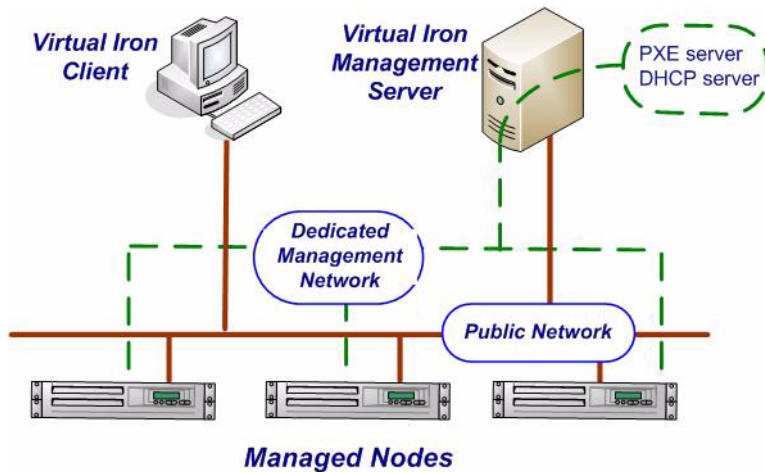


VirtualIron

Welcome to Virtual Iron®

This tutorial assumes you have a basic setup like the one shown here. For details on the setup, see the *VI-Center™ Administrator Guide*.



The basic configuration comprises a single *management* node, interconnected with one or more *managed nodes* over a *dedicated management network*. The management node hosts the Virtual Iron® management server. All managed nodes must be AMD-V or Intel VT-based. Instead of an OS, these nodes run a software component called Virtualization Services. This component supports the creation of a virtual infrastructure on physical hardware. It is PXE-booted to each managed node from the management server. A separate system hosts the management client.

Note that the management server includes PXE and DHCP servers, which communicate with managed nodes over the dedicated management network.

What You're Going to Accomplish

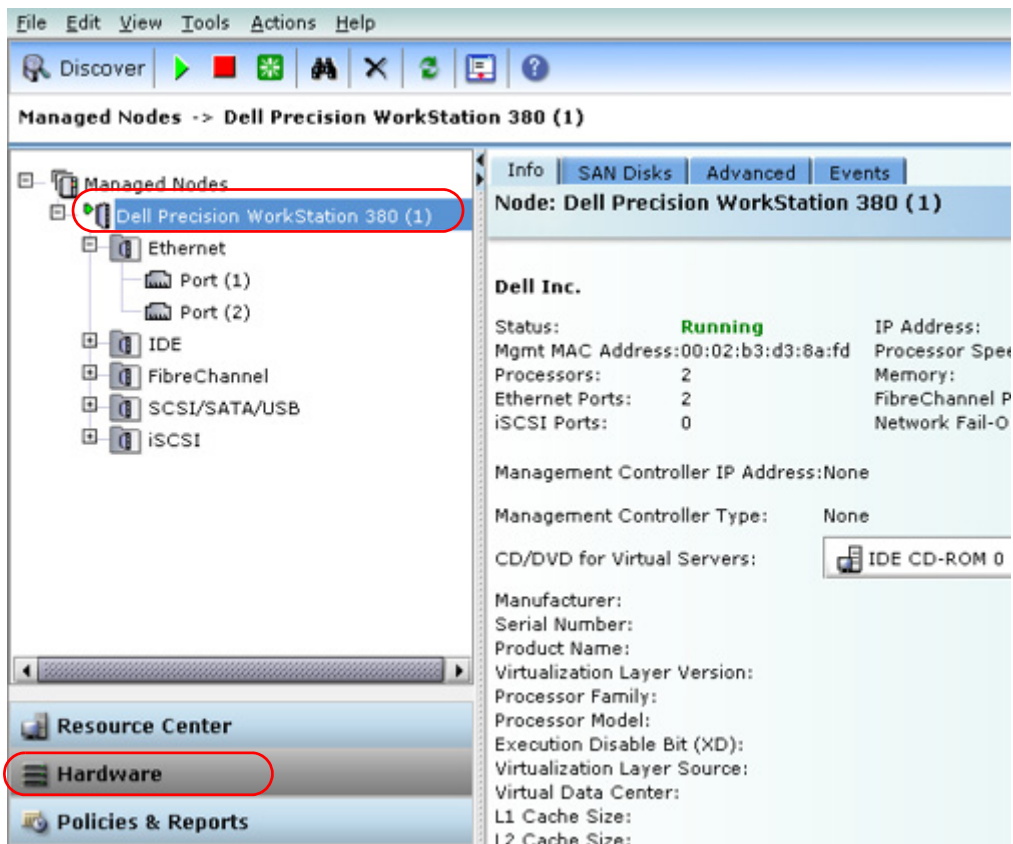
Virtual Iron® partitions the processing, memory, and IO resources in a node, allowing it to run multiple guest operating systems (GOSs) smoothly and simultaneously. All GOSs in the Virtual Iron® framework are fully virtualized, so they run right out-of-the-box *without special configuration or preparation*.

Okay, let's get started!

VirtualIron

Step 1: Power Cycle Each Managed Node

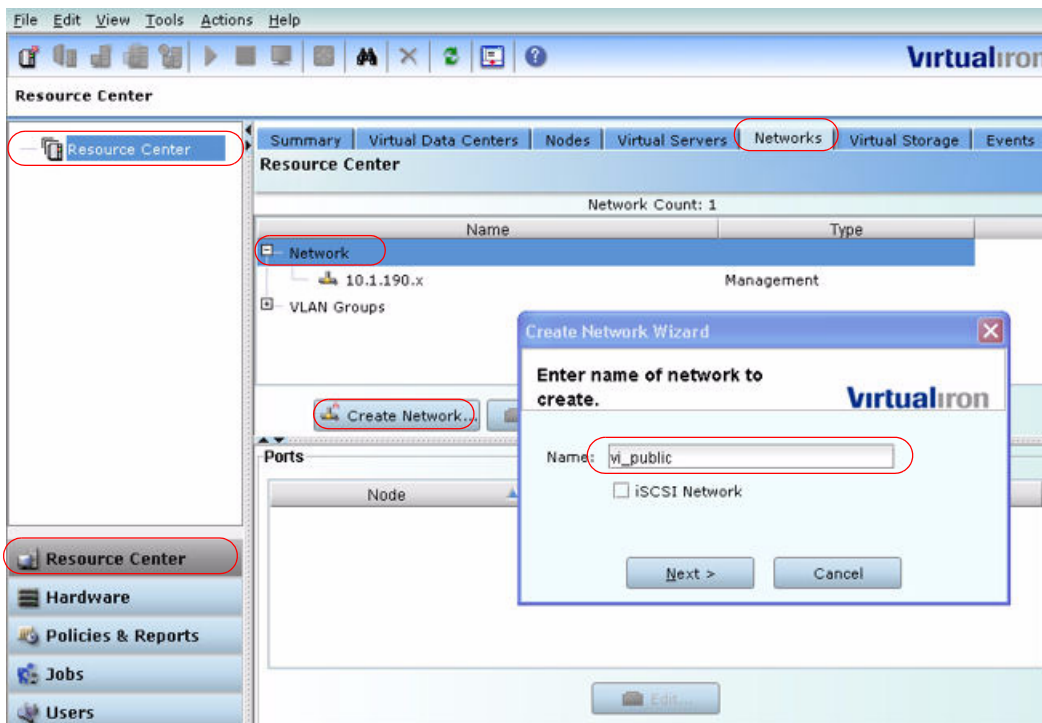
- A. Power-cycle each managed node. At power-up, the nodes (or network) PXE-boot the virtualization services component from the management server node.
- B. Select **Hardware** from the Application Shortcuts. After a few minutes, the managed nodes appear in the Navigation Tree.



Step 2: Configure Networks

Configure the networks that will be used by Virtual Servers (VSs).

- A. Click **Resource Center**. Select **Network** and click the **Networks** tab. A single network is listed in the Managed Nodes window. This is the management server network, which connects the management server to managed nodes.
- B. Click **Create Network** to start the **Create Network Wizard**. Add a name for a connection to a public network. Click **Next**.

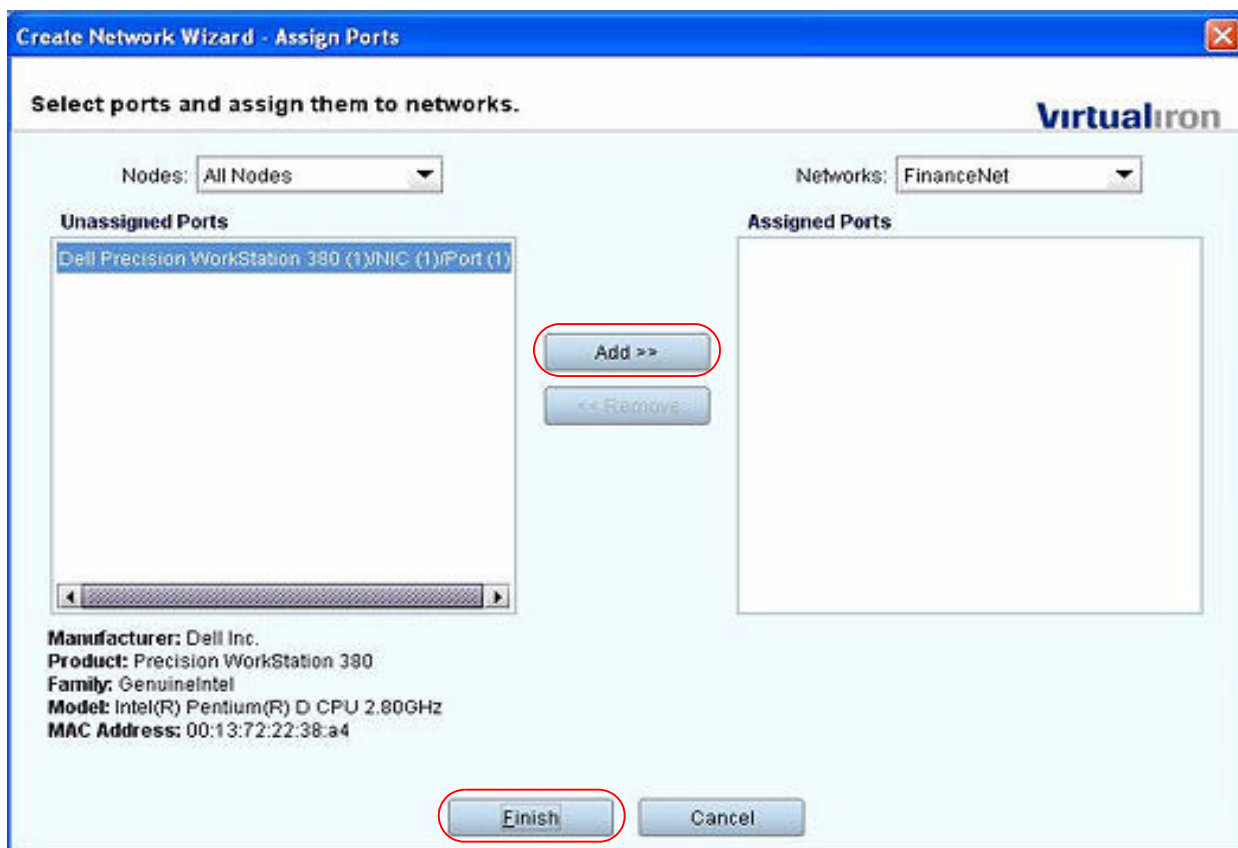


VirtualIron

Step 3: Assign Ports

Assign one or more ports to each network you have added.

- A. When you click **Next**, this dialog window appears. Use this window to assign one or more ports to the network you have added. Available ports are listed in the Unassigned Ports window.
- B. For each managed node, select the correct *physical port* and map it (assign it) to the network name added earlier. To determine how physical ports are mapped to the management server interface, see the *Virtual Iron Getting Started Guide*.
- C. To assign a physical port to an Ethernet network, select the port and click **Add>>**.



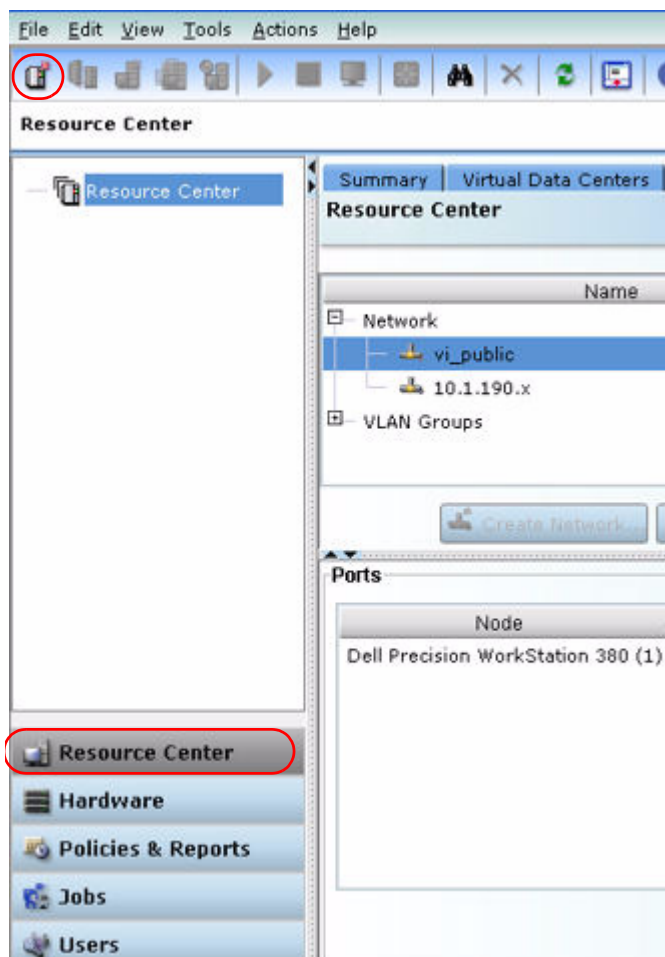
- D. Click **Finish** when you have added the ports to the network.
- E. Repeat the process of adding networks and assigning ports until you have assigned all ports.

VirtualIron

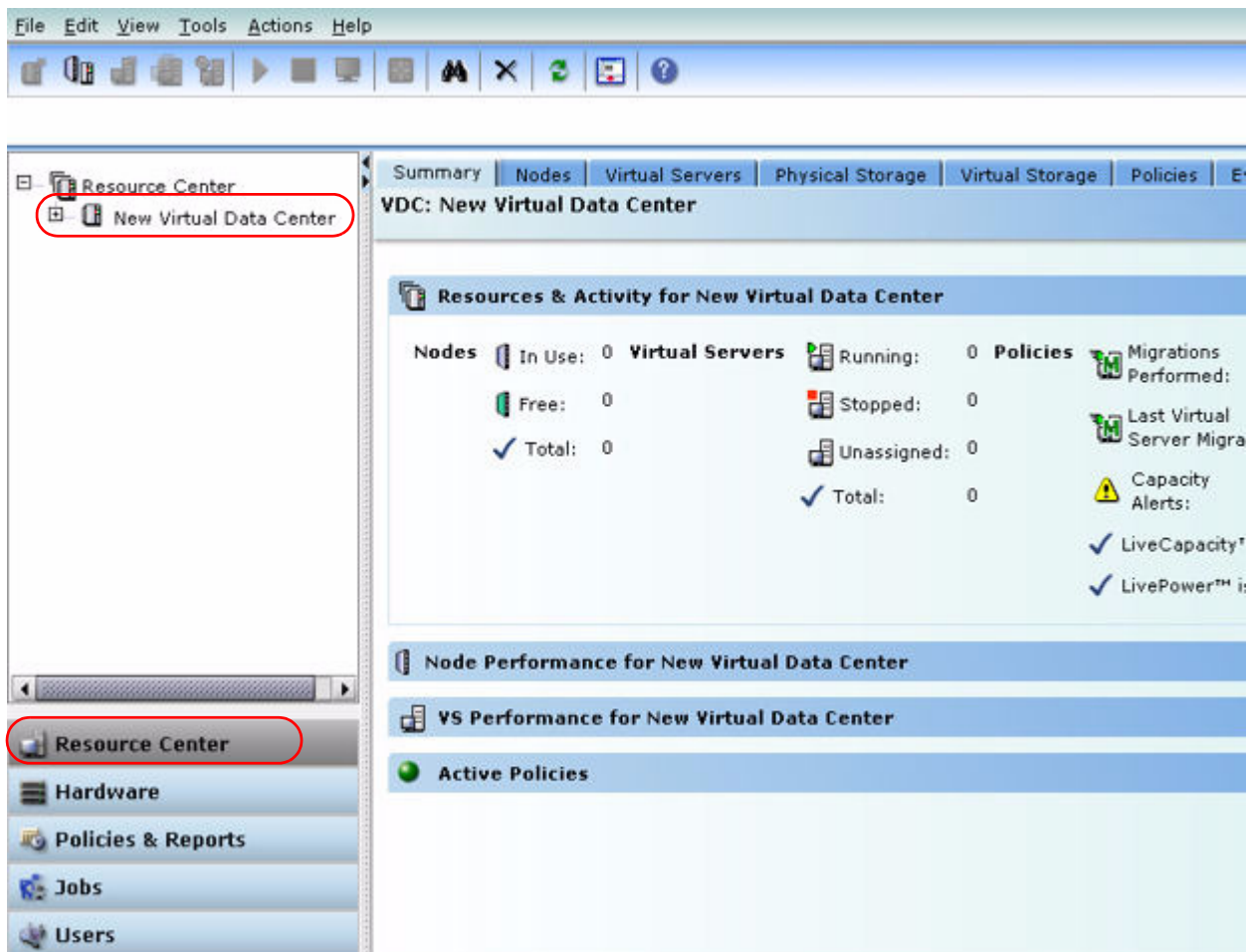
Step 4: Create a Virtual Data Center (VDC)

A Virtual Data Center (VDC) is a group of one or more nodes that you can organize and manage as required.

- A. Click **Resource Center** in the **Applications Shortcuts**.
- B. Click the **Create new Virtual Data Center** icon as shown here.



The new VDC appears in the Navigation Tree



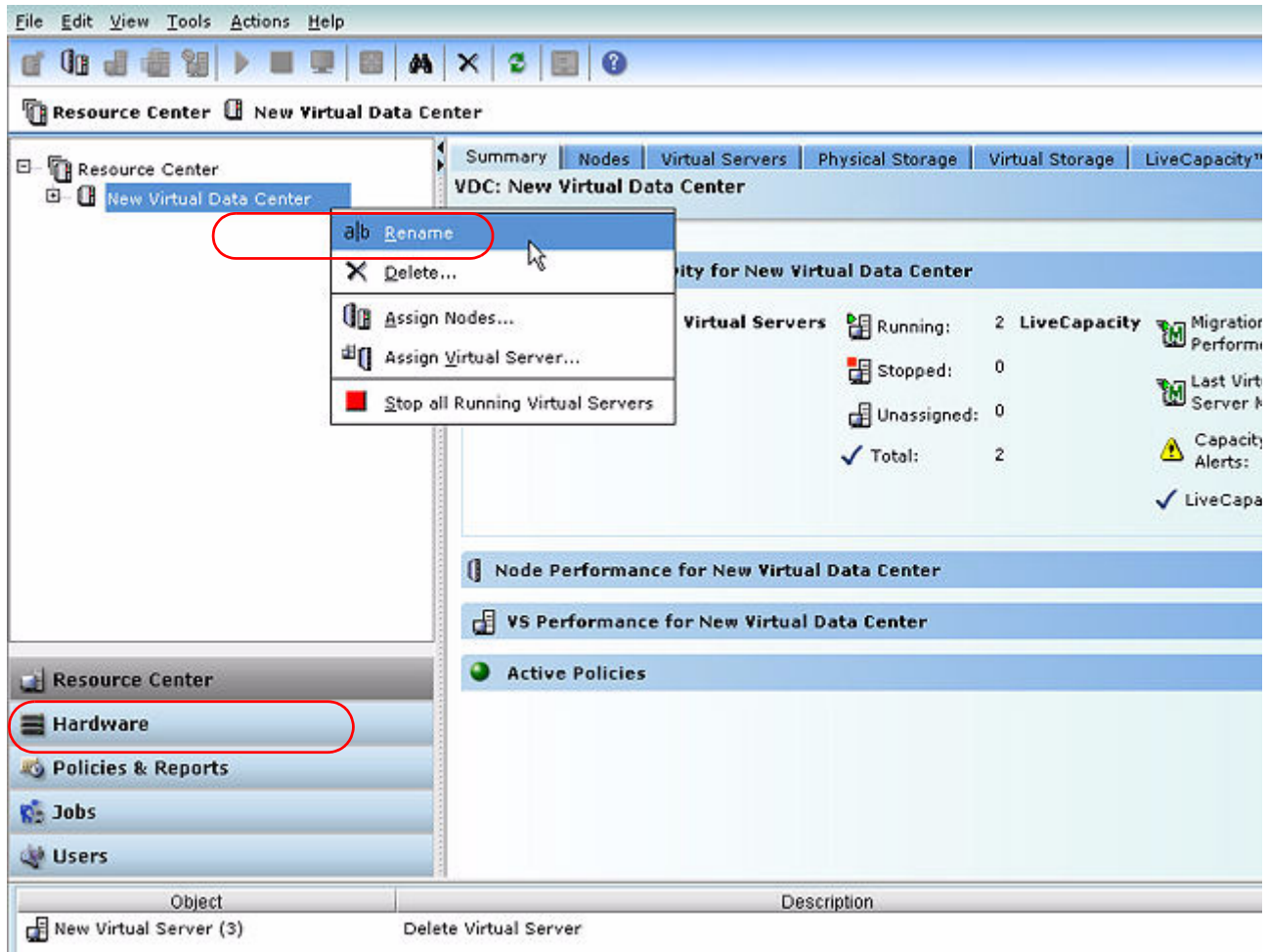
Note that a yellow lock briefly appears next to the name of the new virtual data center to indicate that you are making a change to this object. When a yellow lock appears next to an object, other users cannot make changes to it until the operation is complete.

VirtualIron

Step 5: Rename the VDC

Give the VDC a name that describes its purpose.

- A. Right click the VDC, select **Rename** from the menu, and type in a new name. We used “Finance Group” in this example. Press **Enter** to change the name.



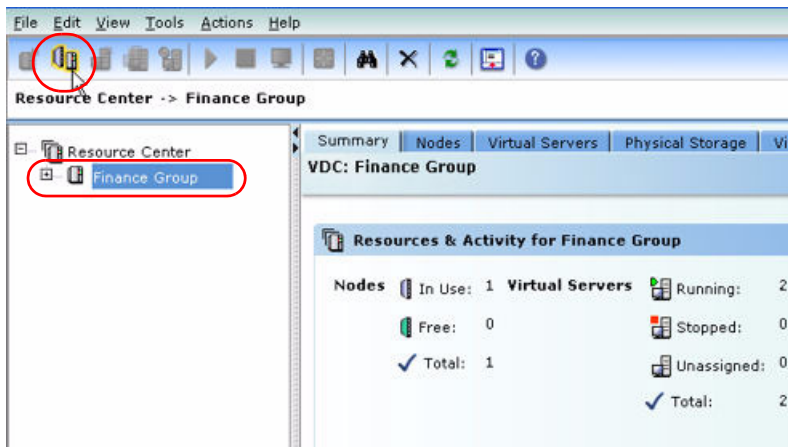
- B. Note that the name you chose for the new VDC appears in the navigation tree and the **Job Progress** tab at the bottom of the management pane.

VirtualIron

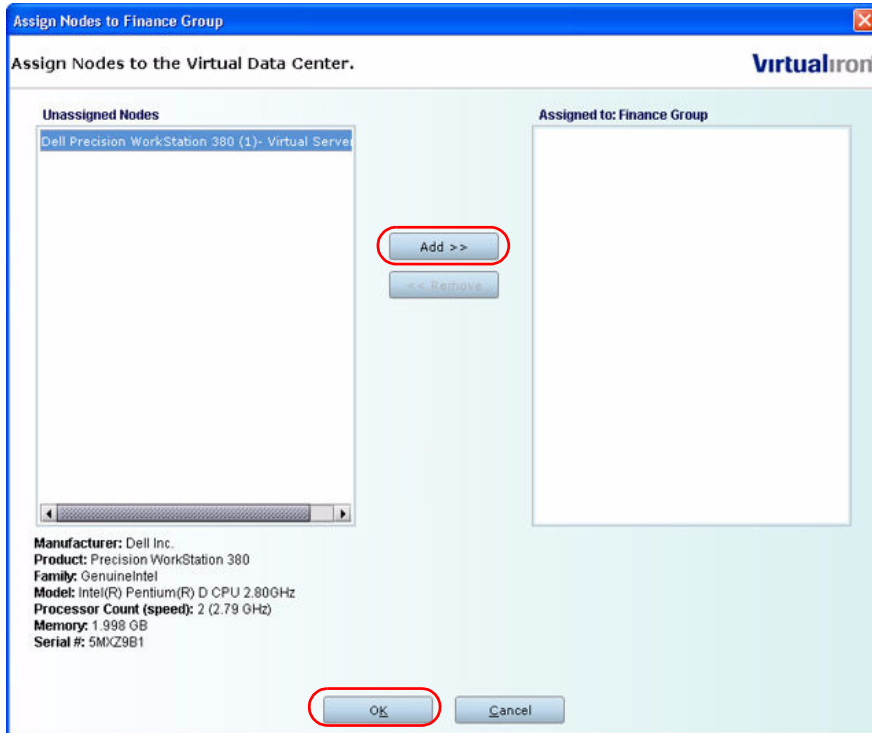
Step 6: Assign a Node to the VDC

Assigning a node provides the VDC with a pool of processing, memory, and I/O resources that can be shared by VSs and their applications. You can assign as many nodes to a VDC as exist in the Hardware view.

A. Select the VDC in the navigation tree, and click the **Assign Nodes** icon as shown here:



B. The **Assign Nodes** dialog window appears. This window contains the name and information associated with all nodes that have been discovered by the management server. To move the node to the VDC you have created, select the node and click **Add >>**. Then click **OK**.



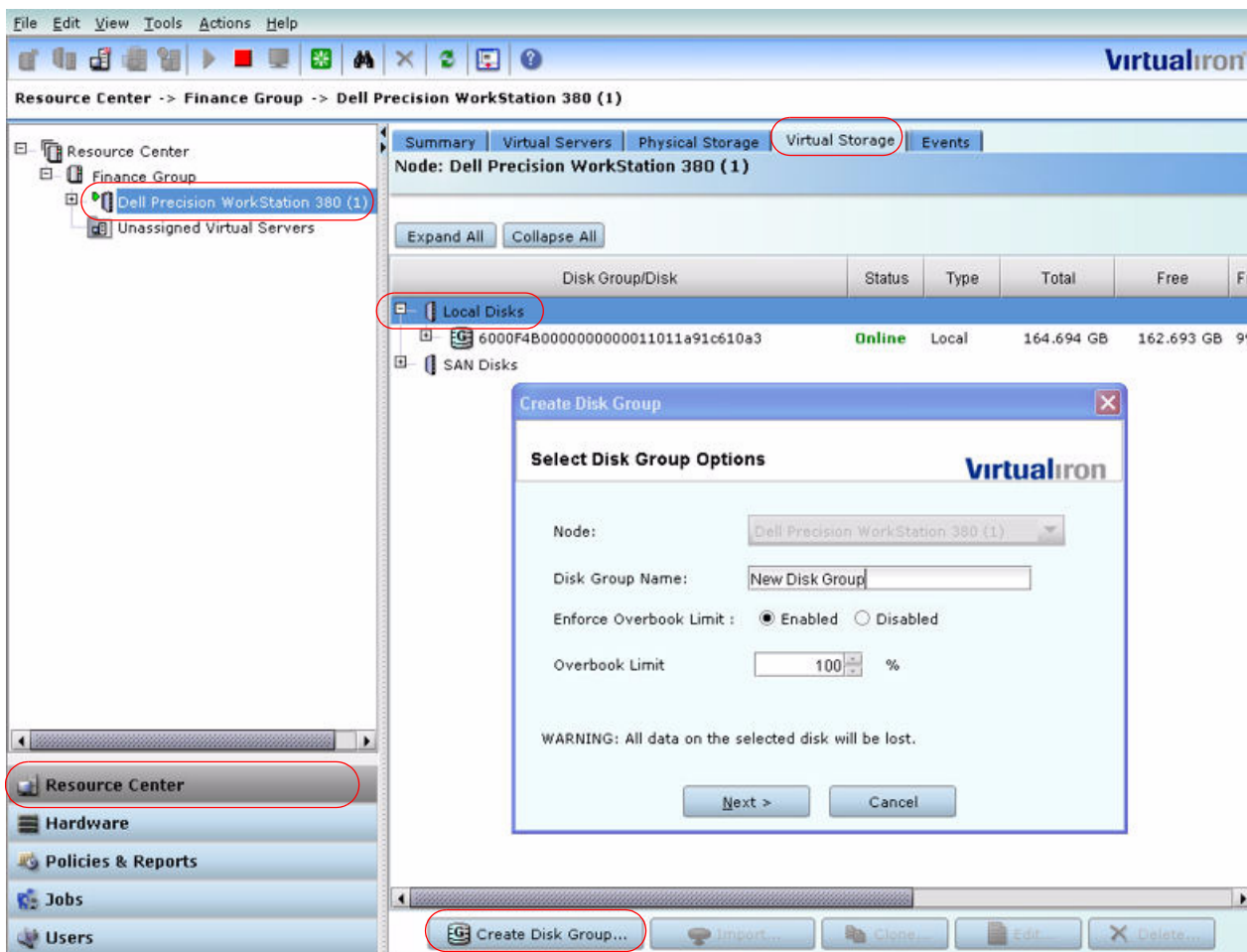
VirtualIron

Step 7: Create a Disk Group

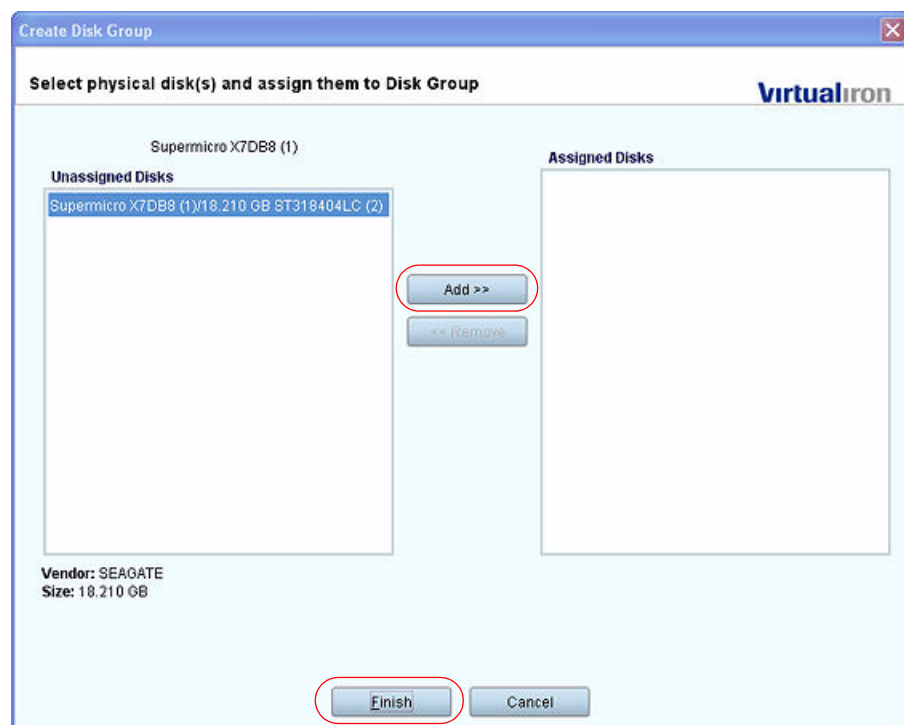
This section describes how to create a disk group on a node local drive. You can also create disk groups on SAN (iSCSI or Fibre Channel) drives. See the Administrator Guide for information on configuring logical disks on SAN drives.

After you create the disk group, you use it as a container for your virtual servers.

- A. Create a disk group: Select the node, the **Virtual Storage** tab, and **Local Disks**.
- B. Click **Create Disk Group...** as shown.
- C. A dialog window appears in which you can give a specific name to the disk group. You can do this, or keep the default name—New Disk Group. Click **Next**.



- D.** Assign one node local hard disk to the disk group. Select the drive in **Unassigned Disks** and **Add** it to the **Assigned Disks** pane.
- C.** Click **Finish**.



Step 8: Create Virtual Network Interface Cards

For every Virtual Server you must have a virtual Network Interface Card available. You can create as many VNICs as you want.

- A. Click **Tools, VNIC Manager**.
- B. The Virtual Network Interface Card Manager dialog appears.

The screenshot shows the 'Virtual Network Interface Card Manager' dialog box. The title bar reads 'Virtual Network Interface Card Manager' with a close button. The main title is 'Virtual Network Interface Card Manager' and the VirtualIron logo is in the top right. The 'MAC Selector' section contains the text 'Specify a unique starting MAC address or collisions may occur if you are running multiple VI-Centers.' Below this is a field 'Specify an Initial MAC Address:' with the value '00 : 21 : F6 : 00 : 00 : 00'. A 'Number of MACs to generate:' field is set to '100'. A 'Generate' button is to the right. The 'Manage MAC Addresses' section features a table with two columns: 'VNICs (MAC Address)' and 'Ethernet Network'. The table is currently empty. A 'Delete' button is located below the table. At the bottom of the dialog is a 'Close' button.

VNICs (MAC Address)	Ethernet Network
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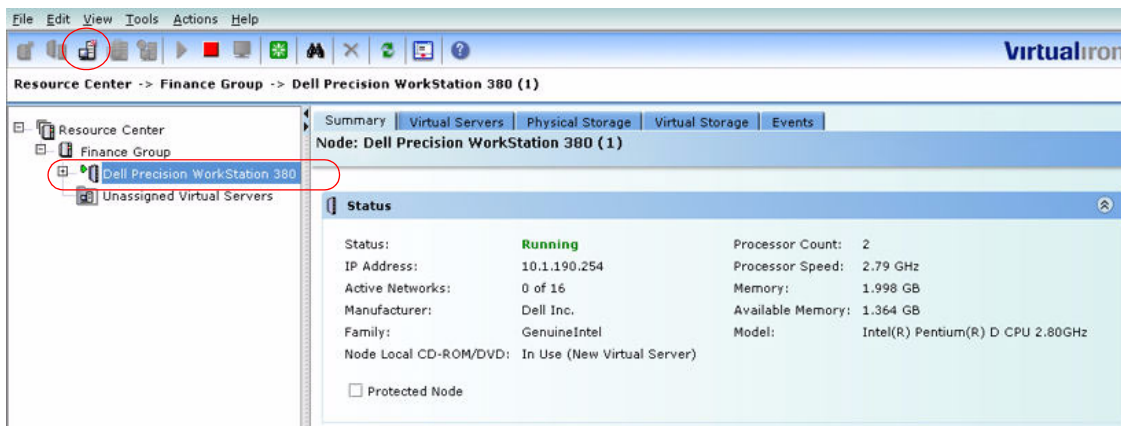
- C. In the Number of MACs to Generate section, enter a number larger than the number of Virtual Servers you plan to create initially. You can always add more VNICs later.
- D. Click Close.

VirtualIron

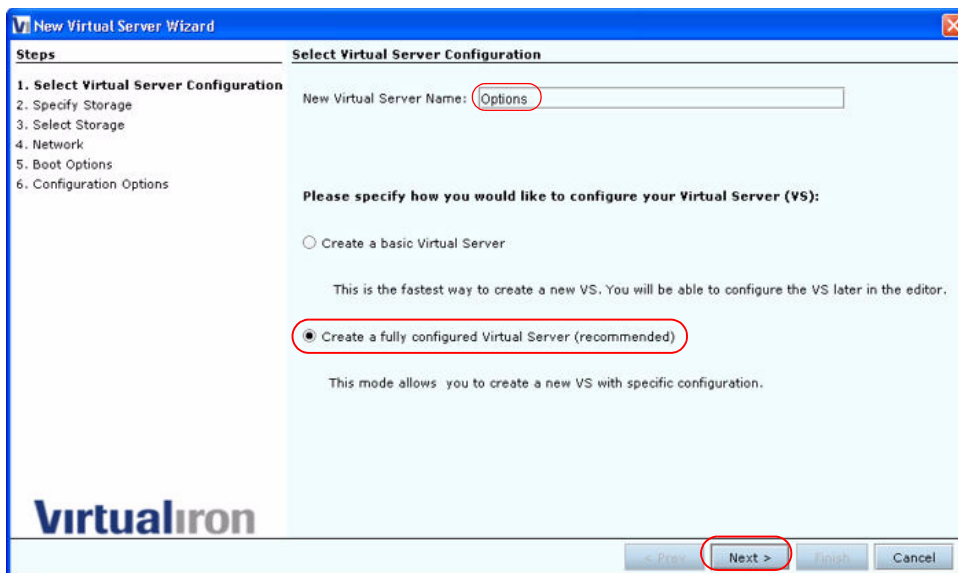
Step 9: Create a Virtual Server (VS)

A Virtual Server (VS) is an instance of an operating system and associated applications. Each node in a VDC can support multiple VSs with different operating systems and applications.

- A. Select the node you added earlier, then click the **Create New Virtual Server** icon on the application tool bar. The new virtual server appears under **Unassigned Virtual Servers**, and the **New Virtual Server Wizard** appears.



- B. Name the virtual server. In this example, the virtual server has been named Options.



- C. For this example, leave the default setting, **Create a fully configured Virtual Server**.

- D. Click **Next**.

VirtualIron

Step 10: Create a New Disk and Specify Storage

Select or create storage for the virtual server.

A. Use the default setting, **Create New Disk**.

The screenshot shows the 'New Virtual Server Wizard' window with the 'Specify Storage' step selected. The 'Steps' list on the left includes: 1. Select Virtual Server Configuration, 2. Specify Storage (highlighted), 3. Select Disk Group, 4. Network, 5. Boot Options, and 6. Configuration Options. The main area contains the text 'Please specify storage:' followed by three radio button options: 'Use existing Disk', 'Create New Disk:' (which is selected and circled in red), and 'Do not specify storage'. Below the 'Create New Disk:' option, there is a text field for 'Disk Name' containing 'New Logical Disk' and a 'Disk Size' spinner set to '10' Gigabytes (Max = 98GB). At the bottom right, the 'Next >' button is circled in red, along with 'Prev <', 'Finish', and 'Cancel' buttons. The VirtualIron logo is visible in the bottom left corner.

B. Type a name for the new logical disk.

C. For this example, keep the default disk size of 10 Gigabytes.

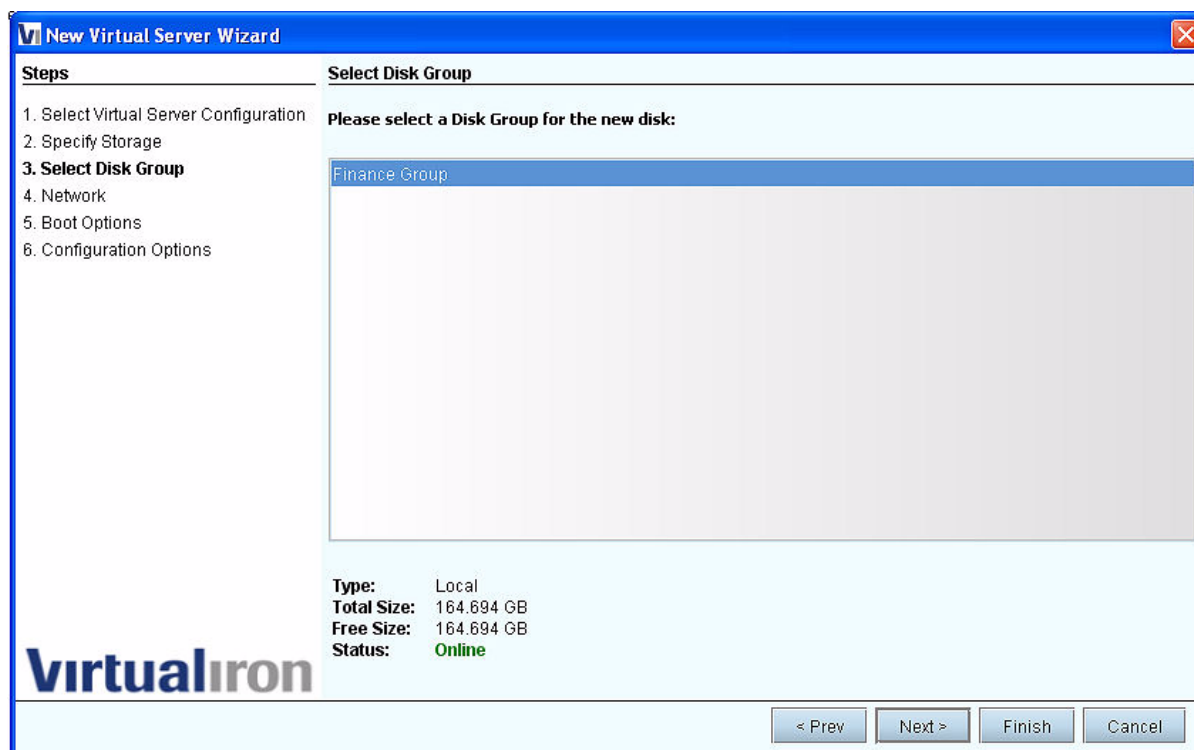
D. Click **Next**.

VirtualIron

Step 11: Select Disk Group

Select the disk group in which the newly created logical disk will be placed.

- A.** Select a disk group in the New Virtual Server Wizard.
- B.** Click **Next**.



VirtualIron

Step 12: Configure Network Adapters

Each Virtual Server requires a Virtual NIC (VNIC) to communicate with a physical network. Adding multiple VNICs enables a virtual server to communicate with multiple networks.

- A. Select an Ethernet network from the **Ethernet Network** pulldown menu.
- B. Select a VNIC from the **Network Adapter** pulldown menu to choose a specific VNIC from the drop-down list.
- C. Click **Next**.

The screenshot shows the 'New Virtual Server Wizard' window, specifically the 'Network' step. On the left, a 'Steps' pane lists the progression: 1. Select Virtual Server Configuration, 2. Specify Storage, 3. Select Disk Group, 4. Network (current step), 5. Boot Options, and 6. Configuration Options. The main area is titled 'Please specify a network:' and contains three radio buttons. The first, 'Specify a network', is selected. Below it, the 'Ethernet Network:' dropdown menu is set to 'vi_public'. The 'Network Adapter:' label is present but has no dropdown. The 'VNIC:' dropdown menu is set to '00:0f:4b:00:00:1f' and is highlighted with a red rectangle. The third radio button, 'Do not specify network', is unselected. At the bottom right, the '< Prev' button is disabled, the 'Next >' button is highlighted with a red rectangle, and the 'Finish' and 'Cancel' buttons are also visible. The VirtualIron logo is in the bottom left corner.

VirtualIron

Step 14: Configure Virtual Server Processors, Memory, and Priority

You can configure the number of processors and the amount of node memory allocated to a virtual server. You can also give it a scheduling priority in relation to other virtual servers on the virtual data center.

- A. Accept the default values or specify values for the processors, memory and priority. For information on these settings, see the *VI-Center Administrators Guide*.
- C. Click **Finish** and wait for the operation to complete.

The screenshot shows the 'New Virtual Server Wizard' window, specifically the 'Configuration Options' step. The left pane lists the steps: 1. Select Virtual Server Configuration, 2. Specify Storage, 3. Select Disk Group, 4. Network, 5. Boot Options, and 6. Configuration Options. The main area contains the following configuration options:

- Processors:** A numeric input field set to 1.
- Memory (GB):** A numeric input field set to 0.25.
- Processor Cap:** A slider ranging from 10% to 100%, with '(Fastest)' at 10% and a shield icon at 100%.
- Priority:** A slider ranging from 'Lowest' to 'Highest', with a value of 50 in the middle and a shield icon.
- VS Tools Installed:** An unchecked checkbox.
- Mouse Type:** A dropdown menu set to 'Tablet', with a note '* Tablet mouse recommended'.

At the bottom right, there are four buttons: '< Prev', 'Next >', 'Finish', and 'Cancel'. The 'Finish' button is circled in red.

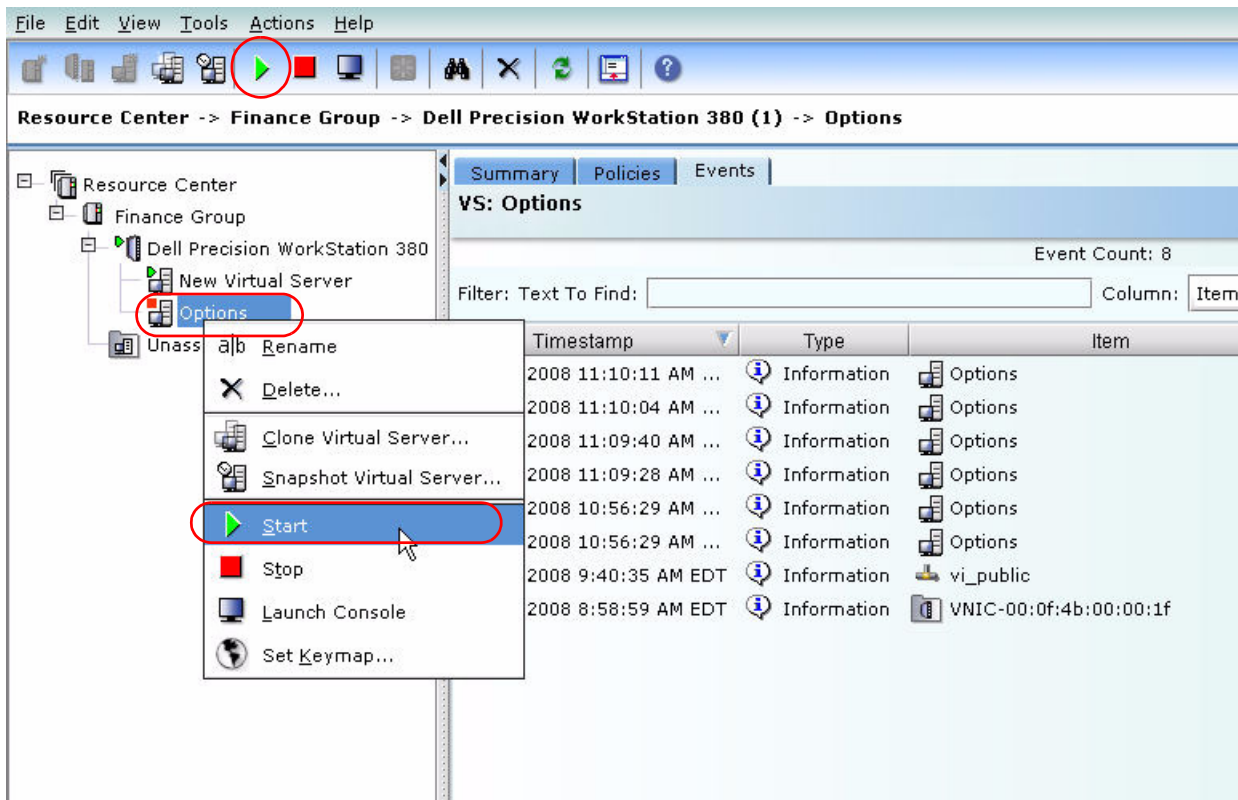
VirtualIron

Step 15: Start the Virtual Server

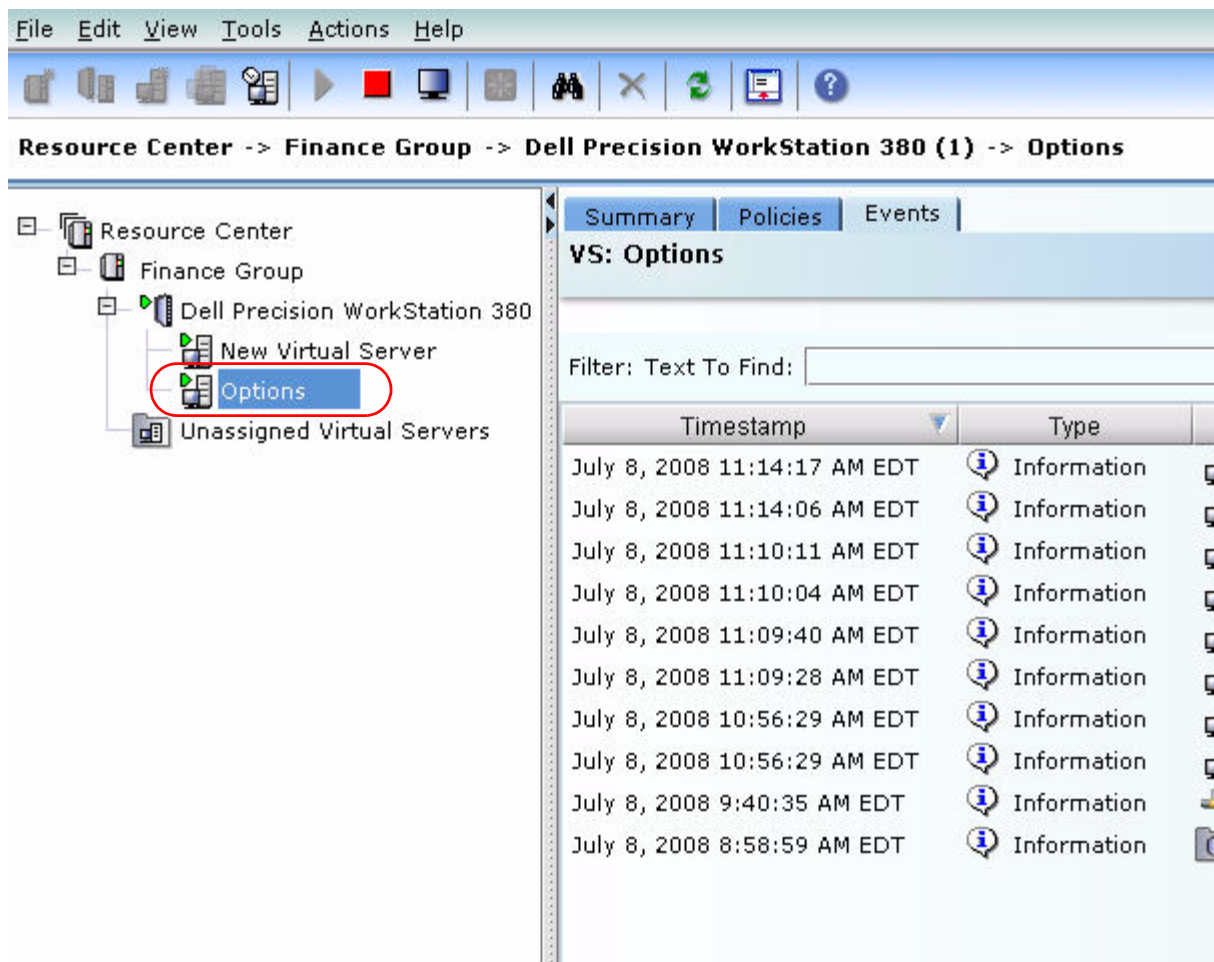
Now that you've configured your VS, you can start the Windows installation.

To start the virtual server:

A. Click the **Start** icon, or right-click the virtual server and choose **Start** from the pop-up menu.



The virtual server icon changes from red to green when the server starts.



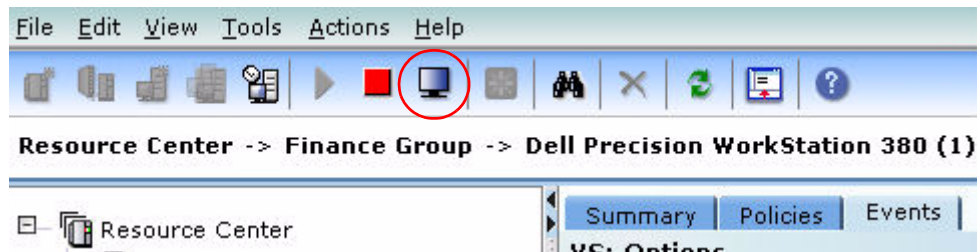
- B.** Note that it may take up to three minutes for the virtual server to start. While the virtual server is starting, open a management console and continue with the next step.

VirtualIron

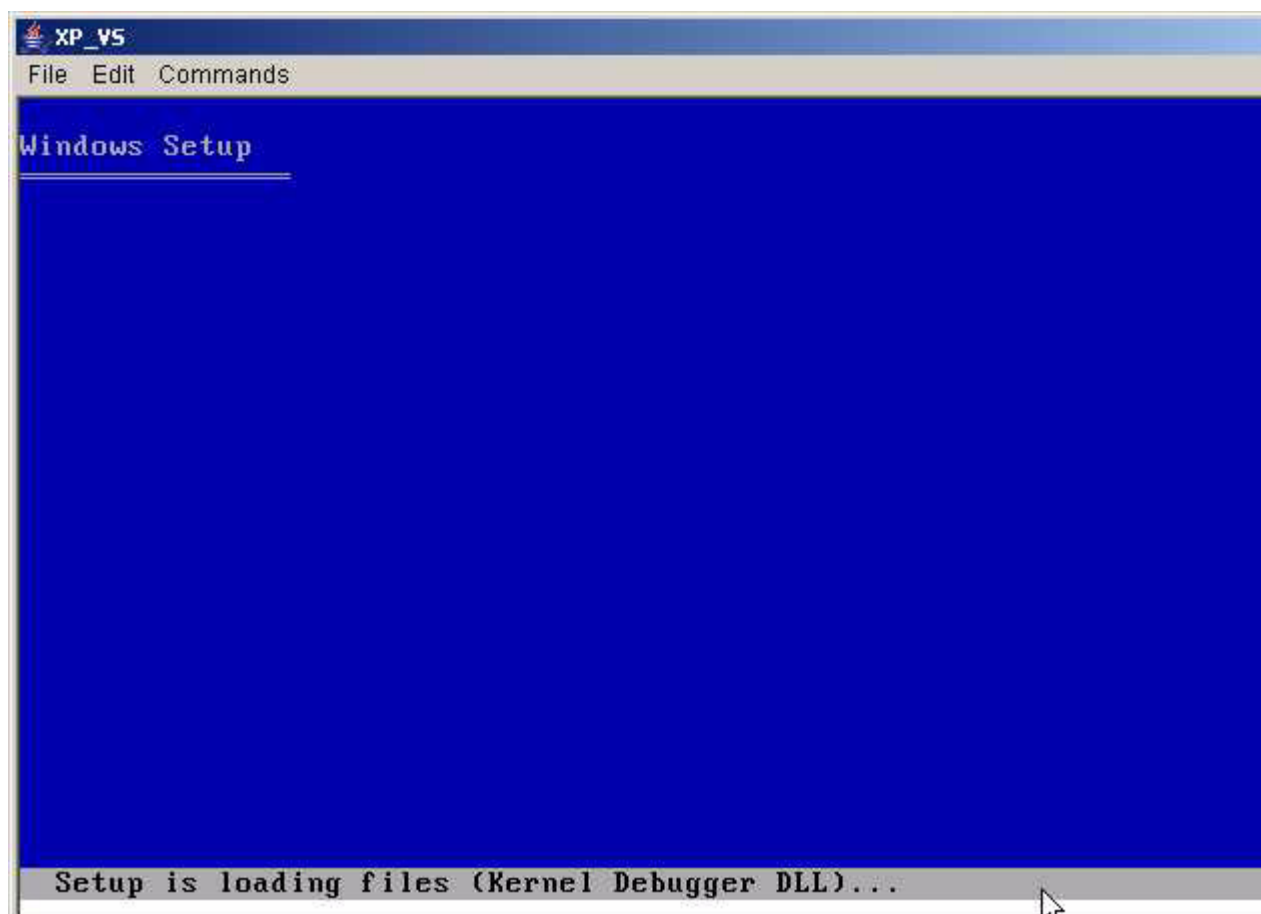
Step 16: Start a Virtual Server Console

While the virtual server is starting, open a console to answer the Windows Installer questions.

A. Click the console icon on the toolbar.



B. A console opens for the virtual server.



C. To install VS Tools into this virtual server, see the *Getting Started Guide*.