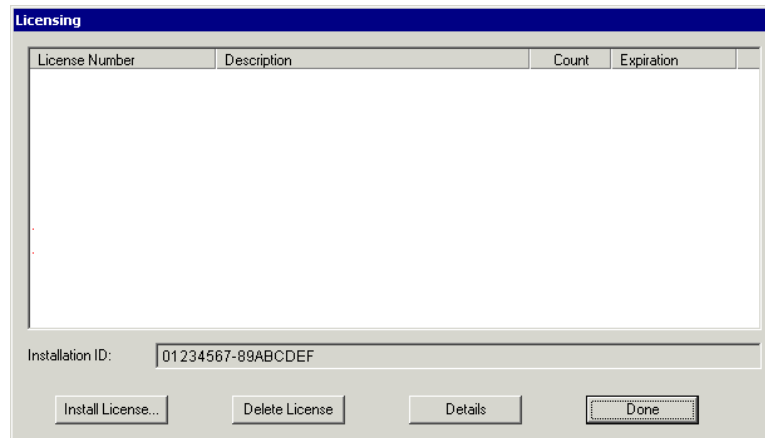
- **Enterprise Server** includes two license numbers that are installed on two computers to provide redundant ThinManager Servers.
- **Enterprise Site** has a single license number that can be installed on an unlimited number of computers at a single company location to provide redundancy and departmental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

Additional Licenses include:

- A **MultiSession Server License** allows a terminal server to be added to a Terminal Server Group that is available for MultiSession. A number of MultiSession Server Licenses are included with Enterprise Licenses or they can be purchased for use with Standard ThinManager licenses.
- A **SmartSession Server License** allows a terminal server to be added to a Terminal Server 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.
- The **High Speed Serial Driver License** allows a terminal to use the High Speed Serial Driver module. This is an additional purchase.
- The **Instant Failover License** allows a terminal to use the Instant Failover module when using individual terminal servers, or to connect to a Terminal Server Group that is configured to use the Instant Failover option. This is an additional purchase.

- The **Share Keyboard Mouse 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.

The ThinManager Licensing dialog box shows the available licenses and shows the Installation ID. It is opened by selecting **Tools>Licensing** from the ThinManager menu bar.



Licensing Dialog box

The Installation ID at the bottom left-hand corner of the screen is used to obtain the License File from ACP.

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

ThinManager License File Download

To obtain a license file you need two numbers:

- The **Installation ID** that is generated by ThinManager during installation.
- The **License Number** that is provided with the ACP ThinManager CD.

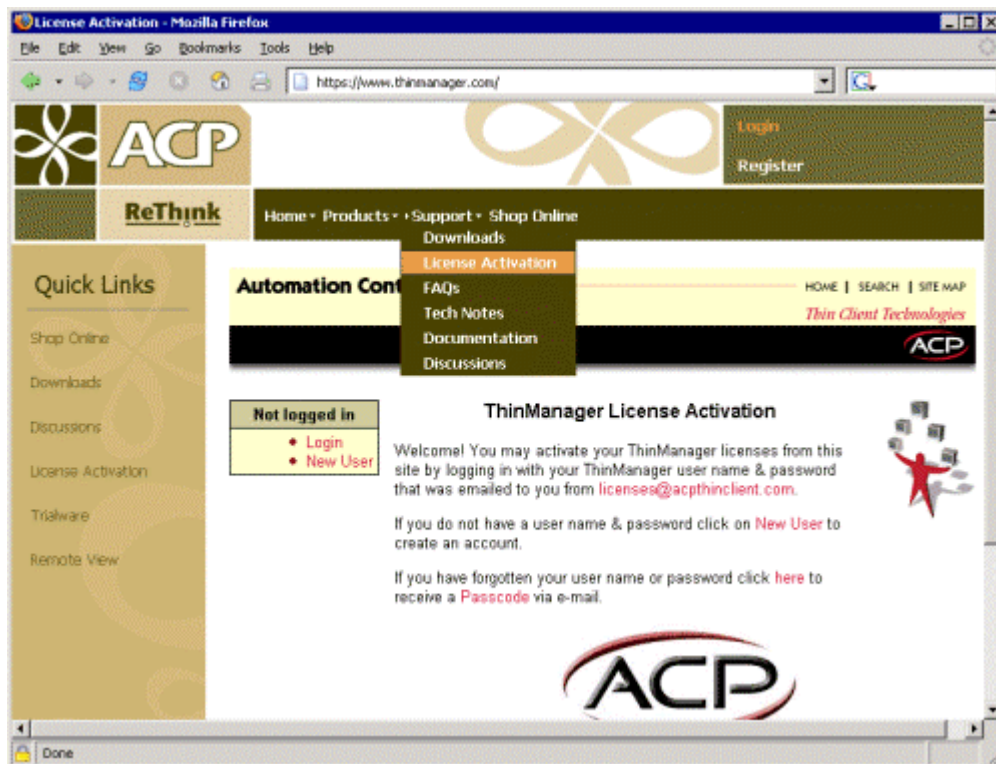
The License File needed to activate ThinManager is obtained from the ACP web site at www.thinmanager.com or www.acpthinclient.com.

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 **Support > License Activation** link. This will launch the ThinManager License Site.



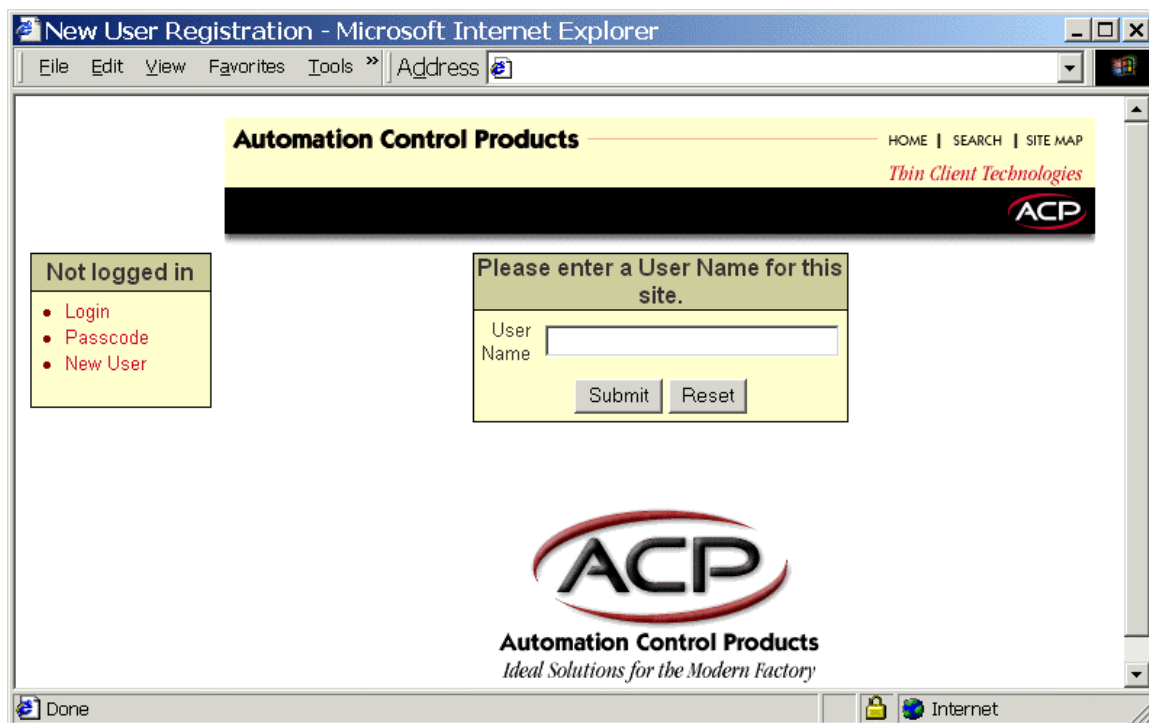
ThinManager License Site

There are three links at the ACP Licensing Site:

- **Login** - This link allows previously registered users to enter the site.
- **Passcode** - This link allows previously registered users who have forgotten their username and password to receive an entrance code through e-mail.
- **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 Registration - Microsoft Internet Explorer

Automation Control Products HOME | SEARCH | SITE MAP
Thin Client Technologies

ACP

Not logged in

- Login
- Passcode
- New User

Please enter a User Name for this site.

User Name

Submit Reset

ACP
Automation Control Products
Ideal Solutions for the Modern Factory

Done Internet

New User Login

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

New User Registration - Microsoft Internet Explorer

File Edit View Favorites Tools » Address

Automation Control Products HOME | SEARCH | SITE MAP
Thin Client Technologies
ACP

Not logged in

- Login
- Passcode
- New User

Please enter User Information

User Name John Doe

Name John Doe

Company Acme Co.

Title Network Administrator

Address 1 123 Main St.

Address 2

City Anytown

State GA

Zip 34567

Country USA

Phone (123) 456-7890

Fax

Email johndoe@acmeco.com

Submit Reset

All fields in red are required.

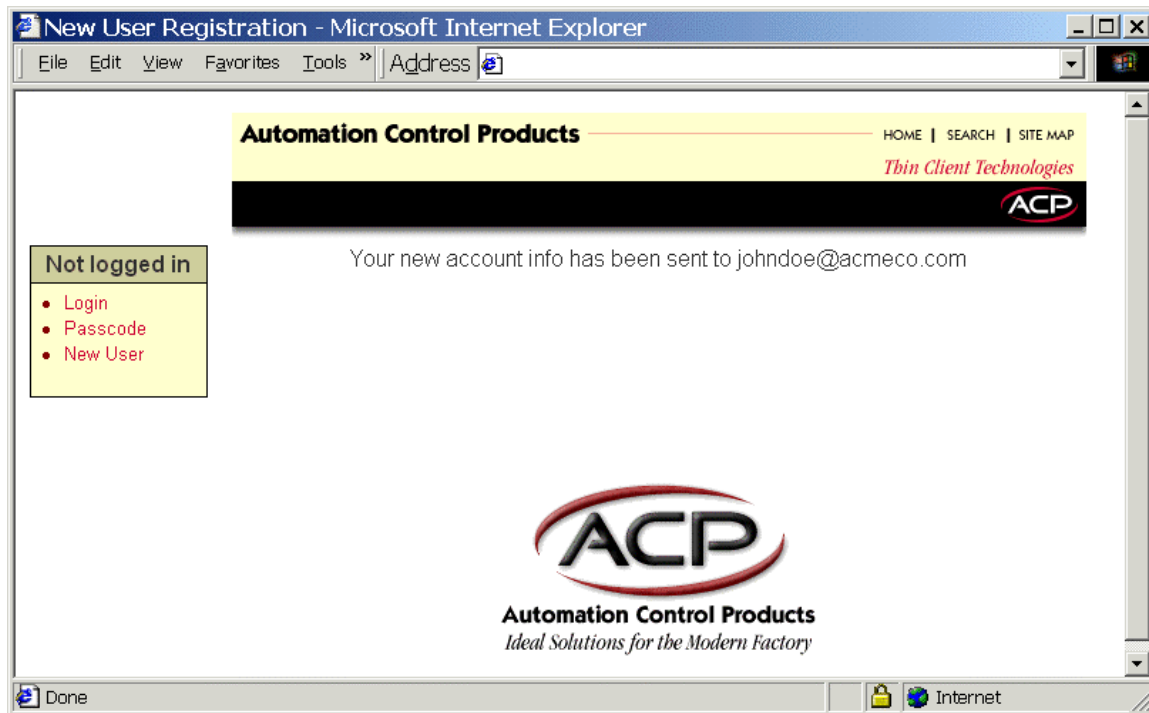
Done Internet

User Information Form

Fill in the User Information form.

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

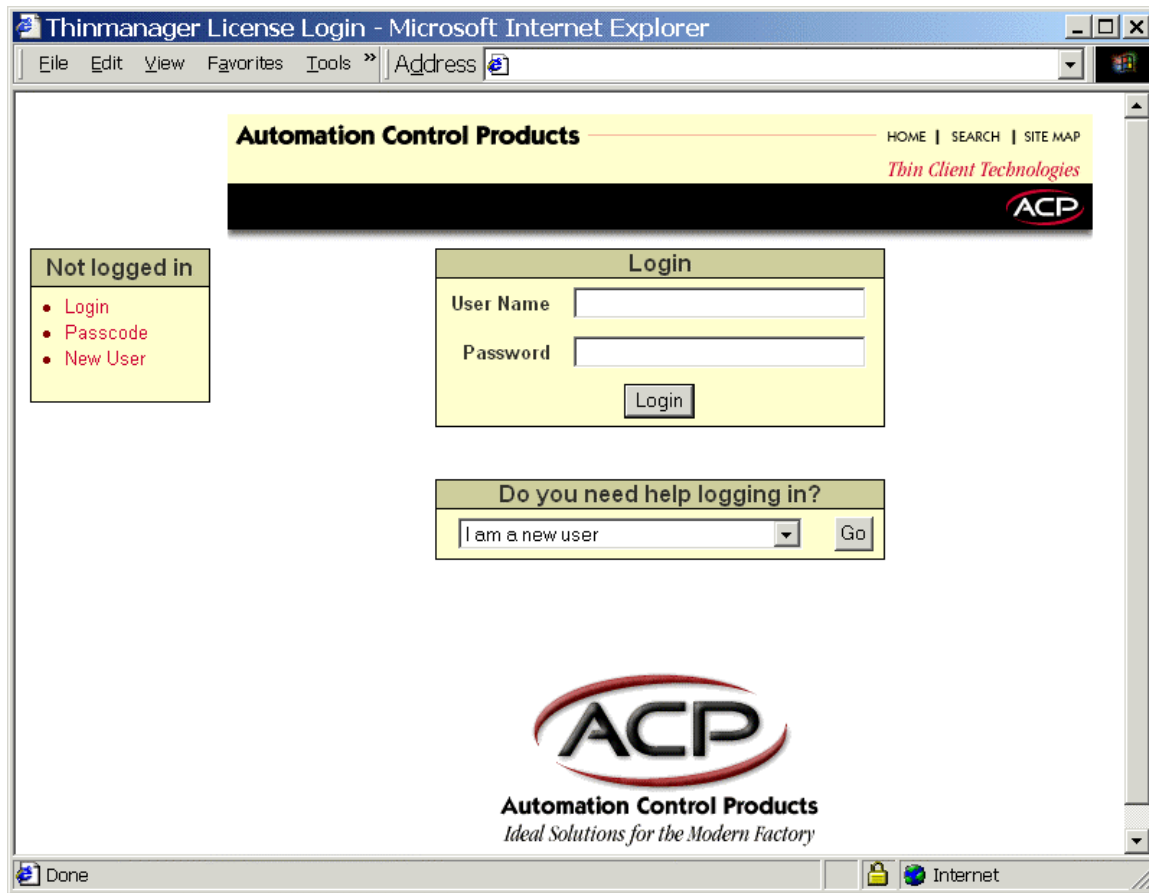
Select **Submit** when finished.



New Account Completion

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

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.



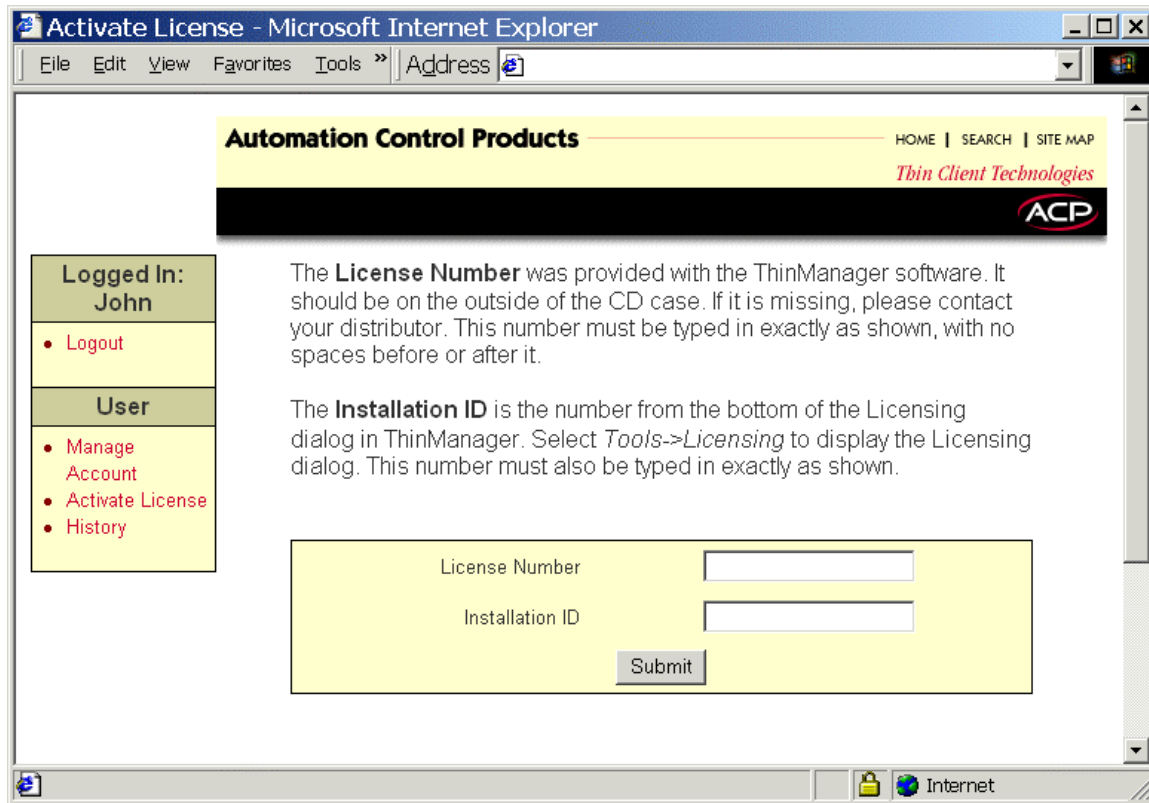
ACP Licensing Site

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.



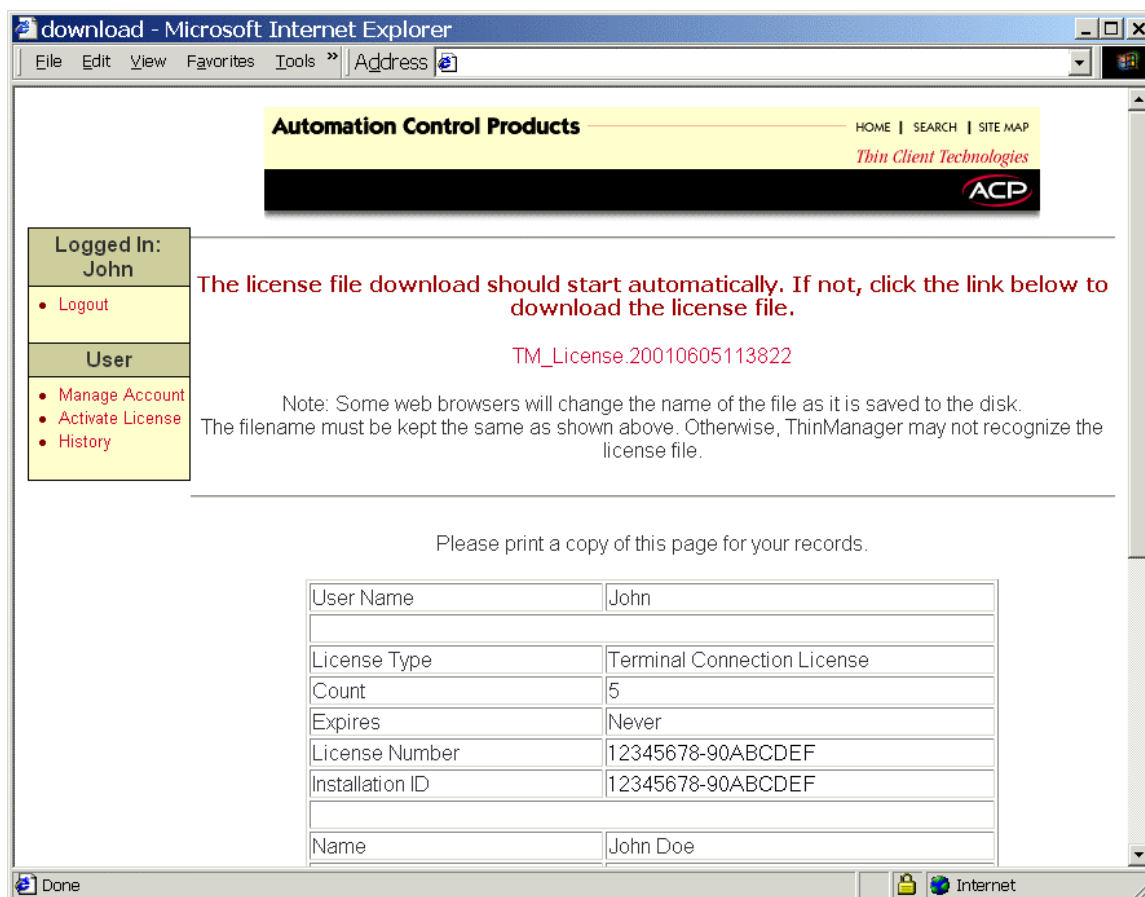
License Request Page

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 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.

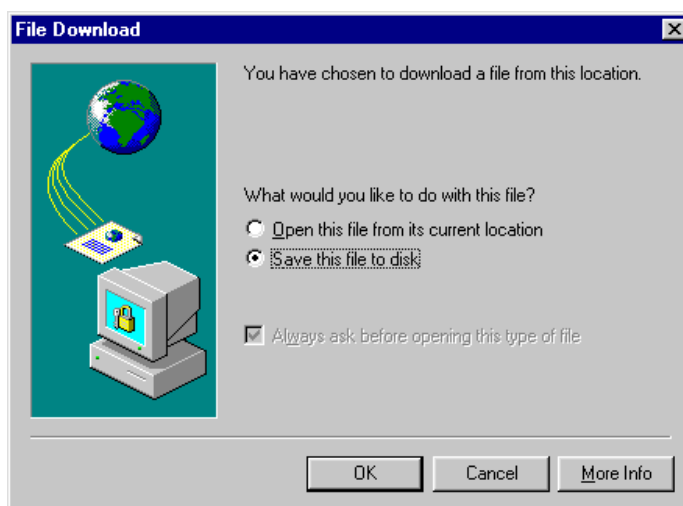
Select the **Submit** button to continue.



Download License File

Print a copy of this page for your records.

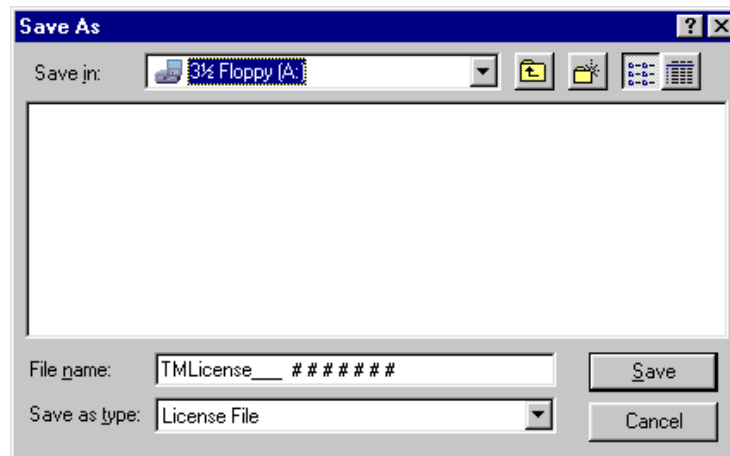
The License File will begin to download. A dialog box will appear that allows the option of opening the file from its current location or saving the file to disk. Saving the file to disk is recommended.



Saving File to Disk

Select **OK** to continue.

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



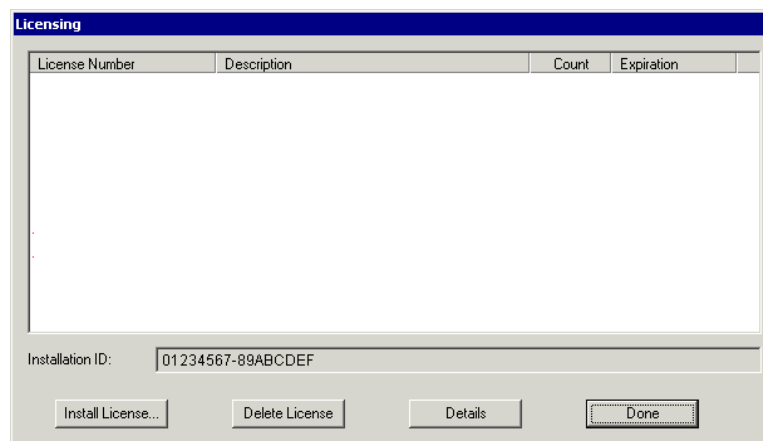
Save As Window

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

The license file is now ready for installation.

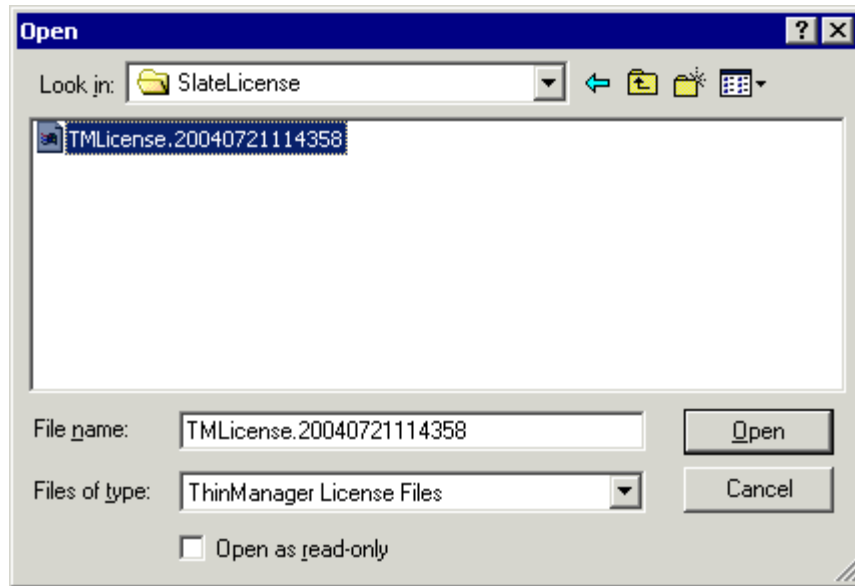
ThinManager License File Installation

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



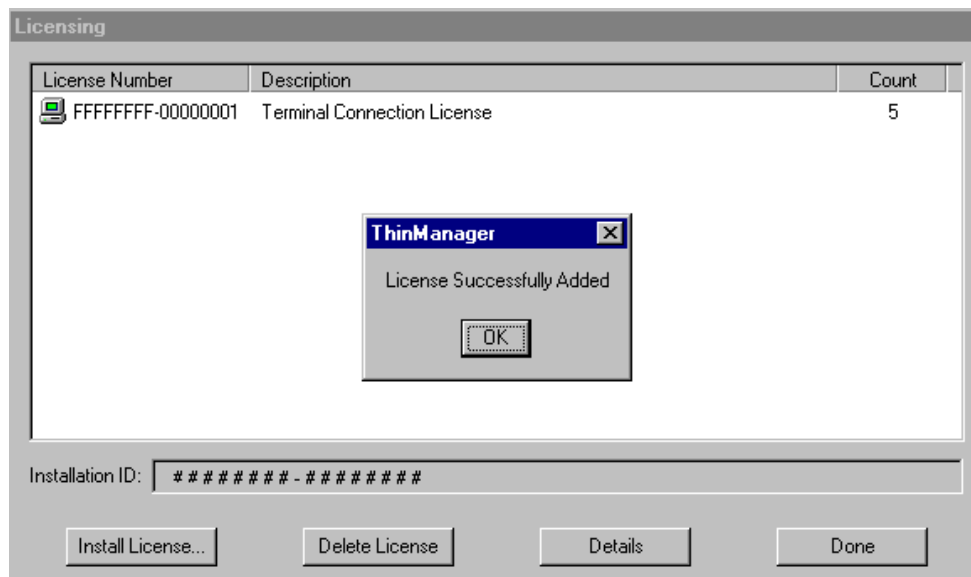
Licensing Dialog Box

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.



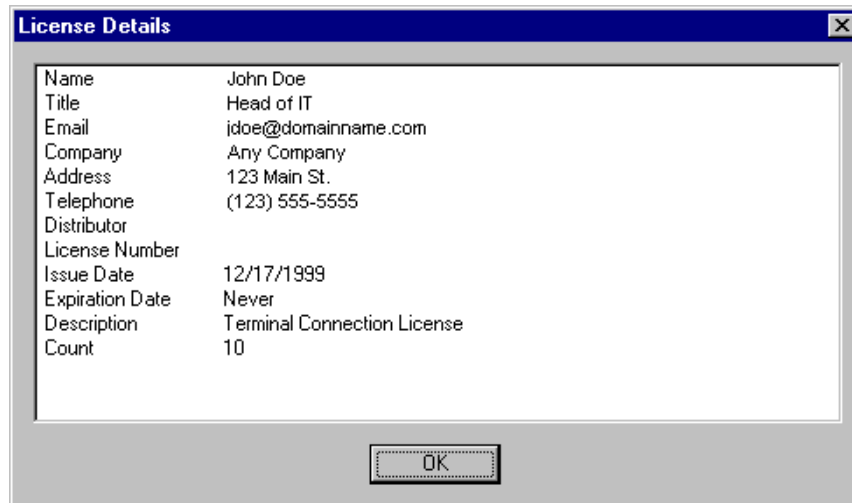
Add License

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.

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.

ThinManager Module Licensing

Certain modules, like the High Speed Serial Driver, Instant Failover, 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.

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.

ThinManager Interface

Opening ThinManager

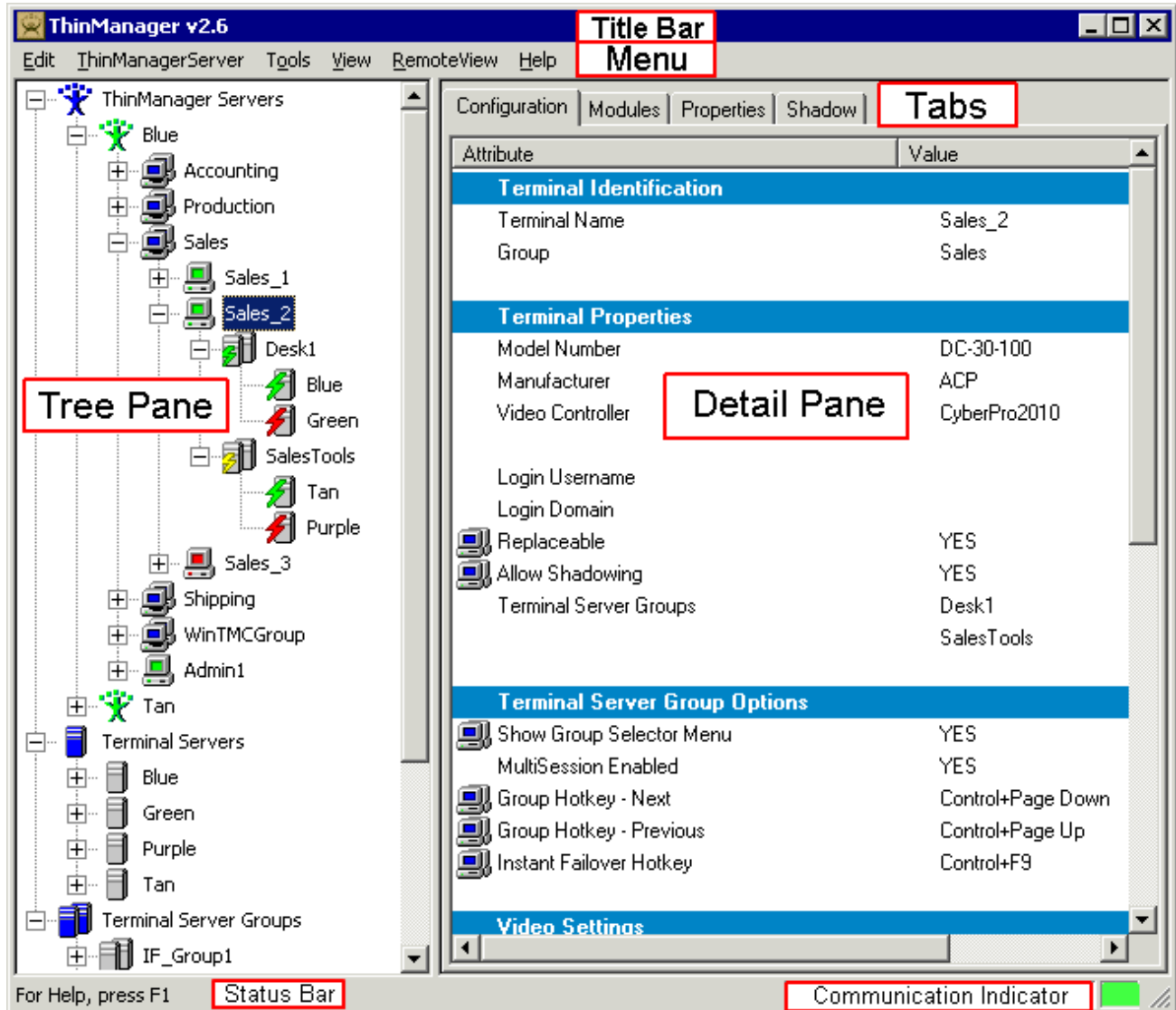
ThinManager is used for the configuration of ThinManager Ready Thin Clients in the ACP thin client environment.

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

- Run from the Start Menu, ***Start>Programs>ACP>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.

ThinManager Graphic User Interface



ACP ThinManager 2.6 Graphic User Interface

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

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

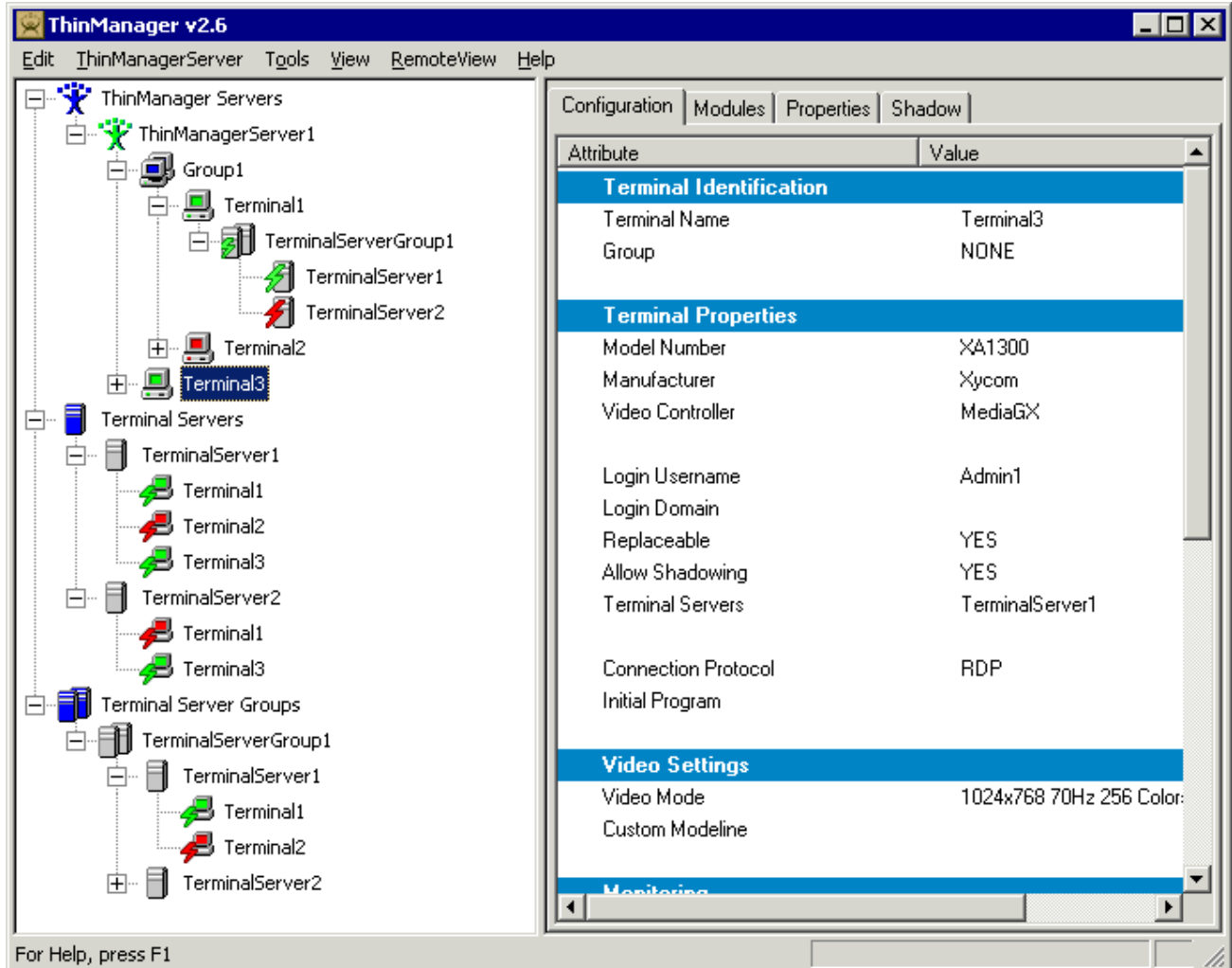
- A **Title Bar** with the standard Windows Minimize/Maximize/Close shortcut icons.
- A **Menu Bar** with commands.
- A **Tree Pane** with an expandable/collapsible tree showing the ThinManager Servers, Terminal Servers, Terminal Server Groups, Groups, and Terminals in the ThinManager

network. Terminals that are on-line have a green monitor icon, while stopped or rebooting terminals have a red monitor icon.

- A **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.

Tree Pane

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



ACP ThinManager With Tree

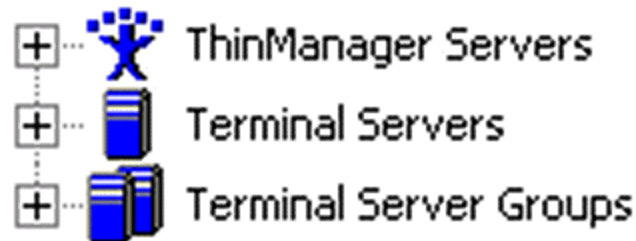
The current version of the Tree separates the **ThinManager Servers**, **Terminal Servers**, and **Terminal Server Groups**. Although a single computer can be a ThinManager Server, a Terminal Server, and a member of a Terminal Server Group, as shown in the example, these are three distinct functions that are displayed in the tree to reflect its function.

ThinManager Servers can be expanded to show the **Groups** and **Terminals** under them. Groups can be expanded to show the Terminals underneath them. Terminals can be expanded to show the Terminal Servers or Terminal Server Groups they are assigned to. Terminal Server Groups can be expanded to show the member Terminal Servers.

Icons

Tree Icons

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

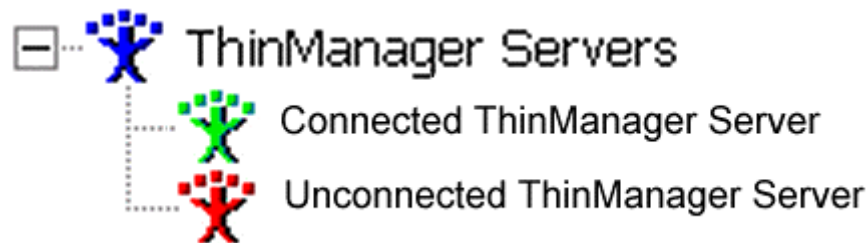


Three Tree Branches

The tree is divided into three branches, ThinManager Servers, Terminal Servers, and Terminal Server Groups.

- A blue icon of ThinMan represents the ThinManager Servers
- A blue server represents the Terminal Servers
- A pair of blue servers represents the Terminal Server Groups.

Each of the branches of the tree can be expanded.

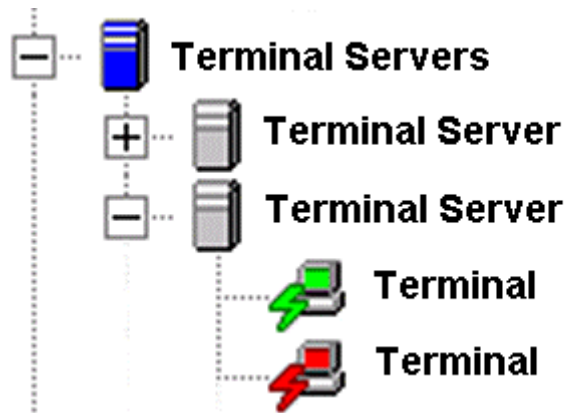


ThinManager Server Icons

A **Blue ThinManager Server** icon represents the top level of the tree and can be collapsed or expanded. This branch shows the local ThinManager Server by default. Other ThinManager Servers can be displayed by selecting **Edit>Add ThinManager Server** from the menu bar. See Add ThinManager Server for details.

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.

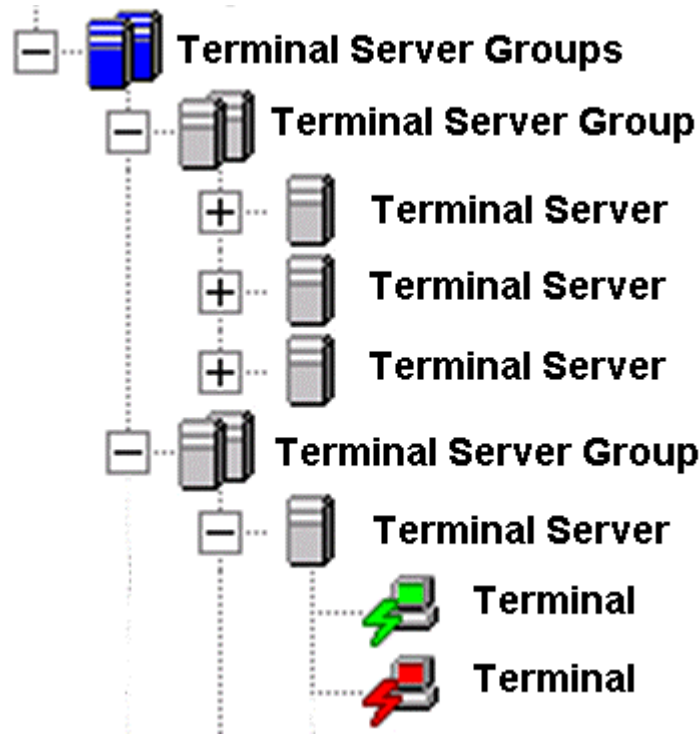
A **Red ThinManager Server** icon represents a ThinManager Server that is not communicating with the program.



Terminal Server Icons

A **Blue Server** icon represents the top level of the Terminal Server tree and can be collapsed or expanded.

A **Gray Server** icon represents individual terminal server. These can be collapsed or expanded to show the Terminal icons that nest under the Terminal Server icons.



Terminal Server Group Icons

A **Blue Terminal Server Group** icon represents the top level of the Terminal Server Group tree and can be collapsed or expanded.

A **Gray Terminal Server Group** icon represents individual terminal server groups. These can be collapsed or expanded to show the terminal server icons that nest under the Terminal Server Group icons and the terminals assigned to that terminal server.



Group and Terminal Icons

A **Group** is represented by an icon of two monitors with a blue screen.

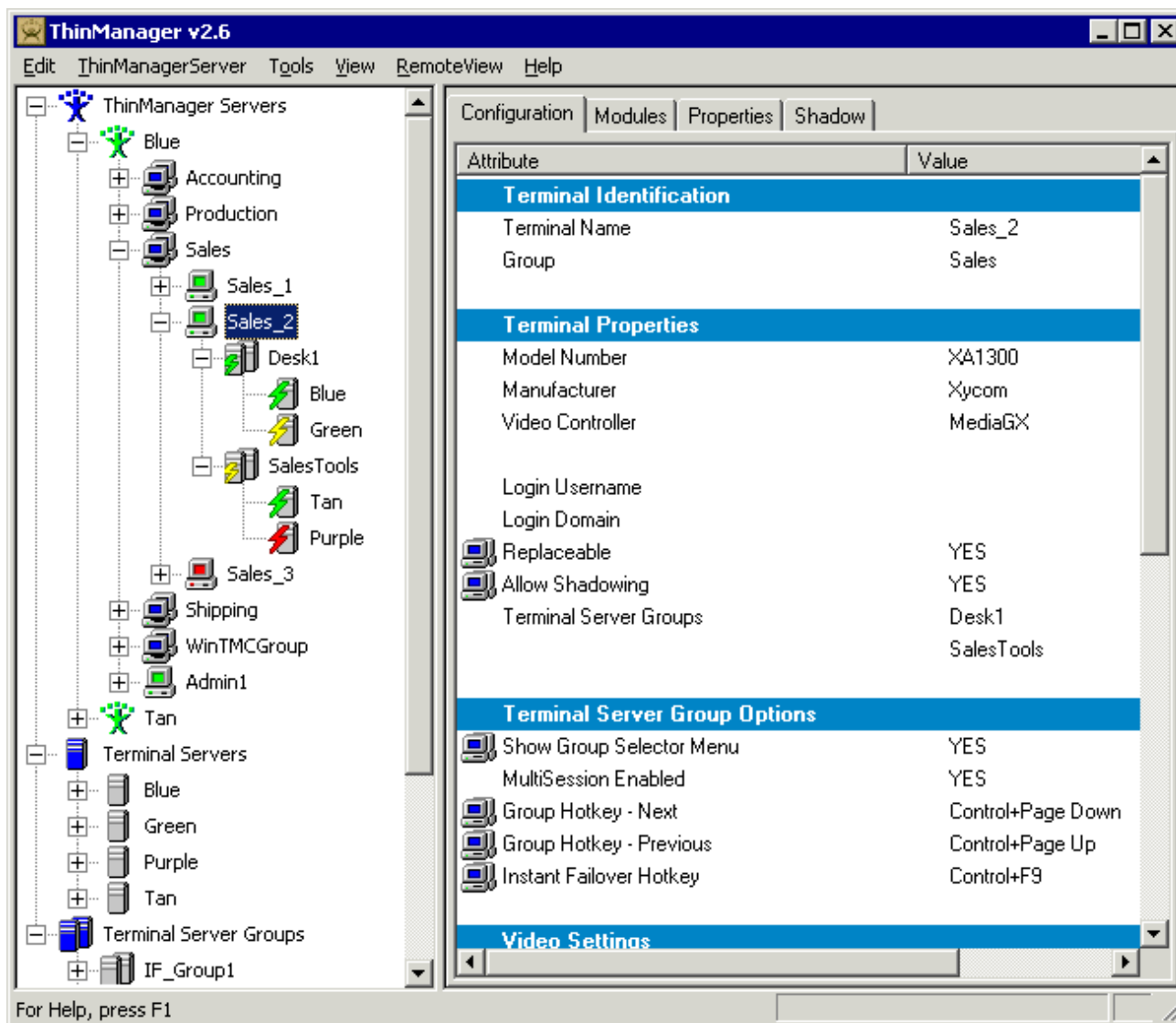
A **Terminal** is represented by an icon of a single monitor.

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

A **Green terminal screen** indicates that the Terminal is on and communicating with the ThinManager Server.

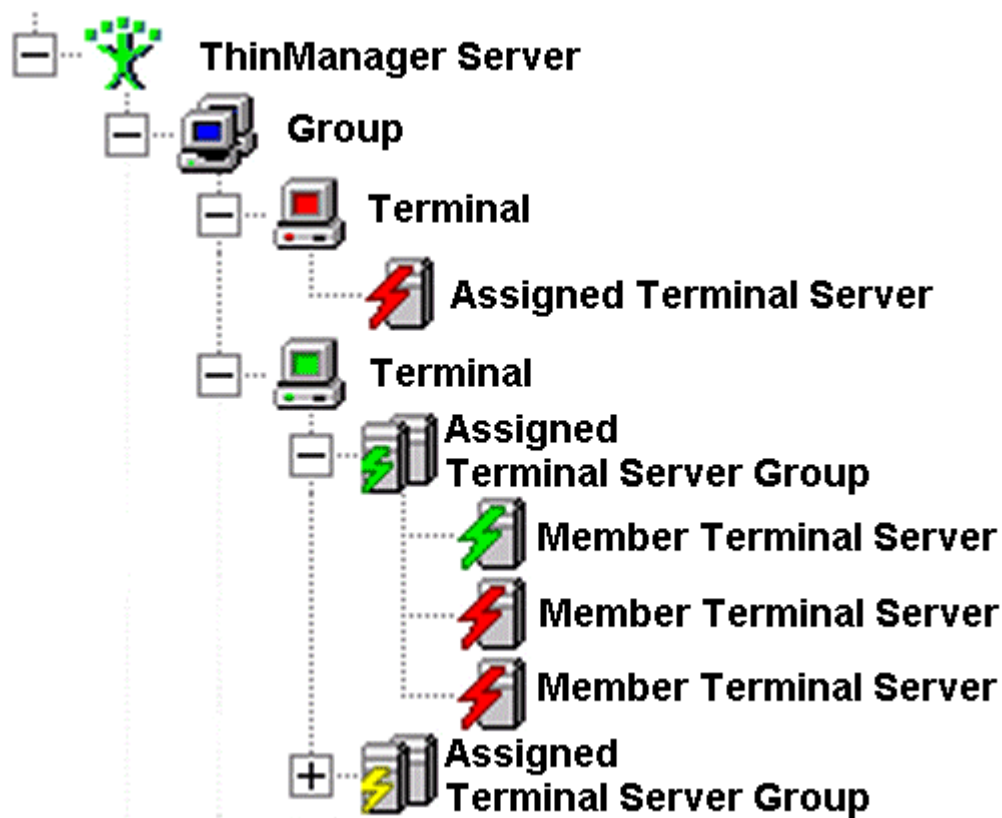
A **Locked terminal** or group icon means that that terminal or group is being modified and cannot be changed by another user. If the Group or Terminal remains locked after the Properties is closed, they can be unlocked by using **Edit>Unlock** from the menu bar.

Each item of this tree level can be expanded to show what Terminal Server Groups or Terminal Servers it is assigned to.



Expanded Tree Showing Icon Variety

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



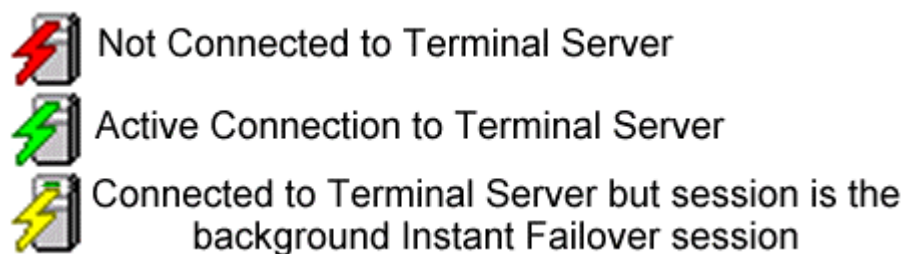
Group and Terminal Nesting

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

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

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

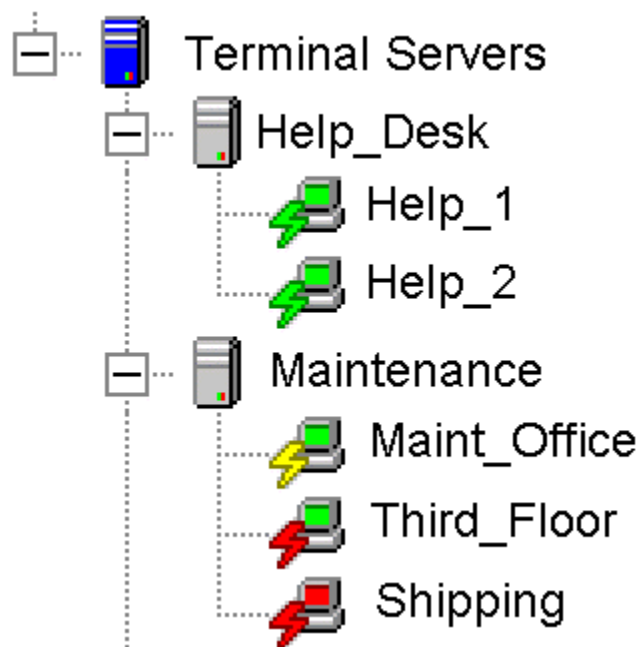
Each color represents a status state.



Terminal Server Connection Icons

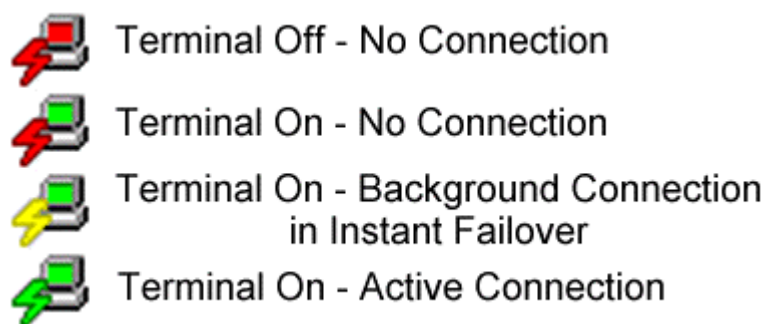
Under each Terminal are icons representing the Terminal Servers that they are assigned to. The lightning bolt color indicated the connection status.

- 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.



Terminal Server Nesting

The top level Terminal Server icon can be expanded to show the Terminal Servers that have terminals assigned 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.

- 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.

The lightning bolt color indicates the Terminal Server connection status.

- 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.



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 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.

- 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 terminal that is turned on. The terminal has a disabling screen and is waiting for enabling.



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.

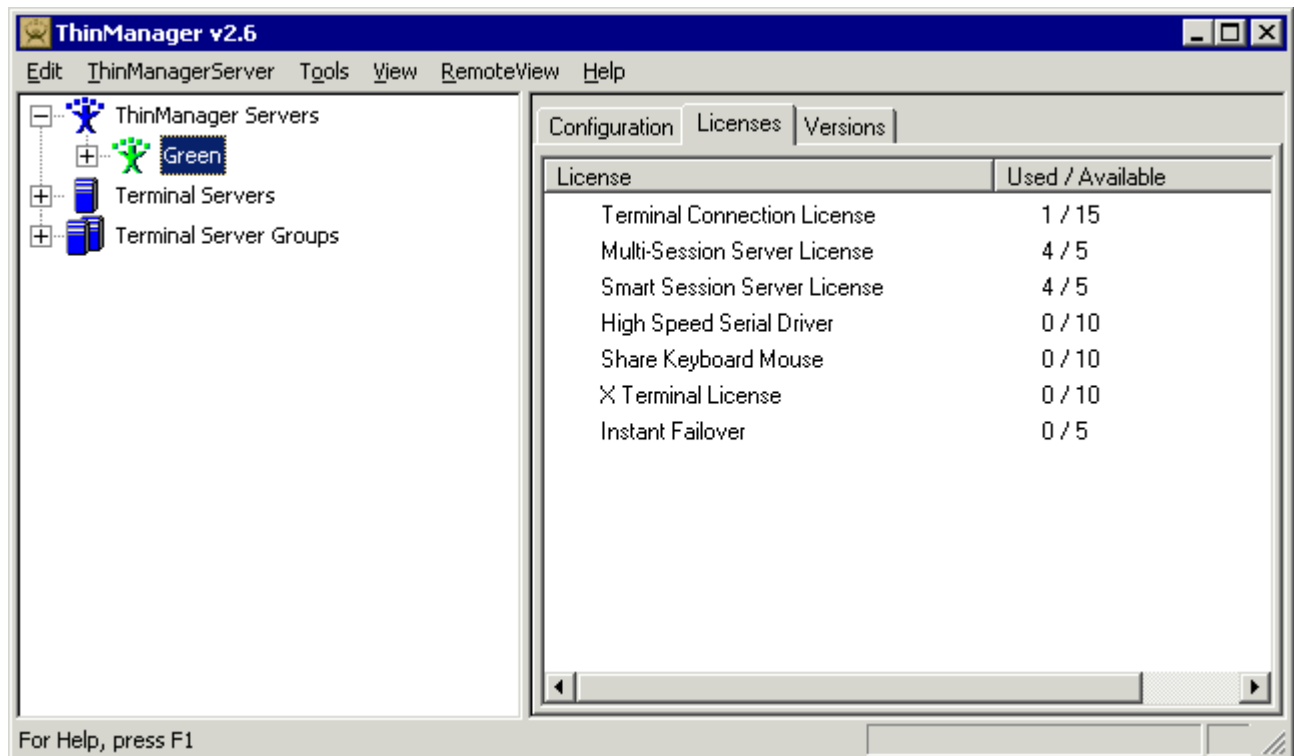
Details Pane

The Details Pane has been reorganized with tabs to sort information. Highlighting a **ThinManager Server**, **Group**, **Terminal**, **Terminal Server**, or **Terminal Server Group** in the tree will display a different set of tabs and the corresponding set of information.

Highlighting the Blue **ThinManager Server** icon will show no details.

Highlighting a **ThinManager Server** will show:

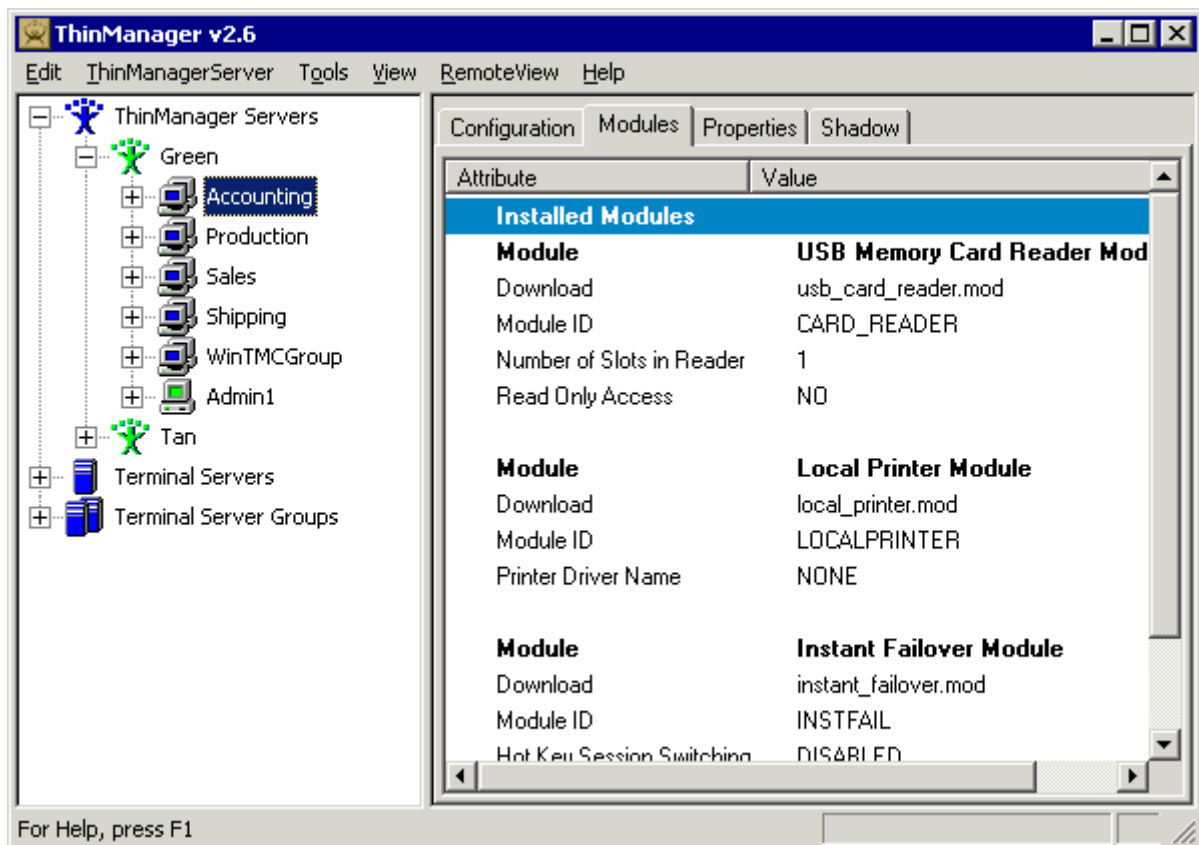
- **Configuration** - These are the configuration parameters set in the ThinManager Server Configuration Wizard and include the Event Messaging summary.
- **Licenses** - This displays the installed licenses, the quantity used and the quantity available.
- **Versions** - This displays the version numbers of ThinManager, the firmware, and the TermCap database.



ThinManager Server Tabs - Licenses

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.
- **Modules** - This lists the assigned modules and parameters for the Group.
- **Properties** - This is blank for a Group.
- **Shadow** - This is blank for a Group.

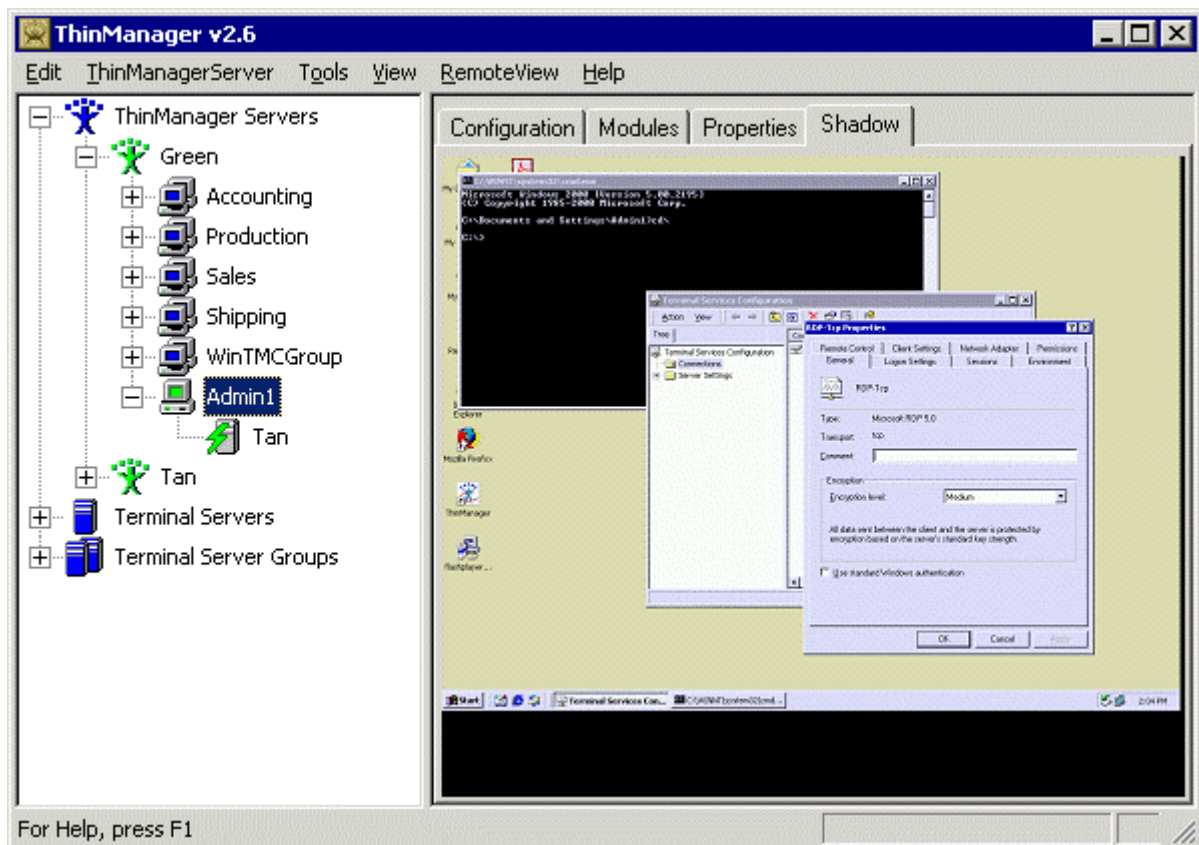


Group Tabs - Modules

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.
- **Modules** - This lists the assigned modules and parameters for the Terminal.
- **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.
- **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.

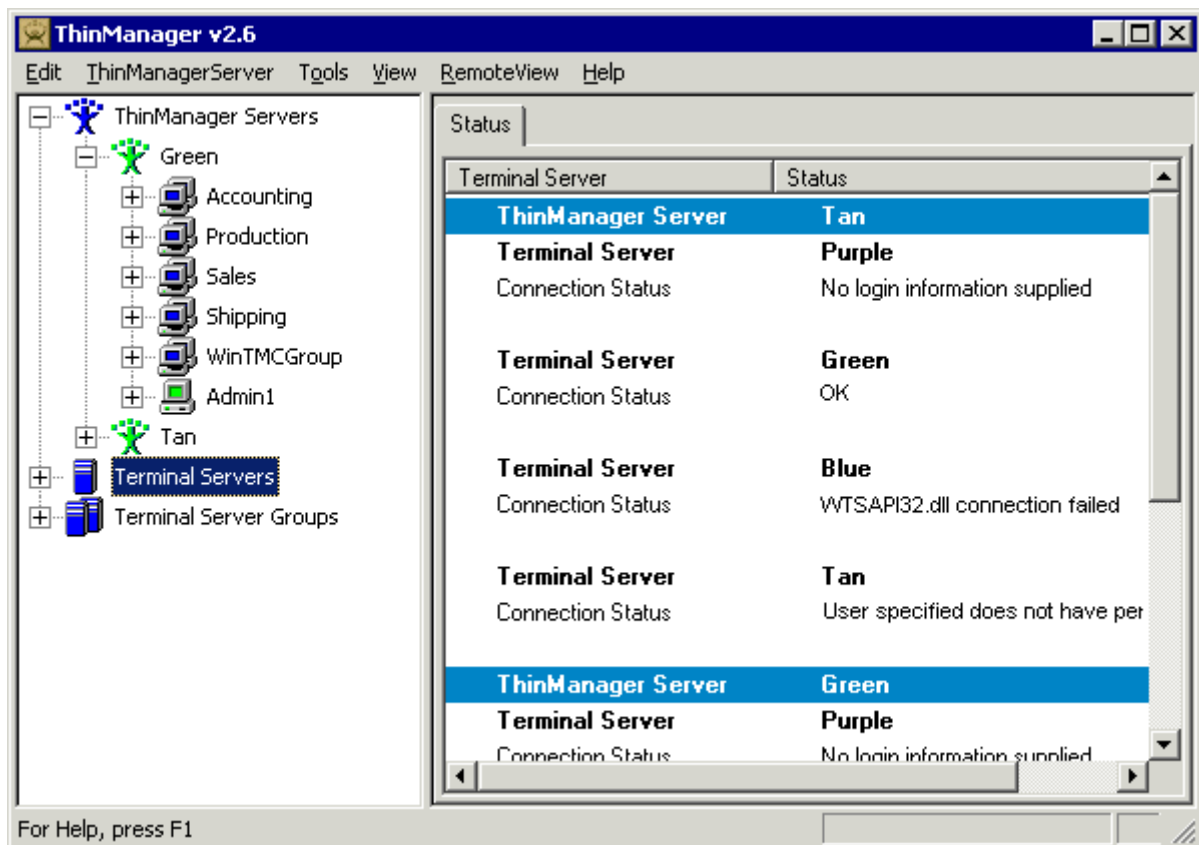
See Shadowing for details.



Terminal Tabs - Shadow

Highlighting the blue **Terminal Server** icon 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.



Terminal Servers Tabs - Status

The Connection Status of the ThinManager Server 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. See the Terminal Server List wizard for details.
- **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. See the Terminal Server List wizard for details.

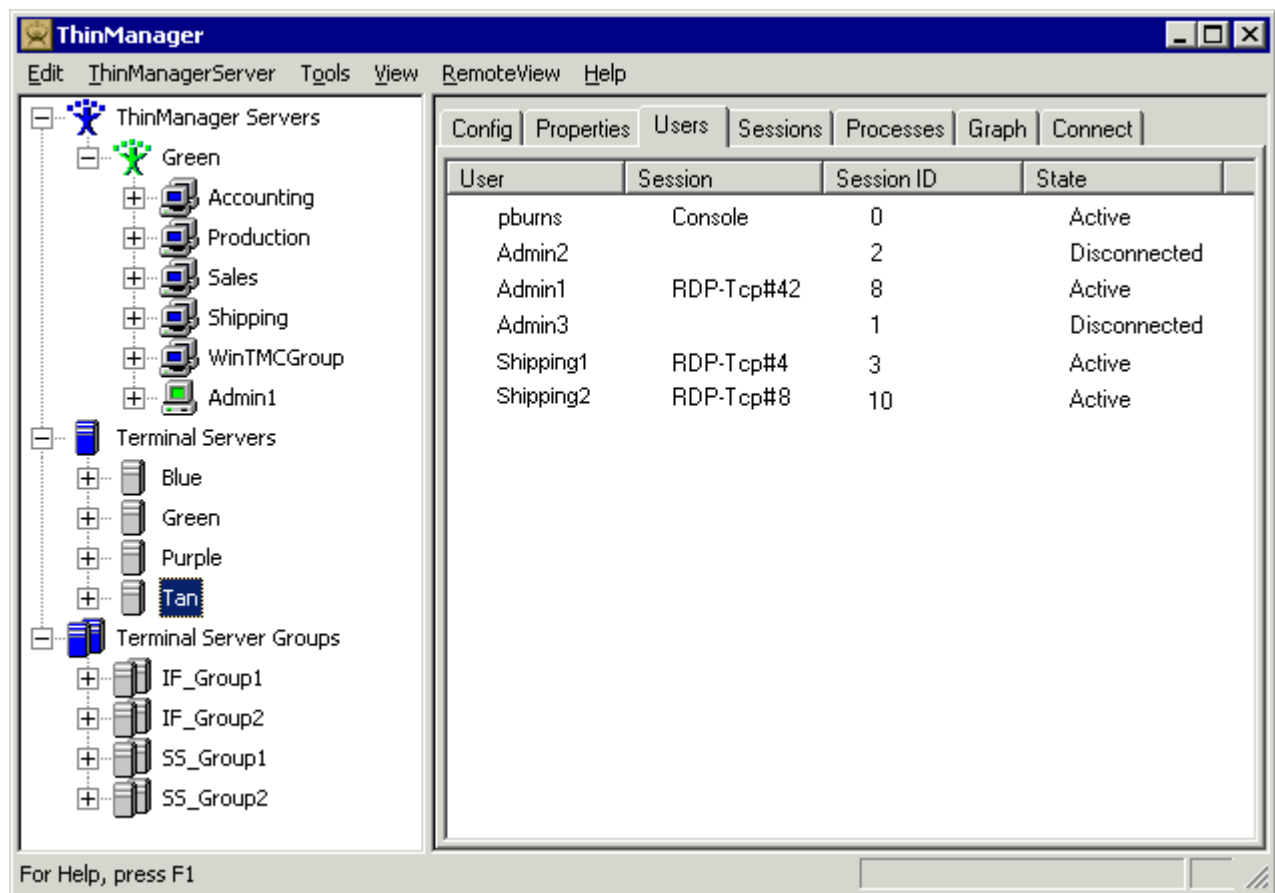
See ThinManager to Terminal Server Communication for more details.

Highlighting a **Terminal Server** will show:

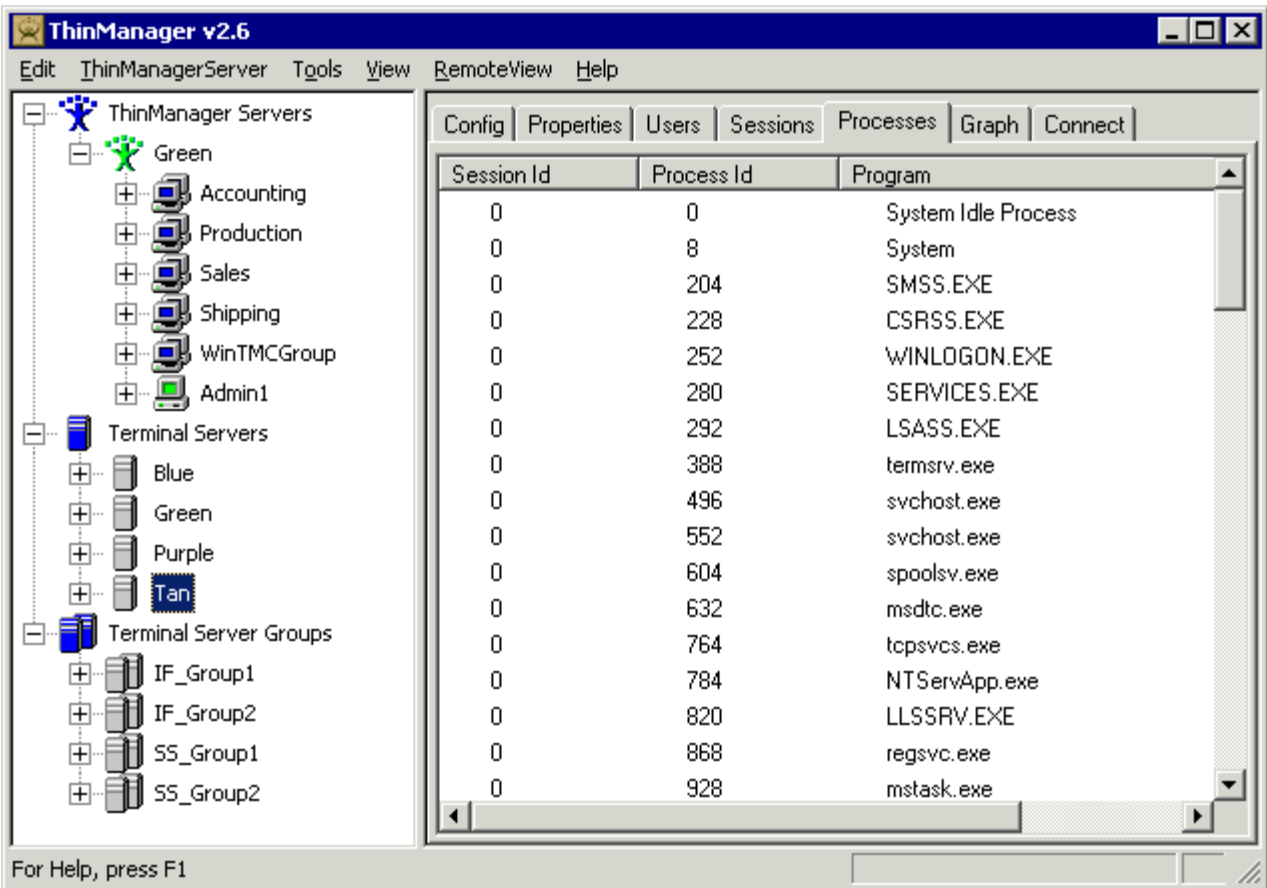
- **Configuration** - This shows the installed Client Communication Protocols and the SmartSession settings for the Terminal Server.
- **Properties** – This tab displays the server resource data like total memory, free memory, uptime, and CPU speed.
- **Users** - This tab displays information from the 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.
- **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.

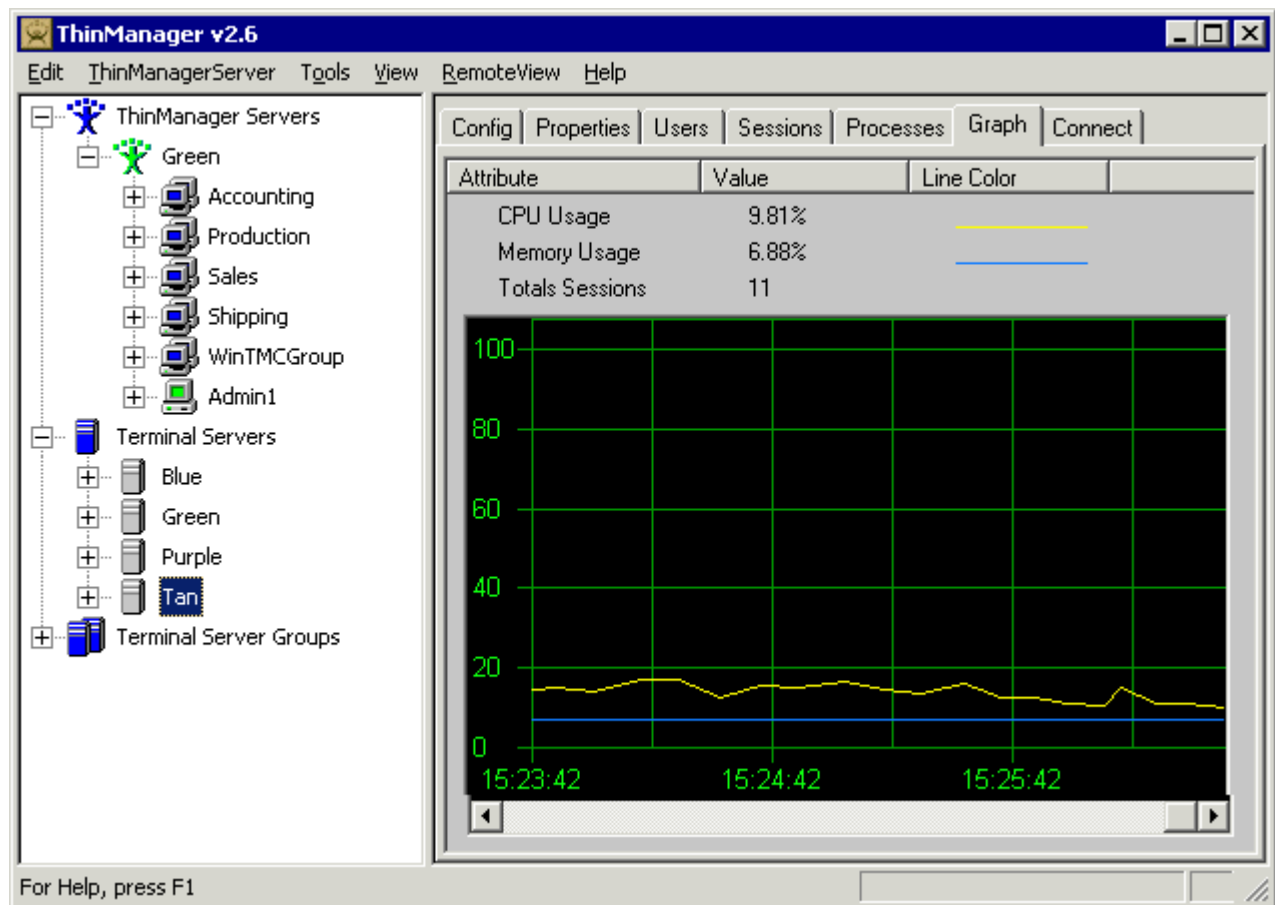
The session is configured in the Remote Control Options window launched by selecting **RemoteView>Session Options** from the menu. If auto login is checked in the Remote Control Options window, the user name and password, which were entered when creating this terminal server in the Terminal Server List, will be used for the logon information.



Terminal Server Tabs – Users

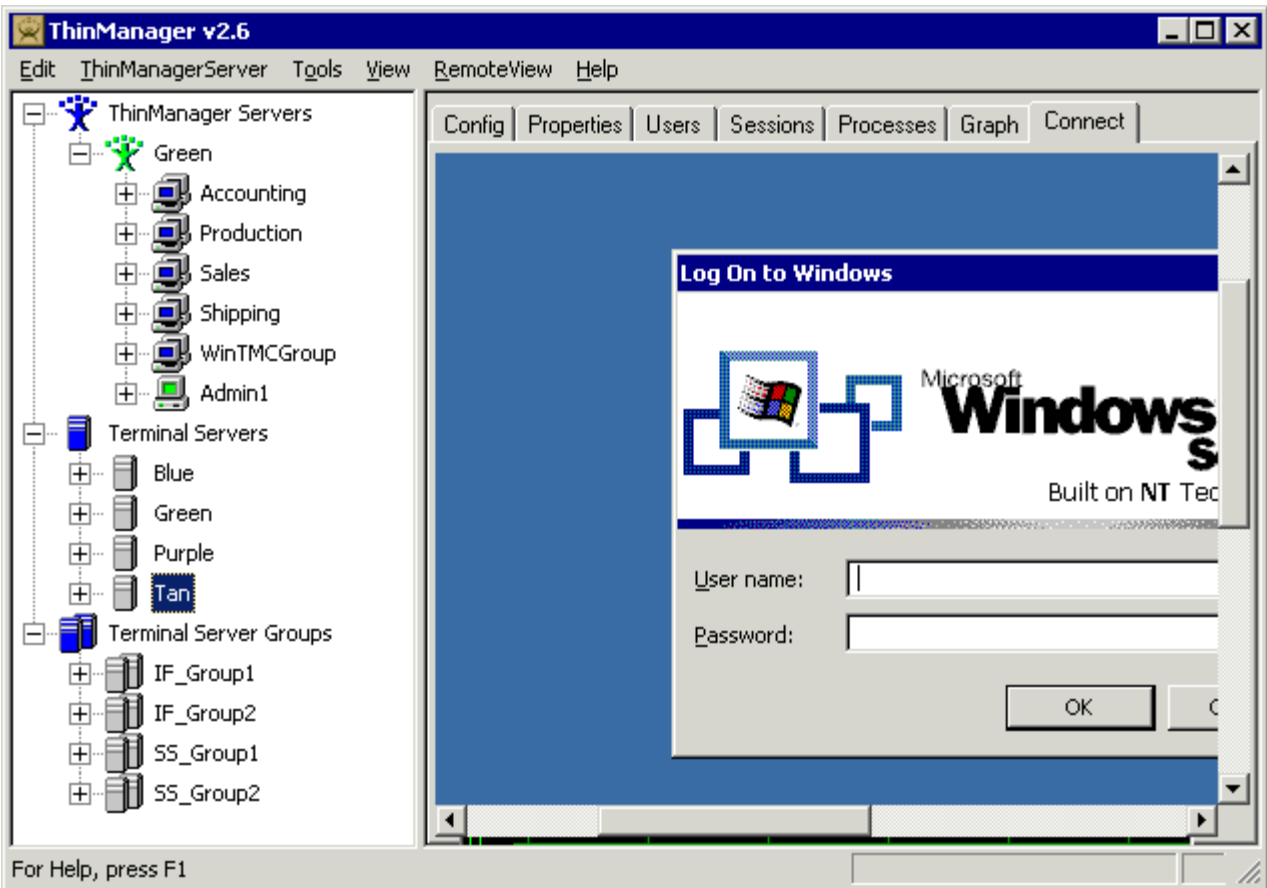


Terminal Server Tabs – Processes



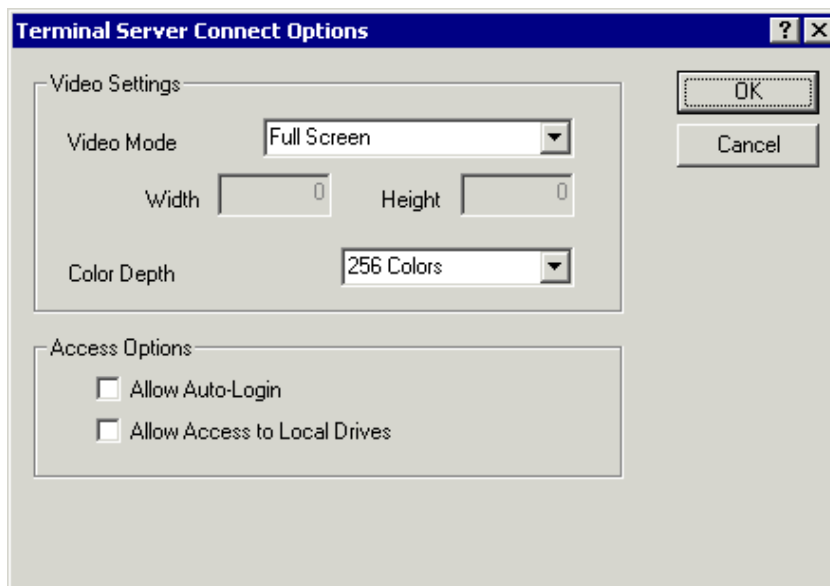
Terminal Server Tabs – Graph

The **Graph** tab will show the memory usage and CPU usage of the selected Terminal Server. Up to 1 hour of historical data is stored for each terminal server.



Terminal Server Tabs – Connect

If the **Allow Auto-Login** checkbox of the **Terminal Server Connect Options** window is selected, the connection will login automatically with the login provided in the Terminal Server List Wizard. If the checkbox is unselected, it will prompt for a manual login.



Terminal Server Connect Options Window

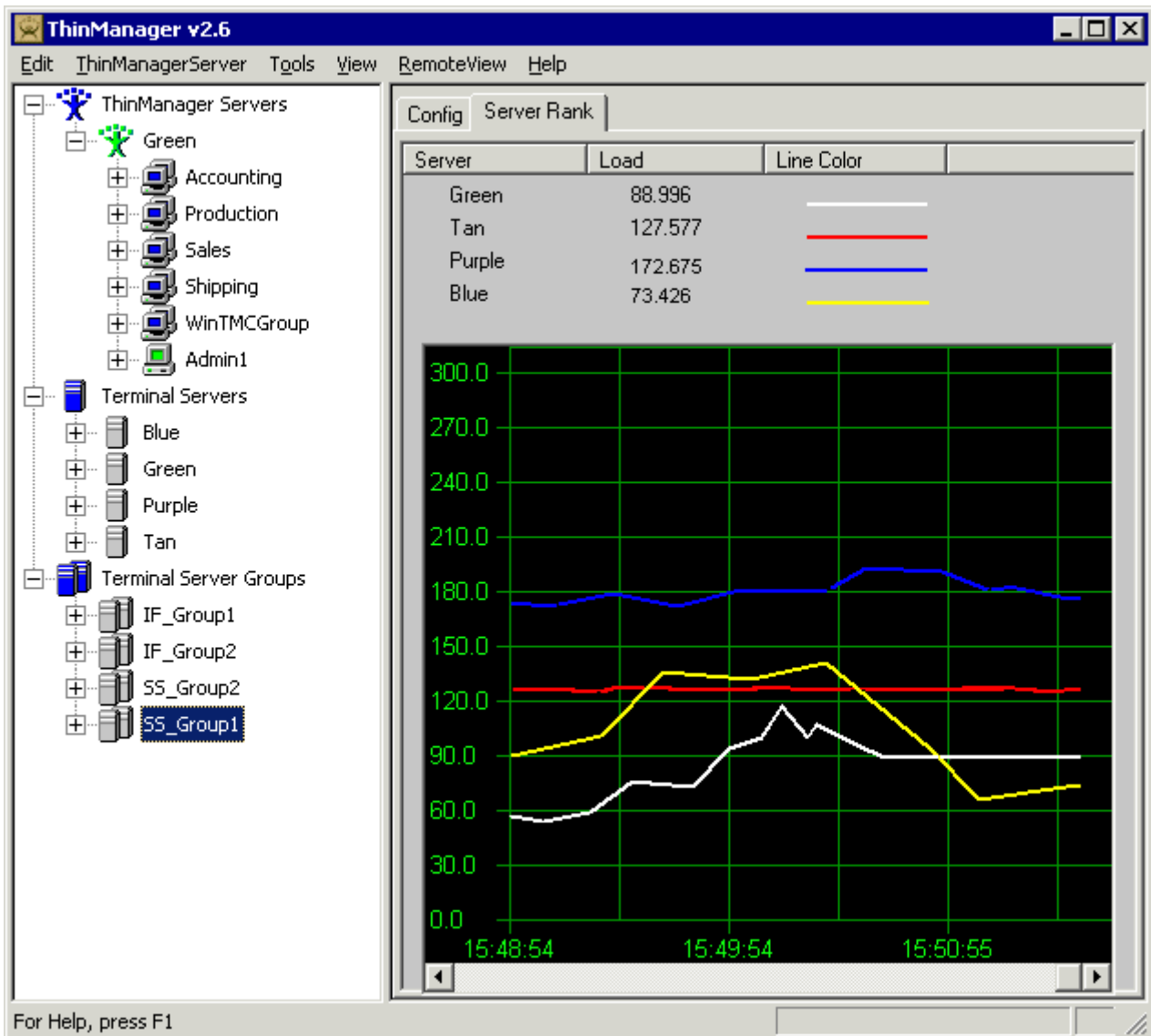
The **Terminal Server Connect Options** window has setting for the screen size, automatic login, and local drive mapping.

See RemoteView for details.

Highlighting the blue **Terminal Server Group** icon will show no details.

Highlighting a **Terminal Server Group** will show:

- **Config** – The Configuration tab will show the members of the Terminal Server Group and details about SmartSession, Multi-Session, and AppLink.
- **Server Rank** - SmartSession ranks terminal servers 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.



Terminal Server Group Tabs – Server Rank

Changing a Terminal's Group

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

- Highlight 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-click on the terminal icon in the **ThinManager** tree pane and select **Modify**.
- Double-click on a terminal icon in the **ThinManager** tree pane.

This will launch the **Terminal Configuration Wizard** in Wizard mode or the **Terminal Properties** in Classic mode. On the Identity tab of the Terminal Properties dialog box, use the Group drop-down box to select the new group that the terminal is to be placed in. This will apply the new group configuration to the terminal. If “None” is selected, the terminal will keep its configuration, but will be removed from the group and is treated as an independent terminal.

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

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:

- Highlight 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-click on the terminal icon in the **ThinManager** tree pane and select **Modify**.
- Double-click on a terminal icon in the **ThinManager** tree pane.

This will launch the **Terminal Configuration Wizard** in Wizard mode or the **Terminal Properties** in Classic mode.

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

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**.

Rebooting a Terminal

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.

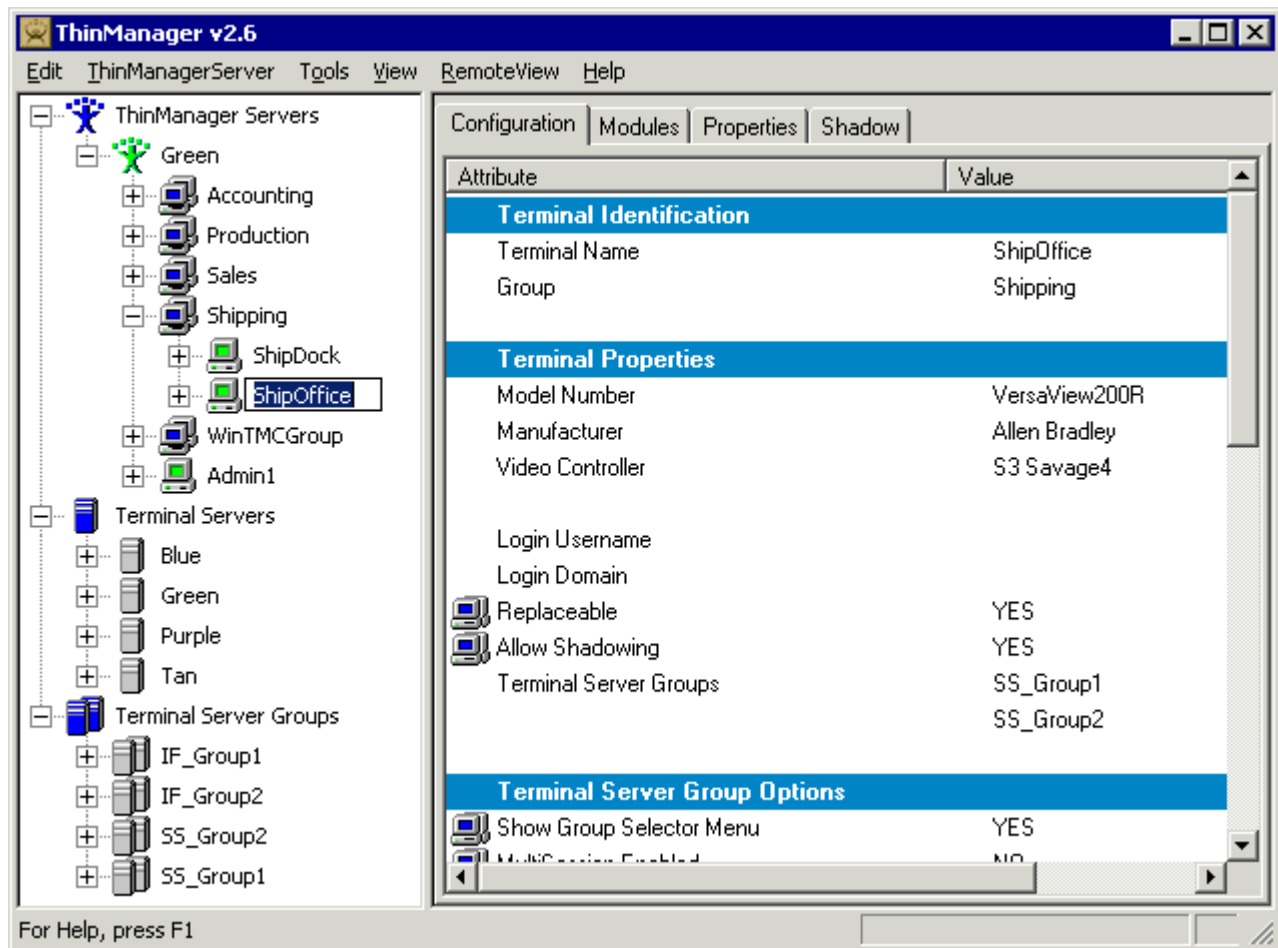
- Right-clicking a terminal icon in the tree pane of ThinManager and selecting **Reboot Terminal**. This will reboot only the highlighted terminal.

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.

Menu Items

Edit

Edit contains commands for adding, deleting, and changing configurations.

Add Terminal

Add Terminal will launch the **Terminal Creation Wizard in Wizard Mode** or the Create New Terminal dialog box in Classic Mode to start the process of adding a new terminal.

See Terminal Configuration Wizard for details.

Add Group

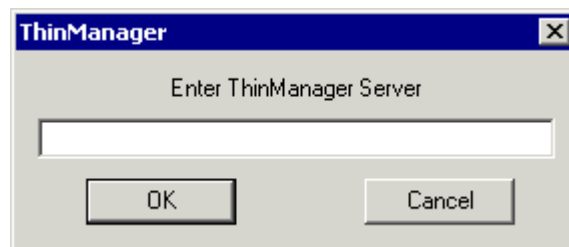
Add Group will launch the **Group Creation Wizard** in Wizard Mode or Create New Group dialog box in Classic Mode to start the process of adding a new group.

See Group Configuration Wizard for details.

Add ThinManager Server

ThinManager allows the remote administration of multiple ThinManager Servers. A user logged in with administrative rights can connect to multiple ThinManager servers for management.

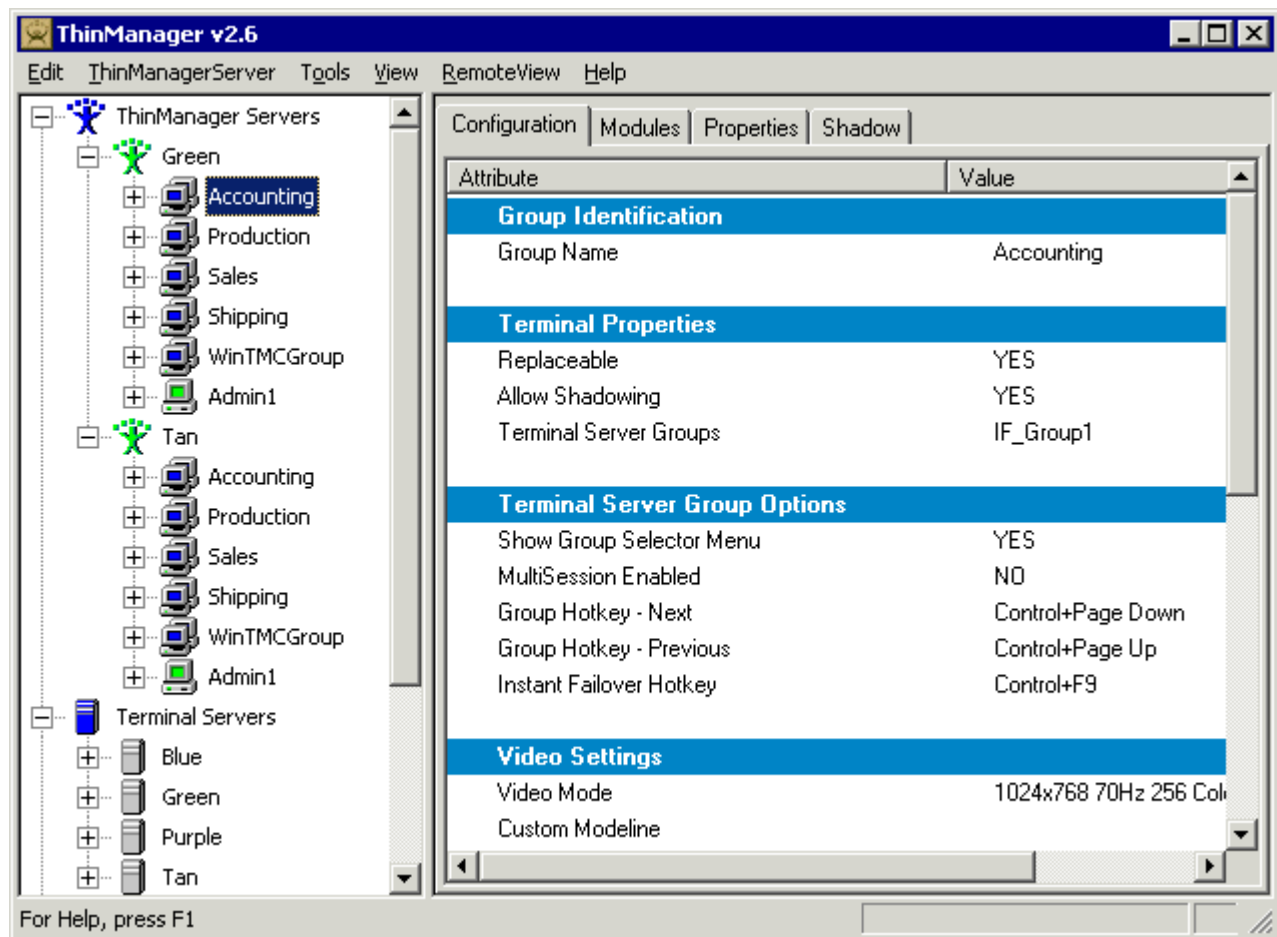
Selecting **Add ThinManager Server** will launch a dialog box.



Add ThinManager Server Dialog Box

Enter the IP address or computer name of a ThinManager server. This adds the ThinManager Server and its configuration to the tree pane of the local ThinManager.

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



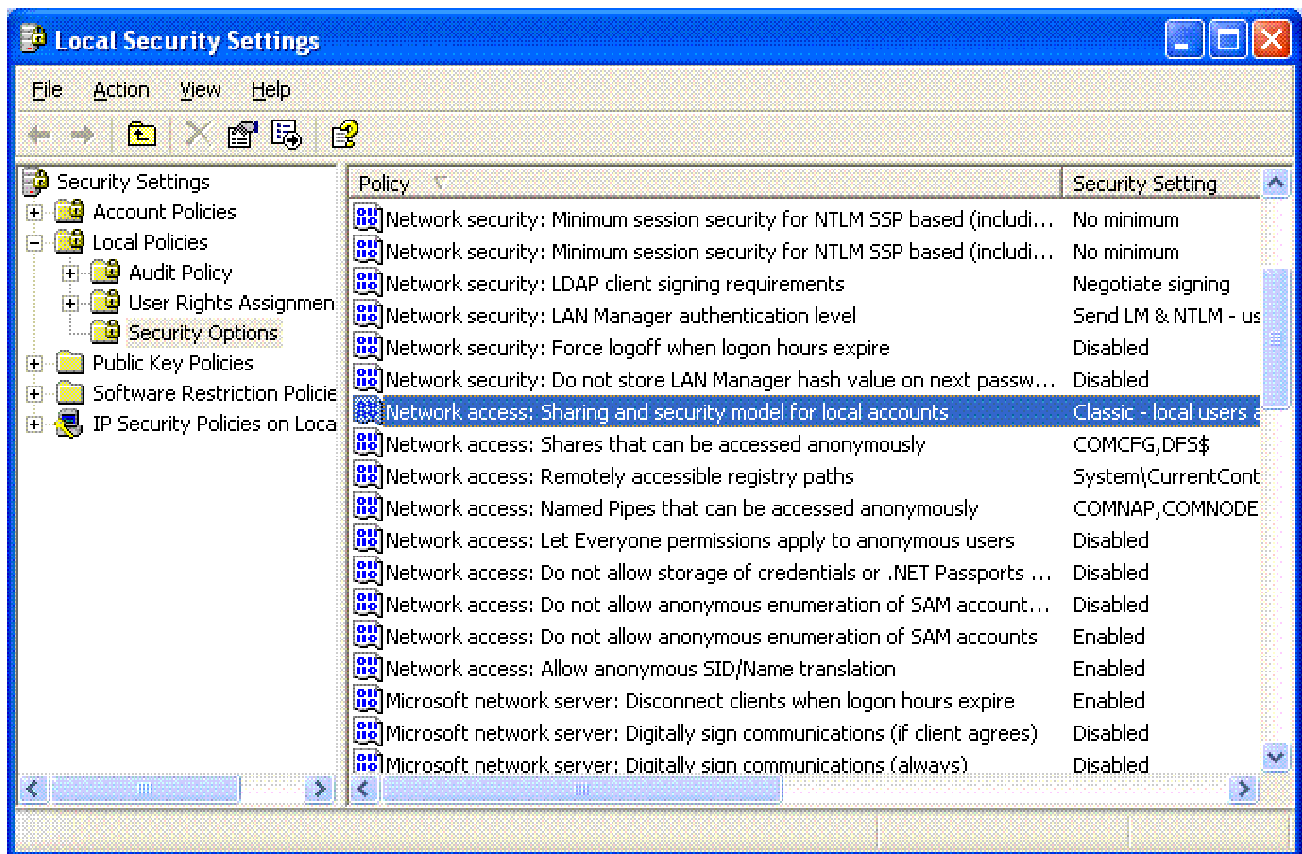
ThinManager with a Second Synchronized ThinManager Server Added

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**.

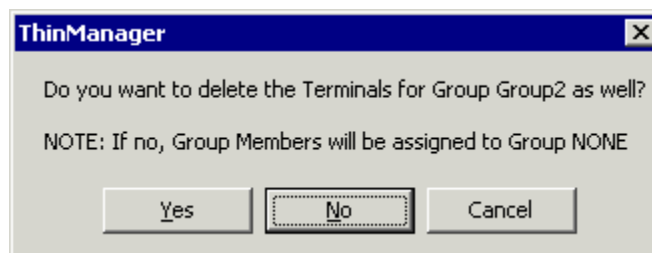


Windows XP Pro – Local Security Settings

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.

Delete

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.

Modify

The function of **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 Settings.
- **Modify** will launch the **Group Creation Wizard** in Wizard Mode or the Group Properties in Classic Mode for a highlighted group. Modifications can be made as described in Group Configuration Wizard.
- **Modify** will launch the **Terminal Creation Wizard** in Wizard Mode or the Terminal Properties in Classic Mode for a highlighted terminal. Modifications can be made as described in Terminal Configuration Wizard.
- **Modify** will launch the **Terminal Server Group Configuration Wizard** for a highlighted Terminal Server Group. This allows the Terminal Server Group to be configured as described in Terminal Server 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.

Rename

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.

Lock

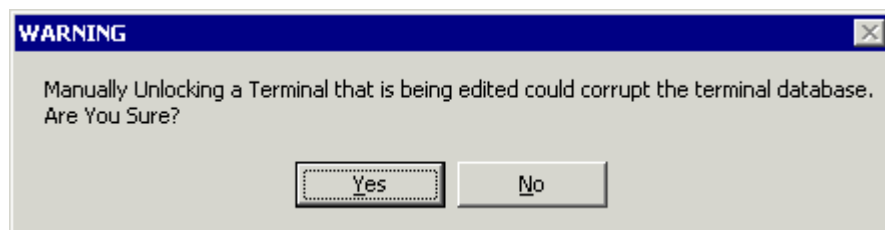
When a group property or a terminal property is opened for modification, the entry in the configuration is automatically locked to prevent two people from making changes at one time.

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 terminal server group are being modified, they will also be locked to prevent two people from making changes at the same time. These will not show a locked icon. Instead, a warning will be displayed to alert the user.



Lock Warning Message

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

Unlock

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.

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.

Find

The **Find** menu item launches a *Find* dialog that searches the tree for the item typed into the ***Find*** field.



Find Dialog Box

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

Find Next

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.

ThinManager Server

The ***ThinManager Server*** contains commands for configuring the ThinManager Server. These options will be grayed out unless the ThinManager Server is highlighted in the tree.

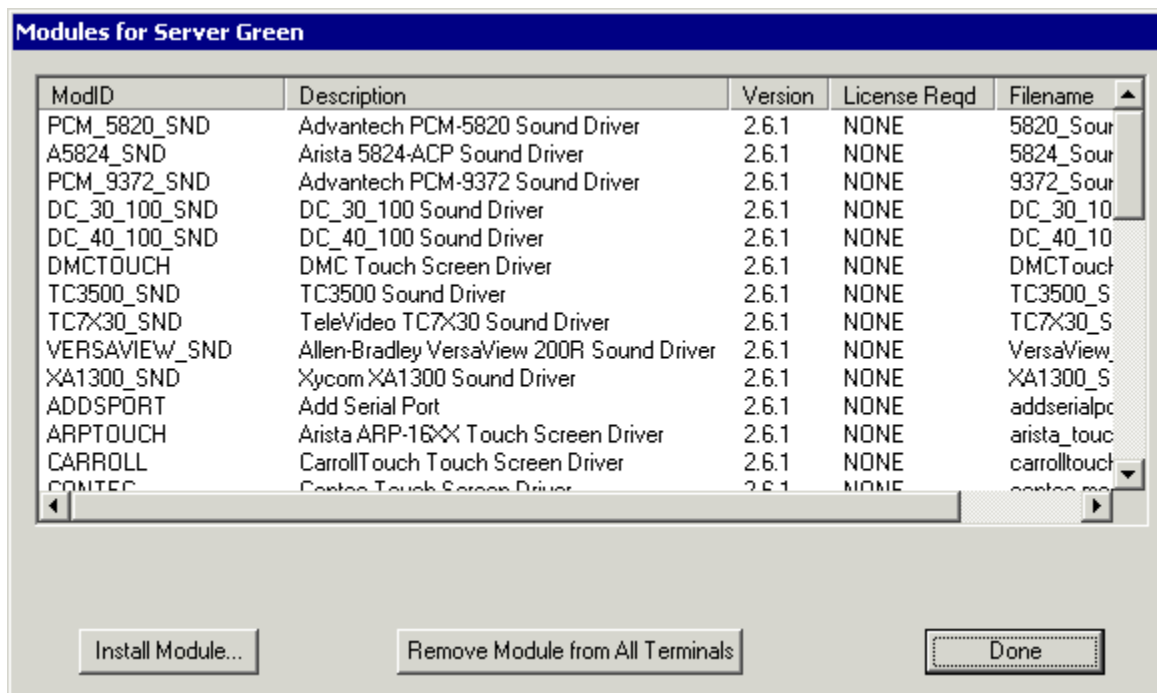
Note: Highlighting a remote ThinManager Server in the tree will perform the commands on that remote ThinManager Server.

Licensing

Licensing opens up the Licensing dialog box. See ThinManager Licensing for details.

Modules

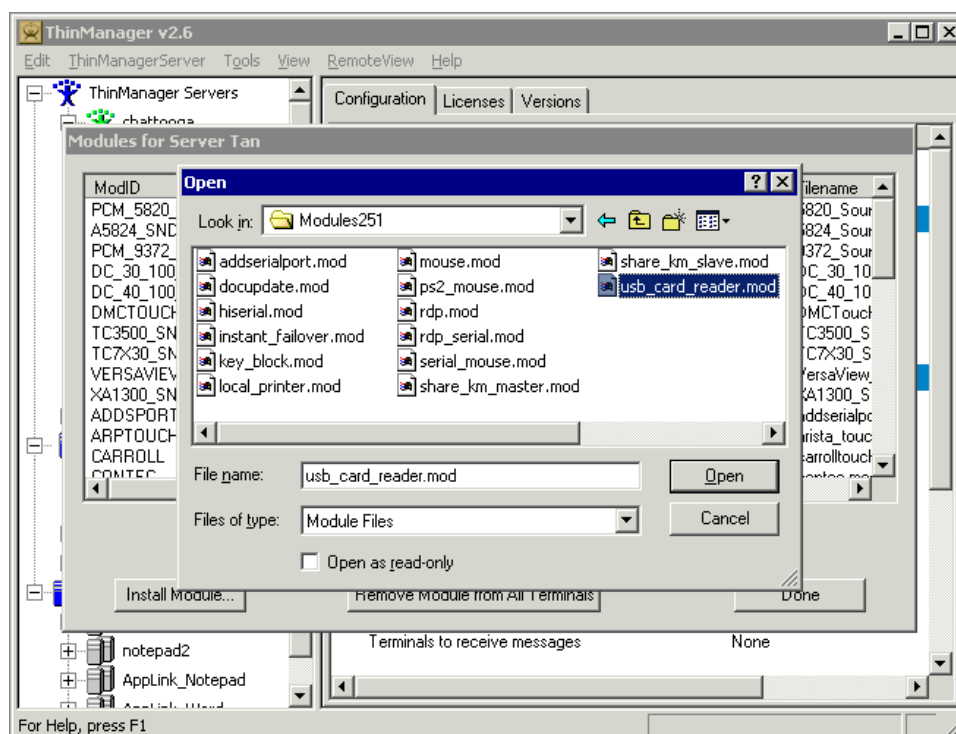
Modules open the Modules dialog box. This displays the modules that are available to the ACP Enabled thin clients. See Module Overview for details.



Installed Modules Windows

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

A module can be added to the list of available modules by highlighting the desired module file and selecting **Open**.

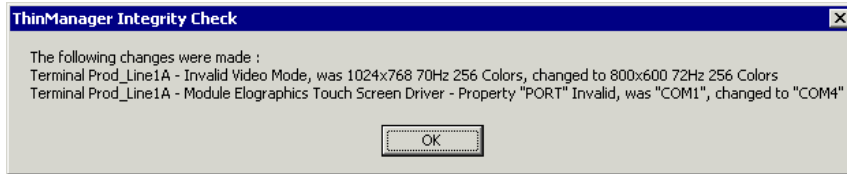


Open Module File

See Module Overview for details

Install New TermCap Database

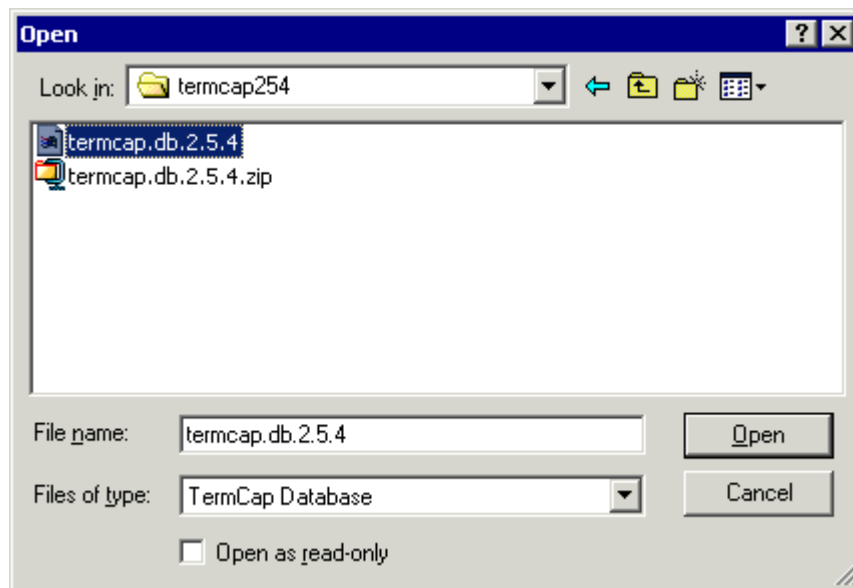
ThinManager has a **Terminal Capability Database** (termcap.db) that provides ThinManager with the configuration parameters for each thin client model. At each terminal connection, the TermCap database is checked and an integrity check is performed. If the configuration does not match the terminal specifications,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



Install New TermCap Database

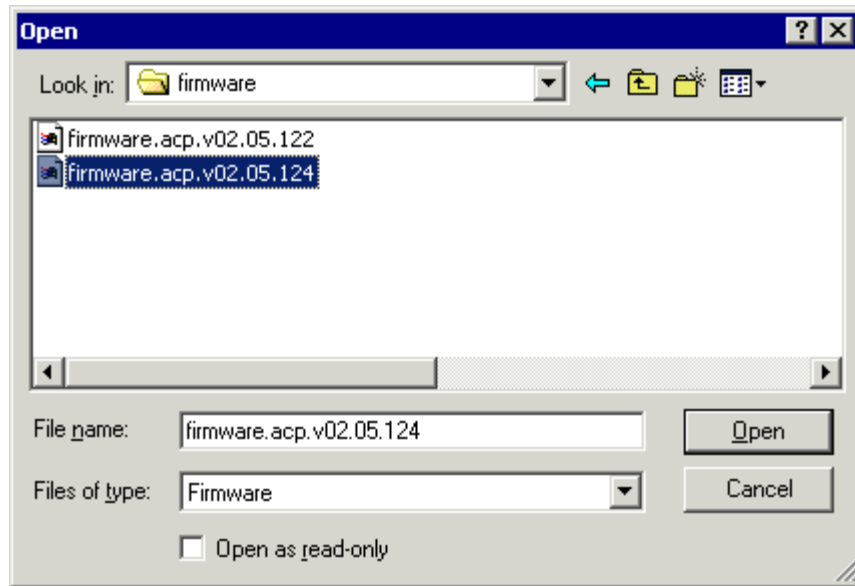
An **Open** dialog box will be launched.

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

Install New 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 **Tools>Install New 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.

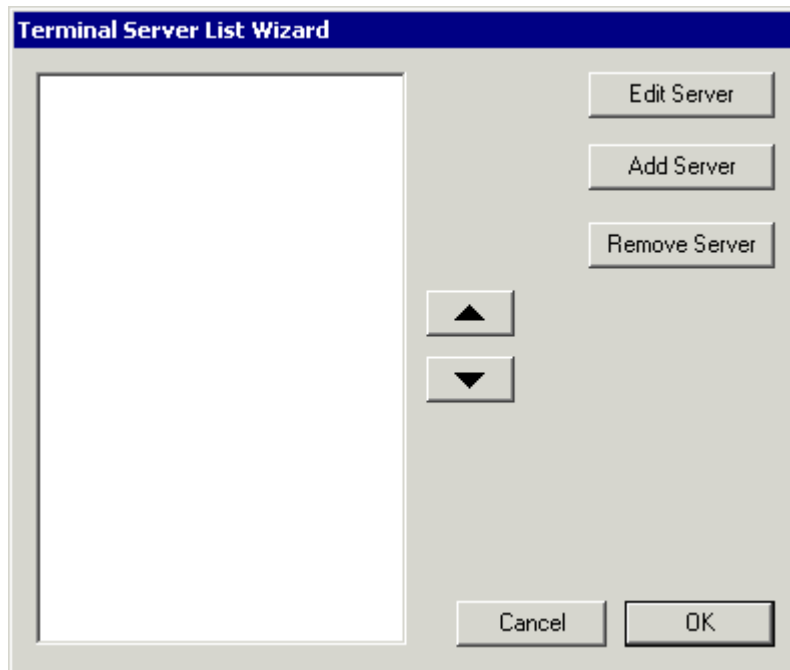
Server List Management

Server List Management is a launching point for the four server wizards. These allow the usage of names to identify the computers during configuration without the need of a DNS Server. The Server List Wizards are:

- The **T**erminal Server List Wizard
- The **T**erminal Server Group List Wizard
- The **T**hinManager List Wizard
- The **D**NS List Wizard

Terminal Server List

Selecting **ThinManagerServer>Server List Management>Terminal Server List** will launch the Terminal Server List Wizard to allow terminal servers to be defined by name.

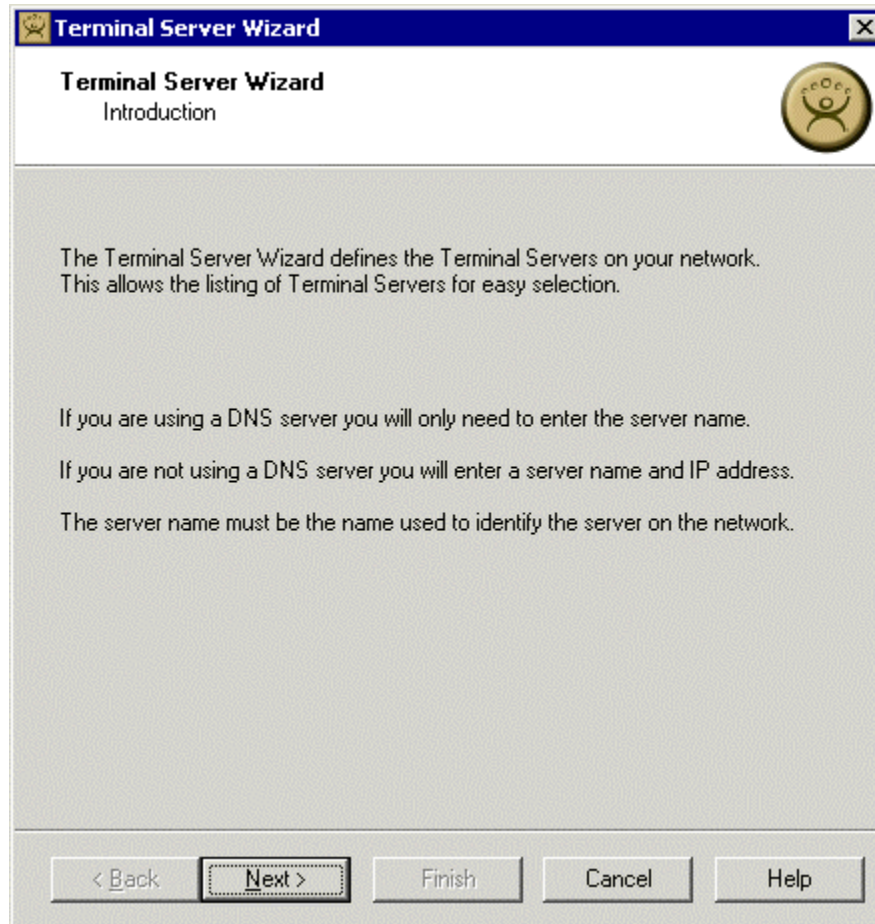


Terminal Server List Wizard

The opening window of the Terminal Server List Wizard will show any Terminal Servers that are defined, or will be blank if none have 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.
- **Cancel** closes the wizard without action.
- **OK** closes the wizard after accepting changes.

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



Terminal Server List Wizard Introduction

The **Terminal Server List Wizard** allows each Microsoft Terminal Server to be listed for easy selection by name during group and terminal configuration.

Select **Next** to continue.

Terminal Server Name Page

The screenshot shows a Windows-style dialog box titled "Terminal Server Wizard". The main heading is "Terminal Server Name" with the instruction "Enter the Terminal Server Name and Login information". The dialog contains several input fields: "Terminal Server Name" with the value "Blue", "Terminal Server IP" with the value "192 . 168 . 3 . 36", and a "Login Information" section with fields for "Domain", "User Name" (containing "Administrator"), "Password" (masked with "XXXXXXXX"), and "Verify Password" (masked with "XX"). A message at the bottom states "The password and verify password fields do not match". At the bottom of the dialog are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Server List Wizard – Terminal Server Name

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

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.

The **Terminal Server Name** fields are:

- **Terminal Server Name** - Enter the computer name as found in the Microsoft System Properties.
- **Terminal Server IP** – Entered the IP address of the terminal server.
- **Username** - Enter either the **domain and an administrative account** or the **computer name and an administrative account** for that machine. Use the **Domain\Username** or **Computername\Username** format, as shown in the example.
- **Password** - Enter the password for the administrative account used in the username field.
- **Verify Password** – Re-enter the password for the administrative account used in the username field. Passwords that do not match will be indicated by a warning message on the page.

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

Terminal Server Capabilities Page

Terminal Server Wizard

Terminal Server Capabilities
Select the capabilities of this Terminal Server

Select the options for this Terminal Server

- ☐ Available for SmartSession Groups
- ☐ Available for MultiSession configurations

Supported Connections

- ☐ Citrix Metaframe
- ☐ Citrix Device Services
- ☒ Microsoft Remote Desktop Protocol

< Back Next > Finish Cancel Help

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 **Smart Session Server** checkbox to make the terminal server available for Terminal Server Groups with SmartSession. See SmartSession for more details.
- Check the **Make this server available for MultiSession configurations** checkbox to make the terminal server available for Terminal Server Groups with MultiSession. See MultiSession for details.

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 MetaFrame** checkbox if that program is installed on the terminal server to provide the ICA protocol. Citrix MetaFrame is an optional program sold by Citrix.
- 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

Terminal Server Wizard

Data Gathering
Enter the Data Gathering Intervals

Data Gathering Intervals

☒ Fast
☐ Medium
☐ Slow
☐ Custom

SmartSession Data Update Interval: 8 seconds
Process Update Interval: 5 seconds
Session Update Interval: 8 seconds

< Back Next > Finish Cancel Help

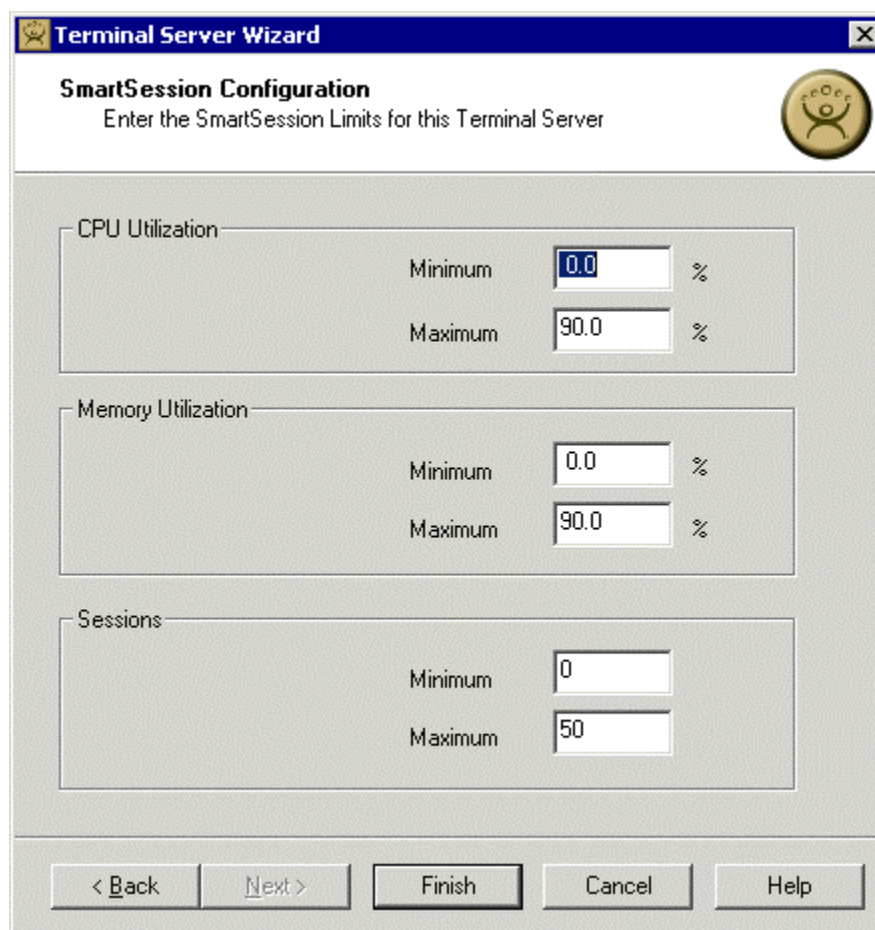
Data Gathering

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 for the sessions on 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 terminal server.

If this terminal server is configured for SmartSession, the **Next** button will go to a SmartSession Configuration page. If this terminal server is not configured for SmartSession, the **Next** button will be grayed out and the **Finish** button will close the wizard.

SmartSession Configuration Page



The screenshot shows a window titled "Terminal Server Wizard" with a sub-header "SmartSession Configuration". Below the sub-header is the instruction "Enter the SmartSession Limits for this Terminal Server". The window contains three sections: "CPU Utilization", "Memory Utilization", and "Sessions". Each section has "Minimum" and "Maximum" labels followed by input fields and a percentage sign. The "CPU Utilization" section has "Minimum" set to 0.0 and "Maximum" set to 90.0. The "Memory Utilization" section has "Minimum" set to 0.0 and "Maximum" set to 90.0. The "Sessions" section has "Minimum" set to 0 and "Maximum" set to 50. At the bottom of the window are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Section	Parameter	Value	Unit
CPU Utilization	Minimum	0.0	%
	Maximum	90.0	%
Memory Utilization	Minimum	0.0	%
	Maximum	90.0	%
Sessions	Minimum	0	
	Maximum	50	

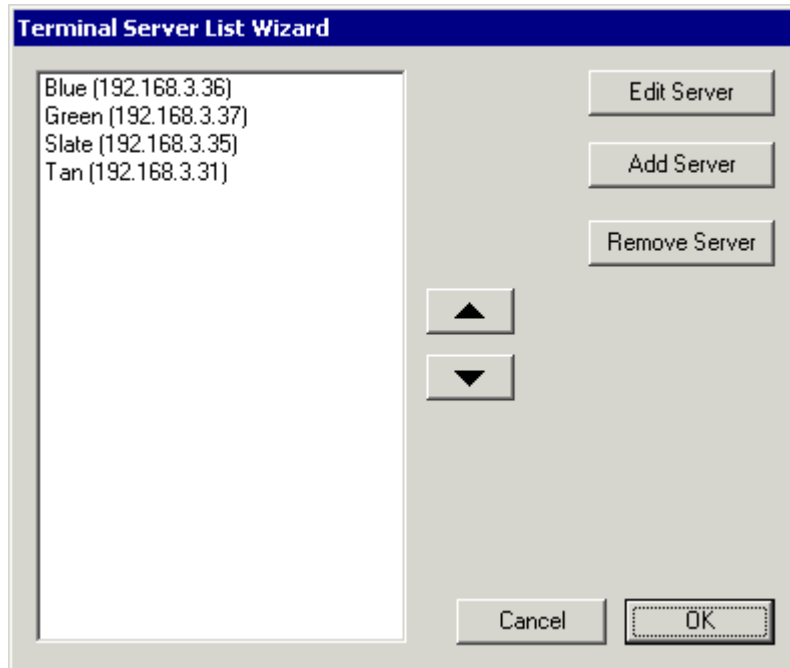
Terminal Server List Wizard – SmartSession Configuration

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 values to rank the SmartSession servers according to available resources and supplies this data to the terminals to allow the terminals to connect to the terminal server with the greatest resources.

The **SmartSession Configuration** page allows the configuration of the three parameters that ThinManager uses to determine availability for SmartSession.

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



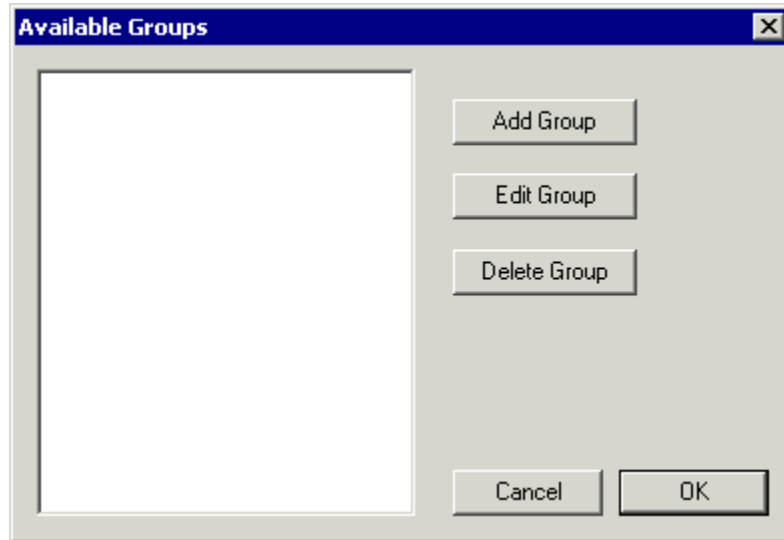
Terminal Server List Wizard

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

Terminal Server Group List

Selecting **ThinManagerServer > Server List Management > Terminal Server Group List** will launch the Terminal Server Group List Wizard to allow terminal servers groups to be defined and configured.

See Terminal Server Groups for more details.



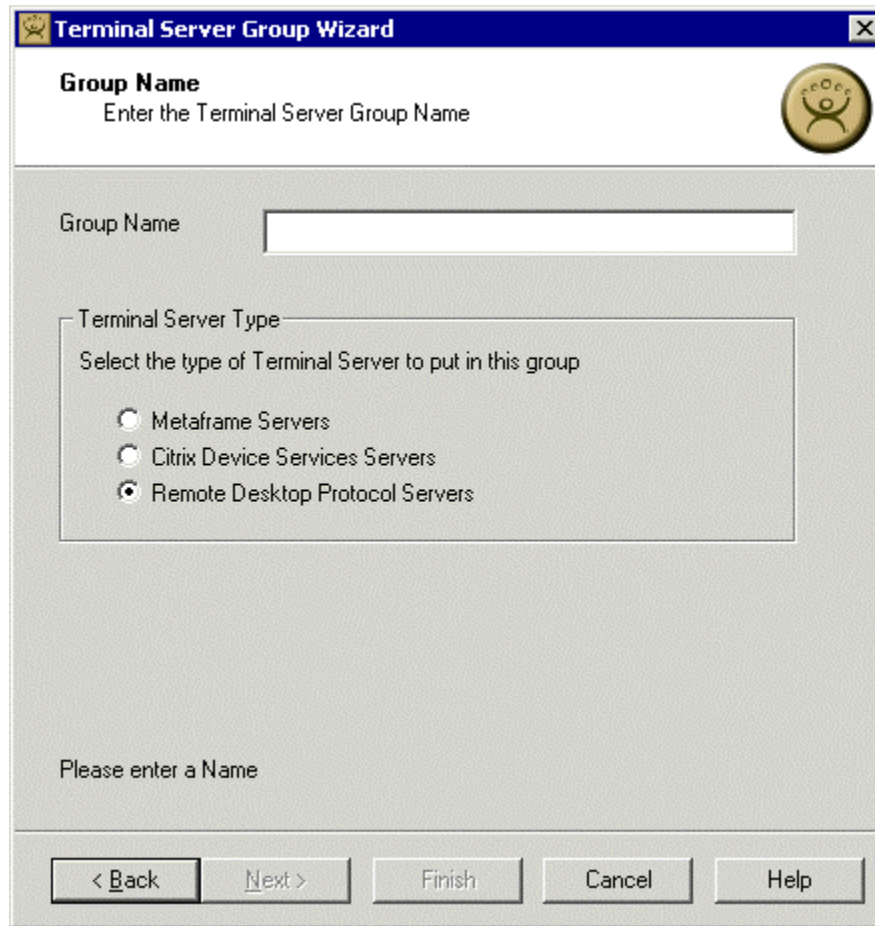
Terminal Server Group List Wizard

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

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

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

Terminal Server Group Name Page



The screenshot shows a Windows-style dialog box titled "Terminal Server Group Wizard". The main heading is "Group Name" with the instruction "Enter the Terminal Server Group Name". There is a text input field labeled "Group Name". Below this is a section titled "Terminal Server Type" with the instruction "Select the type of Terminal Server to put in this group". It contains three radio button options: "Metaframe Servers", "Citrix Device Services Servers", and "Remote Desktop Protocol Servers", with the last one selected. At the bottom, there is a prompt "Please enter a Name" and a row of five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Group Name Page

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

Each group can contain members of one type of Client Communication Protocol. These are configured during the Terminal Server Configuration.

Select the desired Client Communication Protocol and select **Next** to configure the group options.

Terminal Server Group Citrix MetaFrame Page

Terminal Server Group Wizard

Citrix Metaframe
Enter the Metaframe options for this group

Select Encryption Level
Basic

Enter the ICA Browser Address

☐ Use a Citrix Published Application

Enter the name of the Published Application

< Back Next > Finish Cancel Help

Citrix MetaFrame Options

If Citrix MetaFrame is the Client Communication Protocol chosen, the **Citrix MetaFrame** page will be displayed to allow the setting of Citrix options for the Terminal Server Group including *Encryption Level* and the use of *Published Applications*. The **ICA Browser Address** allows aid in connection across routers, subnets, and domains.

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.

Note: Published Application should have a continuous name and not contain spaces.

Select **Next** to continue.

Terminal Server Group Options Page

Terminal Server Group Wizard

Group Options
Select the options for this group

Select the group type options

- ☒ SmartSession Group
- ☐ Make group available for MultiSession Configurations
- ☐ Application Link Group

Select group options

- ☐ Enforce Primary
- ☐ Instant Failover (requires license)
- ☒ Always maintain a session for this group
- ☒ Start a session at boot-up for this group
- ☒ Allow Auto-Login

< Back Next > Finish Cancel Help

Group Options

The **Group Options** allow the configuration of terminal server group parameters.

Group Type Options include:

- **SmartSession Group** – Selecting this option allows the terminal server 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 terminal server group with the most available resources
- **Make group available for MultiSession Configurations** – This allows the terminal server group to be available to ThinManager Ready thin clients that use MultiSession to connect to two or more terminal server groups.
- **Application Link Group** – This option, AppLink, provides the Initial Program function to ThinManager Ready thin clients that connect to members of the terminal server 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.

Group Options include:

- **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** - Allows a terminal to connect to two terminal servers in the Terminal Server 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.

- **Always maintain a session for this group** – If checked, if 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 terminal server group at boot up. If unchecked, a user action is required to start the session.
- **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.

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

Terminal Server Group Members Page

Terminal Server Group Wizard

Terminal Server Group Members
Select the Terminal Servers for this group

Available Terminal Servers

- Blue (192.168.3.36)
- Green (192.168.3.37)
- Slate (192.168.3.35)
- Tan (192.168.3.31)

Selected Terminal Servers

Edit Server List

< Back Next > Finish Cancel Help

Terminal Server Group Members

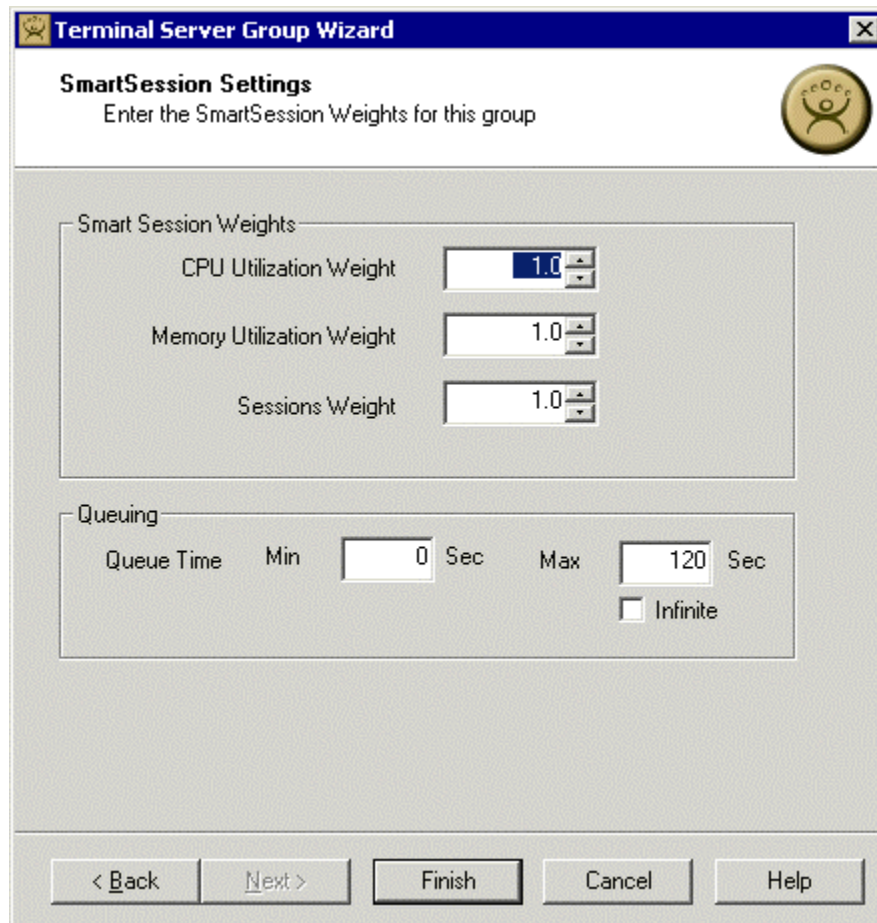
Once the Terminal Server Group is configured, the available Terminal Servers are listed in the Terminal Server Group Members page. Highlight the desired terminal server from the left-hand list and use the arrow to move it into the right-hand column. Use the **Up** arrow and **Down** arrow to prioritize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

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

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

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

Terminal Server Group SmartSession Page



The screenshot shows a Windows-style dialog box titled "Terminal Server Group Wizard". Inside, the "SmartSession Settings" section is active, with the instruction "Enter the SmartSession Weights for this group". There are three spinners for "Smart Session Weights": "CPU Utilization Weight" (set to 1.0), "Memory Utilization Weight" (set to 1.0), and "Sessions Weight" (set to 1.0). Below this is a "Queuing" section with "Queue Time" fields for "Min" (0) and "Max" (120) seconds, and an unchecked "Infinite" checkbox. At the bottom are buttons for "< Back", "Next >", "Finish", "Cancel", and "Help".

Smart Session Settings

The **SmartSession Settings** page allows the importance of the parameter weights to be set and allows SmartSession Queuing to be configured.

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. Changing the weight of one of the three SmartSession parameters will change its importance. The higher the **Weight**, relative to the others, the greater the importance of that parameter has in determining the load for SmartSession.

Note: The **Weights** are relative. Increasing all three **Weights** from “1” to “10” doesn’t change the relative values.

Smart Session Queuing improves the load adjustment when a terminal server fails by staggering the reconnection of the terminals that were connected to the failed terminal server. Queuing allows the terminals to connect a few at a time to let the CPU of the terminal servers stabilize and let the server load get re-sampled to spread the terminals out over the remaining SmartSession members, instead of immediately switching all the terminals to the terminal server with the lowest load and overloading the CPU.

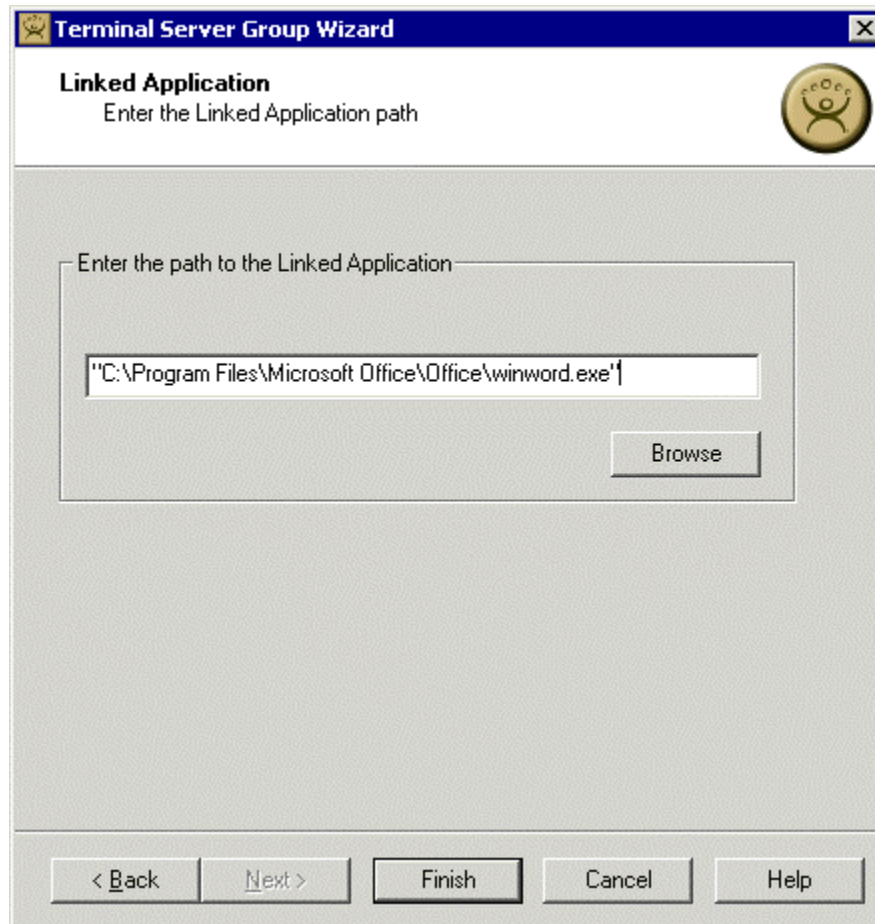
The Smart Session Queuing parameters are:

- **Min Queuing Time** - This is the time delay between allowing sessions to be started on a terminal server. Once a session is started on a terminal server, the Min Queuing Time will have to expire before another session is allowed to be started. Setting this value to 0 disables the Minimum Queuing functionality.
- **Max Queuing Time** - If a terminal server is above its Maximum Smart Session CPU load limit, this is the maximum amount of time a terminal can be delayed before starting a session. If during this time, the CPU load level of the terminal server is below the CPU load limit, the terminal will be allowed to start a session immediately. If other terminals are waiting to start a session on the same terminal server, they will be allowed to start sessions in accordance with the Minimum Queuing Time. The Max Queuing Time can be set to infinite by checking the Infinite checkbox.
- **Infinite** - The Infinite checkbox will set the maximum queuing time to infinite to keep the terminal from reconnecting until the CPU usage has dropped to an acceptable level

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 Terminal Server Group uses the AppLink option, a Link Application page will be displayed by selecting the **Next** button.

Terminal Server Group Linked Application Page



Terminal Server Group Wizard

Linked Application
Enter the Linked Application path

Enter the path to the Linked Application

"C:\Program Files\Microsoft Office\Office\winword.exe"

Browse

< Back Next > Finish Cancel Help

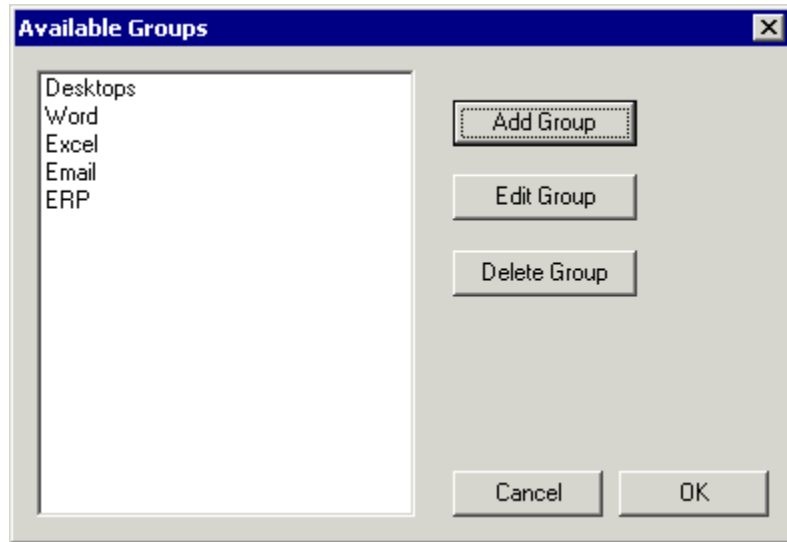
Linked Application Path

The Linked Application page allows a single application to be defined for the AppLink session. Enter the path to the desired application in the **Enter the path to the Linked Application** field as shown in the example.

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 Terminal Server Group List wizard and display the created terminal server groups.



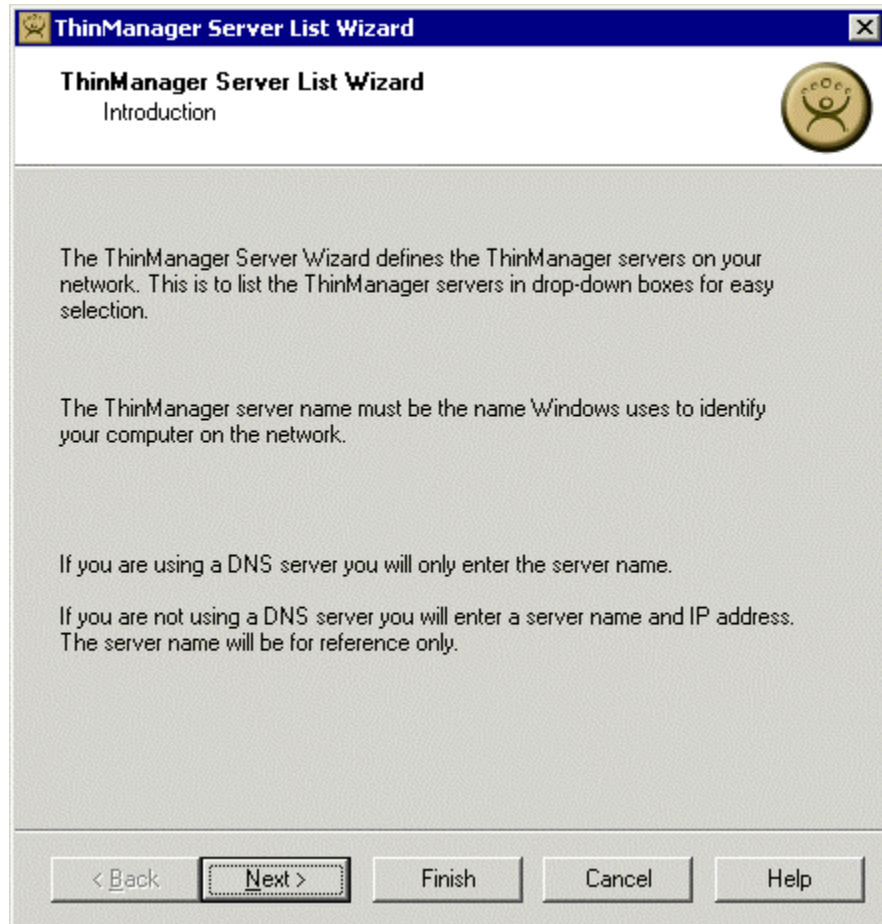
Available Groups

Selecting the New Group button can configure additional groups.

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

ThinManager Server List

Selecting **ThinManagerServer > Server List Management > ThinManager Server List** will launch the ThinManager Server List Wizard to allow the definition of ThinManager Servers.



ThinManager Server List Wizard - Introduction

The ThinManager Server List Wizard begins with an introduction screen.

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

ThinManager Server List Page

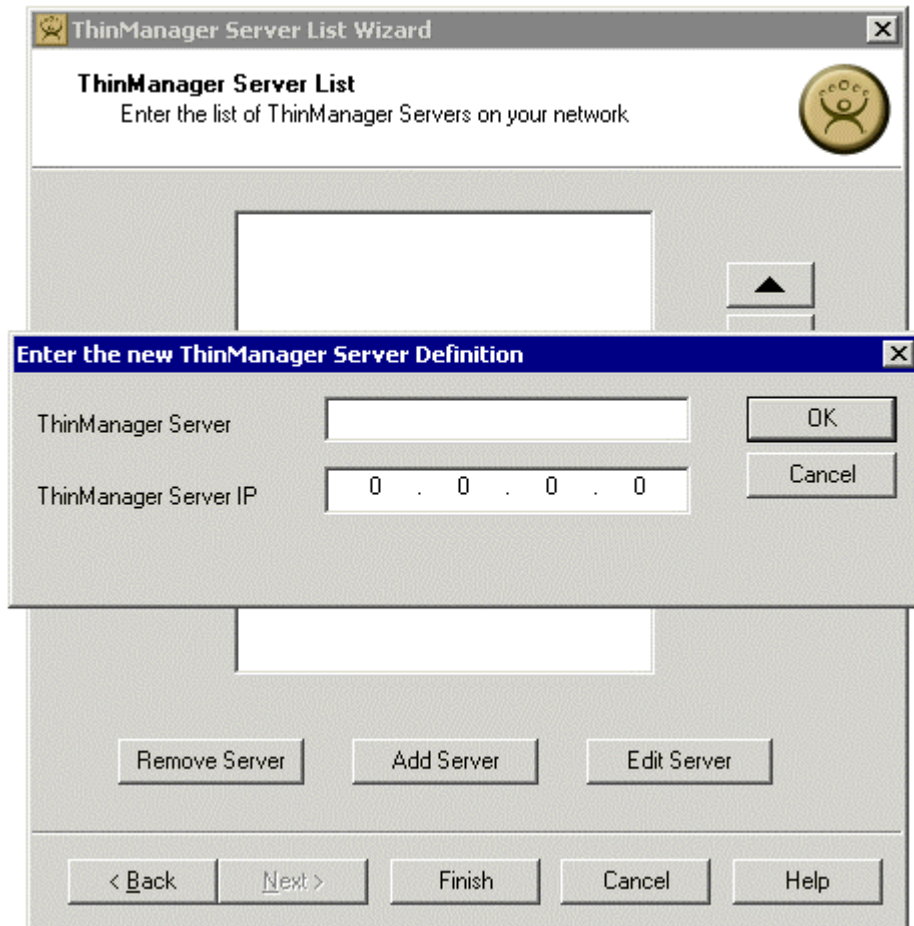


ThinManager Server List Wizard

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** clears 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.

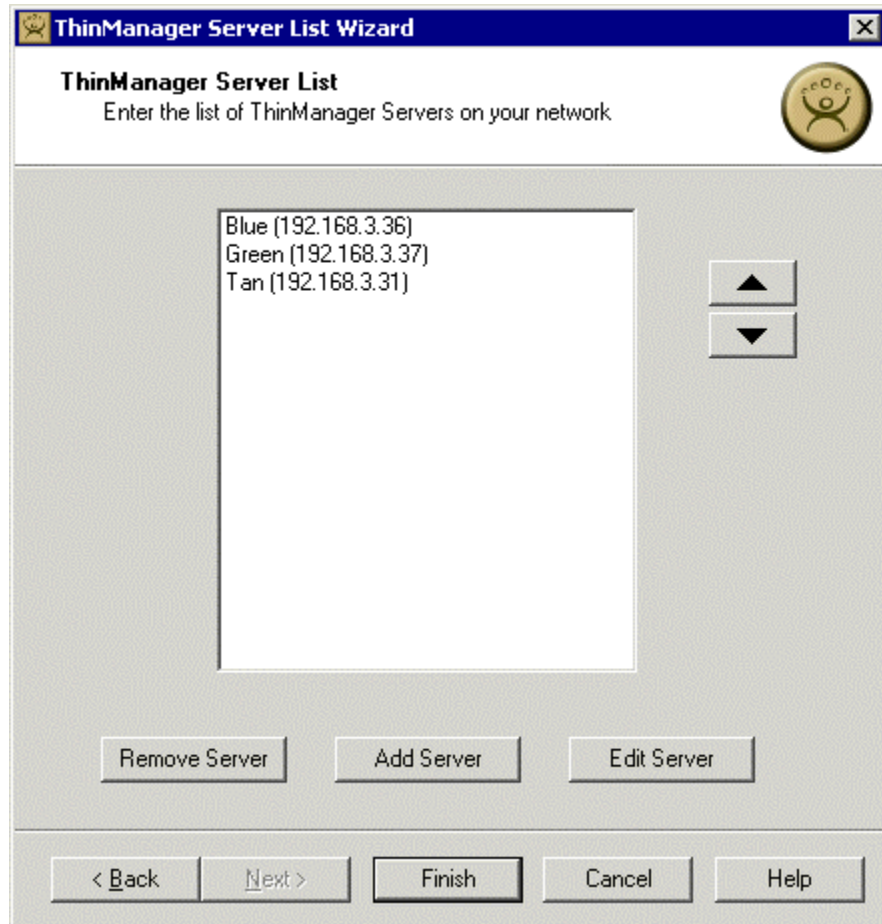
Selecting **Add Server** will launch a ThinManager Server Definition window that allows the entry of the ThinManager Server name and IP address.



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. Type the IP address in the **ThinManager Server Address** field, and select **OK**. This adds the ThinManager Server to the ThinManager Server list.

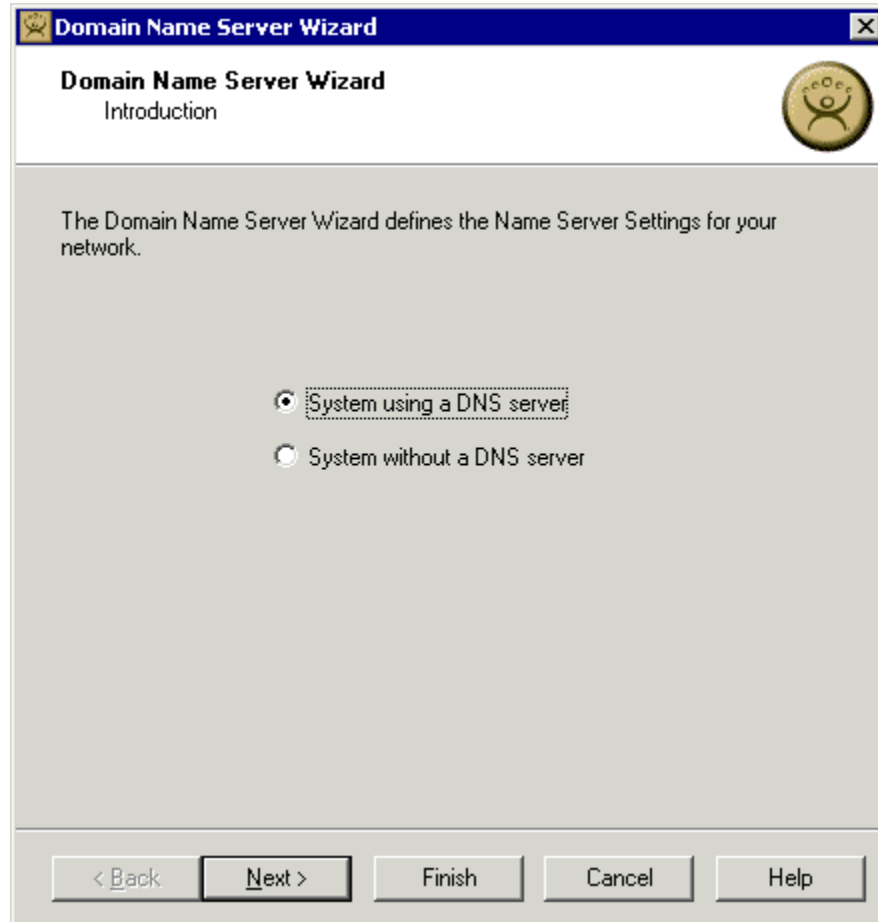


ThinManager Server List

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

DNS Configuration

Selecting **ThinManagerServer > Server List Management > DNS Configuration** will launch the ThinManager Server List Wizard to allow the definition of Domain Name Servers.

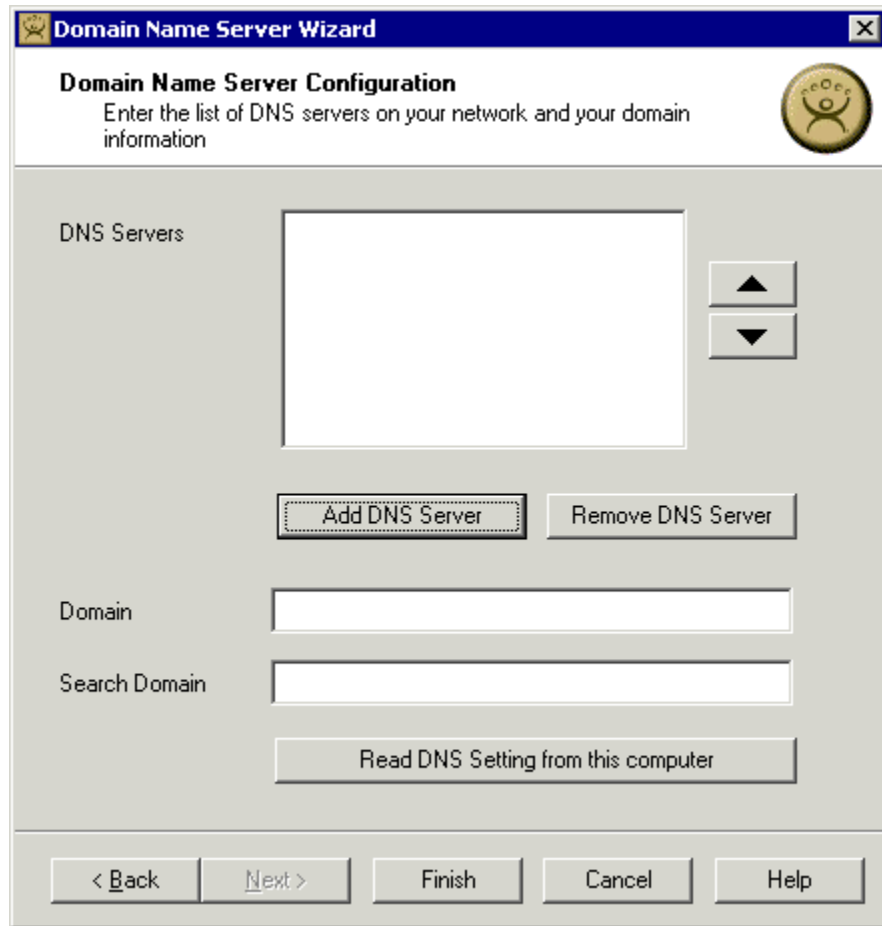


Domain Name Service Wizard – Introduction

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



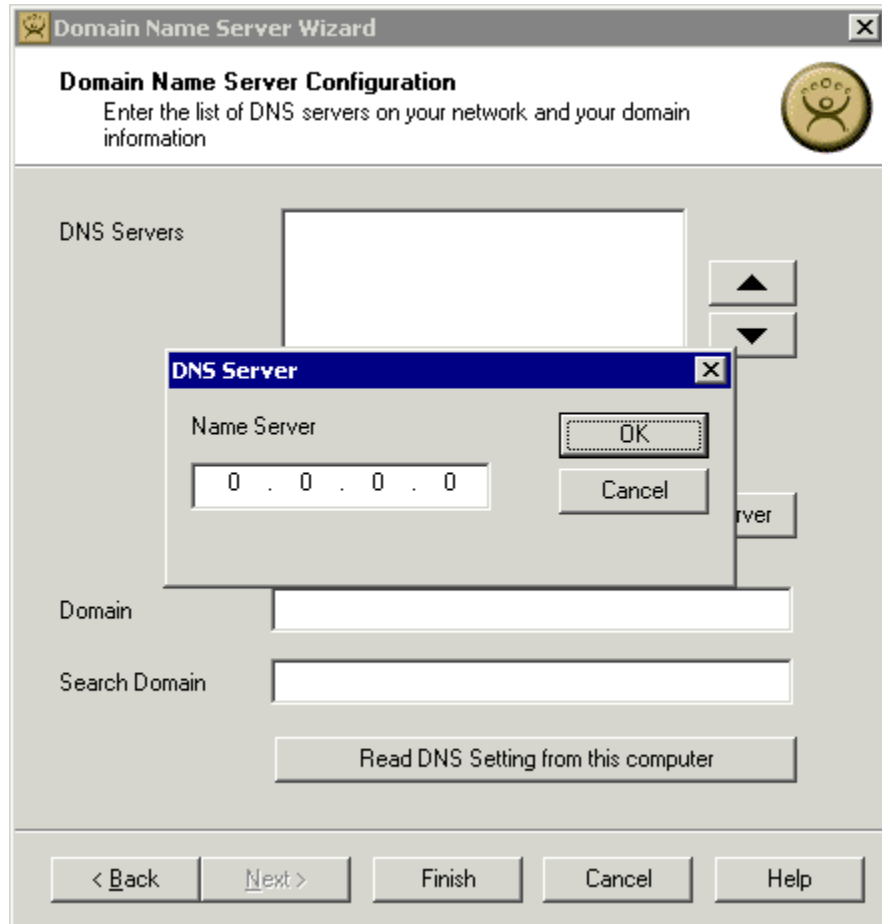
The screenshot shows a Windows-style dialog box titled "Domain Name Server Wizard". The main title bar is blue with a yellow icon on the left and a close button on the right. Below the title bar, the text "Domain Name Server Configuration" is displayed, followed by the instruction "Enter the list of DNS servers on your network and your domain information". To the right of this text is a circular logo with a stylized figure. The main area of the dialog is light gray. It features a list box labeled "DNS Servers" which is currently empty. To the right of the list box are two arrow buttons (up and down). Below the list box are two buttons: "Add DNS Server" and "Remove DNS Server". Below these buttons are two text input fields: "Domain" and "Search Domain". Below the input fields is a button labeled "Read DNS Setting from this computer". At the bottom of the dialog is a row of five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

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** will launch a dialog box that allows the IP address of the DNS server to be added.



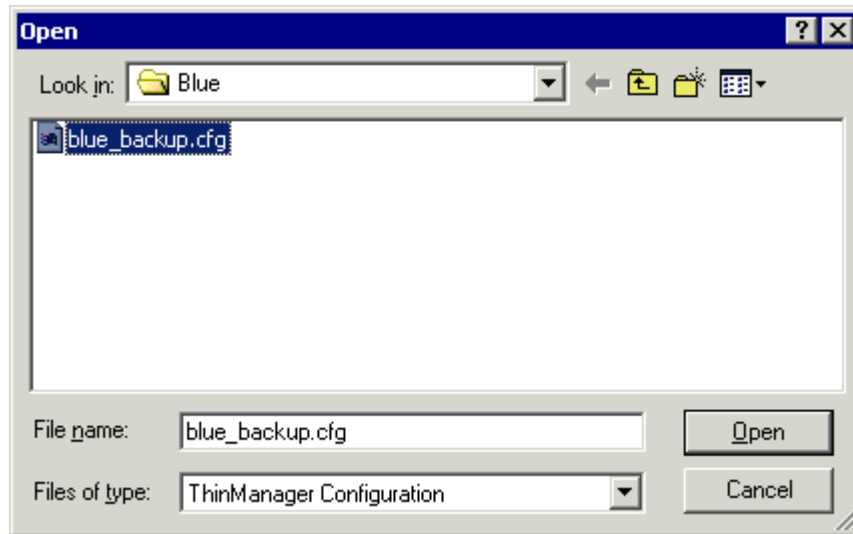
Domain Name Server Configuration – Add DNS Server

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.

Restore Configuration

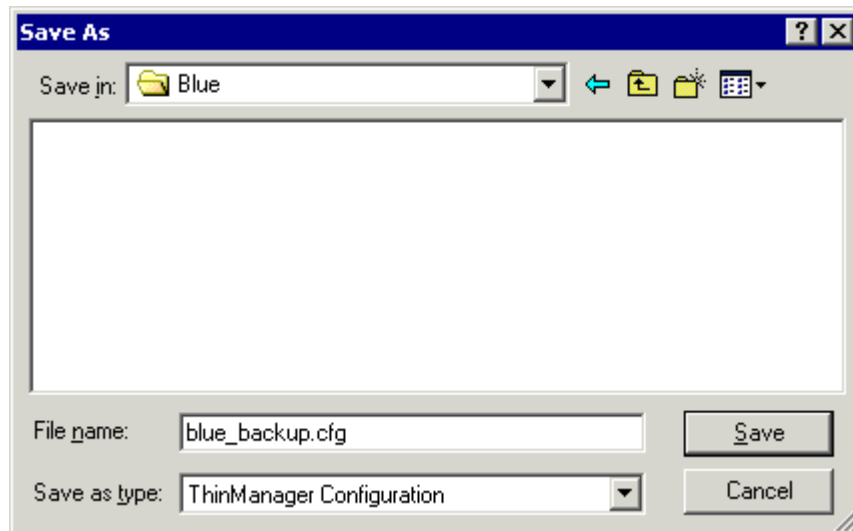
Restore Configuration will allow a backed up ThinManager configuration to be applied to the ThinManager Server. Select **Restore Configuration** to launch the desired ThinManager Configuration file in the browse window and select **O**pen. The backup copy will overwrite the existing configuration.



Restore ThinManager Configuration

Backup Configuration

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



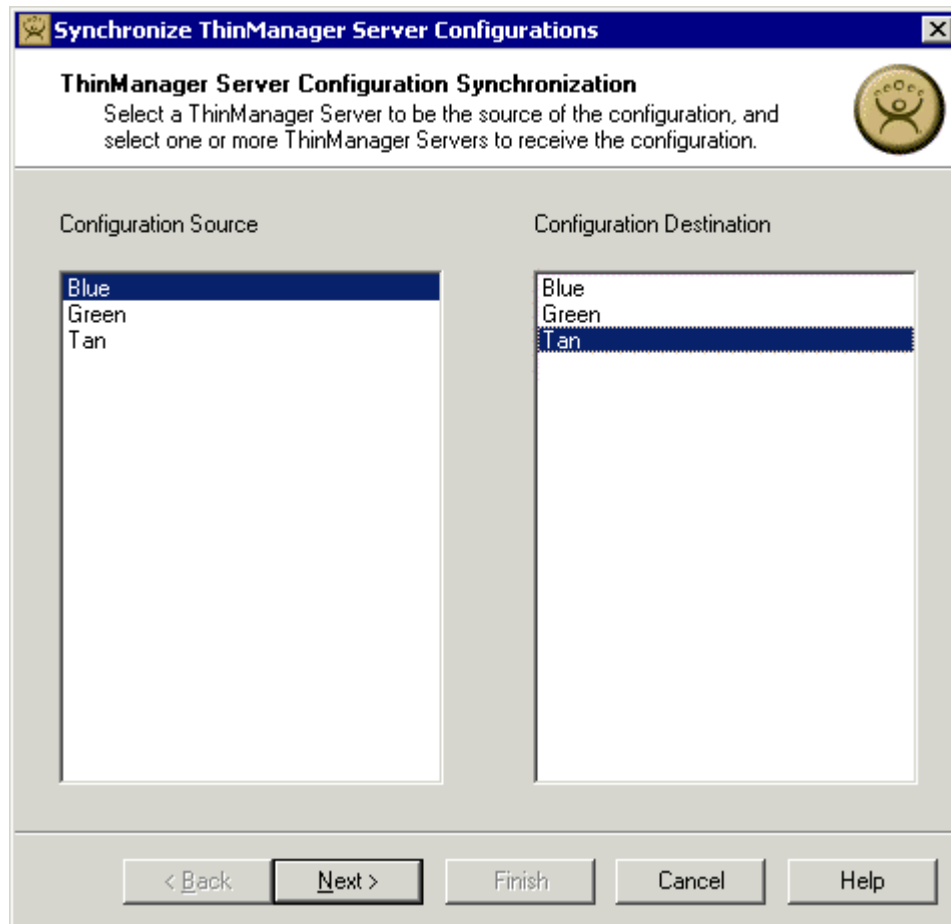
Backup ThinManager Configuration

Synchronize Configuration

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**.

ThinManager Server Configuration Synchronization Page

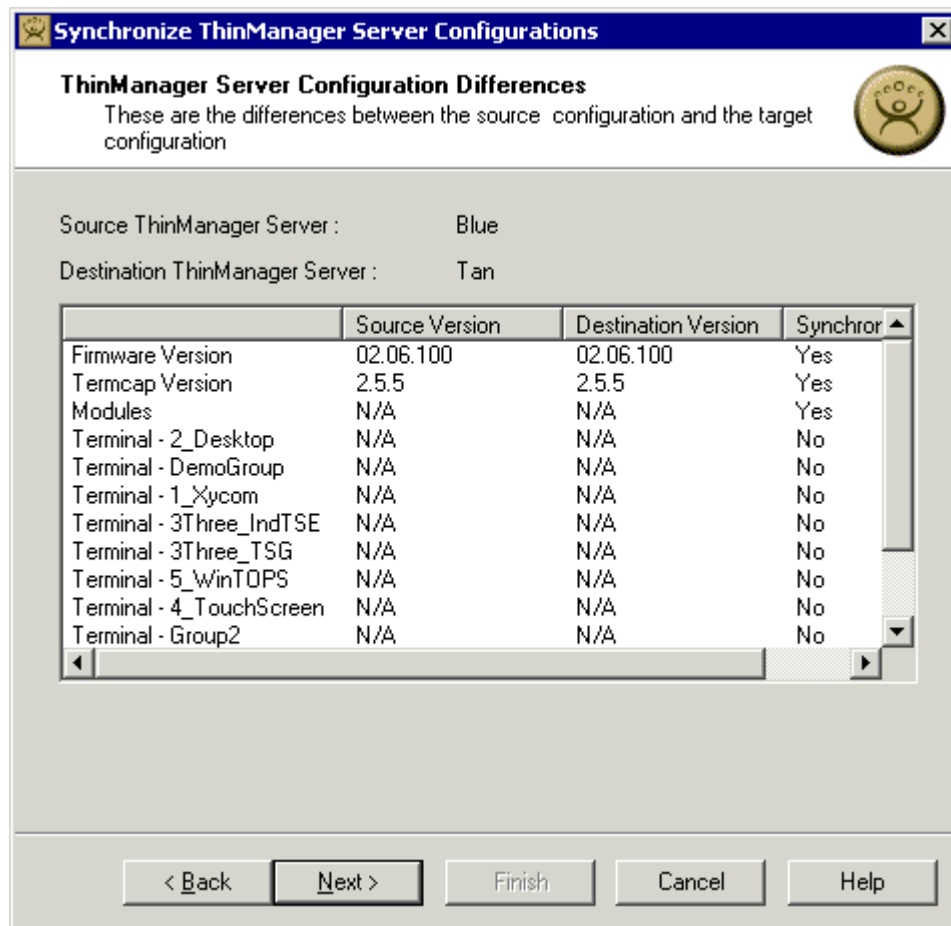


Synchronize ThinManager Server Configuration Wizard

Highlight the **Configuration Source** ThinManager Server and the **Configuration Destination** ThinManager Server, and select **Next**.

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

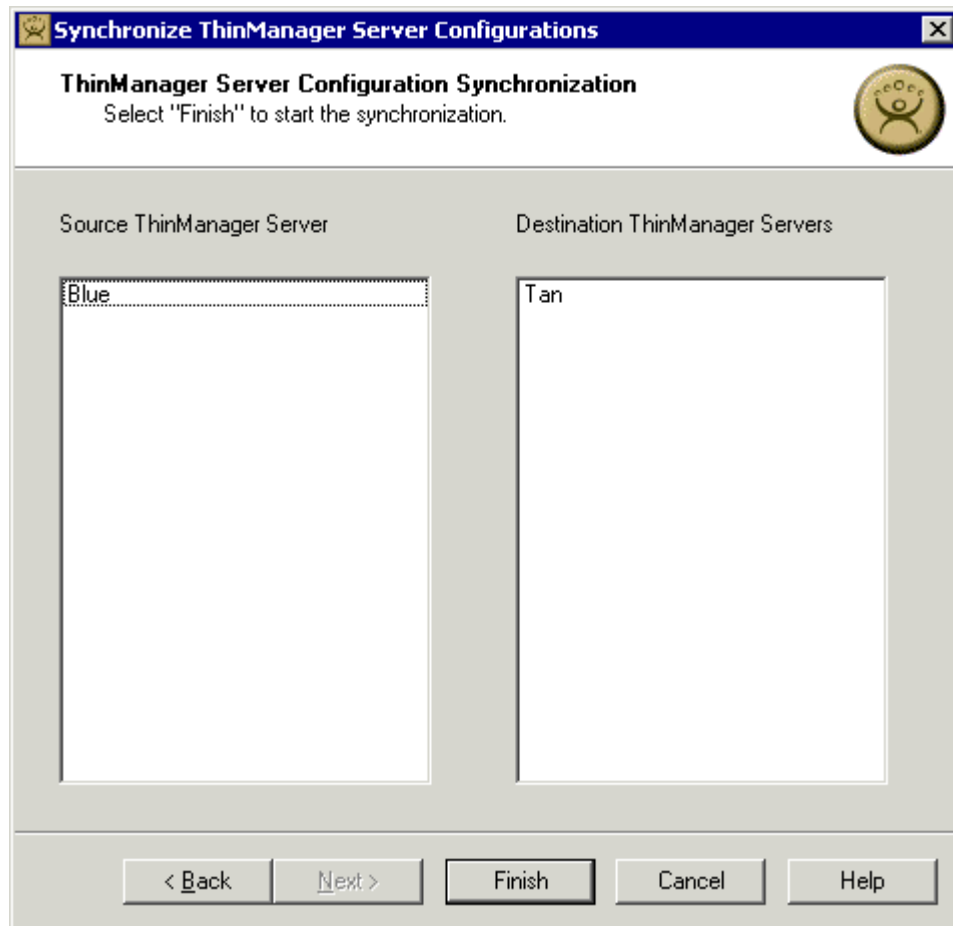


Synchronization Differences

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.

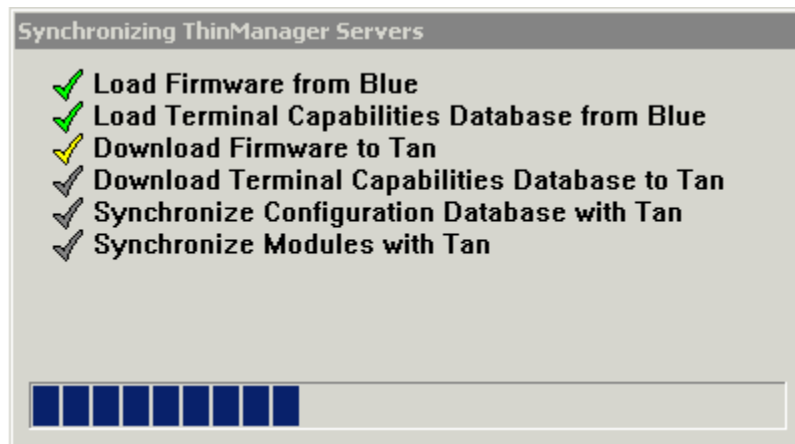
Note: The Synchronization tool does not compare and contrast, then make changes back and forth. Synchronization will take the files and configuration from the source ThinManager Server and overwrite the corresponding files on the destination ThinManager Server.

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.

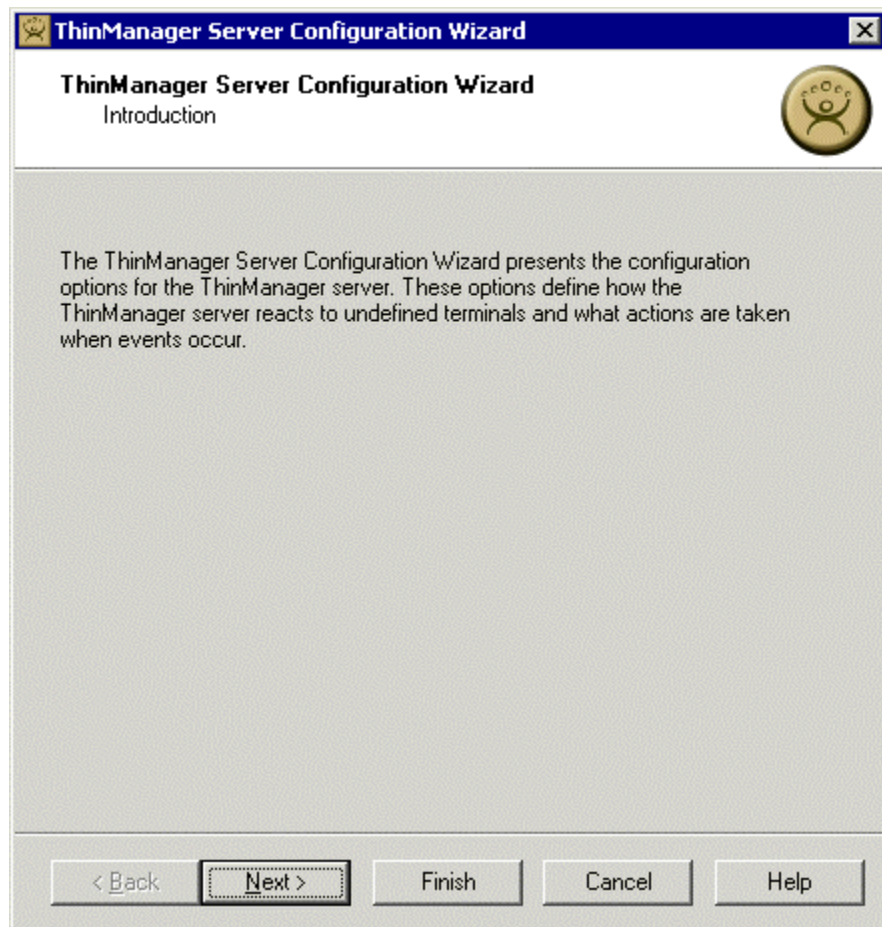


Synchronization Progress Meter

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

Settings

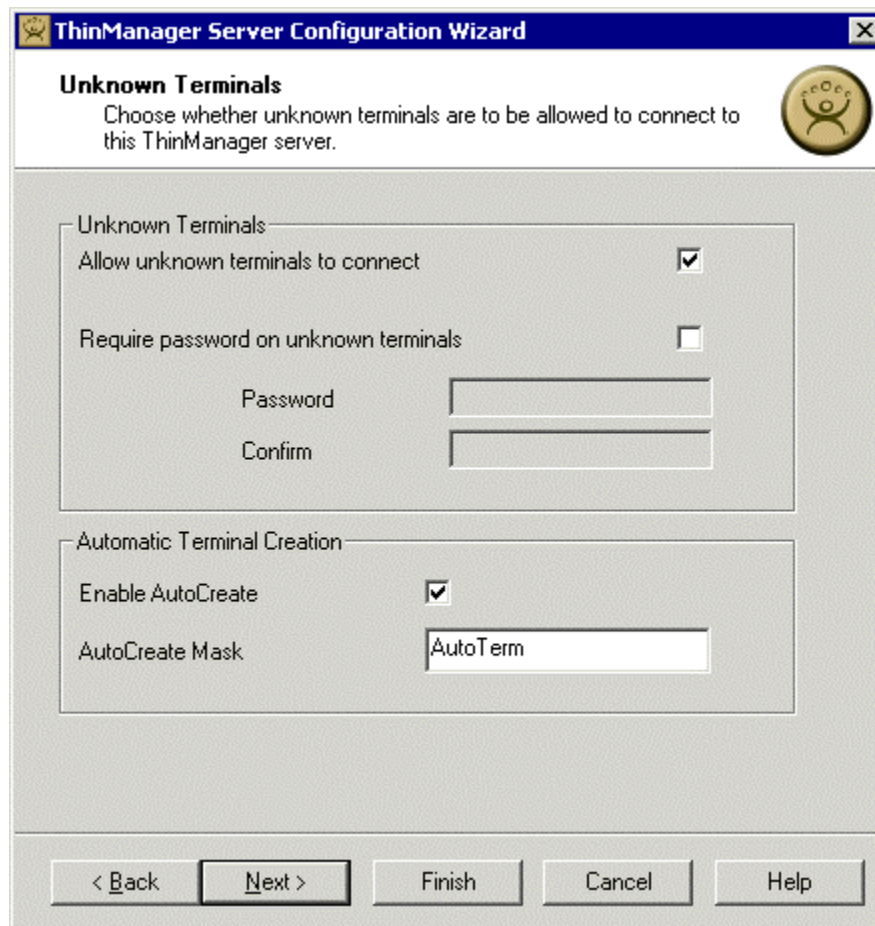
Selecting **Settings** will launch the ThinManager Server Configuration wizard that allows the configuration of global ThinManager settings.



ThinManager Server Configuration Wizard

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

Unknown Terminals Page



The image shows a screenshot of the 'Unknown Terminals' page within the 'ThinManager Server Configuration Wizard'. The window has a blue title bar with the text 'ThinManager Server Configuration Wizard' and a close button. Below the title bar, the page is titled 'Unknown Terminals' with a subtitle 'Choose whether unknown terminals are to be allowed to connect to this ThinManager server.' and a gold circular icon with a person silhouette. The main content area is divided into two sections. The first section, 'Unknown Terminals', contains a checkbox 'Allow unknown terminals to connect' which is checked, and a checkbox 'Require password on unknown terminals' which is unchecked. Below these are two text input fields labeled 'Password' and 'Confirm'. The second section, 'Automatic Terminal Creation', contains a checkbox 'Enable AutoCreate' which is checked, and a text input field 'AutoCreate Mask' containing the text 'AutoTerm'. At the bottom of the window are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

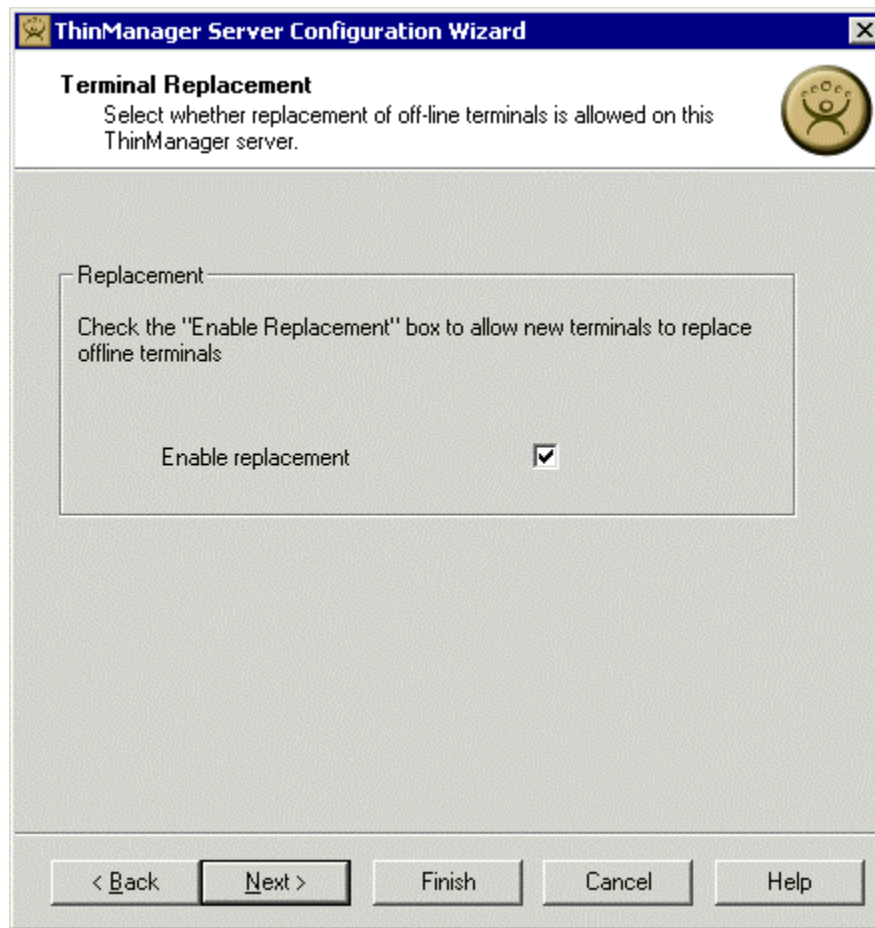
Unknown Terminals

The **Allow unknown terminals to connect** checkbox lets new terminals be added to the ThinManager Server. Replacements and new terminals are prevented if this box is un-selected.

The **Require password on unknown terminals** checkbox 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.

The **Enable AutoCreate** checkbox allows the auto-creation of an array of terminals as described in Auto-Creation of Terminals. The **AutoCreate Mask** field is the base name used in the array.

Terminal Replacement Page



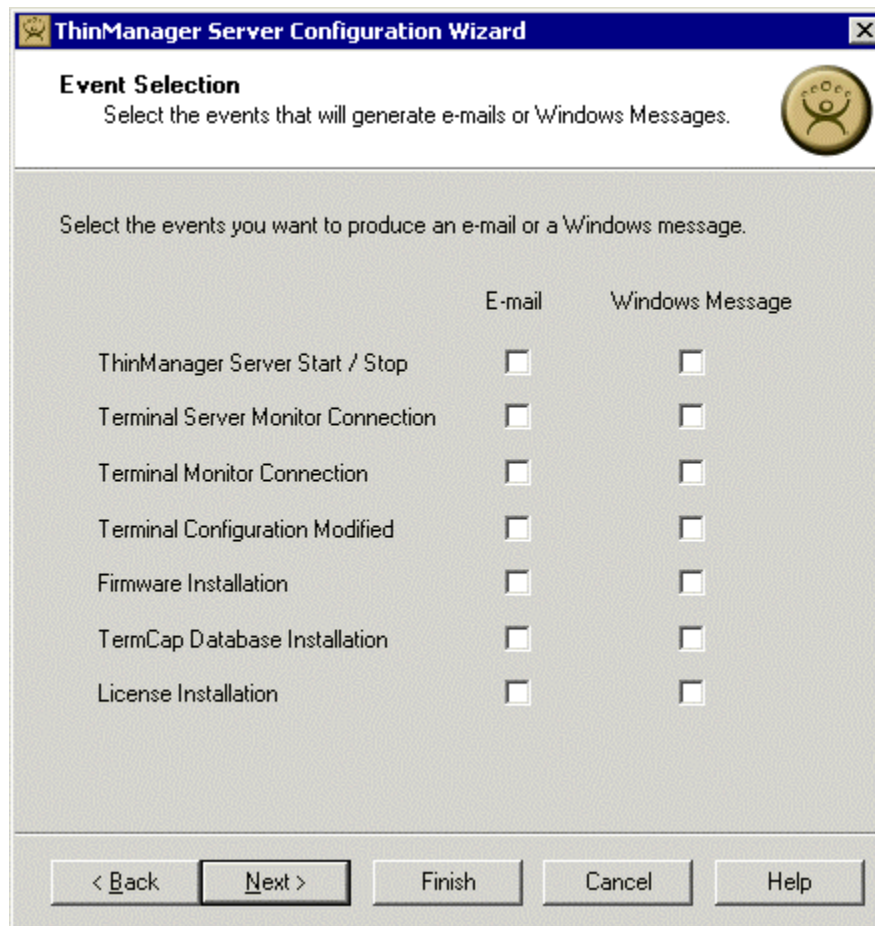
The screenshot shows a window titled "ThinManager Server Configuration Wizard" with a close button (X) in the top right corner. The main heading is "Terminal Replacement". Below it, a text box says "Select whether replacement of off-line terminals is allowed on this ThinManager server." To the right of this text is a circular icon with a stylized figure. The main content area is a light gray box with a title bar "Replacement". Inside this box, it says "Check the 'Enable Replacement' box to allow new terminals to replace offline terminals". Below this text is a checkbox labeled "Enable replacement" which is checked. At the bottom of the window, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

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 Wizard mode or the **Other** tab in classic mode.

Select **Next** to continue.

Event Selection Page



The image shows a screenshot of the 'ThinManager Server Configuration Wizard' window, specifically the 'Event Selection' page. The window has a blue title bar with the text 'ThinManager Server Configuration Wizard' and a close button. Below the title bar, the page is titled 'Event Selection' with a subtitle 'Select the events that will generate e-mails or Windows Messages.' and a gold circular icon. The main area contains a list of events with checkboxes for 'E-mail' and 'Windows Message' notifications. The events are: ThinManager Server Start / Stop, Terminal Server Monitor Connection, Terminal Monitor Connection, Terminal Configuration Modified, Firmware Installation, TermCap Database Installation, and License Installation. At the bottom, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

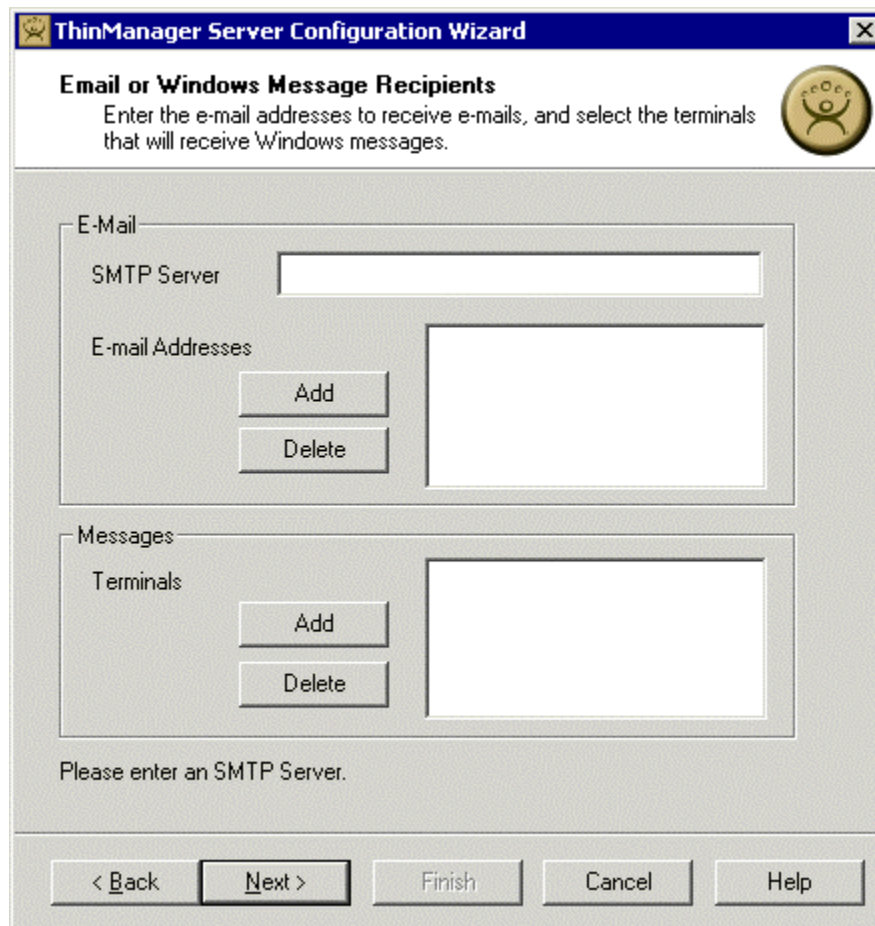
	E-mail	Windows Message
ThinManager Server Start / Stop	<input type="checkbox"/>	<input type="checkbox"/>
Terminal Server Monitor Connection	<input type="checkbox"/>	<input type="checkbox"/>
Terminal Monitor Connection	<input type="checkbox"/>	<input type="checkbox"/>
Terminal Configuration Modified	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

Event Selection

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



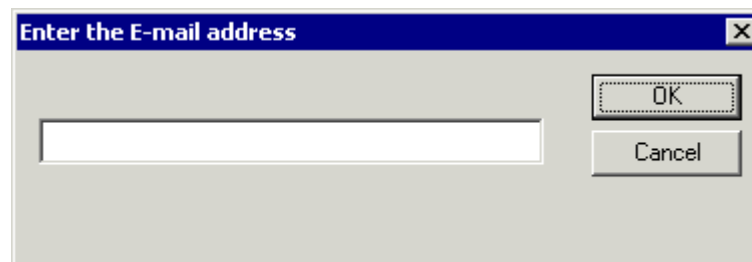
The image shows a screenshot of the 'ThinManager Server Configuration Wizard' window, specifically the 'Email or Windows Message Recipients' page. The window has a title bar with the text 'ThinManager Server Configuration Wizard' and a close button. Below the title bar, the page title 'Email or Windows Message Recipients' is displayed, followed by instructions: 'Enter the e-mail addresses to receive e-mails, and select the terminals that will receive Windows messages.' The main area is divided into two sections: 'E-Mail' and 'Messages'. The 'E-Mail' section contains an 'SMTP Server' text box, an 'E-mail Addresses' list box, and 'Add' and 'Delete' buttons. The 'Messages' section contains a 'Terminals' list box and 'Add' and 'Delete' buttons. At the bottom of the main area, there is a message: 'Please enter an SMTP Server.' The bottom of the window features a navigation bar with buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Email or Windows Messaging Recipients

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

Enter the SMTP (Simple Mail Transfer Protocol) server used by the ThinManager Server in the **SMTP Server** field.

Select the **Add** button in the E-mail frame to list the e-mail recipients.



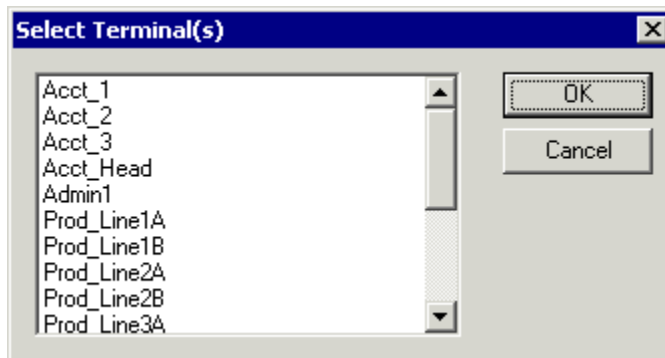
The image shows a screenshot of a small dialog box titled 'Enter the E-mail address'. It has a single text input field and two buttons: 'OK' and 'Cancel'.

E-mail Address Entry Form

Enter the desired e-mail address in the entry form and select **OK**.

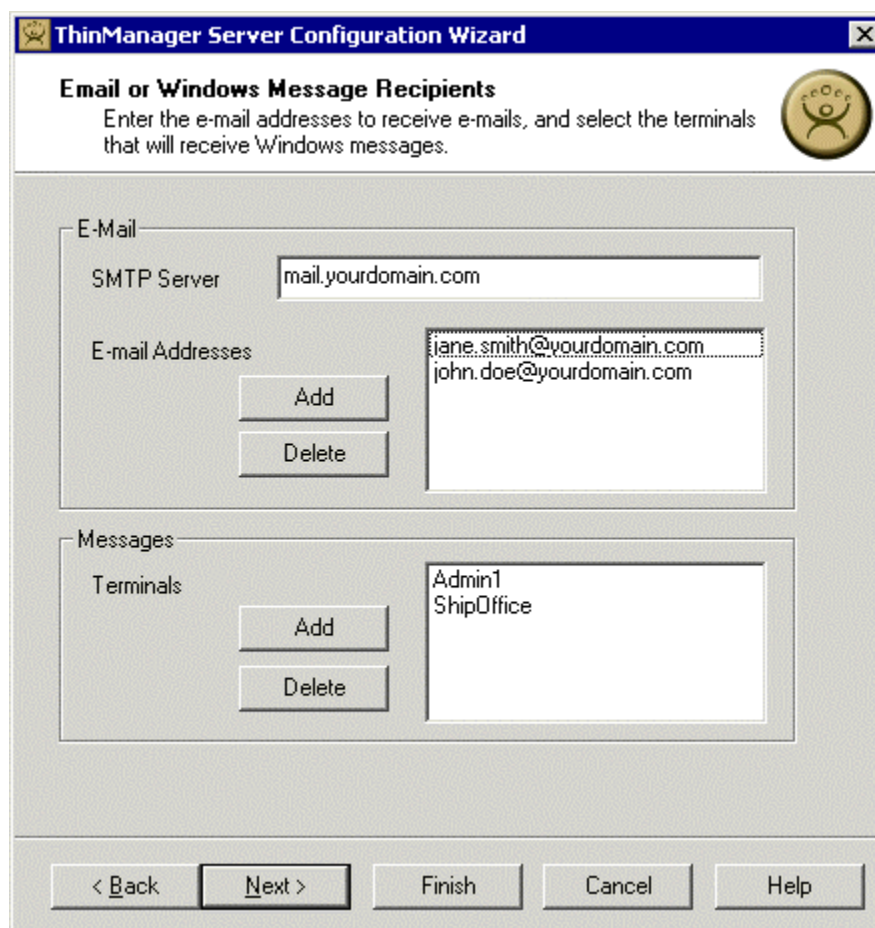
Select the **Add** button in the E-mail frame to add additional e-mails.

To send a Windows message to a terminal, select the **Add** button in the Messages frame to launch a selection window.



Terminal Selection Window

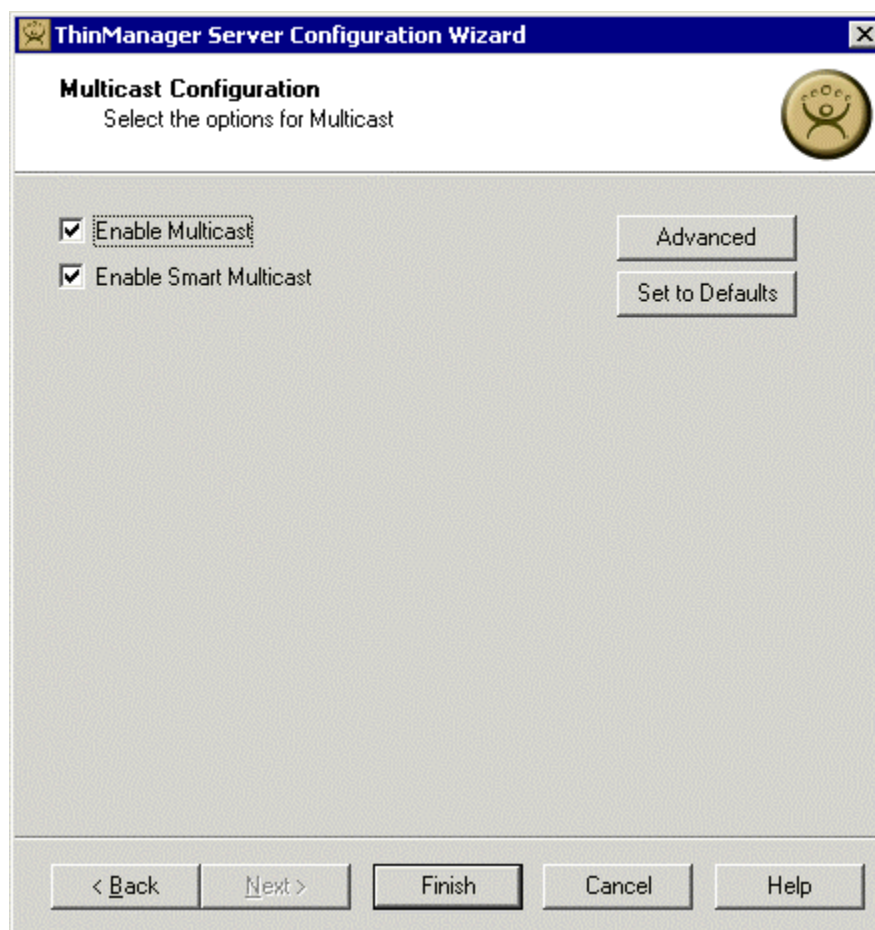
The Select Terminal(s) windows will list the terminals configured on the ThinManager Server. Highlight the desired terminals and select the **OK** button.



Email or Windows Messaging Recipients

When the addresses are configured as desired, select next 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 is 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.

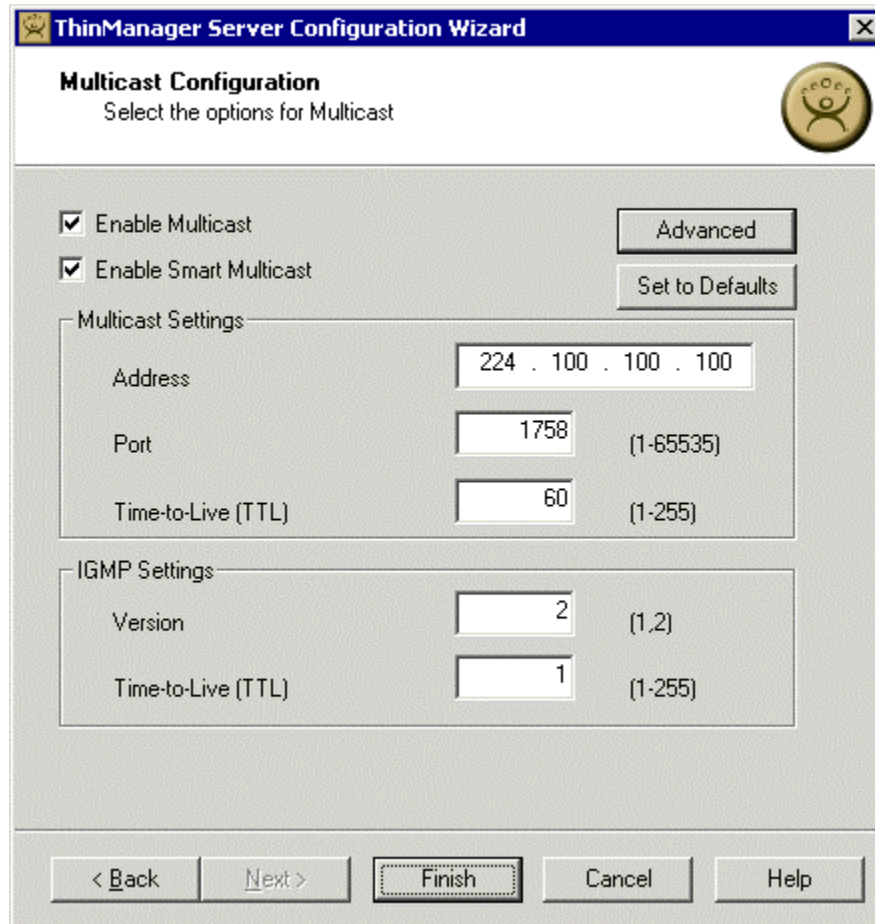
There are two Multicast checkboxes and two buttons.

The **Enable Multicast** checkbox enables Multicast when selected.

The **Enable Smart Multicast** checkbox enables Smart Multicast when selected.

The **Advanced** button will display the advanced settings when selected.

The **Load Defaults** button will set the advanced settings back to the defaults.



ThinManager Server Configuration Wizard

Multicast Configuration
Select the options for Multicast

☒ Enable Multicast Advanced

☒ Enable Smart Multicast Set to Defaults

Multicast Settings

Address: 224 . 100 . 100 . 100

Port: 1758 (1-65535)

Time-to-Live (TTL): 60 (1-255)

IGMP Settings

Version: 2 (1,2)

Time-to-Live (TTL): 1 (1-255)

< Back Next > Finish Cancel Help

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.

Configure Default Terminal

Selecting **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.

Reconnect

Selecting ***Reconnect*** will reinitialize the connection to the selected ThinManager Server.

Disconnect

Selecting ***Disconnect*** will stop the connection to the selected ThinManager Server.

Tools

Tools contain commands that affect the terminals.

Restart Terminals

Selecting this command will restart the terminals, reload the firmware, and reconnect them to the terminal server.

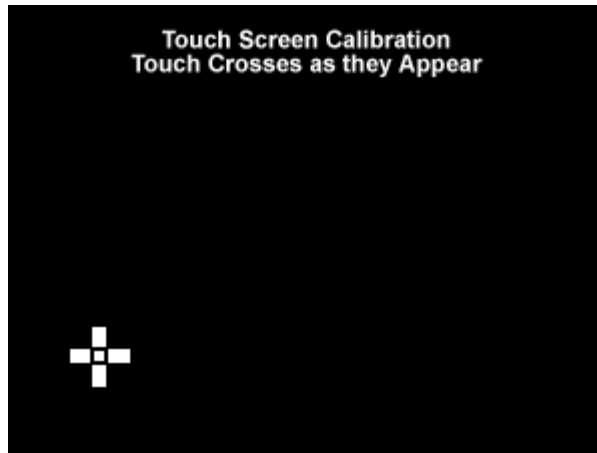
Note: Restarting a terminal does not close the session on the terminal server nor does it unlock a frozen session. It reboots and reloads the firmware and configuration independent of the session on the terminal server. It will reconnect to the same session without changing the session.

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

Calibrate Touch Screen

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



Touch Screen Calibration Screen

A new touch screen calibration program was released with ThinManager 2.6 and is included in the 2.6 touch screen modules. When the calibration is run, an **X** appears in the lower left. Touch the center of the **X** and then touch the center of the other four **X**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 Install for details.

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 ThinManager Server, 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.

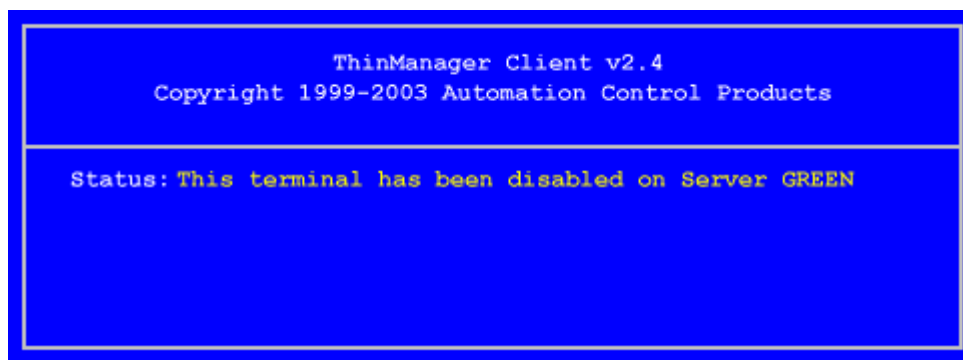
- A **Red terminal screen** with a Red **X** indicates that the Terminal is disabled and is either turned off or rebooted and waiting to be enabled.
- A **Green terminal screen** with a Red **X** indicates that the disabling has been applied to a logged on terminal. The terminal has a disabling screen and is waiting for enabling.

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



Disabled Screen

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.

Enable Terminals

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

View

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.

Use Wizards

Use Wizards allows group and terminal configuration in the Wizard Mode when checked.

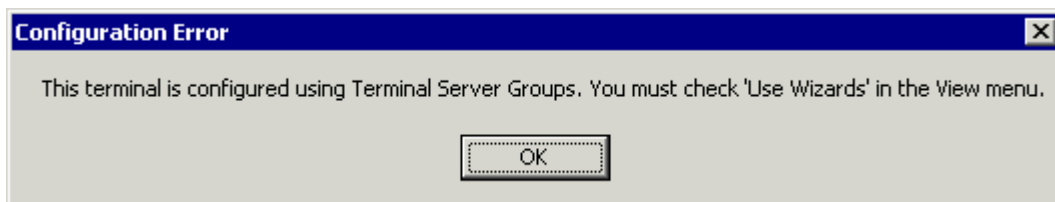
If un-checked, the Group Properties and Terminal Properties will launch in the ThinManager v2.3 **Classic Mode**.

Note: Use the Wizard Mode in ThinManager v2.4 and later. Post 2.3.1 features like RDP, Terminal Server Groups, Shadowing, etc., are not available in the Classic Mode.

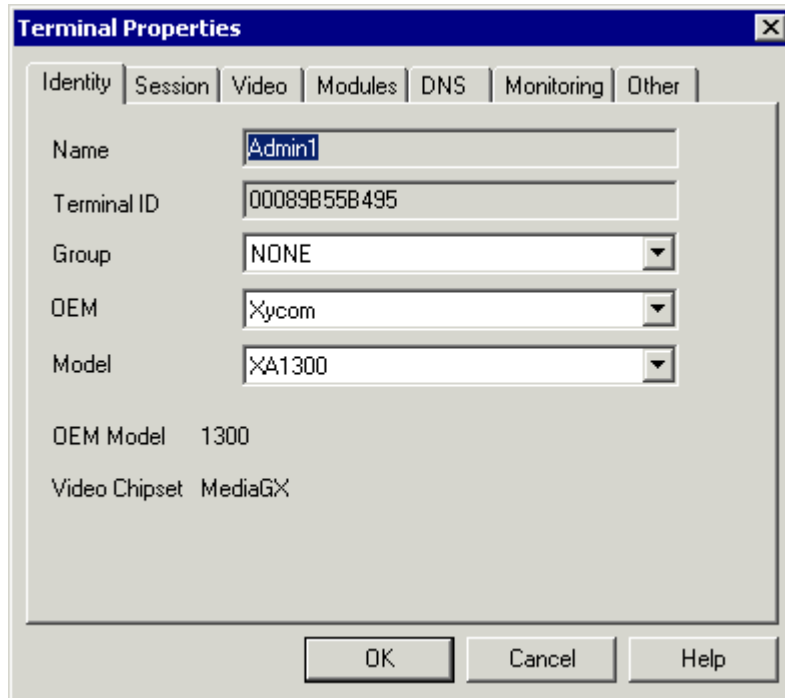
Classic Mode of Configuration

The Classic Mode is the method of creating and configuring Groups and Terminals that was introduced in ThinManager 1.0. This method uses Property Tabs instead of a Wizard. This method has been superseded by the Wizard Mode, but has been left to allow for upgrading from previous editions.

ThinManager uses the Classic Mode when **View>Use Wizards** is unselected. The Classic Mode only works for the properties that were available in ThinManager v2.3.1 or earlier. Trying to use the Classic Mode with new features like RDP, SmartSession, Multi-Session, and AppLink will launch an error window.



Classic Mode Configuration Error



Classic Mode - Terminal Identity Tab

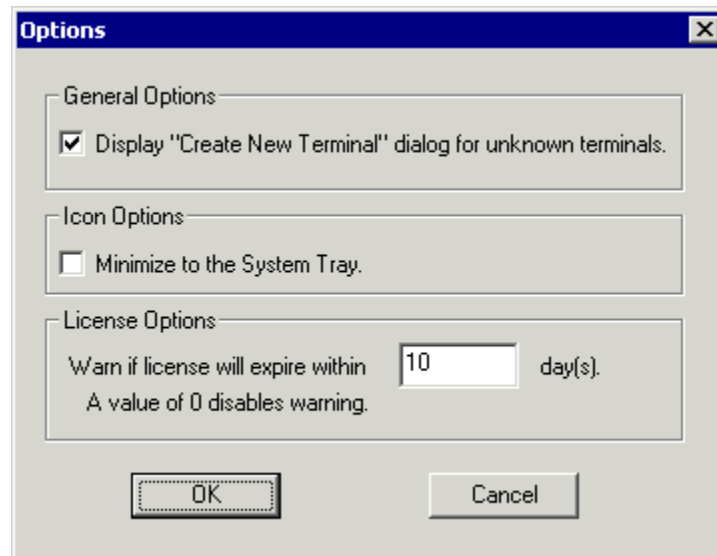
Note: Switching to Classic Mode when these features are in use can cause the terminal configuration to load improperly.

Show Conected Only

If checked, **Show Conected Only** will hide any unconnected terminal or Terminal Server Group. This can make the tree easier to read by hiding un-connected terminals.

Options

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



Options

The **Display “Create New Terminal” dialog for unknown terminals** check box, if selected, will display the **Create New Terminal** option when new terminals are attached.

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.

RemoteView

Interactive Shadow

Interactive Shadow, if checked, allows Administrators and members of the ThinManager Administrators group 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.

Scaled to Window

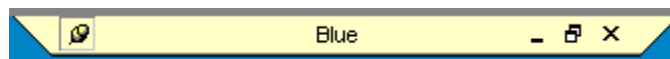
Shadow scale to Windows, if checked, will scale the shadowed terminal session to fit the Details pane of ThinManager. If this value is unchecked the session will be viewed life-sized. This may require the use of scroll bars to view portions of the screen.

Go FullScreen

This allows the Connection from 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.

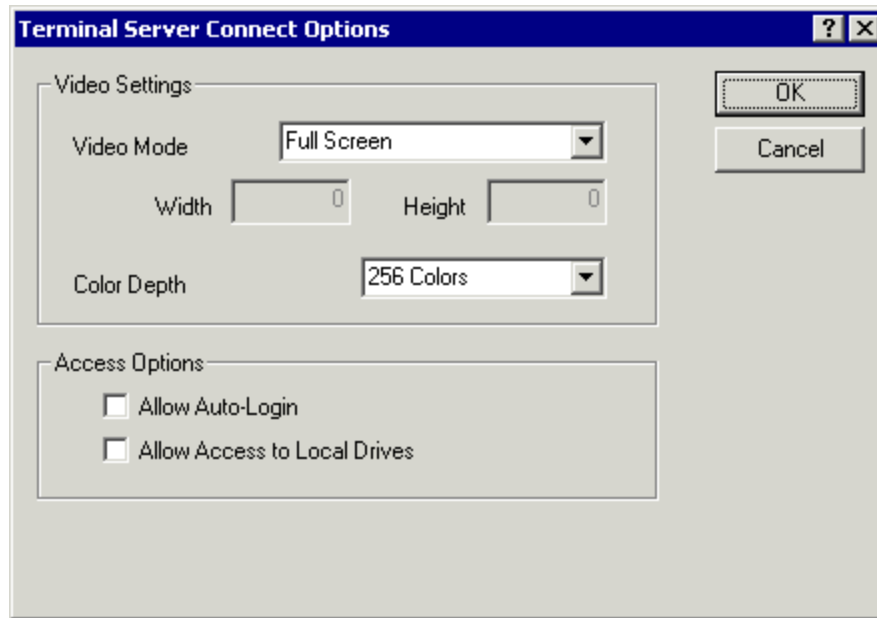
The full screen session will have a tool tab at the top of the screen with controls that allow the window to be switched back to the window or to close the connection.



Remote Session Tool Tab

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 settings include:

- **Video Mode** – This allows the connection to be displayed at a specific resolution or as full screen.
- **Width** – Allows the connection to be displayed at a specific width if the **Video Mode** is set to **Custom**.
- **Height** – 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.
- **Allow Auto-Login** – This checkbox allows the connection to login without prompting when checked.
- **Allow Access to Local Drives** – This checkbox allows the user to access the hard drive on the remote computer from the remote connection.

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**, and **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.

Help

Help Topics

ThinManager has a help file. Selecting **Help Topics** will launch the ThinManager Help file.

About ThinManager

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

Right Click Menus in the Tree Pane

Right Click on the ThinManager Servers Icon

- **Connect to ThinManager Server** - This opens the ThinManager Windows that allows a ThinManager Server to be added to the tree.

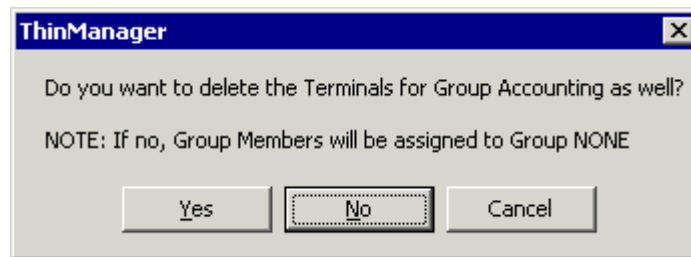
See Add ThinManager Server for details.

Right Click on a ThinManager Server Icon

- **Add Terminal** - This launches the Terminal Configuration Wizard to create a terminal.
- **Add Group** - This launches the Group Configuration Wizard to create a Group.
- **Server List Management** - Expands to show the list of Wizards that can be run.
 - **Terminal Server List** - This launches the wizard that defines terminal servers for use by ThinManager Ready thin clients.
 - **Terminal Server Group List** - This launches the wizard that creates and configures Terminal Server Groups.
 - **ThinManager Server List** - This launches the wizard that defines ThinManager Servers for use by ThinManager Ready thin clients.
 - **DNS Configuration** - This launches the wizard that configures the usage of a Domain Name Server by ThinManager Ready thin clients.
- **Restart Terminals** - This sends a signal to all the terminals under the highlighted ThinManager Server to reset their power, restart, and reconnect. This is useful for reloading a new firmware.
- **Reconnect** - This will cause the ThinServer service to try to reconnect to the highlighted ThinManager Server.
- **Modify** - This launched the ThinManager Server Configuration Wizard to configure the highlighted ThinManager Server.
- **Delete** - This will remove the highlighted ThinManager Server from the tree. It does not remove any configuration or uninstall the program.

Right Click on a Group Icon

- **Add Terminal** - This launches the Terminal Configuration Wizard to create a terminal in the group.
- **Restart Terminals** - This sends a signal to all the terminals under the highlighted group to reset their power, reboot, and reconnect. This is useful for reloading a new group configuration or firmware.
- **Modify** - This launched the Group Configuration Wizard to configure the highlighted group.
- **Rename** - This allows the Group to be renamed.
- **Delete** - This will remove 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.

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 will remove the terminal from the ThinManager configuration.
- **Restart Terminal** - This sends a signal to the terminal to reset its power, reboot, and reconnect. This is useful for reloading a new configuration or firmware.

Right Click on a Terminal Server Icon

- **Restart Terminals** - This sends a signal to all the terminals under the highlighted Terminal Server to reset their power, reboot, and reconnect. This is useful for reloading a new firmware or reestablishing connect to the Terminal Server.

Adding Thin Client Hardware

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. Disk-On-Chip ThinManager Ready thin clients have the firmware embedded in them and boot locally then connect to a ThinManager Server to download its configuration. See Disk-On-Chip 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 Logo Screen: After the terminal receives its configuration, it will display an ACP splash screen with the ACP logo.

Client Communication Connection: Next the terminal will launch its Client Communication protocol. If using ICA it will display a Citrix splash screen while it makes an ICA connection to the terminal server.

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 Sessions tab 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 Configuring RDP for Auto-Login 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.

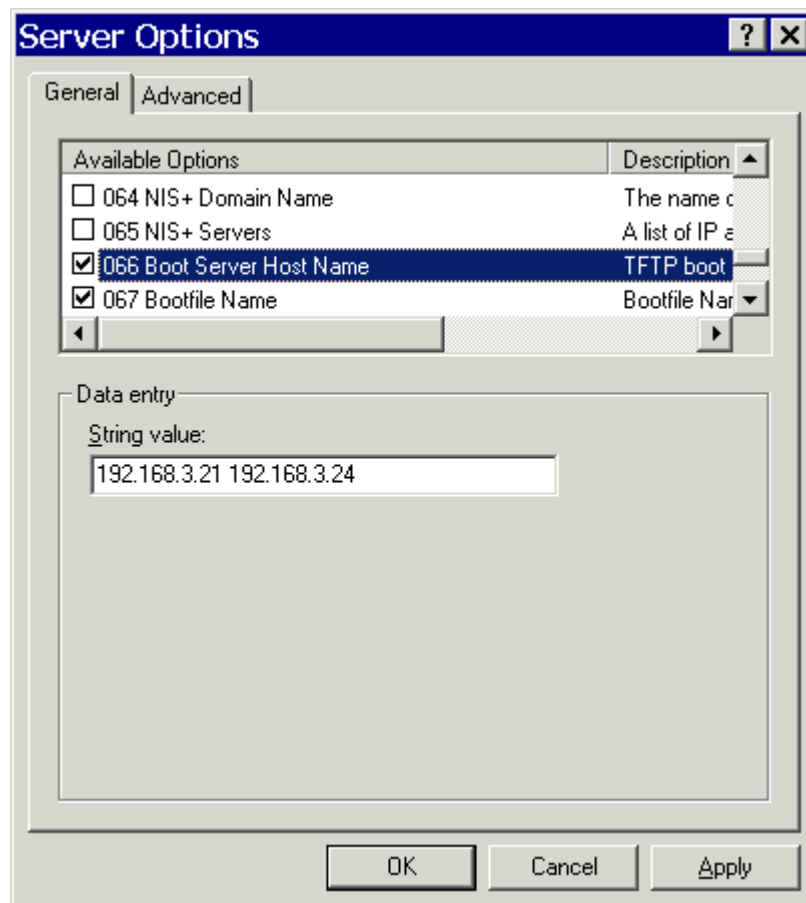
IP Address Assignment

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.

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.



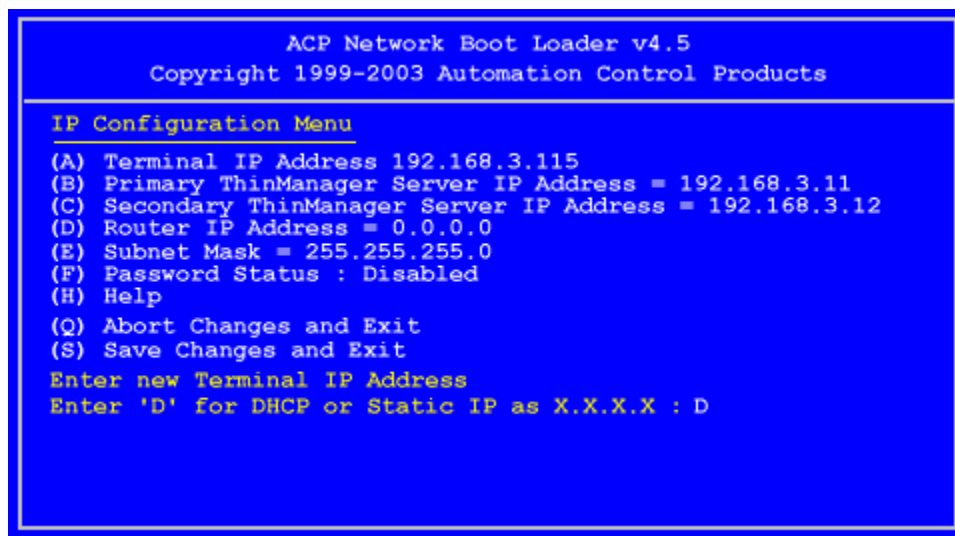
DHCP Options

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.

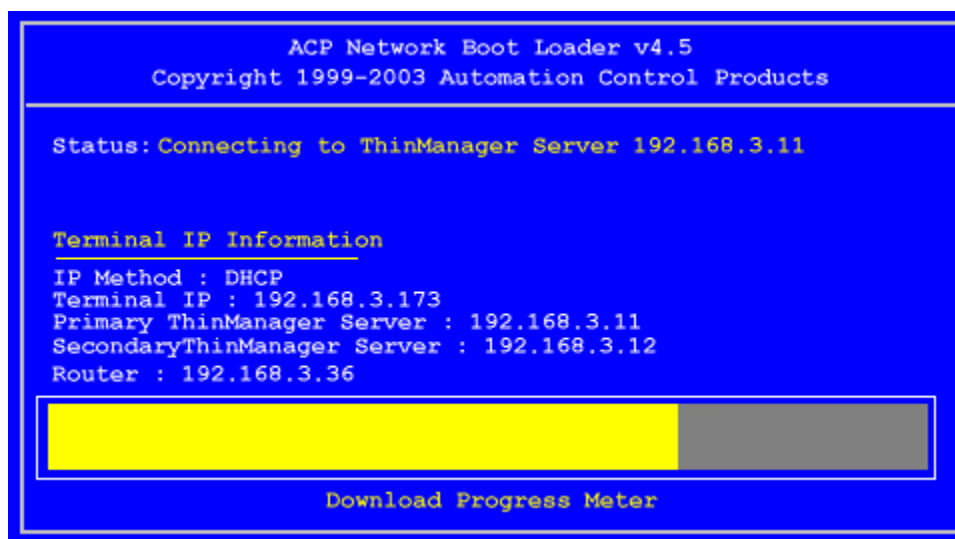
ThinManager Ready thin clients use DHCP (Dynamic Host Configuration Protocol) by default. If they have been set to use a static IP they can be reset to DHCP from static IP by pressing **any key** when prompted during the boot sequence to open the IP Configuration Menu.



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.

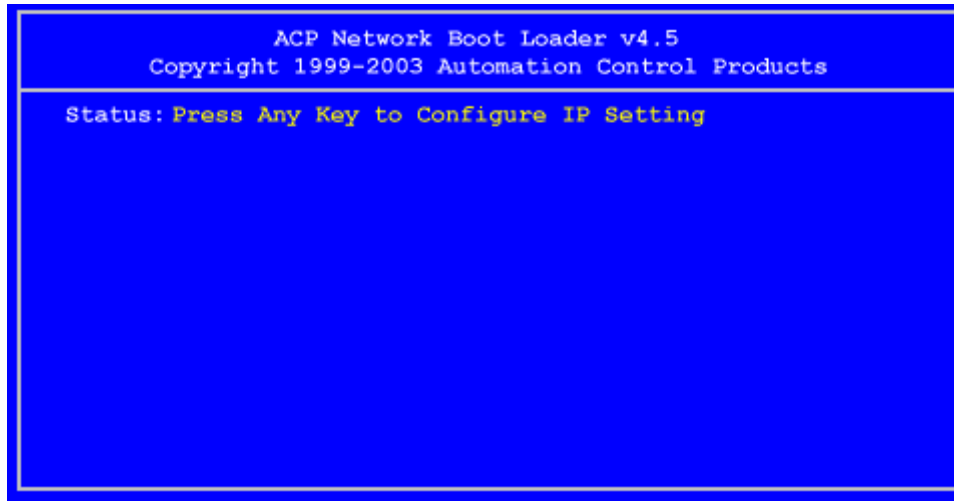


Boot Process - Firmware Download

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

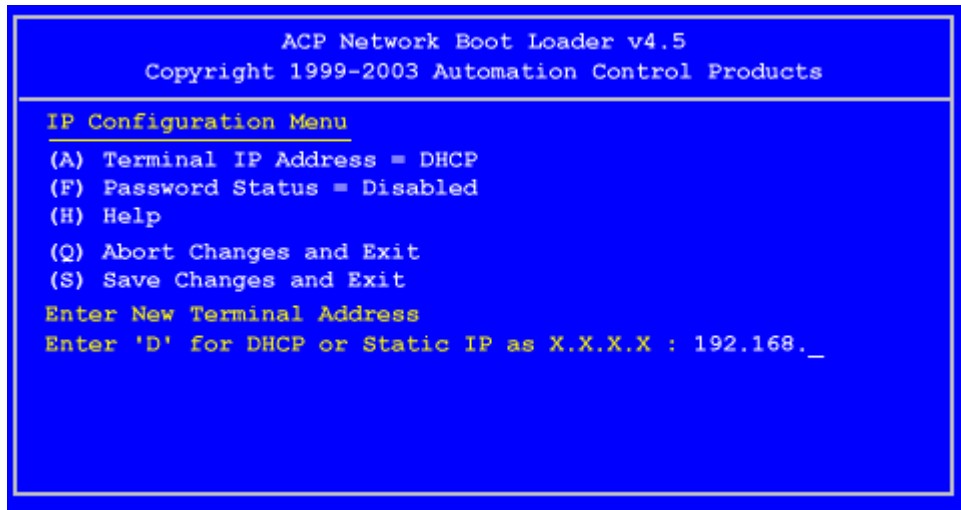
Static IP

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

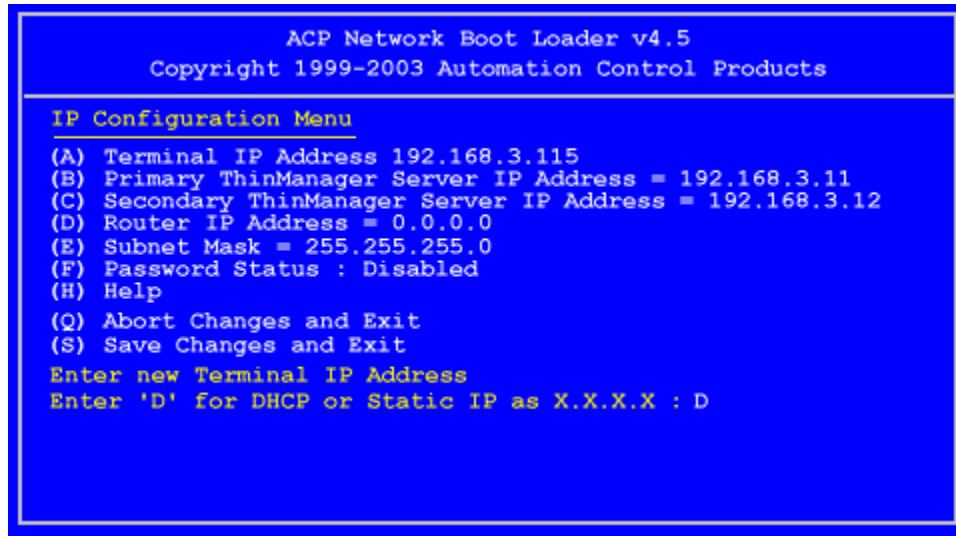
To set the terminal to use a static IP, press **any key** at the appropriate moment of the boot sequence.



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.

Configuring New Hardware

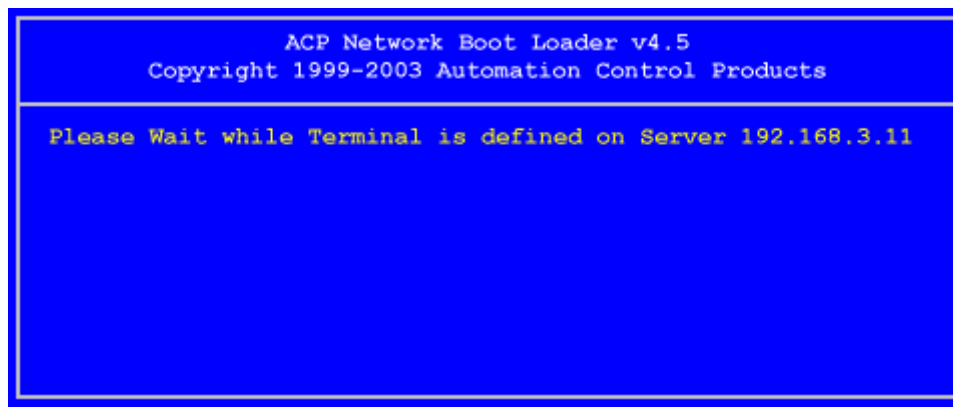
The configuration of terminals is done in ThinManager on the ThinManager Server, and not on each individual terminal. When a new, undefined ThinManager Ready Thin Client is first connected to a ThinManager Server one of three things will happen.

- 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 Terminal 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.

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.

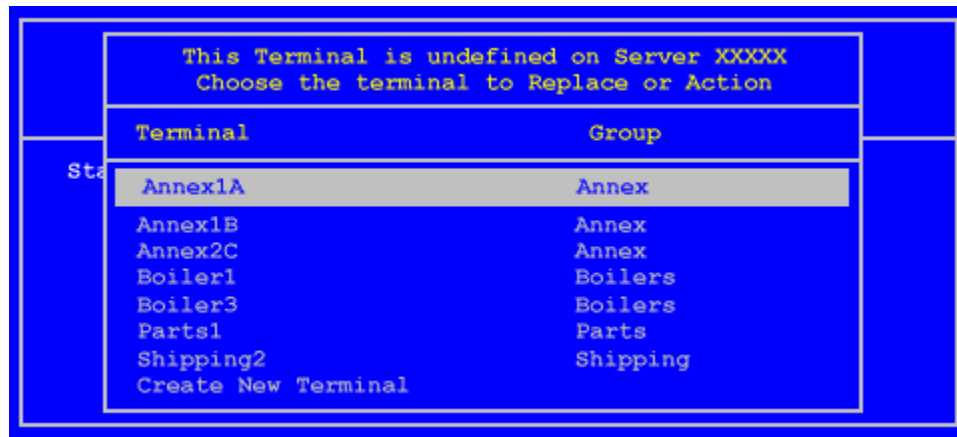


Create New Terminal Mode Screen

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.

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.

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:

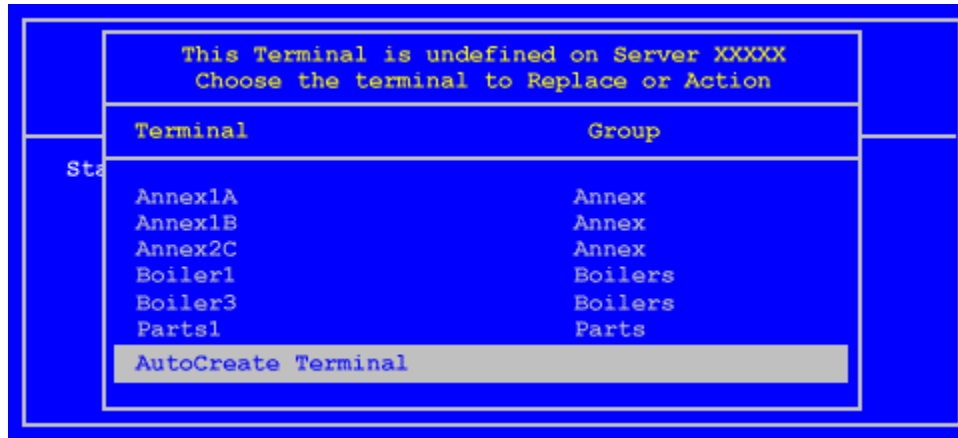
- The Auto-Create mode is enabled by the selection of the **Enable AutoCreate** check box on the Server Properties window.
The Server Properties is launched by selecting **ThinManagerServer>Settings** from the ThinManager menu.

And

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

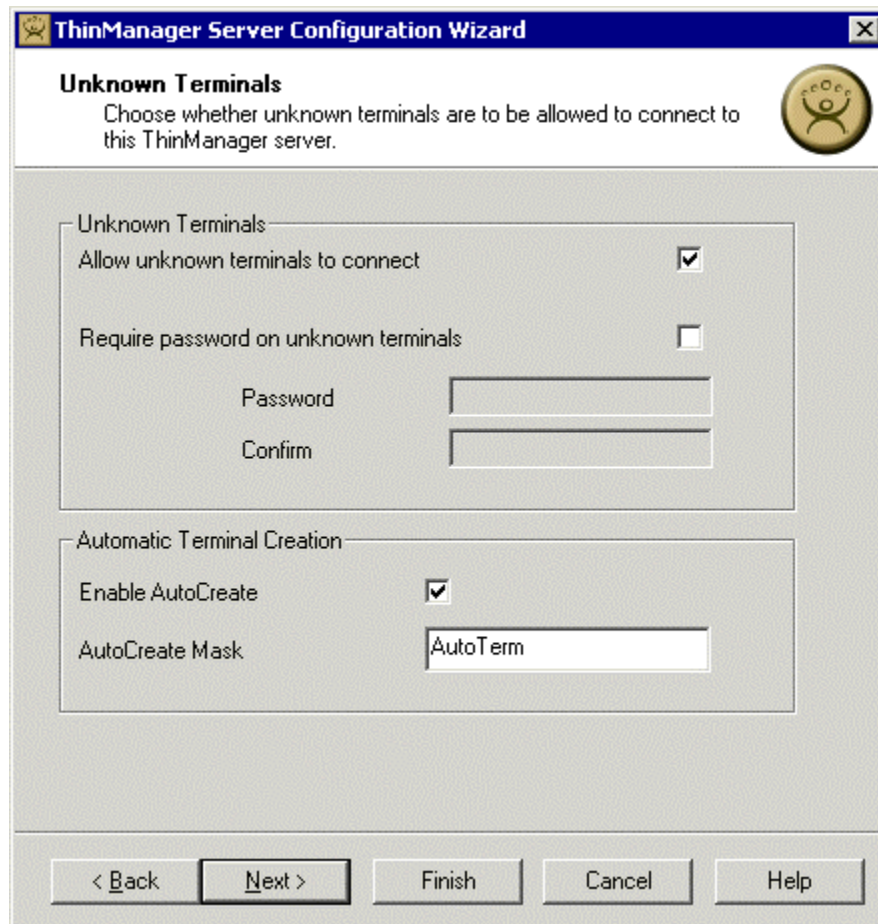
And

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



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



Unknown Terminals

Check the **Enable AutoCreate** checkbox and enter an AutoCreate Mask name.

New terminals can be added to the system and configured without additional input from the server.

Configuration Wizards

Introduction to Wizards

ACP ThinManager Version 2.4 introduced Configuration Wizards to simplify the creation and configuration of ACP Enabled Thin Clients. ThinManager 2.6 extends the scope of the wizards to provide more configuration power.

The Wizard is the default method of configuration. The original Classic Mode can be turned on by going to the menu bar of ThinManager and un-checking the **View>Use Wizard** option. However, recent features like RDP, SmartSession, Multi-Session, and AppLink are unavailable in Classic Mode.

Wizards take two forms.

- **List Wizards** associate Terminal Server 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 or groups of terminals. This is where the terminal and its settings are defined.

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

- Selecting **ThinManager Server>Server List Management**
- Right clicking on a ThinManager Server in the tree and selecting **Server List Management**.

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

- Selecting a ThinManager Server in the ThinManager tree and selecting **Edit>Add Group** or **Edit>Add Terminal** from the menu bar, or
- Selecting a ThinManager Server in the ThinManager tree, right-clicking on the ThinManager Server icon, and selecting the **Add Group** or **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.

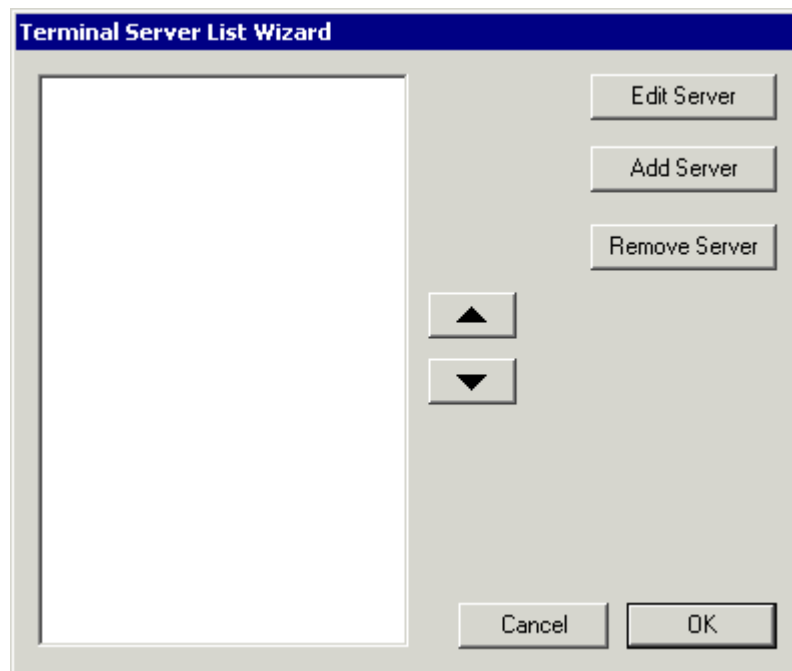
List Wizards

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 are 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 identify the members ahead of time.

Terminal Server List Wizard

Selecting **ThinManagerServer > Server List Management > Terminal Server List** or right clicking on a ThinManager Server in the tree and selecting **Server List Management > Terminal Server List** will launch the Terminal Server List Wizard to allow terminal servers to be defined by name.



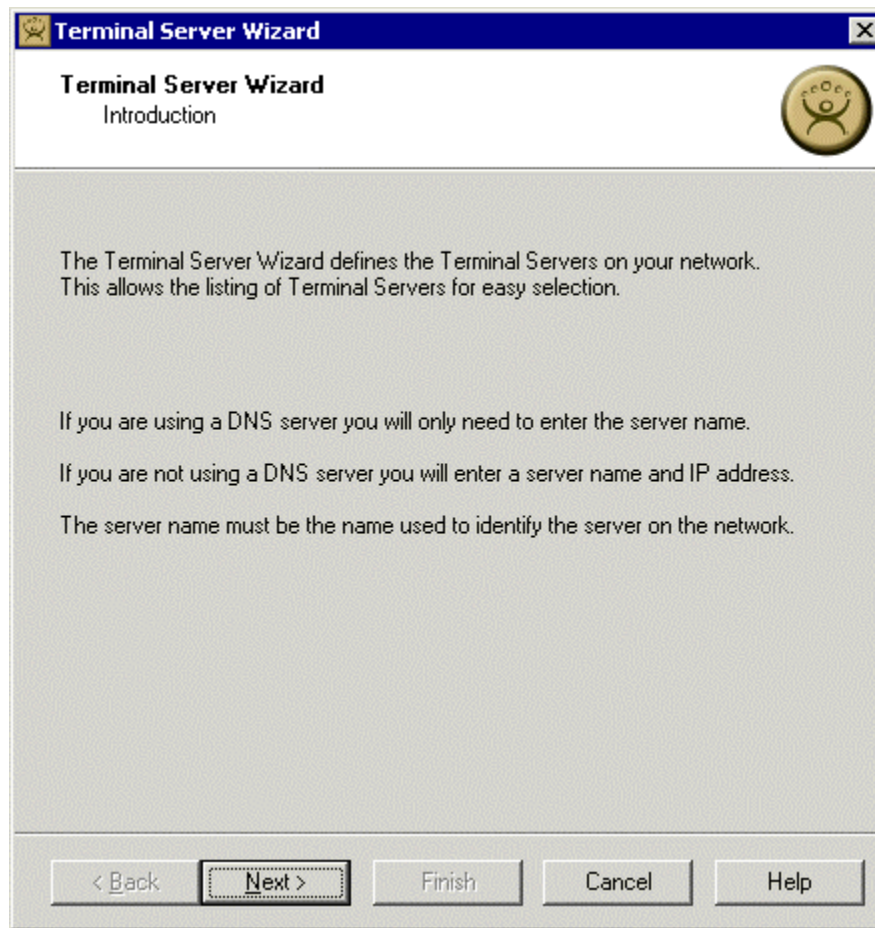
Terminal Server List Wizard

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.
- **Cancel** closes the wizard without action.
- **OK** closes the wizard after accepting changes.

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

Terminal Server Wizard Introduction Page



Terminal Server List Wizard Introduction

The **Terminal Server List Wizard** allows each Microsoft Terminal Server to be listed for easy selection by name during group and terminal configuration.

Select **Next** to continue.

Terminal Server Name Page

The screenshot shows a Windows-style dialog box titled "Terminal Server Wizard". The main heading is "Terminal Server Name" with the instruction "Enter the Terminal Server Name and Login information". A small circular icon with a person is in the top right. The form contains several input fields: "Terminal Server Name" with the value "Blue", "Terminal Server IP" with the value "192 . 168 . 3 . 36", and a "Login Information" section with fields for "Domain", "User Name" (containing "Administrator"), "Password" (containing masked characters), and "Verify Password" (containing masked characters). A message at the bottom states "The password and verify password fields do not match". At the bottom are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Server List Wizard – Terminal Server Name

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

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.

The **Terminal Server Name** fields are:

- **Terminal Server Name** - Enter the computer name as found in the Microsoft System Properties.
- **Terminal Server IP** – Entered the IP address of the terminal server.
- **Domain** - Enter the **domain** for the computer, if it is a member.
- **Username** - Enter username with administrative rights if you wish to display data from the terminal server within ThinManager.
- **Password** - Enter the password for the administrative account used in the username field.
- **Verify Password** – Re-enter the password for the administrative account used in the username field. Passwords that do not match will be indicated by a warning message on the page.

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

Terminal Server Capabilities Page

Terminal Server Wizard

Terminal Server Capabilities
Select the capabilities of this Terminal Server

Select the options for this Terminal Server

- ☐ Available for SmartSession Groups
- ☐ Available for MultiSession configurations

Supported Connections

- ☐ Citrix Metaframe
- ☐ Citrix Device Services
- ☒ Microsoft Remote Desktop Protocol

< Back Next > Finish Cancel Help

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 **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 **Make this server available for MultiSession configurations** checkbox to make the terminal server available for terminal server groups configured for MultiSession. See MultiSession for details.

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 MetaFrame** checkbox if that program is installed on the terminal server to provide the ICA protocol. Citrix MetaFrame is an optional program sold by Citrix.
- 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

Terminal Server Wizard

Data Gathering
Enter the Data Gathering Intervals

Data Gathering Intervals

☒ Fast
☐ Medium
☐ Slow
☐ Custom

SmartSession Data Update Interval: 8 seconds
Process Update Interval: 5 seconds
Session Update Interval: 8 seconds

< Back Next > Finish Cancel Help

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 for the sessions on 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 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 Wizard

SmartSession Configuration
Enter the SmartSession Limits for this Terminal Server

CPU Utilization

Minimum %

Maximum %

Memory Utilization

Minimum %

Maximum %

Sessions

Minimum

Maximum

< Back Next > Finish Cancel Help

Terminal Server List Wizard - SmartSession Configuration

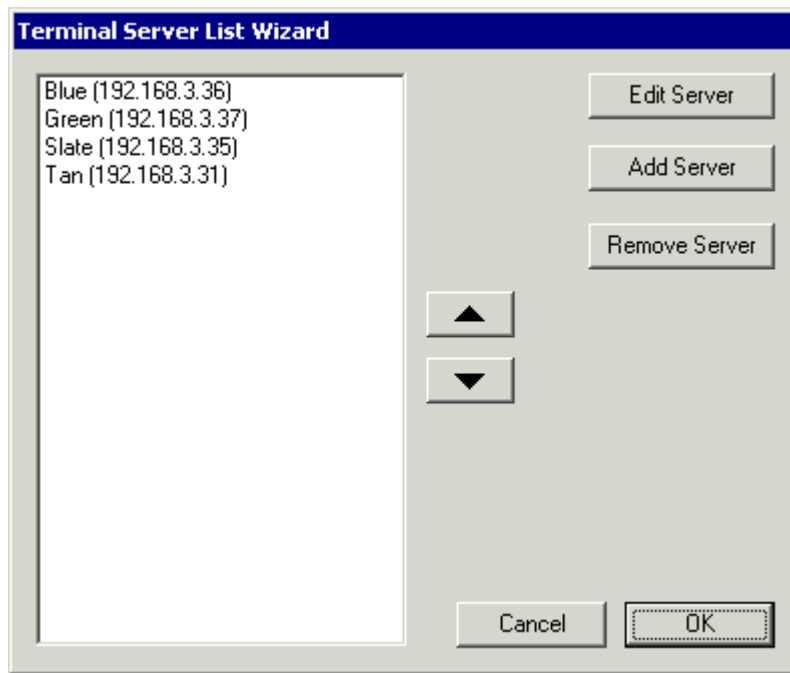
ThinManager uses the *CPU utilization*, *Memory utilization*, and *number of sessions* on the terminal server to define the SmartSession terminal server's available resources. ThinManager uses these values to rank the SmartSession servers according to available resources and supplies this data to the terminals to allow the terminals to connect to the terminal server with the greatest resources.

The **SmartSession Configuration** page allows the configuration of the three parameters that ThinManager uses to determine availability for SmartSession.

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

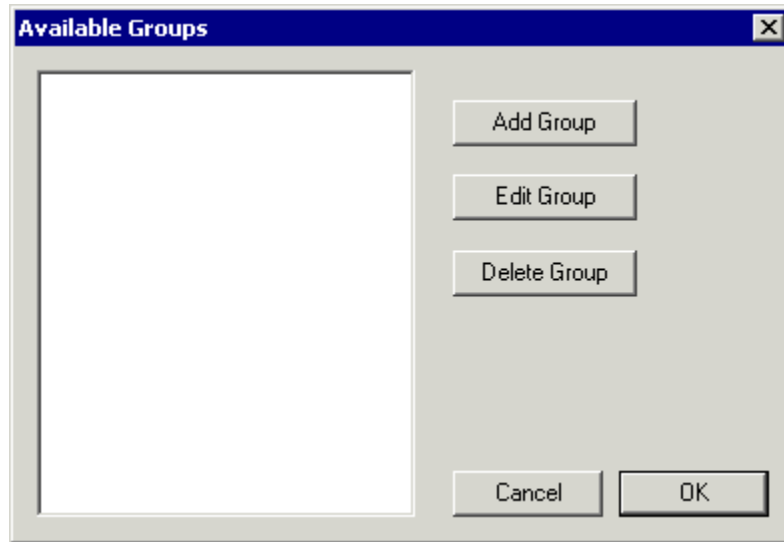


Terminal Server List Wizard

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

Terminal Server Group List

Selecting **ThinManagerServer > Server List Management > Terminal Server Group List** or right clicking on a ThinManager Server in the tree and selecting **Server List Management > Terminal Server Group List** will launch the Terminal Server Group List Wizard to allow terminal servers groups to be defined and configured.



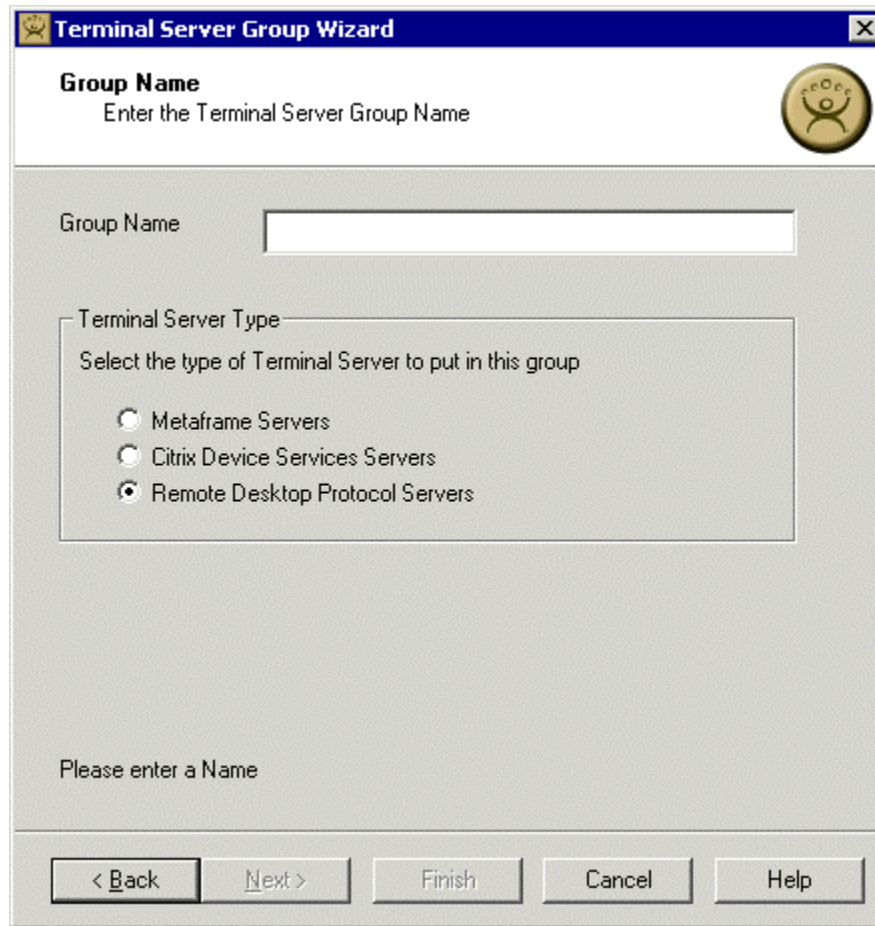
Terminal Server Group List Wizard

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

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

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

Terminal Server Group Name Page



The screenshot shows a Windows-style dialog box titled "Terminal Server Group Wizard". The main heading is "Group Name" with the instruction "Enter the Terminal Server Group Name". There is a text input field labeled "Group Name". Below this is a section titled "Terminal Server Type" with the instruction "Select the type of Terminal Server to put in this group". It contains three radio button options: "Metaframe Servers", "Citrix Device Services Servers", and "Remote Desktop Protocol Servers", with the last one selected. At the bottom, there is a message "Please enter a Name" and a row of five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Group Name Page

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

Each group can contain members of one type of Client Communication Protocol These are configured during the Terminal Server Configuration.

Select the desired Client Communication Protocol and select **Next** to configure the group options.

Terminal Server Group Citrix MetaFrame Page

Terminal Server Group Wizard

Citrix Metaframe
Enter the Metaframe options for this group

Select Encryption Level
Basic

Enter the ICA Browser Address

☐ Use a Citrix Published Application

Enter the name of the Published Application

< Back Next > Finish Cancel Help

Citrix MetaFrame Options

If Citrix MetaFrame is the Client Communication Protocol chosen, the **Citrix MetaFrame** page will be displayed to allow the setting of Citrix options including *Encryption Level* and the use of *Published Applications*. The **ICA Browser Address** allows aid in connection across routers, subnets, and domains.

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.

Note: Published Application should have a continuous name and not contain spaces.

Select **Next** to continue.

Terminal Server Group - Group Options Page

Terminal Server Group Wizard

Group Options
Select the options for this group

Select the group type options

- ☒ SmartSession Group
- ☐ Make group available for MultiSession Configurations
- ☐ Application Link Group

Select group options

- ☐ Enforce Primary
- ☐ Instant Failover (requires license)
- ☒ Always maintain a session for this group
- ☒ Start a session at boot-up for this group
- ☒ Allow Auto-Login

< Back Next > Finish Cancel Help

Group Options

The **Group Options** allow the configuration of terminal server group parameters.

Group Type Options include:

- **SmartSession Group** – Selecting this option allows the terminal server 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 terminal server group with the most available resources
- **Make group available for MultiSession Configurations** – This allows the terminal server group to be available to ThinManager Ready thin clients that use MultiSession to connect to two or more terminal server groups.
- **Application Link Group** – This option, AppLink, provides the Initial Program function to ThinManager Ready thin clients that connect to members of the terminal server 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.

Group Options include:

- **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** - Allows a terminal to connect to two terminal servers in the Terminal Server 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.

- **Always maintain a session for this group** – If checked, if 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 terminal server group at boot up. If unchecked, a user action is required to start the session.
- **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.

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

Terminal Server Group Members Page

Terminal Server Group Wizard

Terminal Server Group Members
Select the Terminal Servers for this group

Available Terminal Servers

- Black (192.168.3.38)
- Green (192.168.3.37)
- Tan (192.168.3.31)**

Selected Terminal Servers

- Blue (192.168.3.36)
- Slate (192.168.3.35)

Edit Server List

< Back Next > Finish Cancel Help

Terminal Server Group Members

Once the Terminal Server Group is configured, the available Terminal Servers are listed in the Terminal Server Group Members page. Highlight the desired terminal server from the left-hand list and use the arrow to move it into the right-hand 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 Terminal Server Group is using the SmartSession option, the **Next** button will launch the **SmartSession Settings** page.

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

Terminal Server Group SmartSession Settings Page

Terminal Server Group Wizard

SmartSession Settings
Enter the SmartSession Weights for this group

Smart Session Weights

CPU Utilization Weight: 1.0

Memory Utilization Weight: 1.0

Sessions Weight: 1.0

Queuing

Queue Time: Min 0 Sec, Max 120 Sec

☐ Infinite

< Back Next > Finish Cancel Help

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.

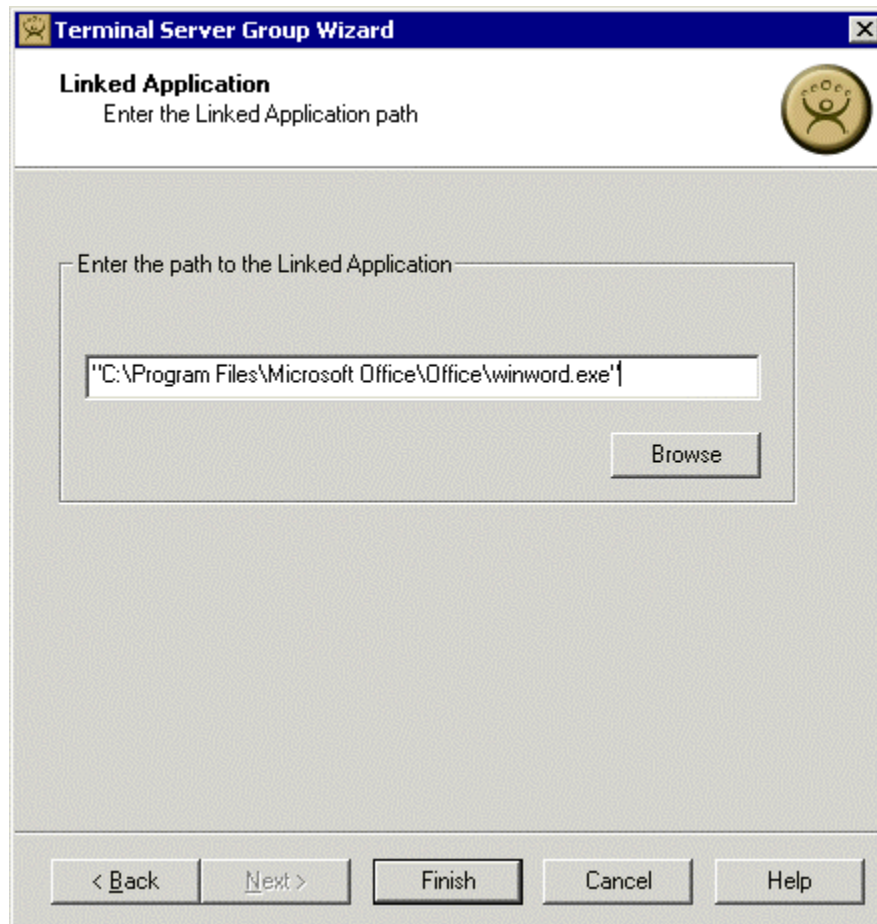
The higher the **Weight**, relative to the others, the greater the importance of that parameter has in determining the load for SmartSession.

Note: The **Weights** are relative. Increasing all three **Weights** from “1” to “10” doesn’t change the relative values.

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 Terminal Server Group uses the AppLink option, a Link Application page will be displayed by selecting the **Next** button.

Terminal Server Group Linked Application Page



The screenshot shows a Windows-style dialog box titled "Terminal Server Group Wizard". Inside, the "Linked Application" section prompts the user to "Enter the Linked Application path". A text input field contains the path ""C:\Program Files\Microsoft Office\Office\winword.exe"". To the right of the text field is a "Browse" button. At the bottom of the dialog, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Linked Application Path

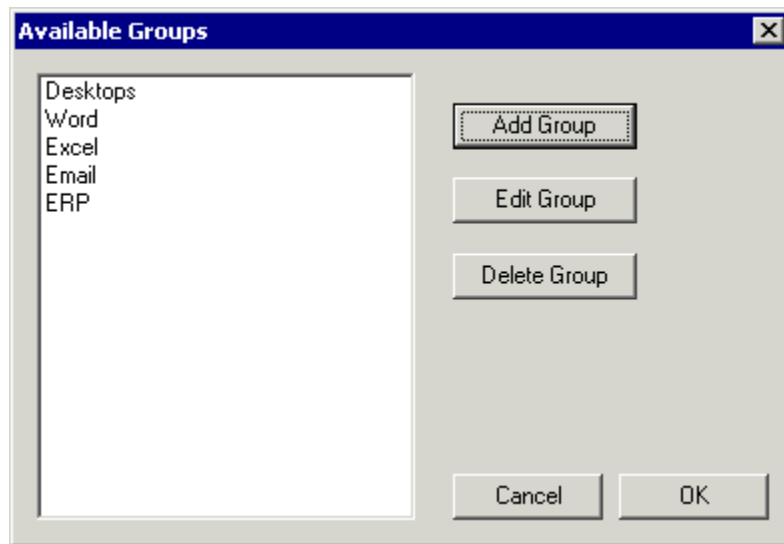
The Linked Application page allows a single application to be defined for the AppLink session. Enter the path to the desired application in the **Enter the path to the Linked Application** field as shown in the example.

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 Terminal Server Group List wizard and display the created terminal server groups.

Available Groups Window



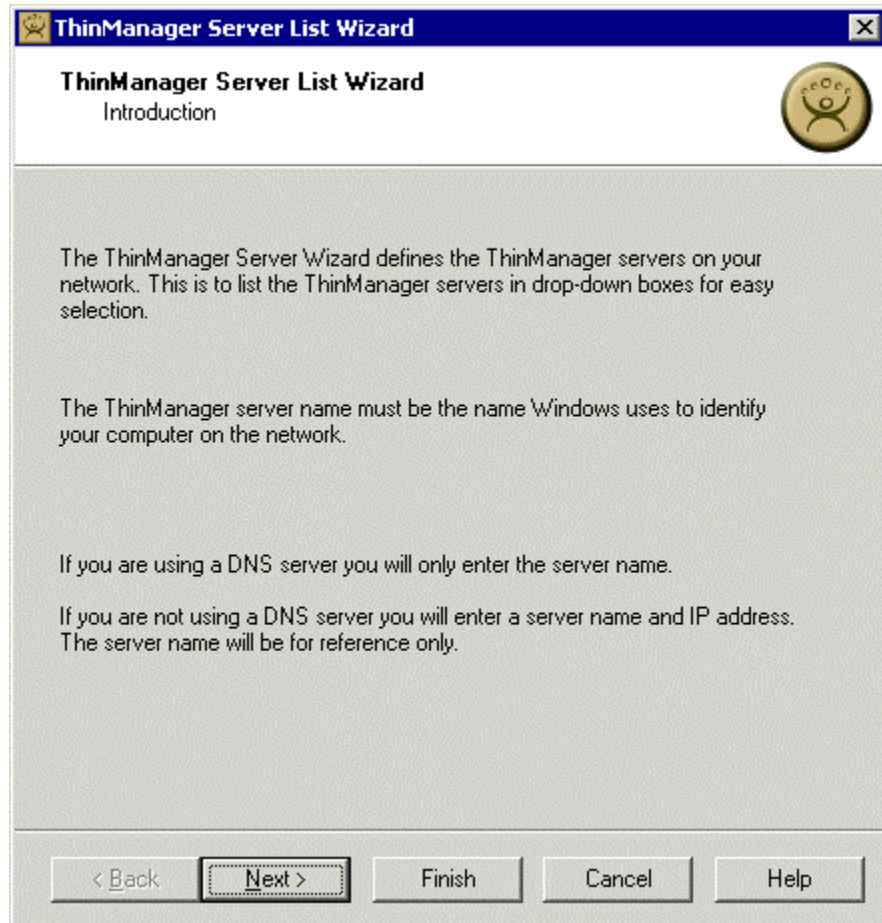
Available Groups

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

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

ThinManager Server List

Selecting **ThinManagerServer>Server List Management> ThinManager Server List** or right clicking on a ThinManager Server in the tree and selecting **Server List Management> ThinManager Server List** will launch the ThinManager Server List Wizard to allow the definition of ThinManager Servers.



ThinManager Server List Wizard - Introduction

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

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

ThinManager Server List Page



ThinManager Server List Wizard

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** clears 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.

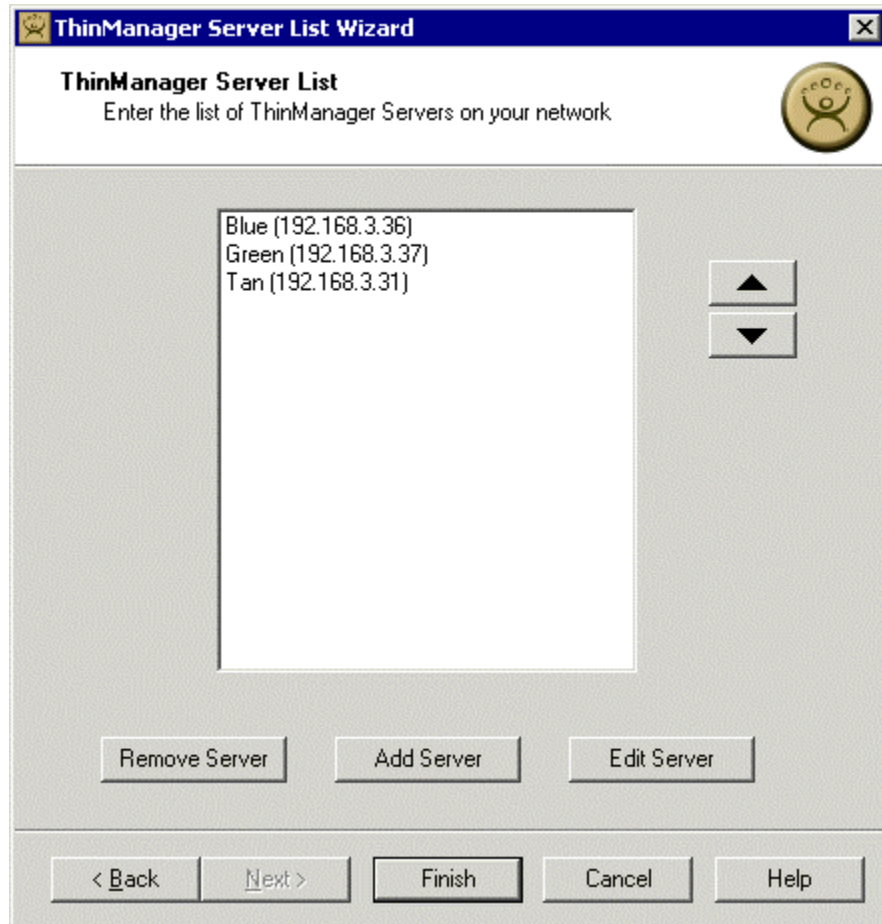
Enter New ThinManager Server Window

The image shows two overlapping windows from the ThinManager software. The background window is titled 'ThinManager Server List Wizard' and contains the text 'ThinManager Server List' and 'Enter the list of ThinManager Servers on your network'. It features a large empty rectangular box for a list of servers and a small upward-pointing arrow button to its right. Overlaid on top of this is a smaller dialog box titled 'Enter the new ThinManager Server Definition'. This dialog box has two input fields: 'ThinManager Server' and 'ThinManager Server IP'. The IP field is pre-filled with '0 . 0 . 0 . 0'. To the right of these fields are 'OK' and 'Cancel' buttons. Below the input fields, there are three buttons: 'Remove Server', 'Add Server', and 'Edit Server'. At the very bottom of the dialog box, there is a row of five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

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.

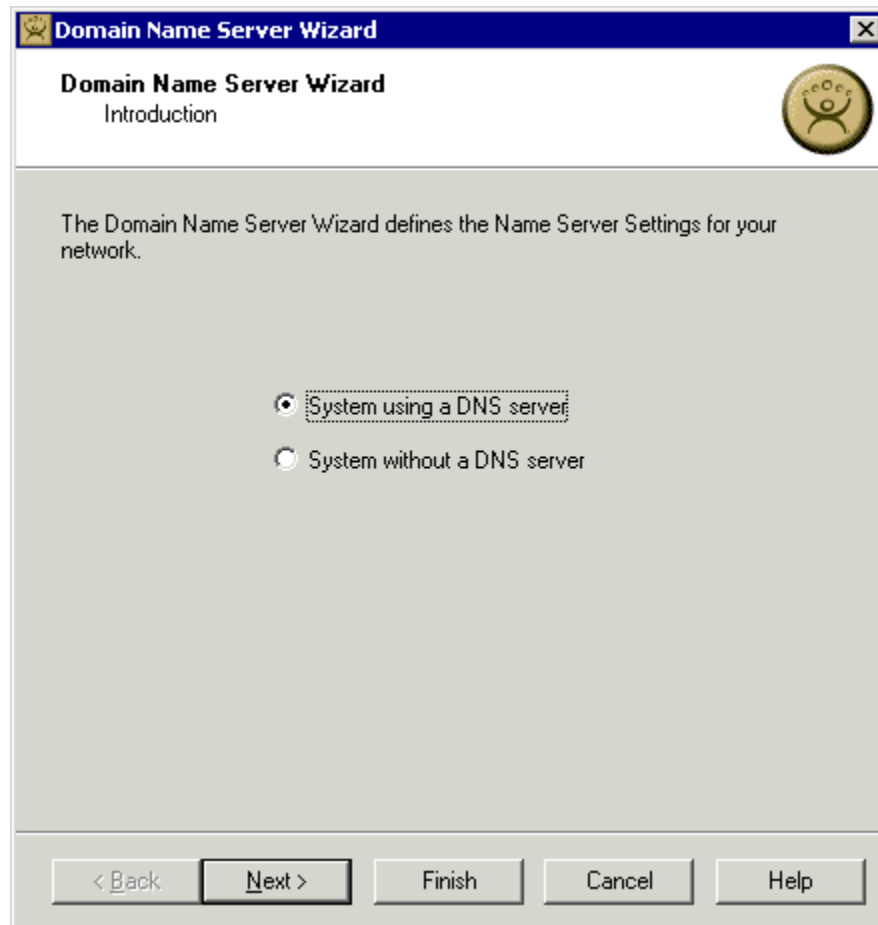


ThinManager Server List

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

DNS Configuration

Selecting **ThinManagerServer > Server List Management > DNS Configuration** or right clicking on a ThinManager Server in the tree and selecting **Server List Management> DNS Configuration** will launch the ThinManager Server List Wizard to allow the definition of Domain Name Servers.

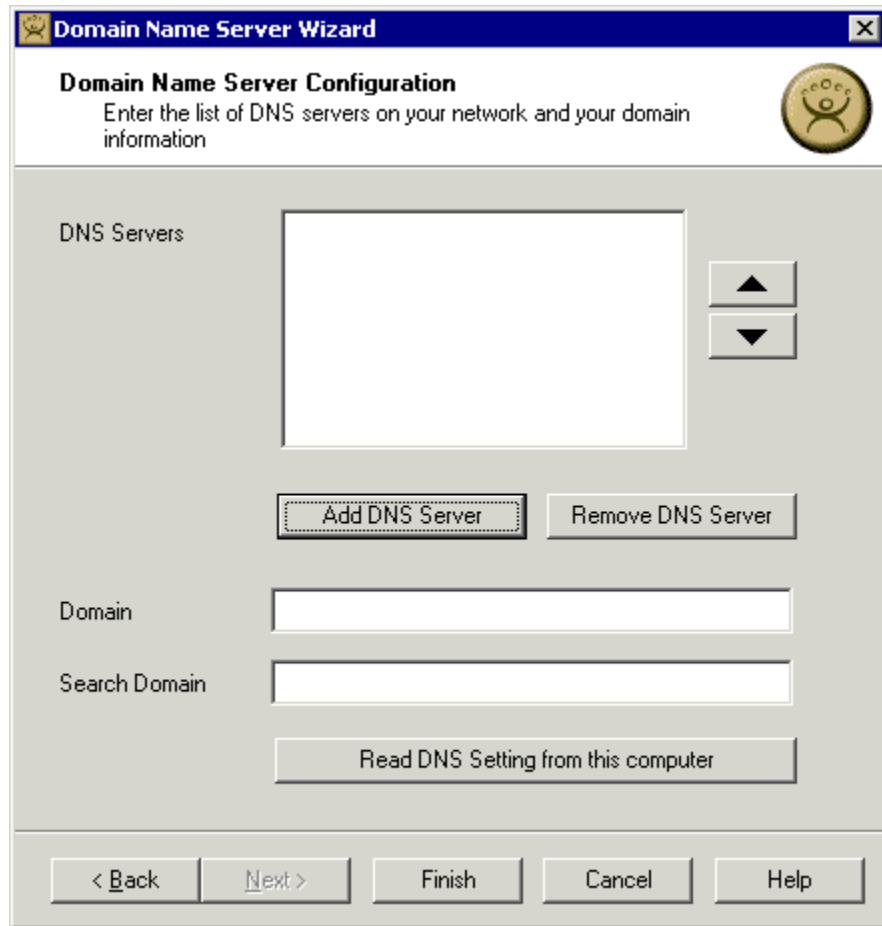


Domain Name Service Wizard - Introduction

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



The screenshot shows a window titled "Domain Name Server Wizard" with a close button (X) in the top right corner. Below the title bar, the text "Domain Name Server Configuration" is displayed, followed by the instruction "Enter the list of DNS servers on your network and your domain information". A gold circular icon is visible in the top right corner of the main content area. The main content area contains a list box labeled "DNS Servers" with up and down arrow buttons to its right. Below the list box are two buttons: "Add DNS Server" and "Remove DNS Server". Further down are two text input fields labeled "Domain" and "Search Domain". Below these fields is a button labeled "Read DNS Setting from this computer". At the bottom of the window is a navigation bar with five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

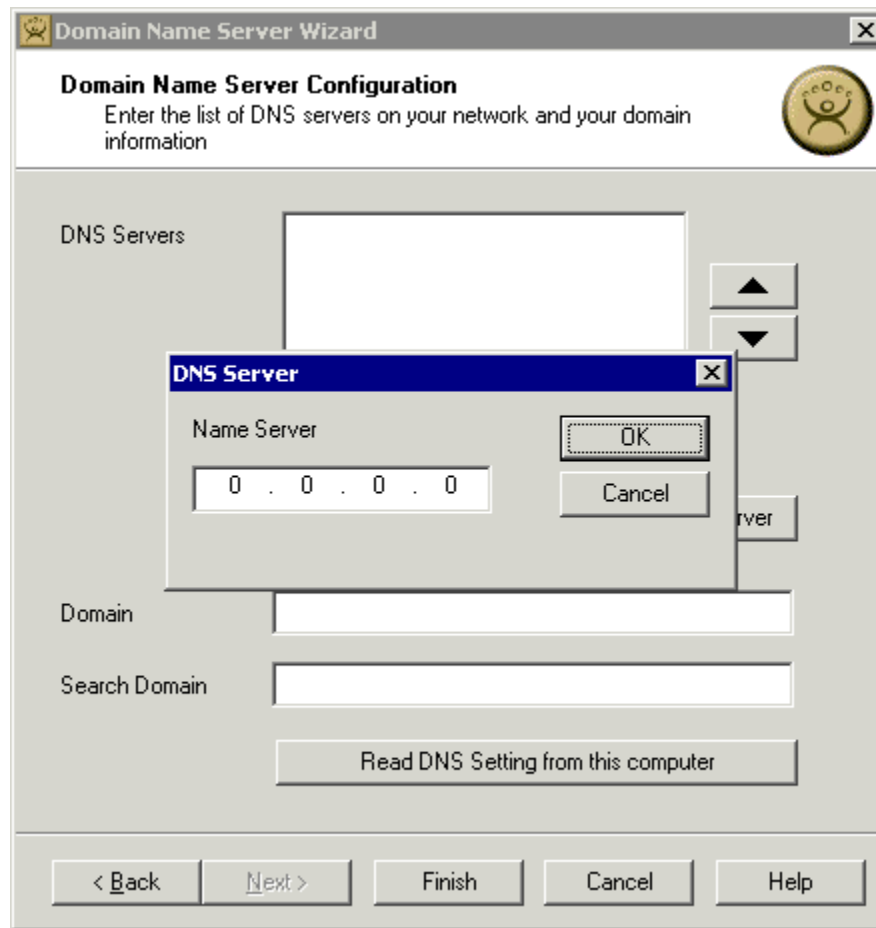
Domain Name Server Configuration

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** will launch a dialog box that allows the IP address of the DNS server to be added.

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.

Group Configuration Wizard

Using 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.

The Group Name Configuration wizard can be launched by selecting **Edit>Add Group** or by right clicking on a ThinManager Server in the tree and selecting **Add Group**.

Group Name Page

The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard" with a close button (X) in the top right corner. The main heading is "Group Name" with the instruction "Enter the name for the group". On the right side of the heading area is a circular icon with a stylized figure. Below the heading is a text input field labeled "Group Name". Underneath the input field is a note: "This must be a unique name using letters, numbers, hyphens [-], and underscores [_] only." At the bottom of the dialog, there are two checked checkboxes: "Allow Terminals in this group to be replaced if offline" and "Allow terminal to be shadowed". At the very bottom are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

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.

Selecting the **Allow Terminals in this group to be replaced if offline** checkbox will allow all members of the group to show up in the replacement list during a new terminal connection.

Selecting the **Allow terminal to be shadowed** checkbox will allow members of the Group to be viewed by ThinManager Power Users and controlled by Administrators 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.

Select **Next** to continue or **Cancel** to quit.

Group Terminal Server Specification Page

The screenshot shows a window titled "Terminal Configuration Wizard" with a close button in the top right corner. Below the title bar, the page is titled "Terminal Server Specification" and includes the instruction "Select the method for choosing terminal servers available for terminals in this group". A circular icon with a person and a plus sign is located in the top right of the main content area. The main content area contains two sections: "Method of Terminal Server Selection" with two radio buttons, "Use Terminal Server Groups" (which is selected) and "Select Individual Terminal Servers"; and "MultiSession" with a checkbox labeled "Enable MultiSession" which is currently unchecked. At the bottom of the window, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Server Specification

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

- **Use Terminal Server Groups** will allow terminals to connect to terminal servers in Terminal Server Groups for increased functionality like load balancing.
- **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.

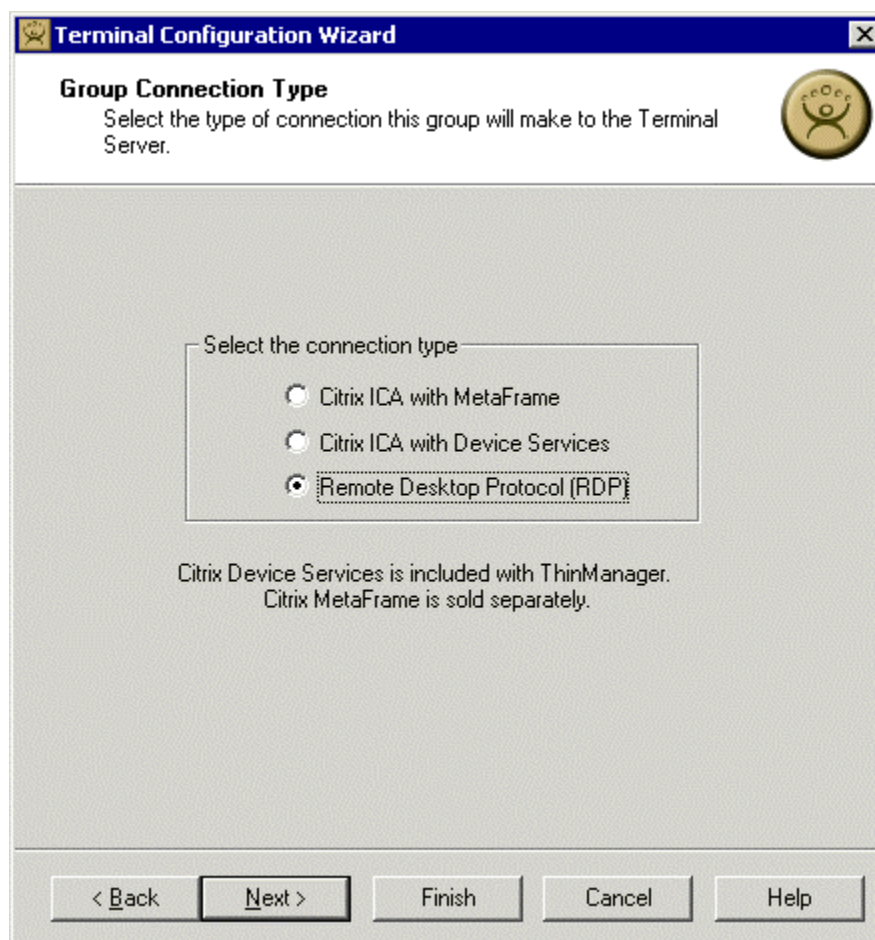
The **Enable MultiSession** checkbox allows the terminals in the group to use the MultiSession functionality as described in MultiSession. This is not available to a Group that is using individual terminal servers only.

Groups Using Individual Terminal Servers

Members of a Group may connect to a list of individual terminal servers by selecting the **Select Individual Terminal Servers** 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



Group Configuration Wizard - Connection Type

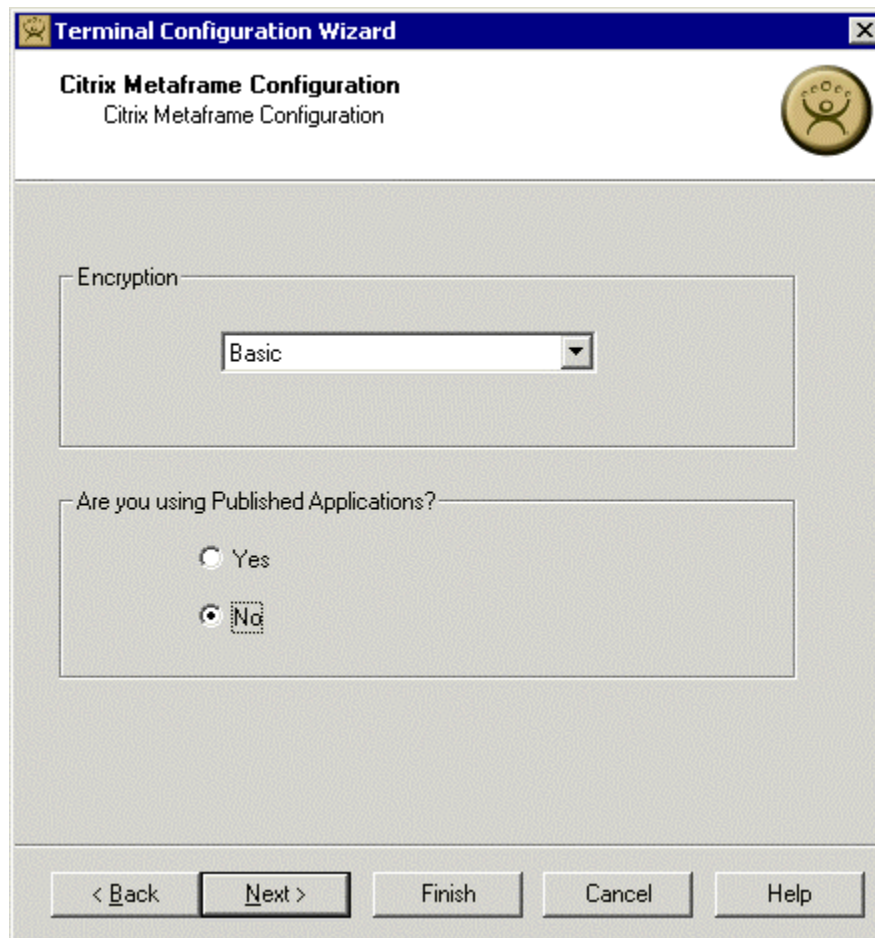
Thin clients use a client communication protocol to connect to the Terminal Servers. Select the correct protocol and select the **Next** button.

- Select the **Citrix MetaFrame** radio button if that program is to be used to provide the ICA protocol. Citrix MetaFrame is an optional program sold by Citrix.
- 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 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 all Windows Terminal Servers. The **Microsoft Remote Desktop Protocol (RDP)** radio button is selected by default unless you choose another protocol.

Selecting **Citrix ICA with MetaFrame** 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 MetaFrame as its Client communication Protocol will be shown additional configuration screens beginning with the Citrix MetaFrame Configuration page.

Group Citrix MetaFrame Configuration Page



The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard" with a close button (X) in the top right corner. Below the title bar, the text "Citrix Metaframe Configuration" is displayed, followed by "Citrix Metaframe Configuration" in a smaller font. A Citrix logo is visible in the top right corner of the dialog. The main area of the dialog is divided into two sections. The first section is labeled "Encryption" and contains a dropdown menu with "Basic" selected. The second section is labeled "Are you using Published Applications?" and contains two radio buttons: "Yes" and "No". The "No" radio button is selected. At the bottom of the dialog, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Group Configuration Wizard - Citrix MetaFrame Configuration

Citrix MetaFrame allows increased encryption in the ICA protocol. Select a level from the **Encryption** drop-down box.

Citrix MetaFrame 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 dialog.

Group Citrix Published Applications Page



The screenshot shows a window titled "Terminal Configuration Wizard" with a close button (X) in the top right corner. Below the title bar, the text "Citrix Published Applications" is displayed. Underneath, a paragraph reads: "Enter the published application this group should run. Enter the ICA browser if necessary to help terminals in this group find the published application." To the right of this text is a circular icon with a stylized figure. Below the text, there are two input fields. The first is labeled "Published Application Name" and the second is labeled "ICA Browser". At the bottom of the window, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Group Configuration Wizard - Citrix Published Applications

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

Citrix MetaFrame 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 Group, or select the ***Next*** button to rejoin the main configuration path to configure more options.

Groups using the ***Select Individual Terminal Servers*** will be shown the Group Terminal Server Selection page to select the desired terminal servers to connect to.

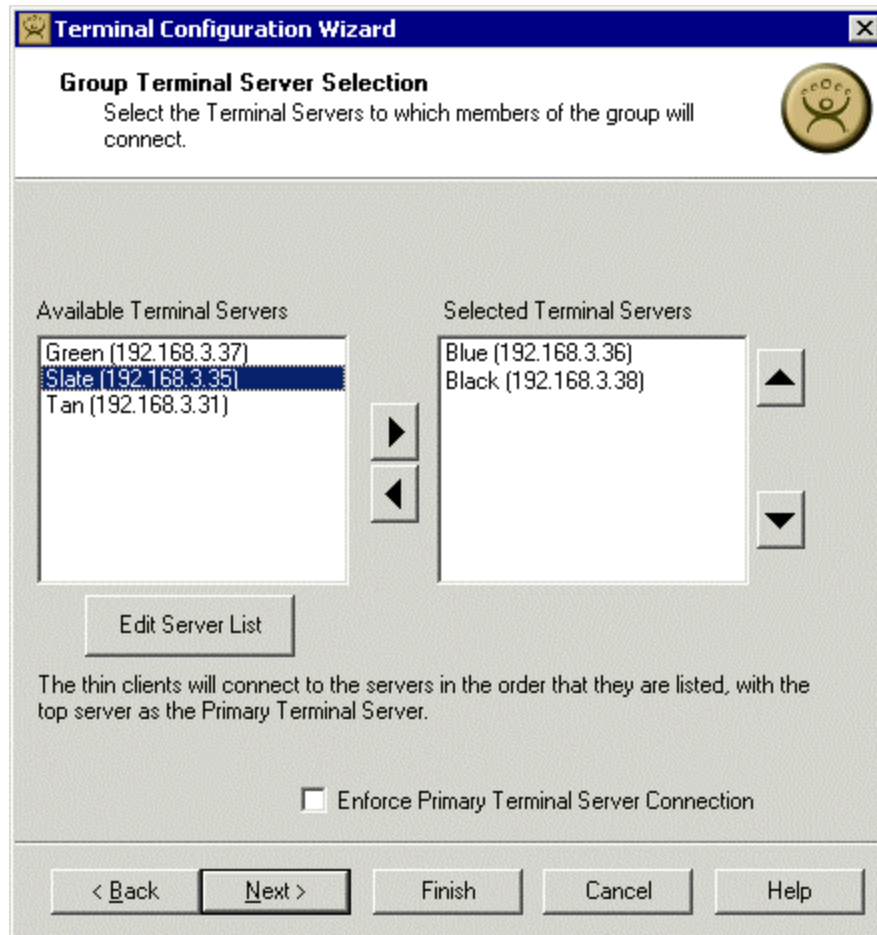
Group Terminal Server Selection Page

The screenshot shows a window titled "Terminal Configuration Wizard" with a close button in the top right corner. The main heading is "Group Terminal Server Selection" with a sub-instruction: "Select the Terminal Servers to which members of the group will connect." A gold circular icon with a person and a plus sign is in the top right. The interface is divided into two main sections: "Available Terminal Servers" on the left and "Selected Terminal Servers" on the right. Both sections contain empty rectangular boxes. Between these boxes are two vertical arrow buttons: a right-pointing arrow on top and a left-pointing arrow on the bottom. To the right of the "Selected Terminal Servers" box are two more vertical arrow buttons: an up-pointing arrow on top and a down-pointing arrow on the bottom. Below the "Available Terminal Servers" box is a button labeled "Edit Server List". Below the "Selected Terminal Servers" box is a text block: "The thin clients will connect to the servers in the order that they are listed, with the top server as the Primary Terminal Server." Below this text is a checkbox labeled "Enforce Primary Terminal Server Connection", which is currently unchecked. At the bottom of the window is a row of five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Group Configuration Wizard - Group Terminal Server Selection

The **Group Terminal Server Selection** page allows the selection of the terminal server or servers that the members of the group will connect to.

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.



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. This will put the Terminal Server into the **Selected Terminal Server** 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.

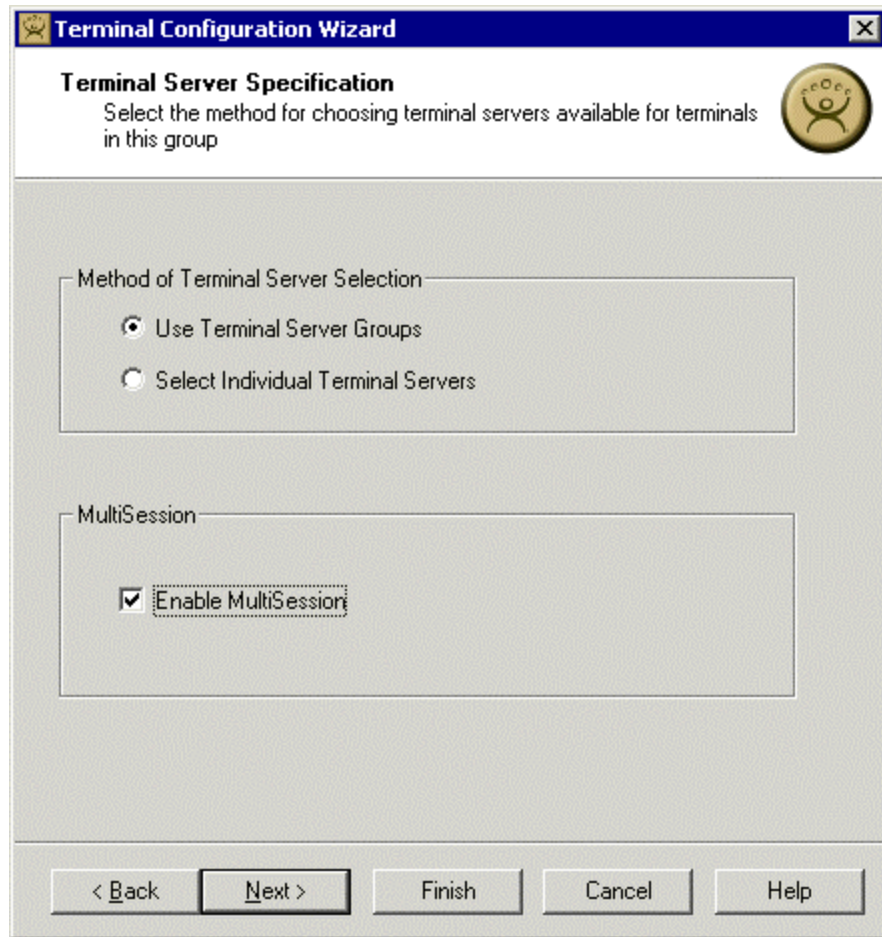
To change the order of the Terminal Servers in the Terminal Server Selection list, highlight a Terminal Server and use the **Up** arrow button and the **Down** arrow button to move it up or down in the list.

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

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

Groups Using Terminal Server Groups

Members of a Group may connect to Terminal Server Groups by selecting the **Use Terminal Server Groups** on the Terminal Server Specification page.



Group Configuration Wizard - Terminal Server Specification

If **Use Terminal Server Groups** is selected, an **Enable MultiSession** checkbox will be displayed.

Check the **Enable MultiSession** checkbox to connect to two or more terminal server groups at once. See MultiSession for details.

Select **Next** to continue configuration.

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

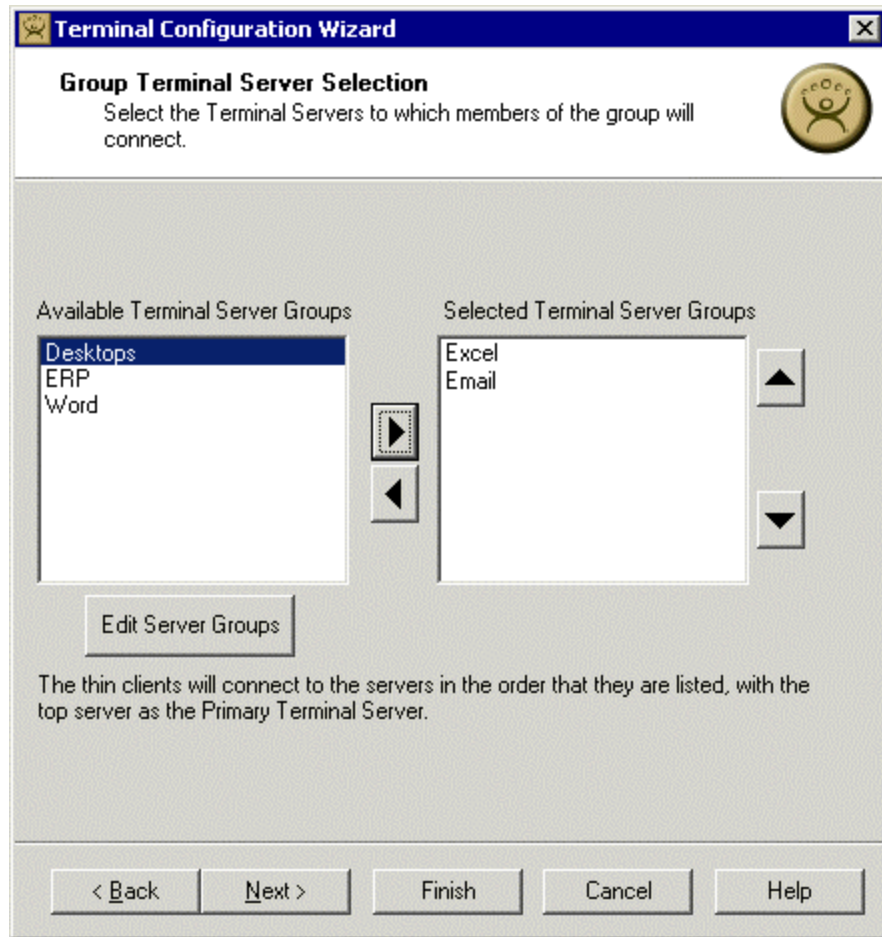
Group Terminal Server Group Selection Page

The screenshot shows a window titled "Terminal Configuration Wizard" with a close button in the top right corner. Below the title bar, the page is titled "Group Terminal Server Selection" with a sub-instruction: "Select the Terminal Servers to which members of the group will connect." A gold circular icon with a person and a plus sign is in the top right. The main area is divided into two columns: "Available Terminal Server Groups" on the left and "Selected Terminal Server Groups" on the right. Both columns contain empty rectangular boxes. Between the boxes are two vertical arrow buttons (right and left). To the right of the "Selected" box are two vertical arrow buttons (up and down). Below the "Available" box is a button labeled "Edit Server Groups". Below the boxes, a text box states: "The thin clients will connect to the servers in the order that they are listed, with the top server as the Primary Terminal Server." At the bottom, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Group Configuration Wizard - Group Terminal Server Selection

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

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



Group Configuration Wizard - Terminal Server Selection

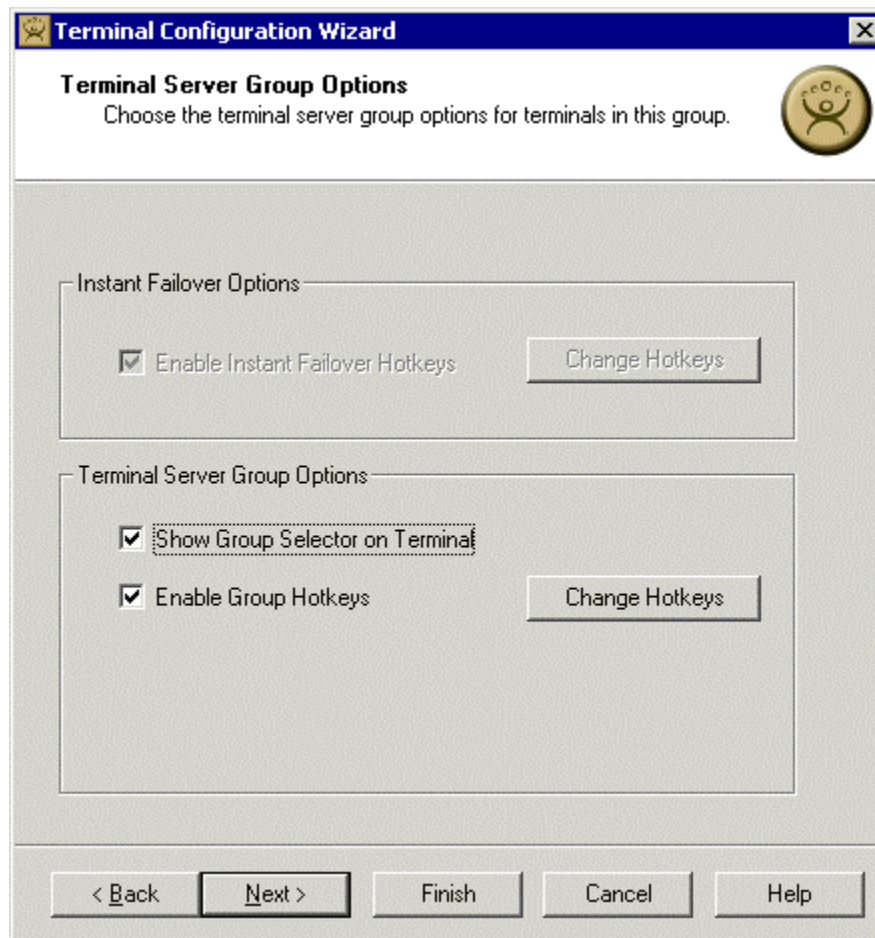
Once the **Terminal Server Group** wizard has run, each Terminal Server Group that is identified in the Terminal Server Group Wizard will initially appear in the **Available Terminal Server Groups** box on the left of the **Group Terminal Server Selection** page.

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

The **Enforce Primary Terminal Server Connection** will cause a terminal to return to the primary terminal server whenever that server is available. This is not available with Smart-Session.

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

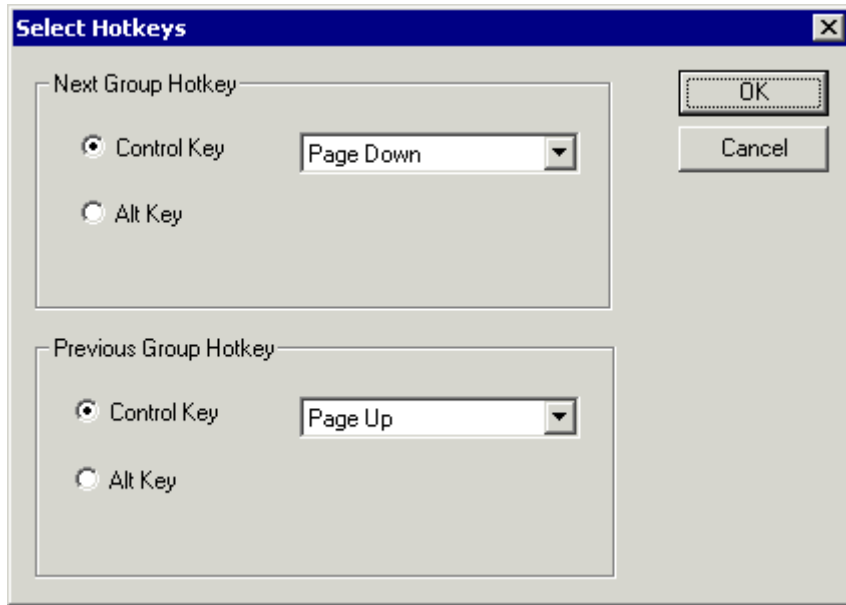
Group Terminal Server Group Options Page



The screenshot shows a window titled "Terminal Configuration Wizard" with a close button (X) in the top right corner. Below the title bar, the page is titled "Terminal Server Group Options" with a subtitle "Choose the terminal server group options for terminals in this group." and a circular icon on the right. The main content area has two sections: "Instant Failover Options" and "Terminal Server Group Options". The "Instant Failover Options" section contains a checked checkbox "Enable Instant Failover Hotkeys" and a "Change Hotkeys" button. The "Terminal Server Group Options" section contains two checked checkboxes: "Show Group Selector on Terminal" and "Enable Group Hotkeys", with a "Change Hotkeys" button to the right. At the bottom, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Configuration Wizard - Terminal Server Group Options

A Group using MultiSession will have a page that allows the configuration of the hotkeys that allow switching between sessions. Select the **Change Hotkey** button to configure hot keys.



Terminal Configuration Wizard - Select HotKeys

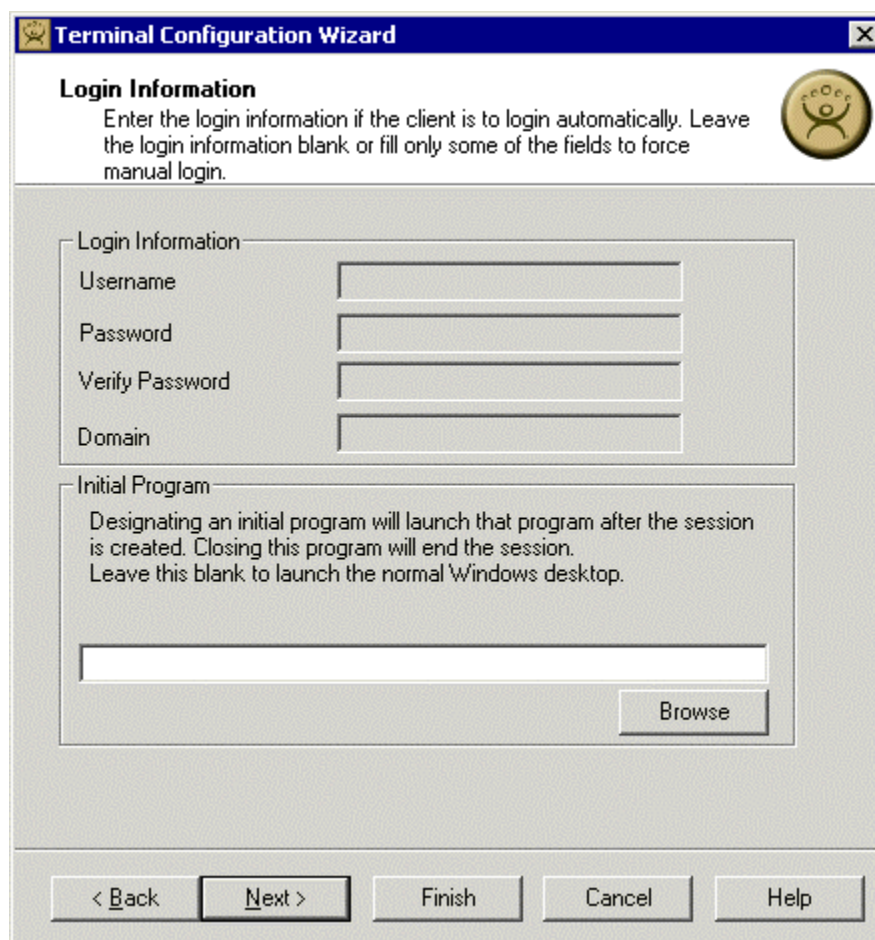
The hotkey to switch between the multiple sessions are set by default to **Control+Page Up** and **Control+Page Down**. The hot keys can be changed by using the dropdown boxes.

Select **OK** to continue.

Continuation of the Group Configuration

The configuration paths (Independent Terminal Servers vs. Terminal Server Groups, MetaFrame vs. Device Services and RDP) unite at the Login Configuration.

Group Login Information Page



The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard". It has a blue title bar with a close button. The main area is titled "Login Information" and contains instructions: "Enter the login information if the client is to login automatically. Leave the login information blank or fill only some of the fields to force manual login." Below this are four input fields: "Username", "Password", "Verify Password", and "Domain". Below these fields is a section titled "Initial Program" with instructions: "Designating an initial program will launch that program after the session is created. Closing this program will end the session. Leave this blank to launch the normal Windows desktop." There is a large text input field for the initial program and a "Browse" button next to it. At the bottom are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Group Configuration Wizard - Login Information

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. These need to be set individually during the Terminal Configuration.

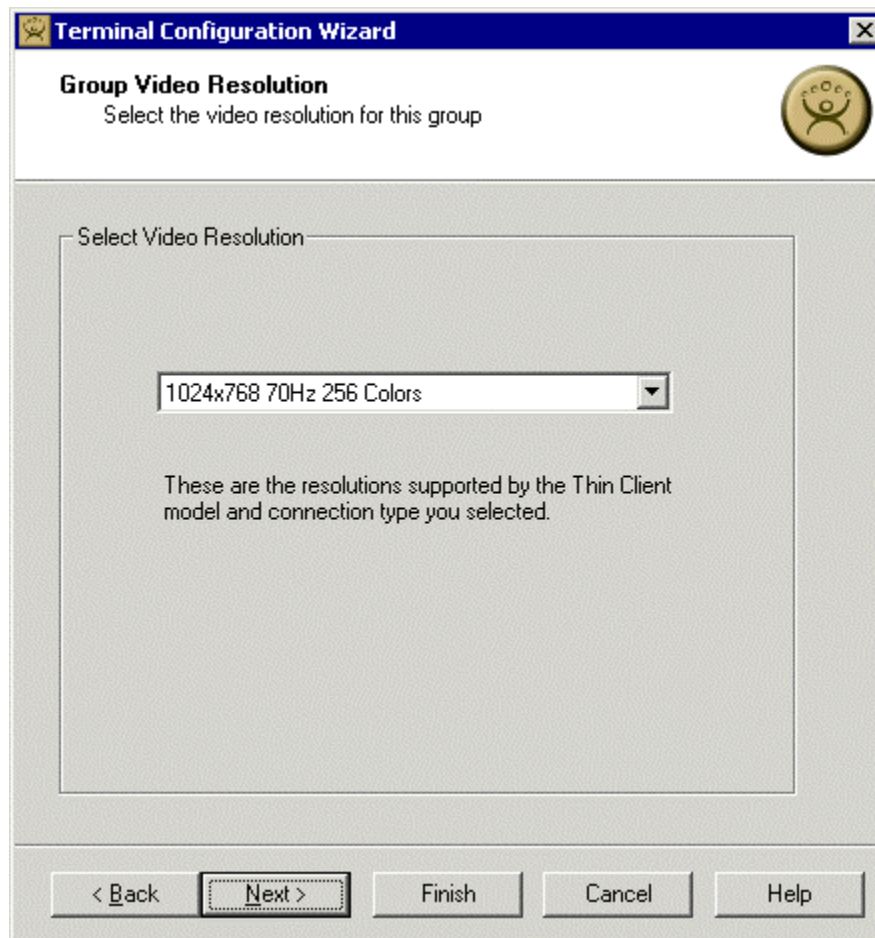
The **Initial Program** loads the designated program instead of the Windows desktop when the terminal connects to the Terminal Server. If a program is launched as the initial program, it is the only program that will run. This provides a level of security and control because that program is the only 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.

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

Note: When using the Initial Program with failover, the path must be identical on all terminal servers.

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

Group Video Resolution Page



The screenshot shows a window titled "Terminal Configuration Wizard" with a close button (X) in the top right corner. Below the title bar, the text "Group Video Resolution" is displayed, followed by the instruction "Select the video resolution for this group". A circular icon with a stylized figure is located in the top right corner of the main content area. The main content area is titled "Select Video Resolution" and contains a drop-down menu with the text "1024x768 70Hz 256 Colors". Below the drop-down menu, a note states: "These are the resolutions supported by the Thin Client model and connection type you selected." At the bottom of the window, there are five buttons: "< Back", "Next >" (which is highlighted with a dashed border), "Finish", "Cancel", and "Help".

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.

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

Group WinTMC Settings

The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard" with a close button (X) in the top right corner. Below the title bar, the text "WinTMC Settings" is followed by a description: "Select the local devices to be redirected, select the experience settings and client control settings. These settings apply only to Windows clients." To the right of this text is a circular icon with a stylized figure. The main area of the dialog is divided into three sections, each with a title and a list of settings:

- Redirect Local Resources**: Contains five unchecked checkboxes: "Redirect Serial Ports", "Redirect Drives", "Redirect Printers", "Redirect Sound", and "Redirect Smart Cards".
- Client Control Settings**: Contains two checked checkboxes: "Allow client to be closed" and "Allow client to be sized".
- Experience Settings**: Contains four checked checkboxes: "Show desktop background", "Show window contents while dragging", "Show menu / window animations", and "Show themes".

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

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 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.

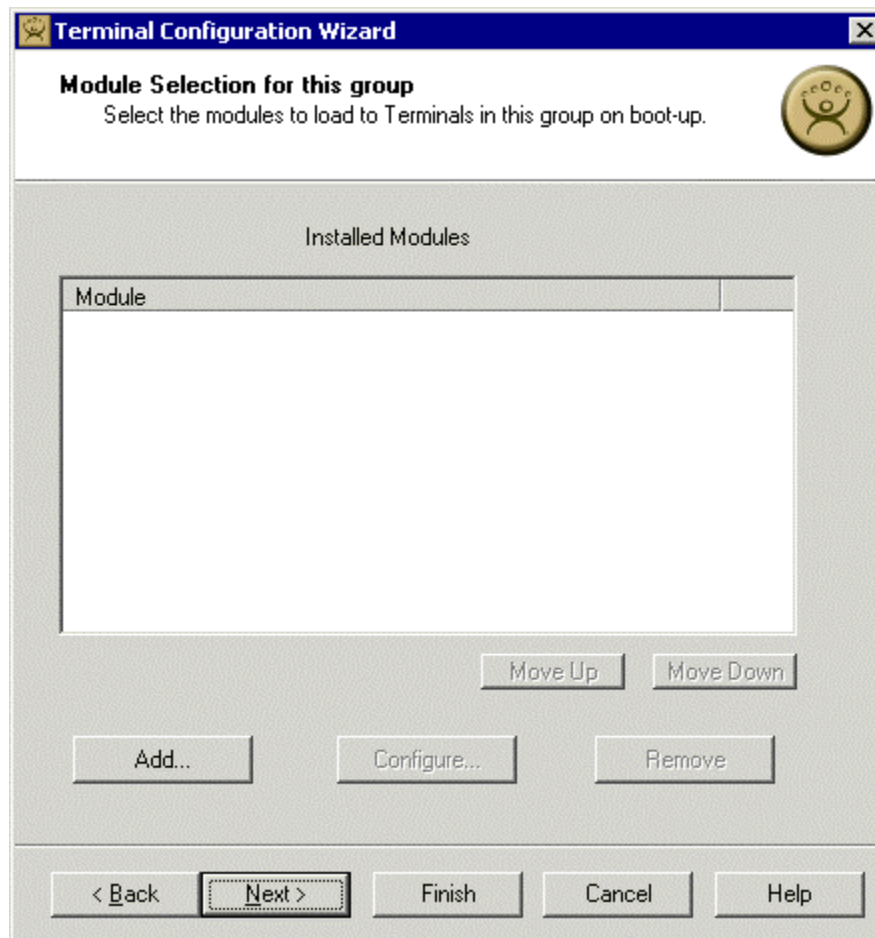
Experience Settings:

- **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.

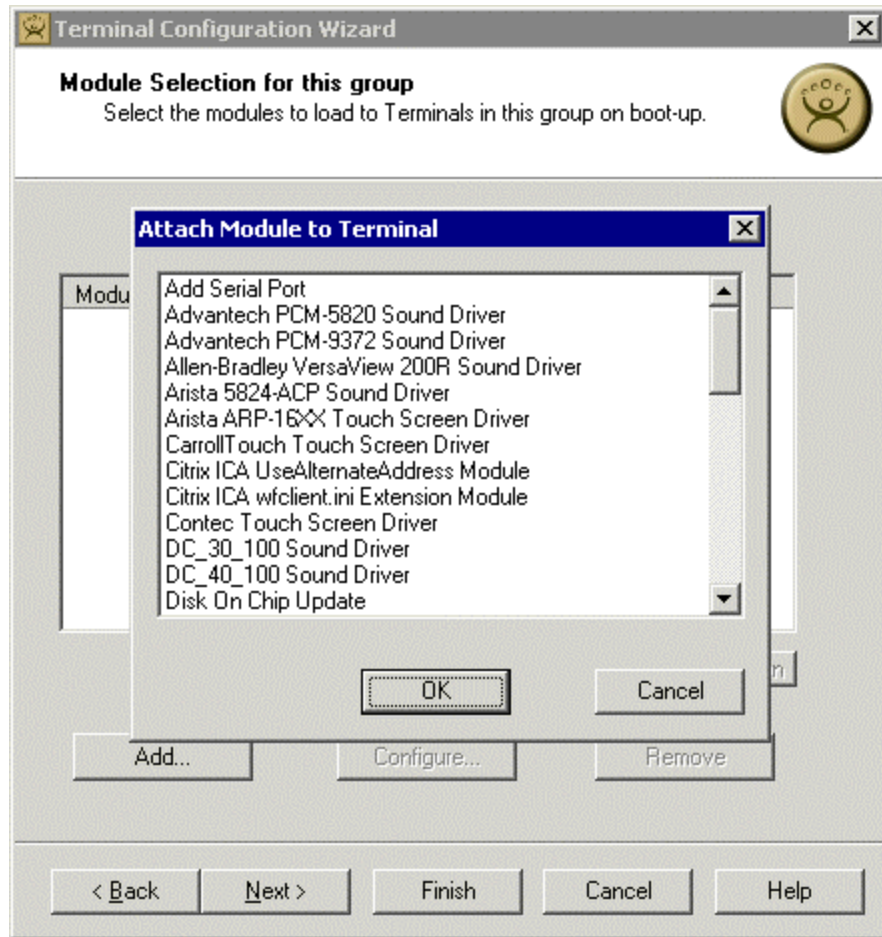
Group Module Selection Page



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 Group, select the **Add...** button and select the Module from the list.



Group Configuration Wizard - Module List

Selecting the **Add...** button will launch the list of available modules in the **Attach Module to Terminal** window.

Highlight the desired module and select **OK**.

Highlighting the module and selecting the **Configure** button can change some module parameters. Select the parameter to change, select the new value in the drop-down list and click the **Set** button. Details are found in Module Overview.

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

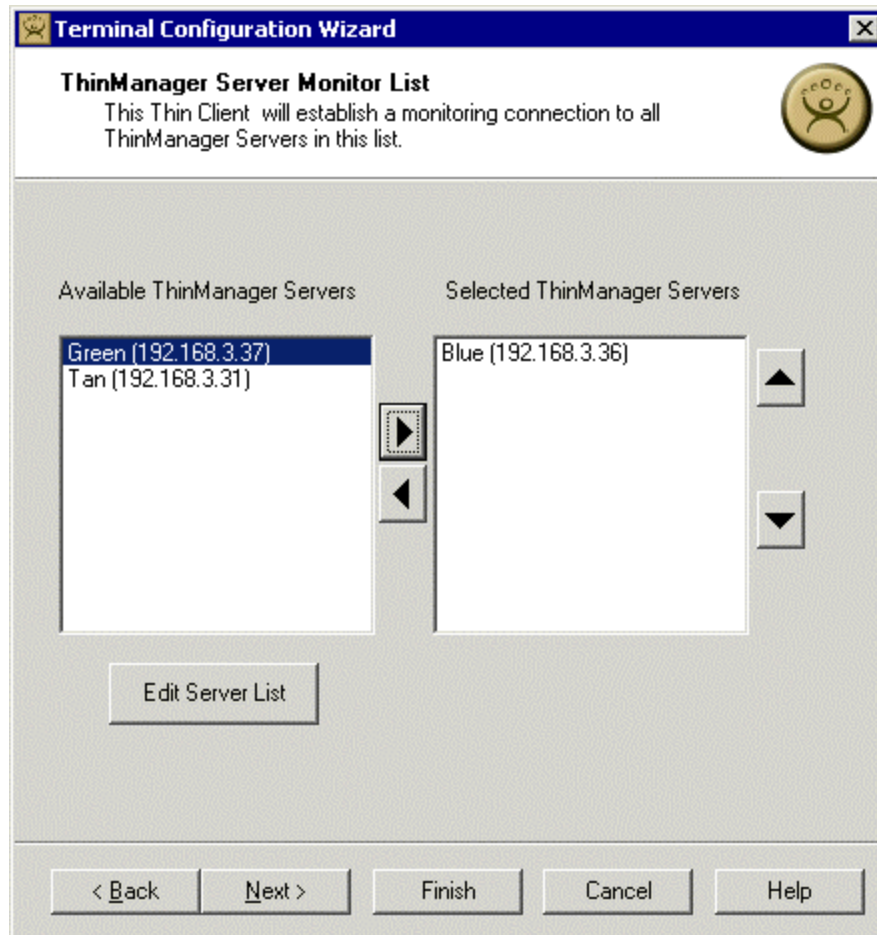
Group Terminal Server Monitor List Page



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.

If this column is empty or is missing the desired ThinManager Server, select the **Edit Server List** button to launch the ThinManager Server List Wizard as shown in ThinManager Server List.



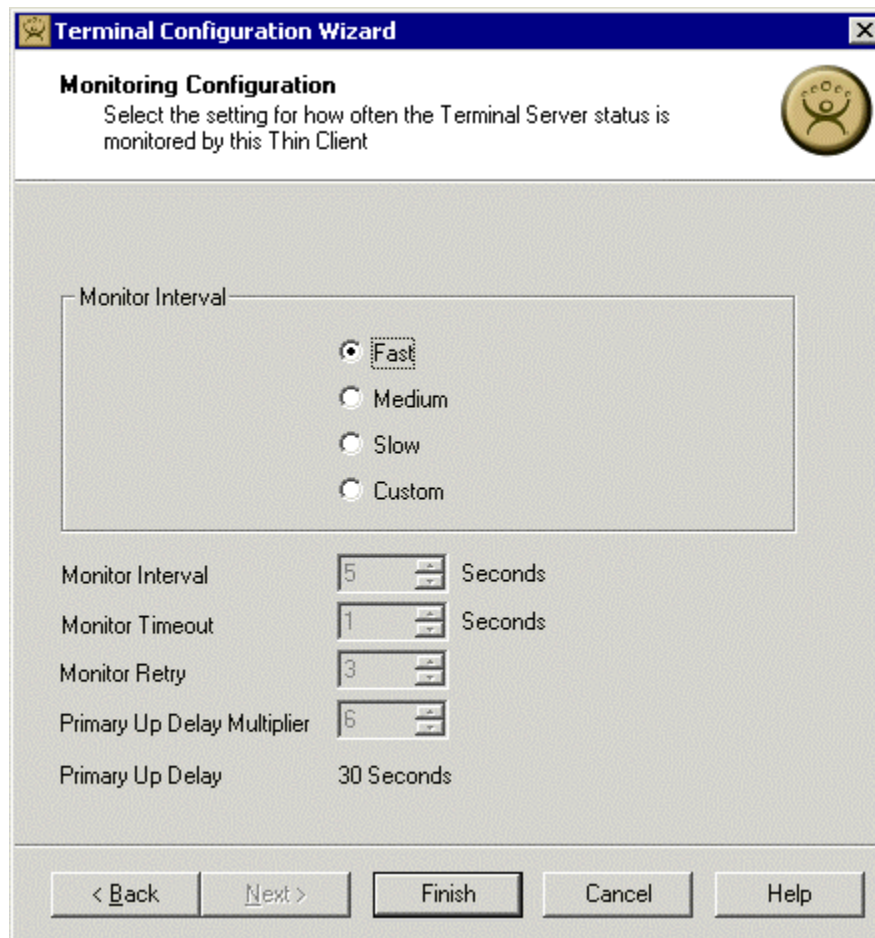
Group Configuration Wizard - Monitoring Configuration

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.

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

Group Monitoring Configuration



The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard" with a close button (X) in the top right corner. Below the title bar, the text "Monitoring Configuration" is displayed, followed by the instruction: "Select the setting for how often the Terminal Server status is monitored by this Thin Client". A circular icon with a person and a gear is in the top right. The main area contains a "Monitor Interval" section with four radio buttons: "Fast" (selected), "Medium", "Slow", and "Custom". Below this, there are five settings with spinners: "Monitor Interval" (5), "Monitor Timeout" (1), "Monitor Retry" (3), "Primary Up Delay Multiplier" (6), and "Primary Up Delay" (30 Seconds). At the bottom, there are five buttons: "< Back", "Next >", "Finish" (highlighted), "Cancel", and "Help".

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.

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

Terminal Configuration Wizard

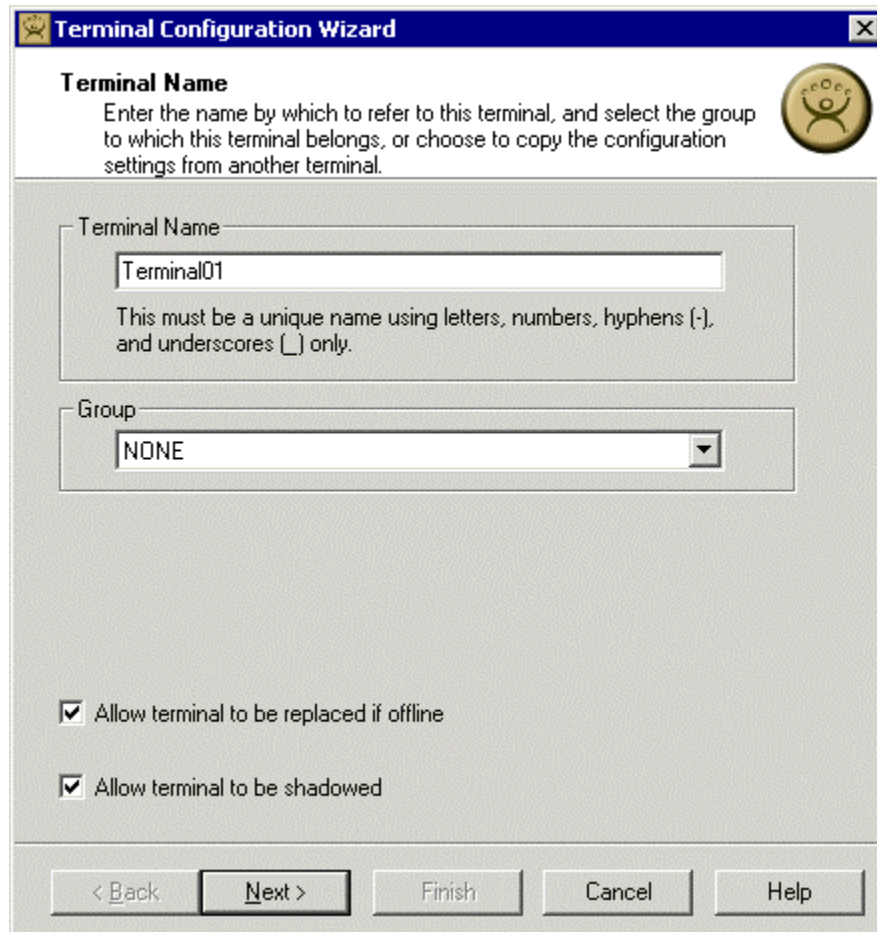
Configuring a Terminal is just like configuring a Group.

If a terminal is created in a Group, or added to a Group, it will have the option of using the Group configuration. This is controlled with a **Use Group Property** checkbox on each wizard page. To change the configuration from the Group, un-check the checkbox and use the desired settings. A terminal created outside a Group and not added to a Group, will not display the **Use Group Property** checkboxes.

Note: The following section shows a terminal that is configured as an individual and not as a member of a Group. Terminals created as a member of a Group will display a **Use Group Setting** checkbox and have Group settings grayed out. To use the individual settings, uncheck the **Use Group Setting** checkbox and apply the individual configuration.

The Terminal Creation Wizard can be launched by either:

- Selecting a ThinManager Server in the ThinManager tree and selecting **Edit > Add Terminal** from the menu bar, or
- Selecting a ThinManager Server in the ThinManager tree, right-clicking on the ThinManager Server 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.



The screenshot shows the 'Terminal Configuration Wizard' dialog box. The title bar is blue with a yellow icon on the left and a close button on the right. The main area has a light gray background. At the top, there's a section titled 'Terminal Name' with a yellow circular icon on the right. Below this, there's a text box containing 'Terminal01'. A note below the text box states: 'This must be a unique name using letters, numbers, hyphens [-], and underscores [_] only.' Below the text box is a 'Group' section with a dropdown menu currently set to 'NONE'. At the bottom, there are two checked checkboxes: 'Allow terminal to be replaced if offline' and 'Allow terminal to be shadowed'. The bottom of the dialog features five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Terminal Configuration Wizard - Terminal Name

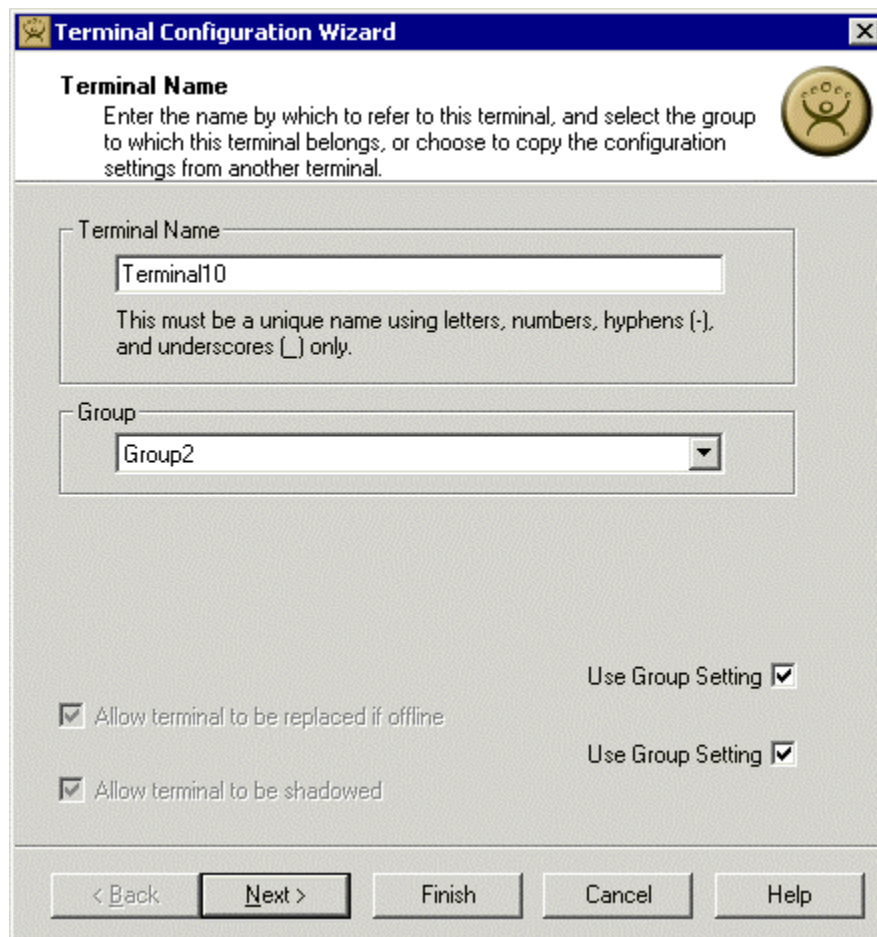
When a Terminal is first created, giving it a name is the first priority. Use numbers, letters, hyphens (-), and underscores (_), but don't use spaces or other characters.

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

It can be added to a Group by selecting the Group name in the Group drop-down box. Terminals added to a Group will be assigned the Group properties, but they can have the Group properties changed to individual settings by un-checking a **Use Group Property** checkbox on each wizard page.

The **Copy Settings from another Terminal** checkbox will copy an established configuration to the new terminal, cutting setup time.

The **Allow terminal to be replaced if offline** checkbox allows this terminal to be replaced in case of failure. Un-checking it will prevent it from being replaced until an administrator checks this box.



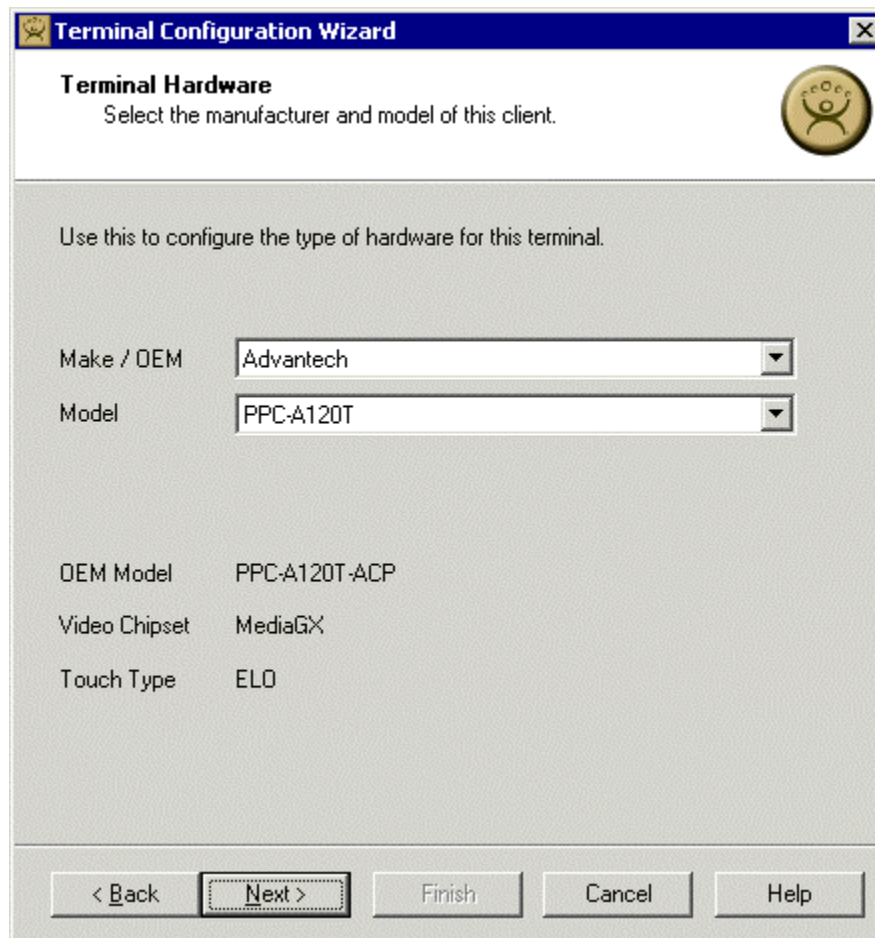
The screenshot shows the 'Terminal Configuration Wizard' window with the 'Terminal Name' tab selected. The window has a title bar with a close button. Inside, there's a section titled 'Terminal Name' with a description: 'Enter the name by which to refer to this terminal, and select the group to which this terminal belongs, or choose to copy the configuration settings from another terminal.' Below this, there's a text box for 'Terminal Name' containing 'Terminal10' and a note: 'This must be a unique name using letters, numbers, hyphens (-), and underscores (_) only.' Below that is a 'Group' dropdown menu showing 'Group2'. At the bottom, there are four checkboxes: 'Allow terminal to be replaced if offline' (checked), 'Allow terminal to be shadowed' (checked), 'Use Group Setting' (checked), and 'Use Group Setting' (checked). At the very bottom are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Terminal Configuration Wizard - Terminal Name

Members of a group will display a **Use Group Settings** checkbox at each setting. Un-selecting the **Use Group Setting** will activate the individual properties to allow a change in configuration.

Select **Next** to continue or **Cancel** to quit.

Terminal Hardware Page



The image shows a Windows-style dialog box titled "Terminal Configuration Wizard". The main heading is "Terminal Hardware" with a sub-instruction: "Select the manufacturer and model of this client." Below this, a note says "Use this to configure the type of hardware for this terminal." There are two dropdown menus: "Make / OEM" set to "Advantech" and "Model" set to "PPC-A120T". Below these, three fields are displayed: "OEM Model" with value "PPC-A120T-ACP", "Video Chipset" with value "MediaGX", and "Touch Type" with value "ELO". At the bottom, there are five buttons: "< Back", "Next >" (highlighted with a dashed border), "Finish", "Cancel", and "Help".

Make / OEM	Advantech
Model	PPC-A120T
OEM Model	PPC-A120T-ACP
Video Chipset	MediaGX
Touch Type	ELO

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) as described the Install New TermCap Database. If the unit has an integrated flat panel, it will display the touch screen controller type.

Terminal Configuration Wizard

Terminal Hardware
Select the manufacturer and model of this client.

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

Make / OEM: GENERIC
Model: PersonalComputer

OEM Model: OTHER
Video Chipset: UNKNOWN

< Back Next > Finish Cancel Help

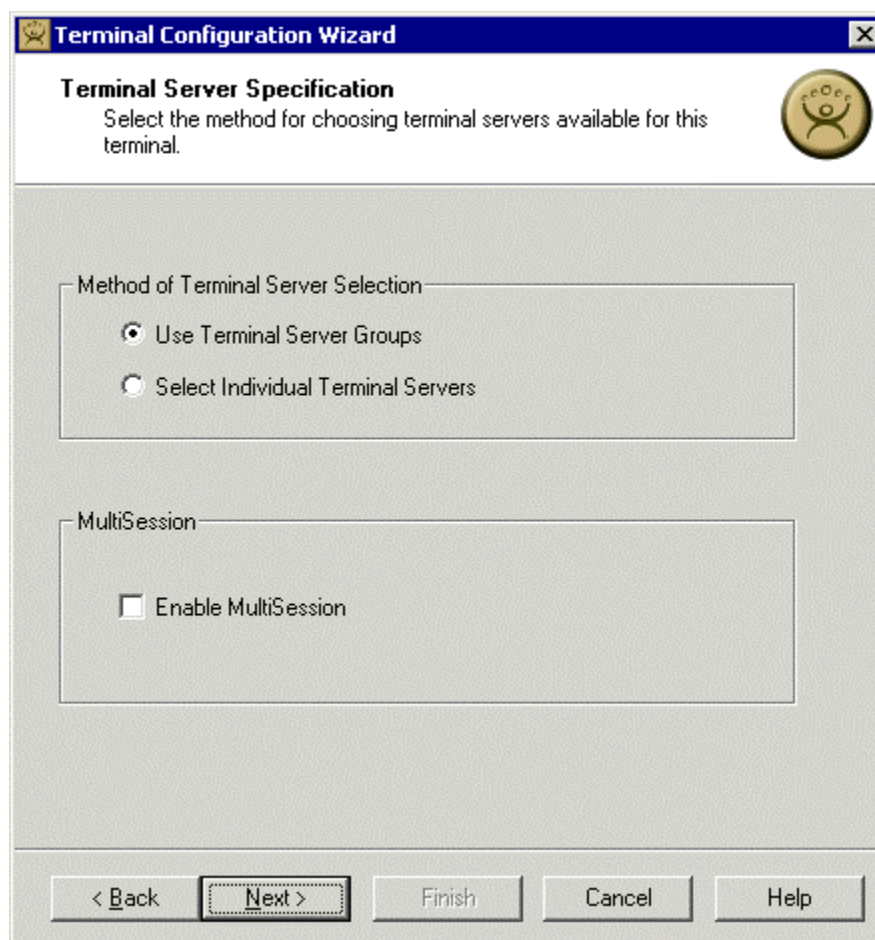
Terminal Configuration Wizard - WinTMC Setup

Note: A WinTMC connection needs to be configured as Generic/Personal Computer.

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 configuration to match the actual settings.

Select **Next** to continue.

Terminal Server Specification Page



The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard". The main heading is "Terminal Server Specification". Below the heading is a descriptive text: "Select the method for choosing terminal servers available for this terminal." To the right of the text is a circular icon with a stylized figure. The main content area is divided into two sections. The first section, "Method of Terminal Server Selection", contains two radio buttons: "Use Terminal Server Groups" (which is selected) and "Select Individual Terminal Servers". The second section, "MultiSession", contains a checkbox labeled "Enable MultiSession" which is currently unchecked. At the bottom of the dialog are five buttons: "< Back", "Next >" (highlighted with a dashed border), "Finish", "Cancel", and "Help".

Terminal Server Specification

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

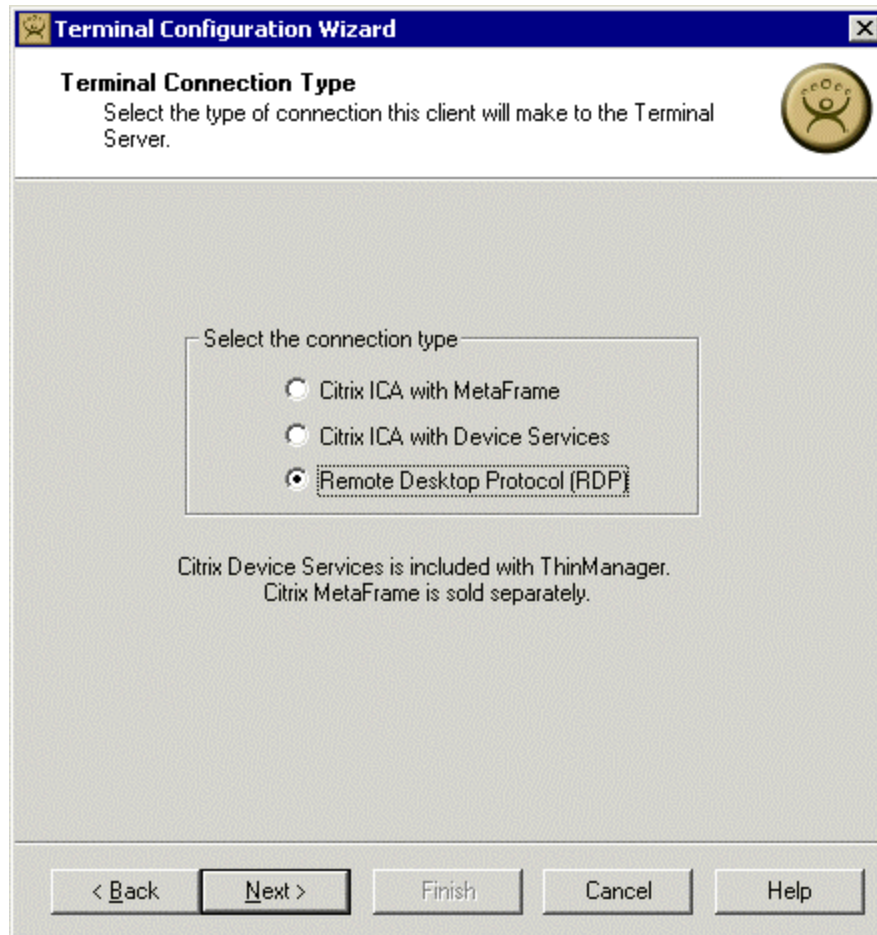
- **Use Terminal Server Groups** will allow terminals to connect to terminal servers in Terminal Server Groups for increased functionality like load balancing.
- **Select Individual Terminal Servers** will allow terminals to connect to a list of terminal servers as it has been done in earlier versions of ThinManager.

The **Enable MultiSession** checkbox allows the terminals in the group to use the MultiSession functionality as described in MultiSession. This is not available for terminals that are using individual terminal servers.

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.

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 MetaFrame** radio button if that program is to be used to provide the ICA protocol. Citrix MetaFrame is an optional program sold by Citrix.
- 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 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 all Windows Terminal Servers. The **Microsoft Remote Desktop Protocol (RDP)** radio button is selected by default unless you choose another protocol.

Selecting **Citrix ICA with MetaFrame** 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 MetaFrame as its Client communication Protocol will be shown additional configuration screens beginning with the Citrix MetaFrame Configuration page.

Citrix MetaFrame Configuration Page



The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard" with a close button (X) in the top right corner. Below the title bar, the text "Citrix Metaframe Configuration" is displayed, followed by the instruction "Choose the settings for Citrix Metaframe." and a Citrix logo. The main area of the dialog contains two sections. The first section, labeled "Encryption", features a dropdown menu with "Basic" selected. The second section, labeled "Are you using Published Applications?", contains two radio buttons: "Yes" (which is unselected) and "No" (which is selected). At the bottom of the dialog, there are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Configuration Wizard - Citrix MetaFrame Configuration

Citrix MetaFrame allows increased encryption in the ICA protocol. Select a level from the **Encryption** drop-down box.

Citrix MetaFrame 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 dialog.

Citrix Published Applications Page



Terminal Configuration Wizard

Citrix Published Applications
Enter the published application this terminal should run. Enter the ICA browser if necessary to help the terminal find the published application.

Published Application Name

ICA Browser

< Back Next > Finish Cancel Help

Terminal Configuration Wizard - Citrix Published Applications

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 MetaFrame 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 to select the desired terminal servers to connect to.

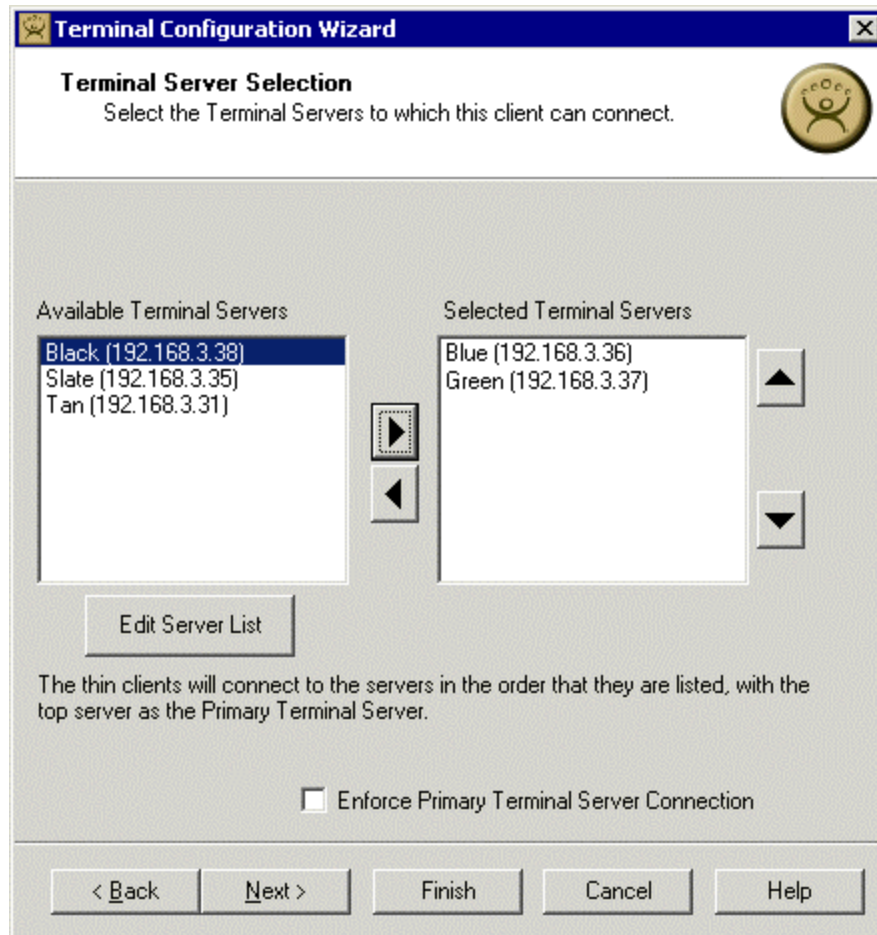
Terminal Server Selection Page

The screenshot shows a window titled "Terminal Configuration Wizard" with a close button in the top right corner. Below the title bar, the page is titled "Terminal Server Selection" with a subtitle "Select the Terminal Servers to which this client can connect." and a small circular icon on the right. The main area is divided into two columns: "Available Terminal Servers" on the left and "Selected Terminal Servers" on the right. Both columns contain empty rectangular boxes. Between these boxes are two vertical arrow buttons (right and left). To the right of the "Selected Terminal Servers" box are two vertical arrow buttons (up and down). Below the "Available Terminal Servers" box is a button labeled "Edit Server List". Below the two columns, there is a text block: "The thin clients will connect to the servers in the order that they are listed, with the top server as the Primary Terminal Server." followed by a checkbox labeled "Enforce Primary Terminal Server Connection". At the bottom of the window are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Configuration Wizard -Terminal Server Selection

If Published Applications 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 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 Server** box on the left side of the Terminal Server 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 Server** list on the right. The terminal will use all the Selected Terminal Servers as Terminal Servers.

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.

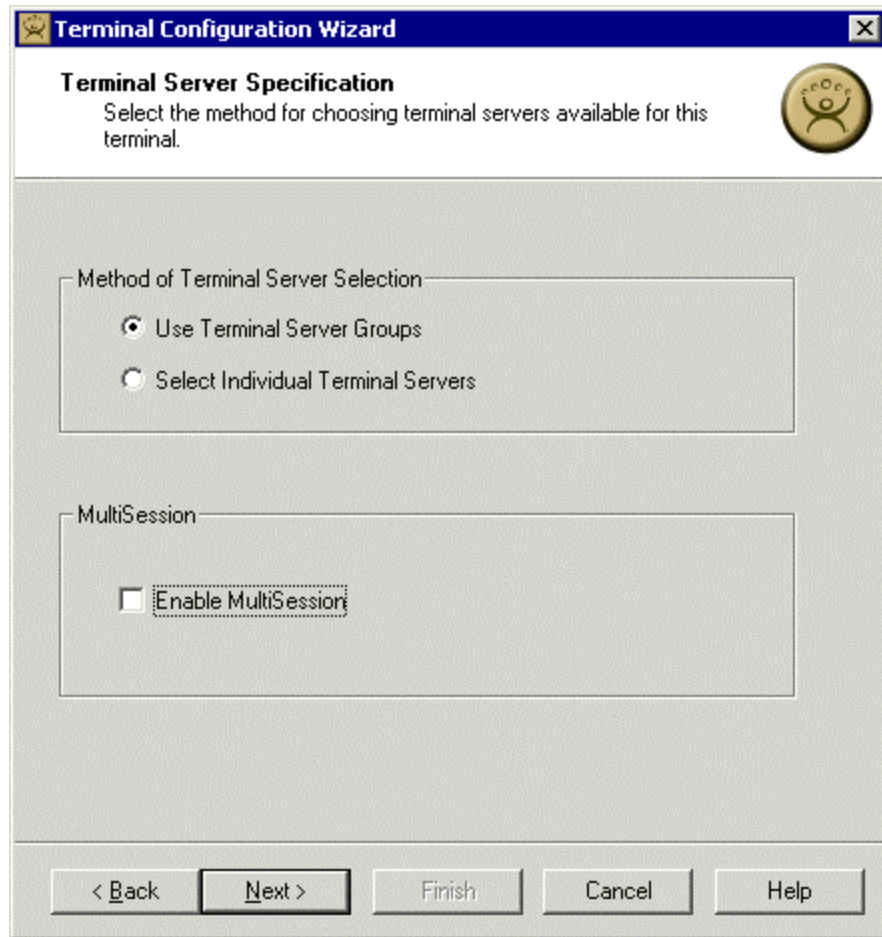
To change the order of the Terminal Servers in the Terminal Server Selection list, highlight a Terminal Server and use the **Up** arrow button and the **Down** arrow button to move it up or down in the list.

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

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

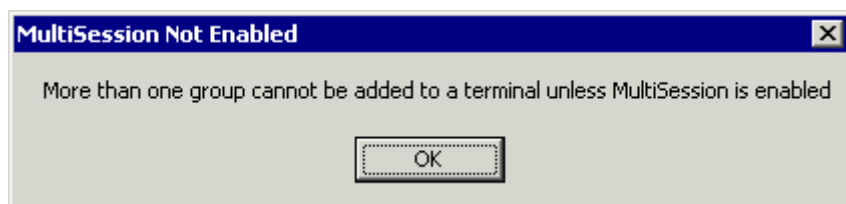
Terminals Using Terminal Server Groups

Terminals may connect to Terminal Server Groups by selecting the **Use Terminal Server Groups** on the Terminal Server Specification page.



Terminal Configuration Wizard - Terminal Server Specification

If **Use Terminal Server Groups** is selected, an **Enable MultiSession** checkbox will be displayed. Check the **Enable MultiSession** checkbox to use Multi-Session. See MultiSession for details.

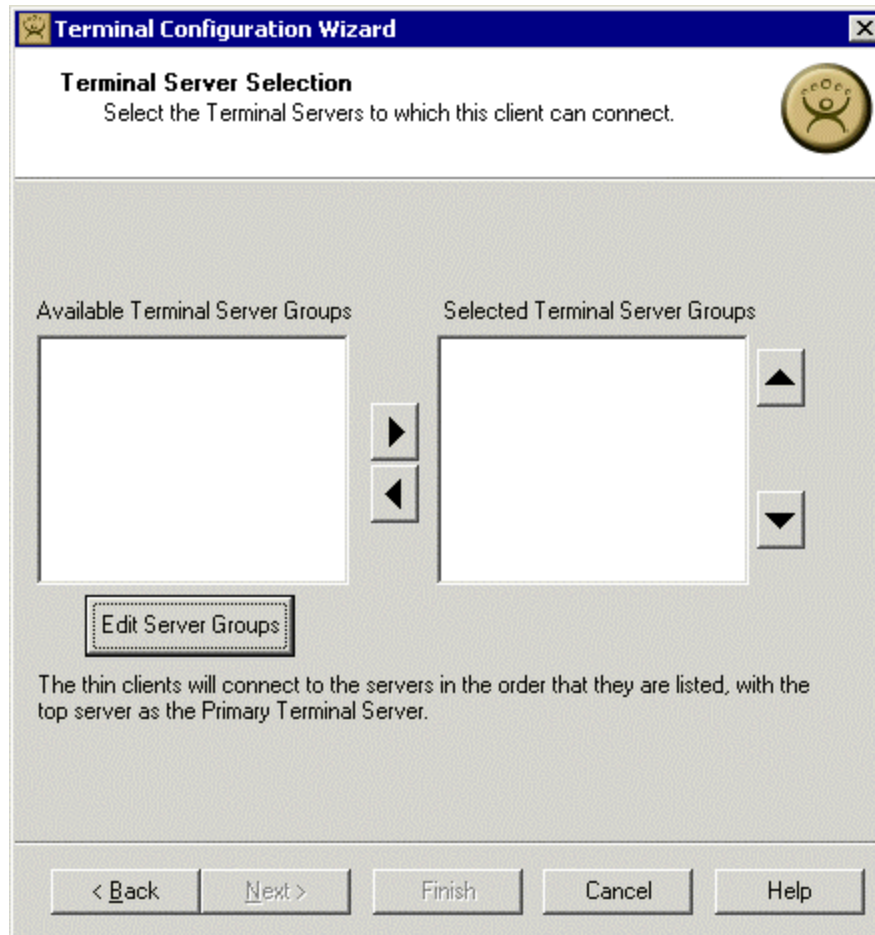


MultiSession Not Enabled Warning

If two Terminal Server Groups are selected without the **Enable MultiSession** checkbox selected, a message will be displayed warning that the **Enable MultiSession** checkbox needs to be checked to allow the MultiSession.

Select **Next** to continue configuration.

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

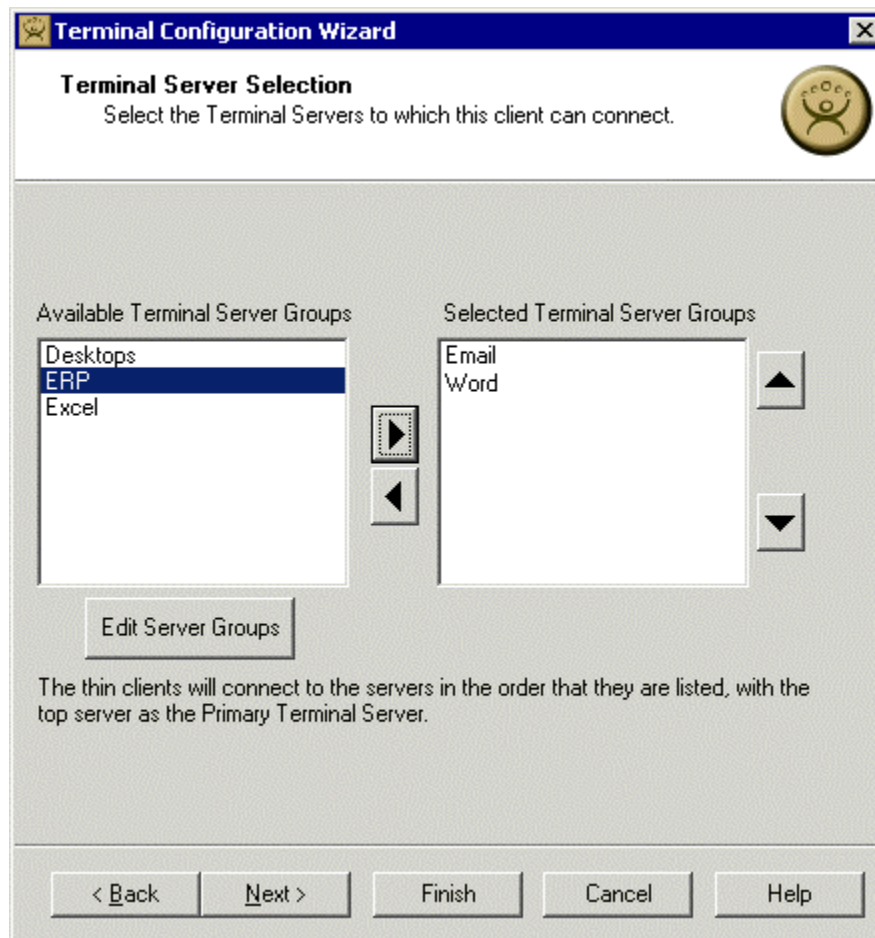


Terminal Configuration Wizard - Group Terminal Server Selection

The terminal will need Terminal Server Groups selected that contain the terminal servers that the terminals will connect to.

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

Terminal Server Groups Selection Page



Terminal Configuration Wizard - Terminal Server Selection

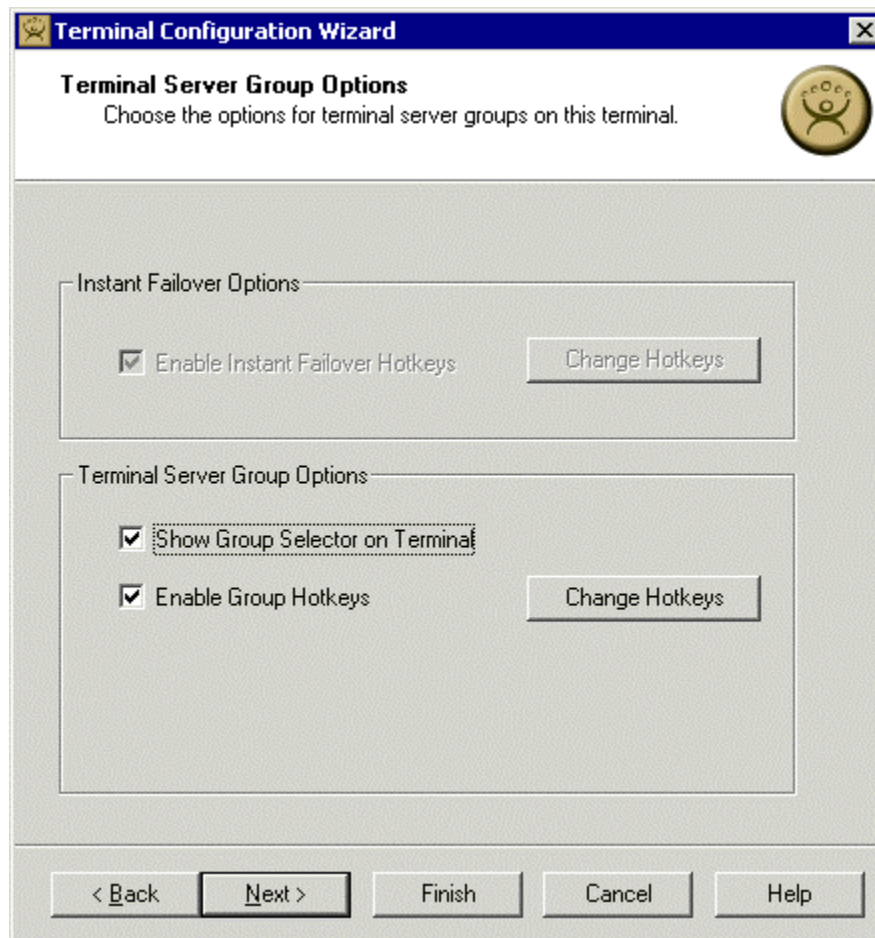
Once the **Terminal Server Group** wizard has run, each Terminal Server Group that is identified in the Terminal Server Group Wizard will initially appear in the **Available Terminal Server Groups** box on the left of the **Terminal Server Selection** page.

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

The **Enforce Primary Terminal Server Connection** will cause a terminal to return to the primary terminal server whenever that server is available. This is not available with Smart-Session.

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

Terminal Server Group Options Page



The screenshot shows a window titled "Terminal Configuration Wizard" with a close button in the top right corner. Below the title bar, the page is titled "Terminal Server Group Options" and includes the instruction "Choose the options for terminal server groups on this terminal." A small circular icon with a person and a plus sign is located in the top right corner of the main content area.

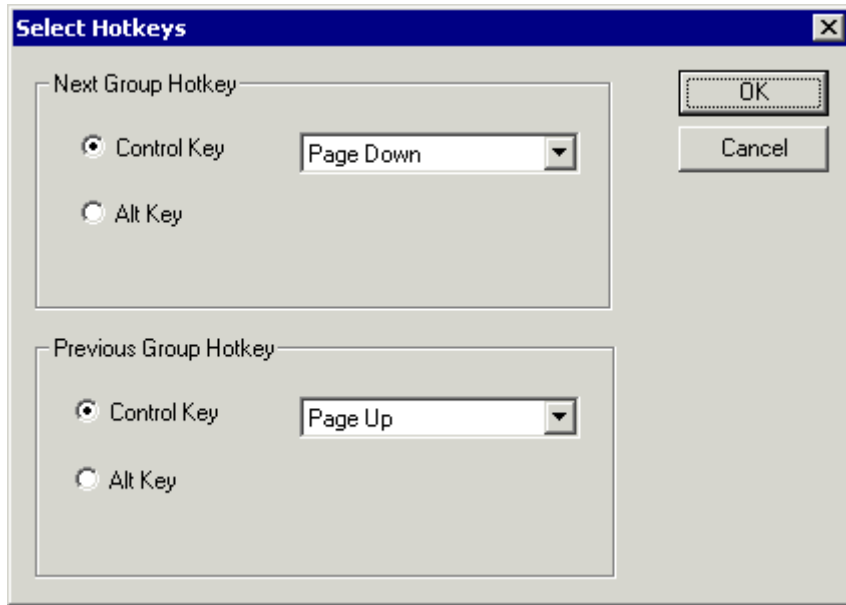
The main content area is divided into two sections:

- Instant Failover Options:** This section contains a checkbox labeled "Enable Instant Failover Hotkeys" which is checked. To the right of this checkbox is a button labeled "Change Hotkeys".
- Terminal Server Group Options:** This section contains two checkboxes, both of which are checked: "Show Group Selector on Terminal" and "Enable Group Hotkeys". To the right of these checkboxes is a button labeled "Change Hotkeys".

At the bottom of the window, there is a row of five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help". The "Next >" button is highlighted with a thick border.

Terminal Configuration Wizard - Terminal Server Group Options

A terminal using MultiSession will have a page that allows the configuration of the hotkeys that allow switching between sessions. Select the **Change Hotkey** button to configure hot keys.



Terminal Configuration Wizard - Select Hotkeys

The hotkey to switch between the multiple sessions are set by default to **Control+Page Up** and **Control+Page Down**. The hot keys can be changed by using the dropdown boxes.

Select **OK** to continue.

Continuation of the Terminal Configuration

The configuration paths (Independent Terminal Servers vs. Terminal Server Groups, MetaFrame vs. Device Services and RDP) unite at the Login Configuration.

The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard". It has a blue title bar with a close button. Below the title bar, the text "Login Information" is displayed in bold. A paragraph of instructions follows: "Enter the login information if the client is to login automatically. Leave the login information blank or fill only some of the fields to force manual login." To the right of this text is a circular icon with a stylized figure. The main area of the dialog is divided into two sections. The first section, titled "Login Information", contains four text input fields labeled "Username", "Password", "Verify Password", and "Domain". The second section, titled "Initial Program", contains a paragraph of instructions: "Designating an initial program will launch that program after the session is created. Closing this program will end the session. Leave this blank to launch the normal Windows desktop." Below this text is a single-line text input field and a "Browse" button. At the bottom of the dialog are five buttons: "< Back", "Next >", "Finish", "Cancel", and "Help".

Terminal Configuration Wizard - Login Information

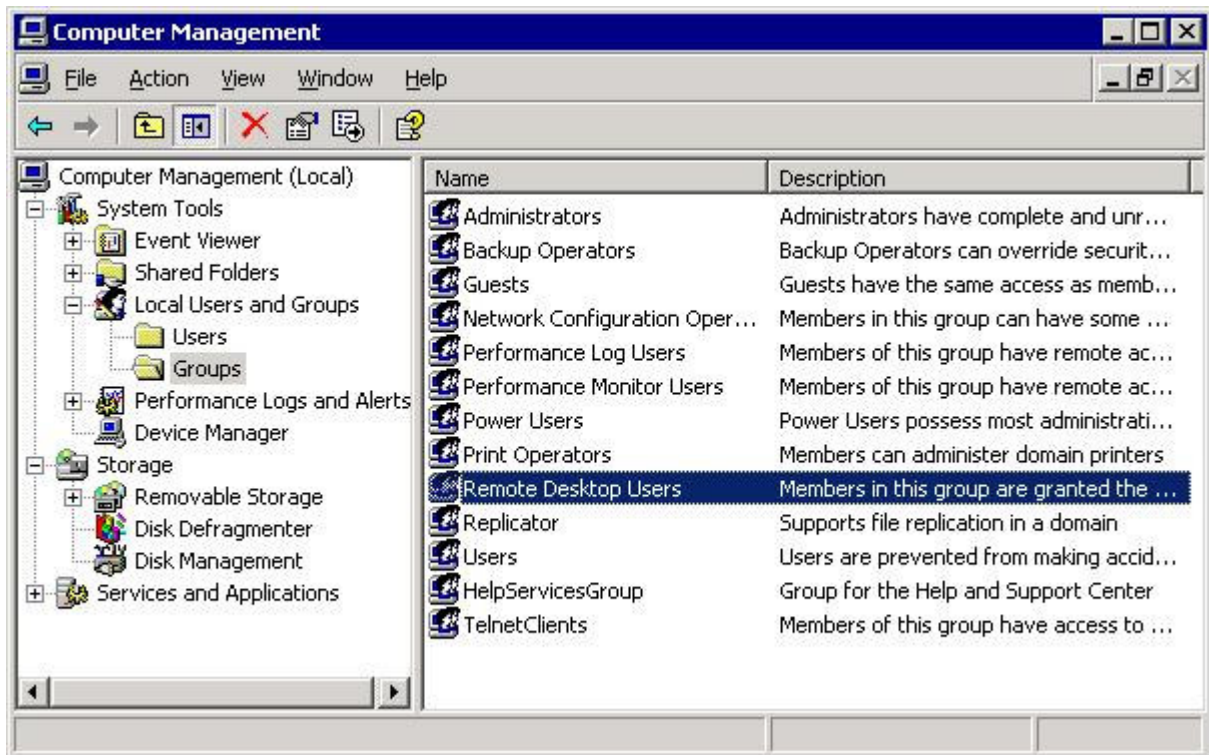
It is recommended that each terminal should login to a Terminal Server with a unique profile.

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.

Note: RDP will not allow auto-login by default. See Configuring RDP for Auto-Login for details.

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.

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

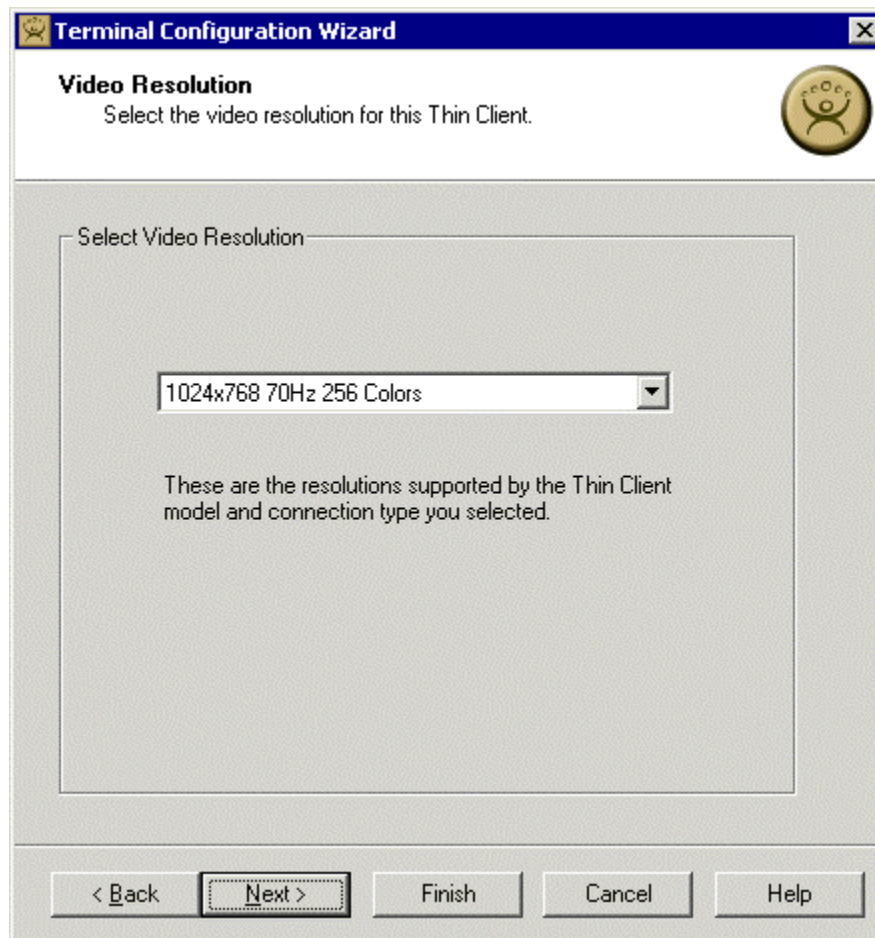
The **Initial Program** loads the designated program instead of the Windows desktop when the terminal connects to the Terminal Server. If a program is launched as the initial program, it is the only program that will run. This provides a level of security and control because that program is the only 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.

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

Note: When using the Initial Program with failover, the path must be identical on all terminal servers.

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 a drop-down box that allows the video resolution to be set for the terminal.

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 the ICA client with Citrix MetaFrame 1.8 FR1 or greater.

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

WinTMC Settings Page

Terminal Configuration Wizard

WinTMC Settings
Select the local devices to be redirected, select the experience settings and client control settings.

Redirect Local Resources

- ☐ Redirect Serial Ports ☐ Use Group Settings
- ☐ Redirect Drives
- ☐ Redirect Printers
- ☐ Redirect Sound
- ☐ Redirect Smart Cards

Client Control Settings

- ☒ Allow client to be closed ☐ Use Group Setting
- ☒ Allow client to be sized

Experience Settings

- ☒ Show desktop background ☐ Use Group Setting
- ☒ Show window contents while dragging
- ☒ Show menu / window animations
- ☒ Show themes

< Back Next > Finish Cancel Help

WinTMC Settings

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 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.

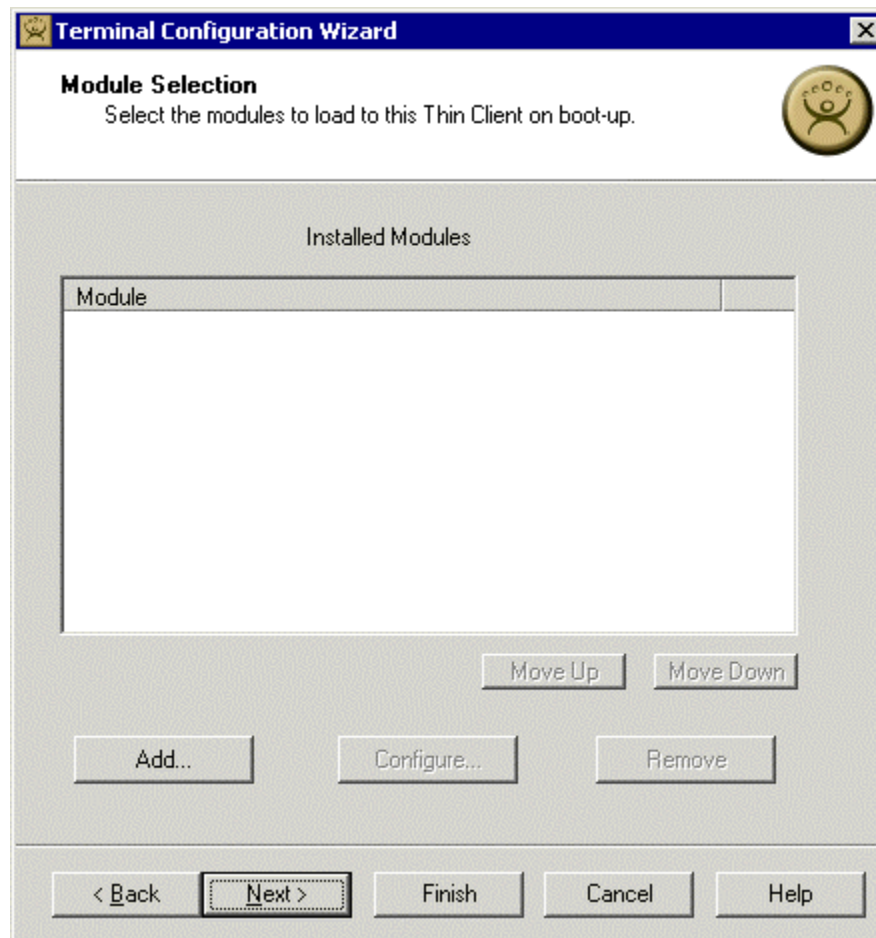
Experience Settings:

- **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.

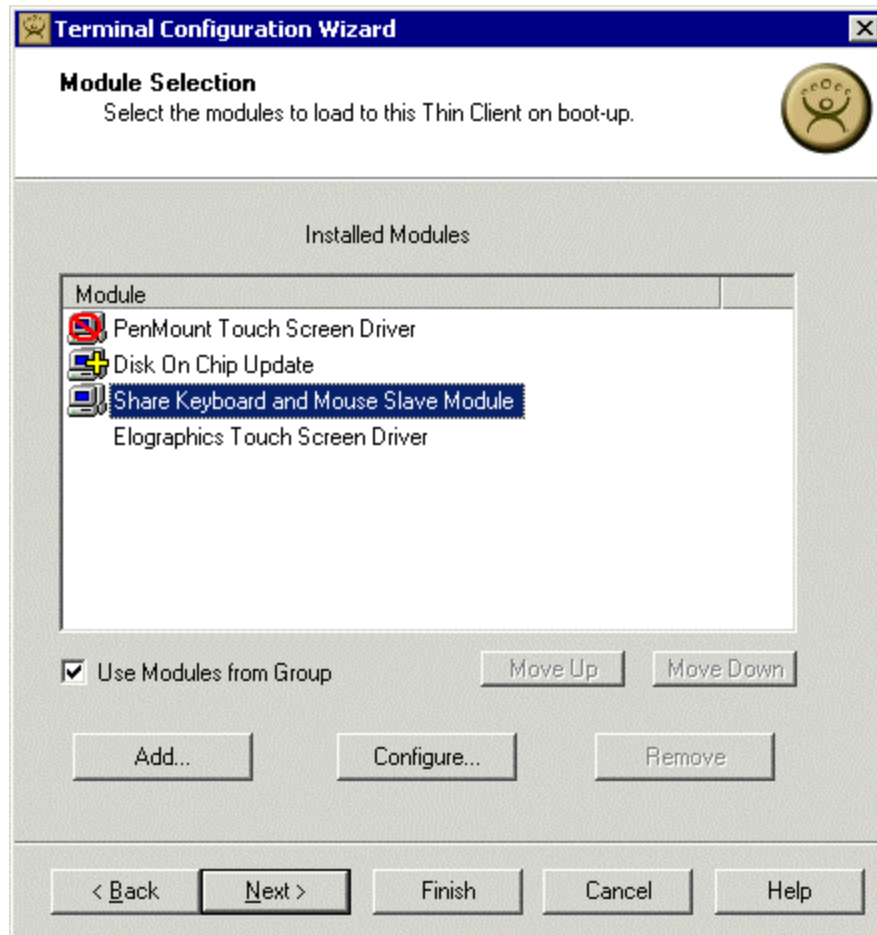
Terminal Module Selection Page



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 and select the Module from the list.



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 properties assigned by the Group.
-  The Group icon with yellow plus sign represents properties that are changed on the terminal from the Group settings.
-  The Group icon and red circle represents a terminal that isn't using an assigned Group module. The **Use Modules from Group** checkbox was un-selected.
- No icon indicates that the module was added to the Terminal and not the Group.

To add a Module to a Terminal, select the **Add...** button and select the Module from the list.

Highlighting the module and selecting the **Configure** button can change some module parameters. Select the parameter to change, select the new value in the drop-down list and click the **Set** button. A yellow plus sign will be displayed on the icon as an indicator.

To remove a Group Module, uncheck the **Use Group Properties** checkbox. This will put the red circle on the icon as an indicator.

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

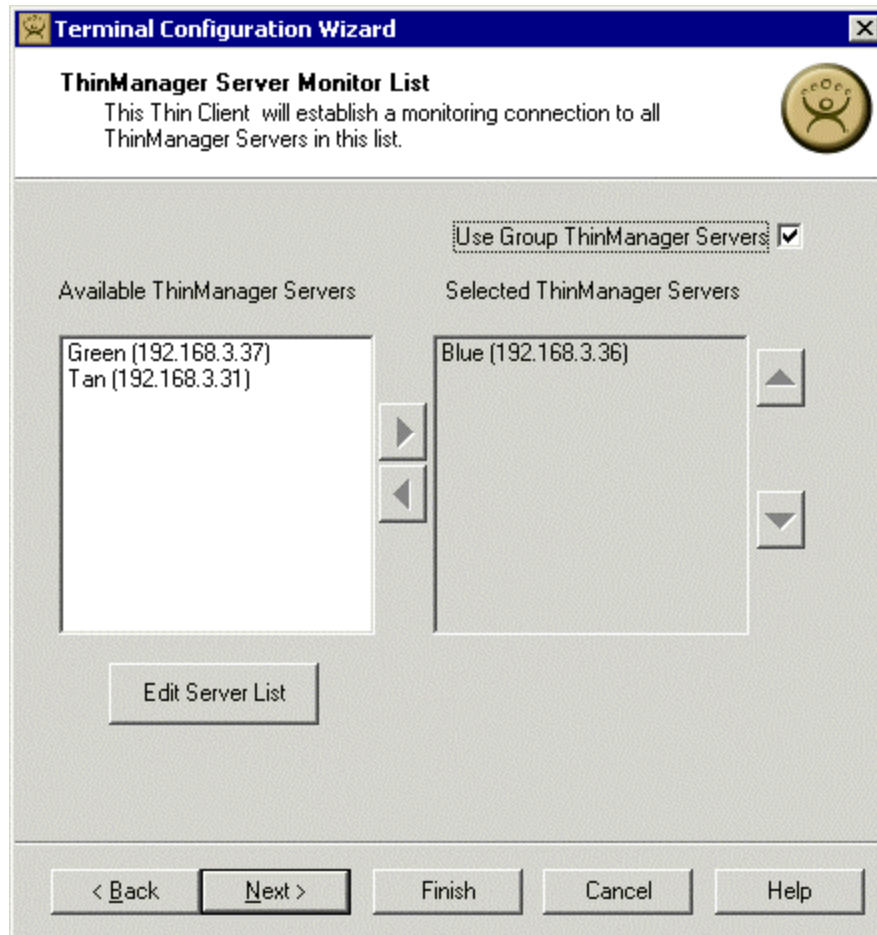
ThinManager Server Monitor List Page



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.

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
Select the setting for how often the Terminal Server status is monitored by this Thin Client

☐ Use Group Monitoring Setting

Monitor Interval

☒ Fast
☐ Medium
☐ Slow
☐ Custom

Monitor Interval: 5 Seconds
Monitor Timeout: 1 Seconds
Monitor Retry: 3
Primary Up Delay Multiplier: 6
Primary Up Delay: 30 Seconds

< Back Next > Finish Cancel Help

Terminal Configuration Wizard - Monitoring Configuration

ThinManager Ready Thin Clients continuously monitor the terminal servers to which they are connected to make sure that the terminal server stays online. If the terminal server goes offline, the terminal will disconnect and connect to the next Terminal Server that it was assigned to in the Terminal Server Selection. The Monitoring Connection sets the frequency that the monitoring 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.

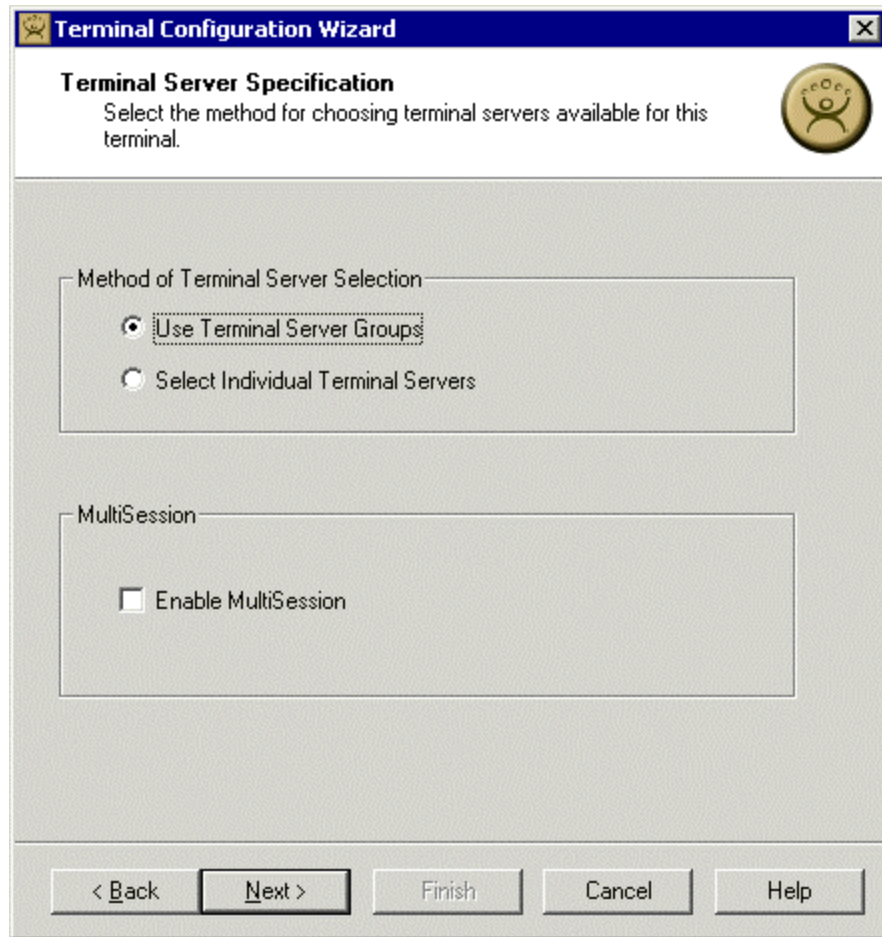
Terminal Server Groups

Terminal Server Group Overview

Terminal Server Groups are collections of Terminal Servers. A ThinManager Ready thin client can connect to one or more terminal servers that are members of a Terminal Server Group. Instead of specifying individual terminal server that a terminal will connect to a terminal server defined in a terminal server group. The specific terminal server that the terminal connects to is based on the Terminal Server Group configuration and options.

- A **standard Terminal Server 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 Terminal Server Group with the most available resources.
- The **Instant Failover** option allows a terminal to connect to two terminal servers within a Terminal Server 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 a Terminal Server 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 Terminal Server Groups. The user can switch between groups using an on-screen menu or hot keys. These groups may be standard Terminal Server Groups, Terminal Server Groups with SmartSession, AppLink, and/or Terminal Server Groups with Instant Failover.

These Terminal Server Group options can be combined on the same Terminal Server Group, for example a Terminal Server 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 Terminal Server Groups.

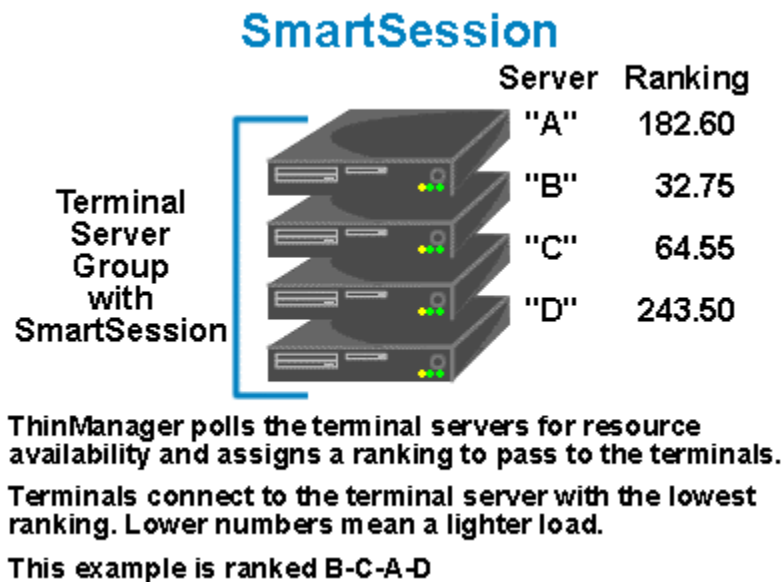


Terminal Configuration Wizard - Terminal Server Specification Page

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

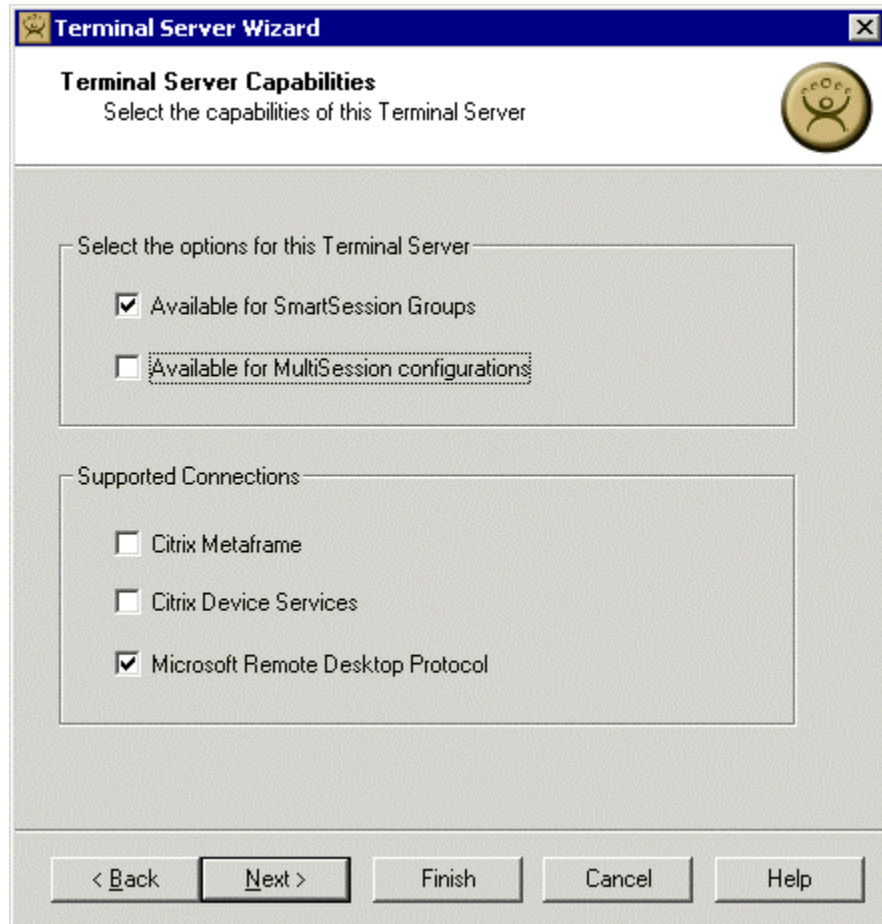
SmartSession

SmartSession is a load balancing strategy that allows terminals to connect to the member of a terminal server 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 a terminal server 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 a terminal server group using SmartSession.

Note: MultiSession can also be enabled on this page.

Terminal Server Wizard

SmartSession Configuration
Enter the SmartSession Limits for this Terminal Server

CPU Utilization

Minimum %

Maximum %

Memory Utilization

Minimum %

Maximum %

Sessions

Minimum

Maximum

< Back Next > Finish Cancel Help

Terminal Server List Wizard - SmartSession Configuration

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:

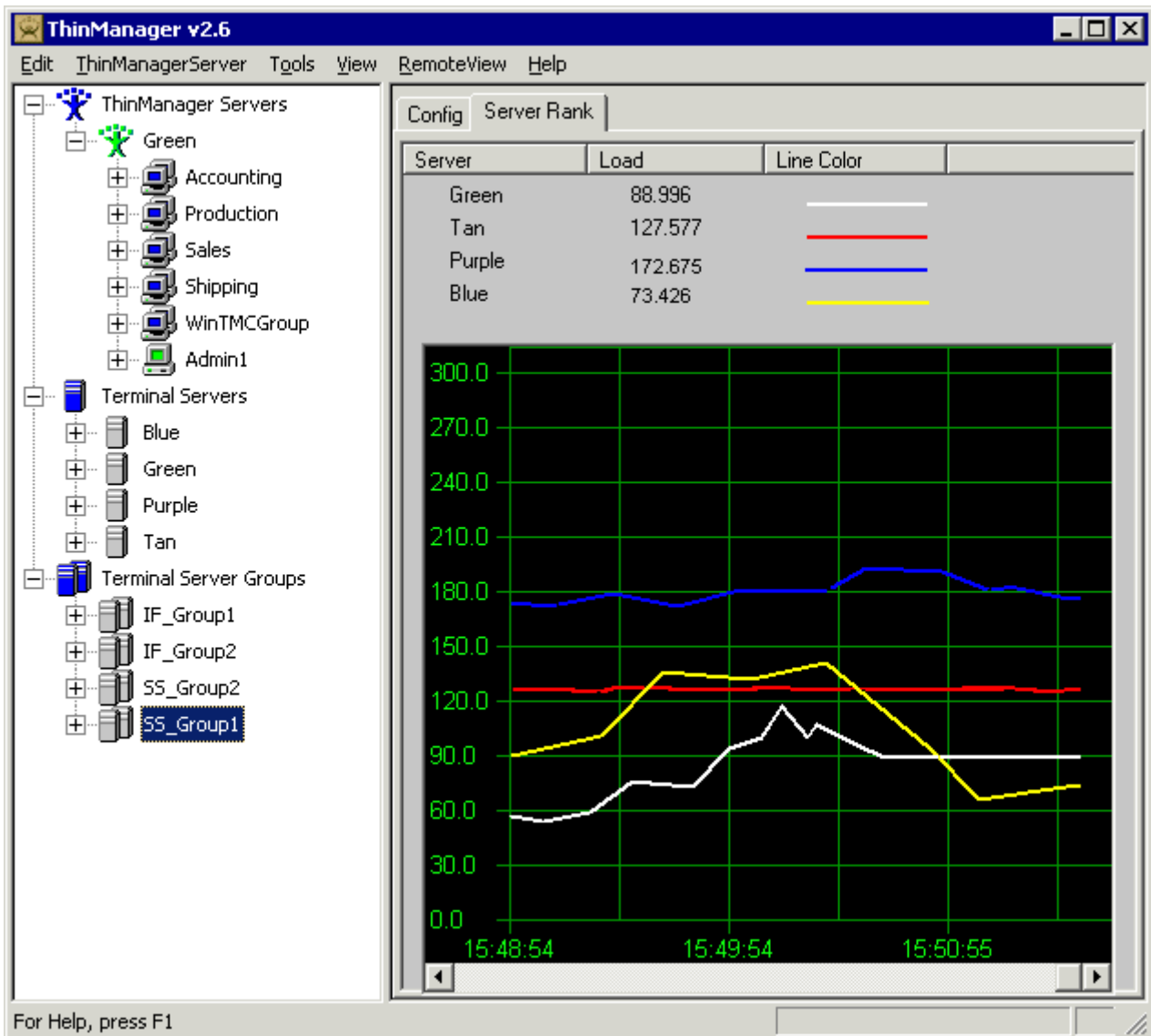
- **CPU Utilization**
- **Memory Utilization**
- **Number of Sessions**

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 a Terminal Server Group is highlighted in the ThinManager tree. In the example above a ThinManager Ready thin client would connect to **Blue** because it has the lowest load.

Instant Failover with Terminal Server Groups

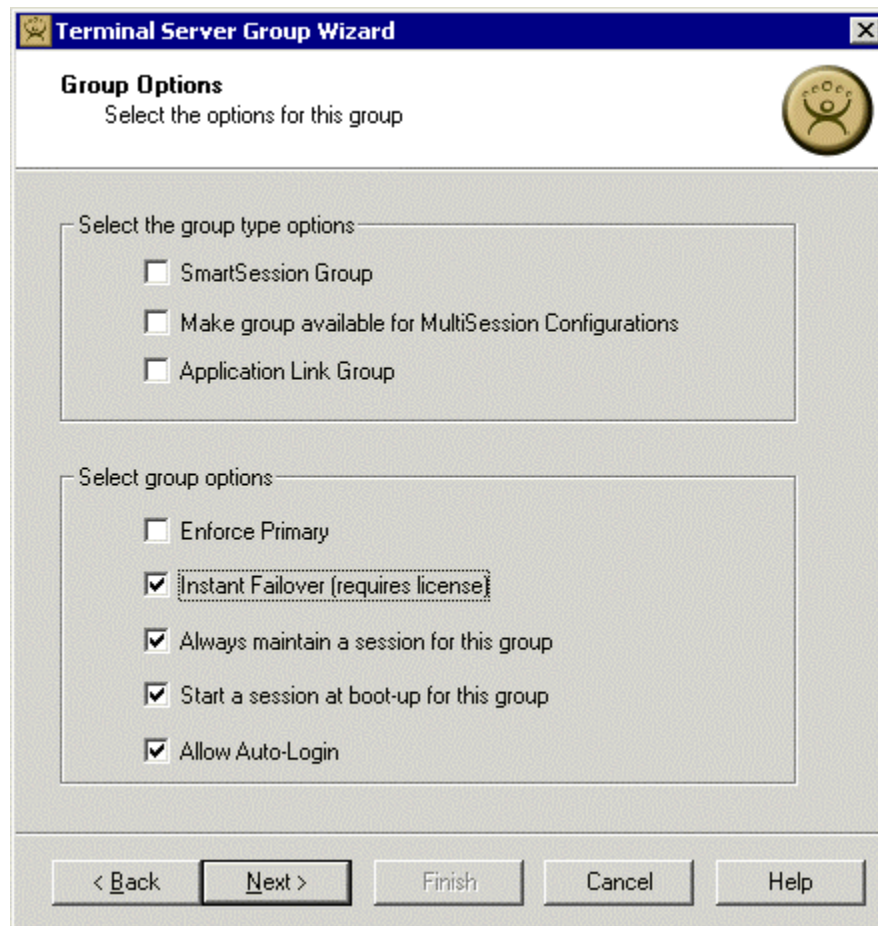
Terminal Server Groups can provide **Instant Failover** without using the **Instant Failover Module**. By selecting the **Instant Failover** checkbox on the **Group Option** page of the **Terminal Server Group Wizard**, a terminal will connect to a session on two terminal servers. Both sessions are active 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.

Instant Failover works within a Terminal Server Group, not between Terminal Server Groups.

In a **standard terminal server 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.

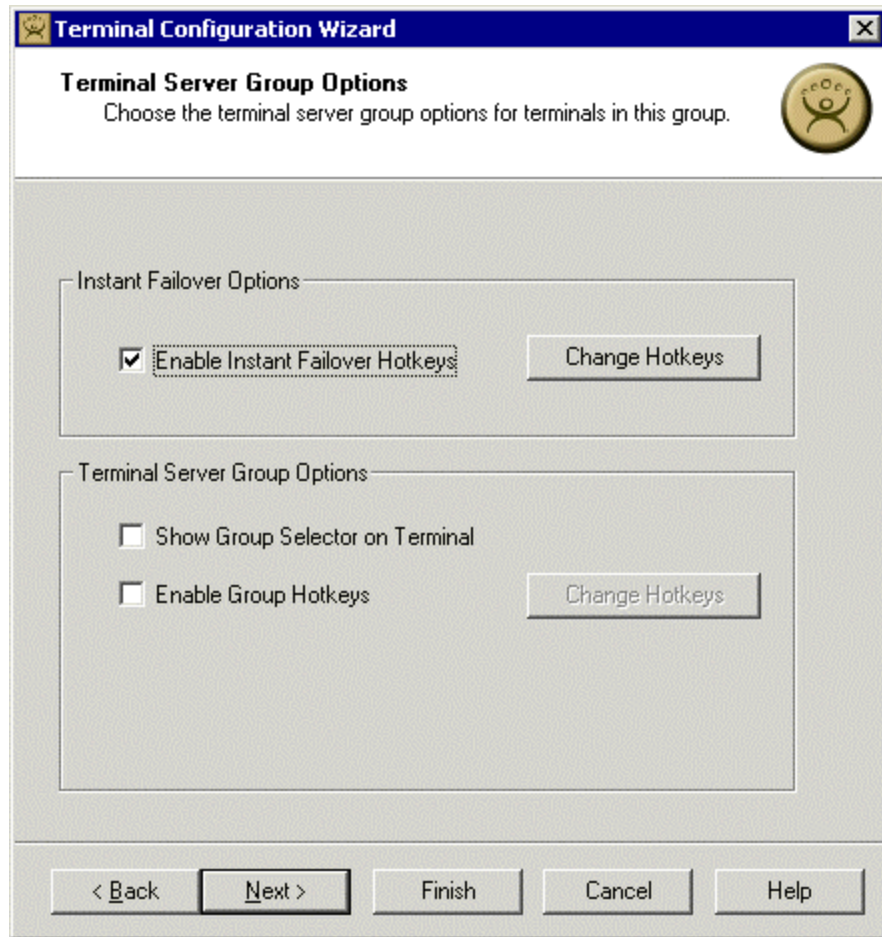
In a **terminal server group with SmartSession**, the primary session will be on the server with the lightest load and the backup session will be on the terminal server with the second lightest load.

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



Terminal Server Group Wizard – Group Options

Instant Failover is a **Group Option** for **Terminal Server Groups**.



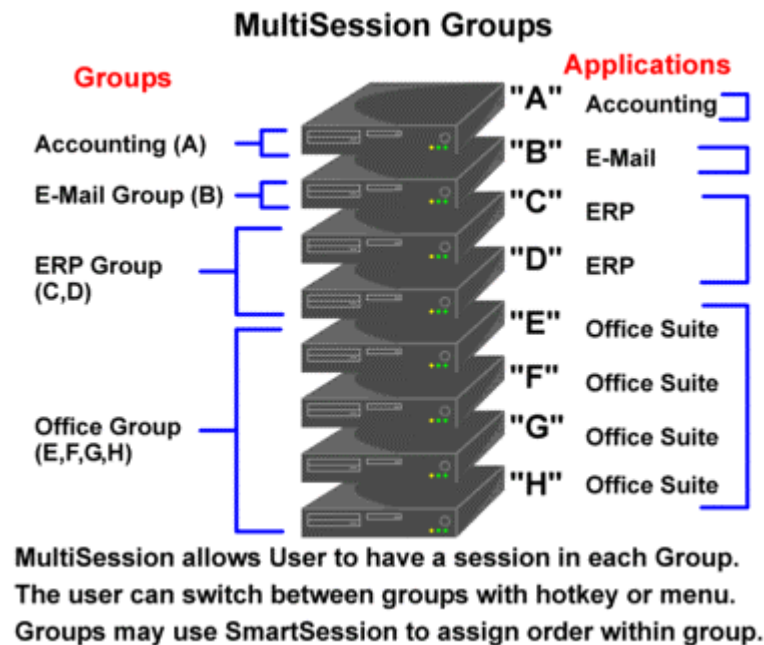
Terminal Server Group Wizard – Terminal Server Group Options

It is possible to switch between the sessions using Instant Failover on the terminal. Check the **Enable Instant Failover Hotkeys** checkbox on the Terminal Server Group Options page of the Terminal Server Group Configuration Wizard to configure the hot keys.

MultiSession

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 terminal server groups. These terminal server groups can be standard groups or have 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

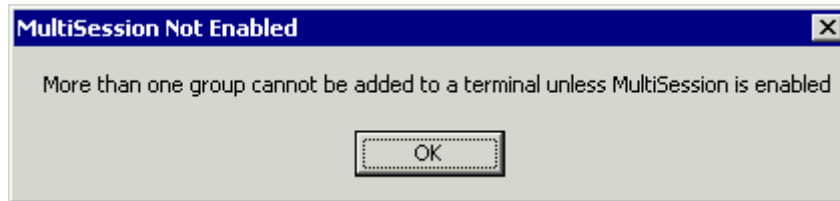
MultiSession is useful in large installations with many servers. Instead of installing every application on every server, individual terminal servers or groups of terminal servers can be dedicated to a single application, a small collection, or a suite. This simplifies maintenance, upgrading, and security,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

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

Enabling MultiSession is a three-step process.

- First, the Terminal Servers need to be configured for MultiSession in the **Terminal Server List Wizard**.
See Terminal Server List Wizard for details.
- Second, the Terminal Server Groups need to be configured for MultiSession in the **Terminal Server Group List Wizard**.
See Terminal Server Group List Wizard for details.

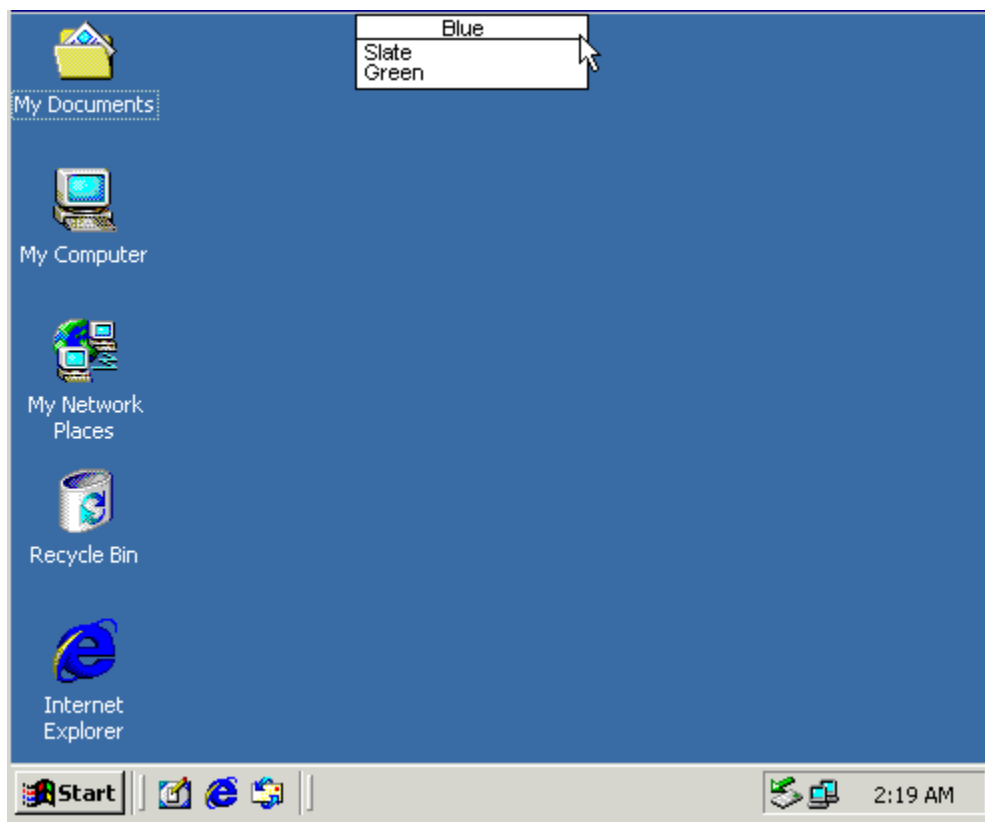
- Third, the Group or Terminal needs to be configured to use MultiSession on the **Terminal Server Specification** page of the **Terminal Configuration Wizard**. See Terminal Configuration Wizard for details.



MultiSession Not Enabled Warning

If two Terminal Server Groups are selected without the **Enable MultiSession** checkbox selected in the Terminal Configuration Wizard, a message will be displayed warning that the **Enable MultiSession** checkbox needs to be checked to allow the MultiSession.

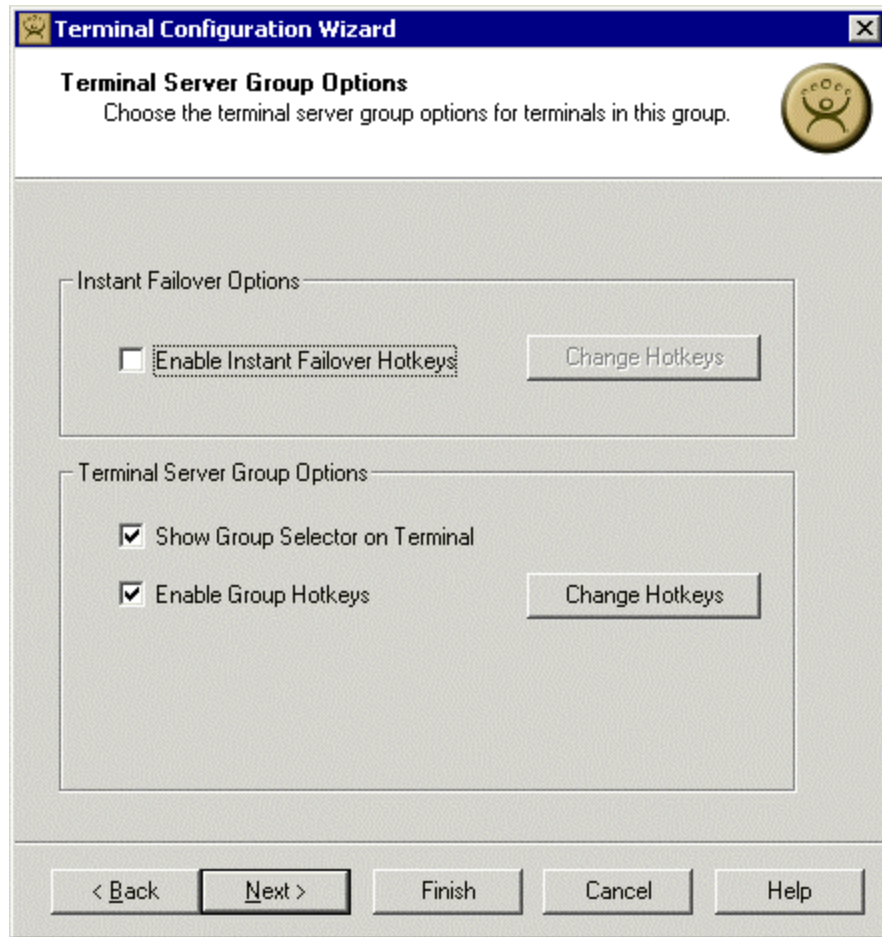
Note: Users can switch between sessions using an onscreen **Group Selector** menu or **hotkeys**.



MultiSession Group Selector

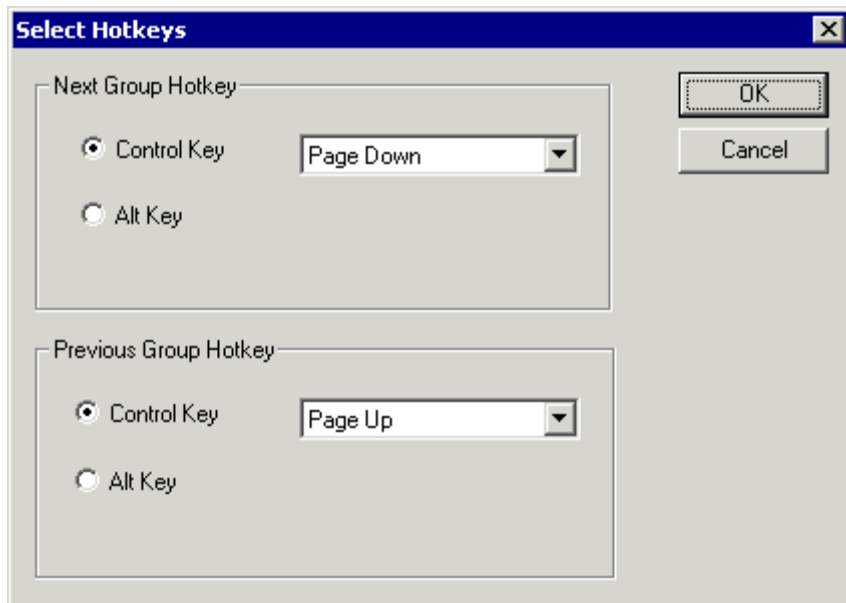
The **Group Selector** shows the Terminal Server Group that the terminal is currently displaying. When activated by the mouse it shows a dropdown list of available Terminal Server Groups.

Hotkeys can be used to switch between the terminal server groups if the **Enable Group Hotkeys** checkbox is selected on the **Terminal Server Group Options** page of the **Terminal Configuration** wizard.



Terminal Server Configuration – Terminal Server Group Options

The choice of the hot keys used can be set by selecting the **Change Hotkeys** button to launch the **Select Hotkeys** window.



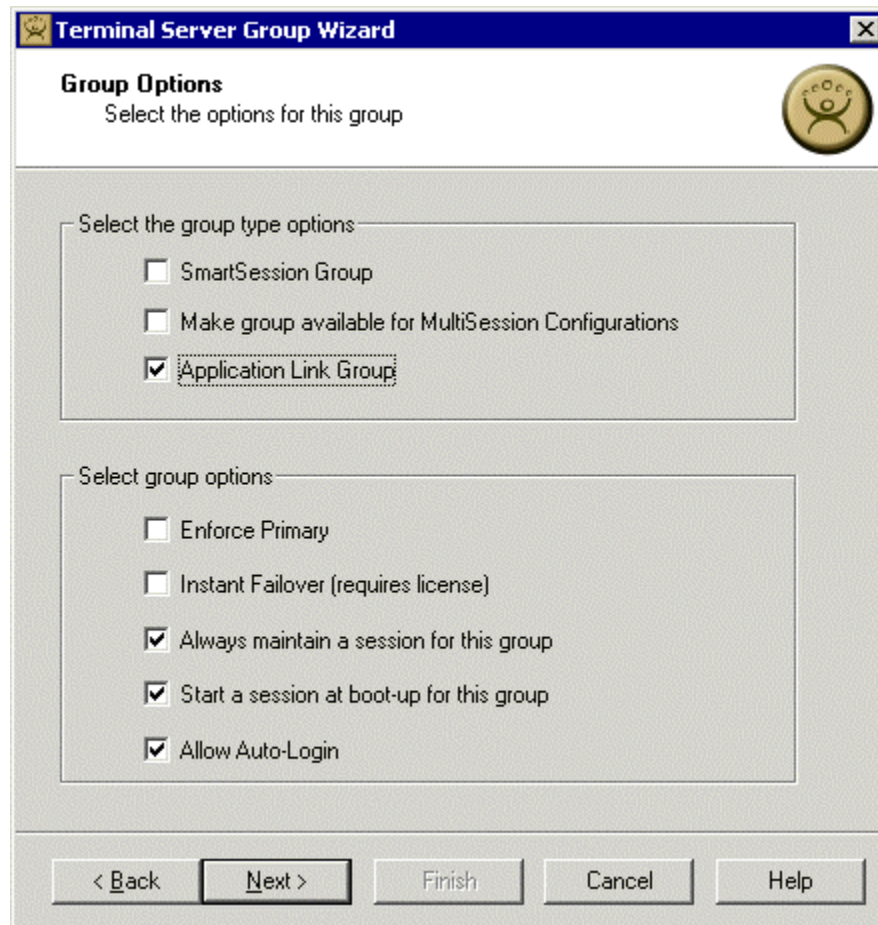
Terminal Configuration Wizard - Select Hotkeys Page

The default hotkeys are **CTRL+Page Down** and **CTRL+Page Up**. These can be changed in the dropdown box.

AppLink

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

AppLink is configured during the Terminal Server Group Wizard. See Terminal Server Group Wizard for details.



Terminal Server Group Wizard – Group Options

Selecting the **Application Link Group** checkbox will make the Terminal Server Group an **AppLink Group**. Selecting **Next** will allow the designation of the Initial Program.



Terminal Server Group Wizard – Linked Application

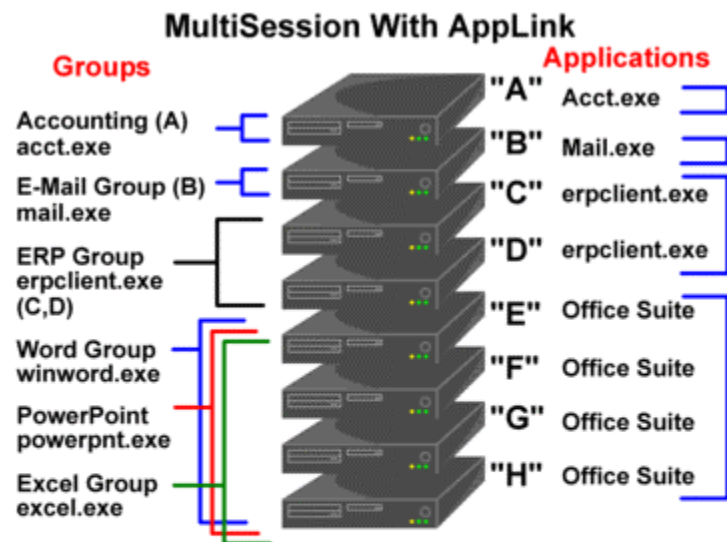
The Linked Application page of the Terminal Server Group Wizard has an ***Enter the path to the Linked Application*** field. Fill in the field for the **Initial Program** with the valid path to the desired program. This may require the use of quotation marks if there are spaces in the path name.

The AppLink Terminal Server 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 Terminal Server Group. If different members of the AppLink group have different paths to the desired program, write a batch file to open the program.

AppLink and MultiSession

MultiSession receives a major increase in functionality in combination with AppLink. Since AppLink adds the **Initial Program** functionality to Terminal Server Groups, a terminal server group with AppLink will display an application instead of a desktop. The user can switch between applications as they switch between AppLink sessions in the different Terminal Server Groups. This allows terminal servers to be set up and maintained by application instead of having every application installed on every terminal server.



AppLink is MultiSession with an assigned application to run.
Each Session runs a single application.

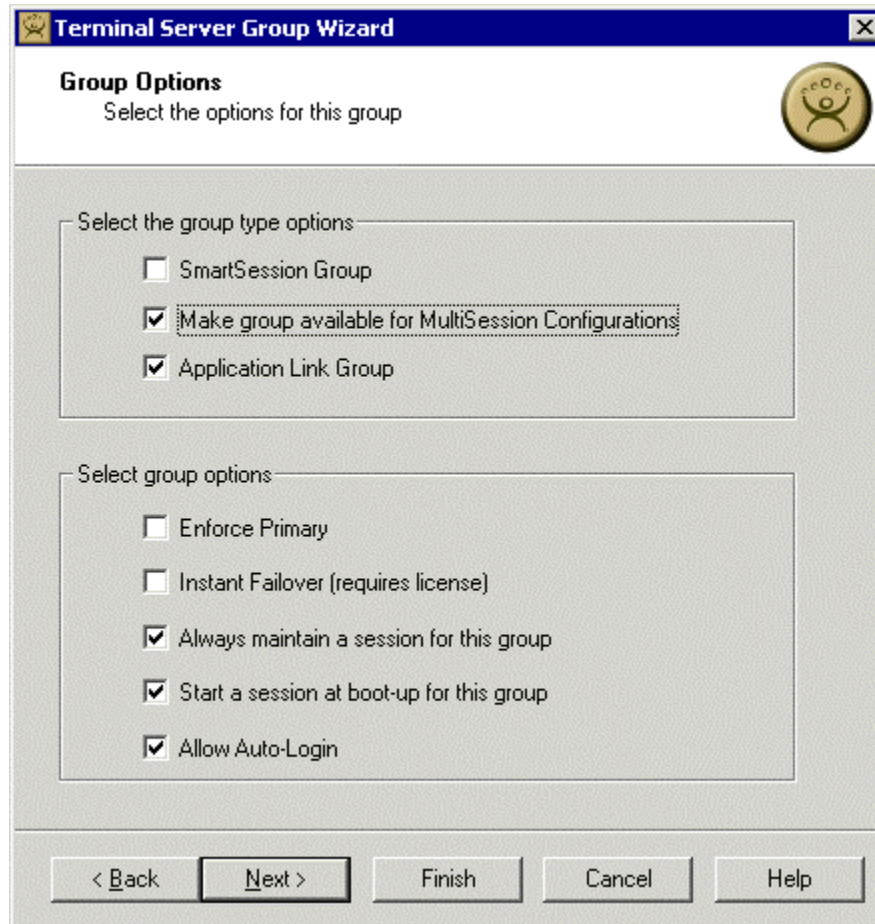
Servers can be devoted to a single application or suite to streamline maintenance and limit programming conflicts.

A server can have applications in several groups as shown by the Office Suite servers.

Groups may use SmartSession to assign order within group.

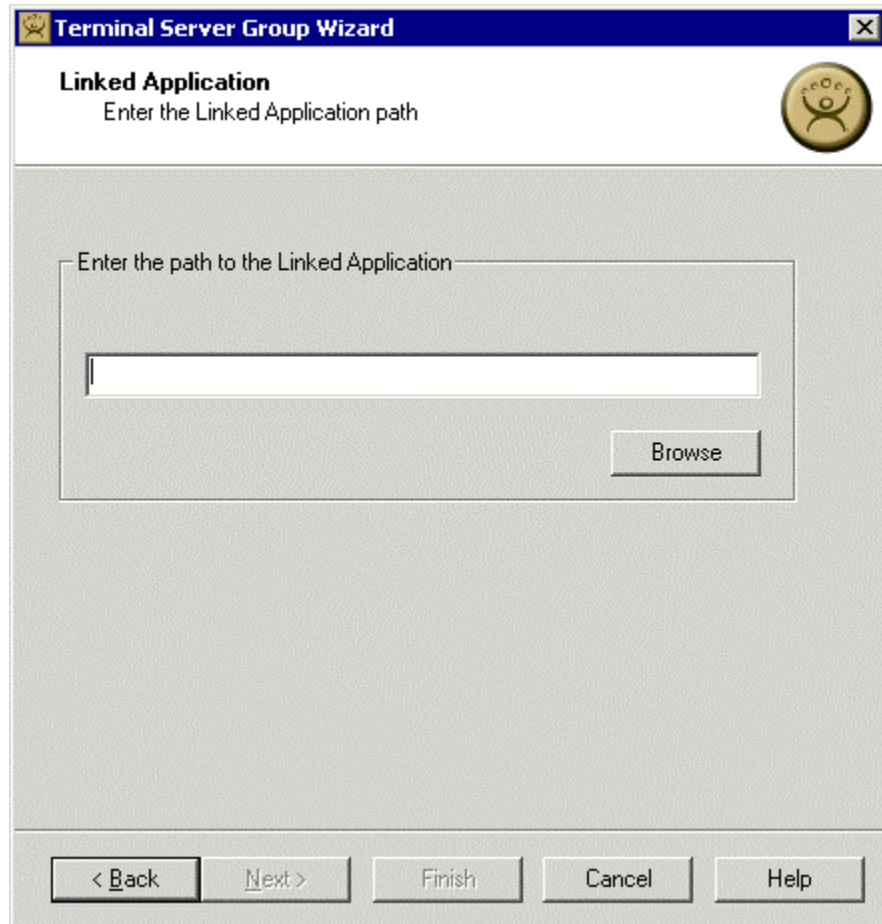
AppLink Servers

AppLink MultiSession is configured in the Terminal Server Group Wizard.



Terminal Server Group Wizard – Group Options

Select the ***Make group available for MultiSession configurations*** checkbox and the ***Application Link Group*** checkbox to make the Terminal Server Group an AppLink MultiSession Group.

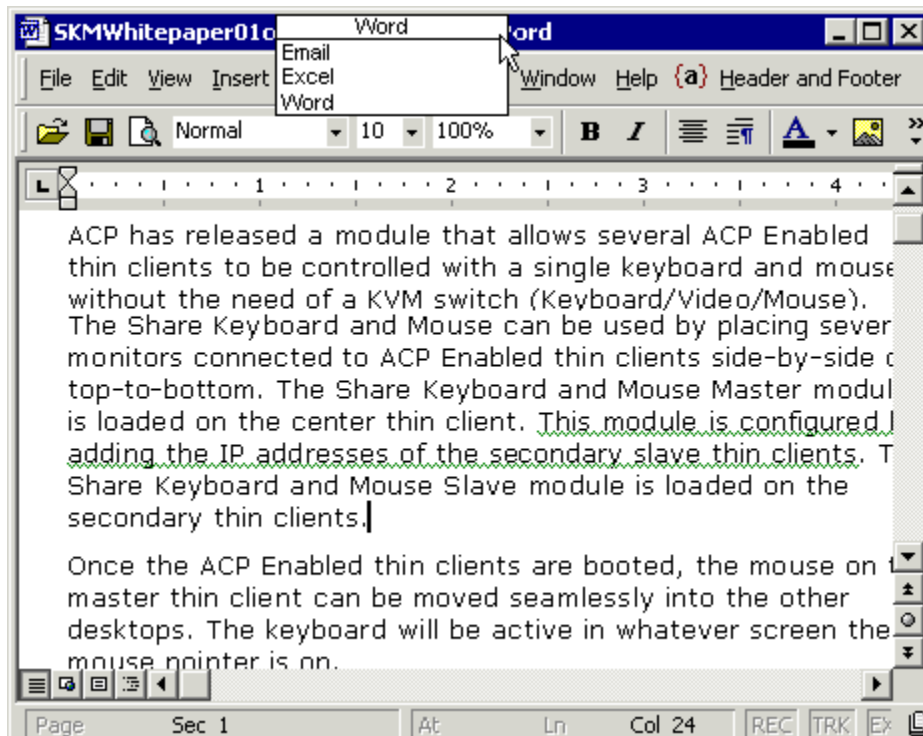


Terminal Server Group Wizard – Linked Application

The Linked Application page of the Terminal Server Group Wizard has an ***Enter the path to the Linked Application*** field. Fill in the field for the ***Initial Program*** with the valid path to the desired program. This may require the use of quotation marks if there are spaces in the path name.

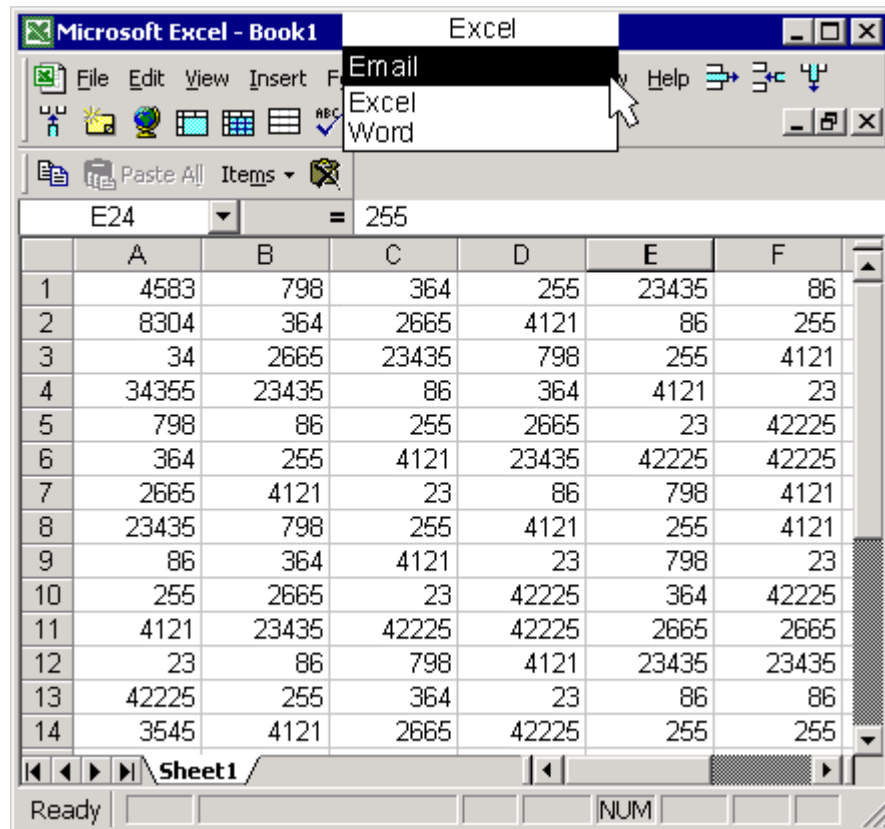
The **AppLink MultiSession Terminal Server Group** may be a single terminal server or may contain many terminal servers. These can be **Standard Groups** or **SmartSession Groups**.

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



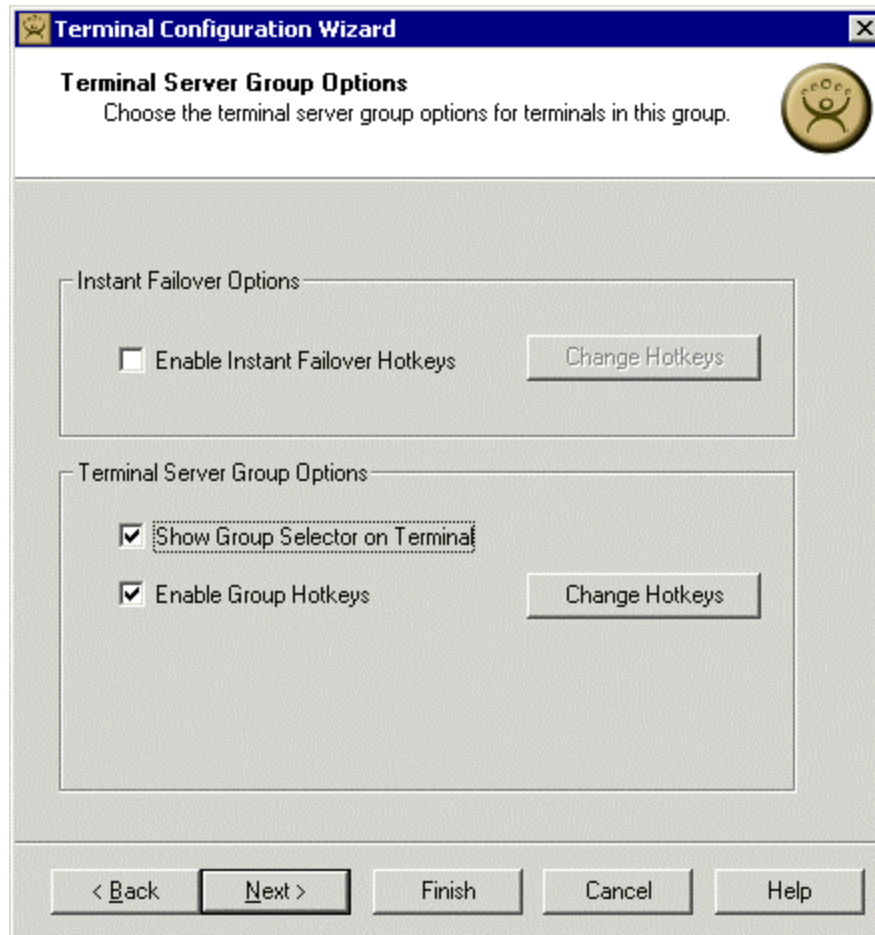
AppLink MultiSession Terminal Screen

The terminal will display a **Group Selector** menu at the top edge of the session when it boots. The Group Selector lists the Terminal Server Group that the terminal is currently displaying. When activated by the mouse it shows a dropdown list of available AppLink Terminal Server Groups.



Group Selector

The user can switch between the AppLink Terminal Server Groups by using an on-screen **Group Selector** or by using **hotkeys**.



Terminal Server Configuration – Terminal Server Group Options

The **Show Group Selector on Terminal** checkbox will display the mouse activated Group Selector at the top edge of the terminal screen. Hotkeys can be used if the **Enable Group Hotkeys** checkbox is selected on the **Terminal Server Group Options** page of the **Terminal Configuration Wizard**. Both methods can be used, but at least one method must be available.

Additional ThinManager Functionality

ThinManager to Terminal Server Connection

ThinManager can connect to the terminal servers and pull resource data, session information, and server load from the terminal servers. Additionally, an administrator can connect to a terminal server and run an RDP session from within ThinManager.

Permission Setup

ThinManager needs permission to pull the data into ThinManager. This is configured in the Terminal Server List Wizard.

Launch the Terminal Server List Wizard by selecting ***ThinManagerServer> Server List Management> Terminal Server List*** in the menu.

Navigate to the **Terminal Server Name** page.

Terminal Server Wizard

Terminal Server Name
Enter the Terminal Server Name and Login information

Terminal Server Name:

Terminal Server IP:

Login Information

Domain:

User Name:

Password:

Verify Password:

The password and verify password fields do not match

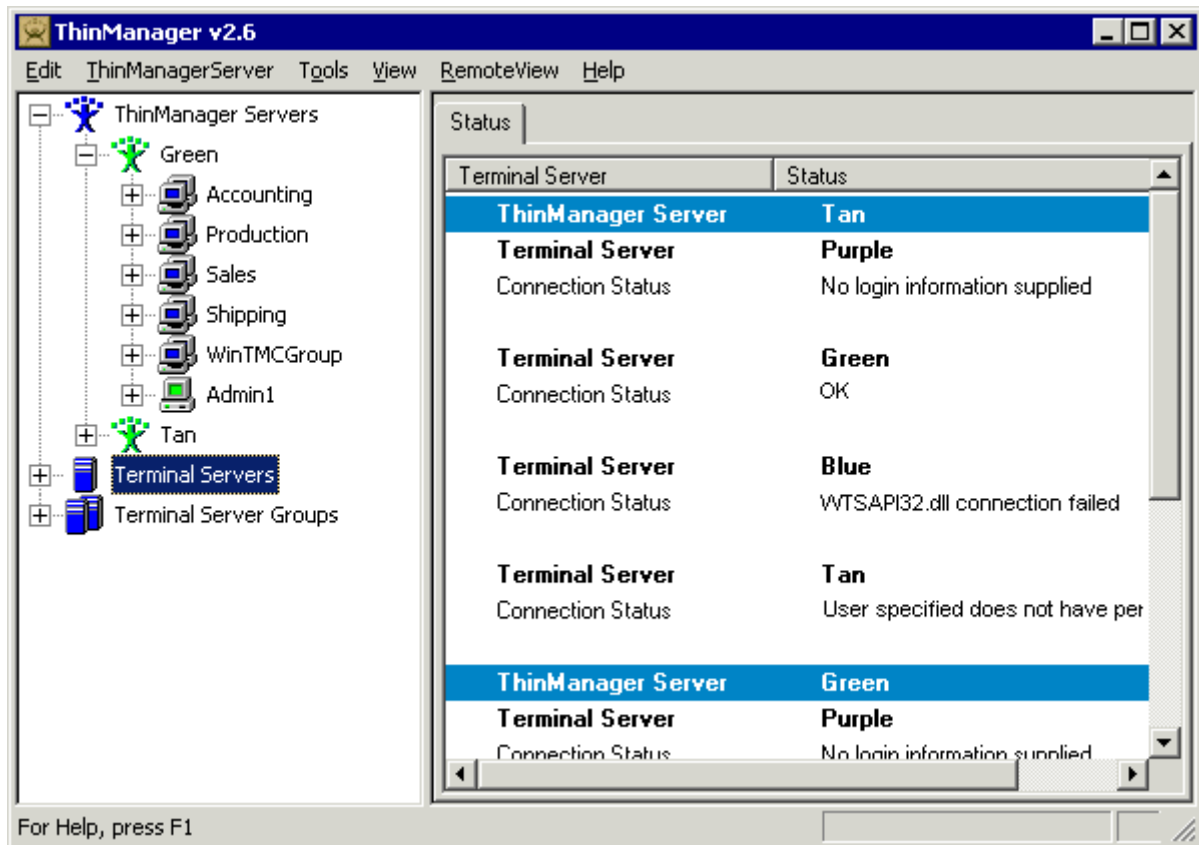
< Back Next > Finish Cancel Help

Terminal Server Name Page

Enter an administrative account in the **User Name** field and the password in the **Password** fields. If the terminal server is in a domain, enter the name of the domain in the **Domain** field.

The **Finish** button will become available when the passwords match.

The connections can be tested by highlighting the Terminal Server branch in the tree.



Terminal Servers Tabs - Status

Highlighting the ThinManager Servers branch of the tree will display the status of the ThinManager to Terminal Server Connection. The Connection Status of the ThinManager Server may have different messages:

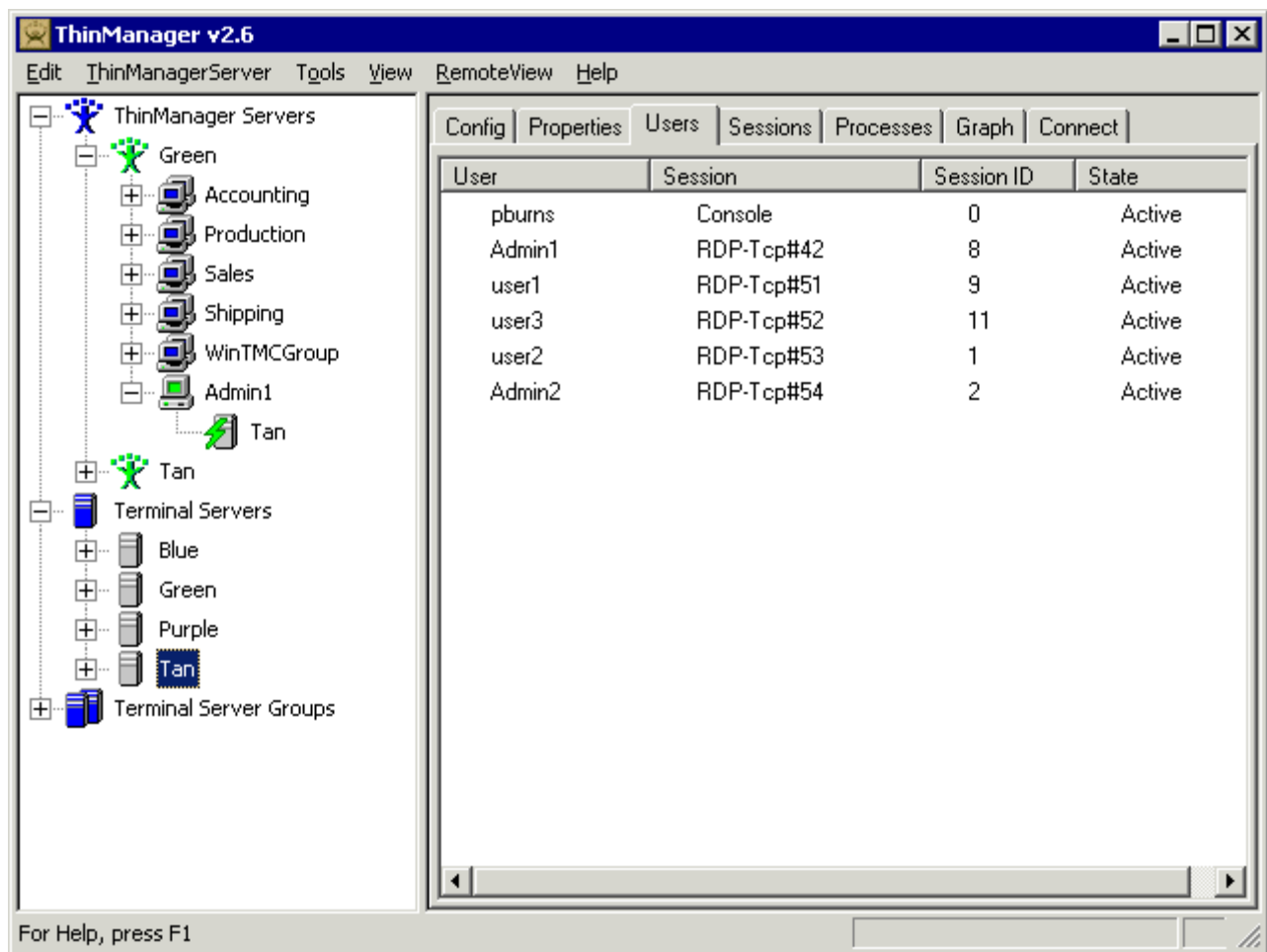
- **OK** indicates a good connection.
- **WTSAPI32.dll connection failed** occurs when the terminal server is off or unreachable.
- **No login information supplied** indicates that the Terminal Server didn't have a username and password added in the Terminal Server List Wizard.
- **User specified does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

Data Display

Terminal Server data can be displayed in ThinManager once the permissions are set.

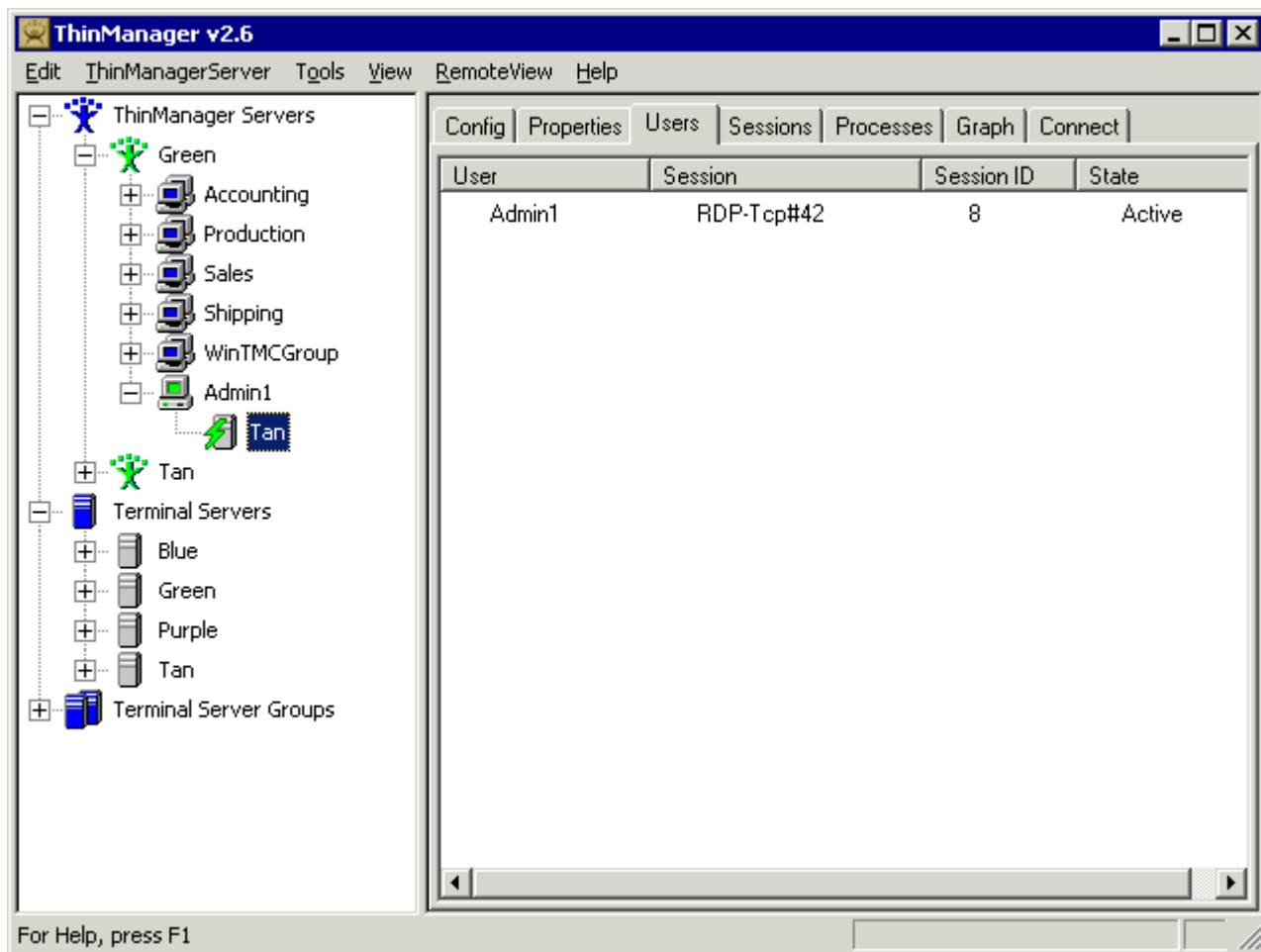
When a terminal server is highlighted in the ThinManager Tree pane, the Detail pane will be tabbed to show the users, sessions, and processes on the terminal server.

When a terminal is expanded in the ThinManager Tree pane and the nested terminal server is highlighted, the Detail pane will be tabbed to show the users, sessions, and processes for the account logged into the terminal server from that terminal alone. This allows an administrator to know what each terminal is running.



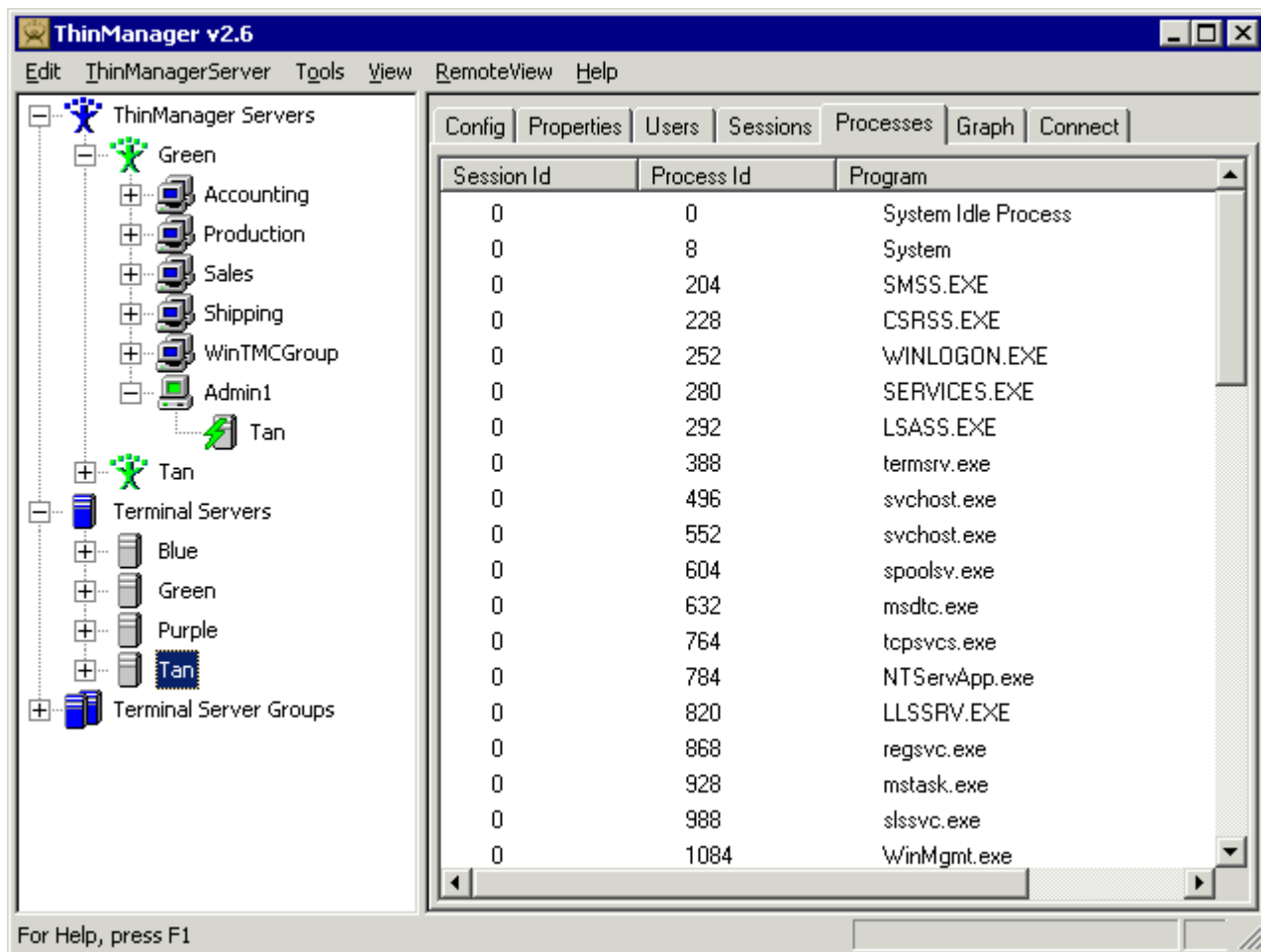
User Tab - Terminal Server

Highlight the terminal server in the Terminal Servers branch and the **User** tab will show the users logged into the terminal server.



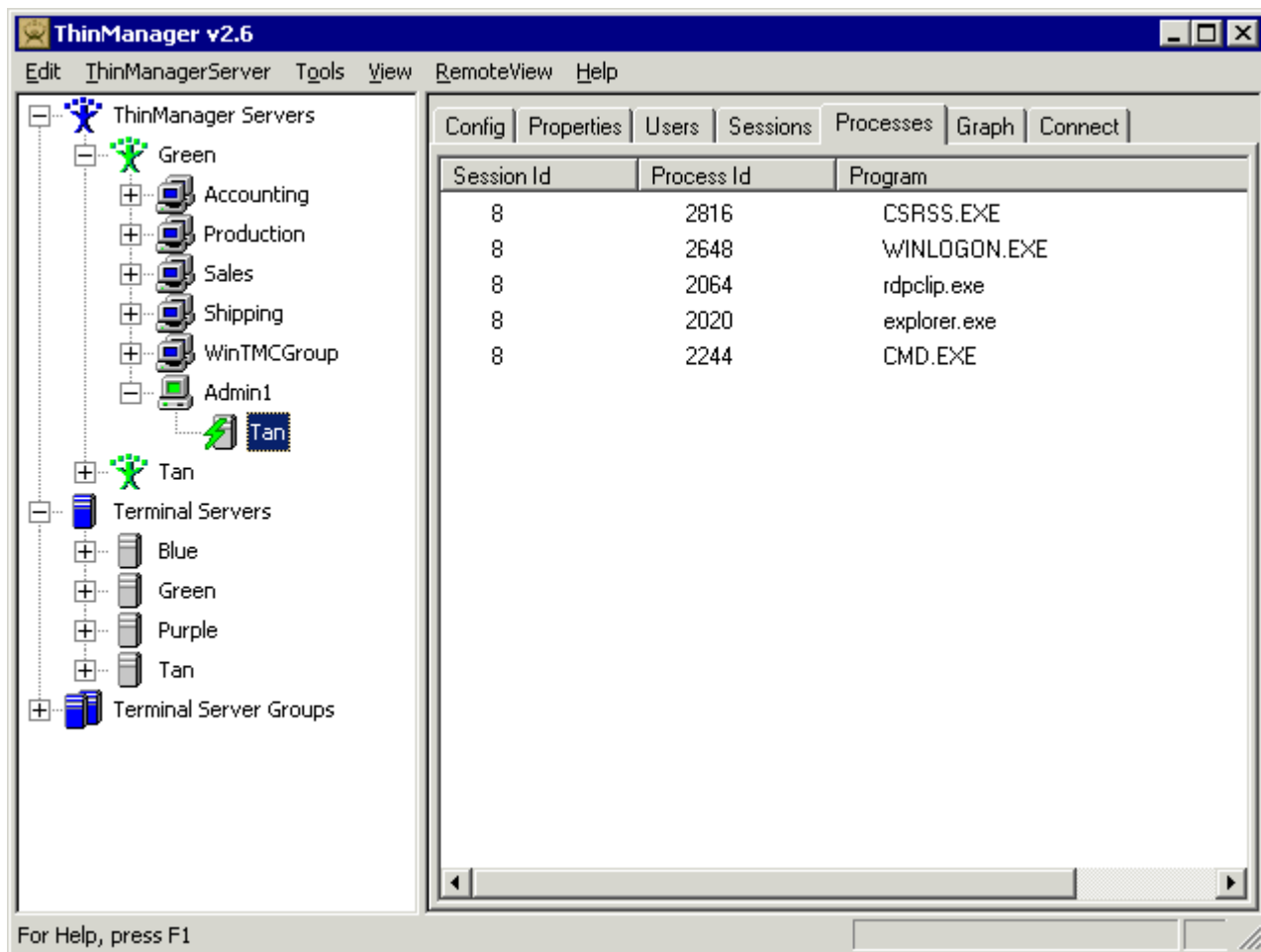
User Tab - Terminal

Highlight the terminal server under a terminal and the **User** tab will show the users logged into the terminal server from that terminal.



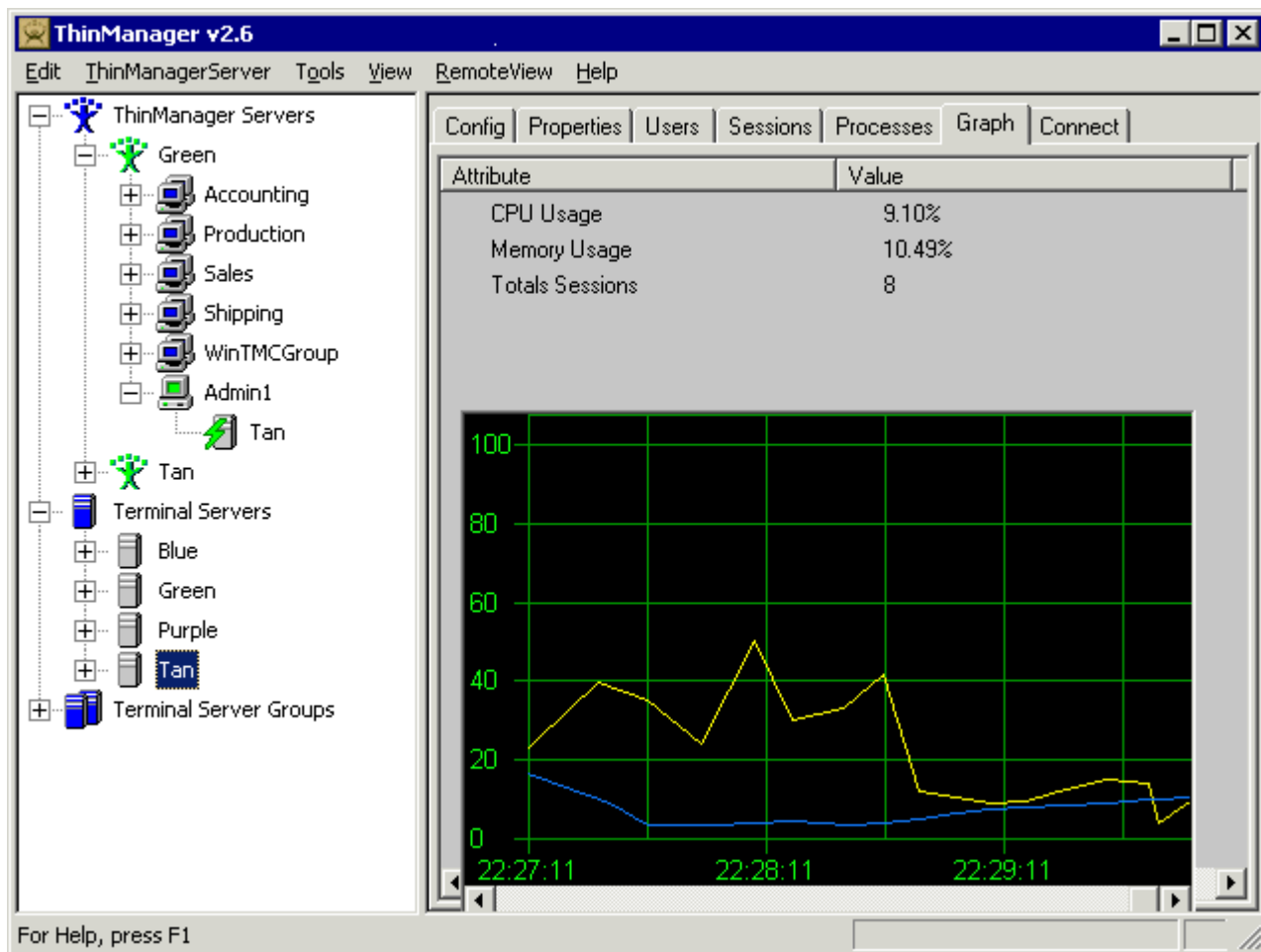
Process Tab - Terminal Server

Highlight the terminal server in the Terminal Servers branch and the **Process** tab will show the processes running on the terminal server.



Process Tab - Terminal

Highlight the terminal server under a terminal and the **Process** tab will show the processes of the user logged into the terminal server from that terminal.



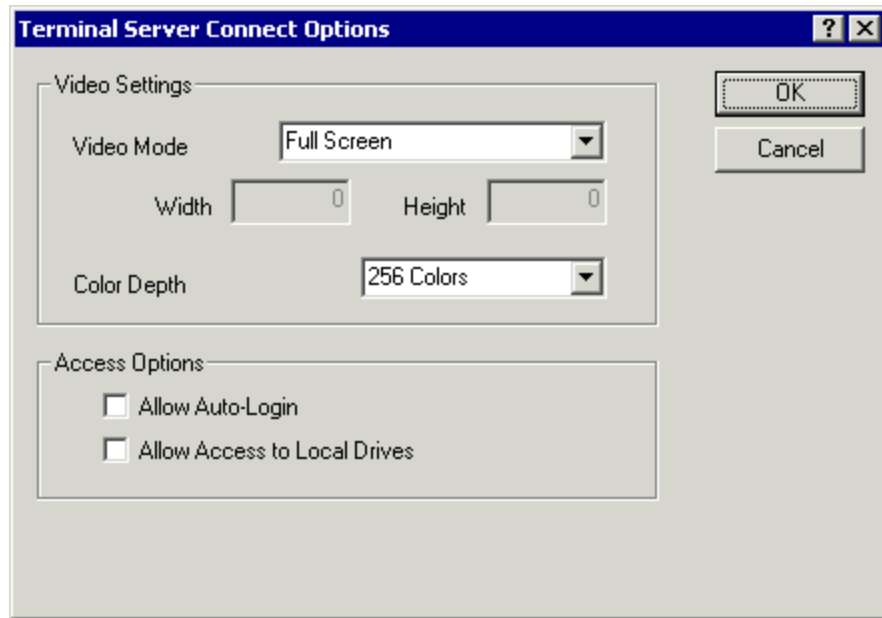
Terminal Server Tabs – Graph

The **Graph** tab will show the memory usage and CPU usage of the selected Terminal Server. Up to 1 hour of historical data is stored for each terminal server.

Remote Connection

The Connect tab allows ThinManager to connect to a terminal server and open a session that is displayed within the Detail pane of ThinManager.

The session is configured in the Remote Control Options window launched by selecting **RemoteView>Connect Options** from the menu.

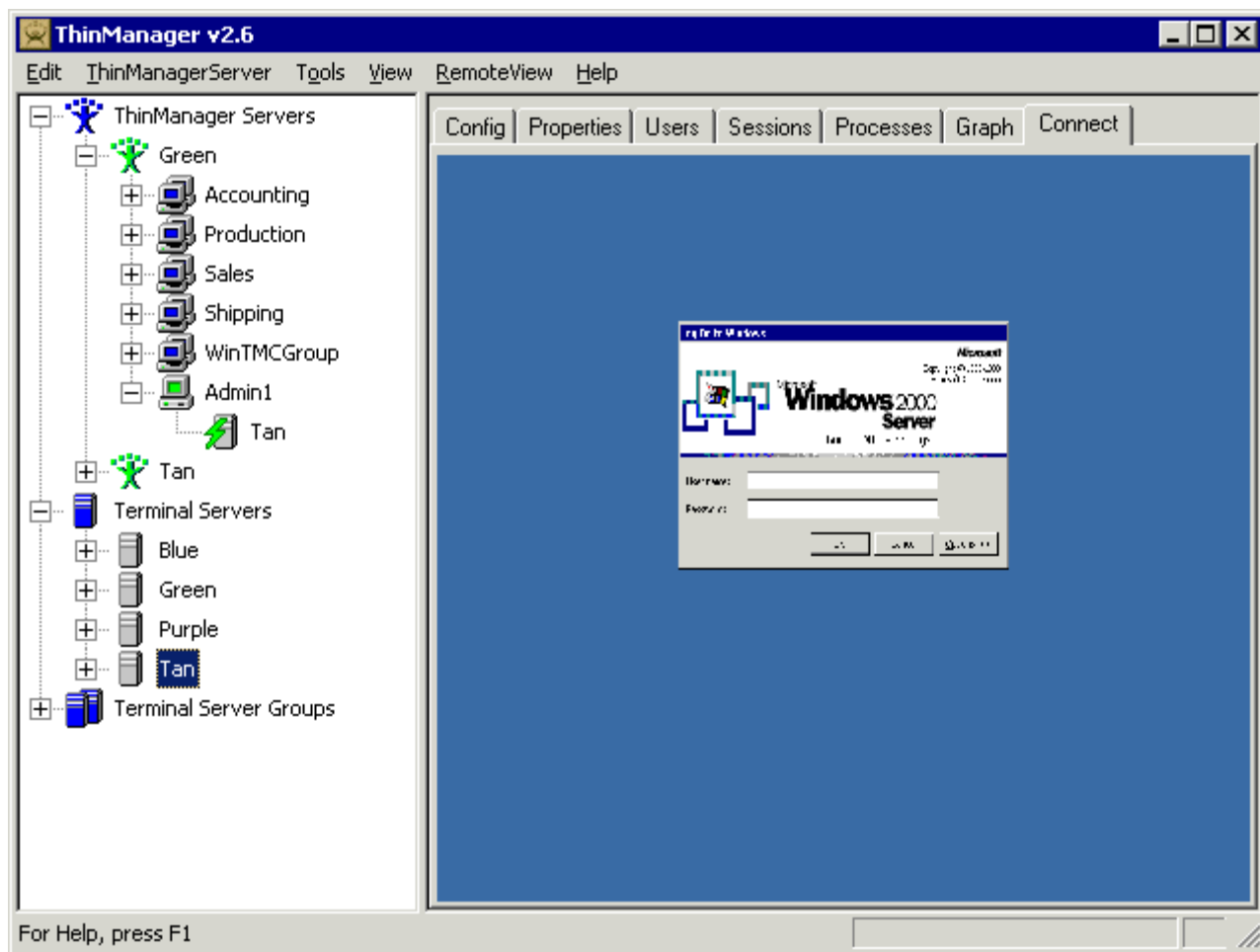


Connect Options Window

The settings include:

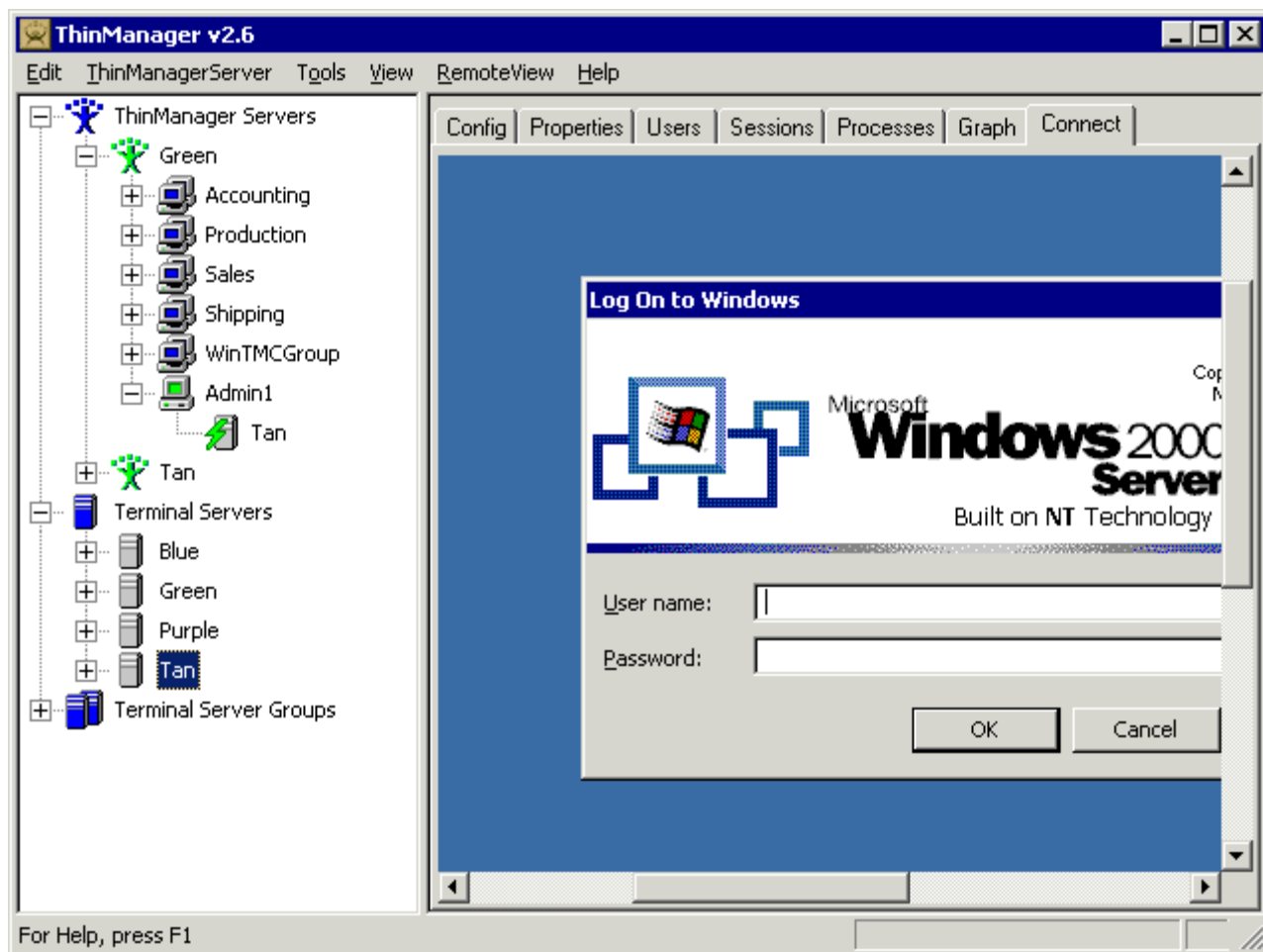
- **Video Mode** – This allows the connection to be displayed at a specific resolution or as full screen.
- **Width** – Allows the connection to be displayed at a specific width if the **Video Mode** is set to **Custom**.
- **Height** – Allows the connection to be displayed at a specific height if the **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.
- **Allow Auto-Login** – This checkbox allows the connection to login without prompting when checked.
- **Allow Access to Local Drives** – This checkbox allows the user to access the hard drive on the remote computer from the remote connection.

If **Allow Auto-Login** is checked in the **Terminal Server Connect Options** window, the user name and password, which were entered when creating this terminal server in the Terminal Server List, will be used for the login information.



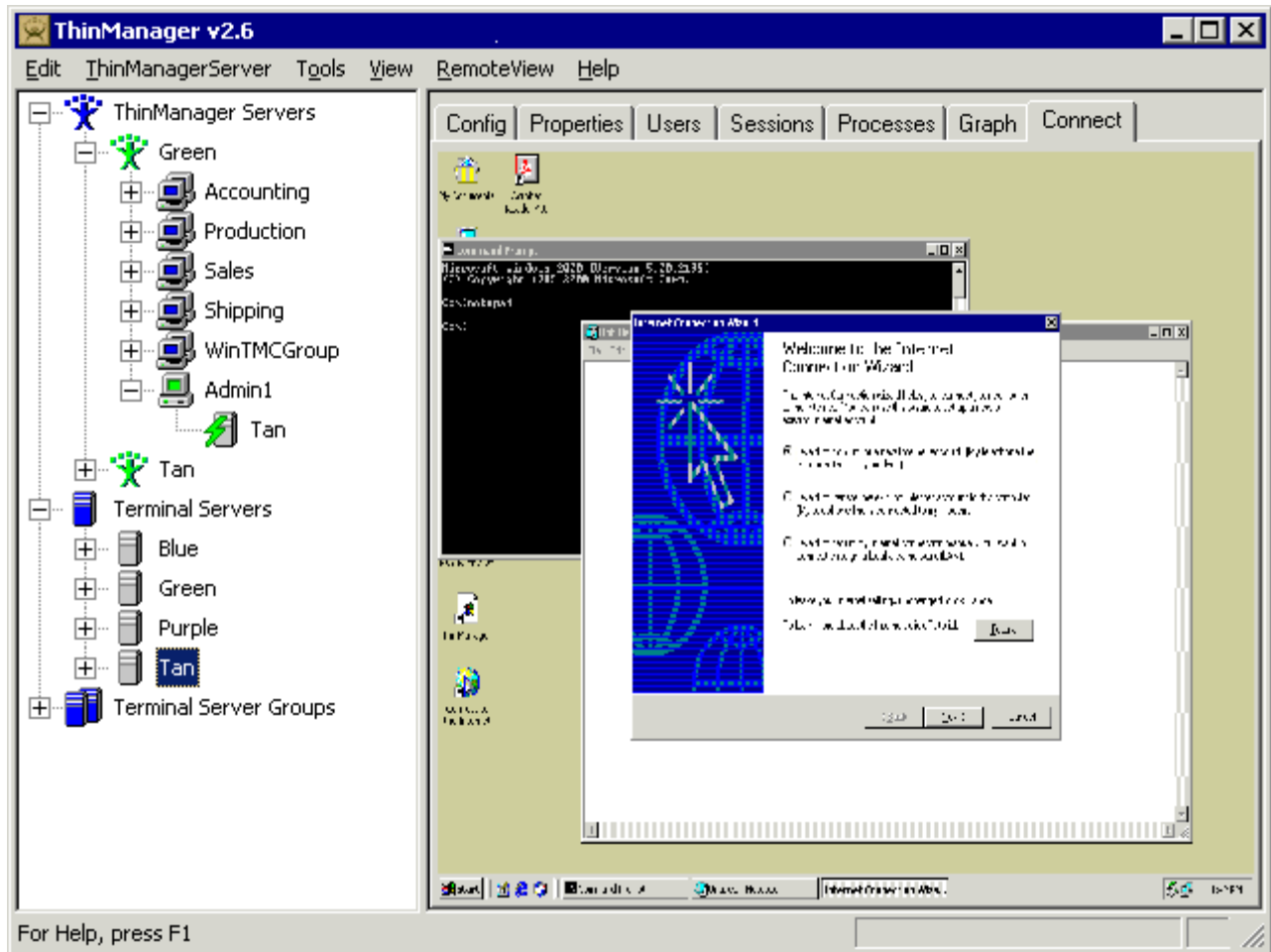
Remote Connect - Scaled to Window

The connection can be configured to fit within the ThinManager Detail pane by selecting **RemoteView> Scaled to Window** in the menu.



Remote Connect - Not Scaled to Window

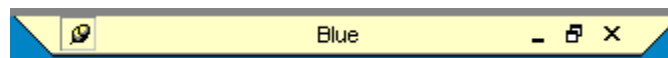
The connection can be shown life-sized within the ThinManager Detail pane by un-selecting **RemoteView> Scaled to Window** in the menu.



Remote Connection - Terminal Server Desktop

Once logged in, the Detail pane will display a terminal server session in the Details Pane.

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.



Remote Session Tool Tab

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.

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 adding and using Modules.
- Details on specific modules.

Module List

Touch Screen Modules

ThinManager supports a wide range of touch screen controllers. The current list includes:

- Arista ARP-16XXXAP-ACP Touch Screen Driver
- Carroll Touch Touch Screen Driver
- Contec Touch Screen Driver
- DMC Touch Screen Driver
- Dynapro Touch Screen Driver
- Elographics Touch Screen Driver
- Gunze AHL Touch Screen Driver
- MicroTouch Touch Screen Driver
- PenMount Touch Screen Driver
- Ronics Touch Screen Driver
- Touch Control Touch Screen Driver
- Xycom 33XX Touch Screen Driver

Note: This list of modules is subject to change, with more modules being added as needed.

Some, but not all, touch screen modules have parameters that can be modified. These may include:

- **Controller Type** - Model of touch screen controller.
- **COM Port** - The serial port that the touch screen is connected to.
- **Baud Rate** - The speed used for communication between the terminal and the touch screen.
- **Double Touch Area** - The size of the area that a second touch will register as a double touch.

- **Double Touch Time** - 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.
- **Calibration** (entered automatically) - Set automatically by machine. These are the calibration values.
- **Orientation** (entered automatically) - 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.

Sound Modules

The use of sound from an ACP Enabled thin client requires three things, **ThinManager Ready hardware** with a sound connection, the **appropriate sound module**, and **either a Windows 2003 Server terminal server or MetaFrame**.

Some thin clients, like the Advantech PCM-5820, may require that a sound harness be plugged into the motherboard.

Current sound modules include:

- ACP DC_30_100 Sound Module
- ACP DC_40_100 Sound Module
- ACP TC3500 Sound Module
- Advantech PCM-5820 Sound Module
- Advantech PCM-9372 Sound Module
- Allen-Bradley VersaView 200R Sound Module
- Arista 5824-ACP Sound Module
- TeleVideo TC7X30 Sound Module
- Xycom XA1300 Sound Module

These Sound modules can be set to use *Low*, *Medium*, or *High* bandwidth when using MetaFrame.

Note: This list of modules is subject to change, with more modules being added as needed.

Mouse Modules

Mouse Configuration Module – Allows USB or PS/2 mice to be configured. Allows the use of two mice. See Mouse Modules for details.

PS/2 Mouse Module – Allows the configuration of a PS/2 mouse to include wheel mouse capabilities. See Mouse Modules for details.

Serial Mouse Module - Allows the usage of a serial mouse instead of a PS/2 mouse. See Mouse Modules for details.

Share Keyboard and Mouse Modules – Allows multiple ThinManager Ready thin clients to be linked with a single mouse and keyboard. This is particularly useful in control rooms. See Share Keyboard and Mouse Module for details.

Additional Modules

Add Serial Port - Configures additional serial ports if additional serial port hardware is added.

- Configuration includes **Port Number**, **Port Address**, **IRQ**, and **UART**

Disk On Chip Update - Allows Disk-on-Chip and Compact Flash embedded storage clients to have their firmware updated.

- Configuration includes **Confirm at Terminal**. This allows an automatic firmware re-flashing when set to **NO**. If set to **Yes**, the terminal receives notification of the firmware update.

See Disk-On-Chip for details.

High Speed Serial Driver - Allows the transfer of serial data from an ACP Enabled thin client's serial port to the terminal server.

- Configuration is done with the ACP COM Redirection Program.

See High Speed Serial Driver for details.

Instant Failover Module - Allows the ACP Enabled thin client to log into two terminal servers at once for a hot backup during failover.

- Configuration includes:
- **Hot Key Session Switching** - allows the toggling between the two sessions.
- **Hot Key Combination** - allows the choice of hot key combinations.

Key Block Module - Traps client keystroke combinations for security.

- Configuration allows blocking of **CTL**, **CTL+ALT+DEL**, **CTL+ESC**, **ALT**, **ALT+F4**, **ALT+F**, **ALT+TAB**, the **Windows** key, and **Menu** key.

See Key Block Module for details.

Local Printer Module – Allows printing to a printer attached to a parallel port on a ThinManager Ready thin client.

- Configuration includes **Local Print Driver** name.

See Local Print Module for details.

RDP Serial Port Redirection Module – Allows the usage of serial ports when using RDP.

See RDP Serial Port Redirection Module for details.

Screen Saver Module – This screen saver runs on the terminal to save terminal server CPU while preventing a monitor from ghost images.

See Screen Saver Module for details.

USB Memory Card Reader Module – Allows USB ports on ThinManager Ready thin clients to access USB memory card readers or USB memory sticks when logged into a Windows 2003 terminal server or MetaFrame server.

See USB Memory Card Reader Module for details.

X Term Module - Allows and ACP Enabled thin client to boot as an X-terminal for connection to Unix and Linux servers.

- Configuration includes the **XDM Host IP address**

See X Terminal Module for details.

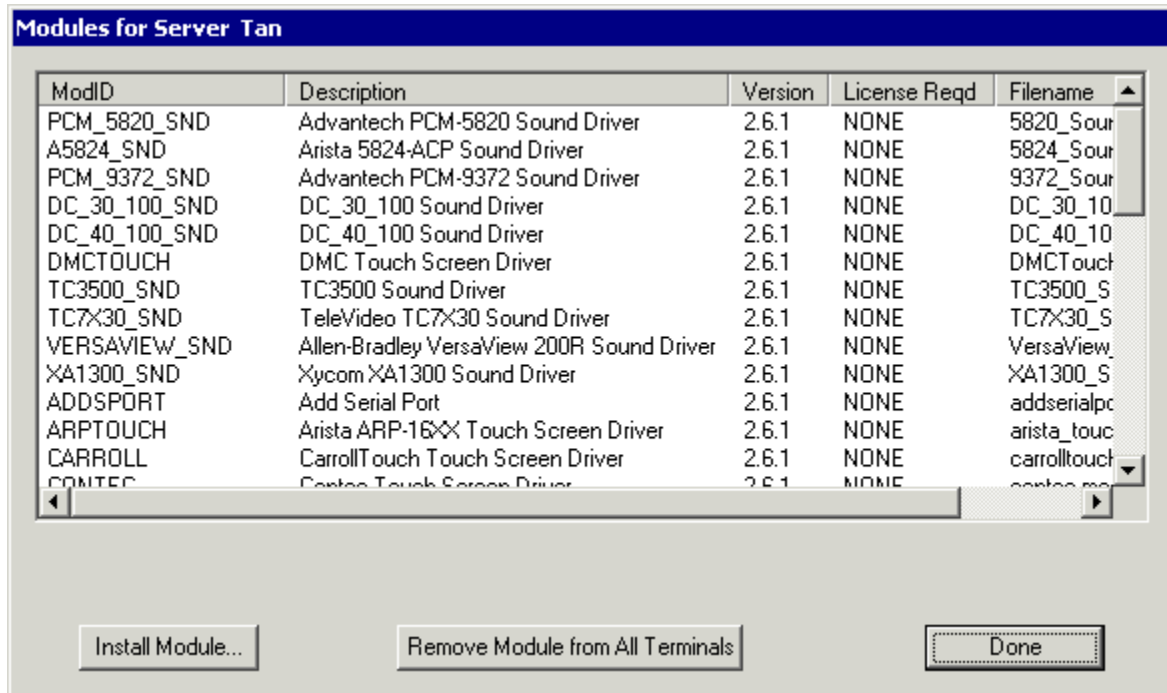
Advanced User Modules

Citrix ICA UseAlternateAddress Module - Used by advance Citrix users.

- Configuration includes ***UseAlternate Address***, ***Browser Protocol***, and ***HttpBrowser Addresses***.

Installing a Module

Open the Modules window by selecting **Tools>Modules** from the ThinManager menu bar.



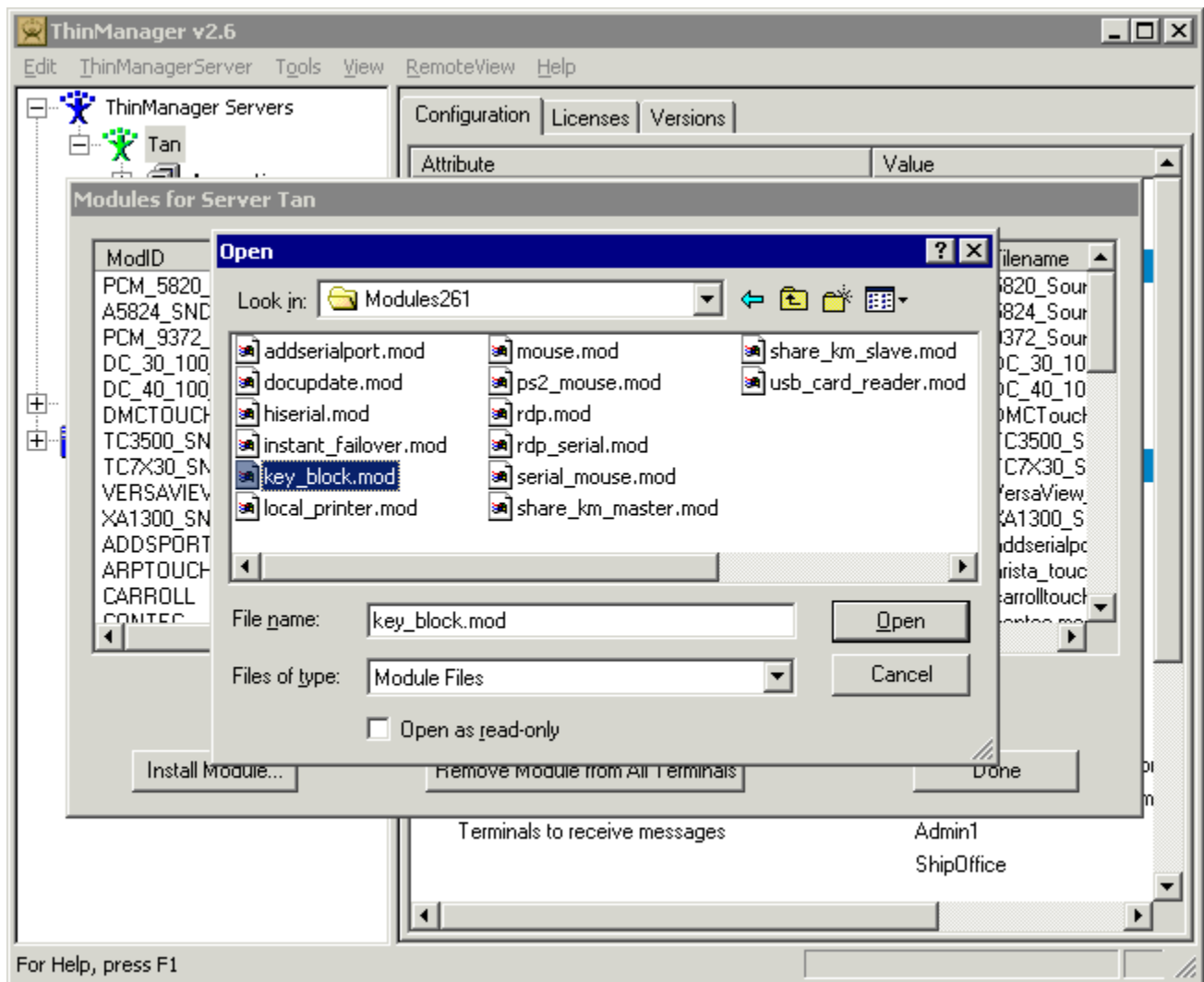
Install Module Window

This launched the Module window that shows all of the modules installed on the ThinManager Server.

To install additional modules select the **Install Module** button. This will launch a file browser window.

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.

Selecting the **Done** button will close the Module window.

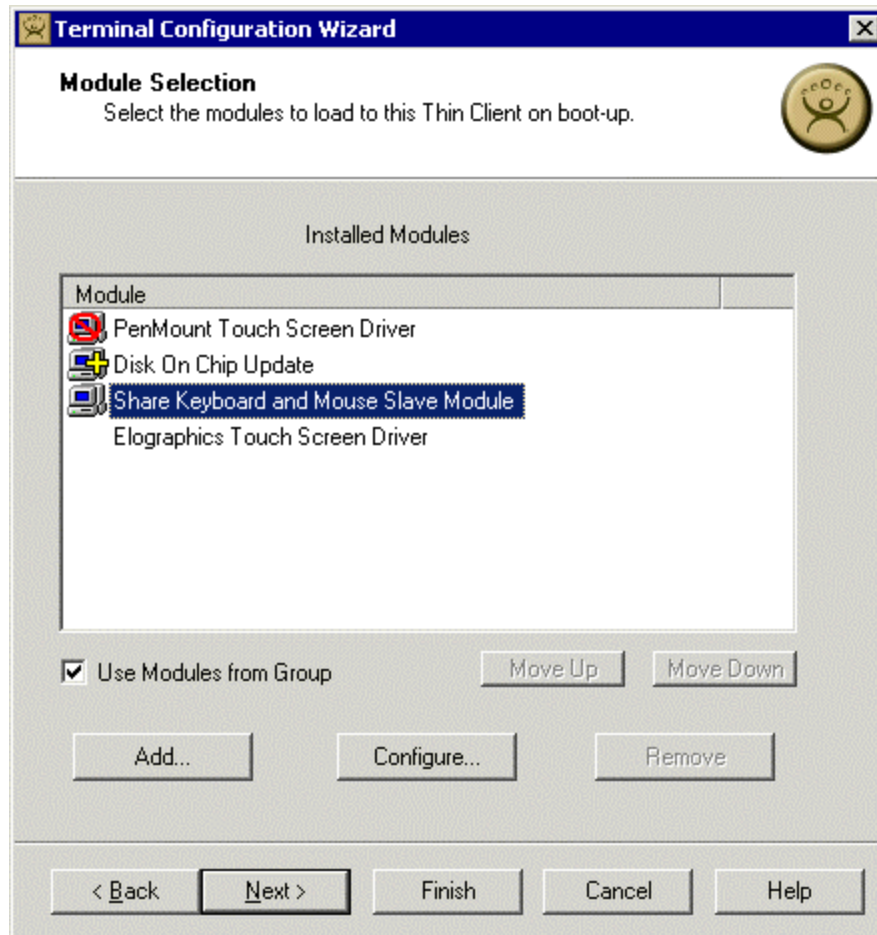


Module File Browser Window

If the **Install Module** button is selected it will launch a file browser window. Select the new module file and select **Open**. This will install the module.




Changing Module Parameters

The parameters of a module can be individually configured on a module assigned to a Group or Terminal. Open the Terminal Property by double-clicking the desired terminal in the ThinManager tree. In Wizard mode click the **Next** button until the Module Selection window is displayed.

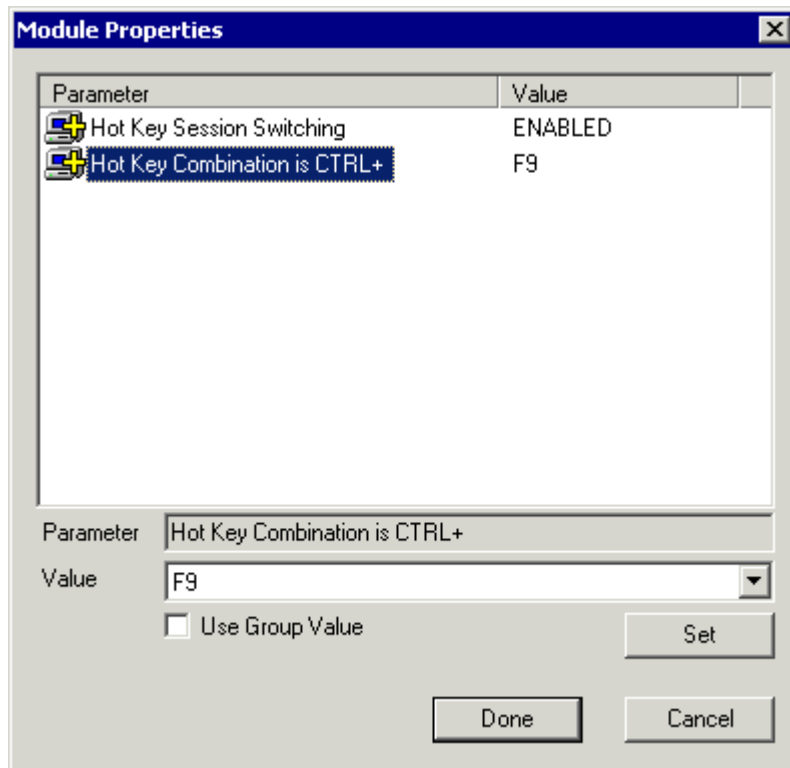


Terminal Module Selection - Wizard Mode

There are four icons that can be used for modules in the Terminal Properties.

-  Two Monitors represents properties assigned by the Group.
-  Two Monitors and a Yellow Plus Sign represent properties that are changed on the terminal from the Group settings.
-  Two Monitors and a Red Slashed Circle represent a terminal that isn't using an assigned Group module. **The Use Modules from Group checkbox was un-selected.**
- No icon indicates that the module was added to the terminal and not the group.

Select the Module to change and select the **Configure** button. A **Module Properties** dialog box will be displayed.



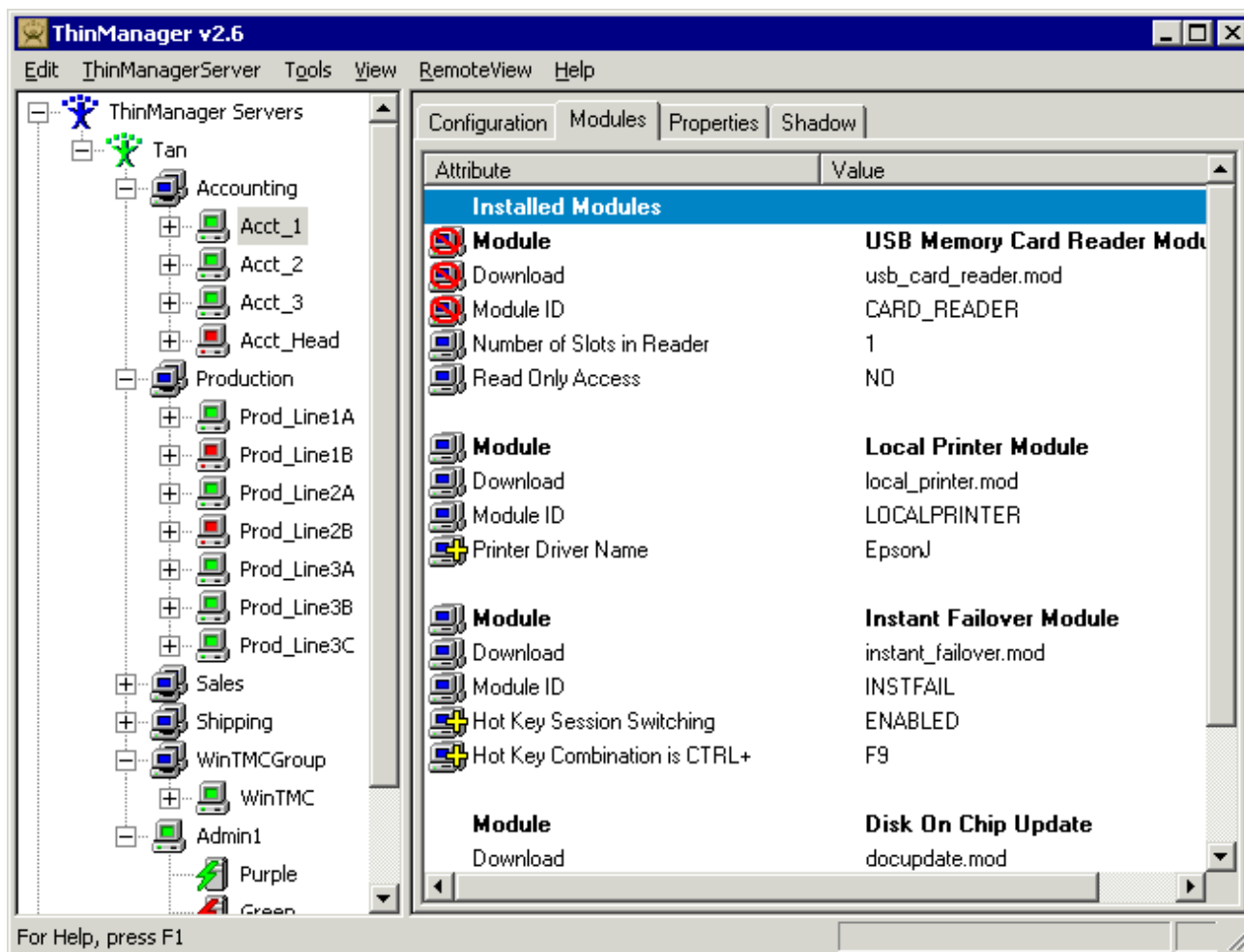
Module Properties Window

Select the parameter to configure. If configuring a Group Module, uncheck the **Use Group Value** check box.

The **Value** field will become active to allow a new value to be added, or a drop-down box will appear with values to choose from. Change the value and select the **Set** button to apply the parameter change.

Note: The **Set** button must be selected to apply the change.

Select the **Done** button to close the window.

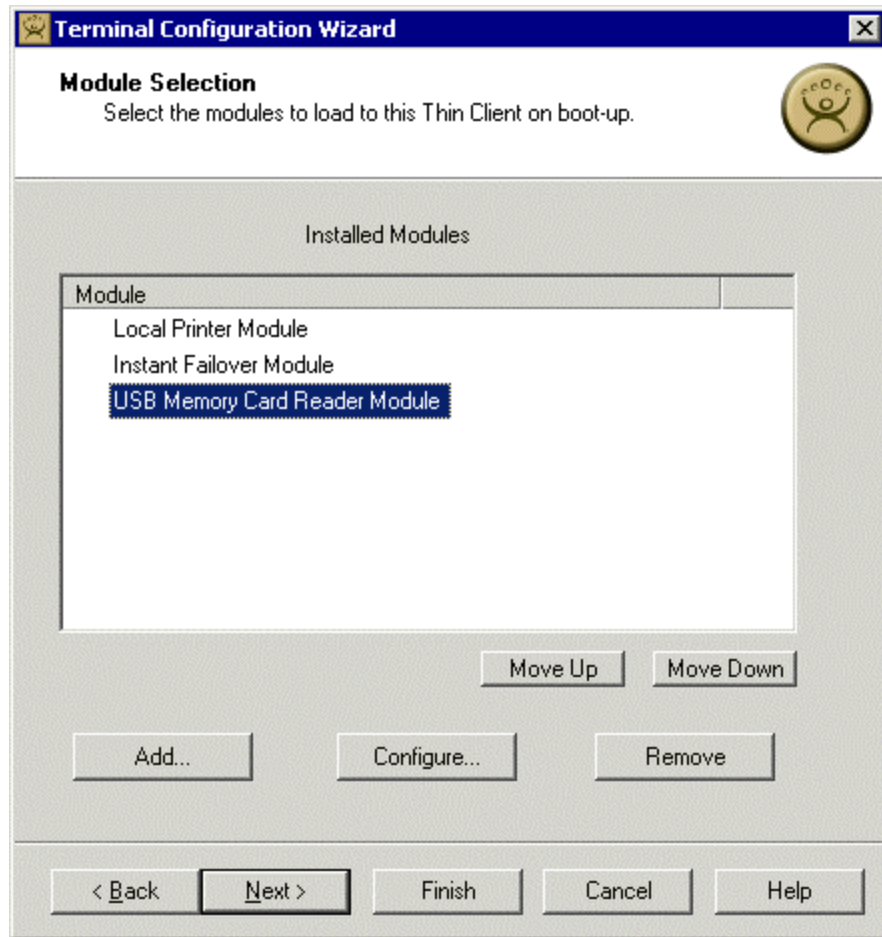


Module Icons in ThinManager

The status of the modules are displayed on the **Module** 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

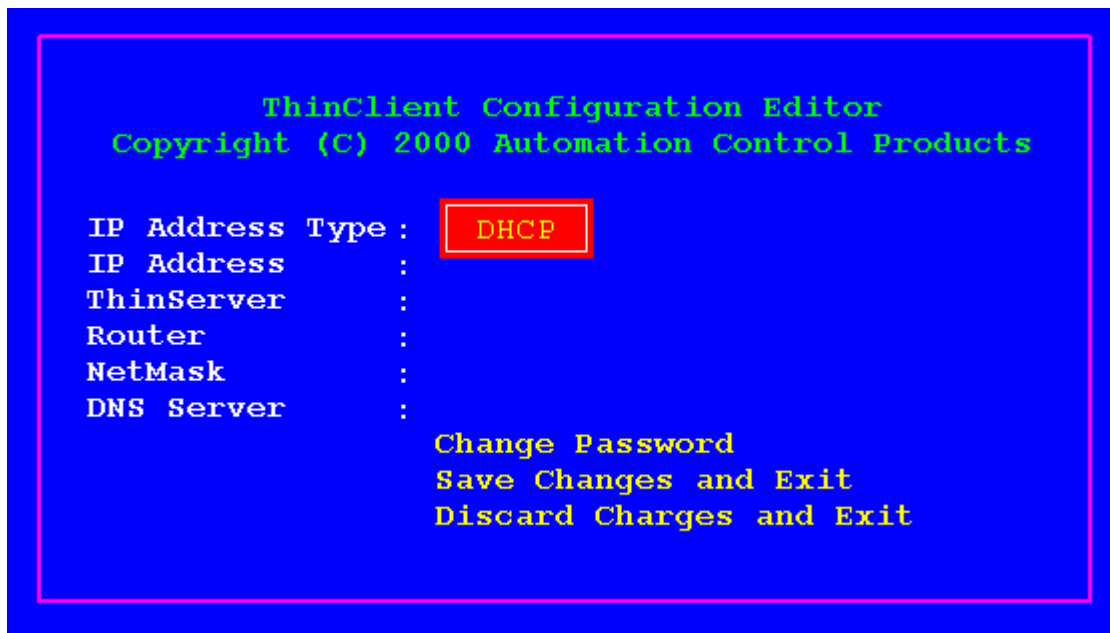
The loading order of modules rarely needs to be adjusted.

Disk-On-Chip

Disk-On-Chip is used in this manual to refer to a number of firmware storage options, including compact flash and disk-on-chip.

Disk-On-Chip Configuration

A disk-on-chip terminal loads the firmware locally before connecting to the ThinManager server. The disk-on-chip 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.



Disk-On-Chip Configuration Screen

The IP Addressing method is set to **DHCP by default**. 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. The changes may be saved or discarded before the boot process is resumed.

Updating Disk-On-Chip

ACP ThinManager has the ability to update the firmware on the disk-on-chip to keep the firmware current. Firmware updates for the disk-on-chip are done through the Disk-On-Chip Update module.

The Disk-On-Chip Update module, when installed on a ThinManager Ready thin client with disk-on-chip hardware, will compare the firmware on the disk-on-chip with the ThinManager server firmware when it connects to a ThinManager server. If the ThinManager firmware is different, it will download the ThinManager server firmware and update the disk-on-chip on the terminal.

The ability to update disk-on-chip 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.

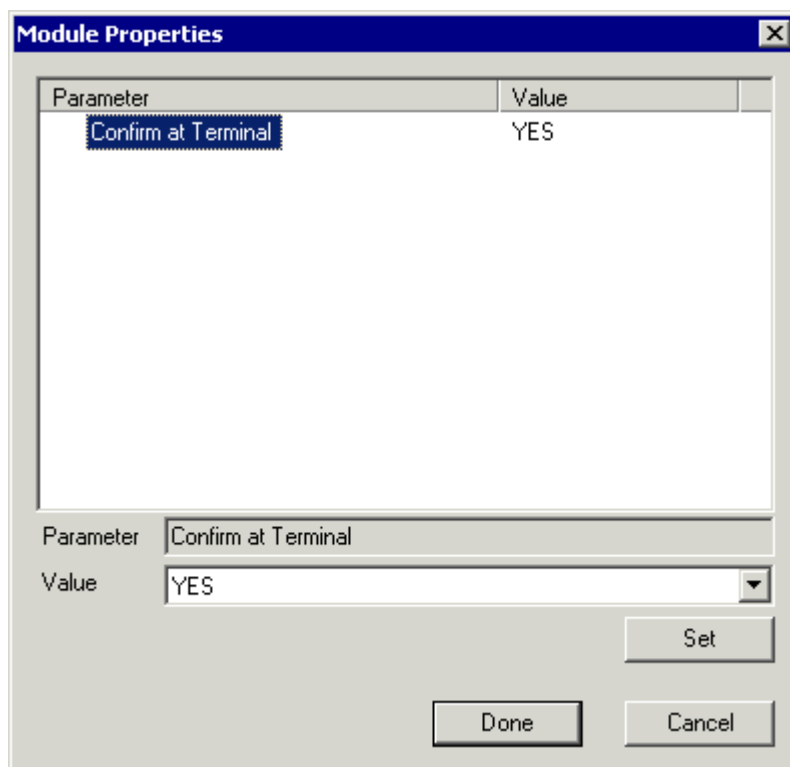
Disk-On-Chip Update Module

The Disk-On-Chip Update module installs with ThinManager. This module has one configurable parameter, **Confirm at Terminal**. If *Confirm at Terminal* is set to **Yes**, then the operator will be prompted 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.

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 the disk-on-chip terminals permanently. 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 connect it to a ThinManager server with older firmware.

Note: It is recommended that instead of updating over a wireless connection, you connect terminals with Ethernet cable to update the disk-on-chip.

To set the **Confirm at Terminal** parameter, highlight the disk-on-chip update module and select the **Configure...** button. This will launch the Module Properties window.



Disk-On-Chip Module Properties

Highlight the **Confirm at Terminal** parameter. The *Value* field will change to a drop-down box containing **Yes** and **No**. Select the desired value and select **Done**.

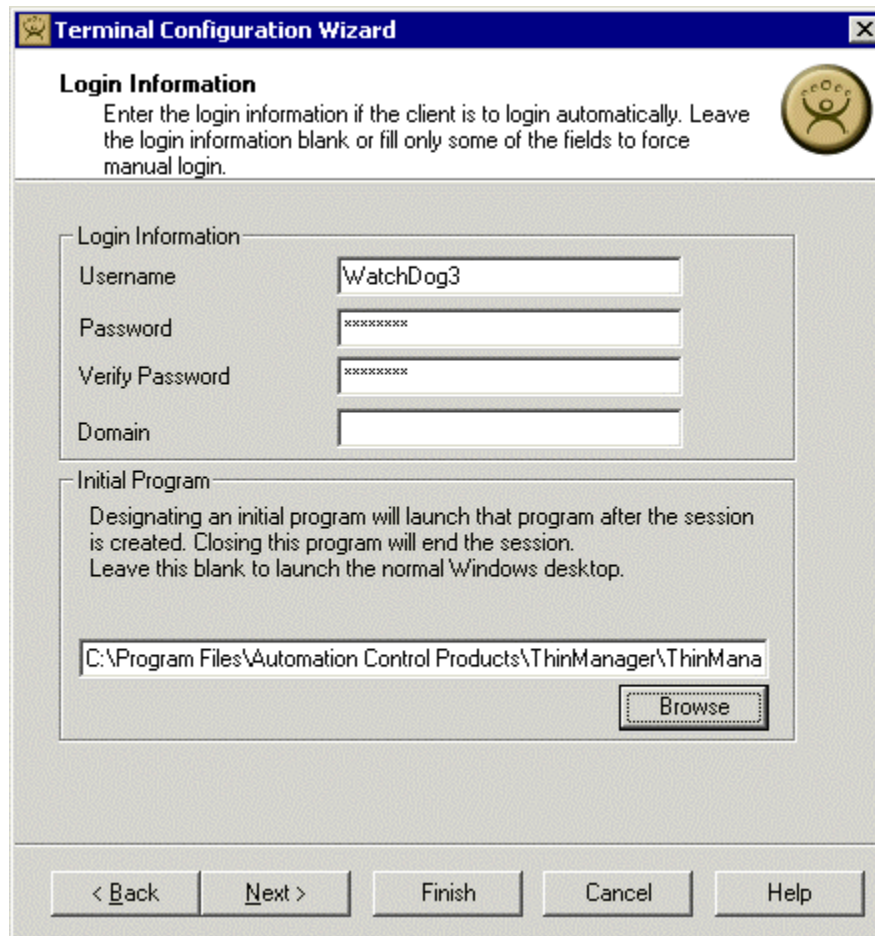
Disk-On-Chip Update Program

Once the new firmware has downloaded, an update program will run on the disk-on-chip terminal to rewrite the new firmware to the disk-on-chip. 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 disk-on-chip, 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 on the disk-on-chip.

Initial Program

The **Initial Program** field on the Login Information page loads a program instead of the desktop in the terminal session.

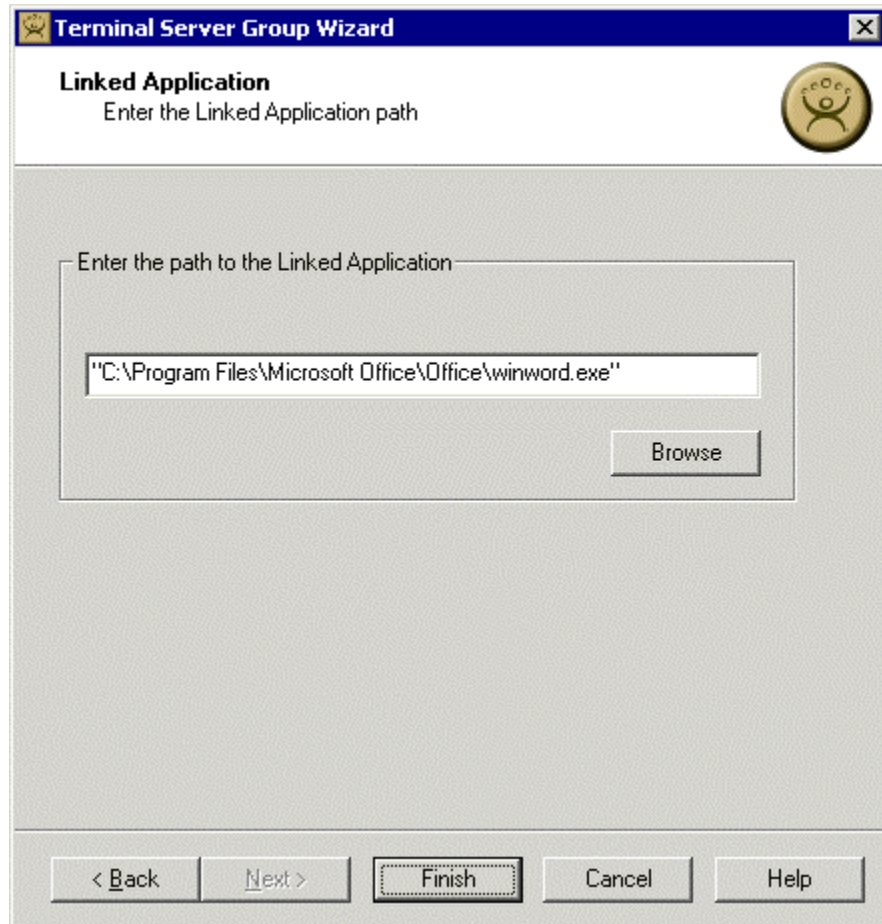


The screenshot shows the 'Terminal Configuration Wizard' dialog box. It has a title bar with a close button. The main area is divided into two sections: 'Login Information' and 'Initial Program'. The 'Login Information' section contains four text boxes: 'Username' (containing 'WatchDog3'), 'Password' (containing 'xxxxxxx'), 'Verify Password' (containing 'xxxxxxx'), and 'Domain' (empty). The 'Initial Program' section contains a text box with the path 'C:\Program Files\Automation Control Products\ThinManager\ThinMana' and a 'Browse' button. At the bottom are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

Initial Program

Normally a session loads **explorer.exe** when it starts, launching the desktop. Other programs can be launched from within this shell.

If a program is set as the initial program, it is the only program that will launch. 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.



Terminal Server Group Wizard – Linked Application Page

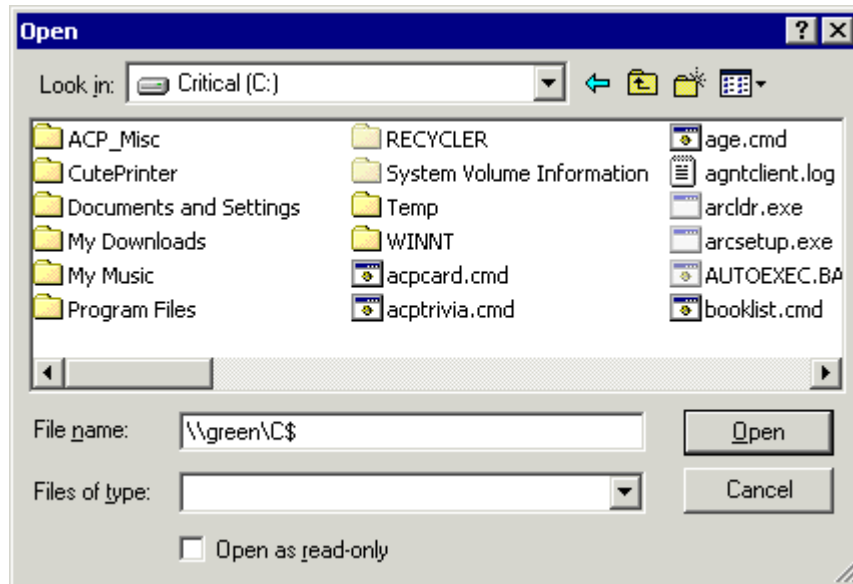
In Terminal Server Groups using the AppLink option, this Initial Program functionality is applied to each terminal server. Each group will have a single program that will launch. Closing it will kill the session and force a reconnect with the initial program running again.

Note: When using the Initial Program with failover, the path must be identical on all terminal servers.

Note: If the user launches **explorer.exe**, the initial program can be closed and other program run. The Key Block module can help close this loophole by preventing launching Task Manager with the **CTL+ALT+DEL** keys or launching the Start Menu with the Run command with **CTL+ESC**.

Browse Button

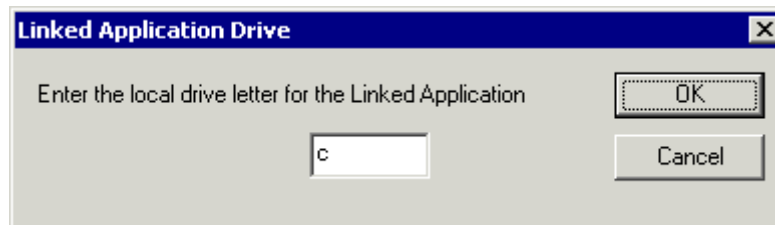
A **Browse** button is provided with Initial Program to make selecting a program easier.



Browse Window

Browse works fine on the local machine. If you are configuring a connection to another computer other than the one you are on, you will browse across the network. That requires entering the network path to open the remote hard drive to find the desired program.

Since an Initial Program path with the complete network address isn't needed on the client, ThinManager launches a popup window that asks for the local drive letter for that initial program or linked application.



Linked Application/ Initial Program Drive Window

Failover

Server crashes of any kind in any network or system can have devastating effects on productivity and data management. In the distributed computing world users may still be able to work on local applications but lose access to data. In a terminal server installation all the terminals rely on the terminal server for processing power. Failure of the terminal server leads to the failure of all the thin clients.

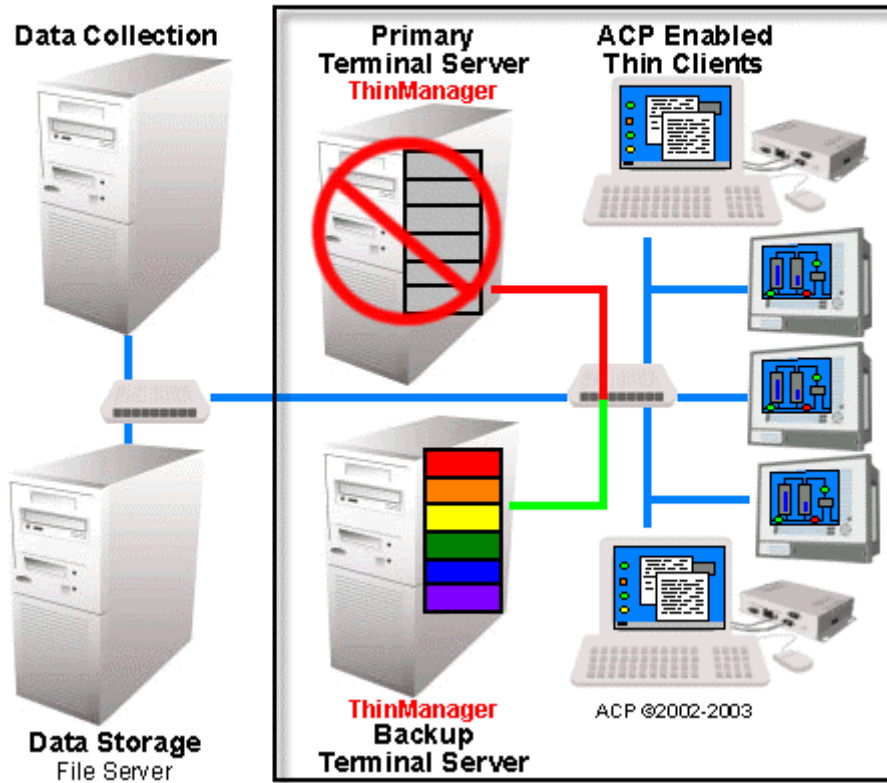
ACP ThinManager (version 2.3 and later) has a failover capability built into it that allows terminals to connect to a secondary terminal server if the terminal server that they are logged into fails. This will lessen the effect of server crashes on the terminal server network. The terminals can detect 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 a Client Communication Protocol and appropriate licenses added.
- **Sufficient Memory:** The second 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 NT/2000 user profiles and permissions. The terminals will not log into a secondary session unless it has a user profile on that server.
- **Multiple Terminal Servers:** The terminal needs be able to connect to multiple terminal servers. When using individual terminal servers, list multiple terminal servers in the Terminal Server Selection page of the Terminal Configuration Wizard. When using Terminal Server Groups, use multiple terminal servers in the groups.

ACP Failover with ThinManager Redundancy

Backup Terminal Server allows
ACP Enabled Thin Clients to run
if Primary Terminal Server fails



ACP Thin Client Network with Failover

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.

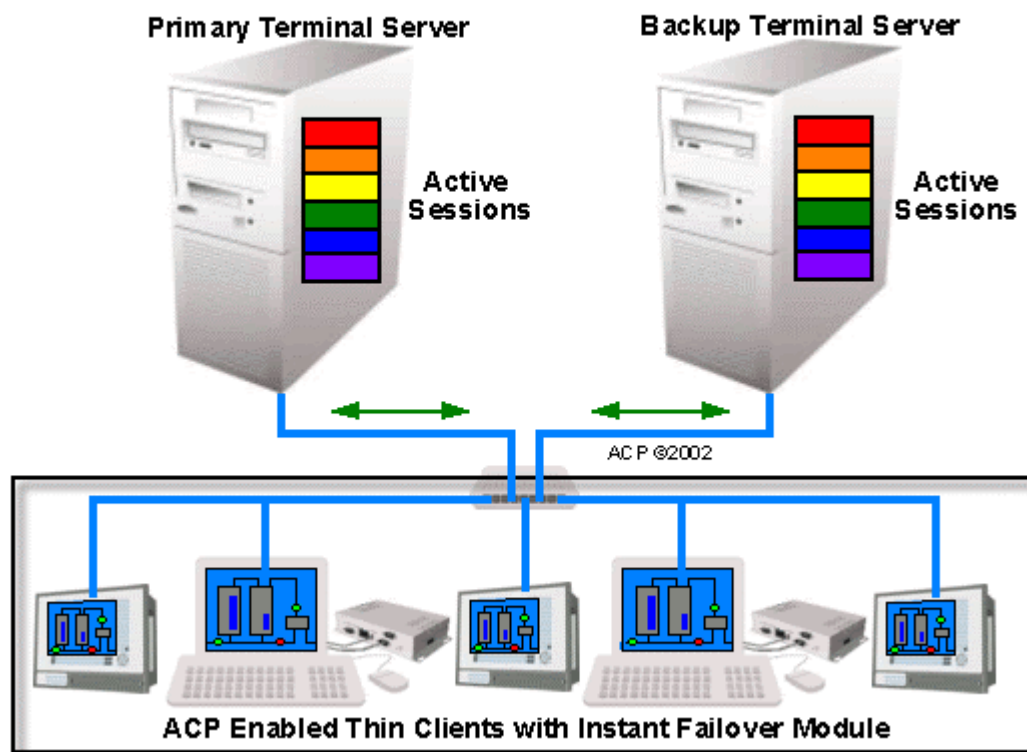
Instant Failover

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.

The Instant Failover module is used if the terminal is connecting to individual terminal servers. If Terminal Server Groups are being used, Instant Failover is a Terminal Server Group option. Instant Failover works within a Terminal Server Group, not between Terminal Server Groups.

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

Instant Failover - Part 1 **Terminals with Instant Failover module login to two terminal servers at once**



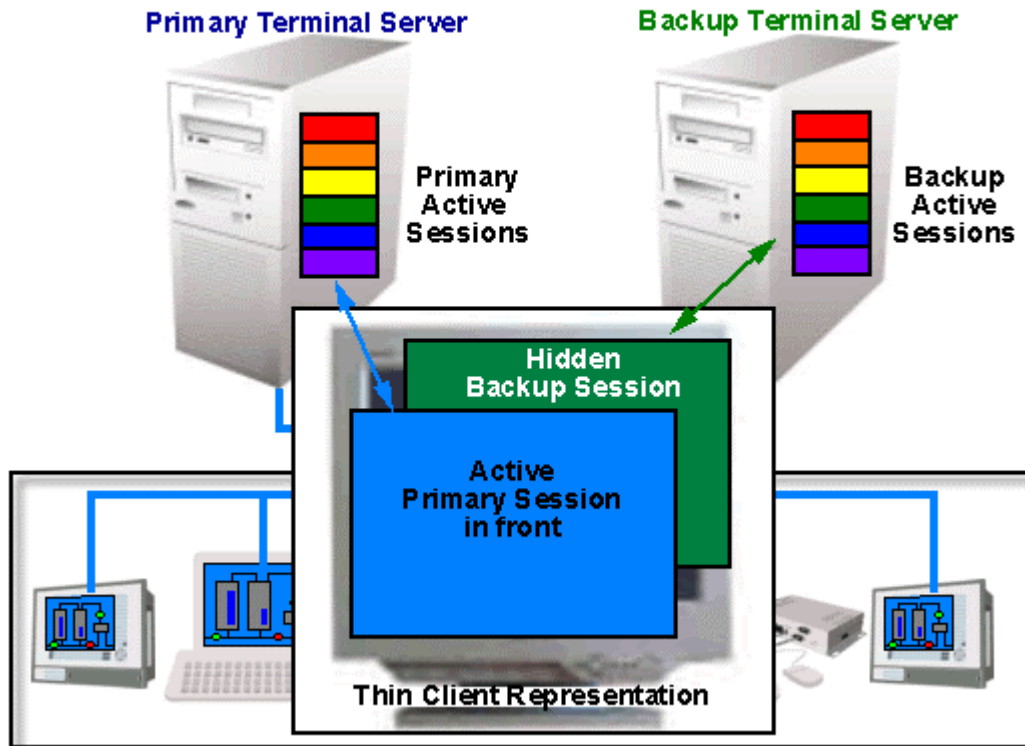
Instant Failover – Part 1

When the ThinManager Ready thin clients with the Instant Failover module boot, they connect to both servers, login, and start sessions.

Instant Failover - Part 2

Terminals run both sessions

The active Primary session is cascaded to hide Backup session

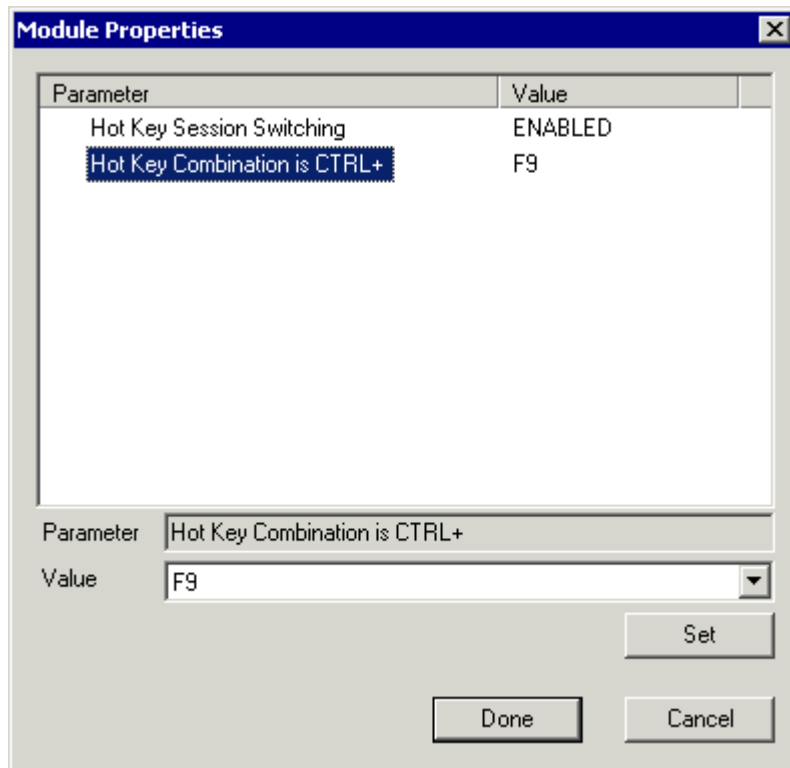


Instant Failover – Part 2

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.

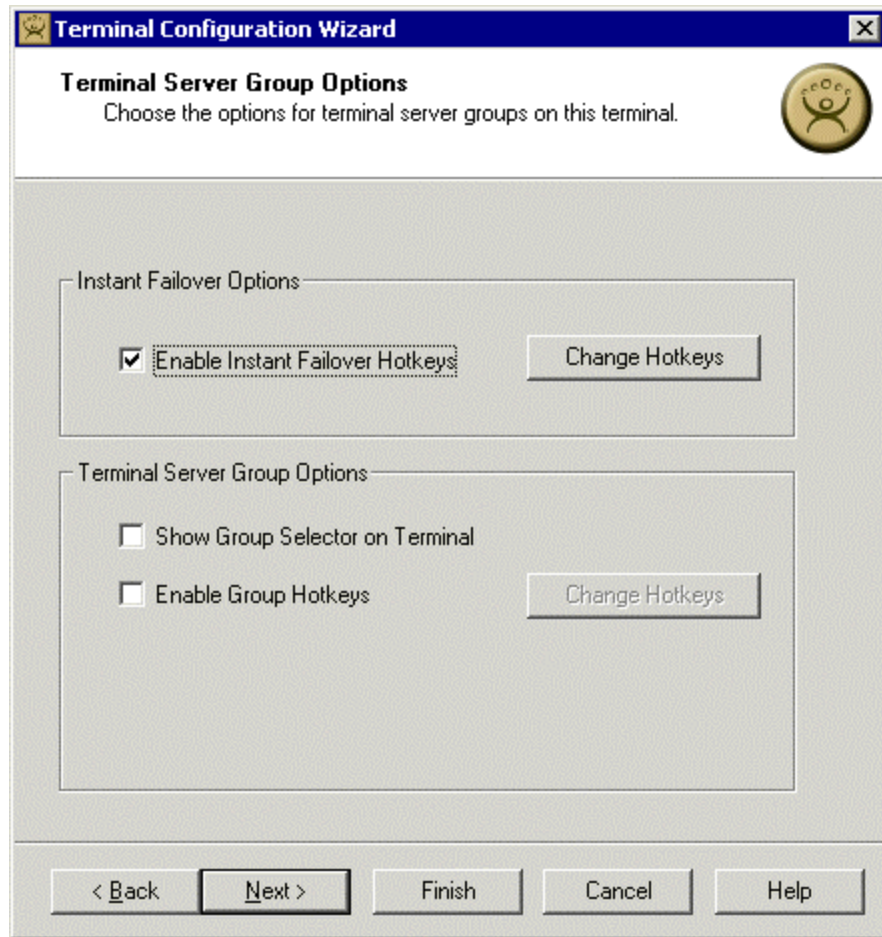
There is an option that allows one to switch between sessions with a hot key.

If using the Instant Failover module, this is configured in the module properties.



Instant Failover Module Properties

If the **Hot Key Session Switching** parameter is set to **Enabled**, the hot key combination will allow the toggling between sessions. The hot key is defaulted to **CTRL+F9**, but can be assigned to any function key.

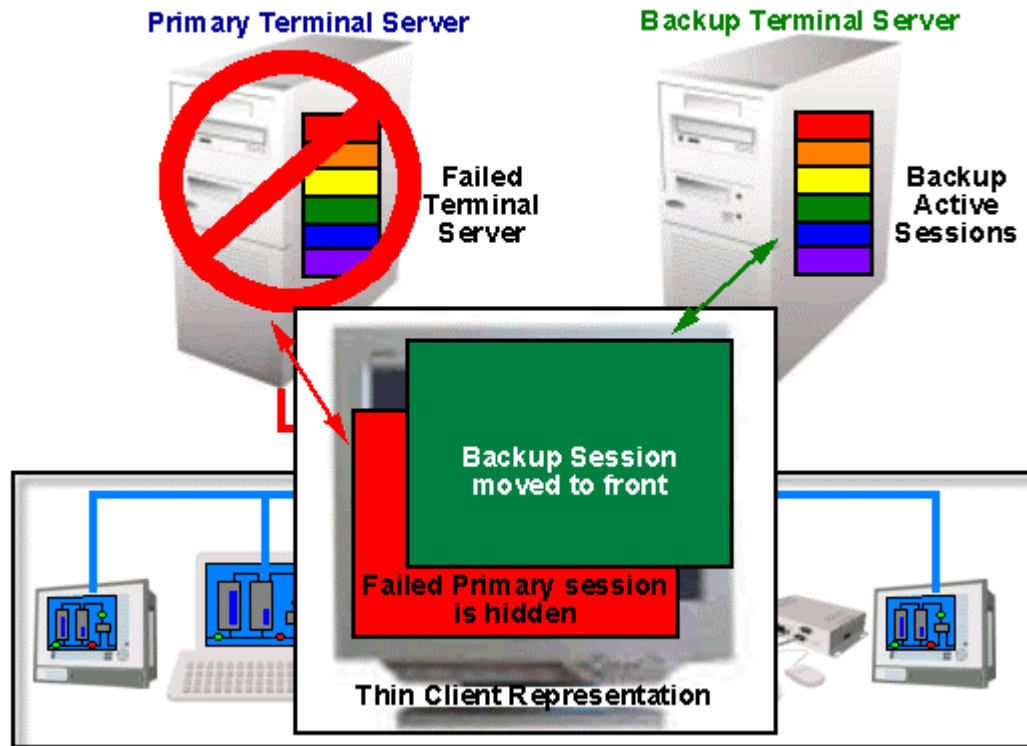


Terminal Server Group Options - Instant Failover Hotkey Configuration

If using the Instant Failover option in Terminal Server Groups, the ***Enable Instant Failover Hotkeys*** checkbox on the **Terminal Server Group Options** allows the switching between sessions.

Instant Failover - Part 3

If the Primary fails, the terminal will toggle the cascaded windows, displaying the Backup session in front



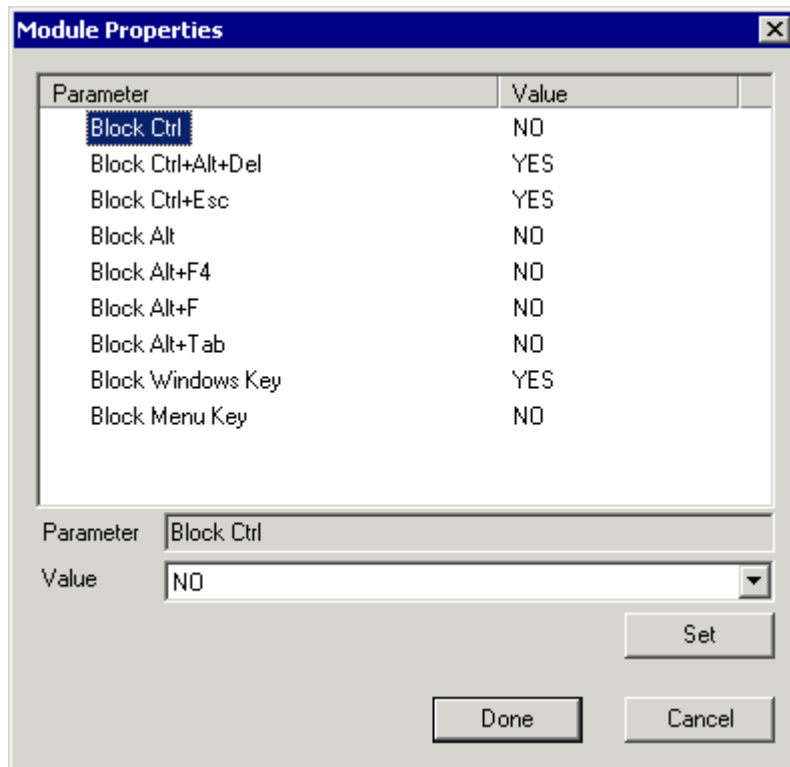
Instant Failover – Part 2

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.

If the **Enforce Primary** feature on the Monitoring tab is set to **Yes**, the thin client will switch back to the primary once it is back online.

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.

Local Print Module

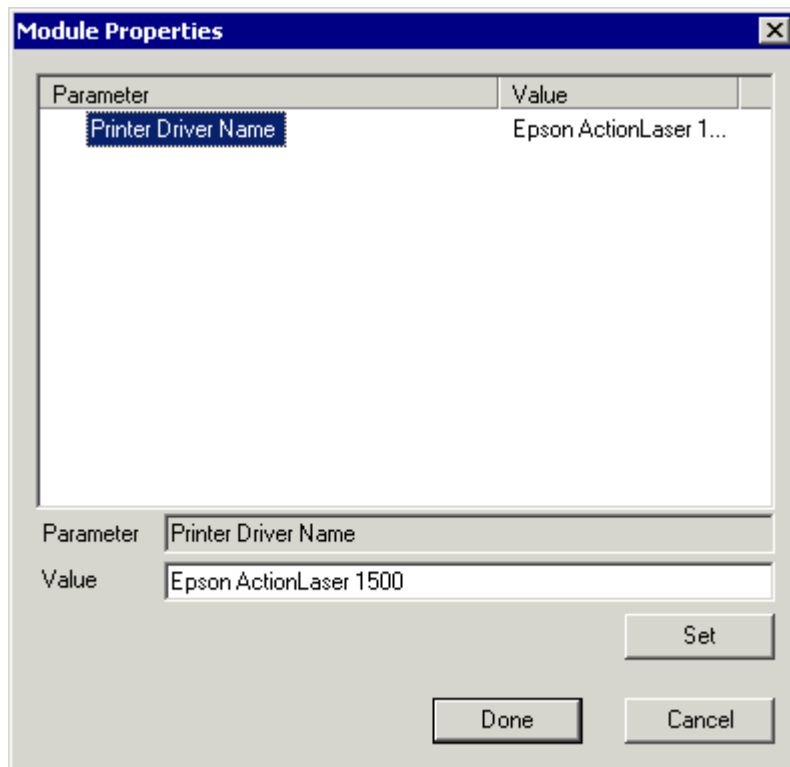
The Local Print Module simplifies printing through the parallel port on ThinManager Ready thin clients.

There are three steps:

Install the print driver on the terminal servers that the client will connect to.

Add the **Local Print Module** to the ThinManager Ready thin client as described in the Module Overview.

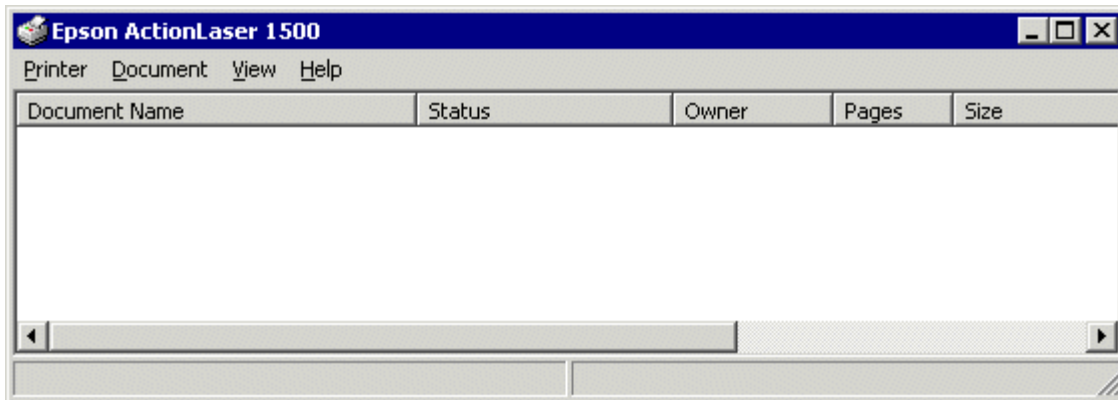
Configure the **Print Driver Name** parameter in the module to contain the print driver's name.



Local Print Module Properties

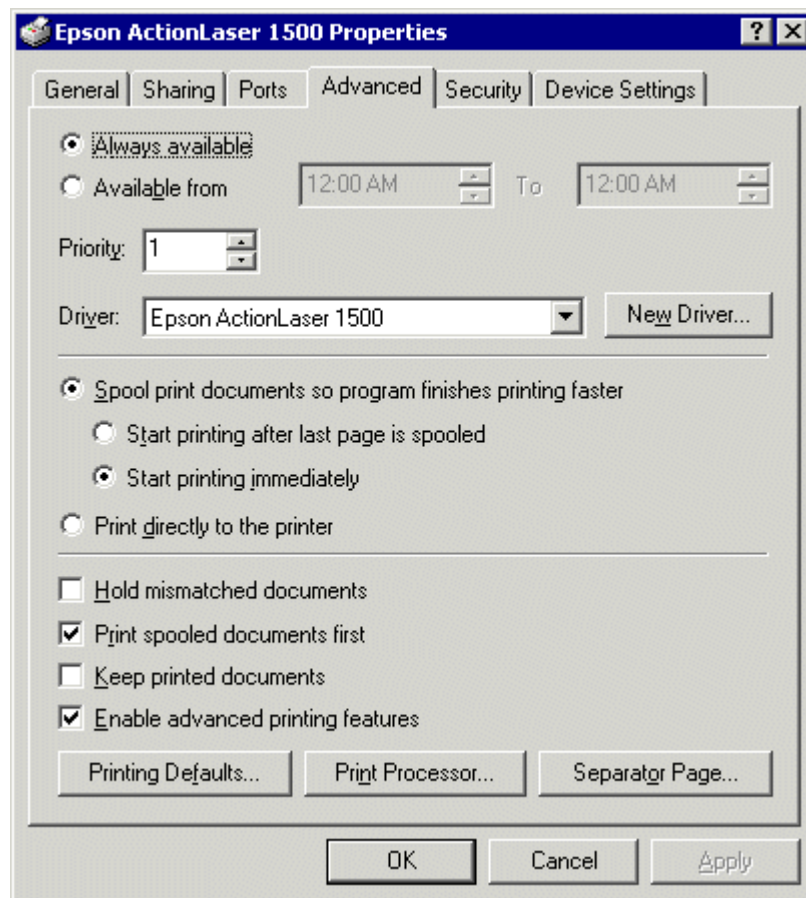
The Local Print module works when the name of the print driver is entered in the **Value** field for the **Printer Driver Name**. The Print Driver name is provided by the properties page for the printer.

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.



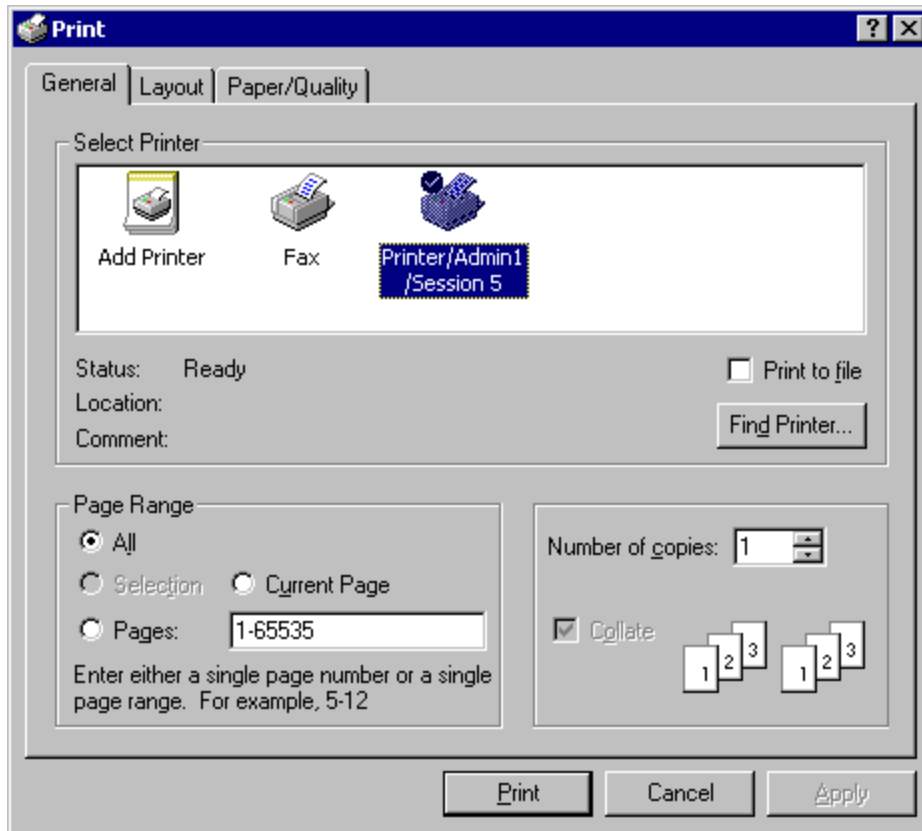
Printer Queue window

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.

Mouse Modules

There are three mouse modules that allow the configuration of mice. They are:

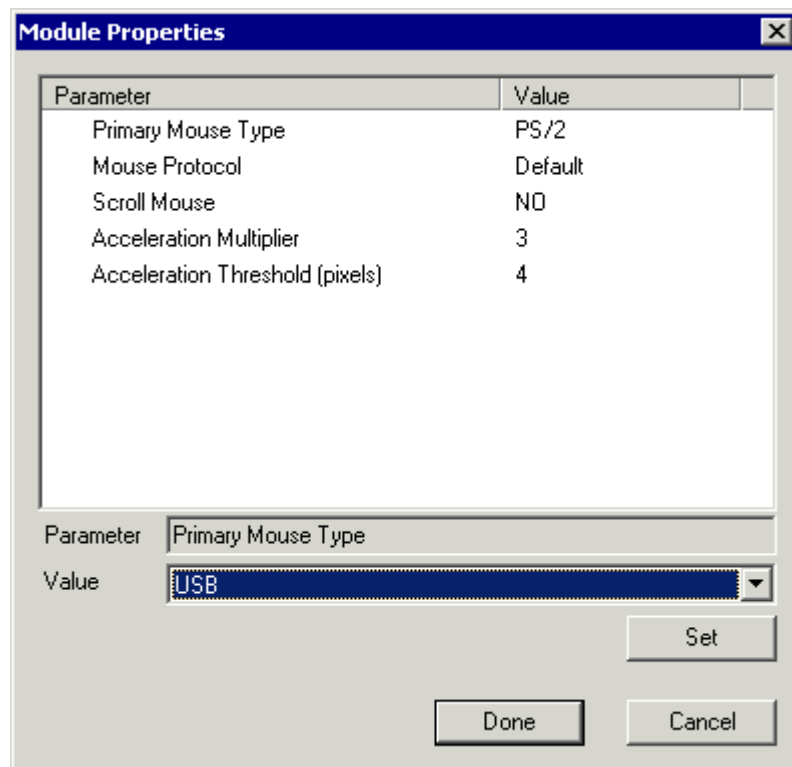
- Mouse Configuration Module
- PS/2 Mouse Module
- Serial Mouse Driver

Mouse Configuration Module

The Mouse Configuration Module allows the configuration of mouse settings including:

- **Mouse Type**
- **Mouse Protocol**
- **Scroll Mouse**
- **Acceleration Multiplier**
- **Acceleration Threshold**

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.

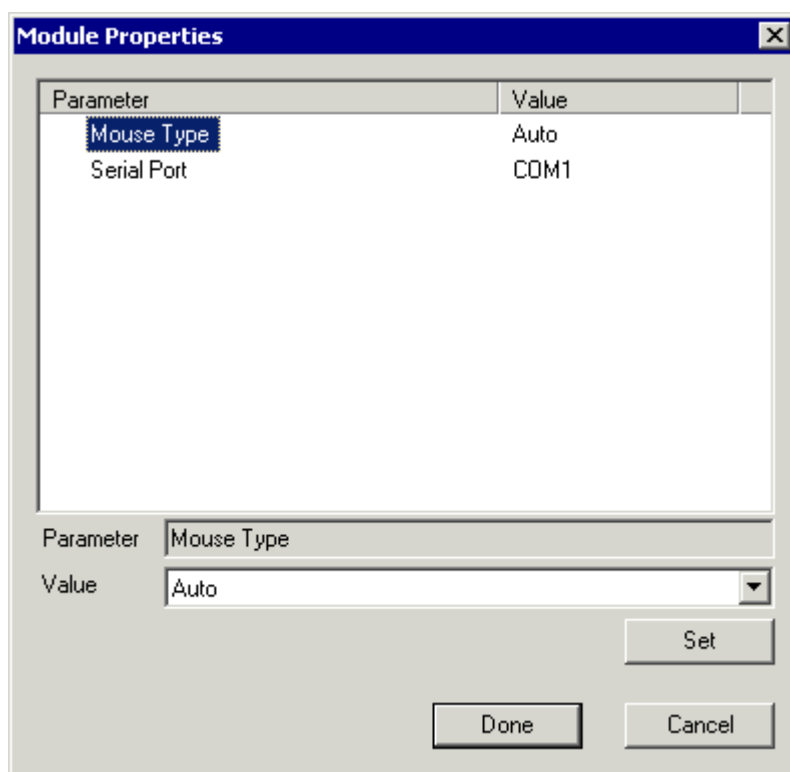
A ThinManager Ready thin client can have both a USB and a PS/2 mouse installed. This module allows the selection of the primary mouse when using two mice.

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.

Serial Mouse Driver

The Serial Mouse Driver allows a serial mouse to be used with ThinManager Ready thin clients.

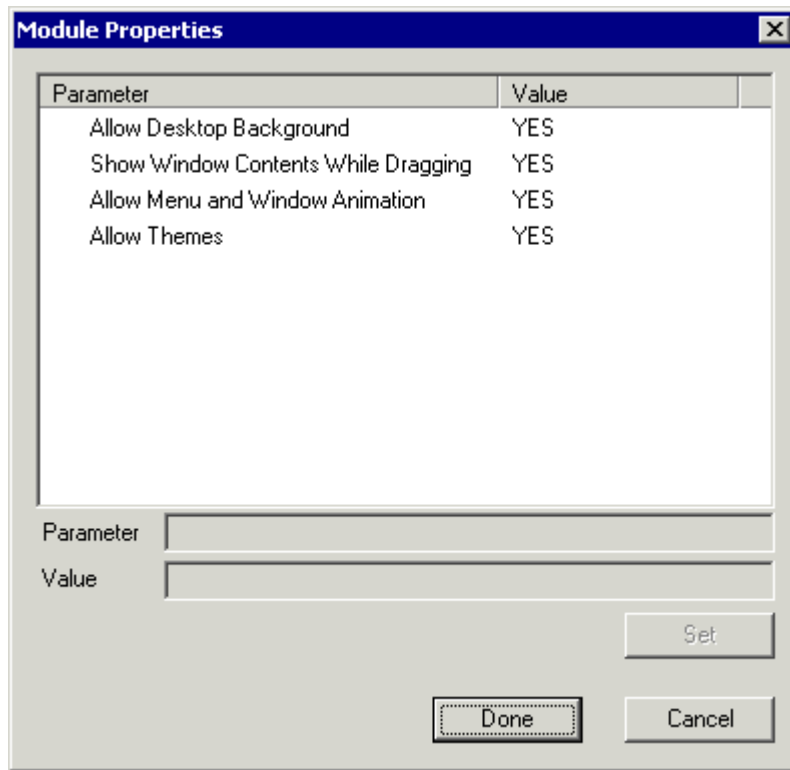


Serial Mouse Module

Configuration for the Serial Mouse include the **Mouse Type** and the **Serial Port** to be used.

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.

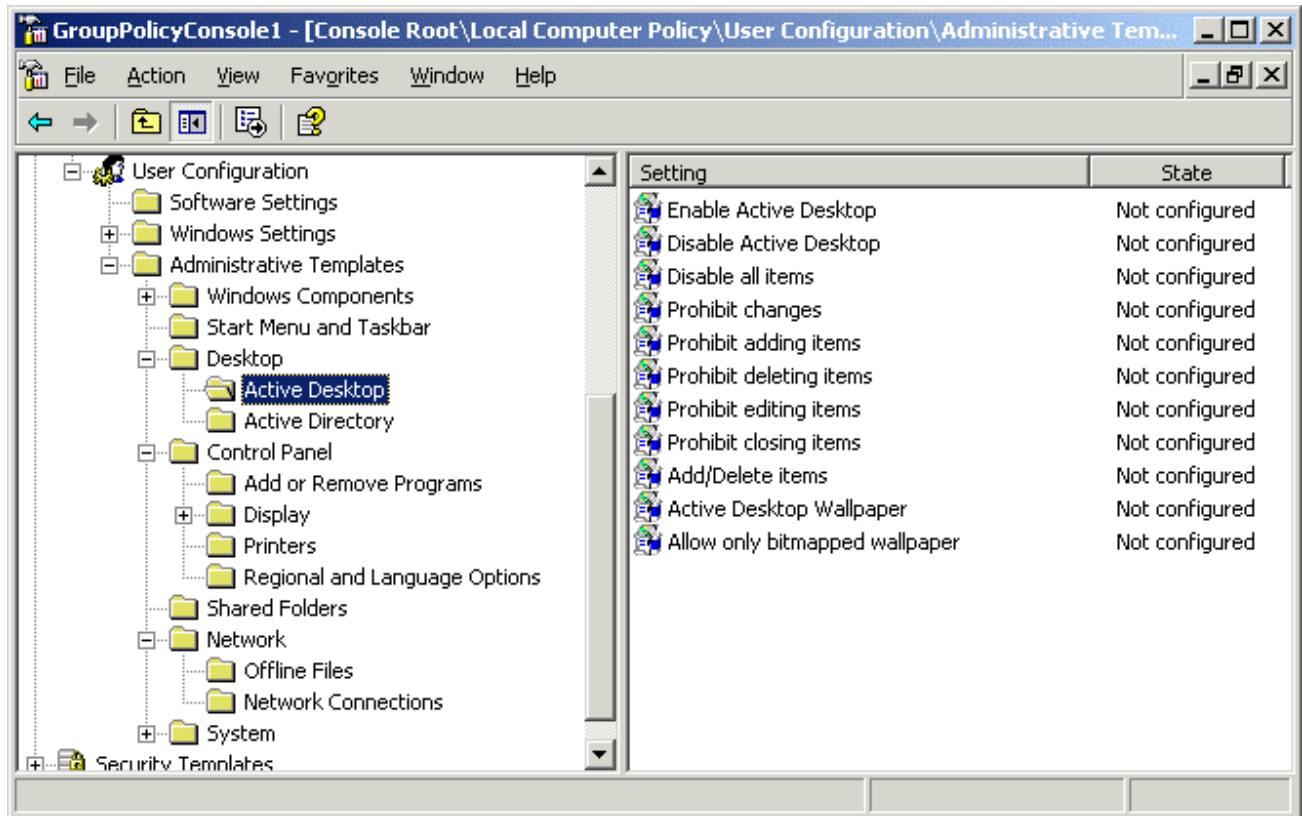


RDP Experience Module Parameters

The **RDP Experience Module** parameters are:

- Allow Desktop Background
- Show Window Contents While Dragging
- Allow Menu and Window Animation
- Allow Themes

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.

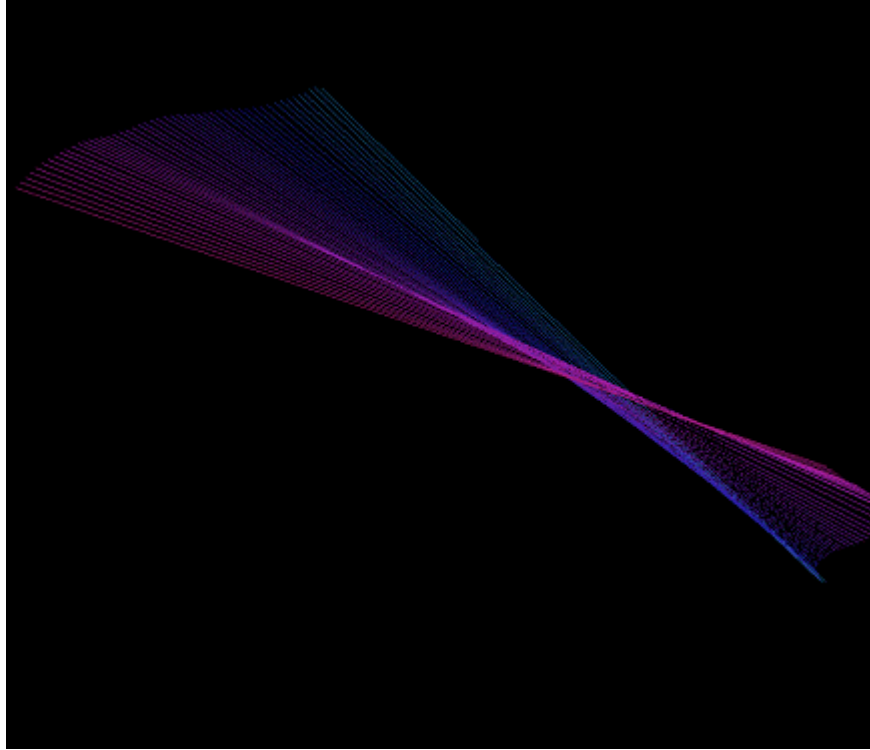


Group Policy Console

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.

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 on the terminal server.



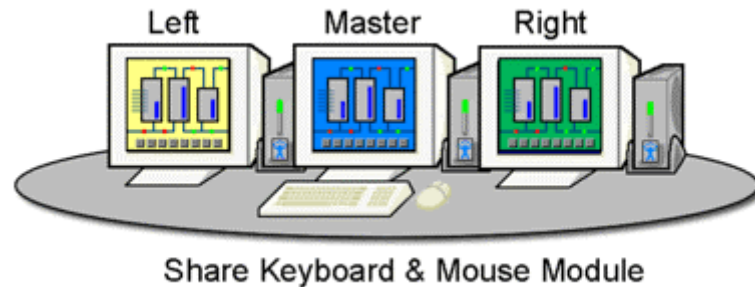
Screen Saver on Thin Client

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.

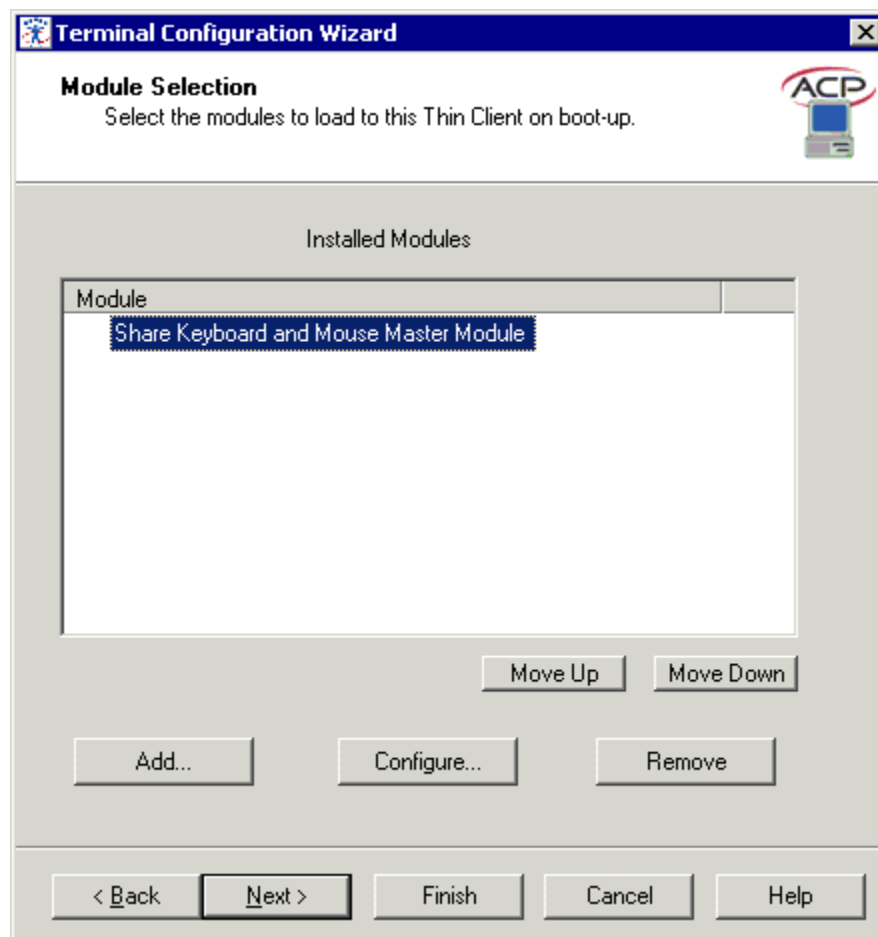
Share Keyboard and Mouse Module

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).



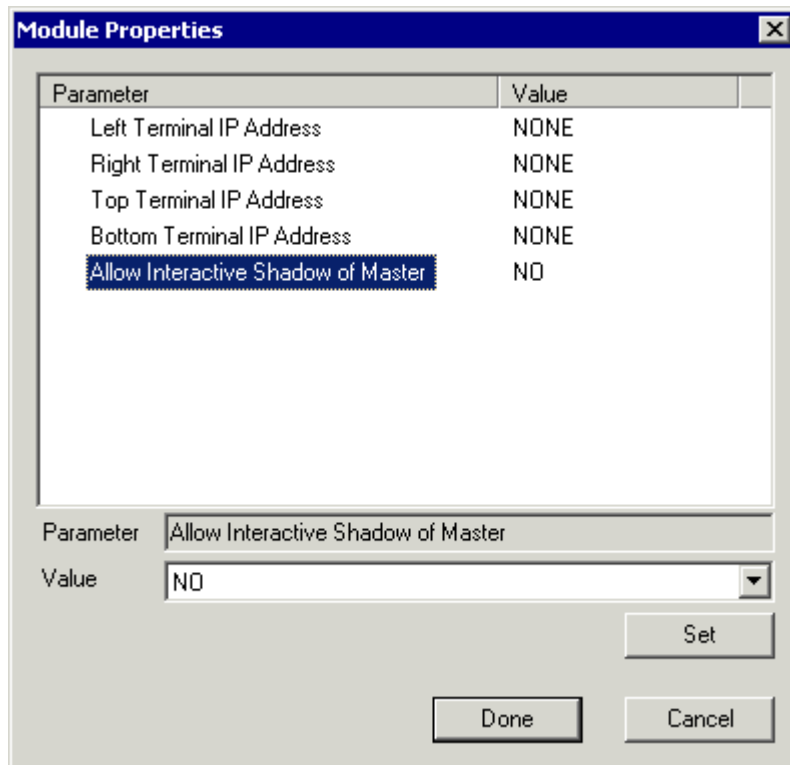
Shared Keyboard and Mouse Layout

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.



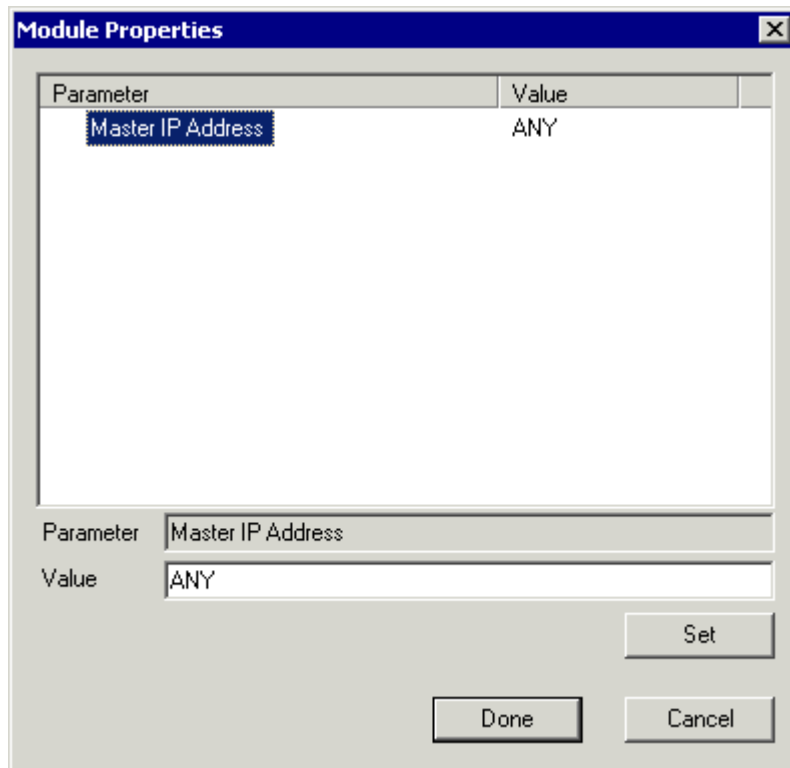
Share Keyboard and Mouse Master Module Properties

Highlight the Slave location (Left, Right, Top, or Bottom) to activate the **Value** field. Enter the correct IP address for the Slave and select the **Set** button.

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.

Select **Done** when finished.

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

The slave module can be configured to connect to a specified master by selecting the **Master IP Address**, 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.

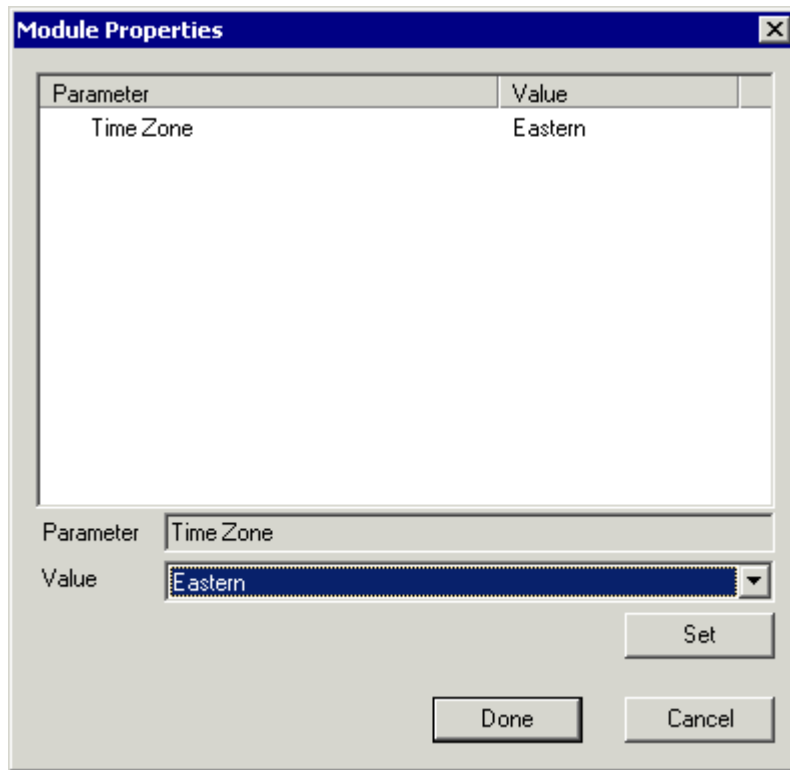
Note: A Master Share Keyboard and Mouse session cannot be interactively shadowed in ThinManager unless it is configured to allow it..

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.

Time Zone Redirection Module

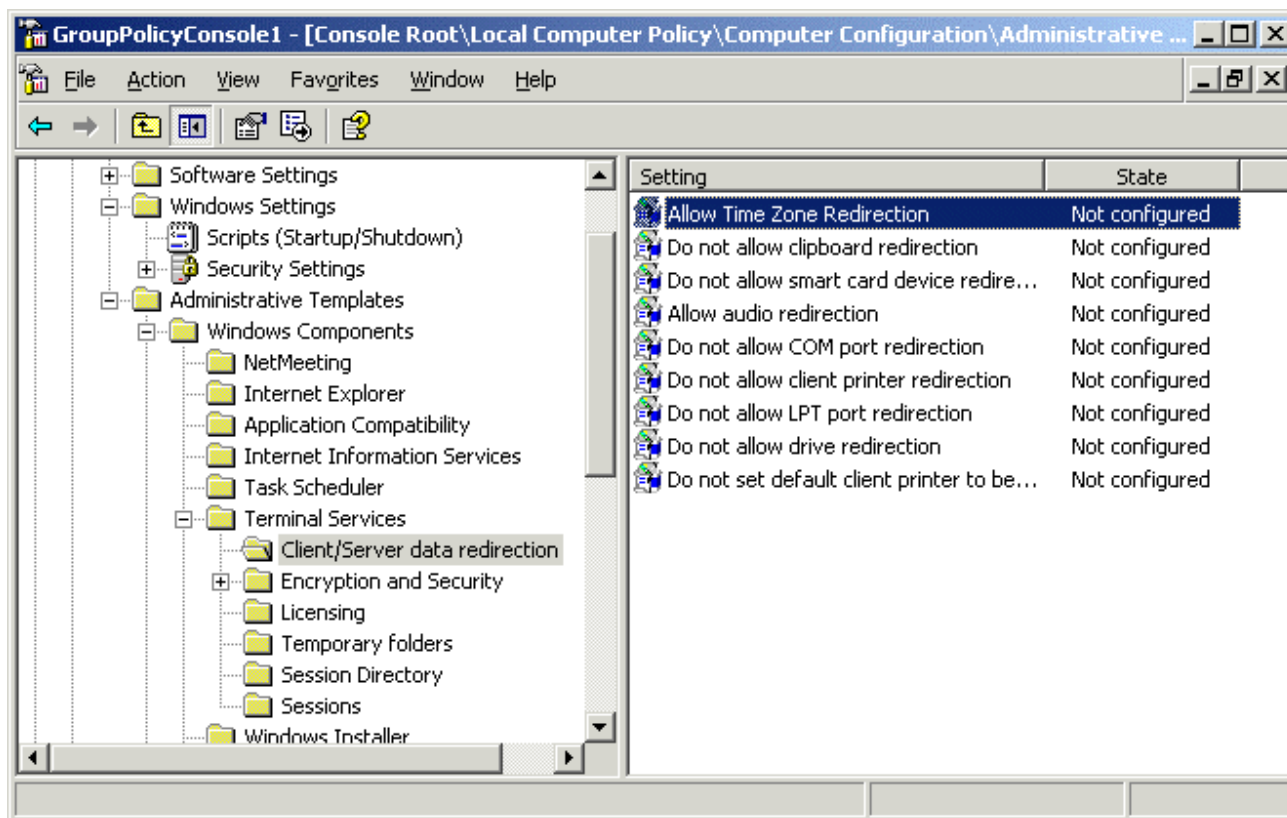
The Time Zone Redirection Module allows a terminal to display local time when it is connected to a terminal server in another time zone.



Time Zone Module Properties

The Time Zone parameter can be highlighted to activate the Value drop-down that contains time zones. Select the **Set** button to accept the changes.

The Time Zone Redirection module needs 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.

USB Memory Card Reader Module

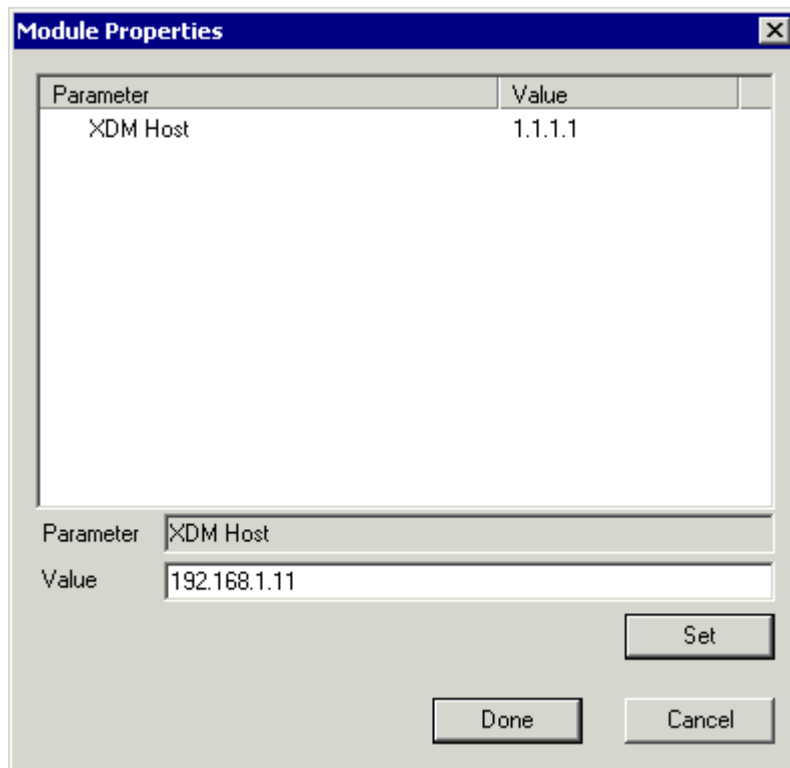
Some ThinManager Ready thin client devices have USB ports. These can be used for USB keyboards and mice without any special configuration. The USB port can also be used for USB memory card readers and USB memory sticks. This can provide local storage and a substitute for a floppy drive.

The USB Memory Card Reader requires a Windows 2003 terminal server or a MetaFrame server.

X Terminal Module

The X Terminal Module allows a ThinManager Ready thin client to boot and connect to a Unix or Linux server and run as an X terminal.

- First - add the X Terminal module to the client.
- Second – open the Module Property window by highlighting the module on the Module Selection page and select the **Configure** button.
- Third - Point the terminal to the Unix or Linux server by highlighting the XDM Host parameter in the Module Properties window and entering the IP address of the Unix or Linux server. Press the **Set** button and then the **Done** button to accept the configuration.



X Terminal Module Parameters

X Term Configuration requires the **XDM Host IP address**.

Note: The XDM service needs to run on the Unix or Linux to allow a connection.

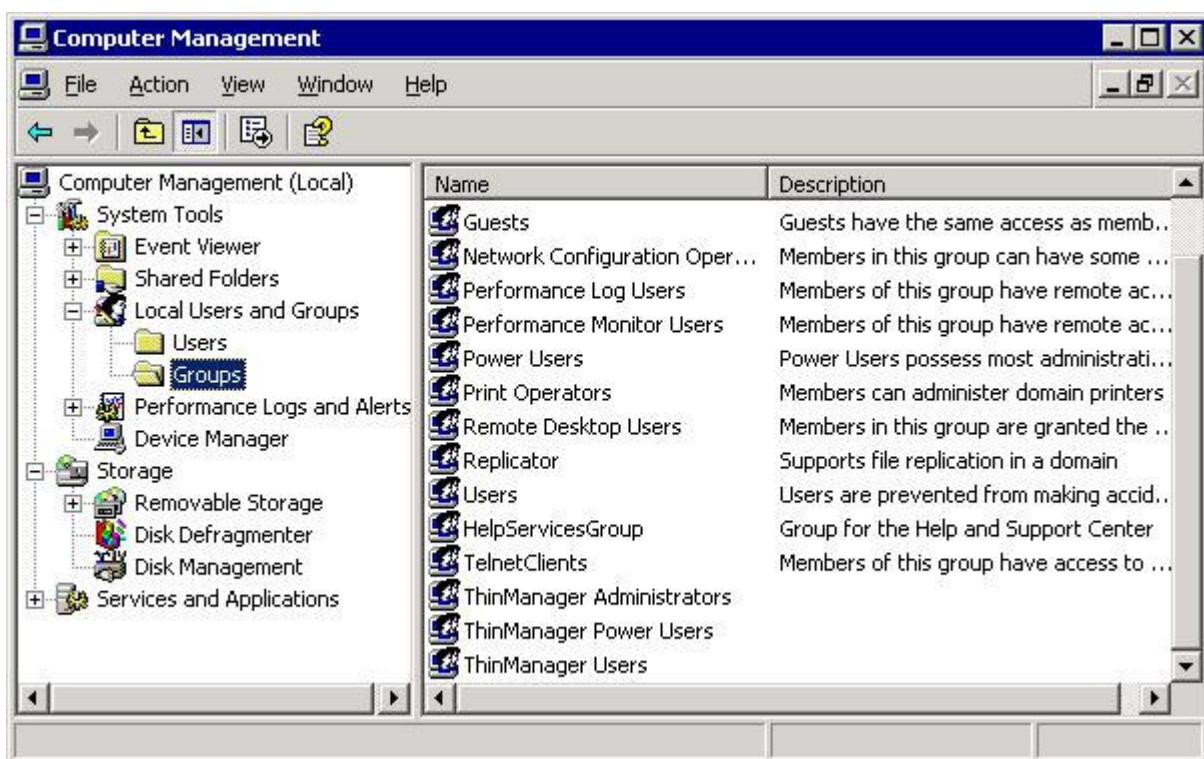
ThinManager Security

ThinManager Security Groups

ThinManager allows three different levels of access and functionality based on standard Windows groups.

Three standard Windows groups can be created in the Computer Management console and named **ThinManager Administrators**, **ThinManager Power Users**, and **ThinManager Users**. ThinManager gives members of these groups different privileges.

- **ThinManager Administrators** have full permission to do anything within ThinManager including the power to logoff sessions, kill processes, send messages, reboot 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.
- **ThinManager Power Users** can logoff sessions, kill processes, send messages, reboot 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 Users** can view only. They cannot logoff sessions, kill processes, send messages, reboot terminals, or calibrate touch screens. ThinManager Users cannot shadow a terminal.

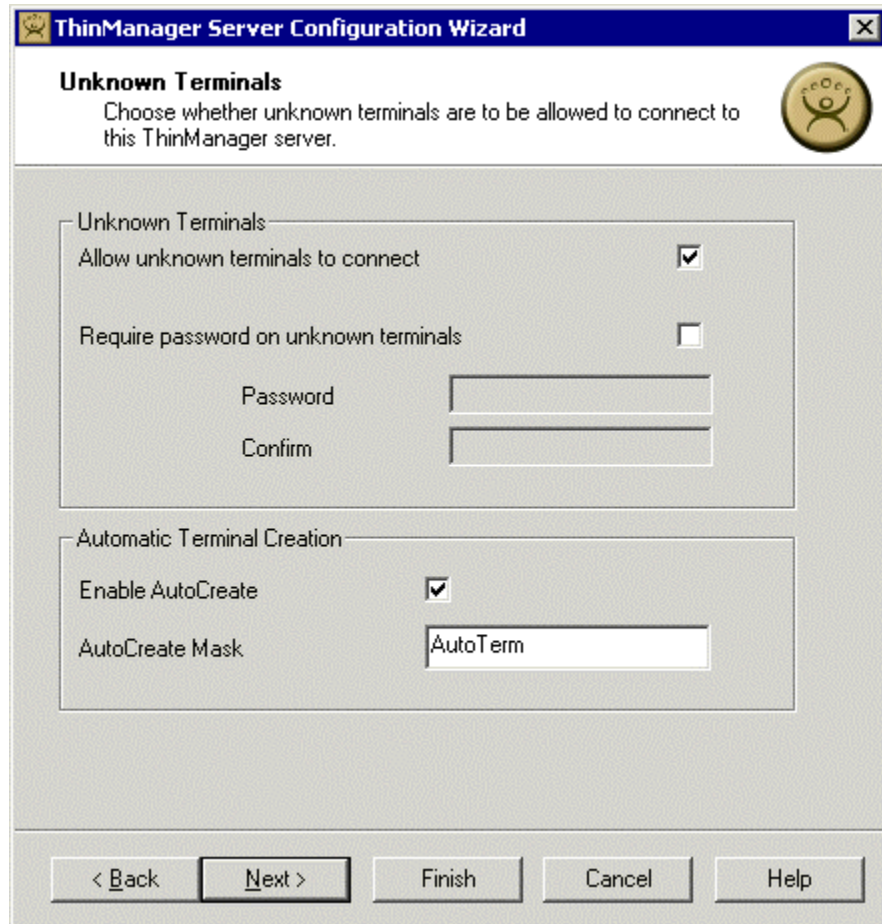


Created ThinManager Security Groups

If these groups are not created, members of the standard Windows Administrator group has full privileges in ThinManager while members of the standard Windows User group will have view only privileges.

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 select **ThinManager Server > Settings** from the menu.



The image shows a screenshot of the 'ThinManager Server Configuration Wizard' window. The title bar is blue with the text 'ThinManager Server Configuration Wizard' and a close button. The main window has a white background. At the top, there is a section titled 'Unknown Terminals' with a subtitle 'Choose whether unknown terminals are to be allowed to connect to this ThinManager server.' and a circular logo on the right. Below this, there are two main sections: 'Unknown Terminals' and 'Automatic Terminal Creation'. The 'Unknown Terminals' section contains a checkbox 'Allow unknown terminals to connect' which is checked, and a checkbox 'Require password on unknown terminals' which is unchecked. Below these are two text input fields labeled 'Password' and 'Confirm'. The 'Automatic Terminal Creation' section contains a checkbox 'Enable AutoCreate' which is checked, and a text input field 'AutoCreate Mask' with the value 'AutoTerm'. At the bottom of the window, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

ThinManager Server Configuration Wizard

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

Unknown Terminals

Allow unknown terminals to connect ☒

Require password on unknown terminals ☐

Password

Confirm

Automatic Terminal Creation

Enable AutoCreate ☒

AutoCreate Mask

< Back Next > Finish Cancel Help

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.



Terminal Replacement

On the next 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.

Windows Security

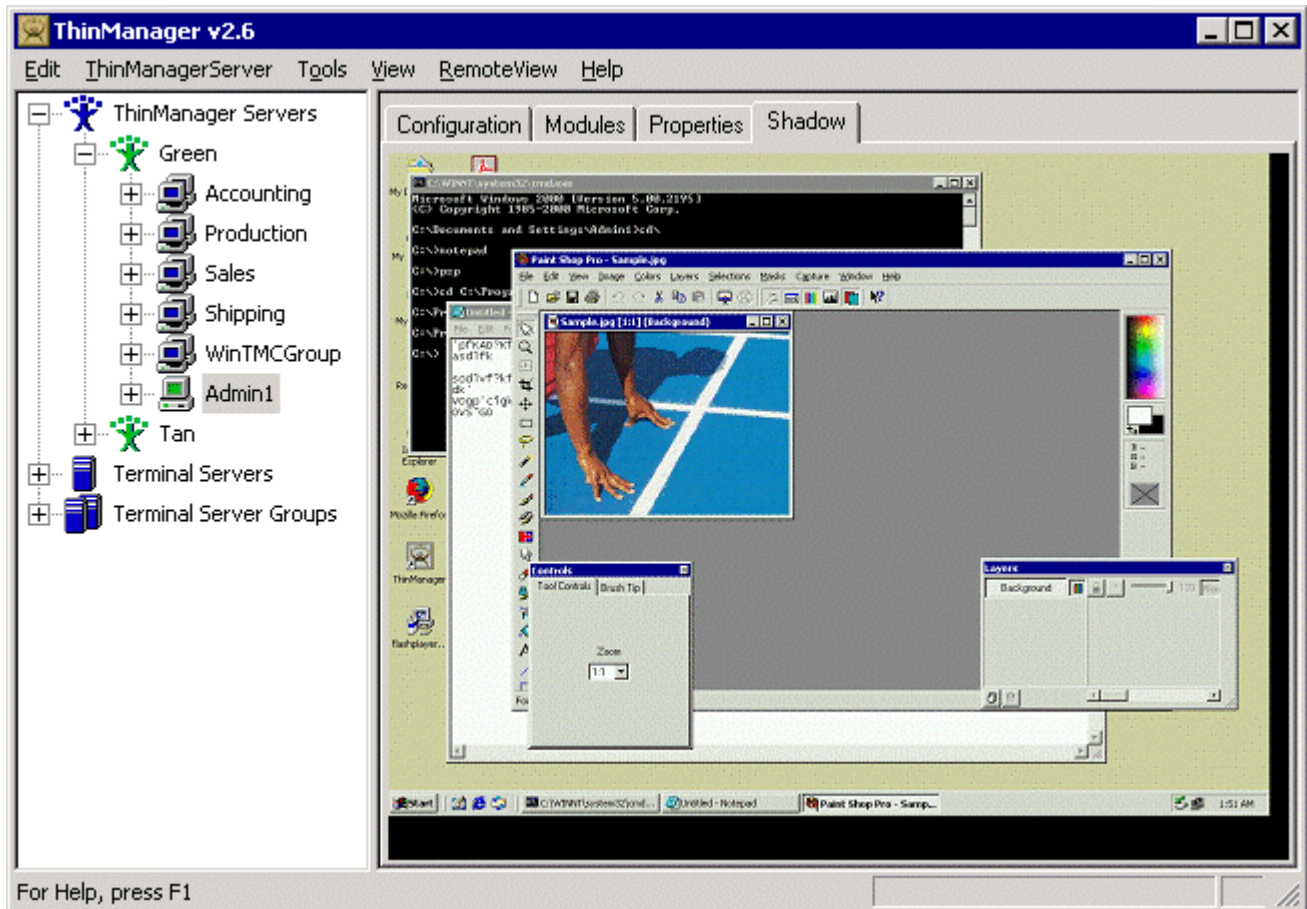
The ACP ThinManager system delivers a Windows 2000/2003 desktop to each thin client by default. Each thin client has full access to the server resources, as if it is the server. However, just because the thin client has the ability to have full access to the server resources doesn't mean that the user 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.

Shadowing

Shadowing of a ThinManager Ready terminal can be initiated from within ThinManager by using the new **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 **View>Shadow scaled to Window** to scale the session, and unselect the option to view it life sized.

Shadow Access

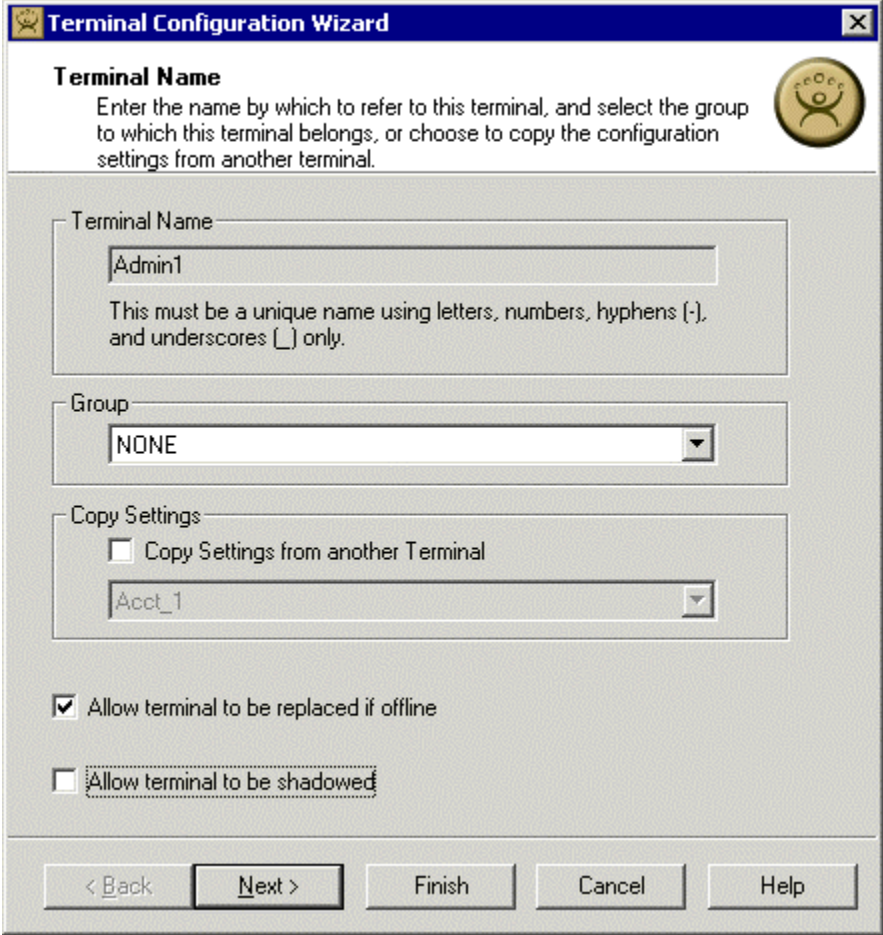
Access to the shadow function is control by membership in ThinManager User Groups.

- **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 Users** cannot shadow a terminal.

View>Interactive Shadow on the menu bar prevents the interaction with the shadowed session if unselected.

Disable Shadow

Shadow can be turned off for a Group or a Terminal by unselecting the **Allow terminal to be shadowed** checkbox on Terminal Name page of the Terminal Configuration wizard or Group Configuration wizard.



Terminal Configuration Wizard

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

Terminal Name
Admin1
This must be a unique name using letters, numbers, hyphens [-], and underscores [_] only.

Group
NONE

Copy Settings
☐ Copy Settings from another Terminal
Acct_1

☒ Allow terminal to be replaced if offline
☐ Allow terminal to be shadowed

< Back Next > Finish Cancel Help

Terminal Configuration Wizard

The **Allow terminal to be shadowed** checkbox controls access to shadowing. If unchecked, shadowing is denied.

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 **Tools> Shadowing>Send Ctl+Alt+Del** or **Tools> Shadowing>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.

Serial Communications

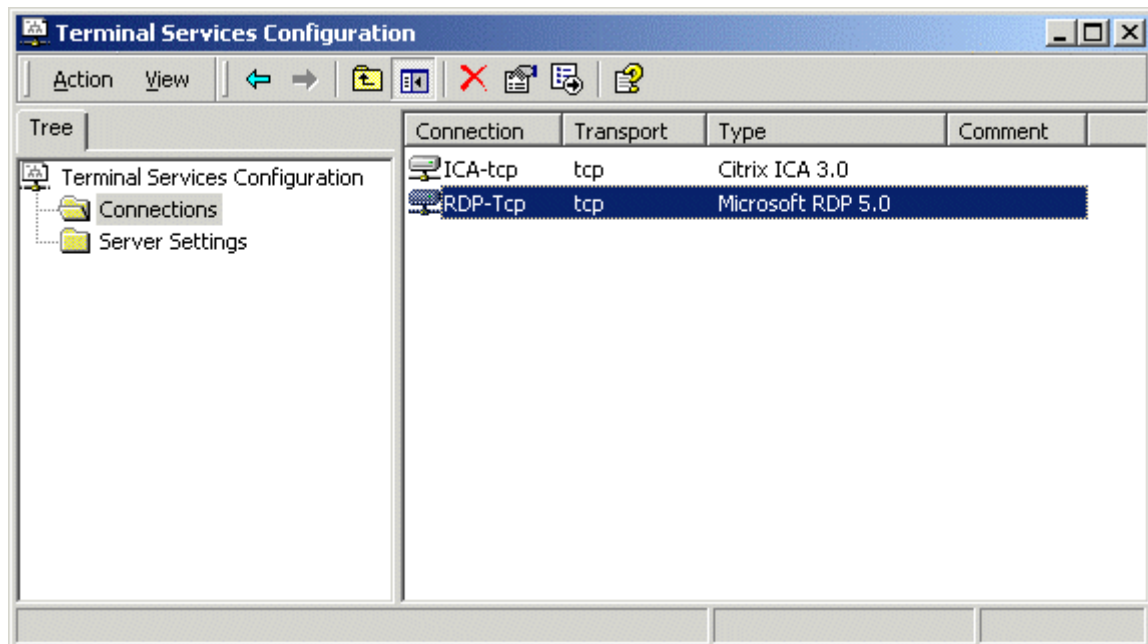
Because the session of the thin client is actually running on the terminal server, referencing the serial port in the session will reference the server serial port. To access the serial port on the terminal, one must either map the serial port or use the High Speed Serial Driver.

- Serial Port mapping is available for ThinManager Ready thin clients using the RDP protocol through the addition of the RDP Serial Port Redirection Module.
- Mapping a serial port using the ICA protocol requires a command prompt program.
- The High Speed Serial Driver is available for ThinManager Ready thin clients using either ICA or RDP.

RDP Serial Port Redirection Module for Windows 2003

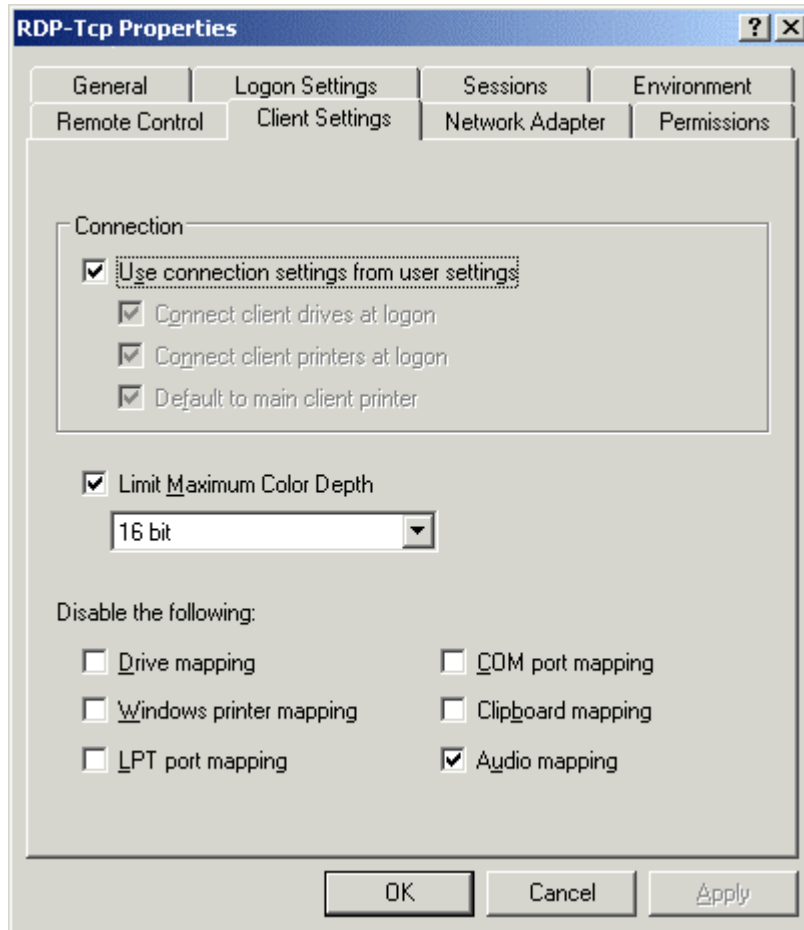
The serial ports on a ThinManager Ready thin client can be remapped by adding the RDP Serial Port module to the thin client without additional configuration. Once the thin client is booted, the COM1 in the session will refer to the COM1 on the terminal, while the COM2 in the session will refer to the 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.

Serial Port Mapping with ICA

When using the ICA Client Communication Protocol with a ThinManager Ready thin client, you must map the physical thin client COM port to a COM port in the session running on the terminal server.

To map a COM Port in the session to a physical COM Port on a ThinManager Ready thin client, open a command prompt on the client and type:

```
net use comX: \\client\comY:
```

Where "X" is number of the COM port your application will use, and "Y" is the number of the physical COM port on the ThinManager Ready thin client. Use "**client**" for the name of the terminal.

For example: **net use com3: \\client\com2:**

The example will map COM3 in the session to physical COM Port 2 on the client. Using COM3 in an application in the session will access data from the client's physical COM Port 2.

Note: The space after the colon in "comX" is important.
The "**\\client**" is the word "**client**", not the client's name.

This is a local mapping. It must be mapped on the client, and the COM port data is only available to that session.

This connection will last until the session is terminated. To maintain the mapping, use **/persistent** as a switch in the command.

For example: **net use com3: \\client\com2: /persistent** will keep the COM 3 on the session mapped to COM 2 on the terminal hardware.

High Speed Serial Driver

Automation Control Products has a High-Speed Serial Driver (HSSD) module that offers more reliable serial communication at speeds to 115K per second. This is a global serial redirection; a COM port on a client becomes available to all users on that machine.

This has two components

- **The High Speed Serial Driver module** is a module that is added to the terminal and provides the client application.
- **The ACP COM Redirector program** is a server-side application that is loaded on the terminal server or other computer where the serial data is desired.

Serial data is passed from the client-side High Speed Serial Driver module to the server-side ACP COM Redirector program. Configuration is done in the server-side ACP COM Redirector program.

Installation Requirements

The high speed serial driver can be installed on any PC running Microsoft Windows NT 4.0 Service Pack 5 or higher, Microsoft Windows NT Terminal Server Edition Service Pack 5 or higher, or Microsoft Windows 2000/2003.

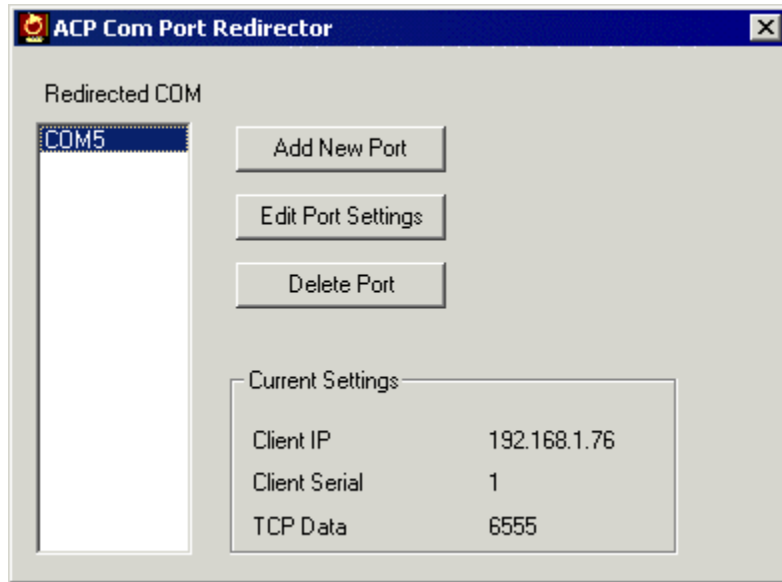
Note: The ACP COM Redirector program can be installed on a machine other than your Terminal Server machine. The high-speed serial driver must be installed on the terminal server from which the thin-client session is running to access the serial ports from your thin-clients. If you install the ACP COM Redirector software on another computer, you will be able to access the thin client serial ports from the ACP COM Redirection software on that machine.

High-Speed Serial Driver Installation

Install the ACP COM Redirection in the install mode using the **Add/Remove Programs** to point to the **setup.exe** file of the High-Speed Serial Driver Install. Follow the instructions to complete the installation.

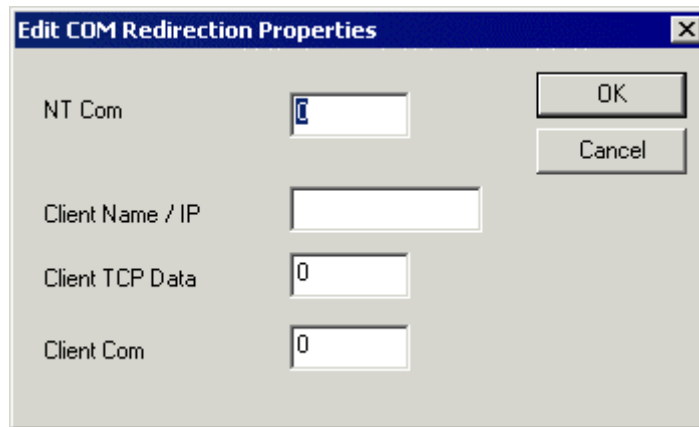
High-Speed Serial Driver Configuration

Once the High-Speed Serial Driver program is installed, you will need to configure the serial ports you wish to access using the ACP COM Redirector. Open the ACP COM Redirector program by selecting **Start>Programs>Acp>ACP Com Redirector**.



ACP Com Port Redirector

To configure a COM port click **Add New Port**, this will launch the Edit Properties dialog box.



Com Redirection Port Properties

Type in a COM port number to assign a number to a “virtual” port in the **NT Com Port** field. This number will identify the COM port on the NT system.

Type in the thin client IP address for the client with the actual serial port in the **Client Name/IP Address** field.

You can leave the **Client TCP Data Port** field empty. The program will fill this in with a unique port number for every serial port that is on the same thin-client, starting with 6550.

Type in the actual serial port number of the thin client’s port that is being used into the **Client Com Port** field.

HSSD Module Installation

The High Speed Serial Driver module needs to be added to terminals whose serial ports are being used.

Module License Installation

Before using the High Speed Serial Driver module, you must obtain and install a license for the High Speed Serial Driver module. This license can be activated at www.acpthinclient.com. The procedure is that same as for the ThinManager terminal licenses. Please refer to ThinManager Licensing for details.

ThinAdapter and the ThinAdapter Plus

The ThinAdapter is a Network Interface Card with an ACP Boot ROM that allows a PC to boot as a ThinManager Ready thin client. This allows outdated hardware to be converted to modern thin clients. A PC with the ThinAdapter card and its hard drive removed or unplugged becomes a ThinManager Ready Thin Client.

The **ThinAdapter Plus** is the ThinAdapter network card with a compatible video card. This eliminates video compatibility issues.

Note: It is recommended that the computer hard drive be unplugged or removed.

ThinAdapter Plus

ThinAdapter Plus Includes a video card to eliminate the need to try to match the ThinAdapter with a video chip set. The ThinAdapter Plus has the same requirements as the ThinAdapter.

- **Processor Requirement:** Pentium 133 or better is required for ThinAdapters
- **Memory Requirement:** 64 MBs of RAM is required for ThinAdapters
- **ThinManager Terminal Properties Configuration:** Set the OEM field to Generic and the Model field to Other on the Identity tab.
- **Video Card Requirement:** Use the included video card to provide the supported video chipset.

WinTMC Fat Client

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 Standard ThinManager Installation for details on installation.

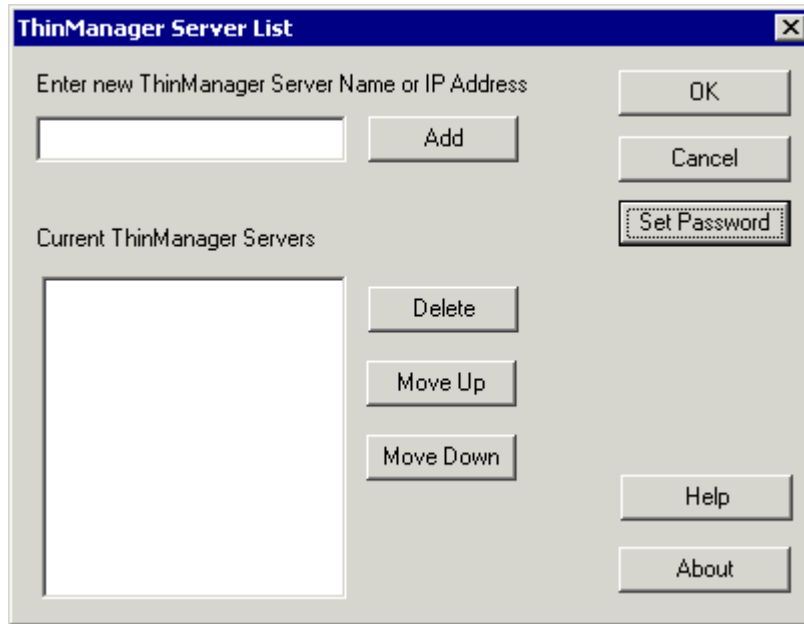
Local WinTMC Configuration

When WinTMC starts, a **Configure** button will be displayed on the splash screen.



WinTMC Splash Screen

Click on the **Configure** button to configure the initial WinTMC settings.



WinTMC ThinManager Server List Configuration

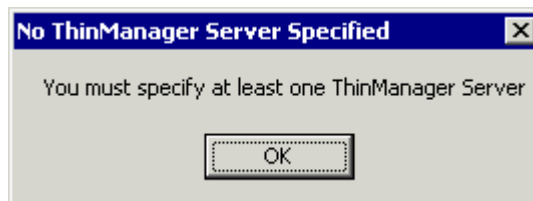
The ThinManager Server List allows the WinTMC to be pointed to one or more ThinManager Servers to retrieve its configuration.

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.

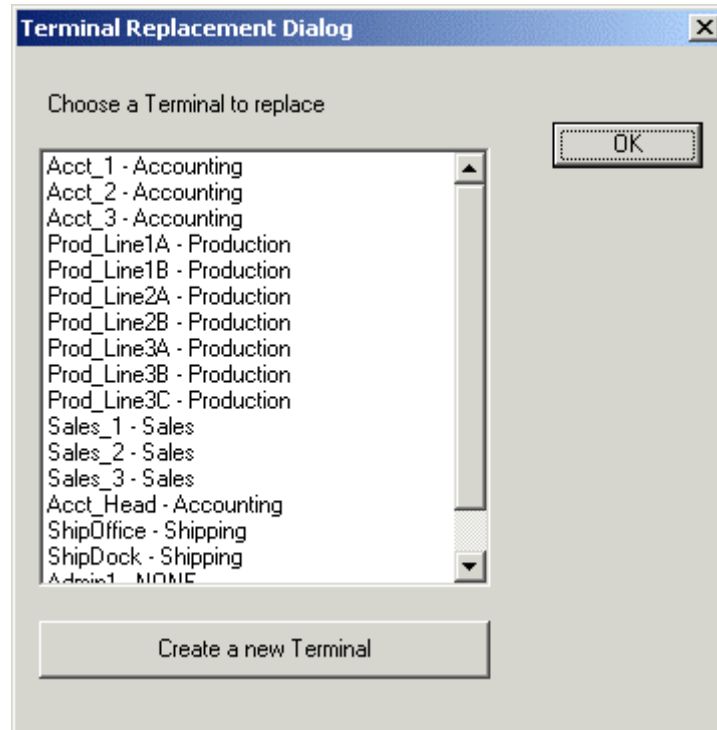
This configuration menu can be password protected by selecting the **Set Password** button. Once the password is set, when WinTMC is started and the Configure button is clicked, a password will be required to change the configuration.



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.

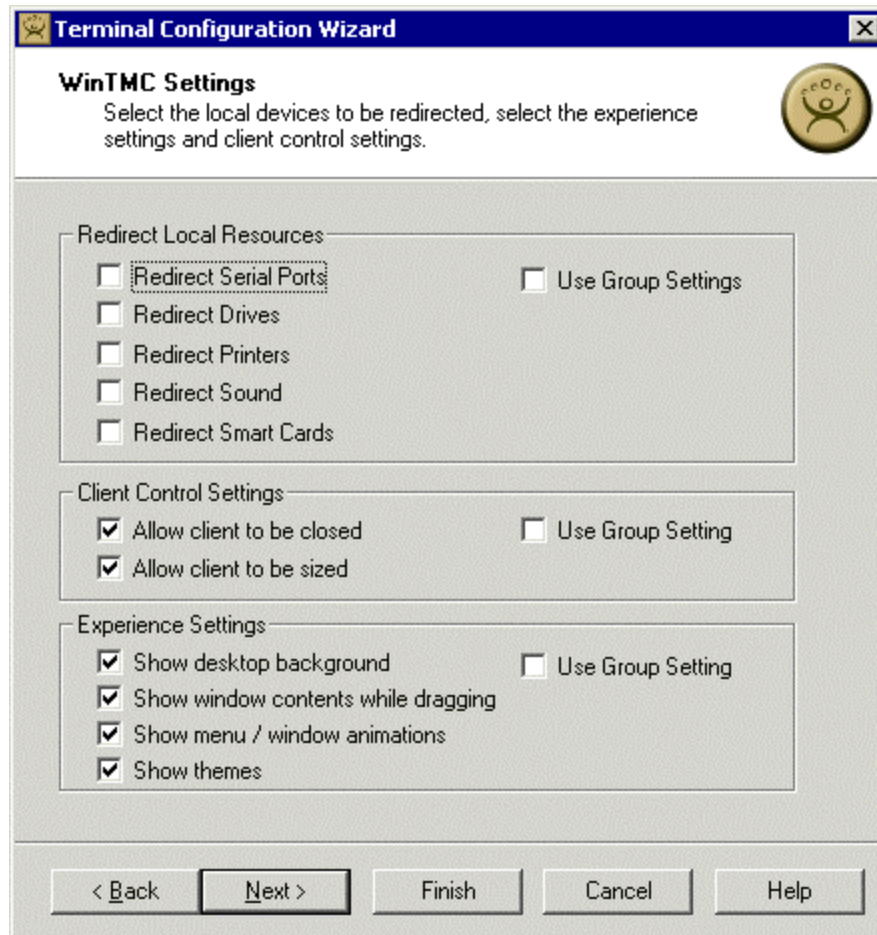
If you want to run WinTMC without the configure button, you can run it from a command line with the ThinManager Servers separated by semi-colons (i.e. **WinTMC TMS1 ; TMS2 ; TMS3**). This will eliminate the configure button when WinTMC is started.

If you want to pre-create a WinTMC client in ThinManager using the Terminal Configuration Wizard, select **GENERIC** for the Make and **PersonalComputer** for the Model on the Terminal Hardware page of the wizard

The screenshot shows a Windows-style dialog box titled "Terminal Configuration Wizard". The main heading is "Terminal Hardware" with a sub-instruction: "Select the manufacturer and model of this client." Below this, a grey-shaded area contains the text "Use this to configure the type of hardware for this terminal." There are two dropdown menus: "Make / OEM" set to "GENERIC" and "Model" set to "PersonalComputer". Below these, the text "OEM Model OTHER" and "Video Chipset UNKNOWN" is displayed. At the bottom, there are five buttons: "< Back", "Next >" (which is highlighted with a dashed border), "Finish", "Cancel", and "Help". A small circular icon with a stylized figure is located in the top right corner of the dialog.

WinTMC Settings in Terminal Hardware

The Terminal Configuration includes a WinTMC Settings page.



WinTMC Settings

WinTMC clients can be configured on the Group WinTMC Settings page. These only apply to connections made by the WinTMC fat 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.

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.

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.

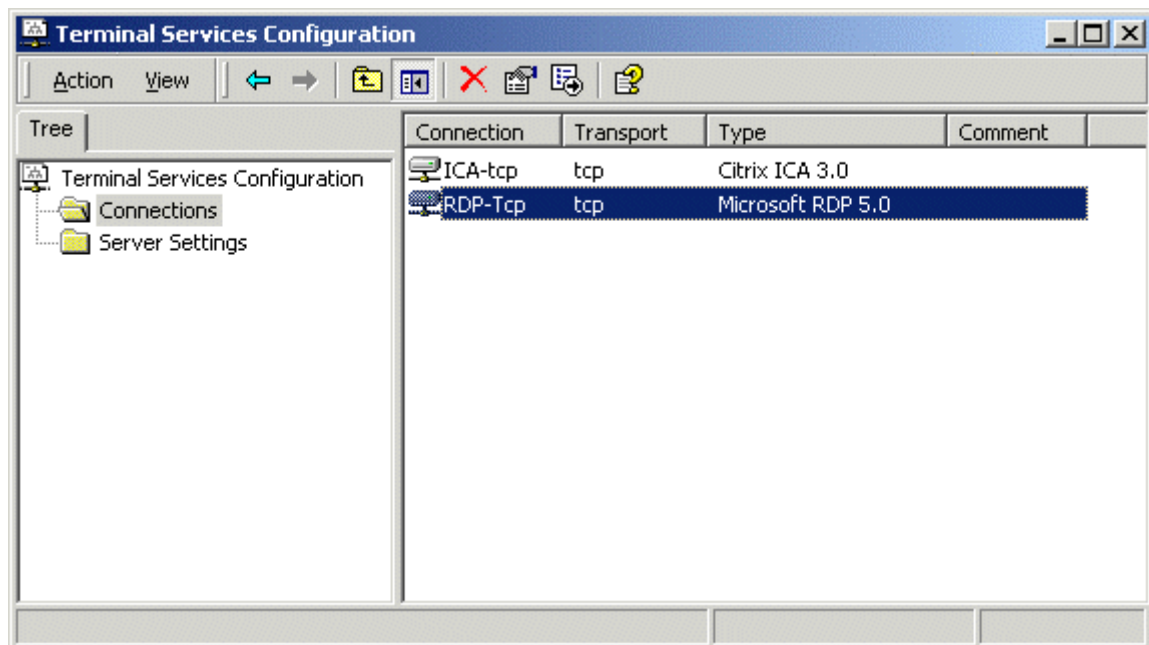
Non-ThinManager Components

Configuring RDP for Auto-Login

RDP, the **Remote Desktop Protocol** is configured by default to require users to enter a password when logging on to a Windows 2000 Terminal Server. This prevents a terminal from logging in automatically when using an initial program. The change in the configuration to allow the auto-login and initial program while using RDP is made in the **Terminal Services Configuration**.

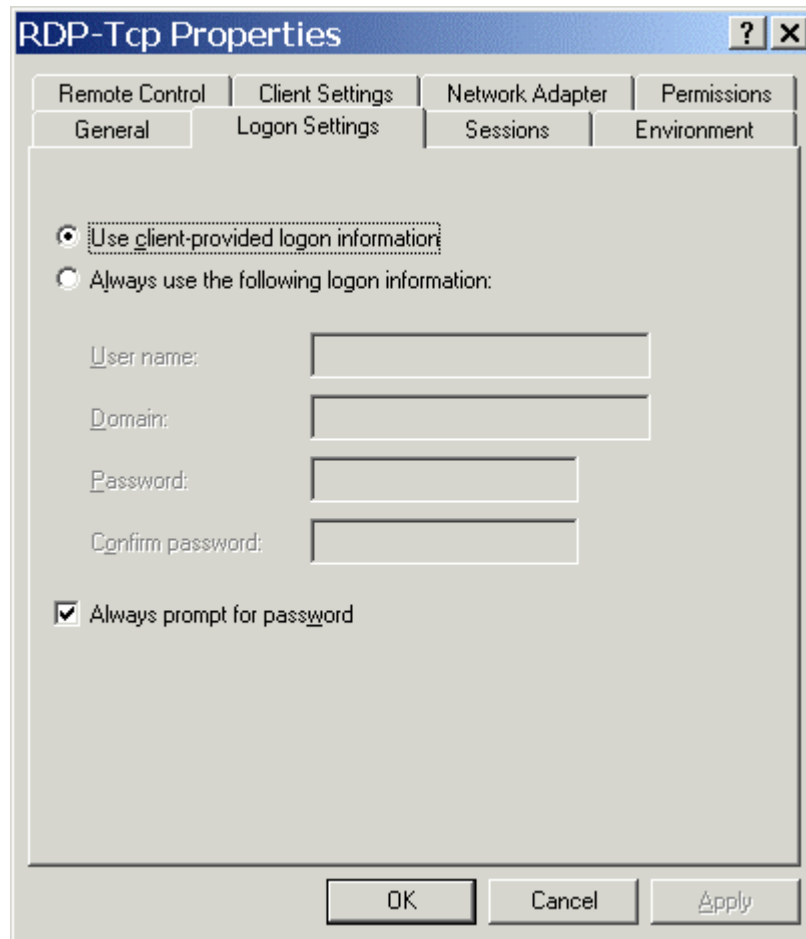
Note: The information included here is for your convenience. Because this information can change, please see Microsoft at www.microsoft.com for up-to-the-minute details.

Select **Start>Programs>Administrative Tools>Terminal Services Configuration** to launch the **Terminal Services Configuration Console**.



Terminal Services Configuration Console- Windows 2000

Double-click **RDP-tcp** in the right pane or highlight **RDP-tcp** and select **Action>Properties** to launch the **RDP-tcp Properties**.



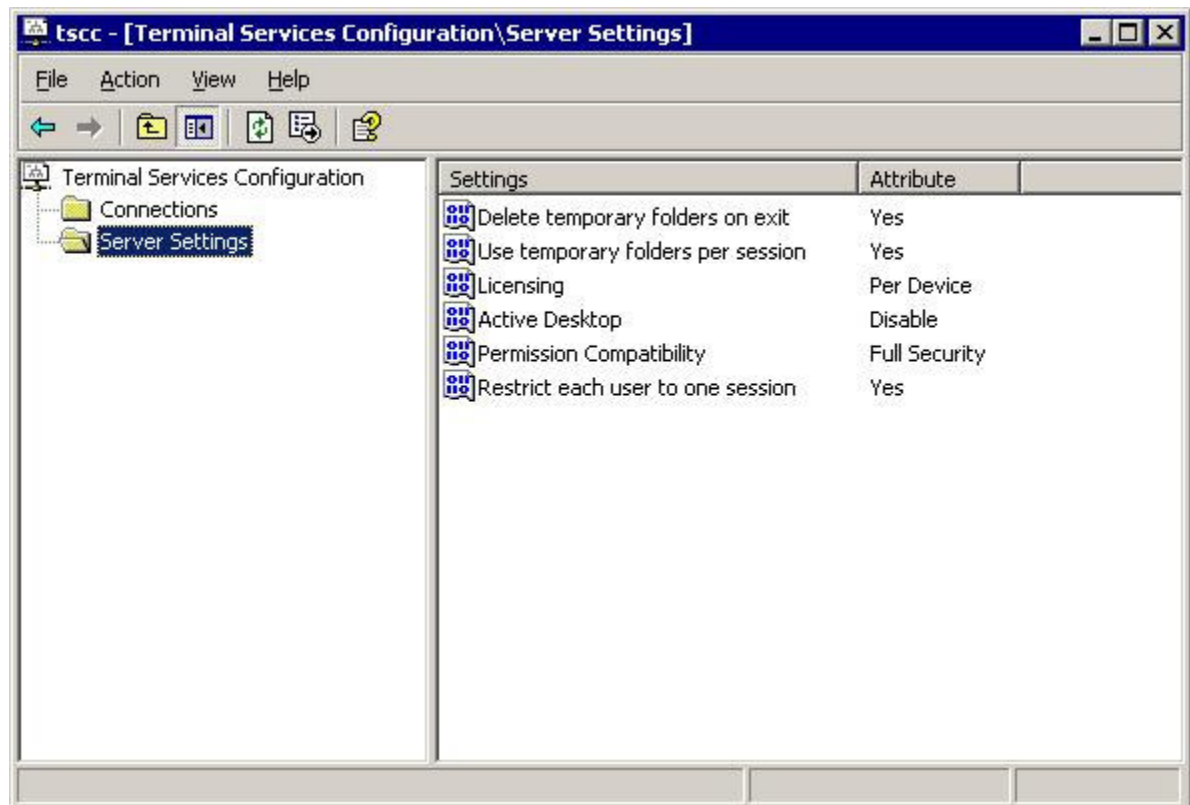
RDP-tcp Properties

Uncheck the ***Always prompt for password*** checkbox and click the ***OK*** button to allow auto-login.

Configuring Windows 2003 Terminal Services for Multiple Logins

Windows 2003 is set to prevent multiple logins by the same account. Although it is a “best practice” to have each user login with a unique account, a terminal using MultiSession can use the same terminal server in several Terminal Server Groups, making multiple logins desirable. This setting, and others, is changed in the Terminal Services Configuration Console. See Configuring RDP for Auto-Login.

Open the Microsoft Terminal Services Configuration Console by selecting **Start>Control Panel>Administrative Tools> Terminal Services Configuration**.

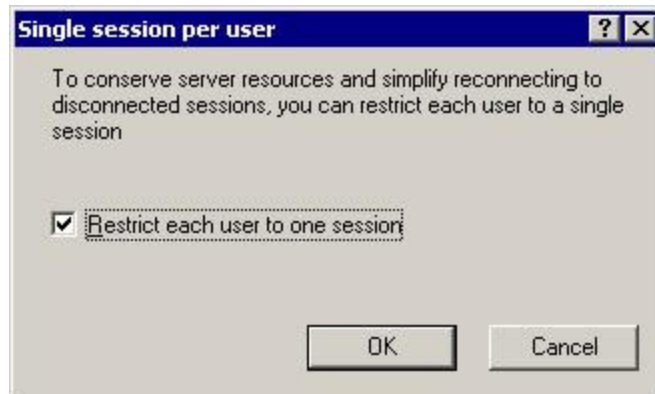


Terminal Services Configuration Console- Windows 2003

The **Server Settings** in the Terminal Services Configuration Console the settings that can be changed by double-clicking them. Three that are of interest are **Licensing**, **Permission Compatibility**, and **Restrict each user to one session**.

Single Session Per User

The **Single Session Per User** setting controls multiple logins. Double-clicking the setting will launch a settings window.



Terminal Services Configuration Console- Single Session Per User

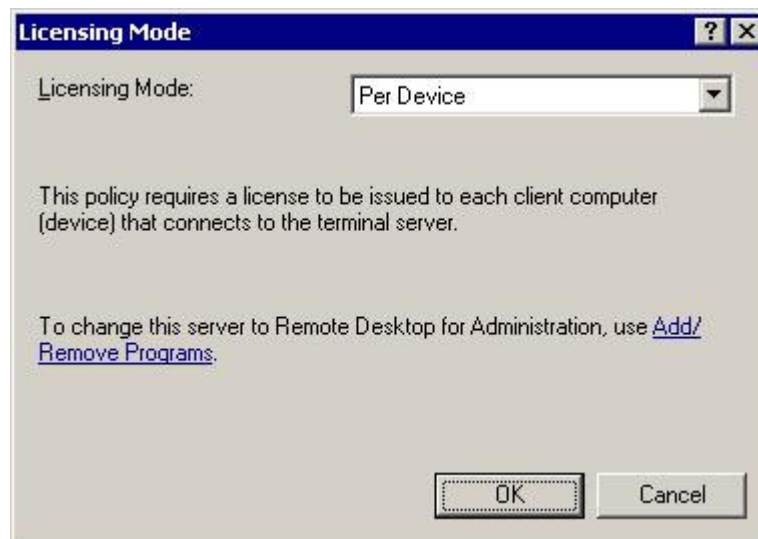
The ***Restrict each user to one session*** checkbox is selected by default in Windows 2003. Unselect it to allow multiple logins if needed for MultiSession.

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**.

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.

Command Prompt

Terminal Services has several commands that aid in managing the terminal server. Some useful ones are:

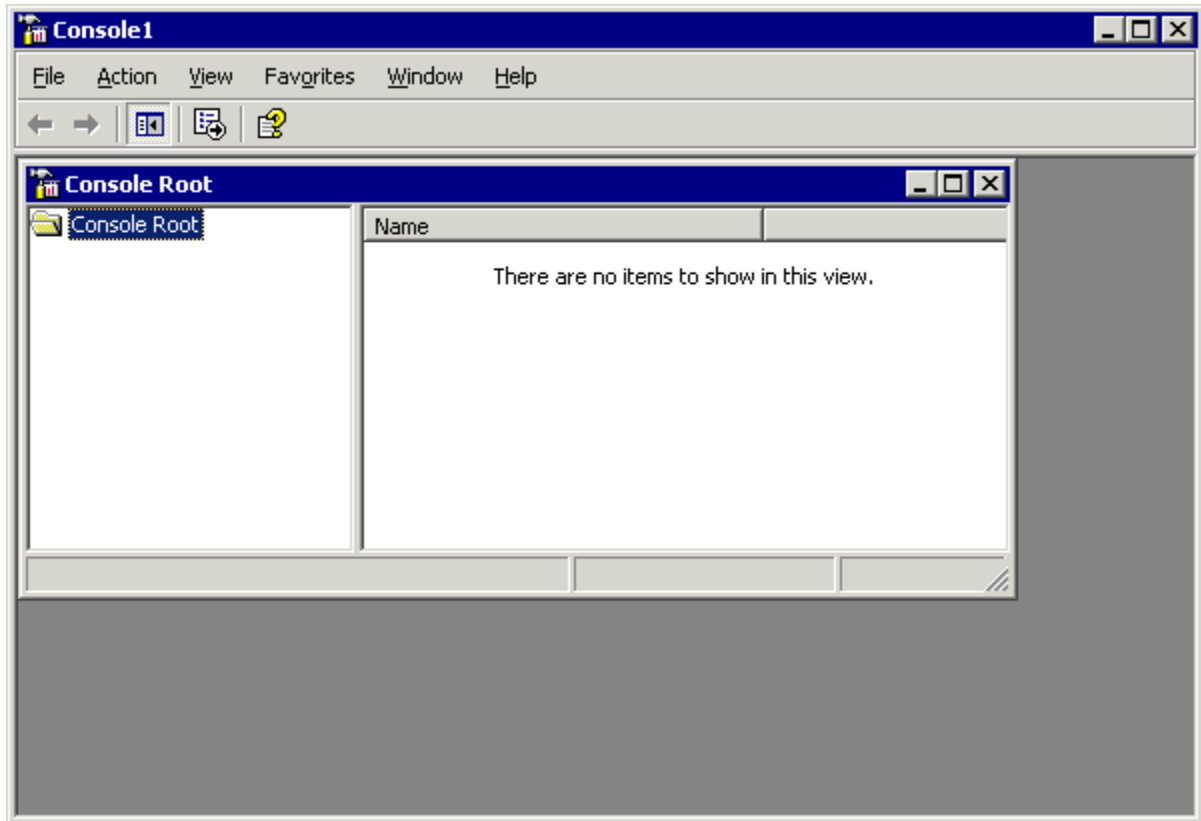
Command	Action
<code>change logon</code>	Temporarily disables logons to a Terminal Server
<code>change port</code>	Changes COM port mappings for MS-DOS program compatibility
<code>change user /install</code>	Puts the server into "Install Mode"
<code>change user /execute</code>	Removes the server from "Install Mode"
<code>Ipconfig</code>	Displays the IP addresses of the network card
<code>Logoff</code>	Logs off a user from a session and deletes the session from the server
<code>net send username "message"</code>	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.
<code>query process</code>	Displays information about processes running on a Terminal server
<code>query session</code>	Displays information about sessions on a Terminal server
<code>query termserver</code>	Displays a list of all Terminal servers on the network
<code>query user</code>	Displays information about user sessions on a Terminal server
<code>reset session</code>	Resets a session to known initial values
<code>Shadow</code>	Monitors another user's session
<code>Tsdiscon</code>	Disconnects a client from a terminal server session
<code>Tsshutdn</code>	Shuts down the terminal server in an orderly manner

See the Windows online help for additional commands and parameters.

Group Policy

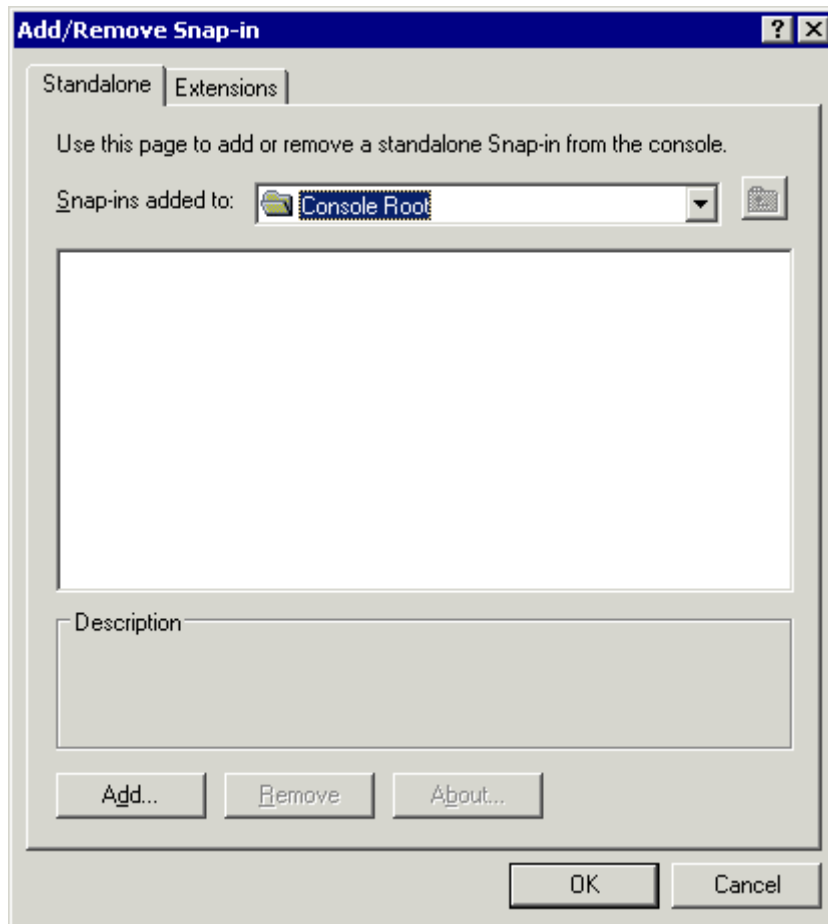
Windows 2003 has a number of features that can be allowed or prevented with a Group Policy. Group Policy is configured in the Group Policy Object Editor snap-in to the Microsoft Management Console.

Access the Group Policy Editor by typing **mmc** at a command prompt to launch the Microsoft Management Console.



Microsoft Management Console

The Microsoft Management Console will be empty. Add snap-ins by selecting **File> Add/Remove Snap-in**.



Add/Remove Snap-in

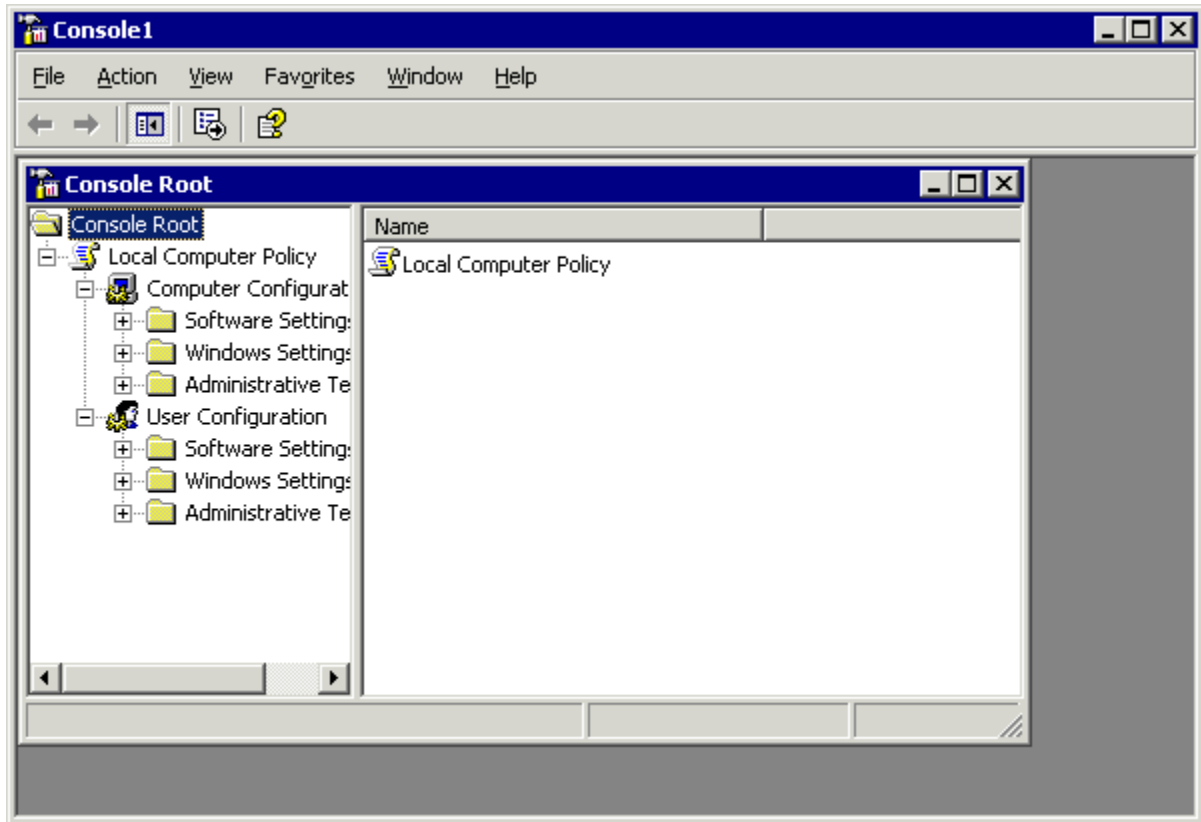
Select the **Add** button on the **Standalone** tab of the **Add/Remove Snap-in** window.



Add Standalone Snap-in

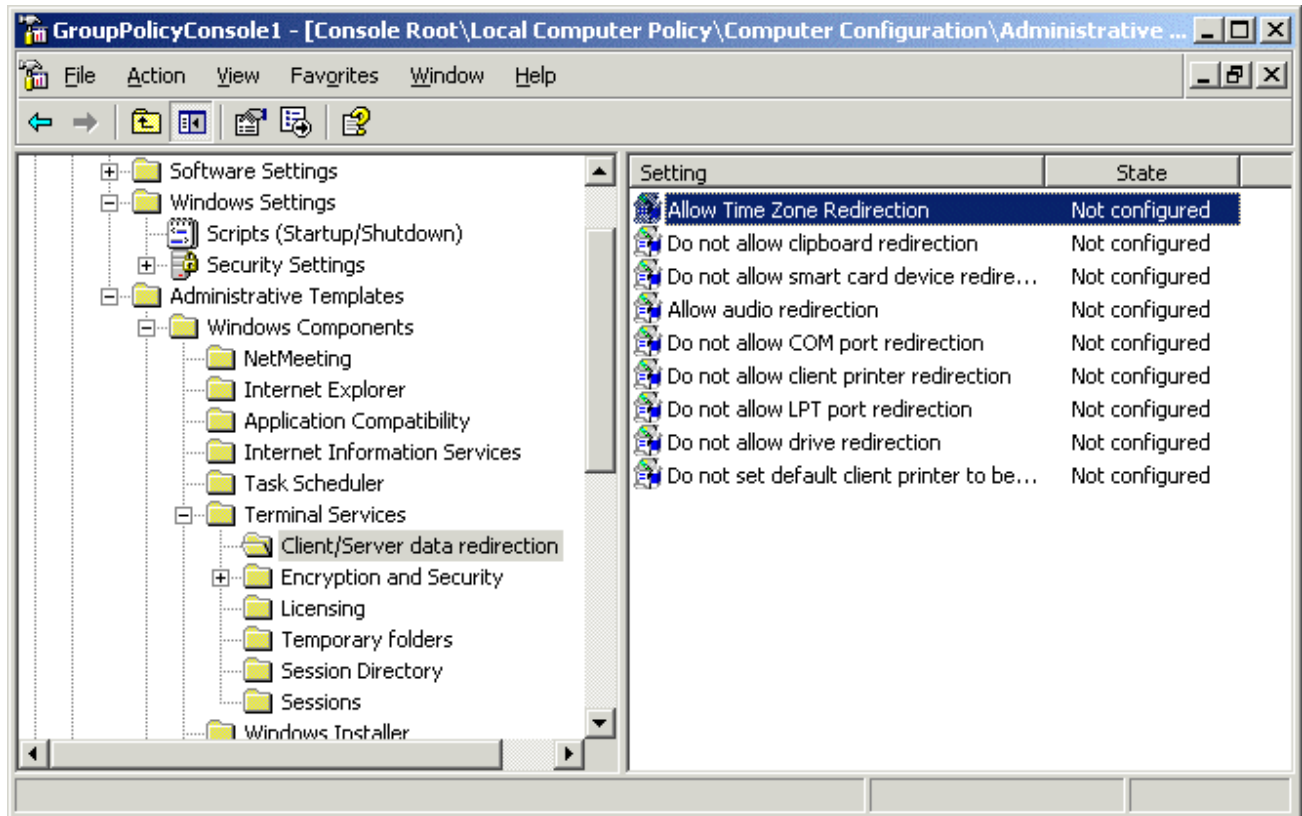
Scroll through the snap-ins on the Add Standalone Snap-in page and highlight the **Group Policy Object Editor**.

Select the **Add** button to add the Group Policy editor to the console.



Console with Group Policy

The Group Policy editor will be added to the console for use. This console can be saved for re-use. Expanding the tree will show Group Policy settings that can affect the terminal server experience.



Group Policy Settings

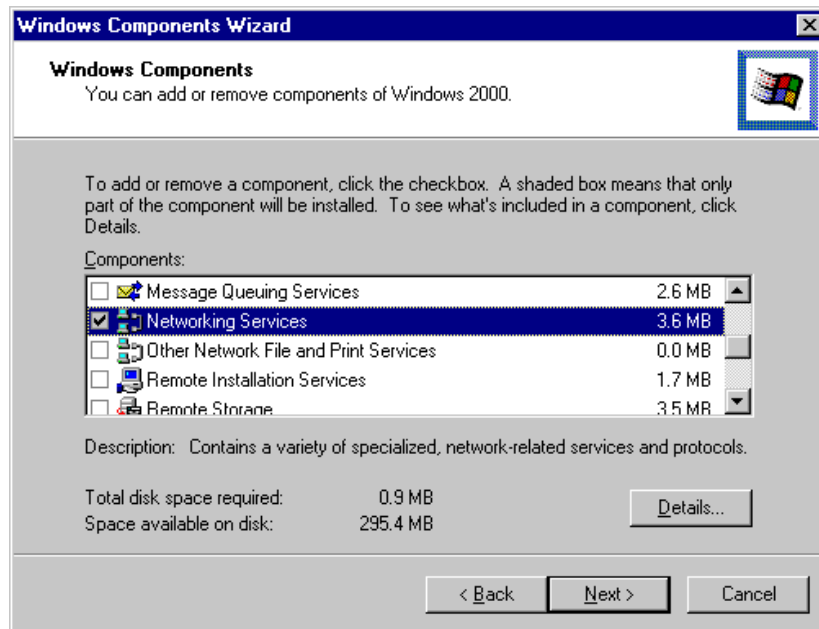
Please refer to Microsoft documentation for information on using these features.

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.

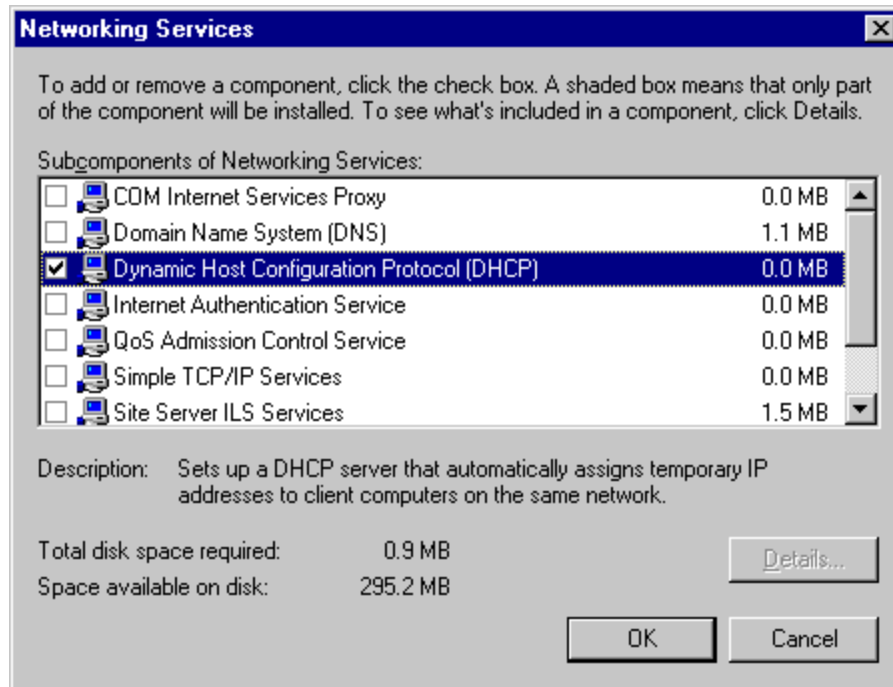
Note: The information included here is for your convenience. Because this information can change, please see Microsoft at www.microsoft.com for up-to-the-minute details.

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.



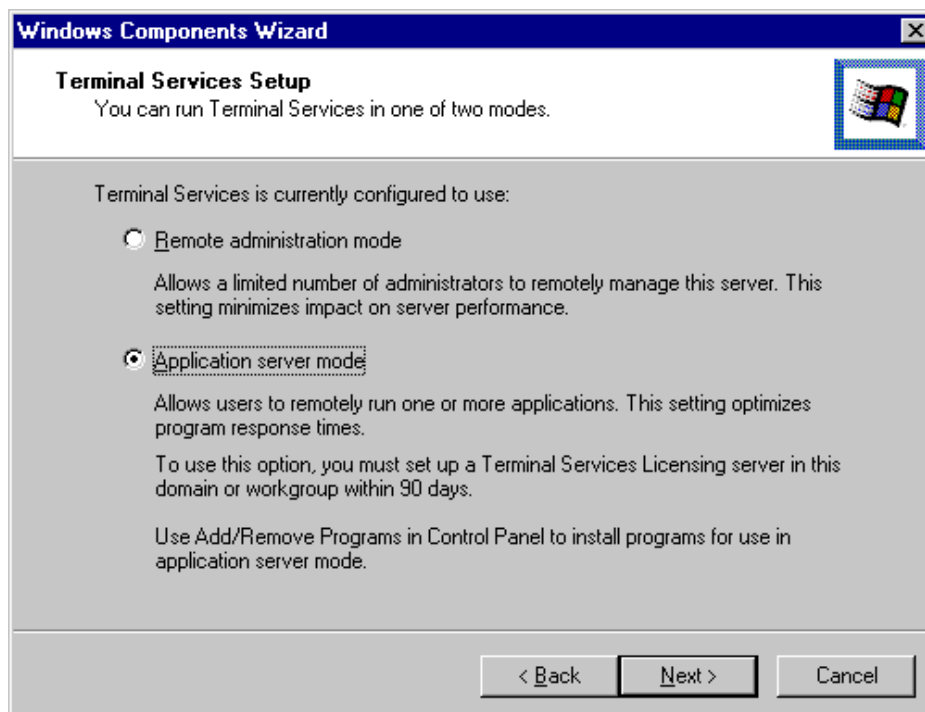
Windows Components Wizard

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

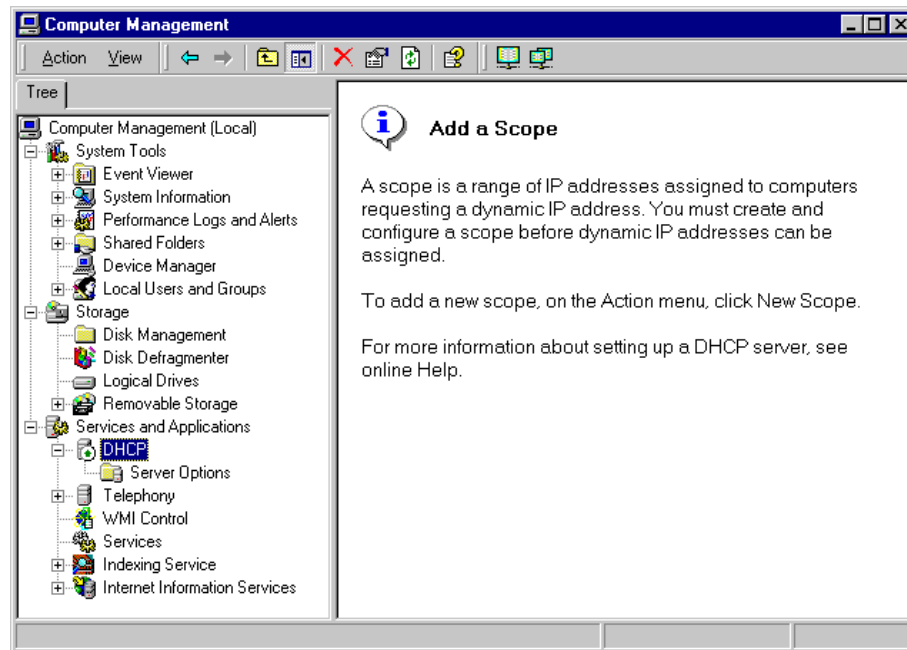
As part of the Windows Components Wizard, you may be asked to confirm the terminal service mode. The terminal server needs to run in application server mode to work with thin clients.

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.

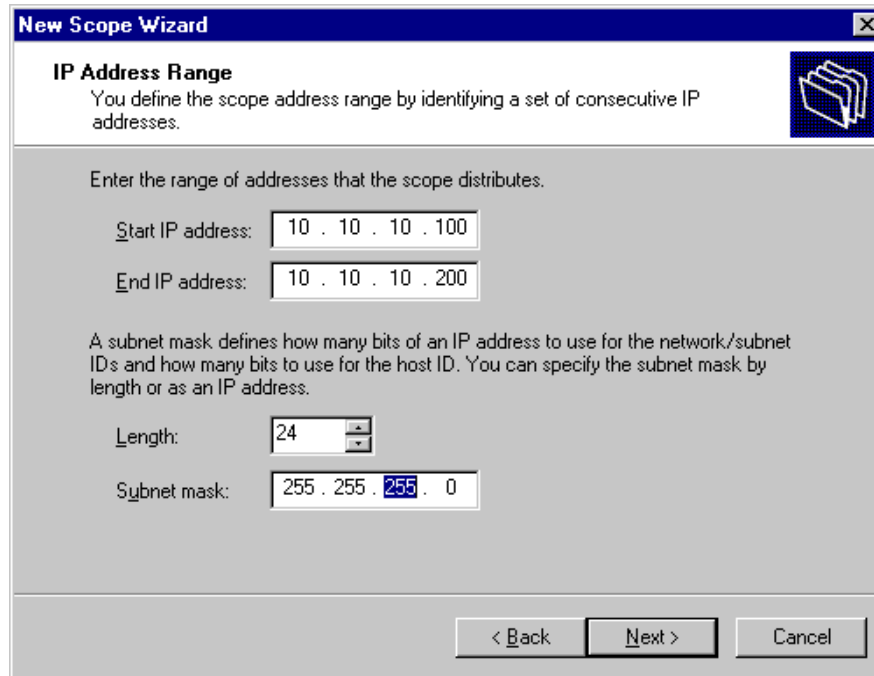
To establish a DHCP scope, open the Computer Management Console by selecting **Start>Programs>Administrative Tools>Computer Management**.



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.



New Scope Wizard

IP Address Range
You define the scope address range by identifying a set of consecutive IP addresses.

Enter the range of addresses that the scope distributes.

Start IP address: 10 . 10 . 10 . 100

End IP address: 10 . 10 . 10 . 200

A subnet mask defines how many bits of an IP address to use for the network/subnet IDs and how many bits to use for the host ID. You can specify the subnet mask by length or as an IP address.

Length: 24

Subnet mask: 255 . 255 . 255 . 0

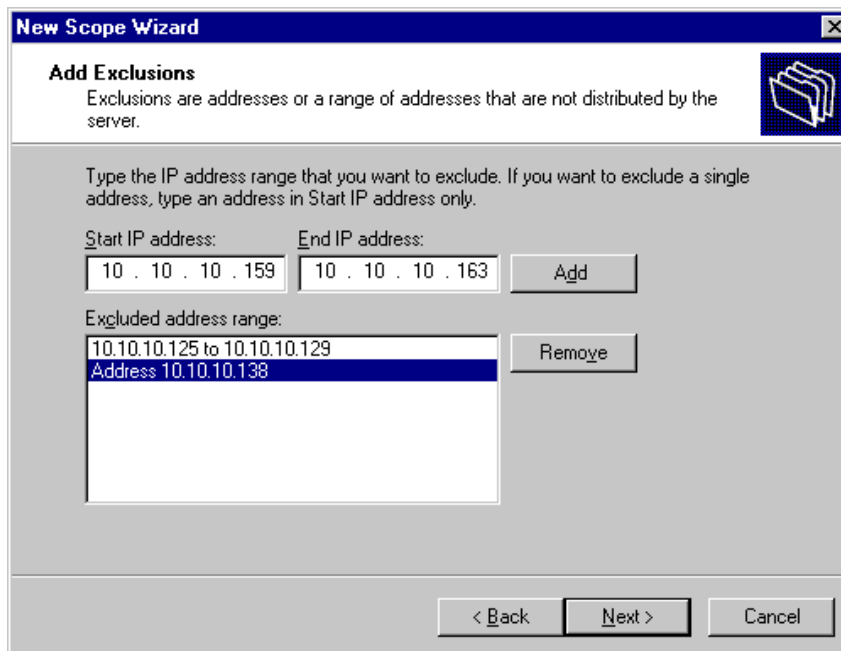
< Back Next > Cancel

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.



New Scope Wizard

Add Exclusions
Exclusions are addresses or a range of addresses that are not distributed by the server.

Type the IP address range that you want to exclude. If you want to exclude a single address, type an address in Start IP address only.

Start IP address: 10 . 10 . 10 . 159 End IP address: 10 . 10 . 10 . 163 Add

Excluded address range:

10.10.10.125 to 10.10.10.129	Remove
Address 10.10.10.138	

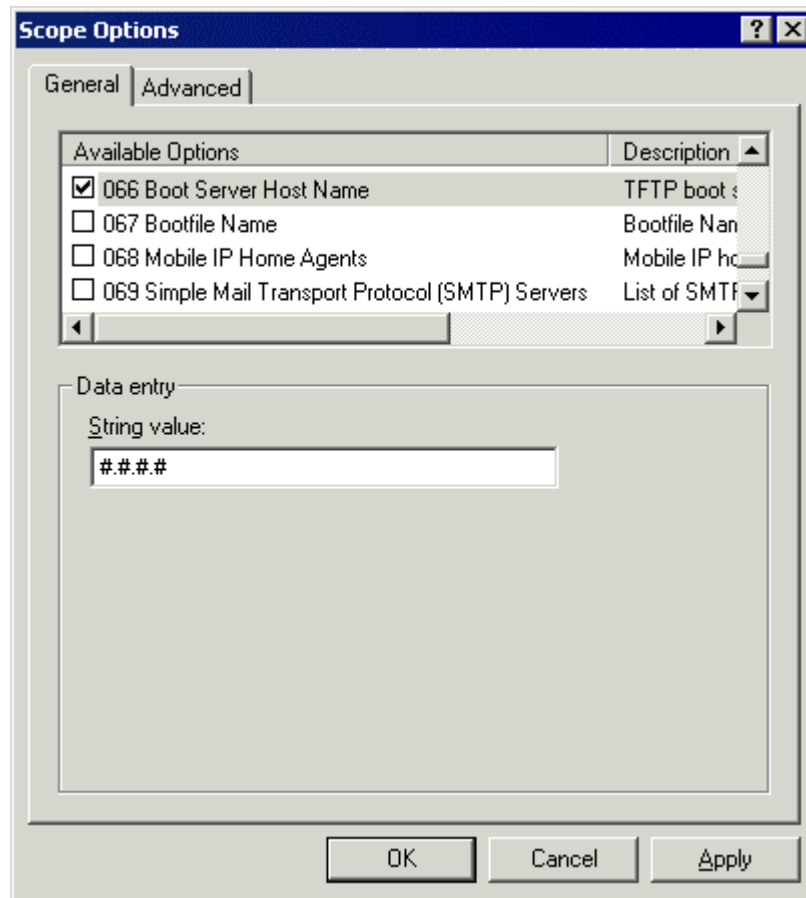
< Back Next > Cancel

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**.



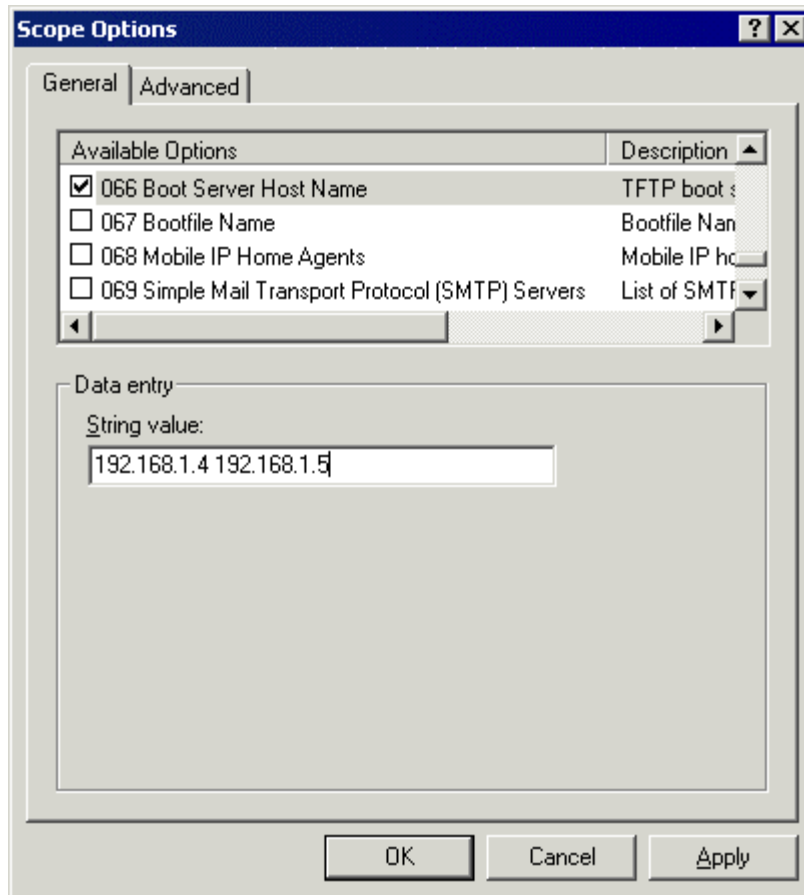
Boot Server Host Name

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.

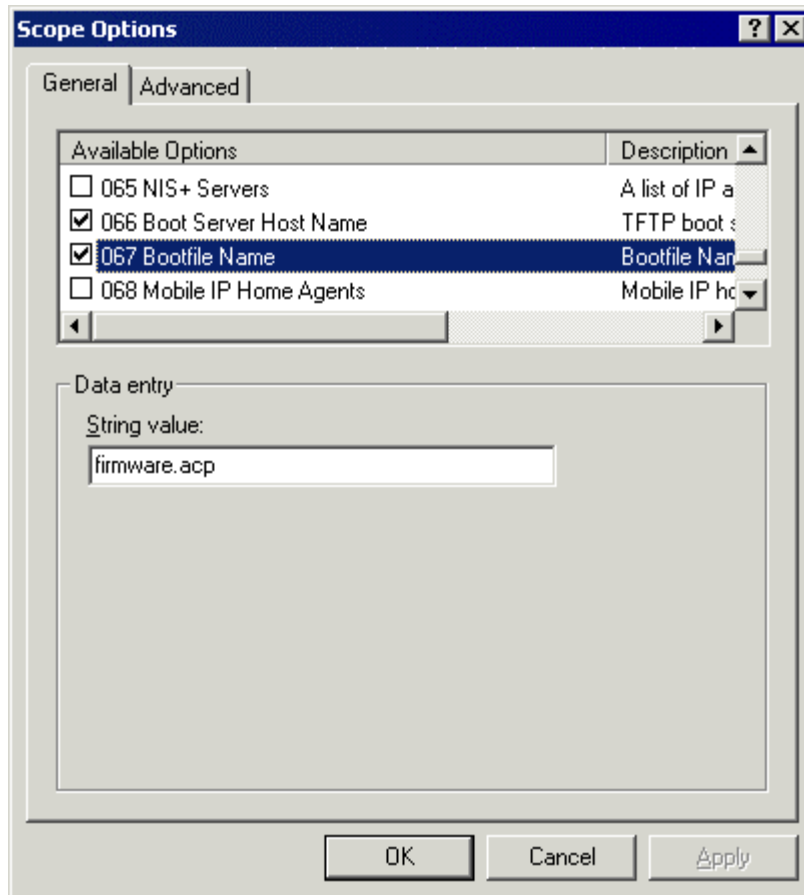
Enter the IP address of the desired ThinManager server in the **String Value** field.



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.



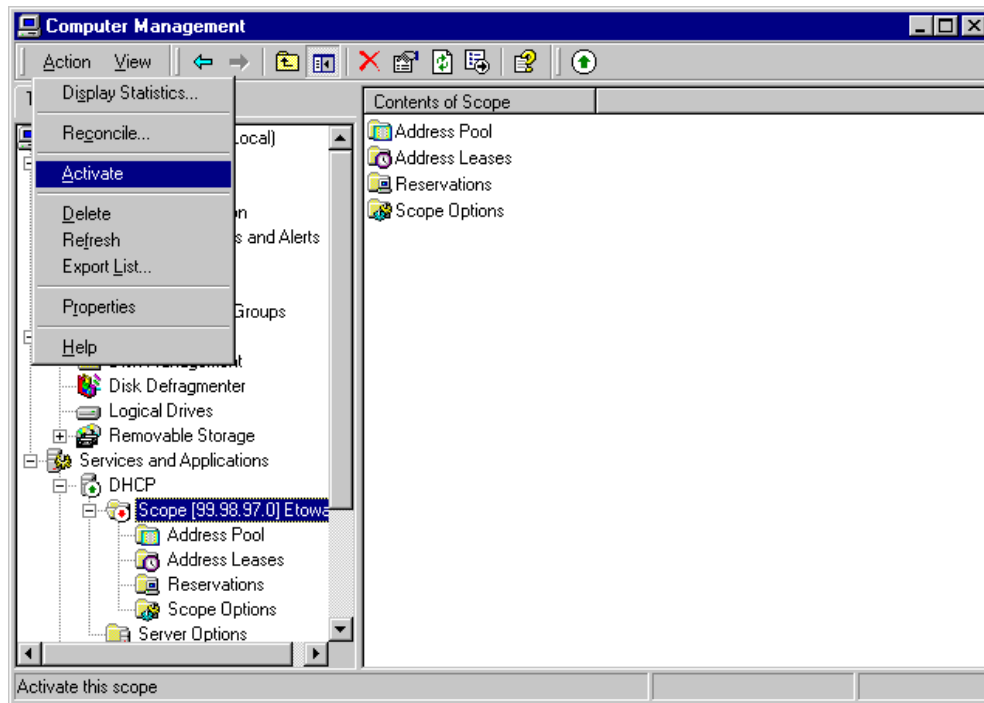
DHCP Options

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 allows 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.

New Reservation ? X

Provide information for a reserved client.

Reservation name:

IP address: . .

MAC address:

Description:

Supported types:

- ☒ Both
- ☐ DHCP only
- ☐ BOOTP only

Add Close

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**.

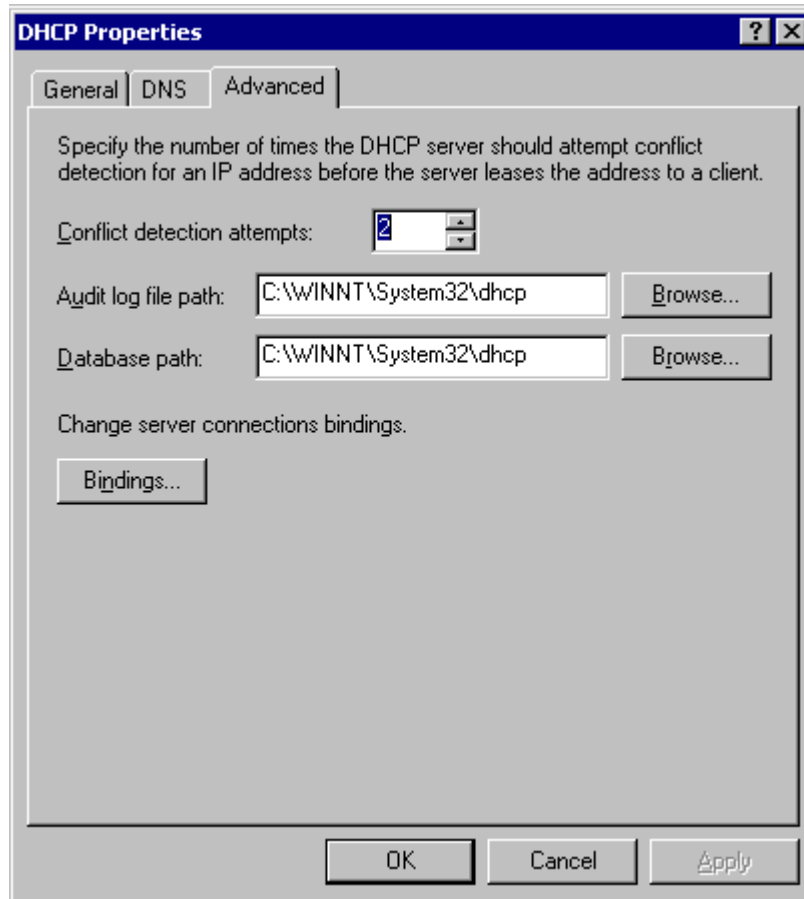
The MAC address of a terminal is displayed in the details-view pane of ThinManager.

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

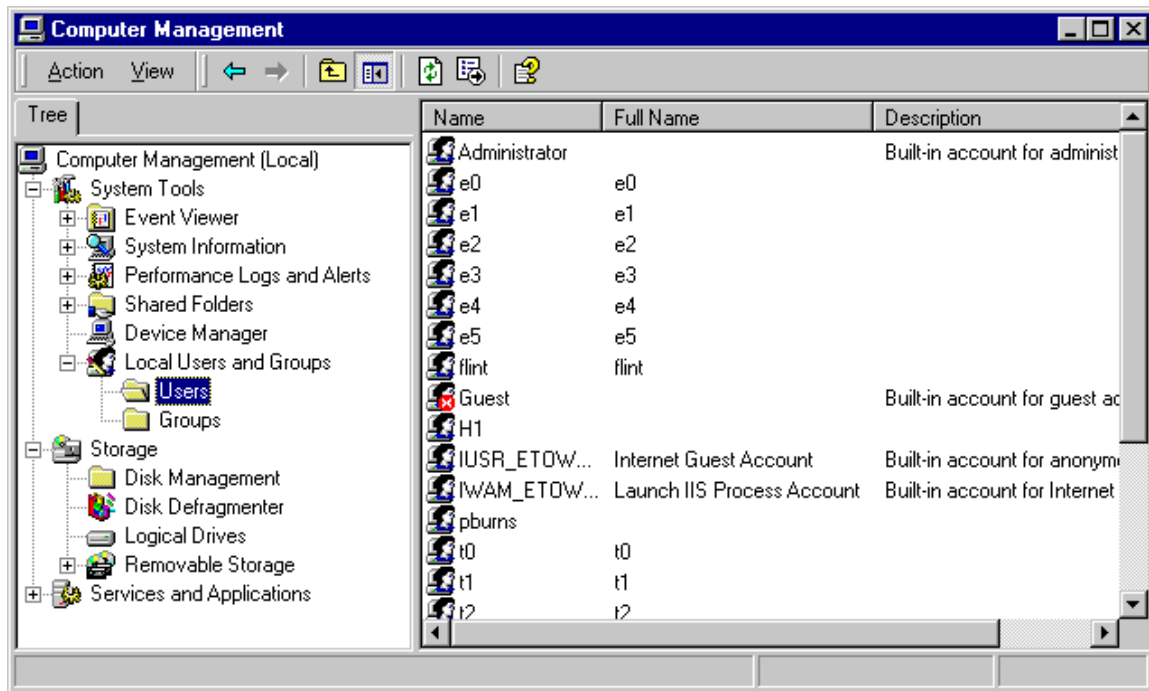
Select the **Advanced** tab. Replace the zero in the **Conflict detection attempts** field with an integer. This will prompt the DHCP Server to check for duplicate IP addresses before assigning an IP address.

Select **OK** when finished.

Creating Microsoft User Profiles

A terminal needs a valid Windows 2000/Windows 2003 User Profile to log onto a terminal server.

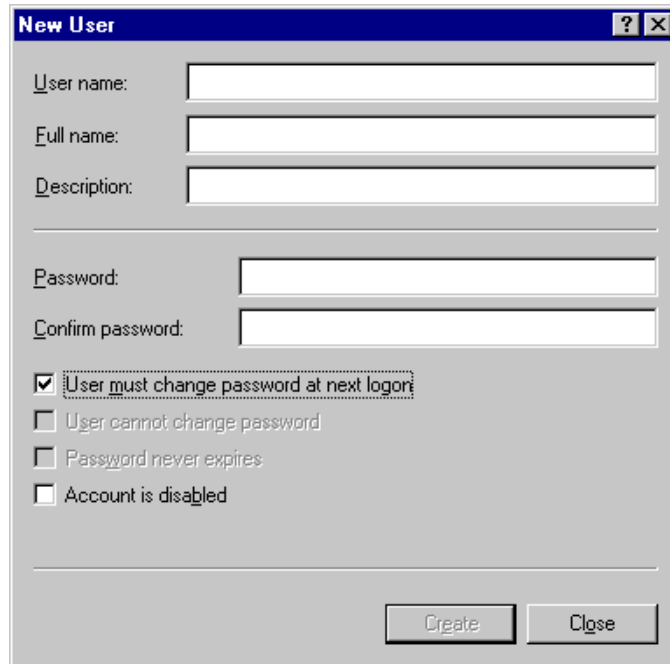
To create a user profile open the **Computer Management Console** by selecting **Start>Programs>Administrative Tools>Computer Management** in Windows 2000 or by selecting **Start>Administrative Tools>Computer Management** in Windows 2003.



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.

The image shows a 'New User' dialog box with a blue title bar containing a question mark and a close button. The dialog has several text input fields: 'User name:', 'Full name:', 'Description:', 'Password:', and 'Confirm password:'. Below these fields are four checkboxes: 'User must change password at next logon' (checked), 'User cannot change password', 'Password never expires', and 'Account is disabled'. At the bottom right are two buttons: 'Create' and 'Close'.

New User Dialog

Enter the user name for the user in the *User name* field.

Enter a password in the **Password** field.

Re-enter the password in the **Confirm password** field.

The **User must change password at next logon** check box forces the user to change the password.

Select the **Create** button to finish the profile.

Select the **Close** button to return to the Computer Management Console.

Microsoft TS CALs – Terminal Server Client Access Licenses

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.

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 2000/2003 Server is not normally sold with TS CALs. These need to be purchased separately and installed on the Terminal Services License server.

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 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.

Microsoft Terminal Server Licensing Activation

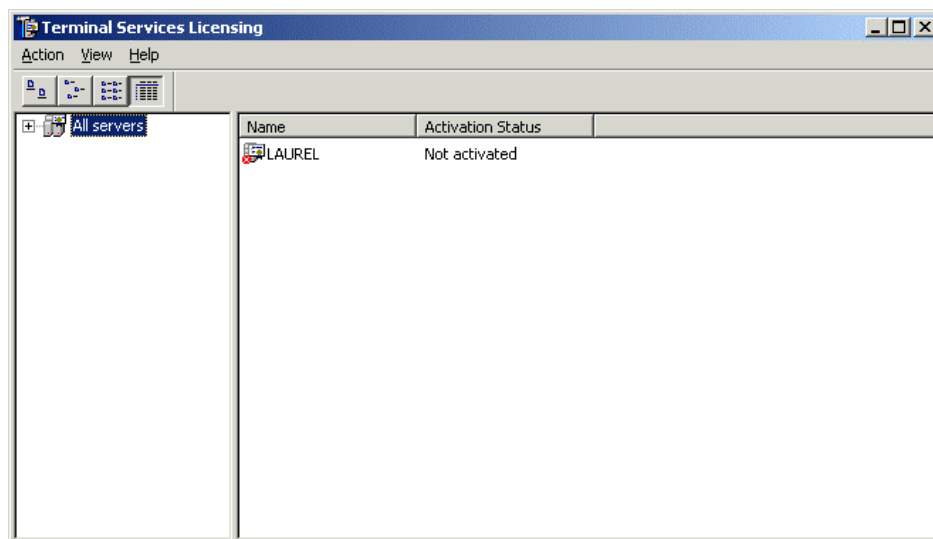
In Windows 2000 and 2003, all the TS CALs are installed on a single Terminal Server Licensing Server. This allows a single site for management and authentication of terminal server connections. A server becomes a Terminal Server Licensing Server by selection of the option during the installation phase 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.

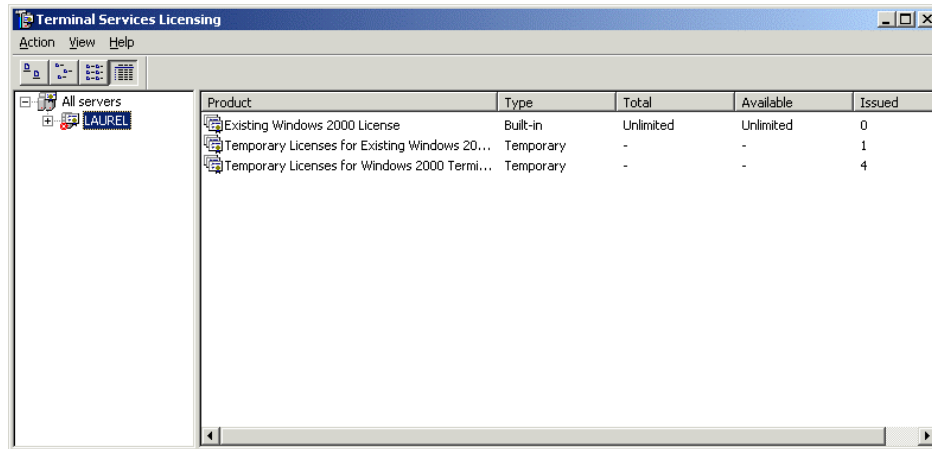
Note: The Terminal Server Licensing Server does not need to be a separate computer, but is usually installed on a Terminal Server. Microsoft requires that the Terminal Server Licensing Server be installed on the Primary Domain Controller in a 2000 domain.

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.

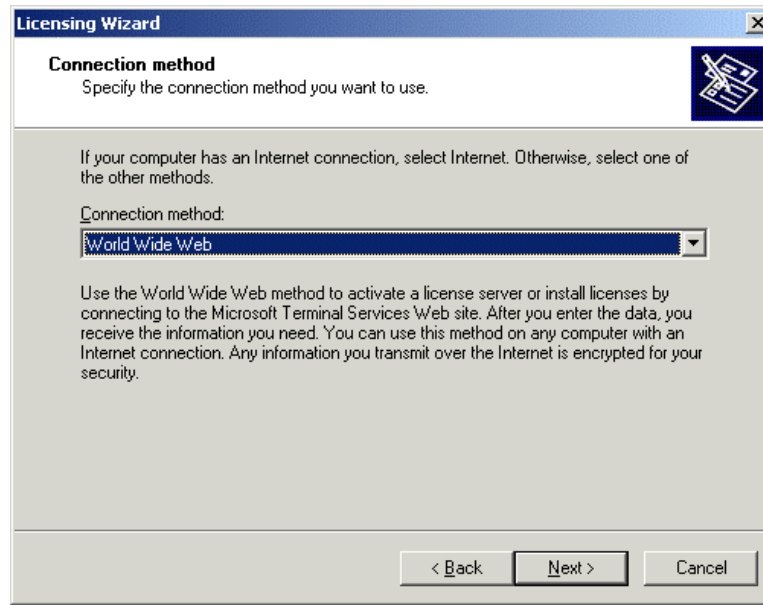


Licensing wizard

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.



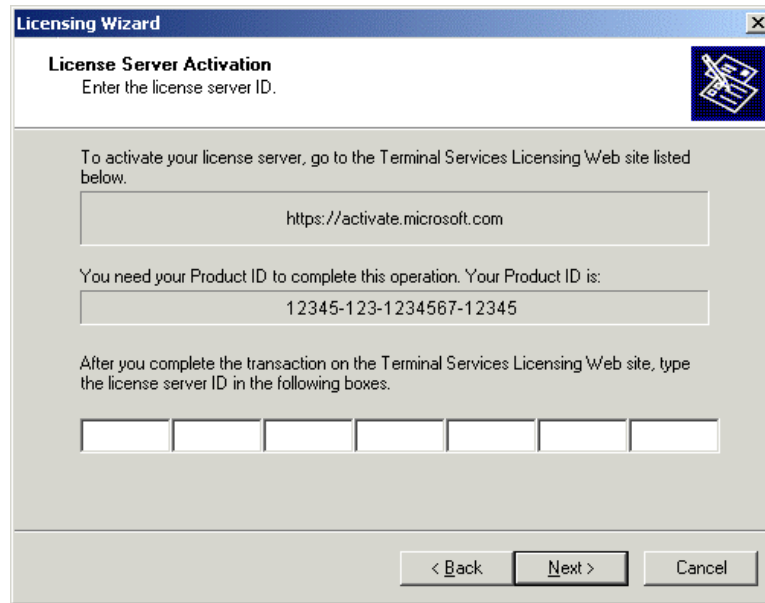
Connection Method

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.

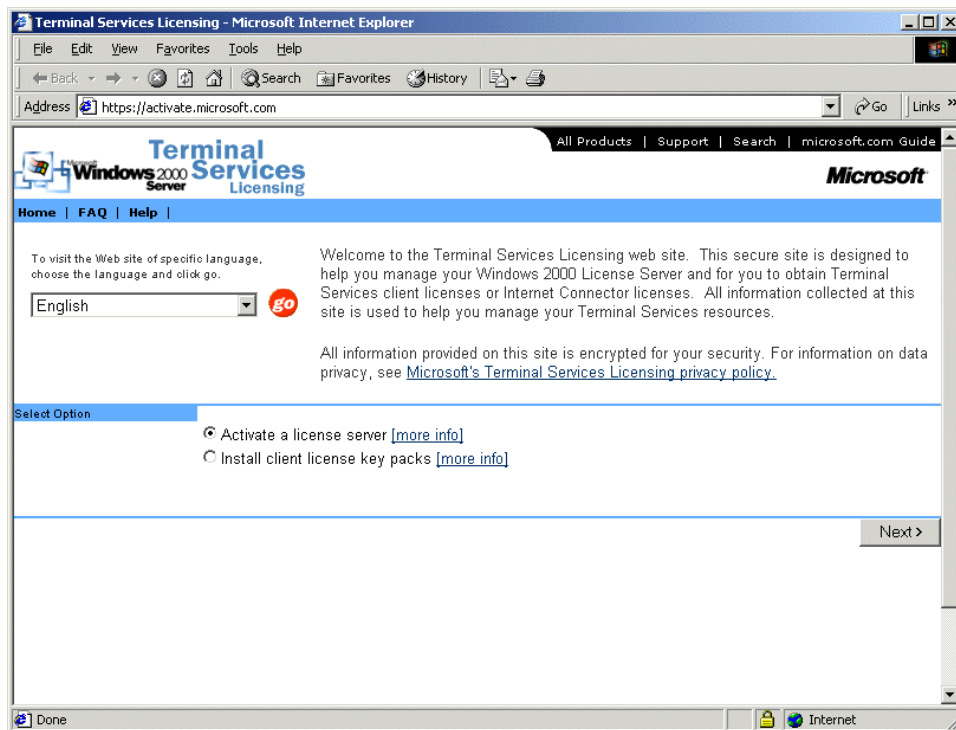
Select the desired method from the drop-down box and select **Next**.

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**.

Terminal Services Licensing - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites History Print

Address <https://activate.microsoft.com/activate.asp> Go Links

Windows 2000 Server Terminal Services Licensing Microsoft

Home | FAQ | Help

To activate your license server, you will need to provide the following information. Product ID can be found by selecting Activate Server in Terminal Services Licensing.

Required information is denoted by a red asterisk(*).

Product Information

Product ID:
 *

Licensing Information

Purchase Method:
 Select or Enterprise Agreement *

Company Information

Last / Surname: * First / Given Name: *

Company: * Organizational Unit:

eMail Address: Phone Number:

Company Address:

City: State/Province: Postal Code:

Country/Region: Afghanistan *

Internet

Customer Information Entry Form

Fill out the information forms and select **Next**. The Product ID is supplied by the Licensing Wizard.

Terminal Services Licensing - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites History Print

Address <https://activate.microsoft.com/activateconfirm.asp> Go Links

Microsoft Windows 2000 Server Terminal Services Licensing

All Products | Support | Search | microsoft.com Guide

Home | FAQ | Help

Terminal Services Licensing is ready to process your request. Please confirm the information provided is correct and click Next. If you need to make corrections, click Back.

Product Information

Product ID:
12345-123-1234567-12345

Licensing Information

Purchase Method:
Other

Company Information

Last / Surname:
Doe

First / Given Name:
John

Company:
Acme Co.

Organizational Unit:

eMail Address:
johndoe@acme.com

Phone Number:
(123) 456-7890

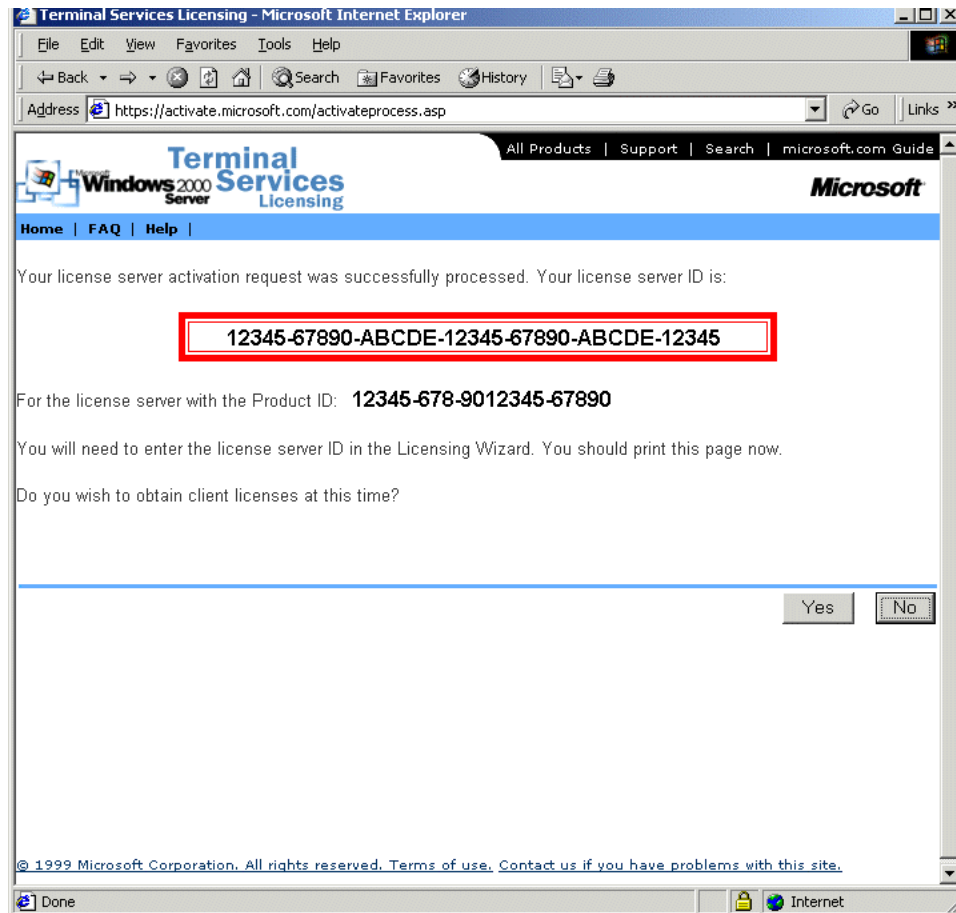
Company Address:
123 Main St.

City:
Anytown

State/Province:

Customer Information

Continue with web-based wizard. Verify the data and select **Next**.



Server Activation Number

The Microsoft will provide the License Server ID.

Add this number to the form in the Licensing Wizard.

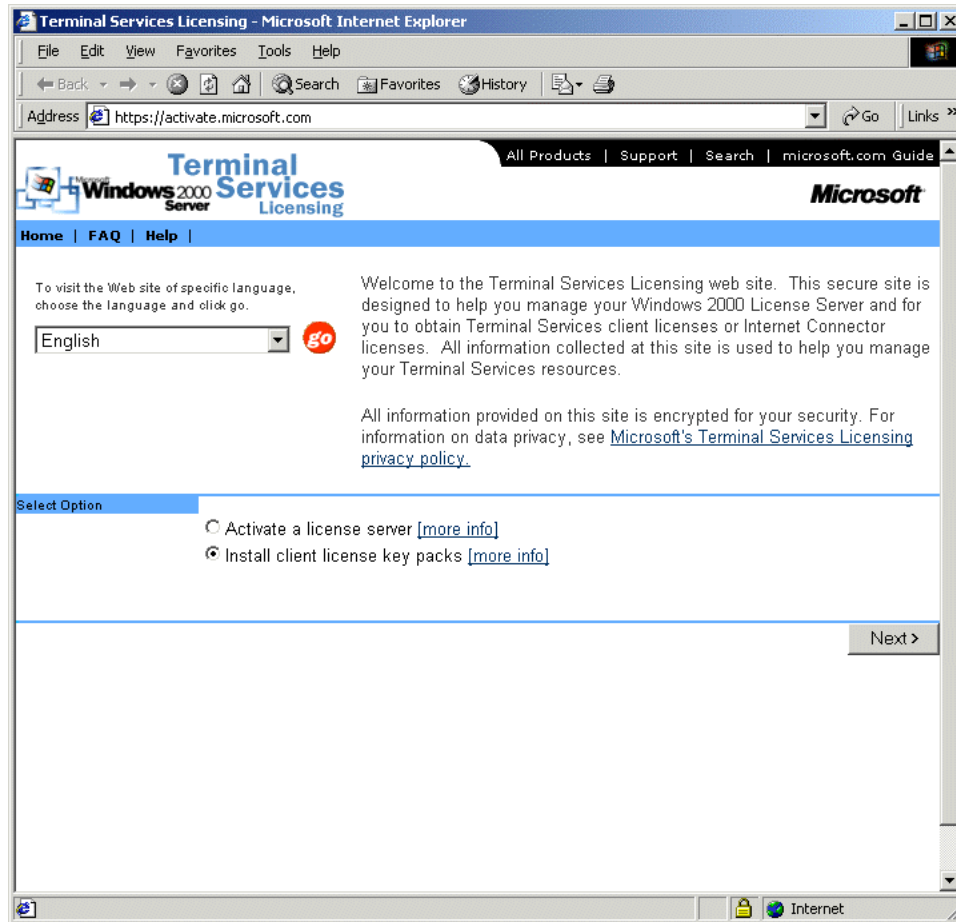


Wizard Completion

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.

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**.

Terminal Services Licensing - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites History Print

Address <https://activate.microsoft.com/getlkp.asp> Go Links

All Products | Support | Search | microsoft.com Guide

Terminal Services Licensing Microsoft

Home | FAQ | Help |

To obtain client licenses, you will need to provide the following information. License Server ID can be found by selecting Install Licenses in Terminal Services Licensing with any Connection method other than Internet (Connection method is set in Properties).

Required information is denoted by a red asterisk(*).

Product Information

License Server ID:

Licensing Information

Purchase Method:

Select or Enterprise Agreement *

Company Information

Last / Surname: *

First / Given Name: *

Company: *

Organizational Unit:

eMail Address:

Phone Number:

Company Address:

City: State/Province: Postal Code:

Country/Region:

Done Internet

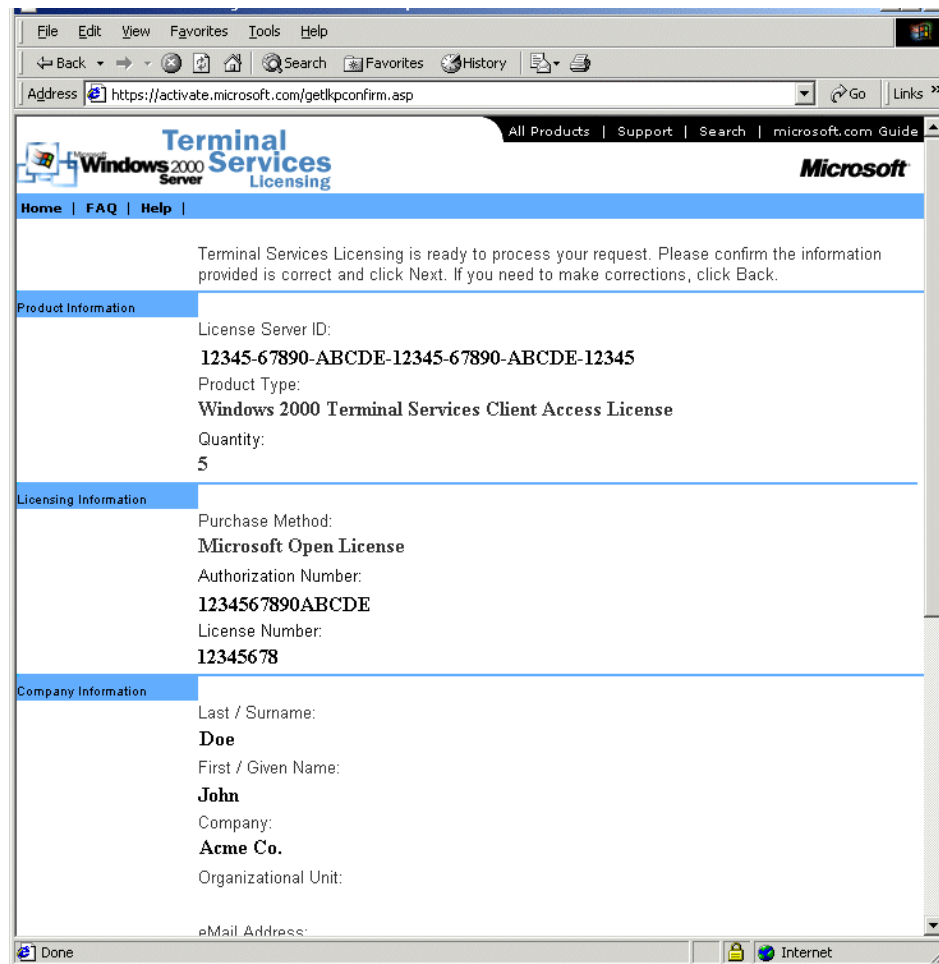
Customer Information

Fill out the form and select **Next**.

TS CAL Information

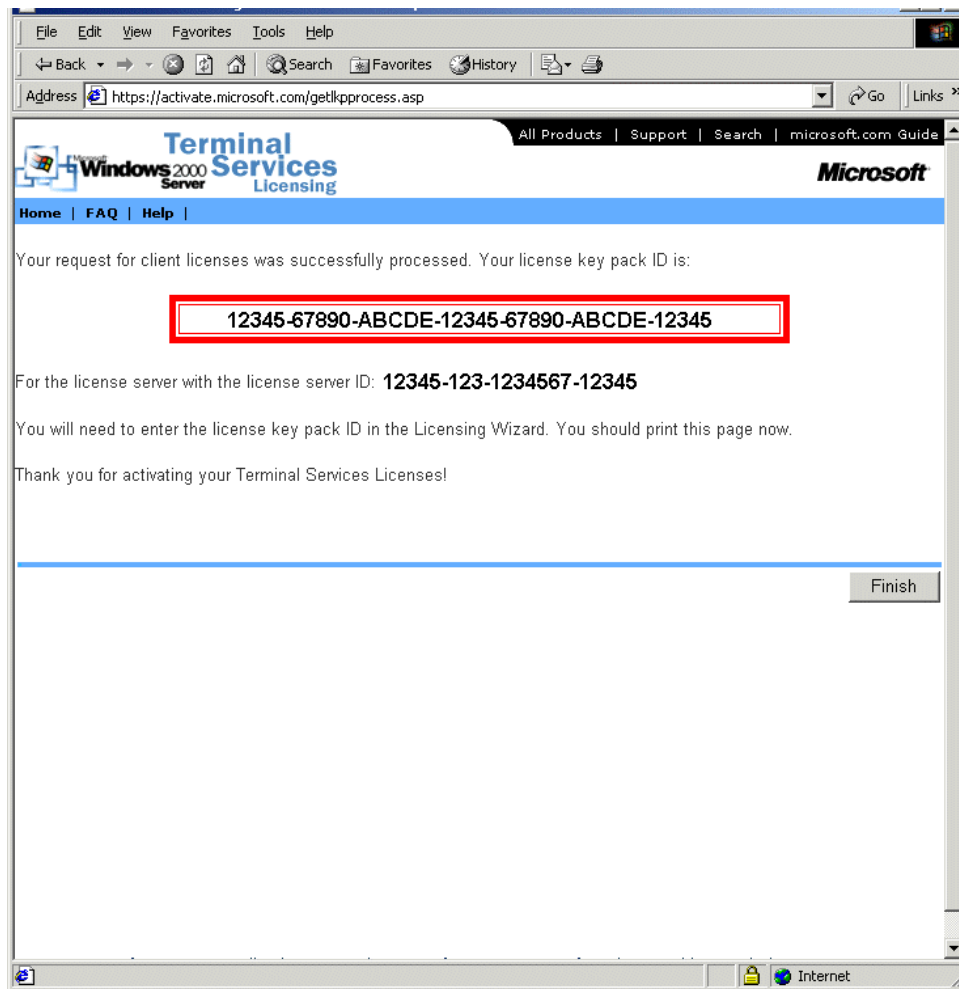
Select the Product Type and fill in the fields with the Quantity, Authorization Number, and License Number from the Licensing Certificate that was included with the purchase of the licenses.

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.

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.

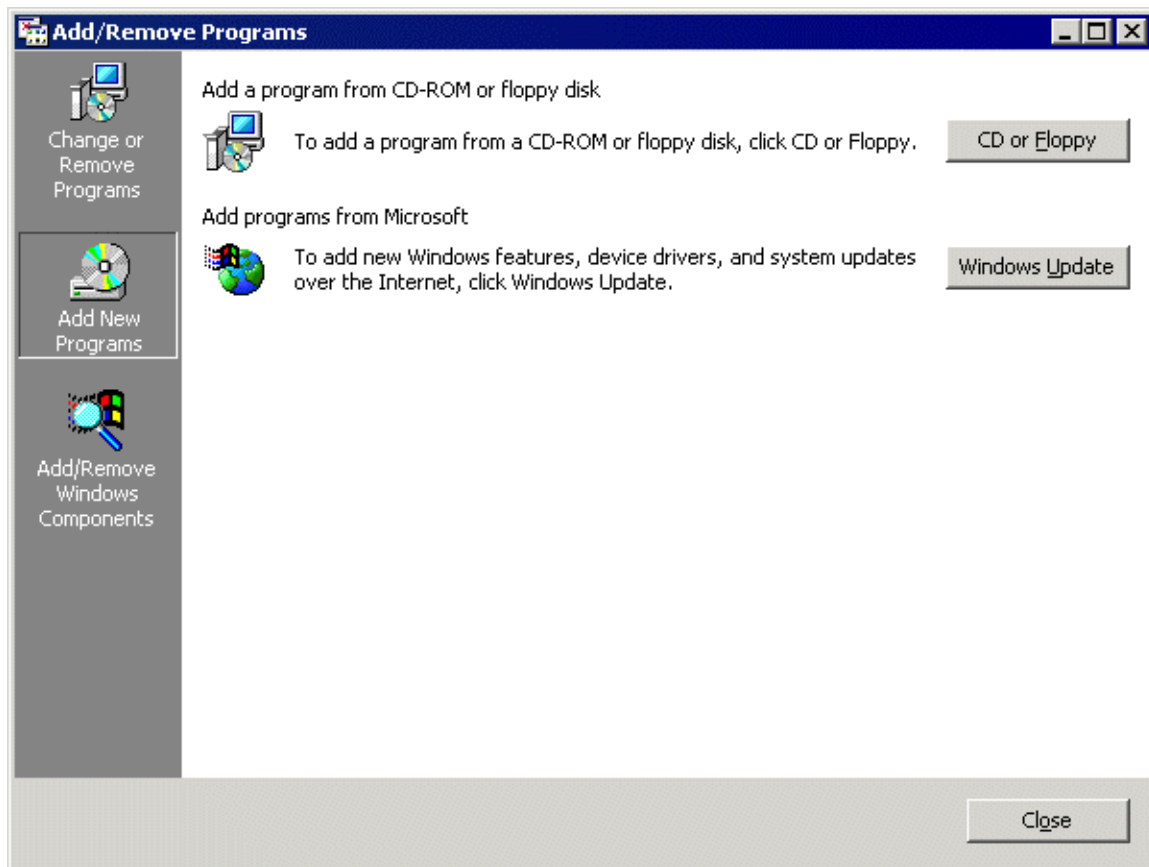
Note: Some software, especially downloaded software, doesn’t allow the installer to install it through the Add/Remove Programs tools. To manually put the machine into the install mode open a command prompt and type:

change user /install

This command sets the machine to install mode. When finished, type:

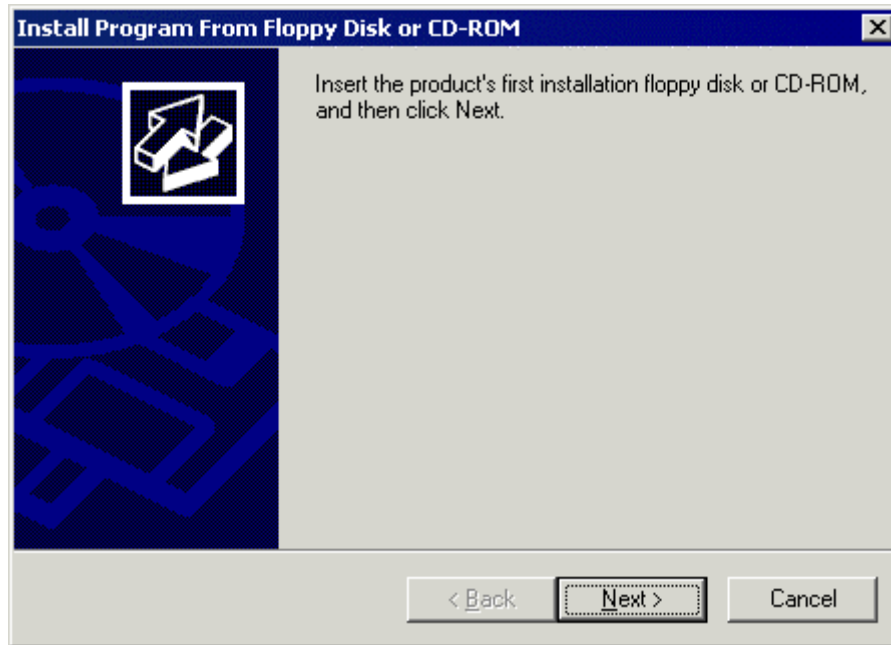
change user /execute

This command returns the machine to the normal run mode.



Add/Remove Programs

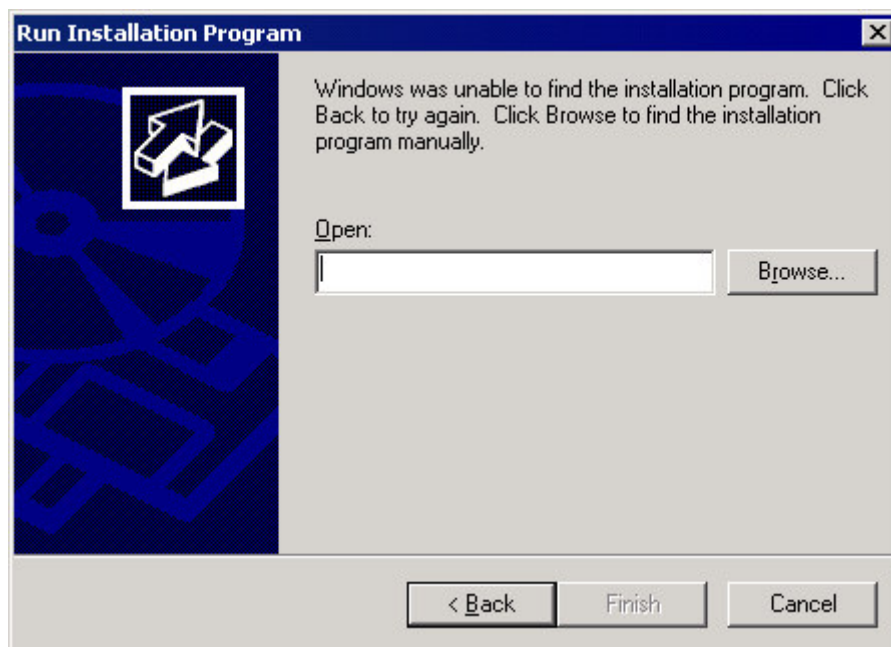
Select the **CD or Floppy** button on the **Add/Remove Programs** dialog box to open the Installation wizard.



Install Program Window

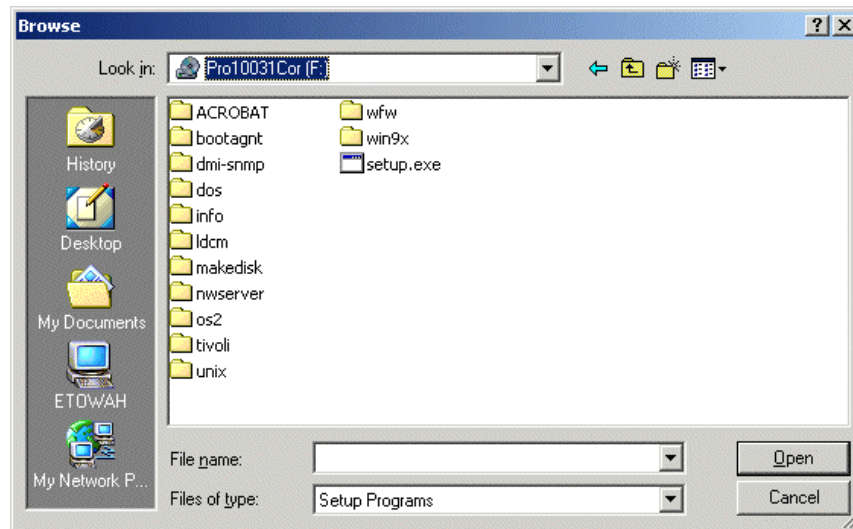
The wizard will prompt for the installation of the software disk. Select **Next** to display the **Run Installation Program** dialog box.

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.



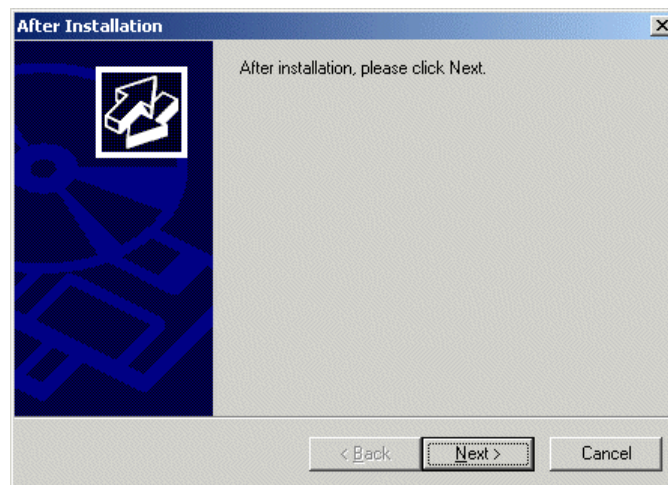
Run Installation Program

Enter the command line of the installation program and select **Finish**, or select the **Browse** button to select the installation file.



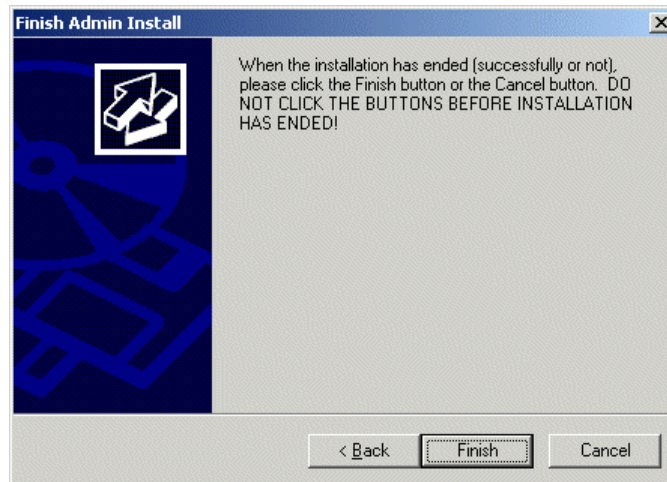
Browse File Window

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.

Glossary of Terms

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.

AppLink

A function that applies the Initial Program to a Terminal Server 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.

HSSD

High speed Serial Driver. A module that works with the ACP Com Redirection program to transfer serial data from the ThinManager Ready thin client to the session on the Terminal Server at speeds up to 115 Kbaud.

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 single keyboard and mouse.

Load Balancing

A dynamic ability to connect a thin client to a group of servers and login to the server with the lightest load.

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.

MultiSession

A function that allows a terminal to connect to several Terminal Server Groups at one time and to switch between sessions.

MultiSession License

A license that allows a server to be added to a Terminal Server 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 without downtime.

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 Terminal Server Group to be load balanced so that a ThinManager Ready terminal will connect to the terminal server in the terminal server group that has the lightest load.

SmartSession License

A license that allows a server to be added to a Terminal Server Group that uses the SmartSession function for load balancing.

Standard Group

A Terminal Server 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 Groups

A managed collection of terminal servers that a terminal can connect to.

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.

Index

A

- ACP Com Redirector 266
- Activate License 26, 27
- Add Group 57, 129
- Add Programs 13
- Add Remove 13
- Add Remove Programs 311
- Add Serial Port 224
- Add Server 122, 138
- Add Terminal 57, 165
- Add ThinManager Server 57
- Adding Terminals 117
- Administrator 212
- Allow terminal to be replaced if offline 166
- Allow terminal to be shadowed 144
- Allow Terminals in this group to be replaced if offline 144
- Application Link 75, 132
- Application Link Group 203
- AppLink 75, 79, 132, 135, 193, 203
- AppLink Group 203
- Auto Login 76, 133
- Auto-Create 93, 118
- Auto-Create Mask 119
- Auto-Create mode 118
- Auto-Creation 120
- Auto-Login 275
- Auto-Login 76, 133, 275
- Available Terminal Server Groups 152, 177
- Available Terminal Servers 150, 175
- Available ThinManager Servers 163, 189

B

- Background 249, 273
- Backup 88
- Backup Configuration 88
- Boot 111
- Browse 235

C

- CAL 296
- Calibrate 100
- Calibrate Touch Screen 100

- Change User 311
- Changing a Terminal's Group 53
- Citrix 172
- Citrix Device Services 68, 125, 146, 171
- Citrix ICA UseAlternateAddress Module 225
- Citrix MetaFrame 68, 74, 125, 131, 146, 171
- Classic Mode 103
- Client Access License 296
- Client Communication Protocol 6
- Color Depth 183
- COM Port 264
- COM Redirection Program 225
- Command Prompt 279
- Communication Indicator 35
- Communications 211
- Compact Flash 231
- Components 6
- Computer Management Console 295
- Configuration 166, 190
- Configure Default 99
- Configure Default Terminal 99
- Confirm at Terminal 225, 232
- Connect 52, 218
- Connect Options 52
- Connection 211
- Copy Settings from another Terminal 166
- Create New Terminal 117
- Create New Terminal Mode 117
- Cut and Paste 199

D

- Data 213
- Data Display 213
- Data Gathering 126
- Default Terminal 99
- Delete 59
- Deleting 54
- Detail pane 35
- Details Pane 43
- Device Services 68, 125, 146, 171
- DHCP 10, 112, 114, 284
- DHCP Options 113
- DHCP Scope 286
- Disable 42, 101
- Disconnect 100
- Disk On Chip Update 225
- Disk-on-Chip 231
- Disk-On-Chip 231
- DNS 85
- DNS Configuration 85, 141
- Domain 86, 142, 156, 181, 212
- Domain Name Server 141

E

- Edit 57
- Edit Group 129
- Edit Server 122
- E-mail 95

- Enable 103
- Enable MultiSession 145, 151, 170, 176
- Encryption 147, 172
- Enforce Primary 75, 132, 150, 153, 175, 178
- Experience 185, 248
- F
- Failover 11, 236
- Fat Client 184
- Find 61
- Find Next 61
- Firmware 64
- Full Screen 105, 222
- Full Security 279
- G
- Go FullScreen 105
- Graph 197, 218
- Graphic User Interface 33
- Group Configuration 143
- Group Configuration Wizard 143
- Group Creation Wizard 60
- Group Modules 187
- Group Option 198
- Group Options 179, 202
- Group Policy 249, 256, 280
- Group Selector 154, 179, 201, 208, 209
- H
- Hardware 168
- Help 107, 116
- Help Topics 107
- High Speed Serial Driver 225
- High Speed Serial Driver 19
- High Speed Serial Driver License 19
- High-Speed Serial Driver 265
- HMI 278
- Hot Keys 202
- Hotkey 154, 179, 209, 240
- Hotkey 201
- HSSD 265
- I
- ICA 171
- ICA Browser 148, 173
- Icons 36
- Initial Program 75, 132, 156, 181, 182, 203, 204, 207, 234, 275
- Install 5
- Install Mode 311
- Install New Firmware 64
- Install New TermCap Database 63
- Installation 13, 14, 311
- Installation ID 19, 27
- Installing a Module 226
- Instant Failover 238
- Instant Failover 76, 133, 193, 197, 225
- Instant Failover 19
- Instant Failover License 19
- Instant Failover Module 238

- Interactive Shadow 105
- IP Address 112, 116, 212
- IP Configuration 114, 116
- K
- Key Block 242, 260
- L
- License 20
- License File 20, 29
- License File Installation 29
- License Installation 29
- License Number 27
- Licensing 18, 62, 296
- Linked Application 204
- List Wizards 65, 122
- Loading Order 230
- Local Drives 219
- Local Printer 243
- Lock 38, 60
- Login 212
- Login Permissions 275
- M
- Make 168
- Menu Bar 34
- Menu Items 57
- MetaFrame 68, 125, 146, 171, 172
- Microsoft Licensing 296
- Model 168
- Modify 60
- Modifying 54
- Module 160, 186
- Module Licensing 31
- Module Loading Order 230
- Module Parameters 227
- Modules 62, 222, 226
- Monitor 188, 190
- Monitor Configuration 190
- Monitor Interval 164, 190
- Monitor Retry 164, 190
- Monitor Timeout 164, 190
- Multicast 98
- Multiple Logins 277
- MultiSession 19, 75, 132, 193, 277
- MultiSession 199
- MultiSession License 19
- MultiSession not Enabled 176, 201
- N
- Name 166, 181, 213
- Network 10
- Network Access 59
- Networks 8
- New Hardware 117
- New User 295
- O
- OEM 168
- Operating System 6
- Option 198

Option 066 10, 113, 288
 Option 067 10, 113, 288
 Options 75, 104, 106, 132
 P
 Pane 34
 Passcode 21
 Password 116, 156, 181, 212, 259
 permission 47, 213
 Permission 211
 Permission Compatibility 279
 Policy 249
 Primary Terminal Server 150, 175
 Primary Up Delay 164, 190
 Primary Up Delay Multiplier 164, 190
 Print 243
 Processes 216
 Published Application 148, 172, 173
 Published Applications 173
 Q
 Queuing 77, 78
 Quick Start 5
 R
 RDP 69, 125, 126, 146, 171, 248, 275
 RDP 199
 RDP Experience 248
 RDP Serial Port 263
 Reboot 100
 Rebooting 54
 Reconnect 100
 Redirect 158, 184, 272
 Relaxed Security 279
 Remote 218
 Remote Connection 218
 Remote Desktop Protocol 69, 126, 146, 171
 Remote View 105
 Remove Module from All Terminals 226
 Remove Programs 13
 Remove Server 138
 Rename 60
 Renaming 54
 Renaming a Terminal 54
 Replace or Create New Terminal 118
 Replace or Create New Terminal Mode 118
 Requirements 6
 Reservation 292
 Resolution 183
 Restart 100
 Restart Terminals 100
 Restore 88
 Restore Configuration 88
 Restrict each user to one session 277
 Router 116
 S
 SCADA 278
 Scaled to Window 105, 221
 Scope 286
 Scope Options 288, 290
 Screen Saver 250
 Search Domain 86, 142
 Security 59, 257, 260, 278
 Select Individual Terminal Servers 145, 170
 Selected Terminal Server Groups 152, 177
 Selected Terminal Servers 150, 175
 Selected ThinManager Servers 163, 189
 Send Key 107
 Serial 263, 264
 Server List Management 65
 Server Rank 52
 Server Ranking 197
 Session Options 106
 Sessions 214
 Settings 92
 Shadow 45, 105, 144
 Shadowing 261
 Share Keyboard and Mouse 251
 Share Keyboard Mouse 19
 Share Keyboard Mouse License 19
 Show Connected Only 104
 Show Group Selector 210
 Single clicking 55
 Single Session Per User 277
 SmartSession 19, 75, 77, 126, 127, 132, 193, 194
 SmartSession Configuration 70, 127, 196
 SmartSession License 19
 Software Installation 311
 Sound 224
 Sound Modules 224
 Specification 170
 Static IP 114
 Status 47, 213
 Status Bar 35, 103
 Subnet Mask 116
 Synchronize 89
 Synchronize Configuration 89
 T
 Tabs 43
 TermCap 64, 168
 TermCap Database 63
 Terminal 166
 Terminal Capability 64
 Terminal Configuration Wizard 165
 Terminal Creation Wizard 60
 Terminal IP Address 116
 Terminal Server 6
 Terminal Server Client Access License 296
 Terminal Server Configuration Wizard 60
 Terminal Server Group 129
 Terminal Server Group 193
 Terminal Server Group Configuration Wizard 60
 Terminal Server Group List 129
 Terminal Server Groups 11
 Terminal Server Groups 176

- Terminal Server Licensing Server 296
- Terminal Server List 65, 122
- Terminal Server List Wizard 122
- Terminal Server Name 67, 124
- Terminal Server Selection 174
- Terminal Server Specification 170, 194
- Terminal Services Configuration Console 275
- Theme 249
- Themes 273
- ThinAdapter 267
- ThinAdapter Plus 267
- ThinManager 7, 33
- ThinManager Administrators 257, 261
- ThinManager Definition 139
- ThinManager Installation 13
- ThinManager IP Address 116
- ThinManager License Site 20
- ThinManager Licensing 18
- ThinManager Power Users 258, 261
- ThinManager Ready 7
- ThinManager Security Groups 257
- ThinManager Server 138
- ThinManager Server Configuration Wizard 60
- ThinManager Server List 80, 136, 138
- ThinManager Server Menu 62
- ThinManager to Terminal Server 211
- ThinManager to Terminal Server Connection 211
- ThinManager Users 258, 261
- ThinServer 7
- Time Zone 255
- Title Bar 34
- Tools 100
- Touch Screen 100, 223
- Touch Screen Modules 223
- Touch Screens 15
- Tree 35
- Tree pane 34, 35
- Trialware 17
- TS CAL 6, 296
- TS CAL Activation 297, 305
- U
- Unlock 38, 61
- USB 247, 256
- Use Group Property 165
- Use Terminal Server Groups 145, 170, 176
- Use Wizards 103
- User Name 212
- User Profile 294, 295
- Username 156, 181
- Users 214
- V
- Value field 229
- Video 157, 183
- Video Resolution 157, 183
- View 103
- W
- Weight 77, 134
- What's New 2
- Windows 2003 59, 249
- Windows XP 58
- WinTMC 14, 158, 184
- WinTMC Installation 14
- WinTMC License 31, 273
- WinTMC Settings 184
- Wizards 121
- WTSAPI32 47, 213
- X
- X Term Module 225
- X Terminal 256
- XDM 257
- XDM Host IP address 225, 257