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***.
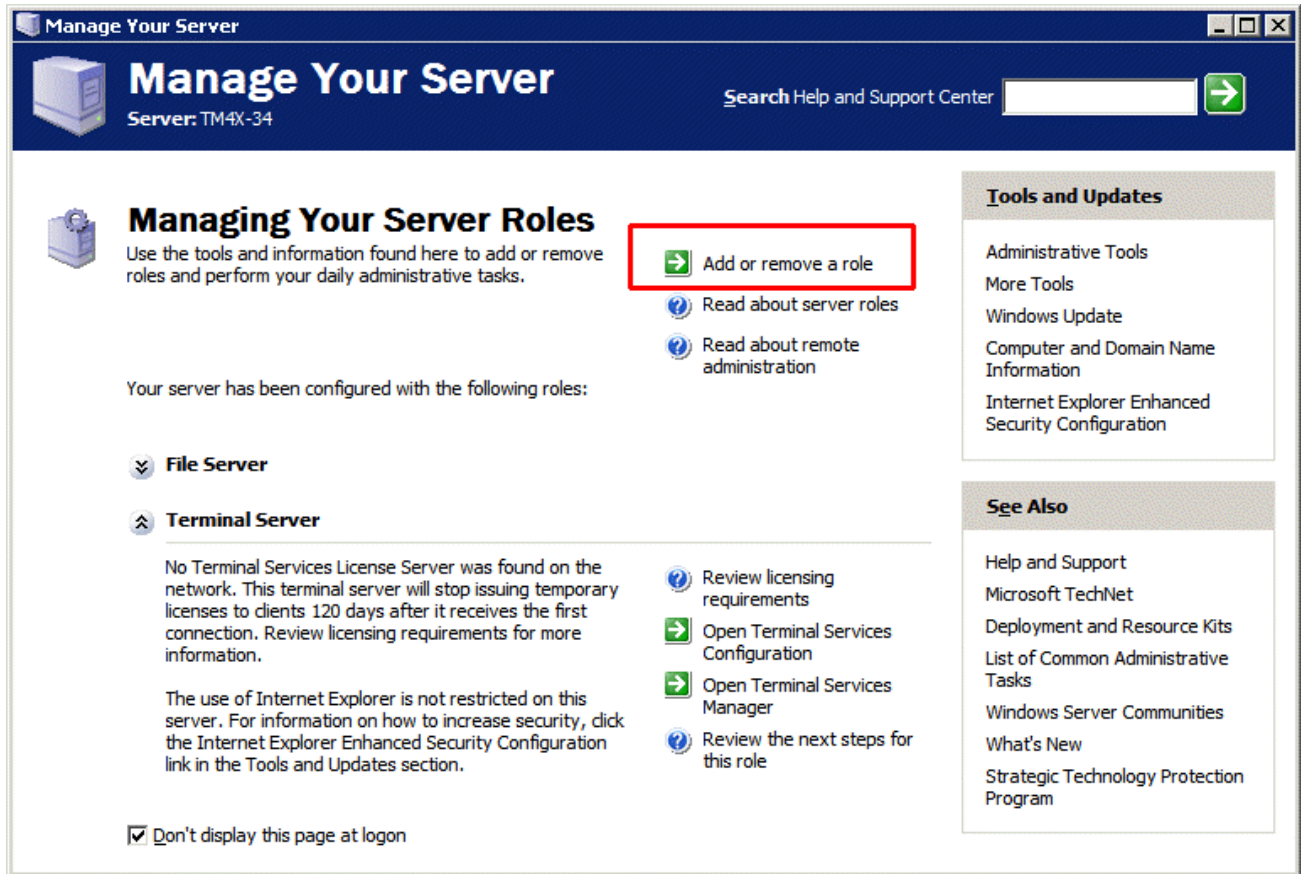
Manager Your Server

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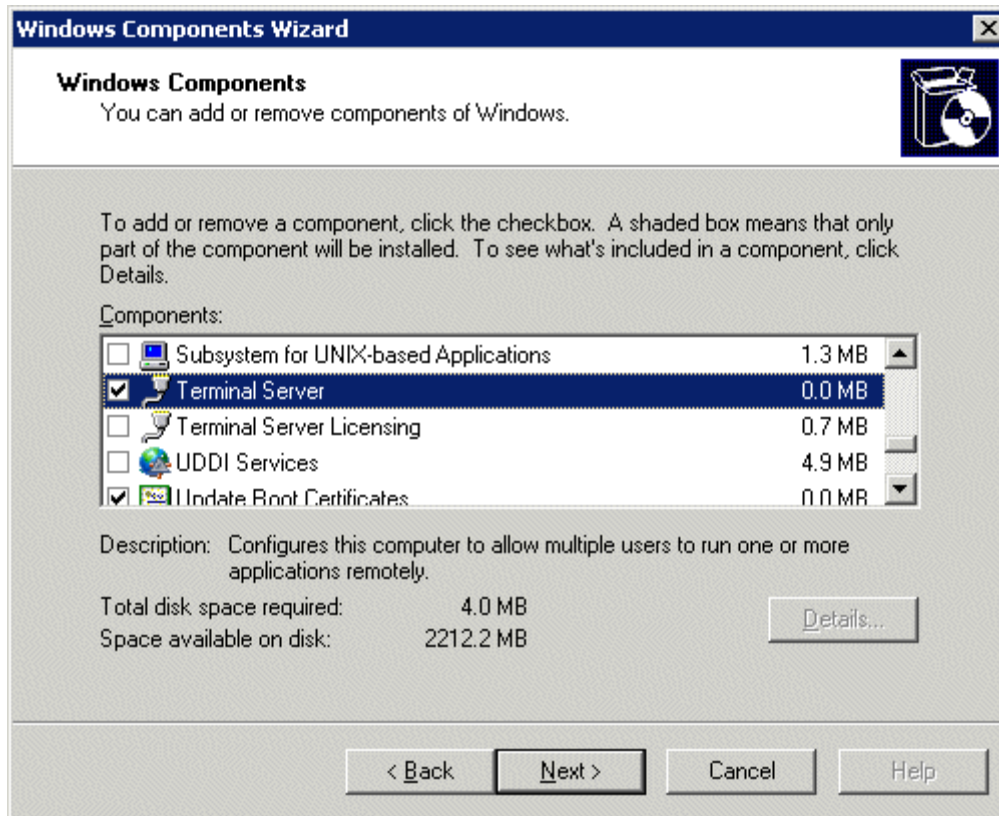
Windows Component Wizard

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

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

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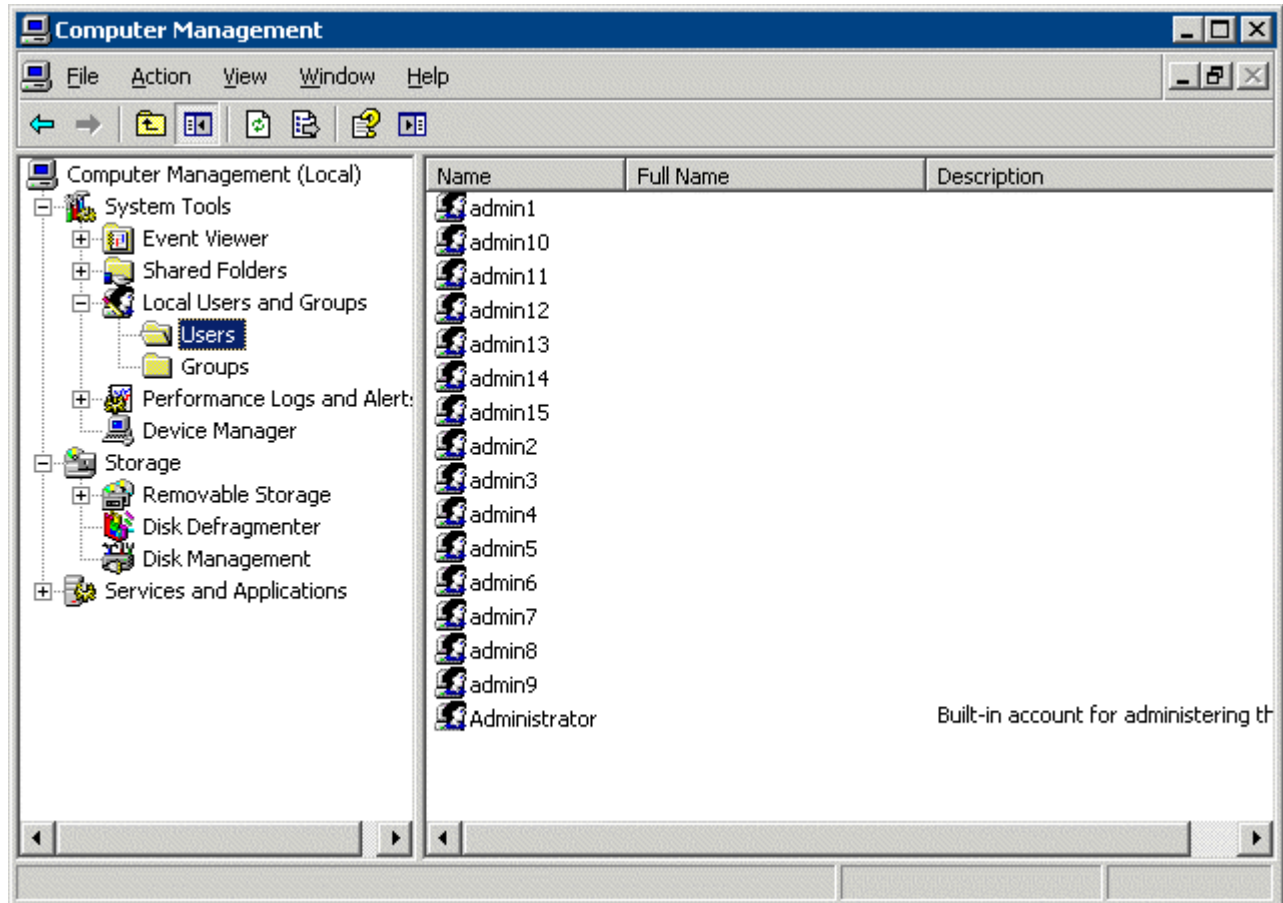
See Microsoft Licenses for details.

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 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:
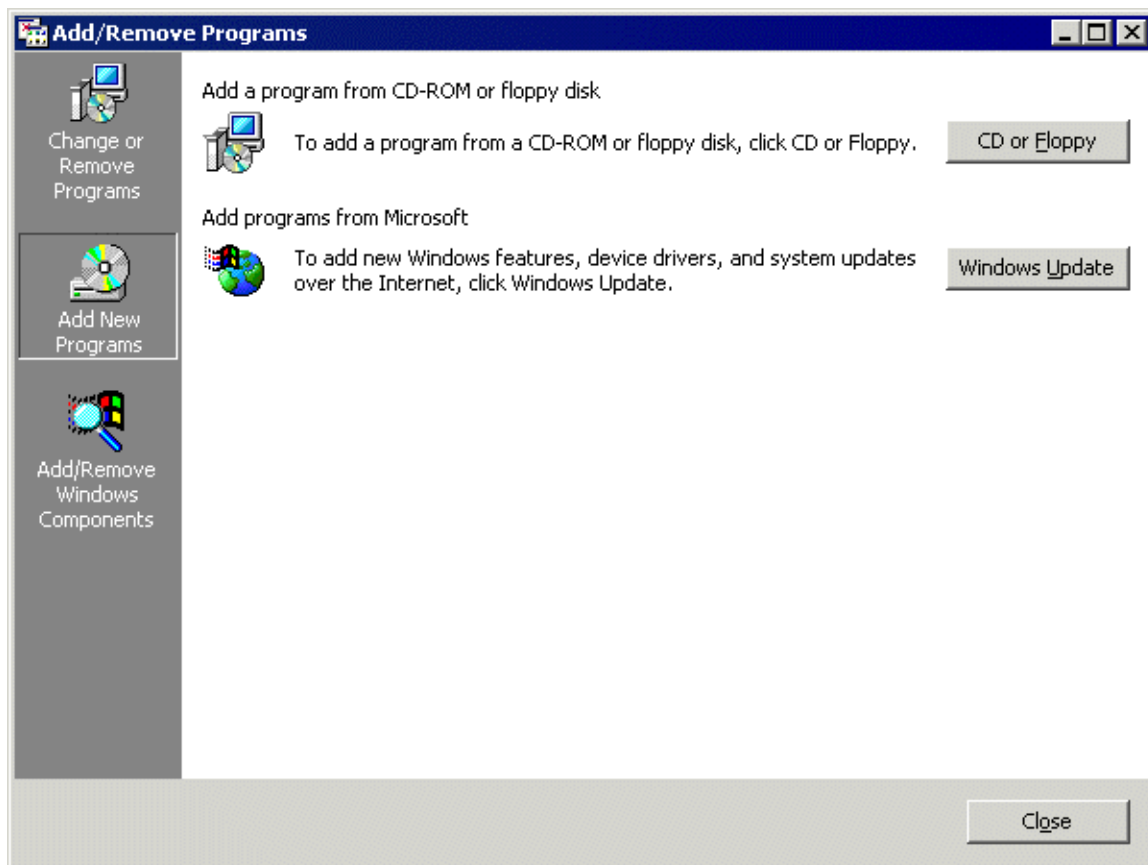```
change user /install
```
This command sets the machine to install mode. When finished, type:
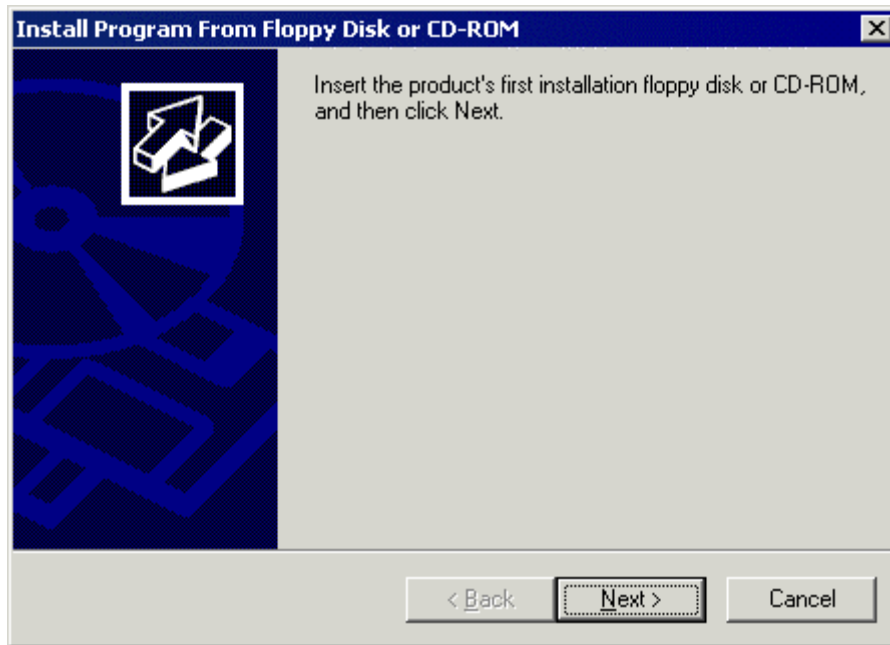```
change user /execute
```
This command returns the machine to the normal run mode.

Add/Remove Programs

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

Install Program 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.
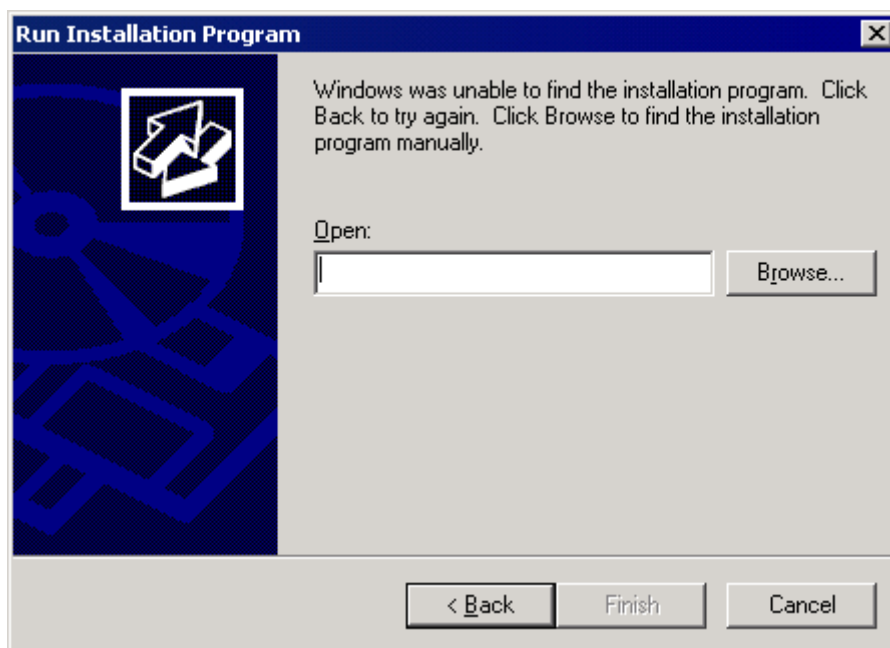
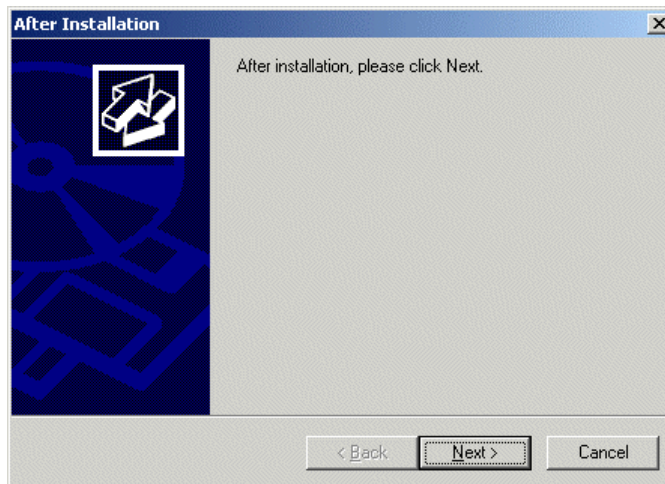*Run Installation Program*

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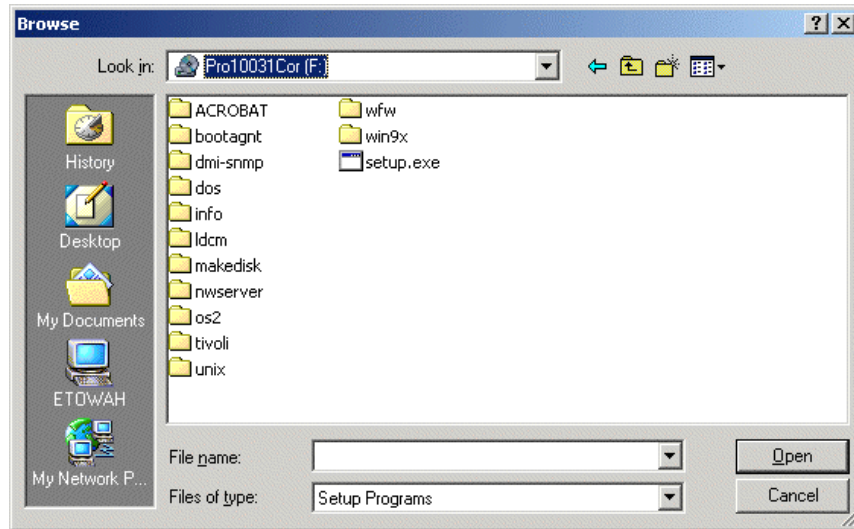

Browse File Window

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.
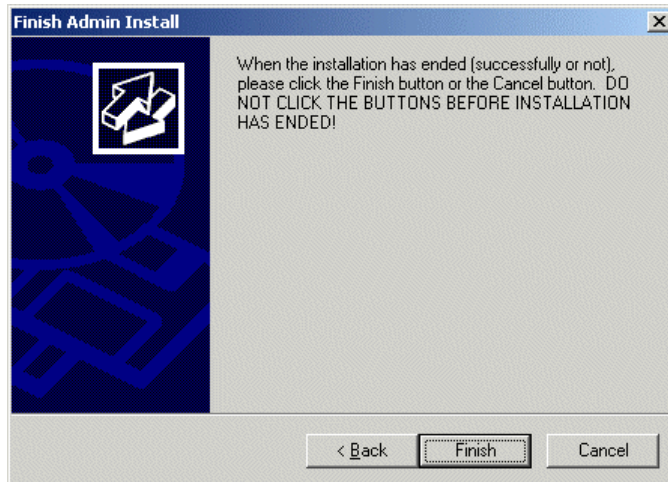
Finish Install Window

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.
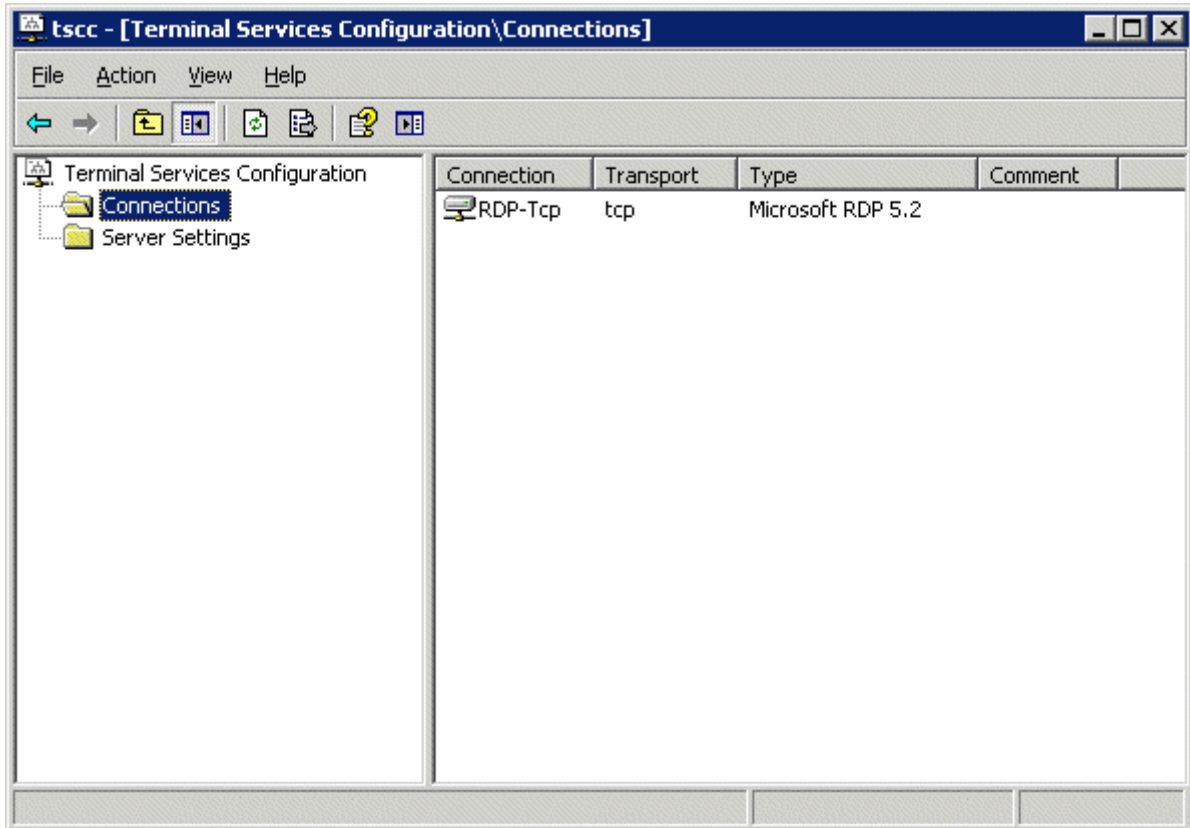
Terminal Services Configuration

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.

Terminal Services Configuration\\Connections Console - Connections

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

RDP-tcp Login Settings

RDP-tcp Login Settings

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

The ***Always prompt for password*** should be unselected to allow auto-logins.
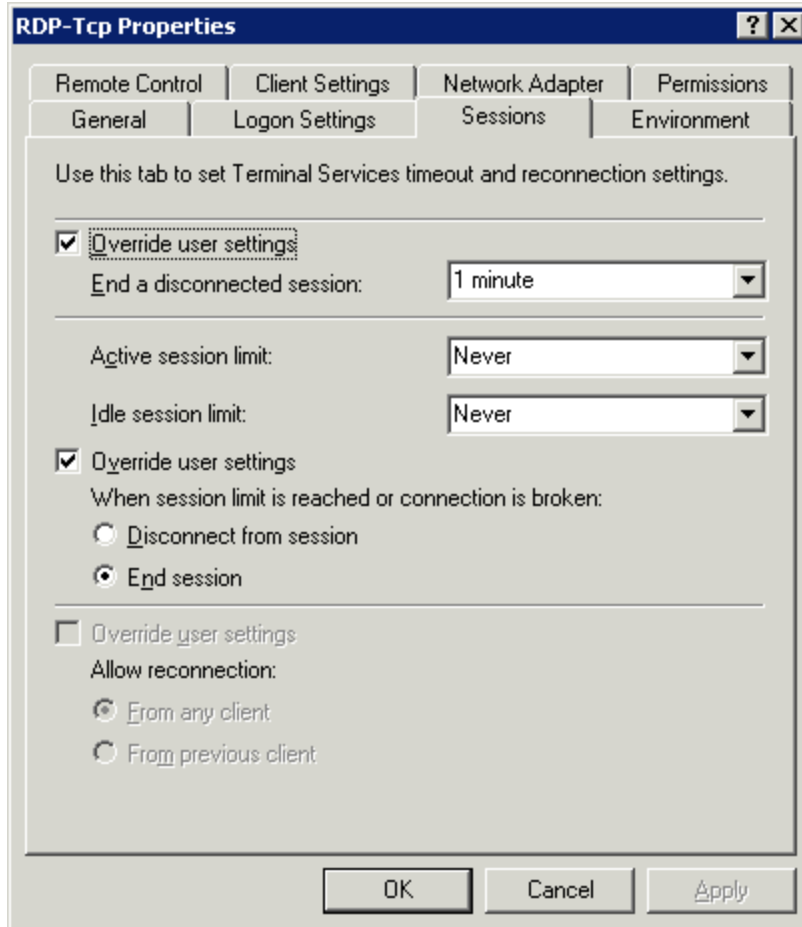
RDP-tcp Sessions Settings

Individual User Account Sessions Configuration

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

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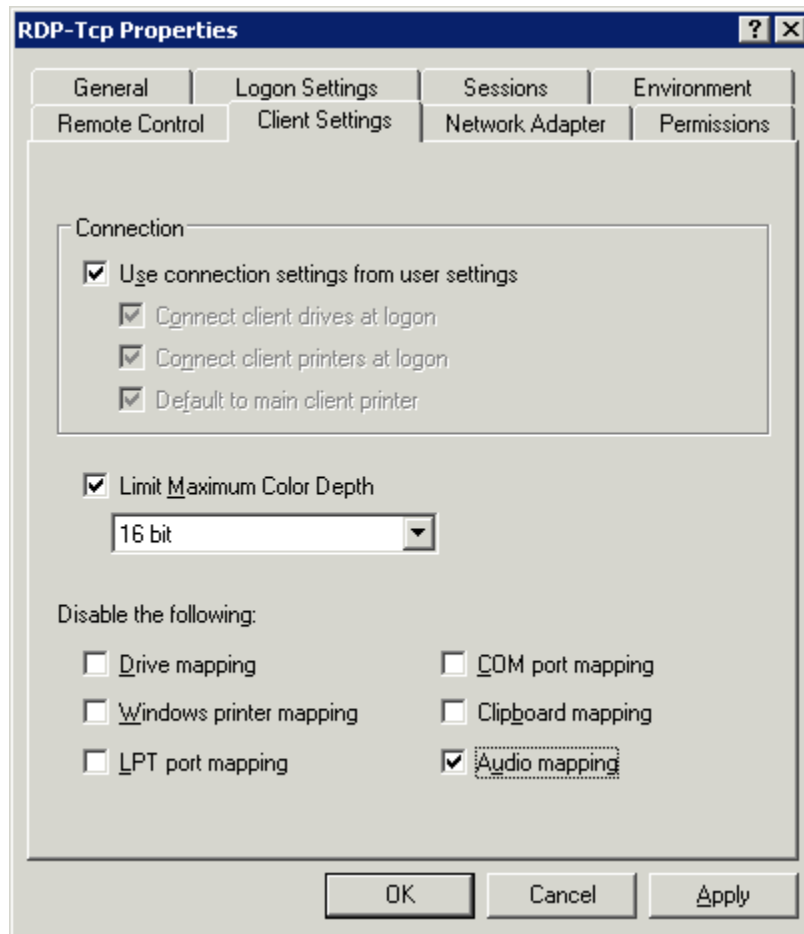
The **Sessions** tab of the **RDP-tcp Properties** allows all users to be configured with a consistent disconnect policy by selecting the *Override user settings* checkbox.

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 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.

RDP-tcp Network Adapter Settings
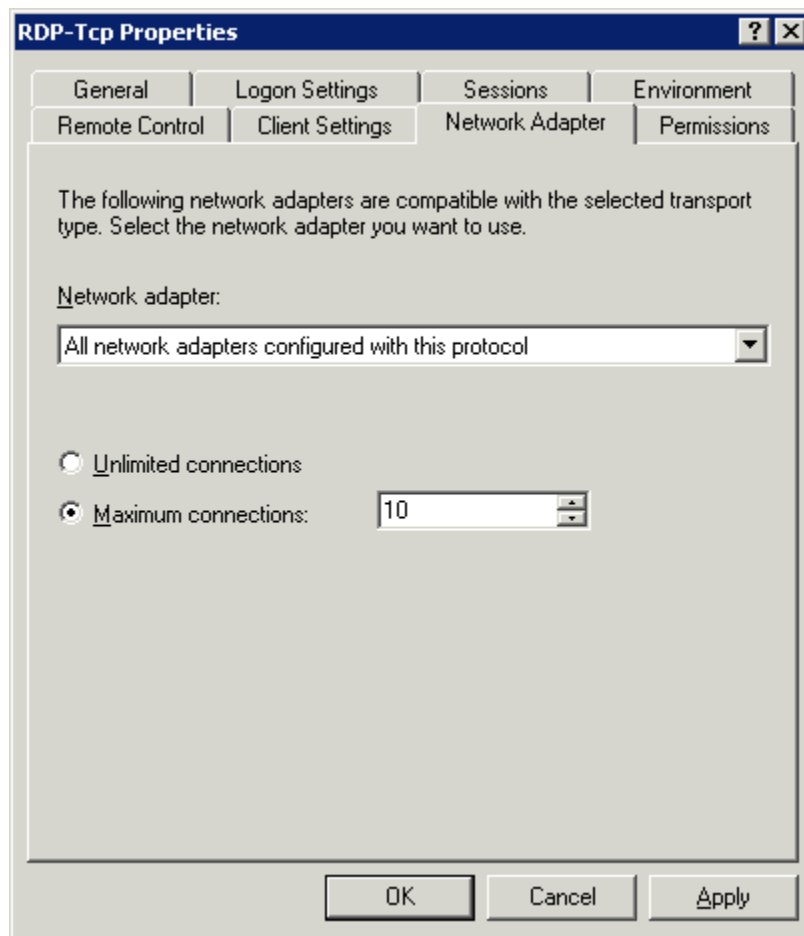

RDP-tcp Network Adapter Settings

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.
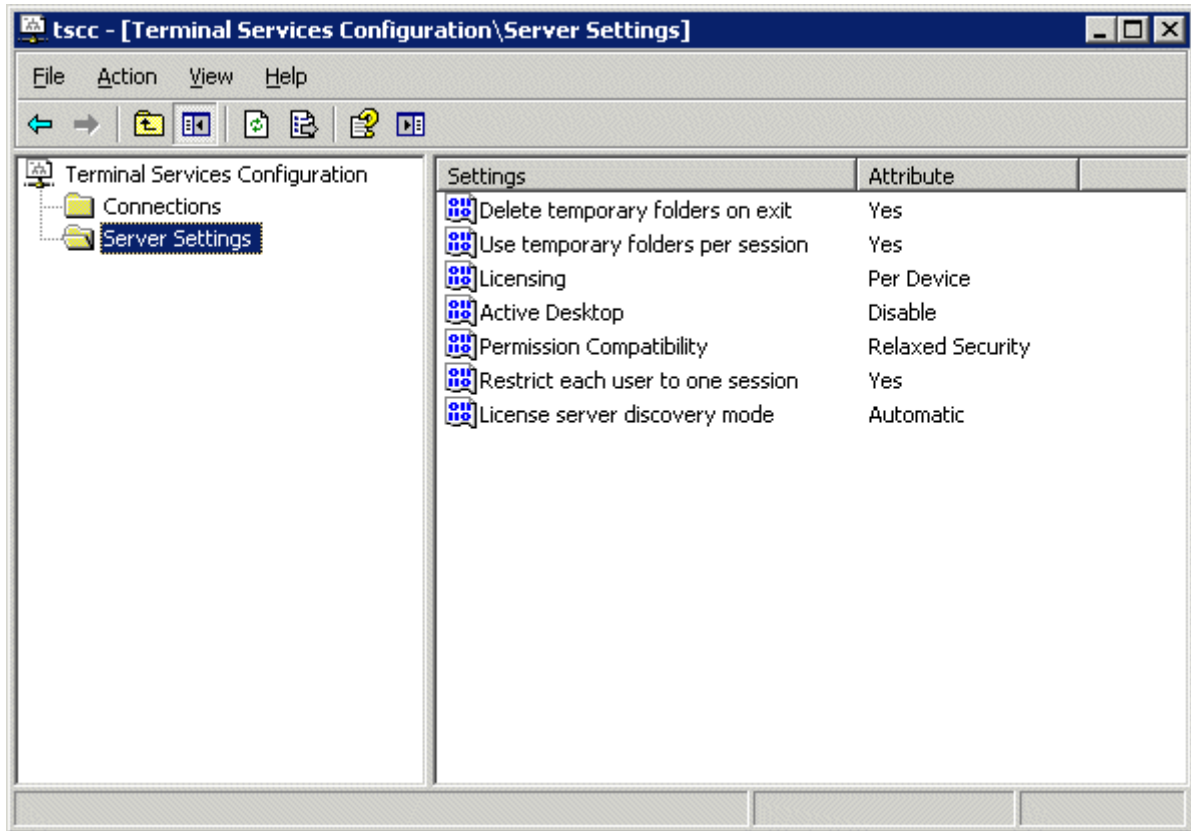
Terminal Services Configuration\\Connections Console - Connections

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.
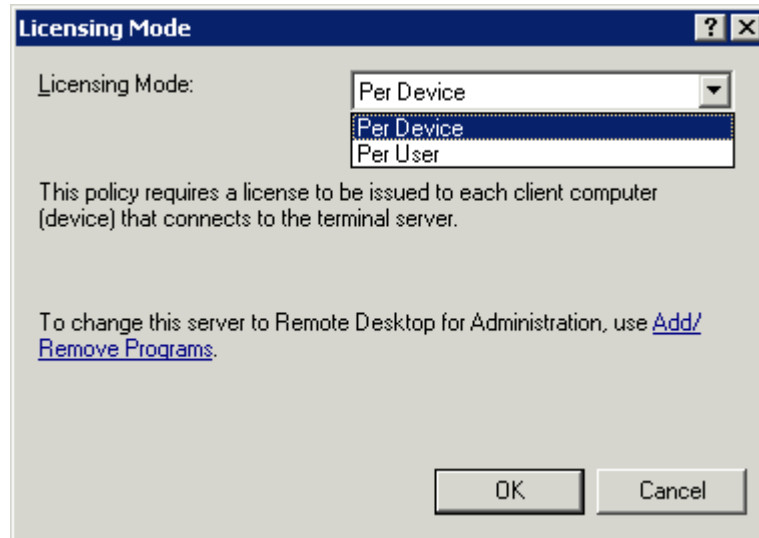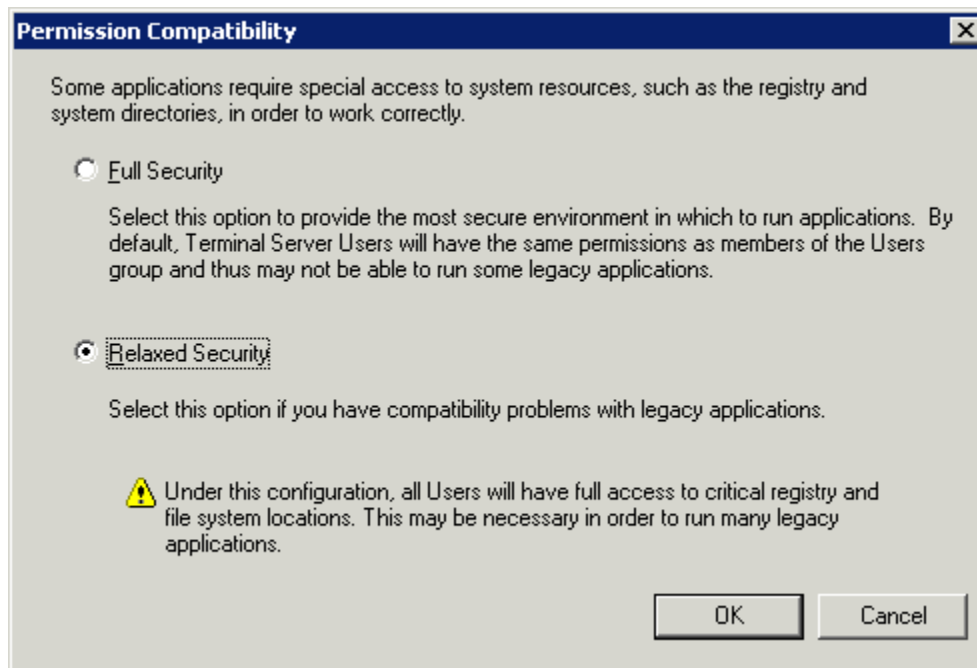
Terminal Services Configuration Console- Licensing Mode

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.
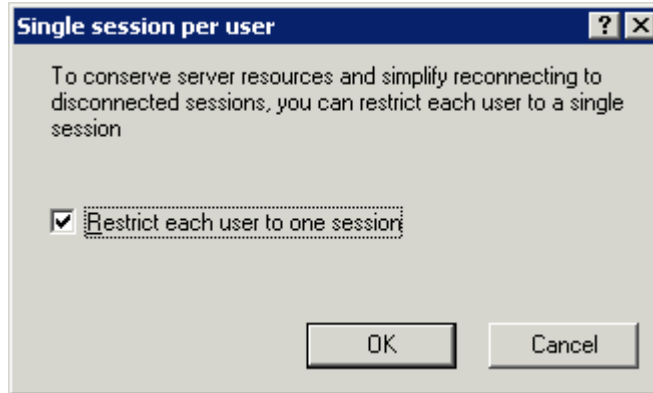

Terminal Services Configuration Console- Permission Compatibility

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.

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.
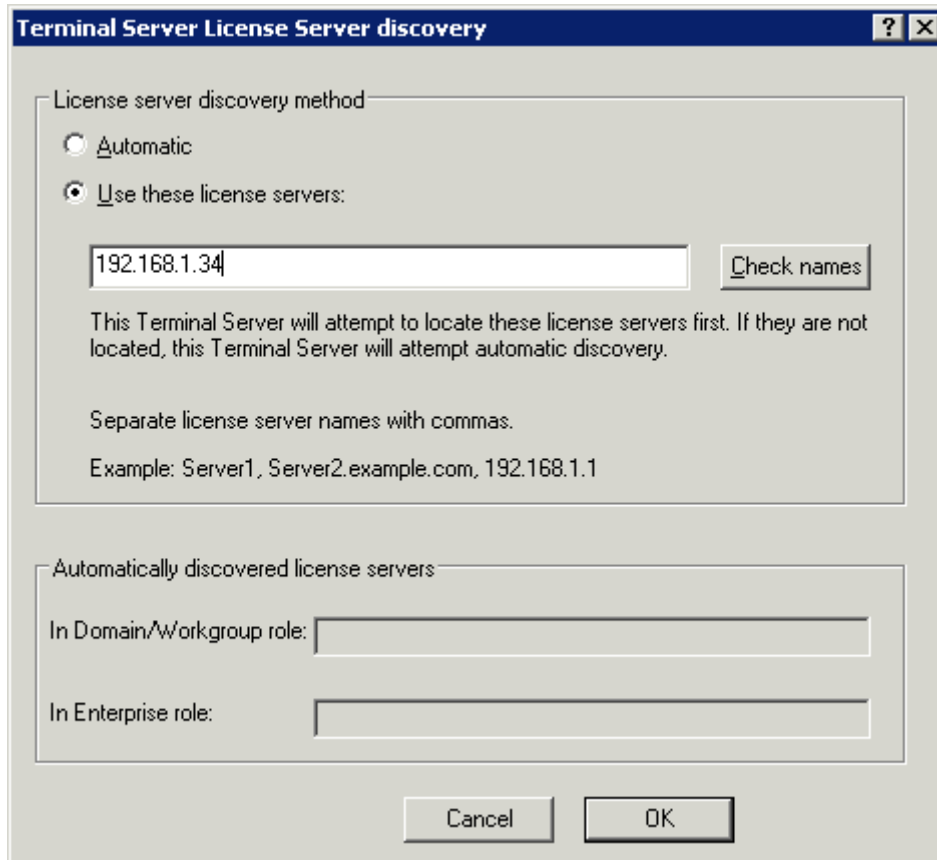
Terminal Server License Server Discovery Window

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.