# Non-ThinManager Components

Microsoft Terminal Servers play an important role in the ThinManager system. It is recommended that you become familiar with the documentation provided by Microsoft about their server. The following information is provided as an aid to understanding terminal services and is not a substitute for Microsoft documentation.

Microsoft Terminal Services requires a license, either a TS CAL (Terminal Services Client Access License) on a 2003 Server or a RDS CAL (Remote Desktop Services Client Access License) on a 2008 Server.

This section covers:

- Server 2003
- Server 2008
- DHCP (Dynamic Host Configuration Protocol) Servers
- Terminal Services Licensing

# Server 2003

#### **Installing Terminal Services**

A Windows 2003 Server can be made a terminal server by installing the Terminal Services role. This can be done with either the **Manage Your Server** or through the **Add/Remove Programs > Add/Remove Windows Components**.

Manage Your Server Server: TM4X-34	<b>Search</b> Help and Support (	Center 🗾 ラ
Managing Your Server Roles         Use the tools and information found here to add or remove roles and perform your daily administrative tasks.         Your server has been configured with the following roles:         Sile Server	<ul> <li>Add or remove a role</li> <li>Read about server roles</li> <li>Read about remote administration</li> </ul>	<b><u>T</u>ools and Updates</b> Administrative Tools More Tools Windows Update Computer and Domain Name Information Internet Explorer Enhanced Security Configuration
<ul> <li>Terminal Server</li> </ul>		S <u>e</u> e Also
No Terminal Services License Server was found on the network. This terminal server will stop issuing temporary licenses to dients 120 days after it receives the first connection. Review licensing requirements for more information. The use of Internet Explorer is not restricted on this server. For information on how to increase security, dick the Internet Explorer Enhanced Security Configuration link in the Tools and Updates section.	<ul> <li>Review licensing requirements</li> <li>Open Terminal Services Configuration</li> <li>Open Terminal Services Manager</li> <li>Review the next steps for this role</li> </ul>	Help and Support Microsoft TechNet Deployment and Resource Kits List of Common Administrative Tasks Windows Server Communities What's New Strategic Technology Protection Program
Don't display this page at logon		

Manager Your Server

Select the *Add or remove a role* link on the **Manager Your Server** splash screen to install the Terminal Services role and/or the Terminal Services License Server role.

ndows Components Wizard	
Windows Components You can add or remove components of Windows.	C
To add or remove a component, click the checkbox. A shaded part of the component will be installed. To see what's included in Details.	
<u>C</u> omponents:	
Subsystem for UNIX-based Applications	1.3 MB 🔺
🗹 🍠 Terminal Server	0.0 MB
🗆 🍠 Terminal Server Licensing	0.7 MB
🗆 💽 🙀 UDDI Services	4.9 MB 🔤
Indate Boot Certificates	оомв 🔟
Description: Configures this computer to allow multiple users to applications remotely.	un one or more
Total disk space required: 4.0 MB	Details
Space available on disk: 2212.2 MB	
< <u>B</u> ack <u>N</u> ext >	Cancel Help

Windows Component Wizard

Terminal Services can be installed by selecting the *Terminal Server* checkbox in the **Windows Component Wizard**.

The Windows Component Wizard is launched by selecting the *Add/Remove Windows Component* button on *Control Panel > Add/Remove Programs*.

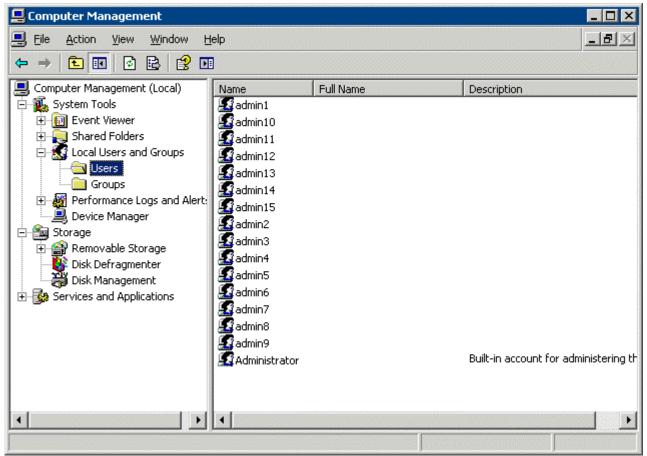
Each Microsoft terminal server system will need a Microsoft Terminal Server Licensing server install. This doesn't have to be a separate computer but is a program installed on an existing computer. It is installed by selecting the *Terminal Server Licensing* checkbox on the **Windows Component Wizard**.

See Microsoft Licenses for details.

# **Creating Microsoft User Profiles**

A terminal needs a valid Windows User Profiles to log onto a terminal server.

Open the **Computer Management Console** by selecting **Start > Administrative Tools > Computer Management** in Windows 2003/2008 to create a user profile.



Computer Management Console

Highlight the User sub-folder of Local Users and Groups in the Computer Management tree pane.

Select Action > New User. This will launch a New User dialog box.

New User	? >	<
User name:		
Eull name:		
Description:		
Password:		
<u>C</u> onfirm password:		
User <u>must change</u> part User cannot change Pass <u>w</u> ord never exp Account is disa <u>b</u> led		
	Cr <u>e</u> ate Cl <u>o</u> se	

New User Dialog

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

Enter a password in the *Password* field.

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

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

Select the *Create* button to finish the profile.

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

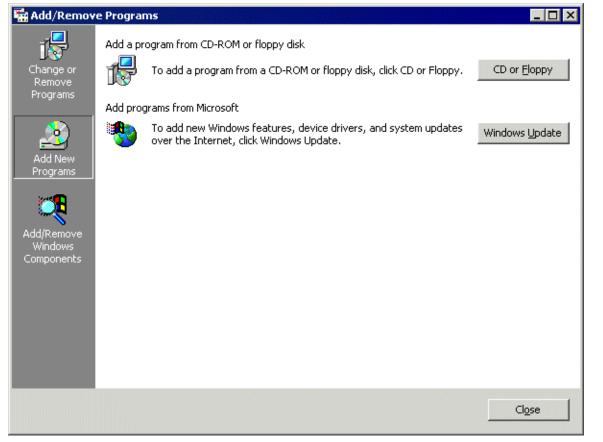
Note: Users need to be added to the **Remote Desktop Users** group or the **Administrators** group to be allowed to connect to a terminal server.

# **Software Installation On Windows 2003**

Microsoft Windows 2003/Server requires that software be added in the "Install Mode" through the *Control Panel > Add/Remove Programs*.

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

Note: Some software, especially downloaded software, doesn't allow the installer to install it through the Add/Remove Programs tools. To manually put the machine into the install mode open a command prompt and type: change user /install This command sets the machine to install mode. When finished, type: change user /execute This command returns the machine to the normal run mode.



Add/Remove Programs

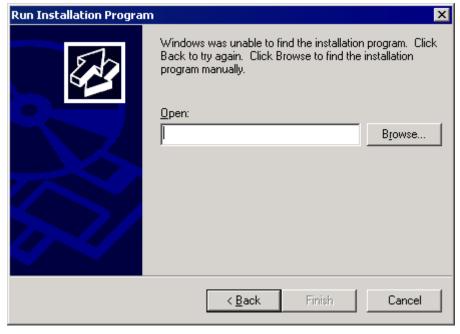
Select the CD or Floppy button on the Add/Remove Programs dialog box to open the Installation wizard.

Install Program From Flop	opy Disk or CD-ROM 🛛 🗙
	Insert the product's first installation floppy disk or CD-ROM, and then click Next.
	< <u>B</u> ack <u>Next</u> > Cancel

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					? ×
Look jn:	Pro10031Cor (F		•	🗢 🗈 💣 🎫	
History Desktop My Documents ETOWAH	ACROBAT bootagnt dmi-snmp dos info ldcm makedisk makedisk nwserver sc2 tivoli unix	☐ wfw ☐ win9x ॓ setup.exe			
My Network P	File <u>n</u> ame: [ Files of <u>type</u> : [	Setup Programs		• •	<u>O</u> pen Cancel

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		×
	After installation, please click Next.	
	< Back Next> Cance	

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.

## **Terminal Services Configuration**

Microsoft provides the **Terminal Services Configuration** interface to configure how terminal services is handled on each terminal server.

Select Start > Programs > Administrative Tools > Terminal Services Configuration to launch the Terminal Services Configuration Console. There are two folders, Connections and Server Settings.

# **Terminal Services Connections**

The **Terminal Services Configuration** tree has a **Connections** folder. Highlighting this folder will display the installed client communication protocols.

🚔 tscc - [Terminal Services Configu	ration\Connect	tions]		
File Action View Help				
Terminal Services Configuration	Connection	Transport	Туре	Comment
Server Settings	RDP-Tcp	tcp	Microsoft RDP 5.2	
	]			

Terminal Services Configuration\\Connections Console - Connections

Double clicking on the RDP-tcp icon on the right will launch the RDP-tcp Properties

RDP-Tcp Properti	es		? ×
Remote Control General	Client Settings Logon Settings	Network Adapter Sessions	Permissions Environment
	ovided logon informati he following logon info		
∐ser name:			
<u>D</u> omain:			-
Password:			
C <u>o</u> nfirm pass	,		
Always prom	pt for pass <u>w</u> ord		
	OK	. Cancel	Apply

#### **RDP-tcp Login Settings**

RDP-tcp Login Settings

The **Login Settings** should use the **Use client-provided logon information** radio button so that each user will login with a unique account.

The *Always prompt for password* should be unselected to allow auto-logins.

RDP-Tcp Properties	? >
Remote Control Client Settings General Logon Settings Use this tab to set Terminal Services tin	Network Adapter   Permissions Sessions   Environment meout and reconnection settings.
Override user settings End a disconnected session:	Never
Agtive session limit:	Never 💌
<ul> <li>Override user settings</li> <li>When session limit is reached or co</li> <li>O Disconnect from session</li> <li>End session</li> </ul>	onnection is broken:
<ul> <li>Override user settings</li> <li>Allow reconnection:</li> <li>Erom any client</li> <li>From previous client</li> </ul>	
OK	Cancel Apply

#### **RDP-tcp Sessions Settings**

Individual User Account Sessions Configuration

Each user account can be configured individually in the Computer Management interface. These can be set to end a disconnected session or an idle session after a period of time. The **Terminal Services Configuration Console** allows these settings to be made for every user of the terminal server, speeding configuration time.

RDP-Tcp Properties	? ×
Remote Control Client Settings General Logon Settings Use this tab to set Terminal Services ti	Network Adapter Permissions Sessions Environment meout and reconnection settings.
☑verride user settings End a disconnected session:	1 minute
Active session limit:	Never
Idle session limit: ✓ Override user settings When session limit is reached or co ○ Disconnect from session ○ End session	Never
<ul> <li>Override user settings</li> <li>Allow reconnection:</li> <li>Erom any client</li> <li>From previous client</li> </ul>	
OK.	Cancel <u>Apply</u>

RDP-tcp Sessions Settings

The **Sessions** tab of the **RDP-tcp Properties** allows all users to be configured with a consistent disconnect policy by selecting the **Override user settings** checkbox.

Selecting *End Session* setting for the *When session limit is reached or connection is broken* and selecting the *Override user settings* will cause a new session to be created when a terminal disconnects and reconnects.

RDP-Tcp Propertie	25		? ×
General Remote Control	Logon Settings Client Settings	Sessions E Network Adapter	nvironment Permissions
Connection			
Use conne	ection settings from us	ser settings	
🔽 C <u>o</u> nne	ct client drives at logo	วท	
🔽 Co <u>n</u> ne	ct client printers at log	jon	
🔽 De <u>f</u> aul	t to main client printer		
16 bit Disable the follow	num Color Depth	-	
Drive map	-	□ <u>C</u> OM port mappin	.
	orinter mapping	Clip <u>b</u> oard mapping	
LPT port n		Audio mapping	-
	OK	Cancel	Apply

#### **RDP-tcp Client Settings**

RDP-tcp Client Settings

The **Client Settings** tab of the **RDP-tcp Properties** allows the color depth to be set in the Limit Maximum Color Depth drop-down.

Drive mapping, LPT port mapping, COM port mapping, and audio mapping are allowed if the appropriate *Disable the following* checkboxes are un-selected.

Audio mapping is disabled by default. You need to uncheck the *Audio mapping* checkbox to allow a thin client to play sound.

P-Tcp Propertie	5		? >
General   Remote Control	Logon Settings Client Settings	Sessions   Network Adapter	Environment Permissions
	work adapters are co etwork adapter you v	ompatible with the sele want to use.	ected transport
<u>N</u> etwork adapter:			
All network adap	ters configured with	this protocol	<u> </u>
O <u>U</u> nlimited con	nections		
Maximum cor			
·s <u>m</u> aximum cor	nectoris. <u>1</u> .0	<u> </u>	

#### RDP-tcp Network Adapter Settings

RDP-tcp Network Adapter Settings

The **Network Adapter** tab of the **RDP-tcp Properties** can be used to limit the number of active users to aid in application licensing compliance.

#### **Terminal Services Connections**

The **Terminal Services Configuration** tree has a **Connections** folder. Highlighting this folder will display the installed client communication protocols.

Connections	Settings Delete temporary folders on exit Use temporary folders per session Licensing Active Desktop Permission Compatibility Restrict each user to one session	Attribute       Yes       Yes       Per Device       Disable       Relaxed Security       Yes       Automatic	
Terminal Services Configuration	Delete temporary folders on exit Use temporary folders per session Licensing Active Desktop Permission Compatibility Restrict each user to one session	Yes Yes Per Device Disable Relaxed Security Yes	
Connections	Delete temporary folders on exit Use temporary folders per session Licensing Active Desktop Permission Compatibility Restrict each user to one session	Yes Yes Per Device Disable Relaxed Security Yes	
	-		

Terminal Services Configuration\\Connections Console - Connections

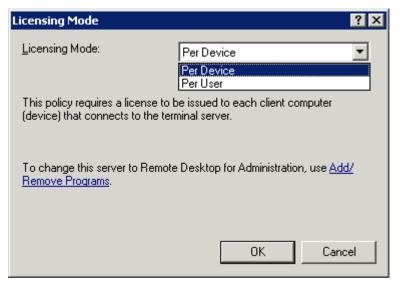
The Server Settings have several settings that can control the terminal services experience.

# **Licensing Mode**

Microsoft expanded the Terminal Services Client Access License (TS CAL) program in Windows 2003. TS CALs are available in two types, TS Device CALs and TS User CALs.

- The TS Device CAL licenses one device to connect to any Microsoft Terminal Servers as any user. This functions like the previous Windows 2000 TS CAL.
- The TS User CAL licenses one user for any device to connect to any Microsoft Terminal Servers.

To change between the *Per Device* licensing and *Per User* licensing, double-click *Licensing* to launch the Licensing Mode window.

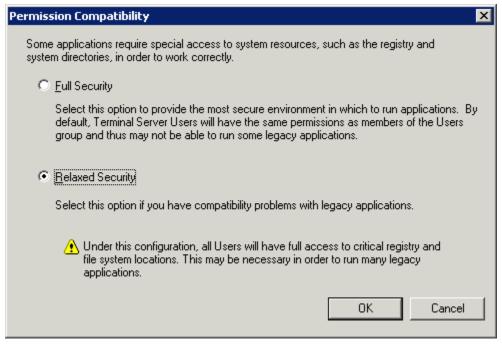


Terminal Services Configuration Console- Licensing Mode

Select the desired mode from the Licensing Mode dropdown box and click OK.

#### **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.

## **Restrict Each User to a Single Session**

The **Restrict Each User to a Single Session** setting prevents duplicate and orphaned sessions by limiting each user to a single login.

Double-clicking the setting will launch a settings window.

Single session per user 🔹 🔋 🗙
To conserve server resources and simplify reconnecting to disconnected sessions, you can restrict each user to a single session
Bestrict each user to one session
OK Cancel

Terminal Services Configuration Console- Single Session Per User

The Restrict each user to one session checkbox is selected by default in Windows 2003.

**Note:** Keep this setting selected. MultiSession will still work as long as each session is using a different AppLink program.

## License Server Discovery Mode

A new feature in Windows 2003, Service Pack 1 and later, is a setting to point the terminal server to a specific Terminal Server Licensing Server. This is the *License server discovery mode* setting in **Terminal Services Configuration**. This is easier than hard coding the license server into the registry.

Ferminal Server License Server discovery	×
License server discovery method	
192.168.1.34 Check names	
This Terminal Server will attempt to locate these license servers first. If they are not located, this Terminal Server will attempt automatic discovery.	
Separate license server names with commas.	
Example: Server1, Server2.example.com, 192.168.1.1	
Automatically discovered license servers	
In Enterprise role:	
Cancel OK	

Terminal Server License Server Discovery Window

Launch the Terminal Server License Server Discovery Window by double-clicking the *License server discovery mode* setting in **Terminal Services Configuration** window.

Entering a valid Microsoft Terminal Server Licensing Server name in the **Use these license servers** field will force the terminal server to use the defined server as the license server. This keeps the terminal server from getting confused when there are multiple license servers.

The *Automatically discovered license servers* field would be automatically populated with license servers found by the terminal server and can be used as a reference. The *Check names* button will check the validation of the name in the *Use these license servers* field.