19 Virtualization in ThinManager
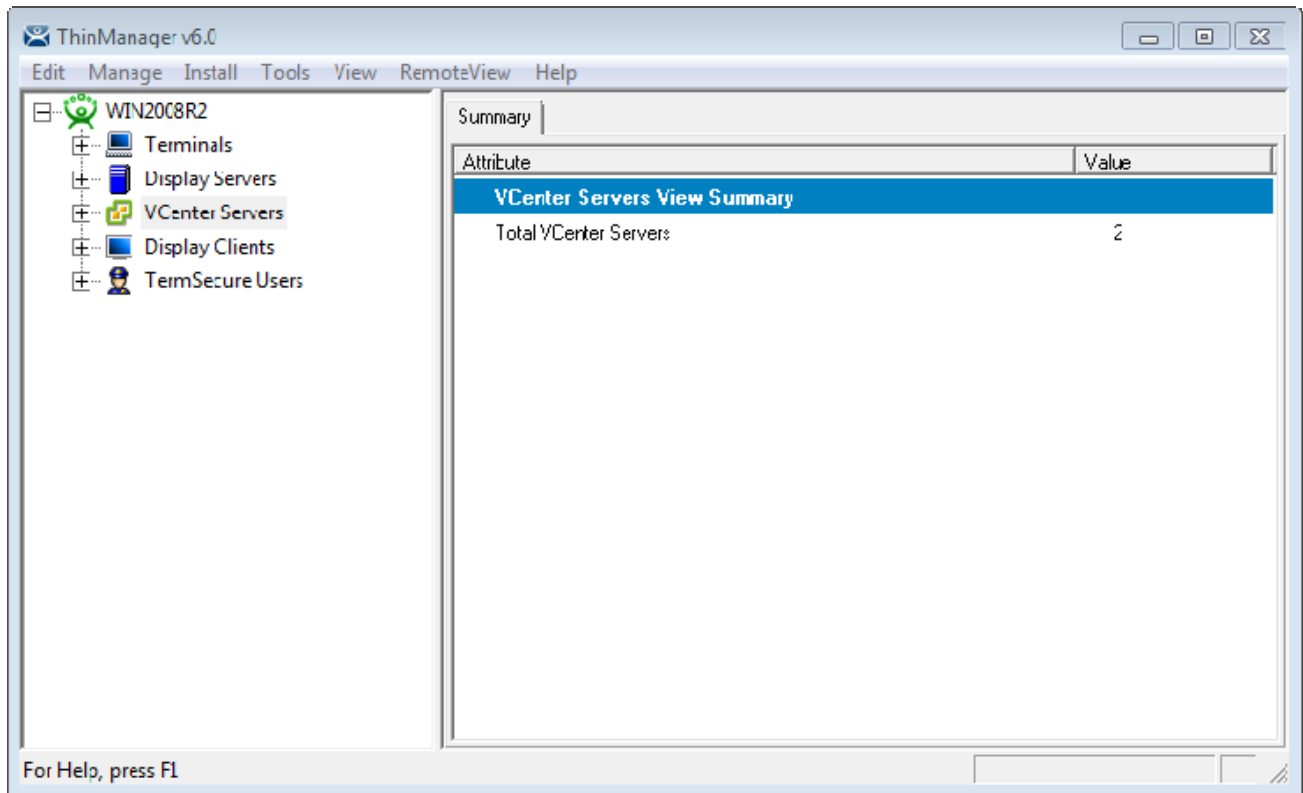
19.1 Virtualization Overview

A virtual machine is an isolated and independent install of an operating system within a host operating system. It allows one computer to run several virtual computers on one physical device. Virtualization, the use of virtual machines, allows the quick deployment and repetition of computers, often by duplicating a folder with a few files.

ThinManager 4.1 includes virtualization tools to help manage virtual servers and virtual workstations in a thin client system.

19.2 VCenter Servers

VCenter is a virtual machine management tool from VMWare. It allows IT administrators to control and manage multiple ESX servers and their virtual machines in a single console.

ThinManager can connect to a VCenter Server and allow the control and management of the virtual machines.

VCenter Servers Branch in the ThinManager Tree

The ThinManager tree has a **VCenter Servers** branch.

Right-click on the **VCenter Servers** branch to add a VCenter Server. It will launch a **VCenter Server Property Wizard**.

19.2.1.1 Virtual Machine Host Name

Virtual Machine Host Name Page

Importance of Page: Virtual Machine Host Name Page allows a VCenter Server to be defined for use within ThinManager.

Settings:

- *VCenter Server Name* – Enter the name of the VCenter Server you wish to connect to.

- *VCenter IP Address* – Enter the IP address of the VCenter Server.

- *User Name* – Enter an administrative account on the VCenter Server to allow a connection.

- *Password* – Enter the password of the administrative account.

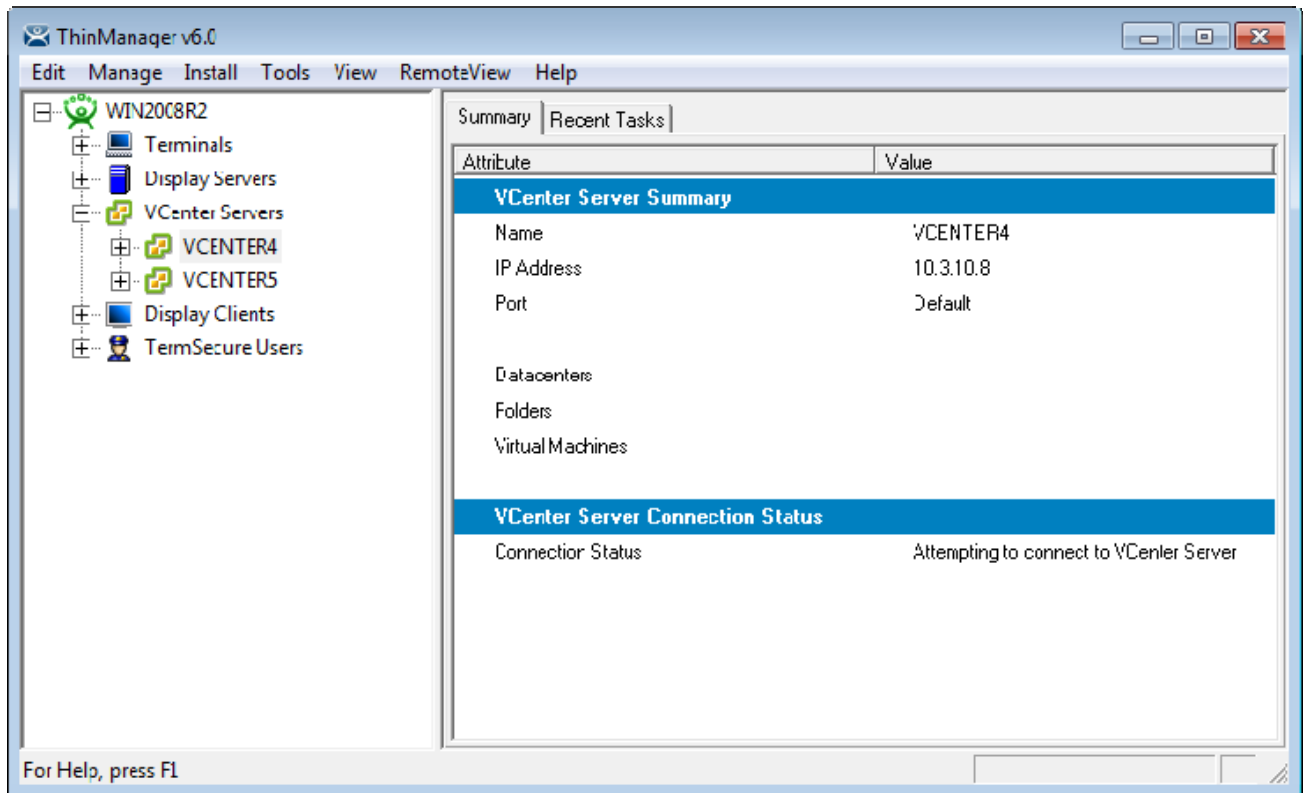- *Verify Password* – Re-enter the password of the administrative account for verification.

Buttons:

- *Discover* – This button will fill in the IP address of the listed VCenter Server.
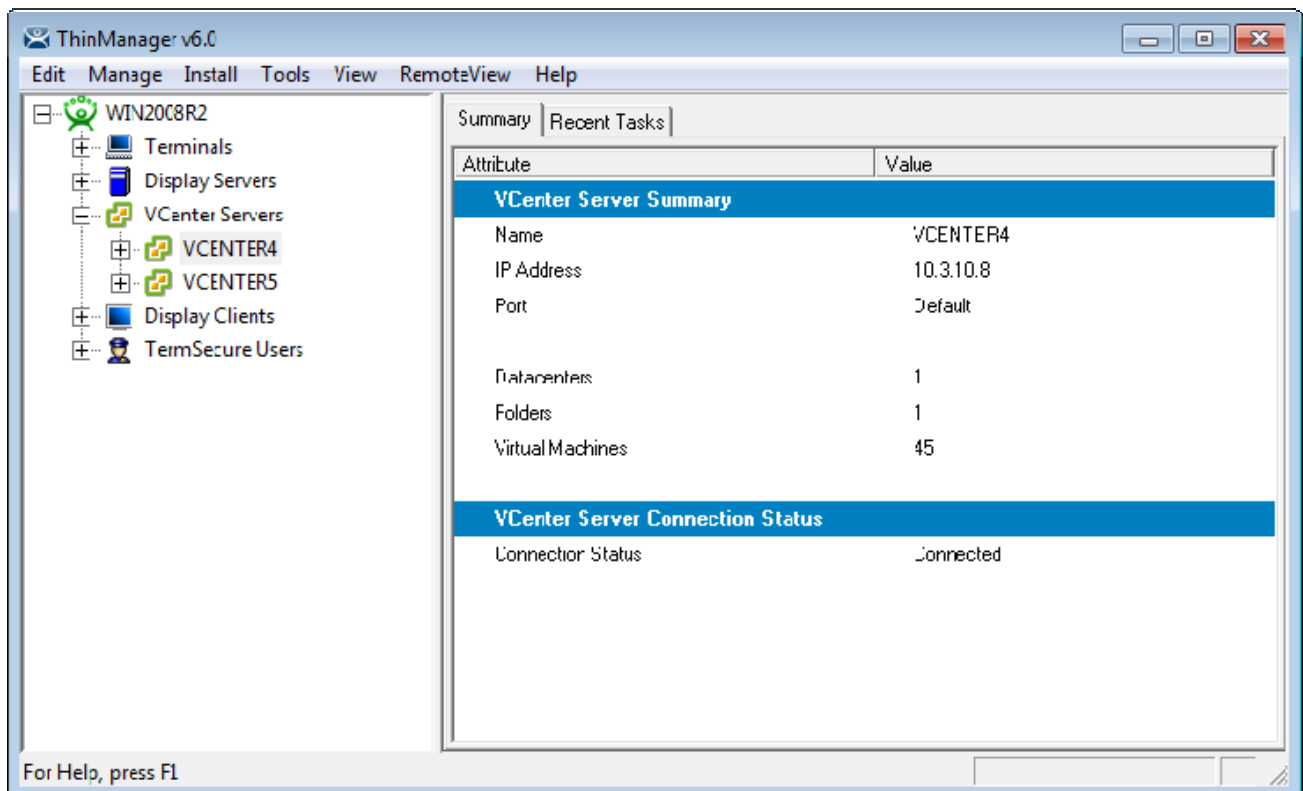
Why Change from Default Settings:

ThinManager won't connect to a VCenter Server unless you tell it to.

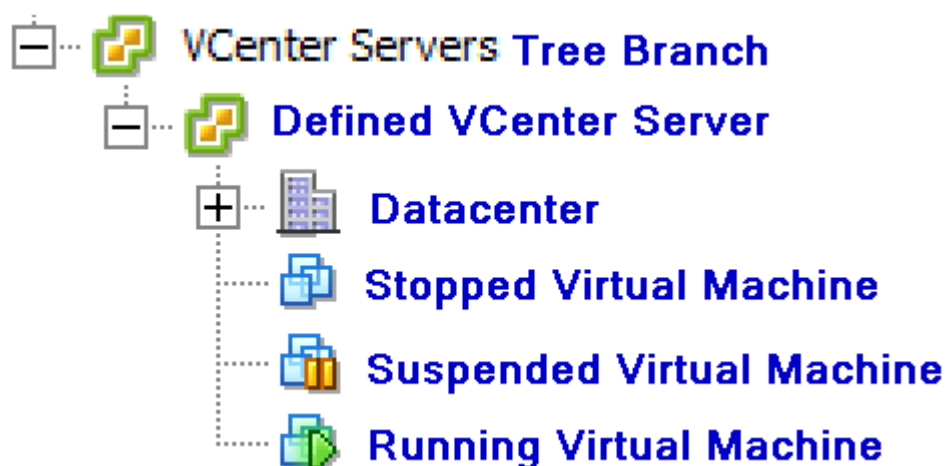Select *Finish* to complete the configuration.

Connecting to VCenter Server

Once the VCenter Server is defined and the **VCenter Server Property Wizard** is closed, ThinManager will connect to the VCenter Server.

Once the VCenter Server has connected the VCenter Servers branch can be expanded to see the virtual machine information imported from the VCenter Server.

VCenter Server Tree Icons

The tree will show the defined VCenter Servers, datacenters in the VCenter Server, and virtual machines.

The virtual machine icons show the state they are in; stopped, suspended, or running.

19.2.2   VCenter Server Right-Click Menus

The branches of the VCenter Server tree have various right-click menus:
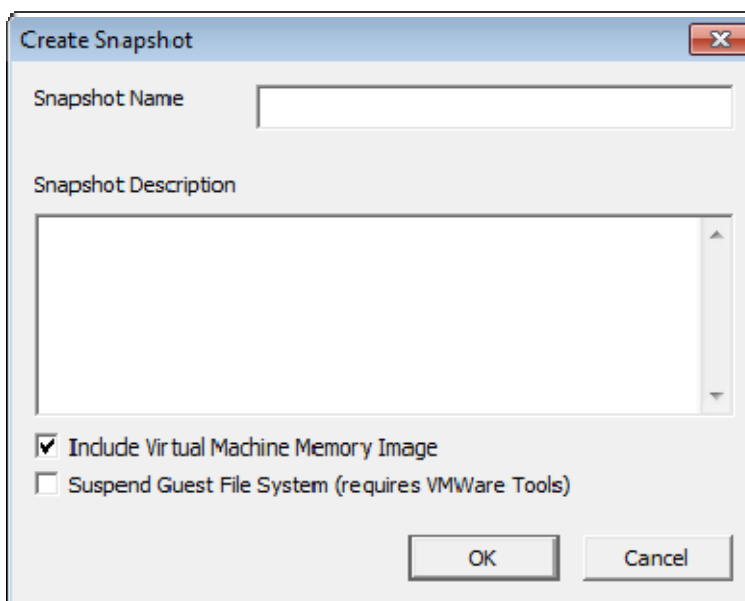
- **VCenter Servers**:
    - ○ *Add vCenter Server* – Launches the **VCenter Server Property Wizard** to allow a VCenter Server to be defined.
- **Defined VCenter Servers**:
    - ○ *Remove* – Removes the defined VCenter Server from ThinManager.
- **Datacenter:**
    - ○ *Rename* – Allows you to rename the datacenter.
    - ○ *Delete* – Allows you to delete the datacenter.
- **Virtual Machine:**
    - ○ *Power Operations:*
        - ▪ *Power On* – Turns on a stopped or suspended virtual machine.
        - ▪ *Power Off* – Turns off a stopped or suspended virtual machine.
        - ▪ *Suspend* – Suspends a running virtual machine and stores the state.
        - ▪ *Reset* – Cycles power to the virtual machine to restart the virtual machine.
    - ○ *Snapshot:*
        - ▪ *Take Snapshot* – Captures and stores the state of the virtual machine.
        - ▪ *Revert to Current Snapshot* – Reapplies the stored state of a previously saved virtual machine.

- **Snapshot Manager** – Launches the Snapshot management tool.
  o **Rename** – Allows the virtual machine to be renamed.
  o **Remove from Inventory** – Removes the virtual machine from the tree without deleting the files.
  o **Delete** – Removes the virtual machine from the tree AND deletes the file system.

19.2.2.1 Snapshots

Snapshots save the state of the virtual machine in a file. Snapshots allow you to preserve a working status before applying new applications, programs or updates. If the changes fail or are undesired, then the snapshot can be restored allowing the virtual machine to return to the pre-change state.

Right-clicking on the virtual machine and selecting **Snapshot>Take Snapshot** will launch the **Create Snapshot** window.
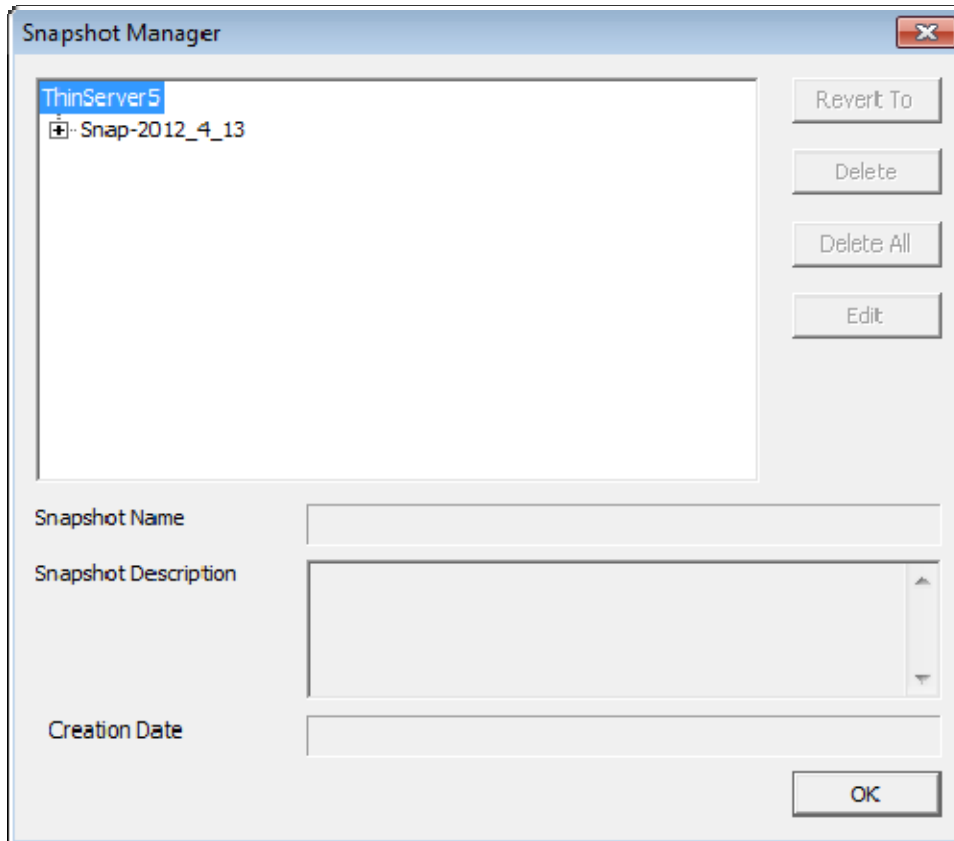

Create Snapshot Window

The **Create Snapshot** window allows you to name the snapshot and enter a description.

Select **OK** to save the snapshot or **Cancel** to close without saving.

Multiple snapshots of a virtual machine can be taken.

Right-clicking on the virtual machine and selecting **Snapshot>Revert to Current Snapshot** will apply the last snapshot taken.

Right-clicking on the virtual machine and selecting **Snapshot>Snapshot Manager** will launch the **Snapshot Manager** window.
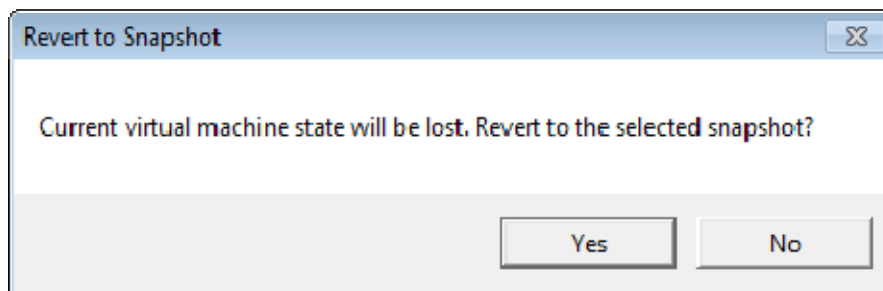
Snapshot Manager

The **Snapshot Manager** window shows all saved snapshots for the selected virtual machine. The **Snapshot Manager** window shows the name, description, and creation date of a highlighted snapshot.

Buttons:

- *Revert To* – This applies the selected saved snapshot.
- *Delete* – This deletes a highlighted snapshot.
- *Delete All* – This deletes all saved snapshots.
- *Edit* – Opens the **Create Snapshot** window to allow changes to the name and description.
- *OK* – Closes the **Snapshot Manager**.

A dialog box will require confirmation before changes are made.

Revert to Snapshot Warning
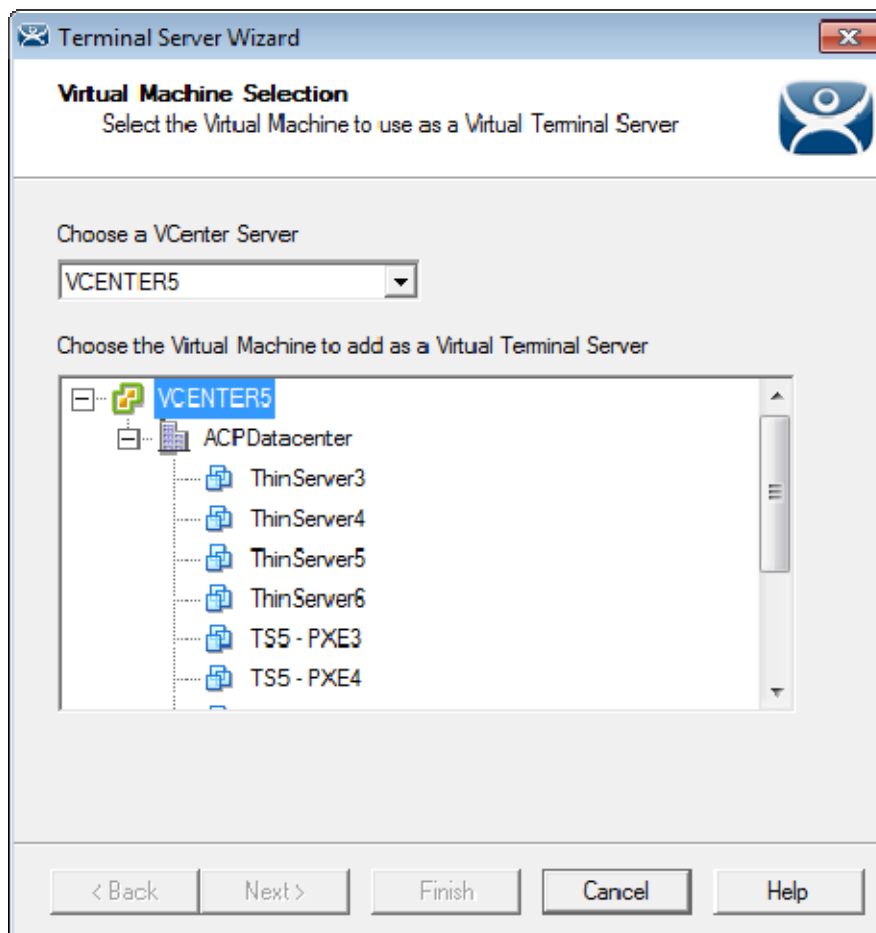
19.3 Virtual Terminal Servers

Virtual terminal servers can be added to ThinManager using two methods, **Add Terminal Server** and **Add Virtual Terminal Server**.

Add Terminal Server – You can define a virtual terminal server as a regular terminal server in the Terminal Server Wizard.

Right-click on the Terminal Server branch and select *Add Terminal Server* to launch the Terminal Server Wizard. Add the virtual terminal server as you would a regular terminal server. This doesn't give you any special configuration or tools.

Add Virtual Terminal Server – You can define a virtual terminal server as a virtual terminal server in the Terminal Server Wizard.

Right-click on the Terminal Server branch and select *Add Virtual Terminal Server* to launch the **Terminal Server Wizard**.

VCenter Server Virtual Machine Selection List

The second page of the **Terminal Server Wizard** will display a **Virtual Machine Selection Page**.

Highlight the desired virtual machine and select the *Next* button.
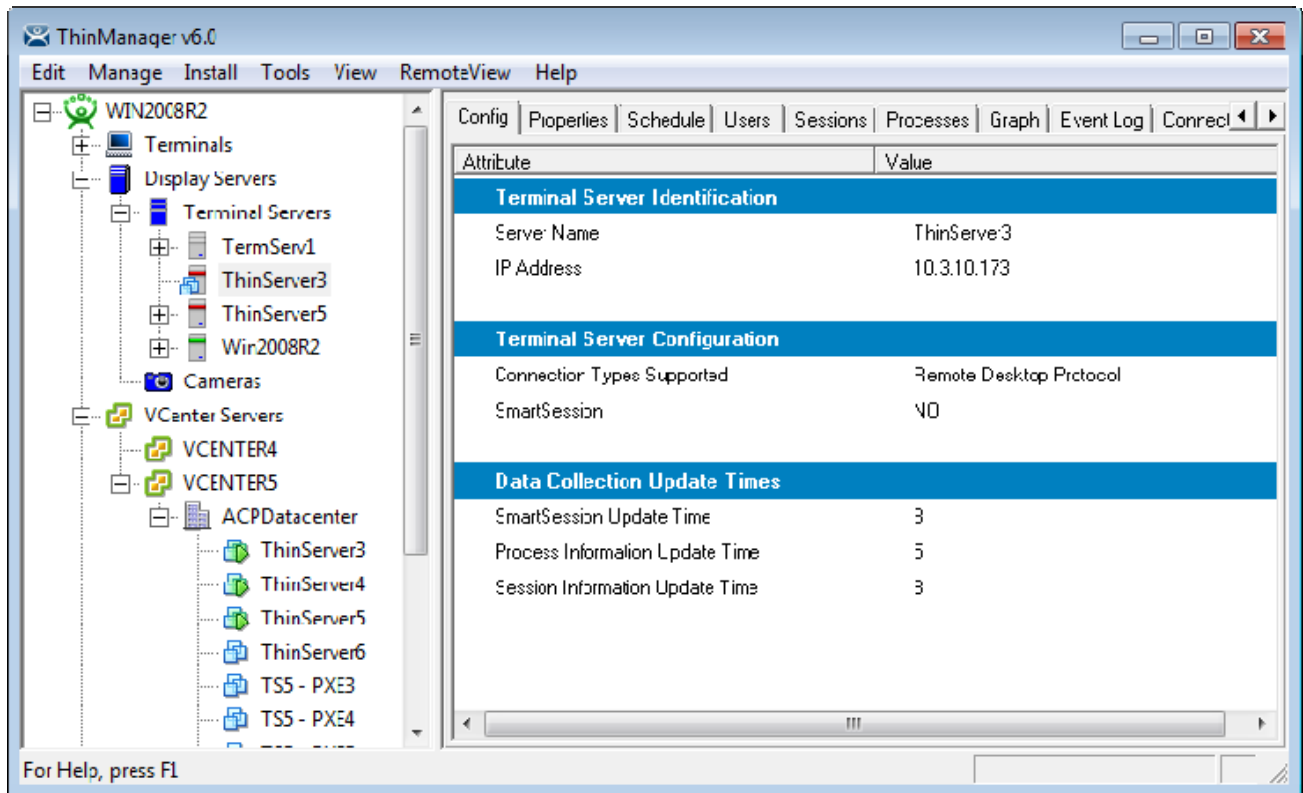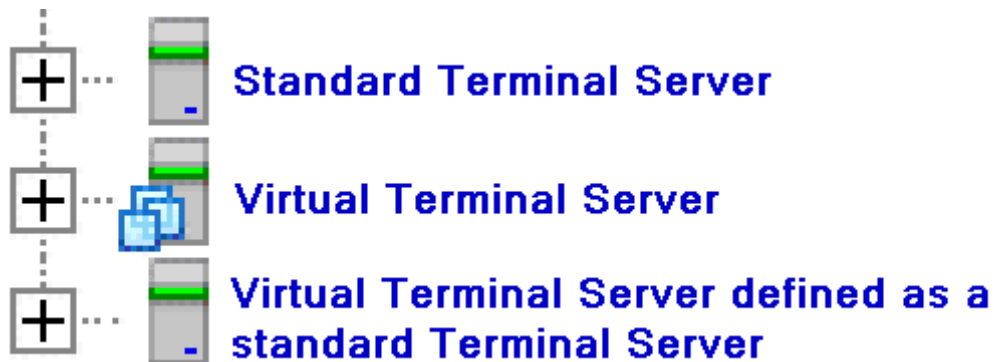
Terminal Server Name Page

The **Terminal Server Wizard** will continue with the virtual terminal server filling in the fields.

These fields, and the schedule button, are the same as on the normal Terminal Server Wizard. See Terminal Services Display Servers for details.

Select *Next* to continue configuring the virtual terminal server, select *Finish* to save the configuration and close the wizard, or select *Cancel* to close the wizard without saving the changes.
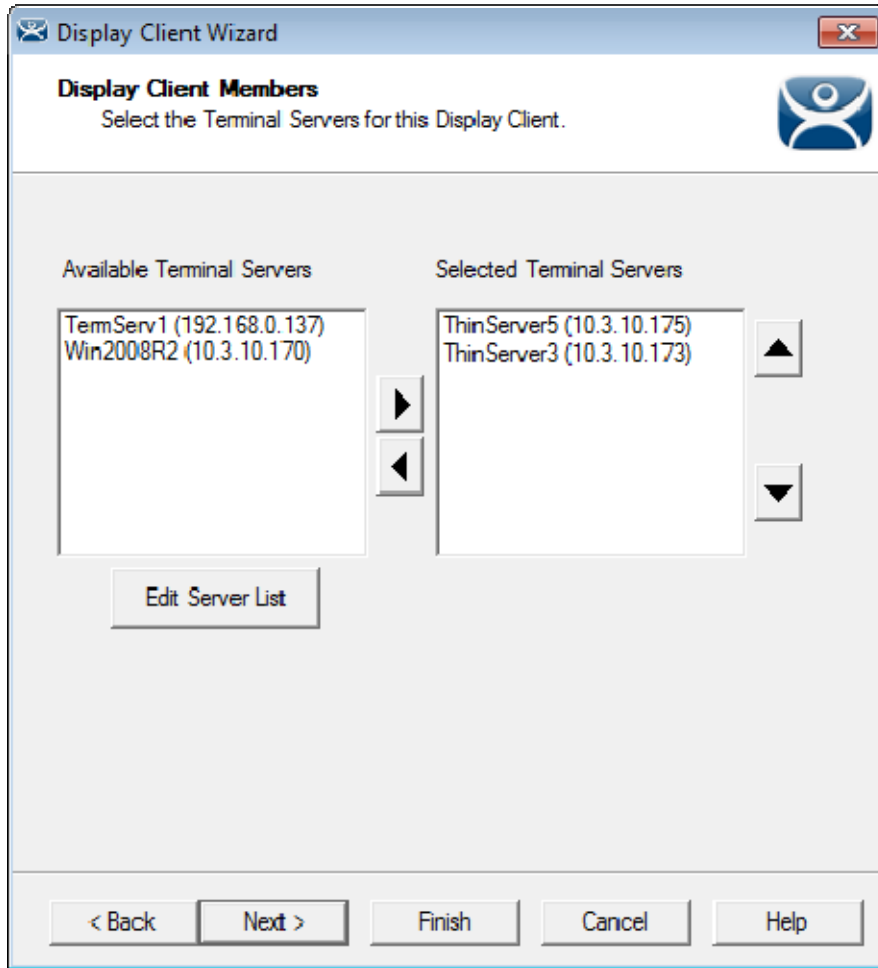
Virtual Terminal Servers in the ThinManager Tree

Terminal Server Tree Icons

Virtual Terminal Servers will show a different icon than a standard terminal server.

A virtual terminal server that is defined as a standard terminal server will show the standard terminal server icon.

Selected Terminal Servers in a Display Client

Virtual and standard terminal servers are treated identically when choosing display clients.

19.4 Virtual Workstations

Windows workstations, XP Pro, Vista Business, or Windows 7 Pro, can be virtualized for deployment as a desktop. ThinManager can deploy these virtual desktops to thin clients to limit the upkeep and management of the operator's workstation.

19.4.1 Workstation Display Clients

First a **Workstation Display Client** needs to be created. This will act as a template for the workstation deployment. Later when the Workstation Display Client is added to a terminal you will need to assign which virtual workstation.

Launch the **Workstation Display Client Wizard** by right-clicking on the Display Client branch of the ThinManager tree or by right-clicking on the Workstation Display Client branch of the ThinManager tree.
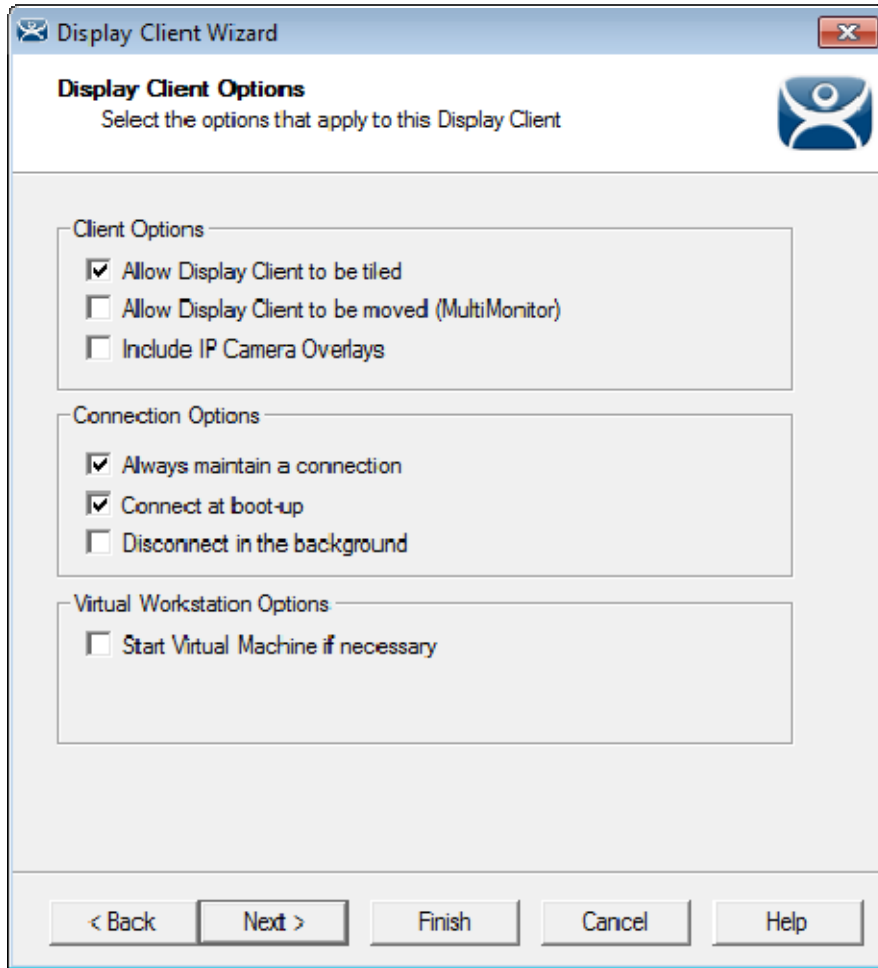
Client Name Page of Display Client Wizard

Enter a name for the Workstation Display Client. Select **Workstation** from the **Type of Display Client** drop-down if you launched the wizard from the Display Client branch.

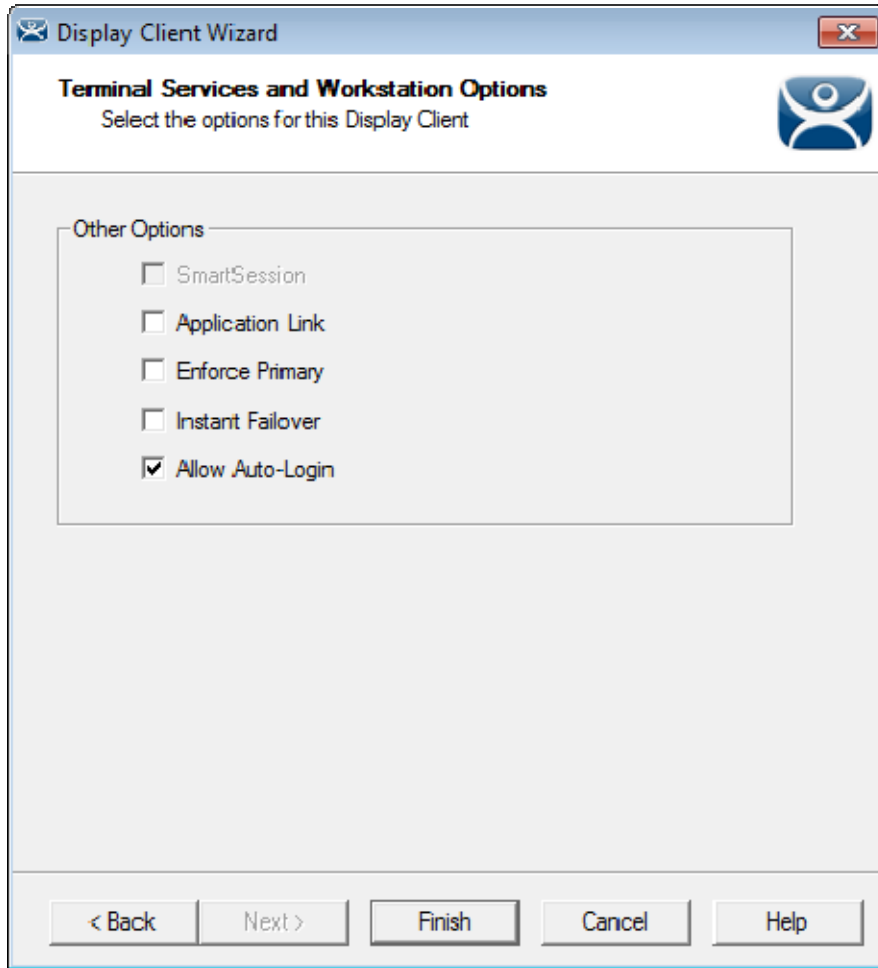Select **Next** to continue with the wizard.

Display Client Option Page of Display Client Wizard

The Workstation Display Client adds *Virtual Workstation Options* to the **Display Client Options** page of the Display Client Wizard. The *Client Options* and *Display Client Connection Options* are the same as other Display Clients. See Terminal Services Display Clients for details.

Virtual Workstation Options:

- *Start Virtual Machine if necessary:* This checkbox, if selected, will automatically start a suspended or stopped virtual machine when it connects.

- *Suspend Virtual Machine when not needed:* This checkbox, if selected, will suspend the virtual machine when the terminal is powered off.
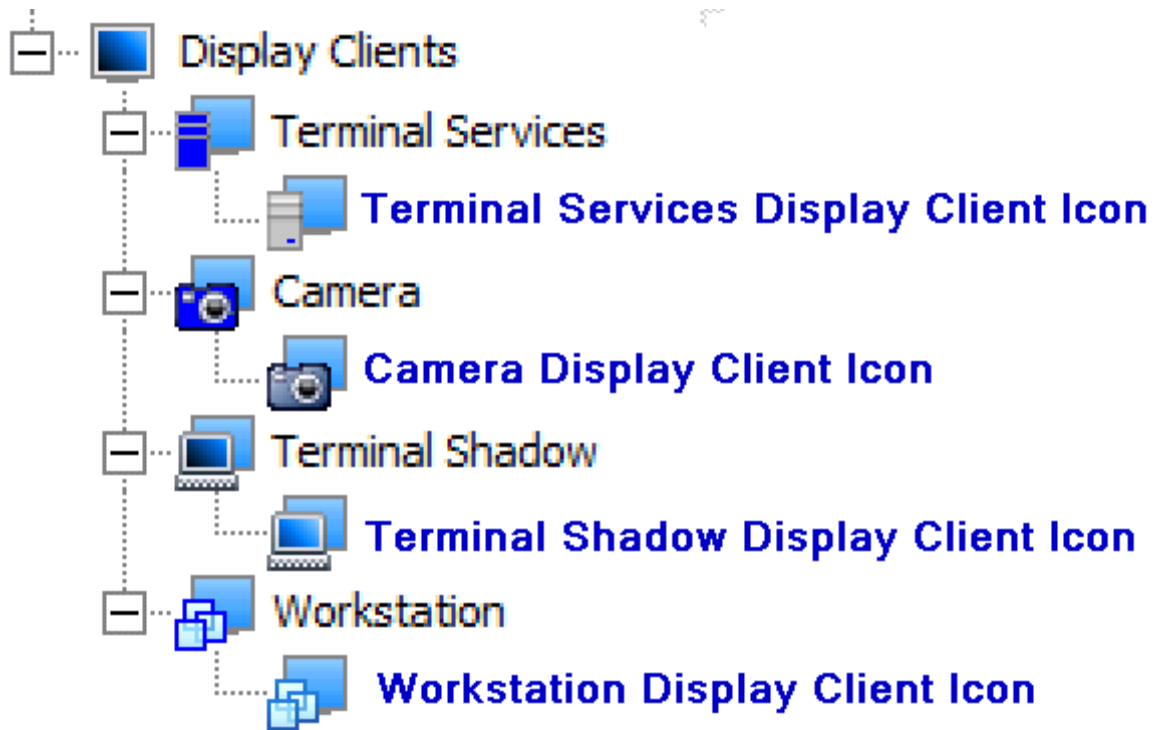
Select *Next* to continue with the wizard.

Terminal Services Display Client Options Page of Display Client Wizard

The Display Client presents the Display Client Wizard similar to the Terminal Services Display Client Wizard, with the exception of omitting the addition of terminal servers. Since workstations have a one-to-one relationship to the terminals the workstations are assigned when the terminal is configured.

Select **Finish** to accept the changes and close the wizard.
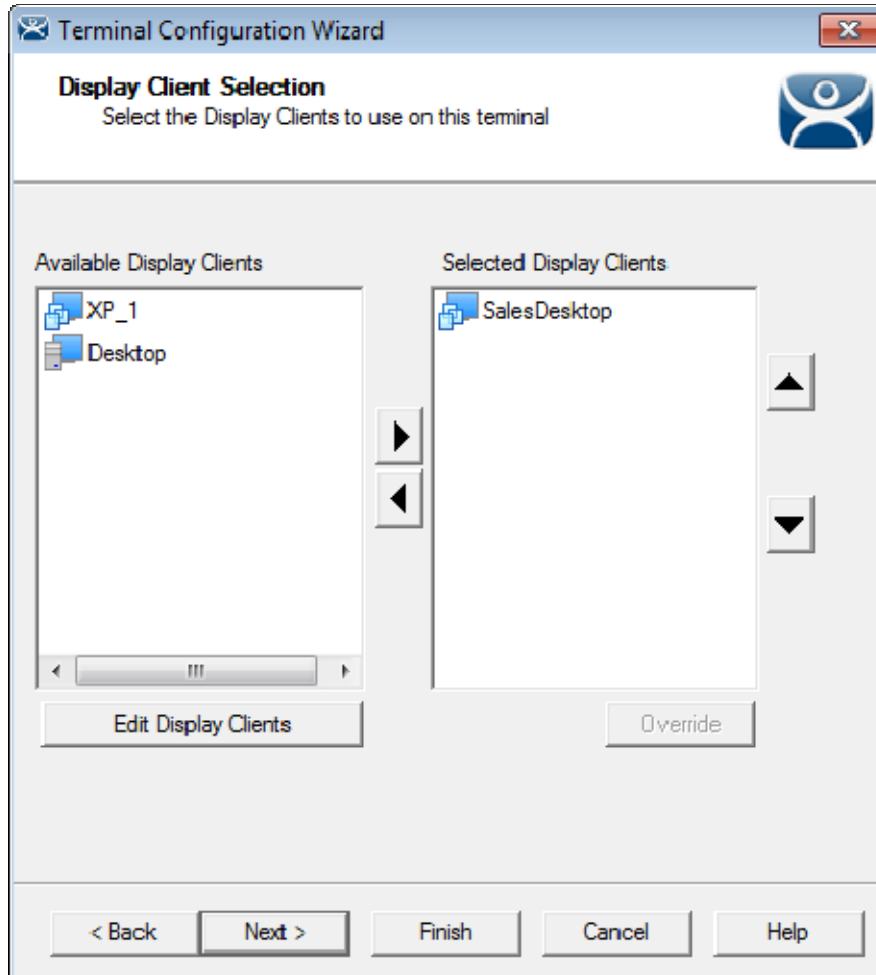
Display Client Icons

When the Workstation Display Client is created it will be added to the tree with the Workstation Display Client icon.

19.4.2 Terminals and Virtual Workstations

Workstations can only deploy their session once to a remote user so the workstation is assigned to its remote connection when the Workstation Display Client is applied to a terminal.

Open the **Terminal Configuration Wizard** for the terminal that you want to assign a workstation to.

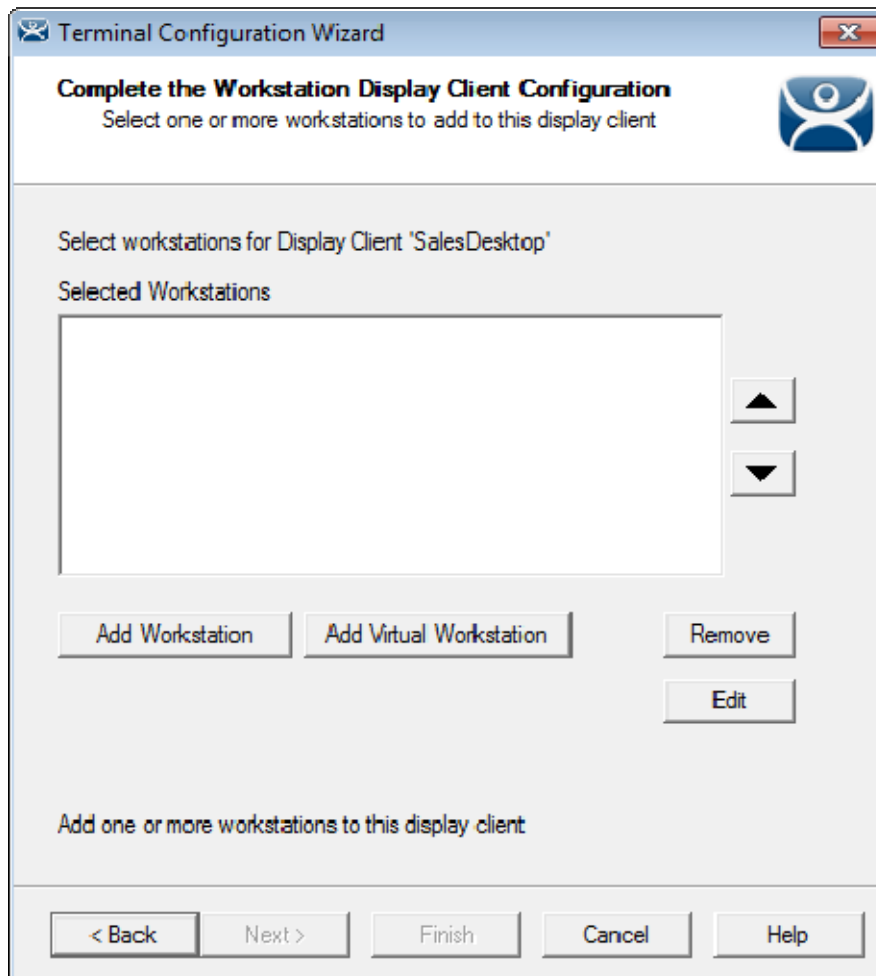*Display Client Selection of the Terminal Configuration Wizard*

The Workstation Display Clients will show up in the *Available Display Clients* list on the **Display Client Selection** page of the Terminal Configuration Wizard. Move the desired Workstation Display Client to the *Selected Display Client* list for deployment.

Workstation Display Client Icon

Workstation Display Clients have their own icon.

Select *Next* to continue the wizard.

Complete the Workstation Display Client Configuration Page

The next page of the wizard is the **Complete the Workstation Display Client Configuration Page**.

Importance of Page: Each deployment of a Workstation Display Client needs to be tied to an available workstation.
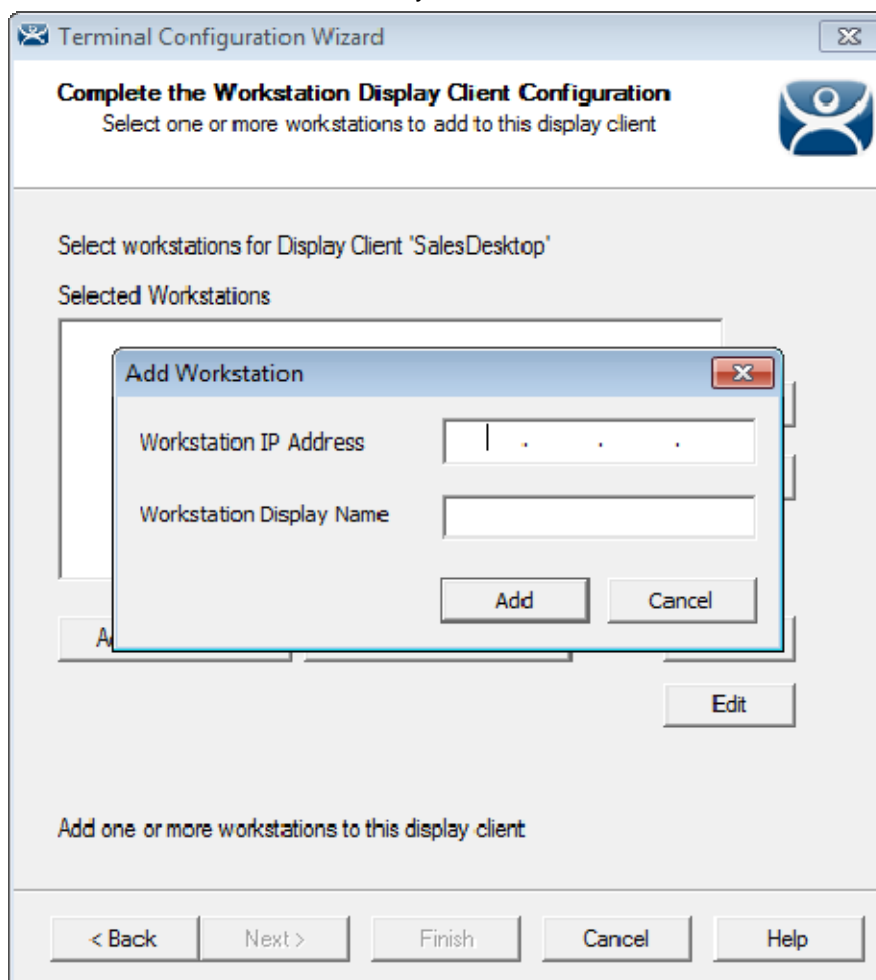
Buttons:

- *Add Workstation* – This button will launch a window that allows a workstation to be designated for use by this terminal.

- *Add Virtual Workstation* – This button will launch a window that allows a virtual workstation to be designated for use by this terminal.

- *Remove* – This button remove a highlighted workstation from the *Selected Workstation* list.

- *Edit* – This button will re-open the window that allowed a workstation to be added to the *Selected Workstation* list.

- *Arrows* – This button will change the loading order of the assigned workstations.

Fields:

- *Selected Workstations* – This textbox will display the workstations assigned to the terminal.

Why Change from Default Settings:

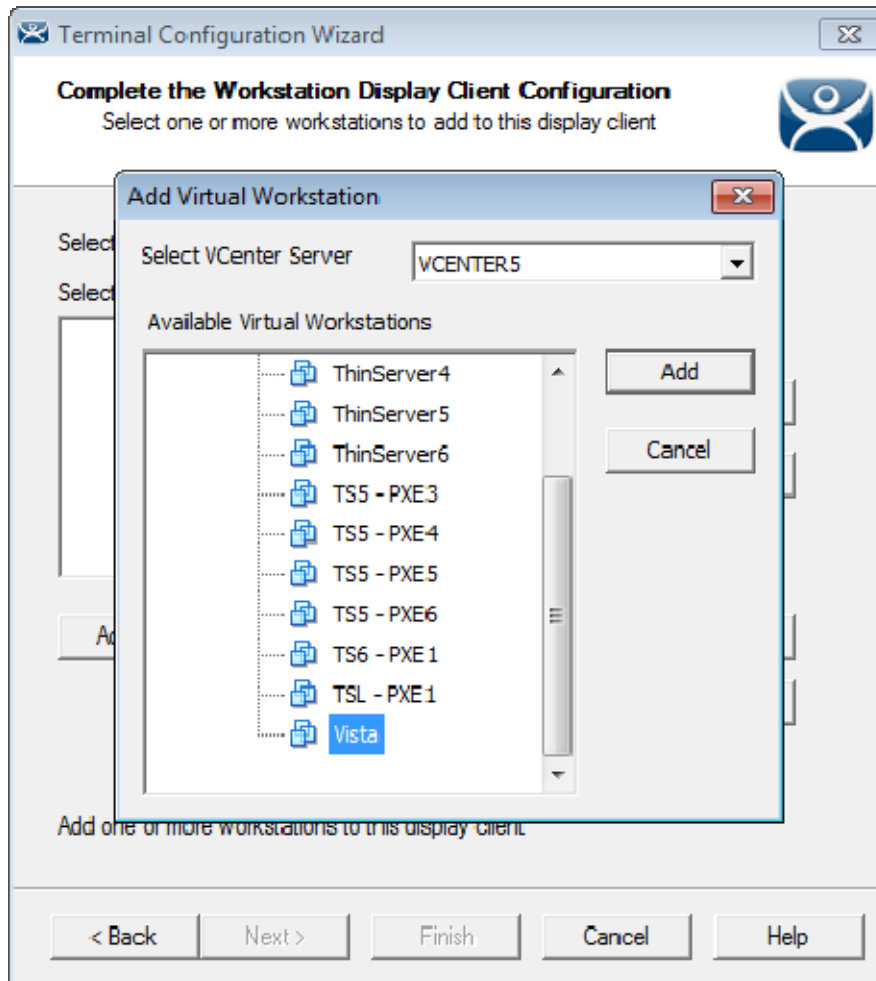ThinManager won't connect to workstation unless you tell it to.

Add Workstation Window

Selecting the *Add Workstation* button on the **Complete the Workstation Display Client Configuration Page** will launch the *Add Workstation* window.

Enter the name and address of the workstation in the appropriate fields.

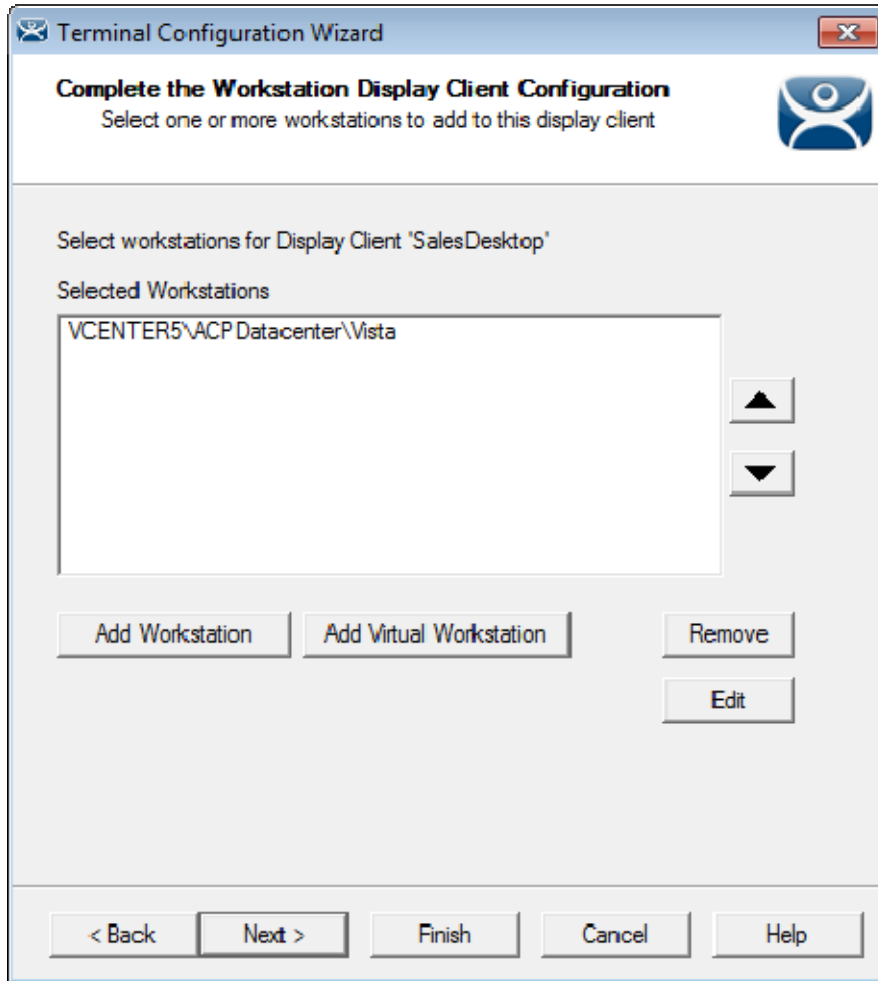Select *Add* to accept the configuration or select *Cancel* to close the window.

Add Virtual Workstation Window

Selecting the *Add Virtual Workstation* button on the **Complete the Workstation Display Client Configuration Page** will launch the *Add Virtual Workstation* window.
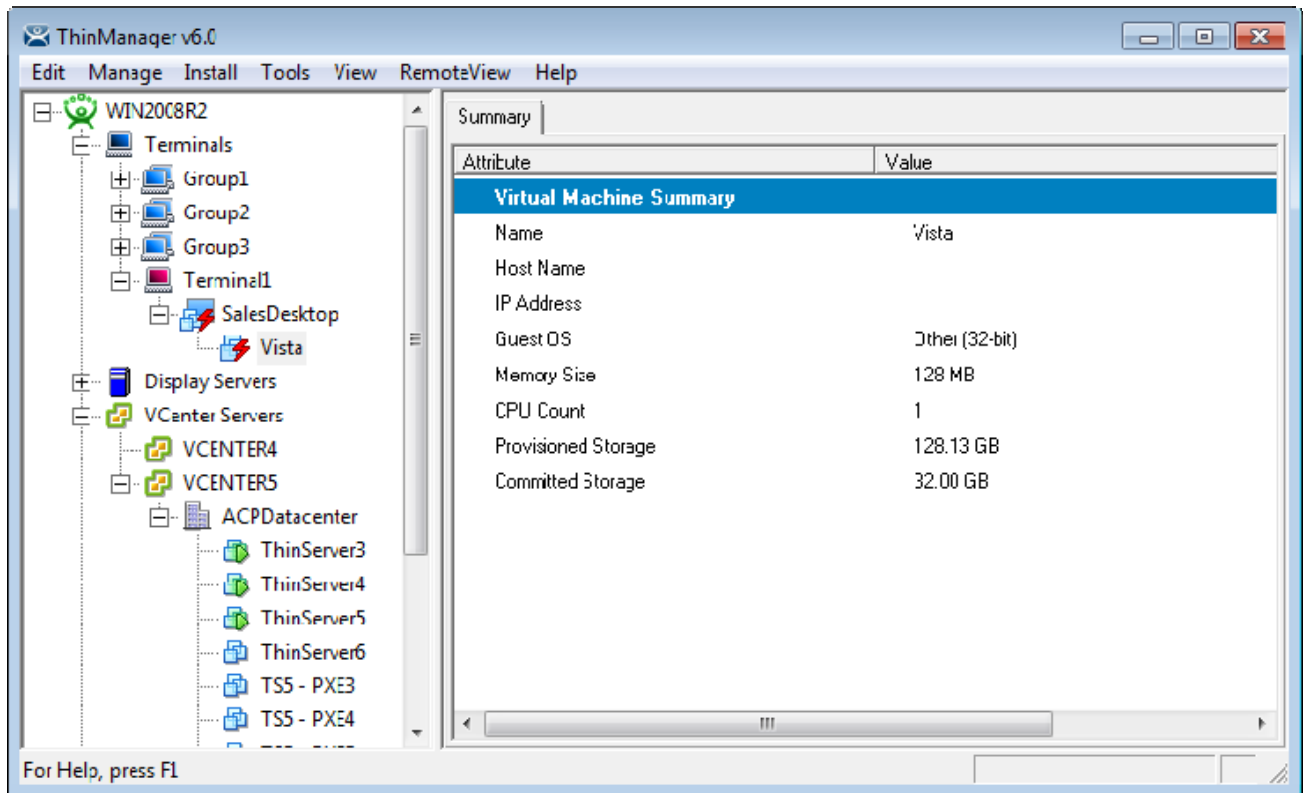
The VCenter Server tree will be displayed in the *Available Virtual Workstation* pane. Highlight the desired virtual workstation and select the *Add* button to apply the virtual workstation to the terminal.

Select *Cancel* to close the window without accepting the configuration.

Complete the Workstation Display Client Configuration Page

Once a workstation or virtual workstation is assigned to the terminal it will be displayed in the **Selected Workstations** window.

Workstation in ThinManager Tree

The ThinManager tree will display the workstation icons for the terminal once the terminal is restarted to apply the configuration changes.