



VIRTUALIZATION MANAGER™ SINGLE SERVER EDITION

GETTING STARTED GUIDE

This manual provides a quick introduction to Virtual Iron® software, and explains how to install and use Virtual Iron® Single Server Edition to configure and manage virtual servers.

Product: Virtual Iron® Virtualization Manager, Single Server Edition

Version: V4.2

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Installing Virtual Iron Single Server Edition

This quick start guide takes you through the process of installing Virtual Iron® Single Server Edition. For information on creating and configuring virtual servers after installation, refer to the Virtual Iron® Virtualization Manager™ Administrator Guide.

- ▶ *This chapter describes how to install the product and connect to the Virtual Iron® management server.*
- ▶ *Chapter Two describes how to create a virtual server.*

About the Single Server Edition

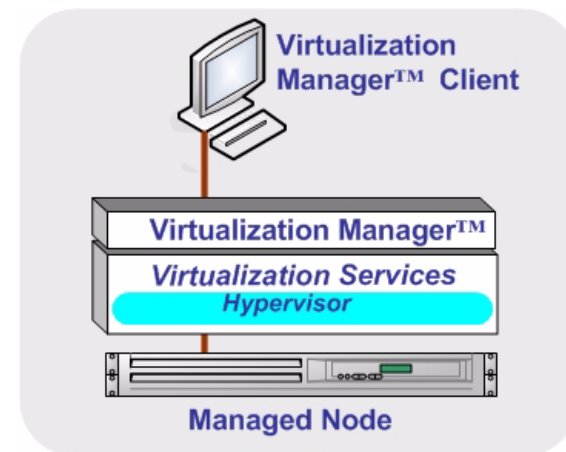
Virtual Iron® Single Server Edition (SSE) is a free, licensed product that allows you to create and manage virtual servers and virtual infrastructure on a single server.

The product consists of three components, which reside on the server it is managing:

- ▶ **Virtualization Manager**—A high-performance client/server management framework
- ▶ **Virtualization Services**—A software component that performs many functions ordinarily provided by standard operating systems
- ▶ **Hypervisor**—An abstraction layer that mediates between the physical hardware and the Virtualization Services component

The installation process identifies all local and remote disks associated with the server and selects a target disk for the product. Installing the product reformats and partitions this disk, wiping away any pre-existing data or applications. After installation, Virtualization Manager runs within the virtualization services component—a specialized component that performs many tasks associated with a standard operating system. In addition, Virtualization Manager communicates with underlying hardware resources through the hypervisor.

Virtual Iron SSE is designed for installation on a server's local drive. *Virtual Iron® strongly recommends that you disconnect the product from the SAN infrastructure prior to proceeding.*



Download the Product

Begin by downloading the product from Virtual Iron® web site:
(<http://www.virtualiron.com/Free>)

Enter your email address, and click [Download Now](#).

After downloading the product, burn the iso file onto a CD.

Choose a Server

Choose a server for the installation from the Virtual Iron® compatibility list at
<http://www.virtualiron.com/products/servers.cfm>

Note: You must install SSE on this machine's hard drive. Installing to a FibreChannel SAN storage disk is not supported.

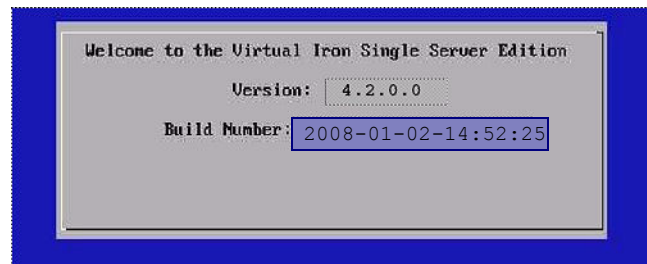
Your server must be Intel® or AMD® based and meet the following requirements:

- ▶ **Processor:** AMD or Intel®, VT-enabled
- ▶ **Networking:** One Ethernet card
- ▶ **Resources:** 2GB RAM; 36 GB storage
- ▶ **Hard drive:** Yes
- ▶ **CDROM drive:** Yes

Install the Single Server Edition

If the server on which you intend to install the product has a SAN connection, disconnect from the SAN prior to the installation.

Step 1. Insert the CD prepared from the product download into your system's local drive. The installation process begins with this welcome screen.

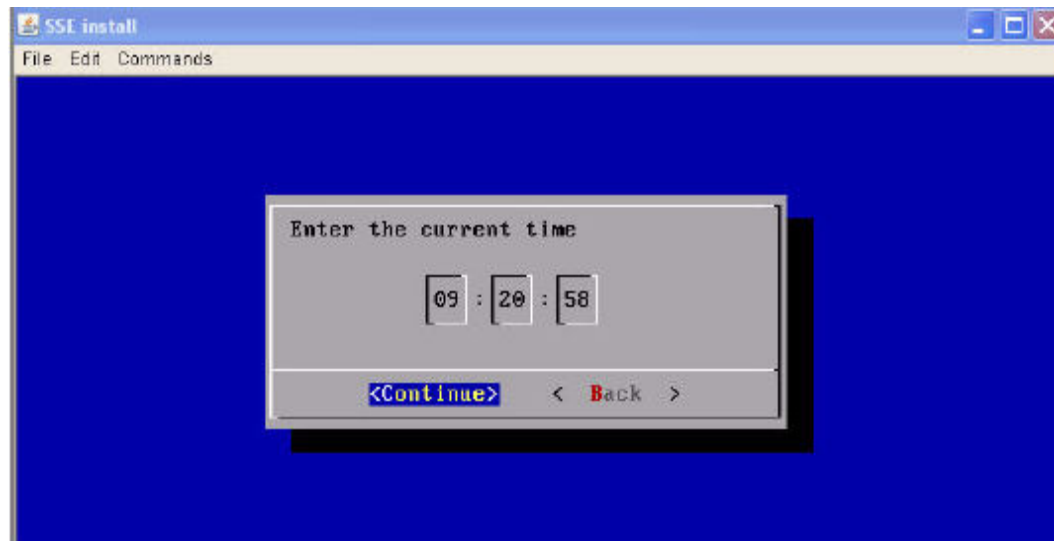
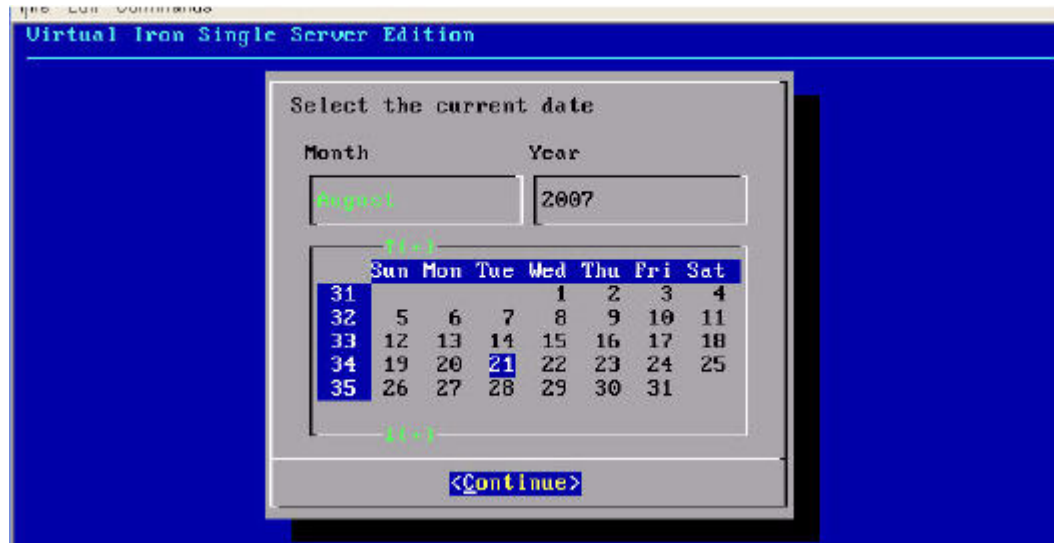


As the installation proceeds, you are prompted to read and accept an end-user license agreement. You must accept this agreement to continue. The installation also provides information on the underlying system, including the hard disks it discovers.

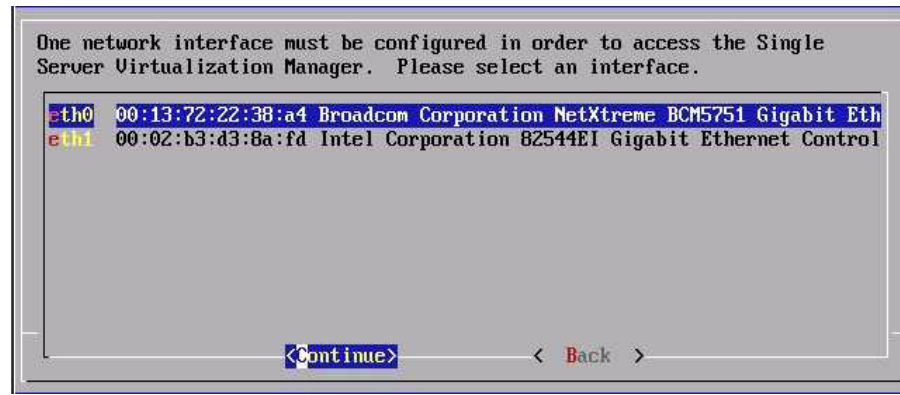
- Step 2.** The **Preserve Installed Guest** screen appears. If you had previously installed Virtual Iron SSE on one disk, you would have the option of reformatting that disk or allowing the default installation. Allow the default, **Install Normally**.
- Step 3.** After gathering information on all accessible disks, the installation determines which disk to use. The installer lists all disks as Local, iSCSI, or FC. You are presented with a window similar to this one, which shows which disk will be partitioned for the installation: Click **Continue**.



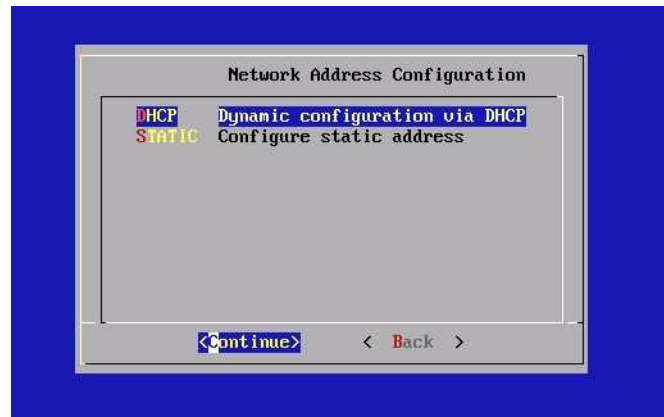
Step 4. The date and time are derived from the operating system in which SSE resides. In the next two dialog boxes, adjust the date and time, if necessary. To do so, press the **TAB** key so that the cursor skips from **Continue** to the field you want to adjust in the dialog box. Use your keyboard's **Up** and **Down** arrows to navigate through the calendar or to set the time.



Step 5. Select which Ethernet interface you will use to manage the product, as shown on this screen.

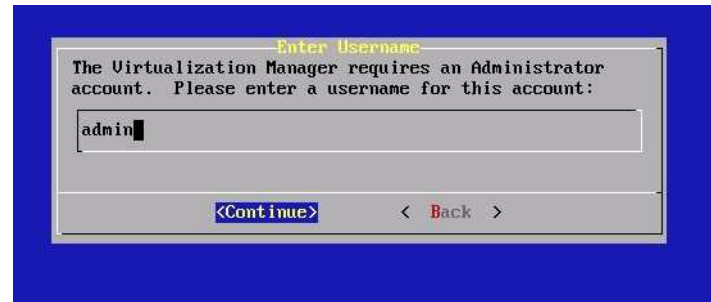


Step 6. Use DHCP to assign an IP address to the server, or assign a static IP address. *It is important that you do not change the management IP address after assigning it.* For this reason, Virtual Iron® strongly recommends that you either choose a static IP address, or a DHCP-assigned address with a long lease time. The installer prompts you to choose an IP address as follows:

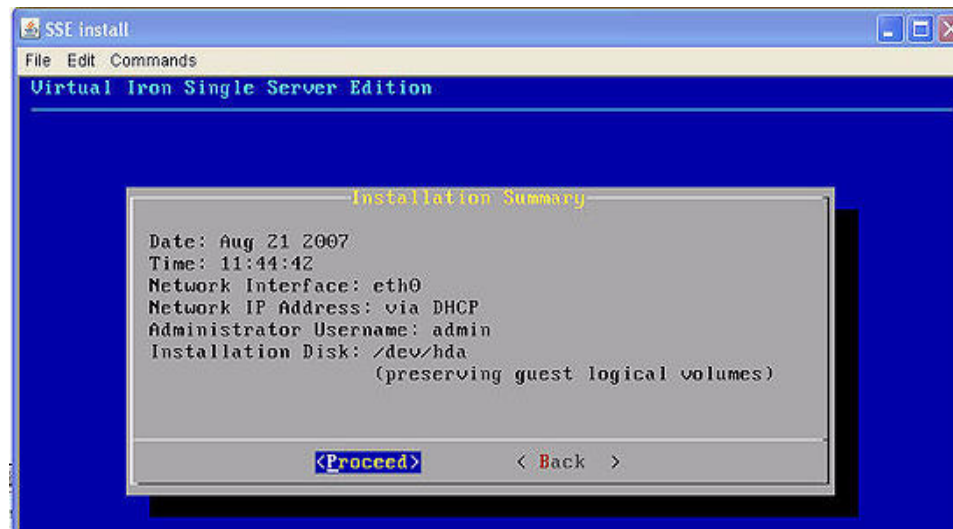


Choose DHCP if you want your network DHCP server to assign an address to the node, or choose STATIC. If you choose STATIC, you are prompted for an IP address, network mask, and default gateway. Make your choice, and click **OK**.

- Step 7.** At the prompt, enter an administrator account and password for the product. The default user name is *admin*. Accept this name or enter a new name and click **Continue**. Enter a password for the account.



- Step 8.** The **Installation Summary** screen appears, showing the SSE configuration options you have selected. If you need to make changes, tab to **Back**.



Step 9. Verify that the disk identified for the installation is the one you want to use. *The installation will partition the disk and wipe it clean.* You are issued this final warning.

When you click Proceed, a screen with a progress bar shows the percentage complete. The installation takes a few minutes.



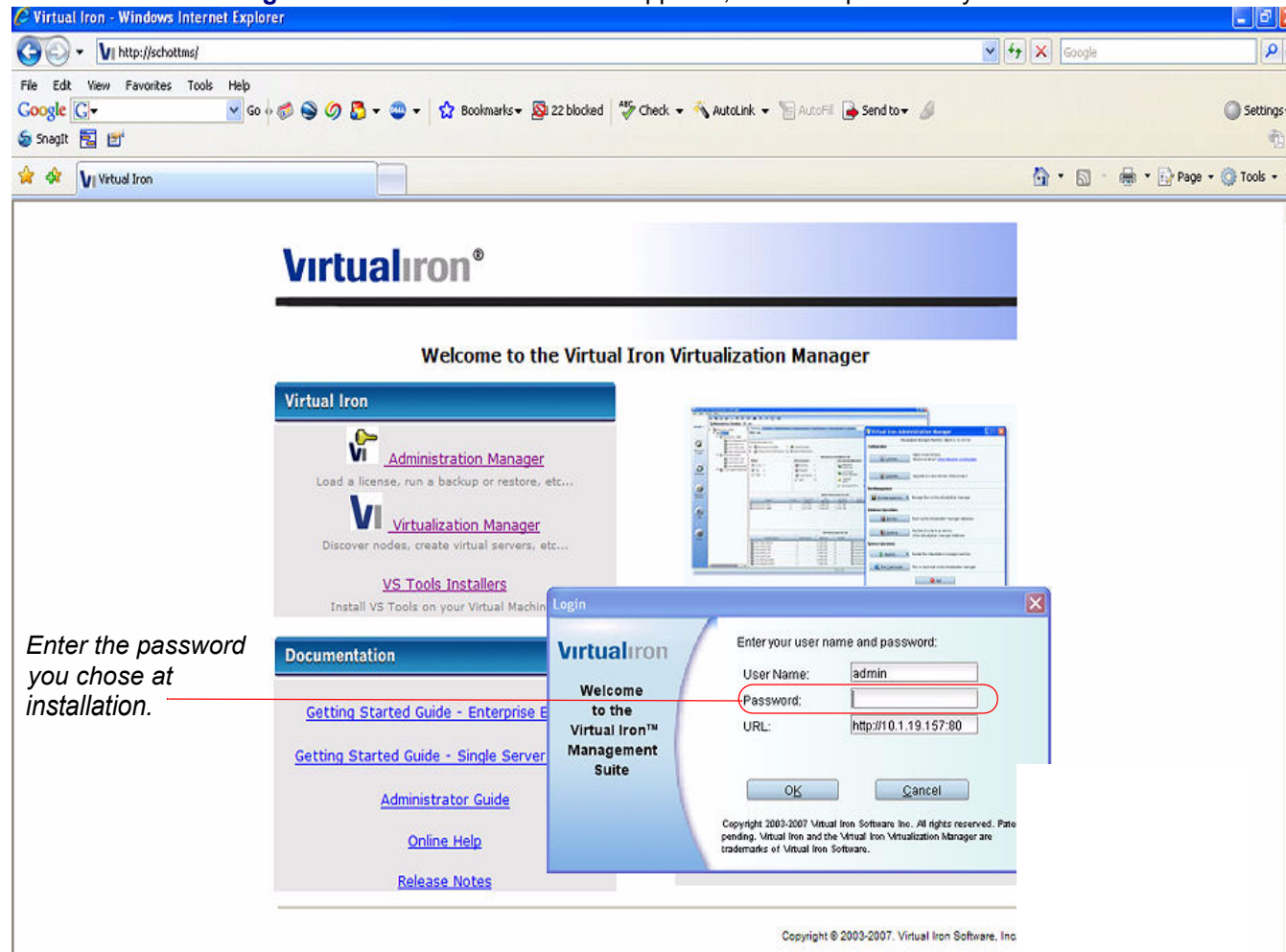
Step 10. When the installation is complete you are presented with this screen:



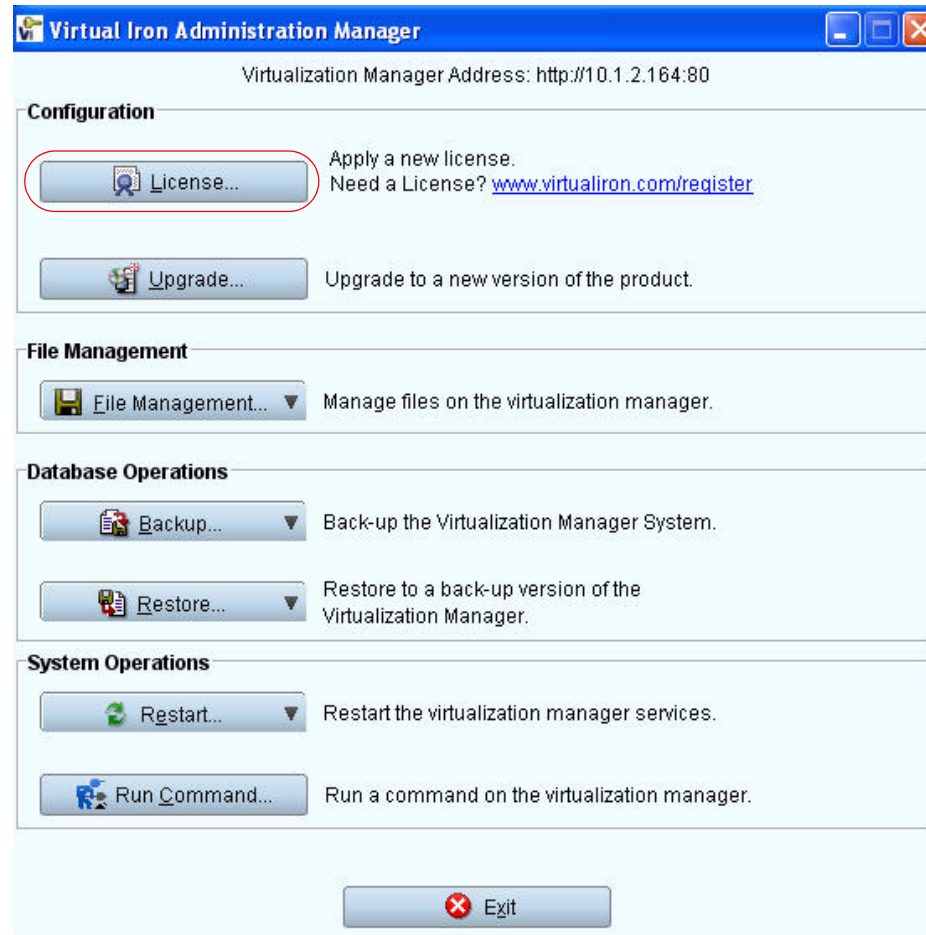
Remove the CD from the drive, and click **OK** to reboot the management server. When the server comes up, you are presented with its IP address, as in this example.

```
Welcome to the Virtual Iron Single Server Edition
VirtualIron Release 4.1.0.0 / 2008-01-02-18:24:14
IP address: 123.45.6.7
Please open a browser to the URL:
    http://123.45.6.7/
and follow the "Administration Manager" link to install your license.
```

Step 11. Browse to this server from another system on the network. Upon connection, this screen appears. Click **Administration Manager**. When the Welcome banner appears, enter the password you chose at installation time.

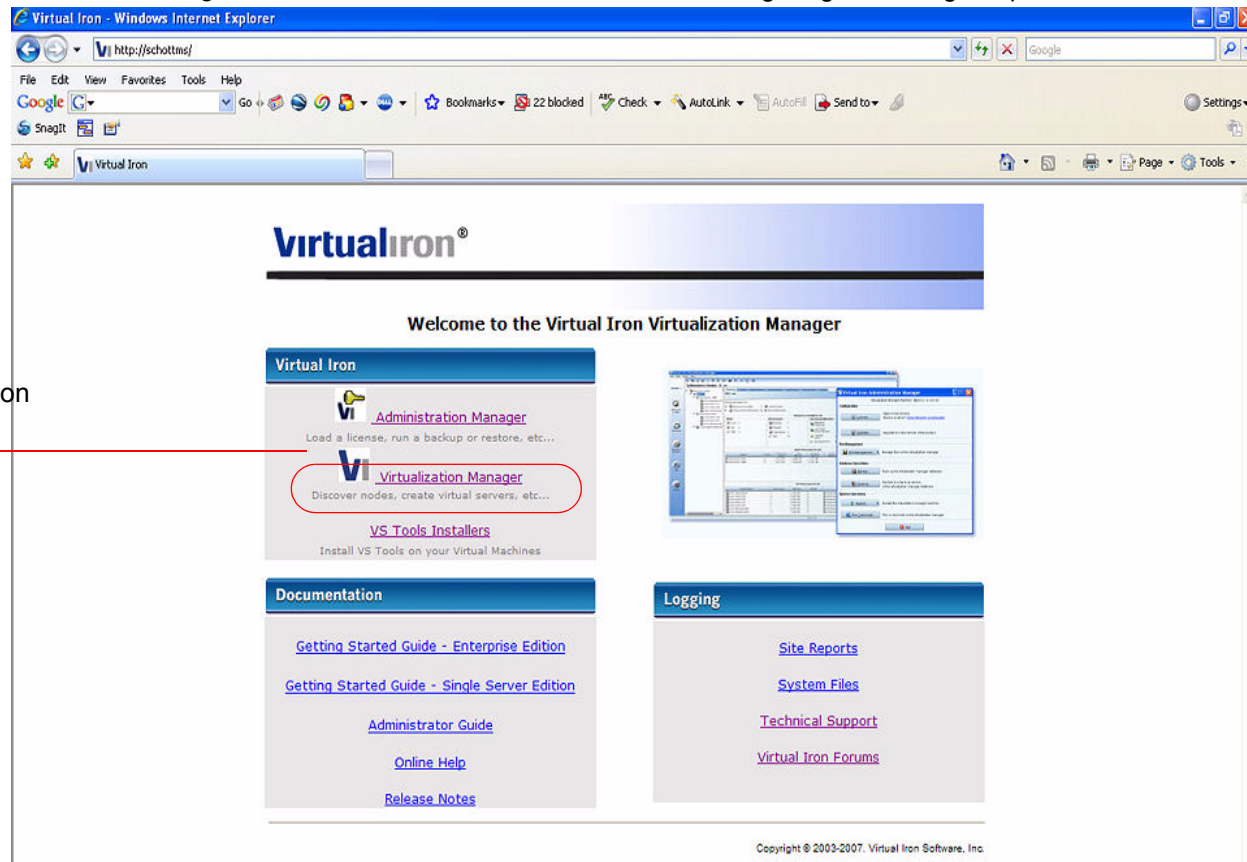


Step 12. If you do not already have a license, go to www.virtualiron.com/Register to get one. Click **License**, and browse to the license file emailed to you by Virtual Iron®.



Step 13. Click **OK** to return to the launcher page and select **Virtualization Manager** as shown. When the login screen appears, enter the password you provided during product installation. See the next section or the *Virtual Iron® Virtualization Manager Administrator Guide* for information on configuring and using the product.

Launch
Virtualization
Manager



Creating and Booting a Virtual Server

Virtual Servers (VSs) can be configured to access local disks and logical disks.

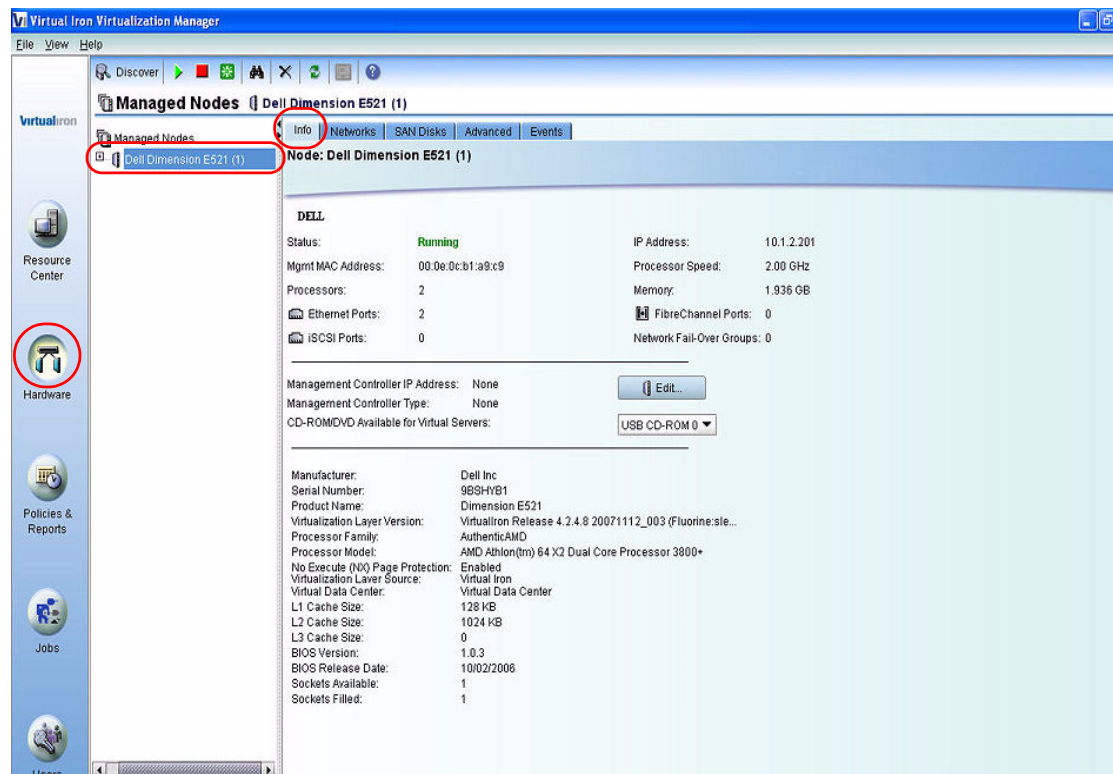
Managed storage on a local disk refers to disks used to configure and store *logical disks*. Virtual Iron supports the creation of logical disks that can be cloned and exported for use by virtual servers.

The succeeding example defines how to create a logical disk on a local drive. See the **Virtual Iron® Virtualization Manager™ Administrator Guide** for details.

Check Hardware Components

When you log in to Virtual Iron SSE, the Virtualization Manager does an inventory of node components. Before moving on, take a moment to check the components of all nodes

1. Click the **Hardware** button in the application toolbar.
2. Select the managed node and click the **Info** tab to get detailed information Virtualization Manager has discovered for the node. The components of each node are listed in the following categories:
 - Ethernet ports (for connection to external networks)
 - IDE drive (CD-ROM)
 - Fibre channel ports (For connection to SAN)
 - SCSI/SATA (local hard drives)/USB
 - iSCSI (Internal SCSI adapters, for SAM connection. Set the Networks tab,)



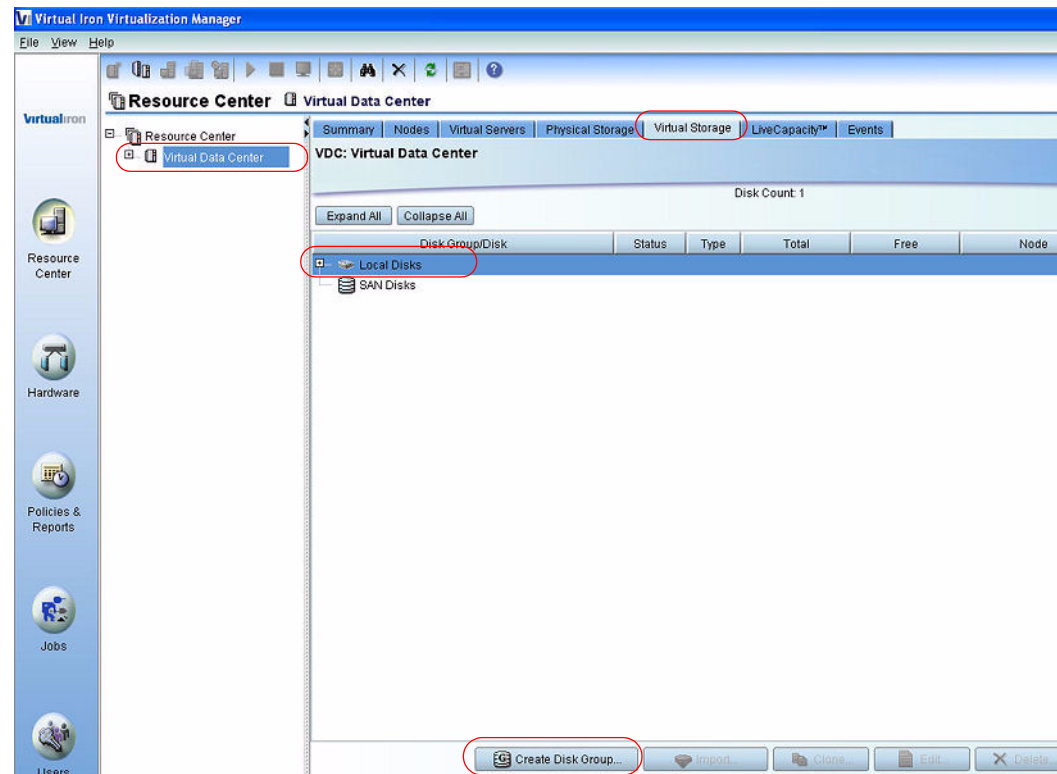
Create a Virtual Server

To create and run a VS, you need to create the VS, configure the boot and runtime options, assign a network to it, and define its storage. This process is covered in these steps:

- Create a Logical Disk
- Create a Virtual Server
- Configure the Network Adapters
- Specify Virtual Server Boot Options
- Configure Virtual Server Processors, Memory, and Priority
- Start the VS Installation
- Install VS Tools on Windows® Virtual Servers
- VS Tools Silent Install
- Special Considerations for Windows 2000 OS

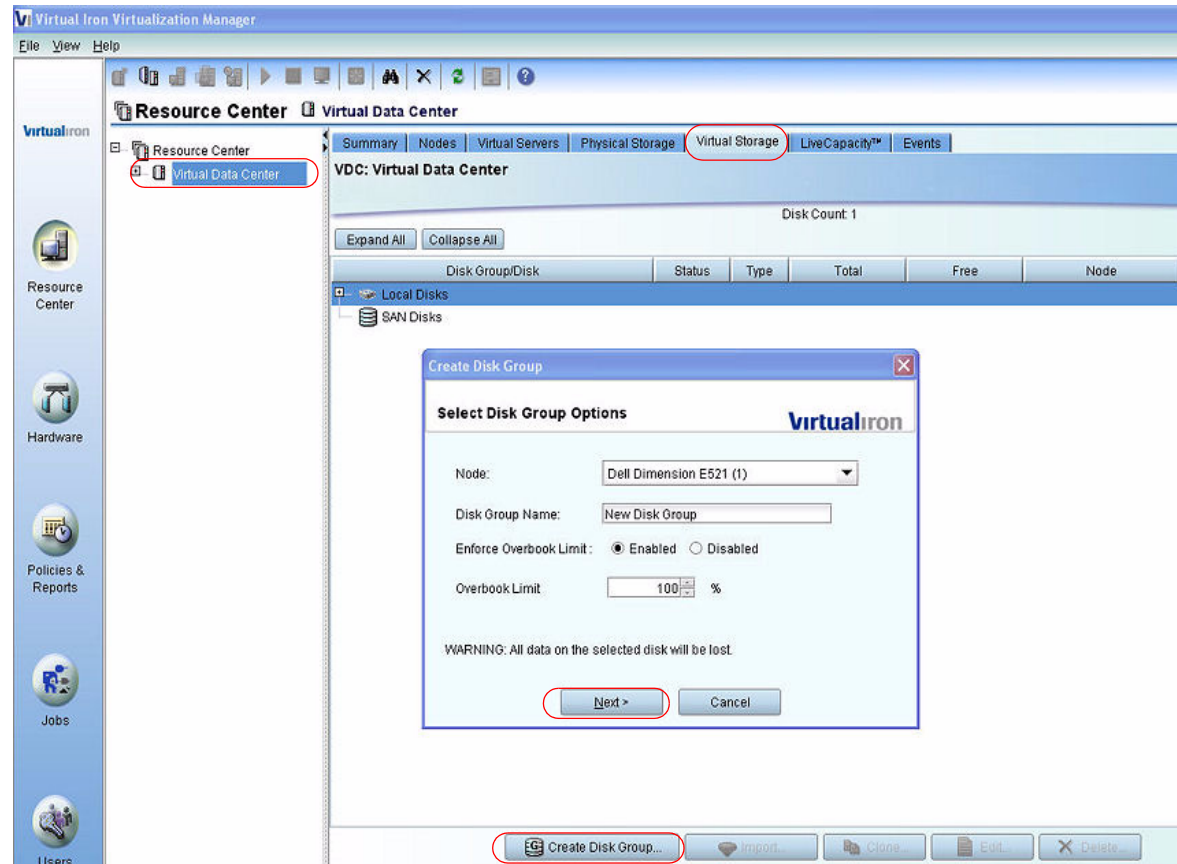
Create a Logical Disk

1. In the Resource Center, select your node and then select the **Virtual Storage** tab.
2. Select **Local Disks**, and click **Create Disk Group...**



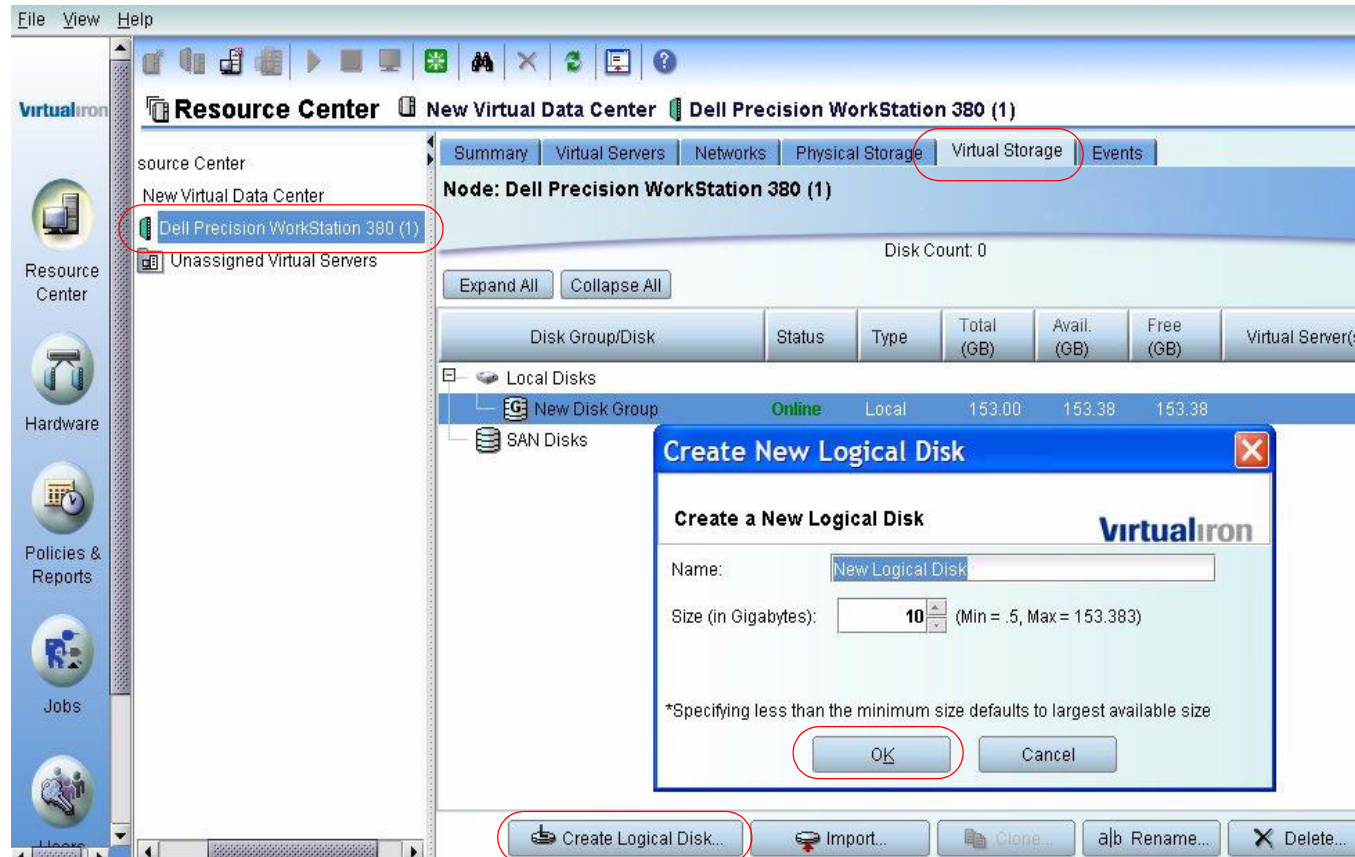
3. In the dialog window that appears, give the Disk Group a name, or keep the default name. Click **Next>>**.

4. In the **Create Disk Group/Options** window, rename the Disk Group, or keep the default name.



5. Click **Next**.

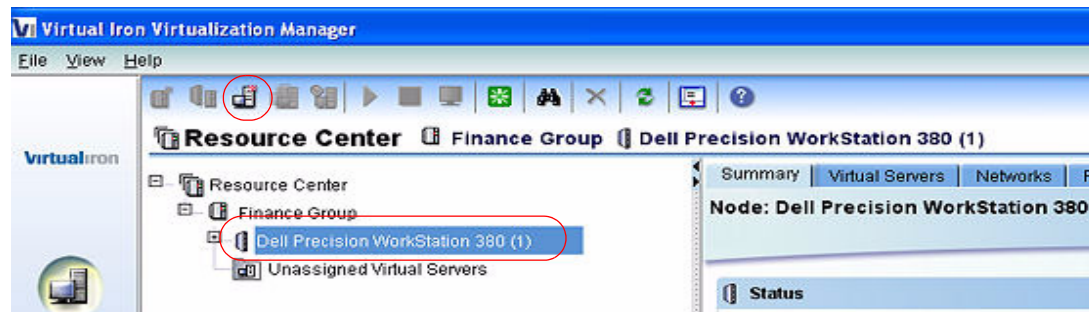
6. Select the Disk Group, and click **Create Logical Disk...** Rename the logical disk if desired. Click **OK**.



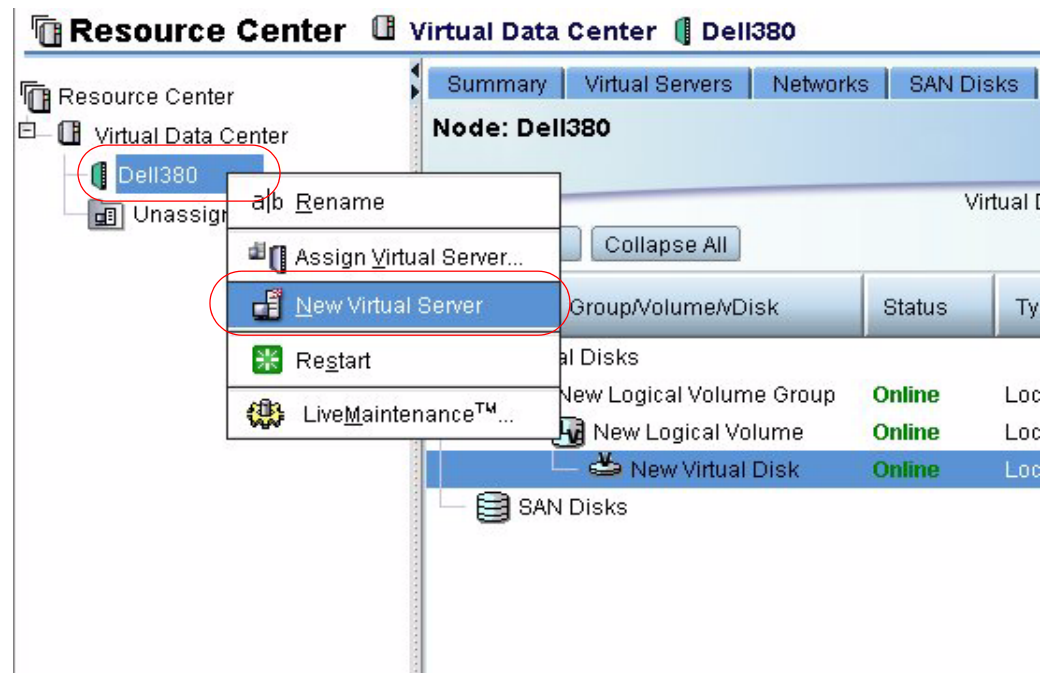
- A logical disk can only be assigned to a virtual server.
- Choose a size for the logical disk that is just large enough to accommodate the virtual server. You can use the remaining space for other VSs.

Create a Virtual Server

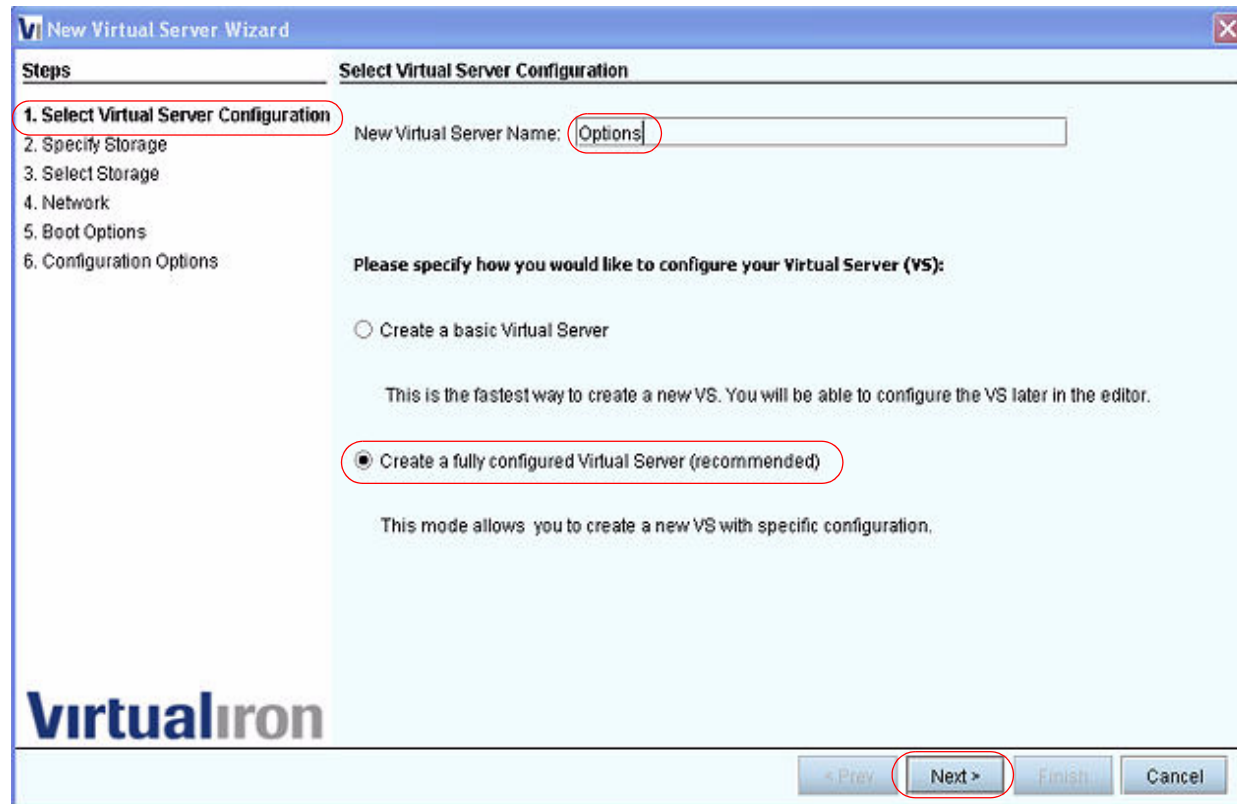
1. To access the Virtual Server Wizard, use one of the following methods:
 - Select the node you added earlier, then click the **Create New Virtual Server** icon on the application tool bar.



- Or, right click the node you added earlier, and select **New Virtual Server** from the pop-up list.



2. Name the virtual server. In this example, the virtual server has been named **Options**.



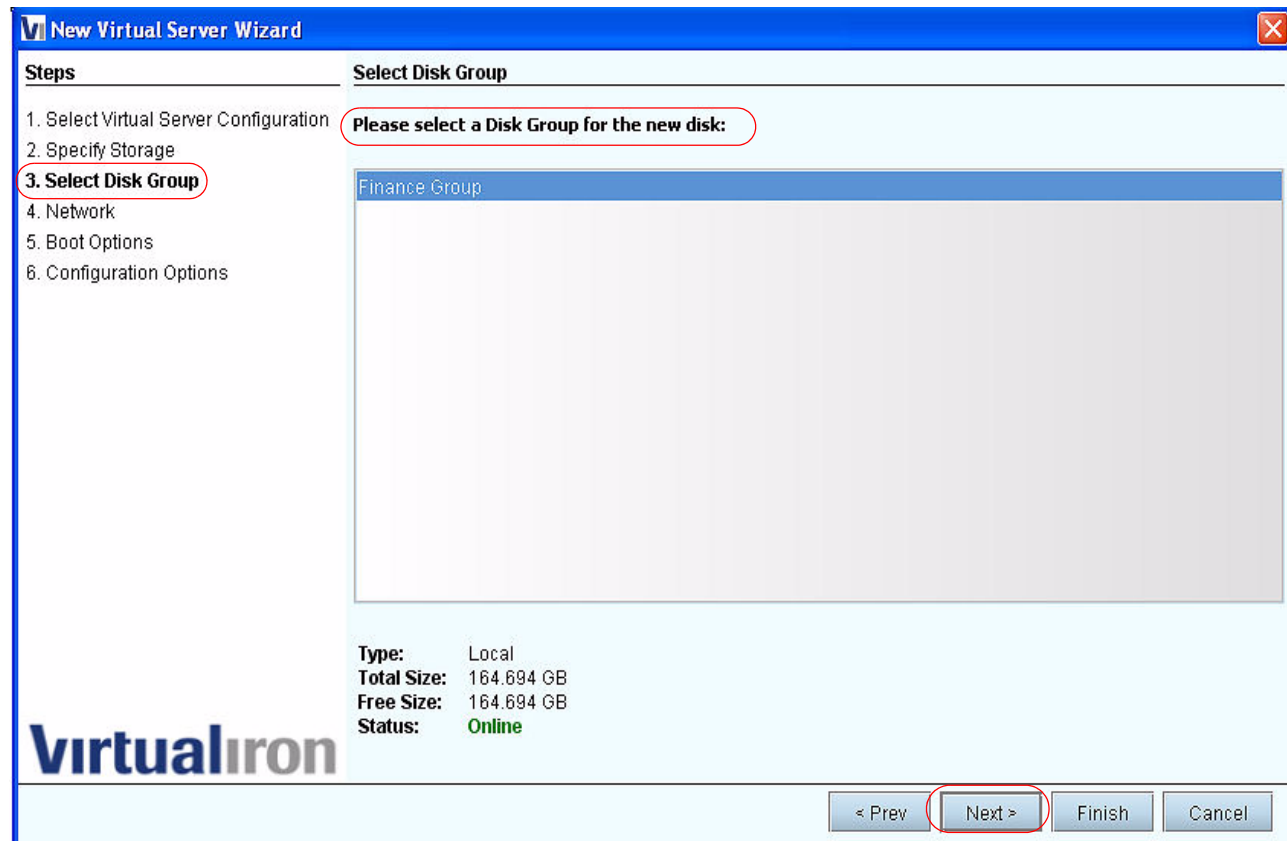
3. Select how you want to configure your virtual server from one of the two options. This example shows the default setting, **Create a fully configured Virtual Server**.
4. Click **Next**.

5. Specify the type of storage you want to use. If you choose **Create New Disk**, as in the example, enter a name for the new logical disk.
6. Select a disk size for the logical disk. **10 Gigabytes** is the default.

The screenshot shows the 'New Virtual Server Wizard' window with the title bar 'New Virtual Server Wizard'. On the left, a 'Steps' pane lists six steps: 1. Select Virtual Server Configuration, 2. Specify Storage (highlighted with a red circle), 3. Select Disk Group, 4. Network, 5. Boot Options, and 6. Configuration Options. The main area is titled 'Specify Storage' and contains the text 'Please specify storage:'. There are three radio button options: 'Use existing Disk', 'Create New Disk' (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 = 164GB), with the '10' circled in red. At the bottom right, there are four buttons: '< Prev', 'Next >' (circled in red), 'Finish', and 'Cancel'. The VirtualIron logo is visible in the bottom left corner of the window.

7. Click **Next**.

8. Select the Disk Group in which the newly created logical disk will be placed.
9. Click **Next**.



Configure the Network Adapters

1. Select an Ethernet network from the pulldown menu.
2. Select a VNIC from the **Network Adapter** pulldown menu to choose a specific VNIC from the drop-down list.
3. Click **Next**.

The screenshot shows the 'New Virtual Server Wizard' window, specifically the 'Network' step. On the left, a 'Steps' list shows the progression from '1. Select Virtual Server Configuration' to '6. Configuration Options', with '4. Network' highlighted by a red circle. The main area is titled 'Please specify a network:' and contains three radio buttons. The first, 'Specify a network', is selected and circled in red. Below it, the 'Ethernet Network' dropdown menu is set to 'FinanceNet'. The 'Network Adapter' label is present, but its dropdown menu is not visible. The 'VNIC' dropdown menu is set to '00:0f:4b:00:00:18'. The second radio button, 'Do not specify network', is unselected. At the bottom right, the navigation buttons '< Prev', 'Next >', 'Finish', and 'Cancel' are shown, with 'Next >' circled in red. The VirtualIron logo is visible in the bottom left corner of the window.

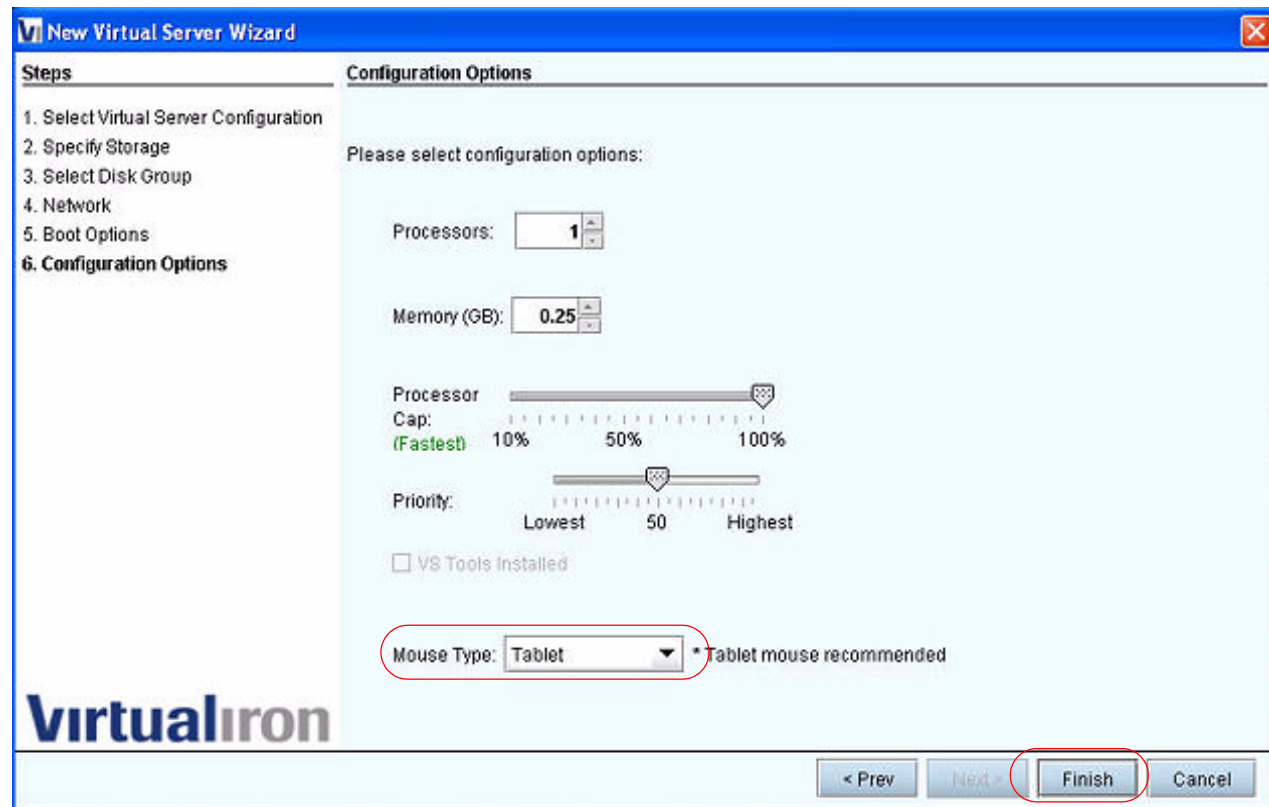
Specify Virtual Server Boot Options

1. In the **Boot Options** pane, select **Microsoft Windows XP** for Operating System. For this example, you will need a Microsoft Windows XP CD and license key later on.
2. Select **CD-ROM/DVD**. This selection tells the VS to boot from the CD ROM device on the node where the VS is located. Later you will install Windows onto a Logical Disk that you specify
3. Place the Windows installation CD into the node on which the virtual server will reside.
4. Click **Next**.

The screenshot shows the 'New Virtual Server Wizard' window, specifically the 'Boot Options' pane. On the left, a 'Steps' list shows six steps: 1. Select Virtual Server Configuration, 2. Specify Storage, 3. Select Disk Group, 4. Network, 5. Boot Options (highlighted with a red circle), and 6. Configuration Options. The main area is titled 'Boot Options' and contains the following fields: 'Operating System:' with a dropdown menu set to 'Microsoft Windows XP'; 'Specify Boot Device:' with three radio buttons: 'CD-ROM/DVD' (selected and circled in red), 'Disk', and 'Network (PXE) Boot'; and three dropdown menus for boot device selection: 'Node Local CD-ROM/DVD' (selected), 'New Logical Disk', and '00:0f:4b:00:05:d2'. Below these is a 'Network Image Mounts' section with two dropdown menus labeled 'CD-ROM:' and 'Floppy:'. At the bottom right, there are four buttons: '< Prev', 'Next >' (circled in red), 'Finish', and 'Cancel'. The VirtualIron logo is visible in the bottom left corner of the window.

Configure Virtual Server Processors, Memory, and Priority

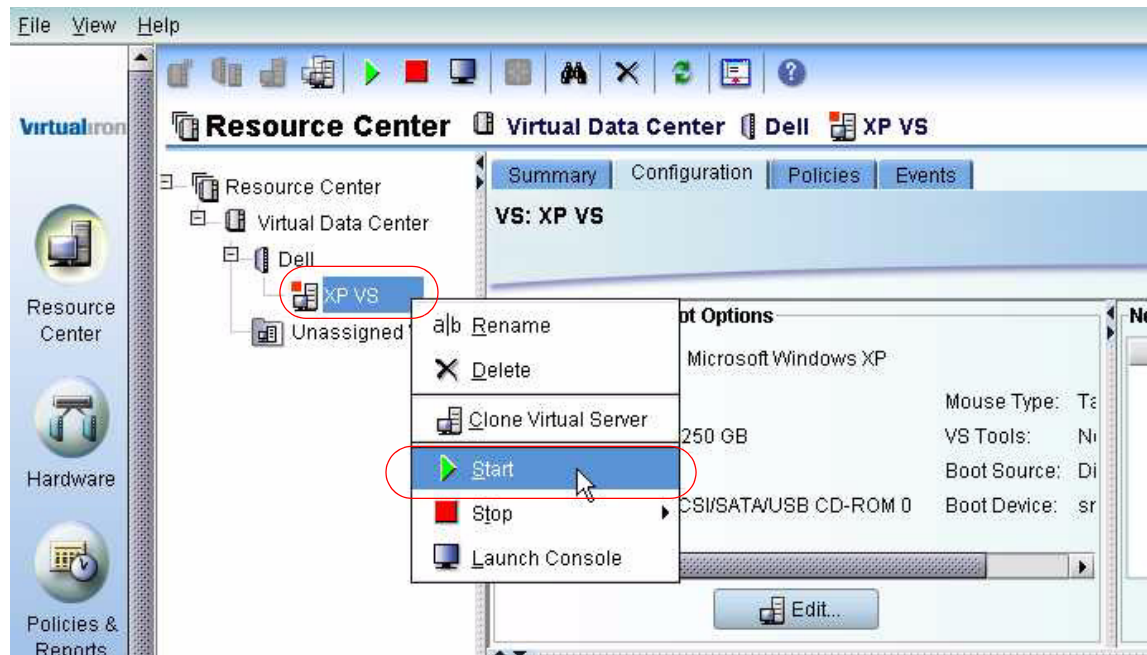
1. Accept the default values or specify new values for the processors, memory, and priority. For information on these settings, see the *Virtualization Manager Administrators Guide*.
2. Select a setting for **Mouse Type**.
3. Click **Finish** and wait for the operation to complete.



4. Click **Add**.
5. Click **OK**.
6. This brings up the Network Adaptor Configuration dialog box. Click **Add** to add any available VNIC to the virtual server, or use the pull-down menu (as shown) to choose a specific VNIC from the drop-down list. Configure Network

Start the VS Installation

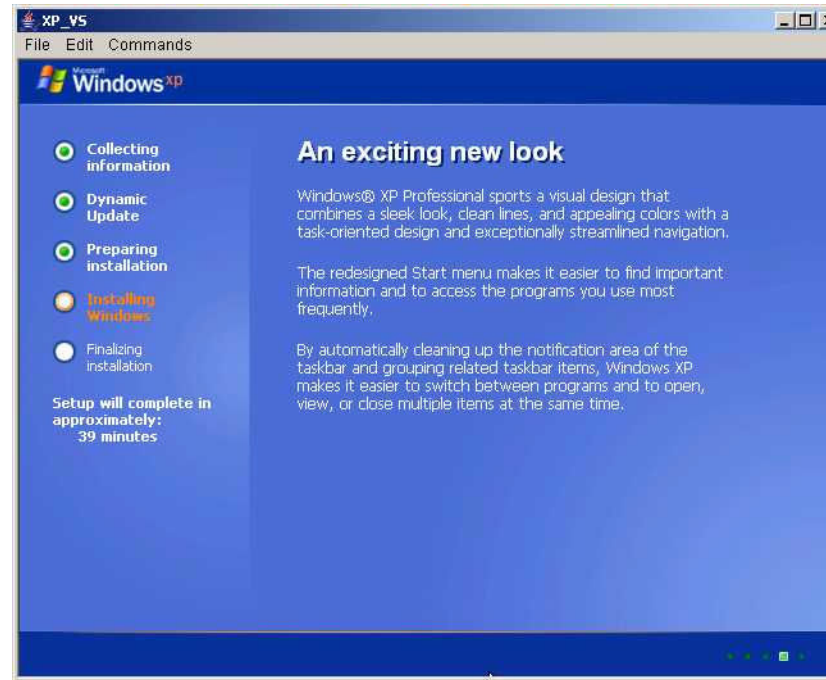
1. Insert the Microsoft Windows XP CD in the CD-ROM/DVD of your node. Select XP VS and choose **Start** from the pop-up menu.



2. Open a console by clicking the console icon on the application toolbar. Windows XP boots in the console window.



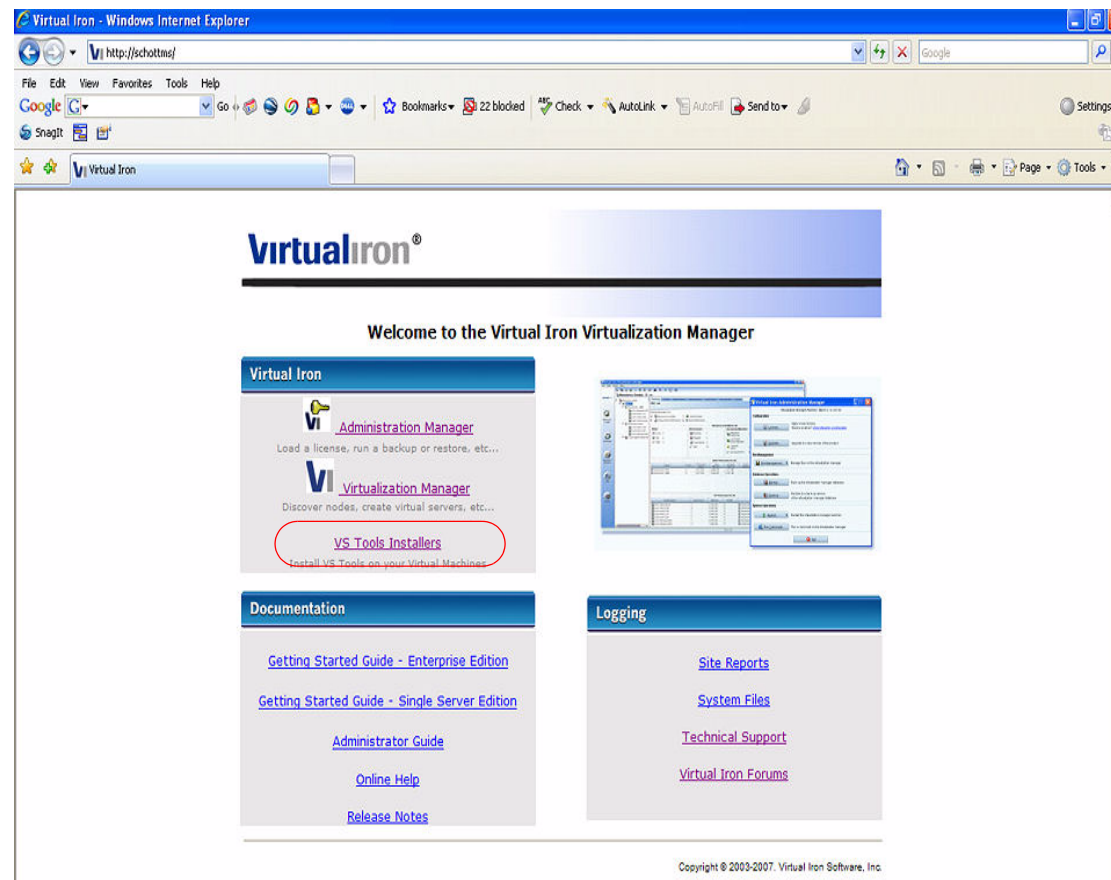
3. Follow the instructions to install Windows.



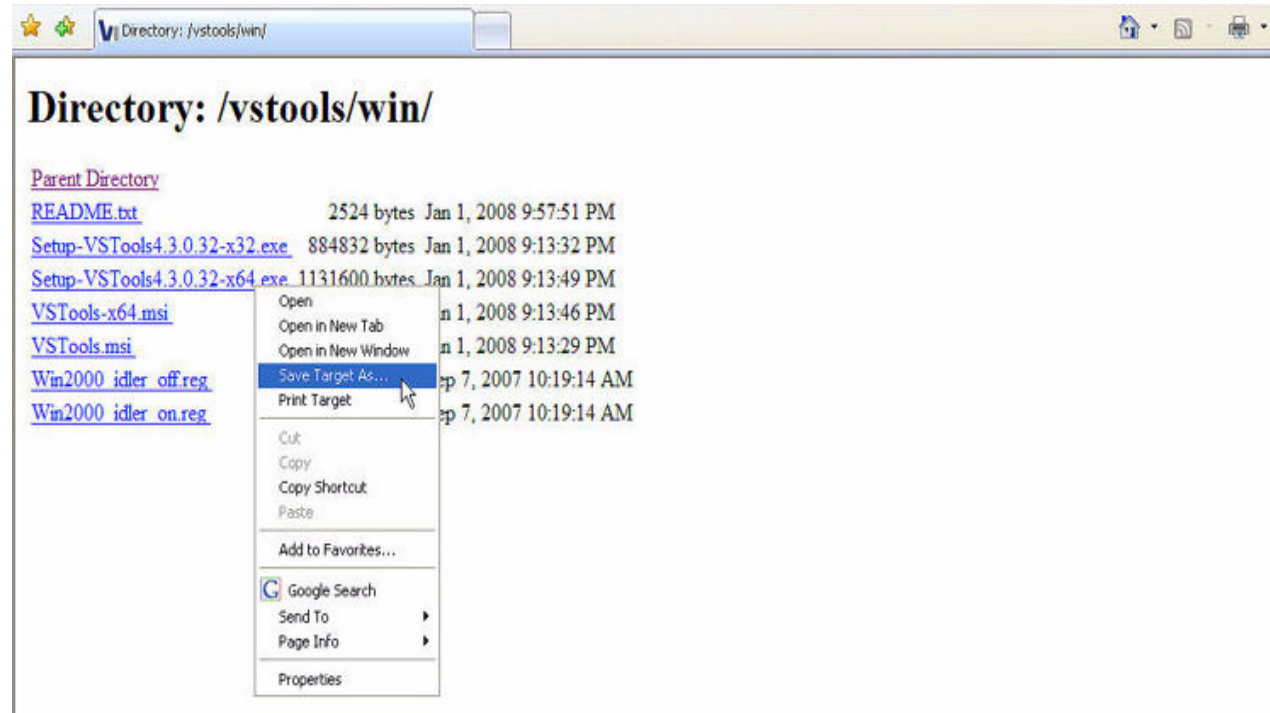
Install VS Tools on Windows® Virtual Servers

Virtual Iron® provides a set of VS Tools designed for use with Windows® OS virtual servers. The steps that follow explain how to install these tools after you have created a VS running Windows®. For automatic installation for Windows 2003 or Windows XP, see [VS Tools Silent Install](#).

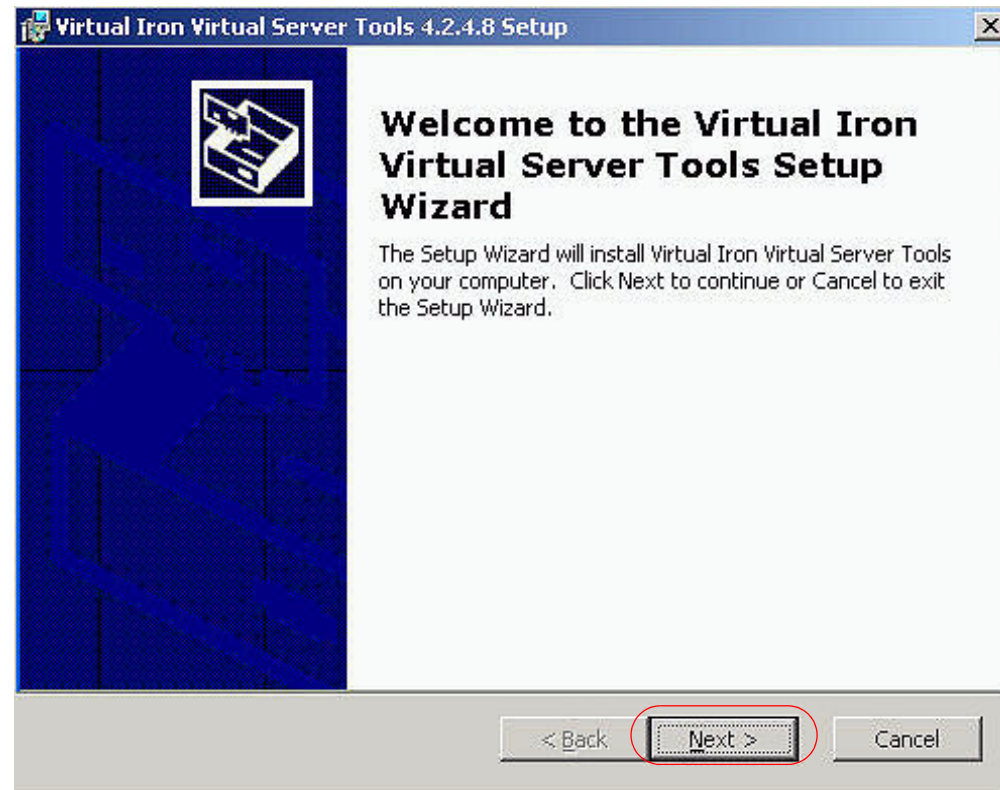
1. Following a successful installation, open a browser within the virtual server console window. Enter the IP address of the Virtualization Manager to open the Virtualization Manager window.
2. Select the **VS Tools Installers** link.



3. Open a browser within the virtual server. Enter the IP address of the Virtual Iron Administration Manager and browse to the [/vstools/win](#) directory.
4. Right-click the 32- or 64-bit **Setup-VSTools-4.x.x-xx.exe** file for your system, and save it to your desktop or some other location with the **Save Target As...** menu option. Double click this file.

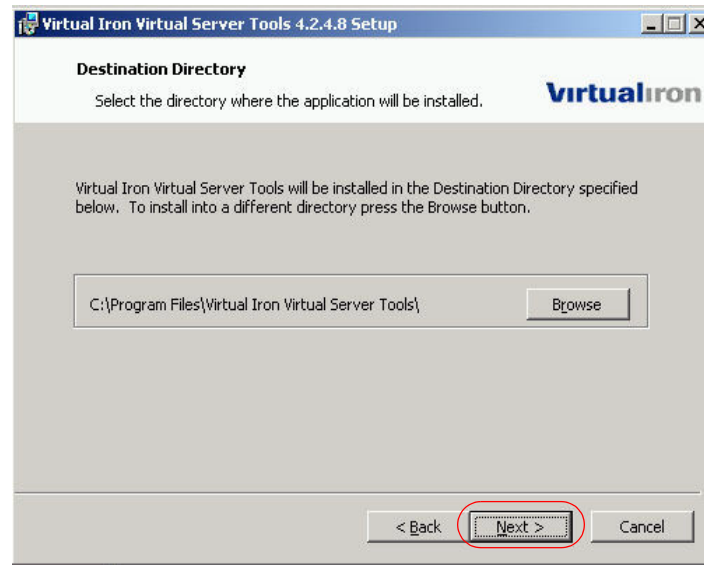


5. Launch the installer and follow the prompts in the **Virtual Server Tools Setup Wizard**.



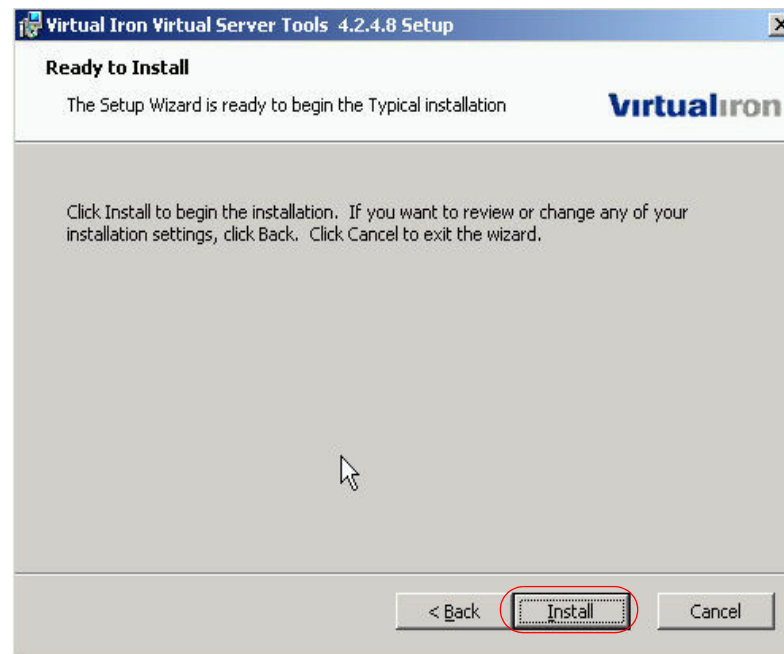
6. Click **Next**.

7. Specify where you want to install the drivers.



8. Click **Next**.

9. Click **Install**. A status bar appears while files are copied.

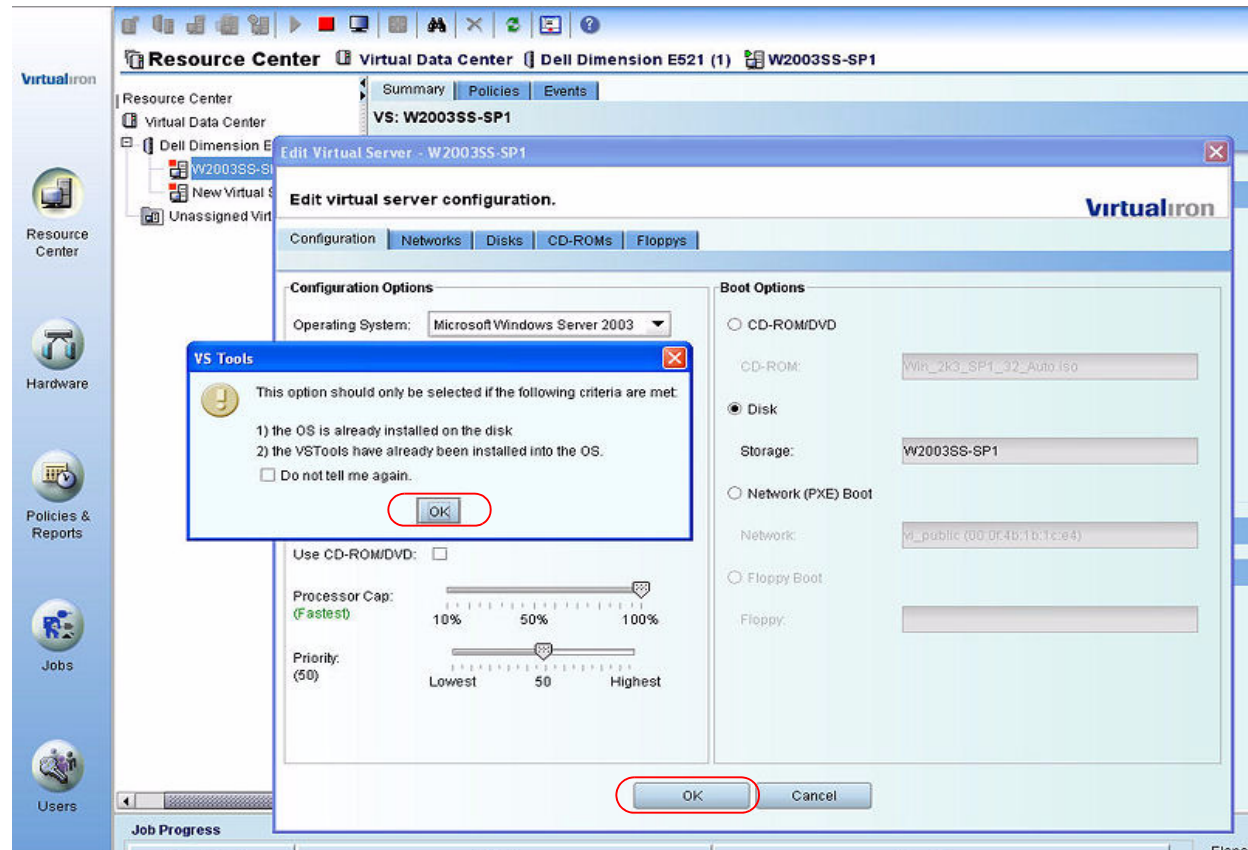


10. When the installer prompts you to shut down your virtual server, click **Yes**.

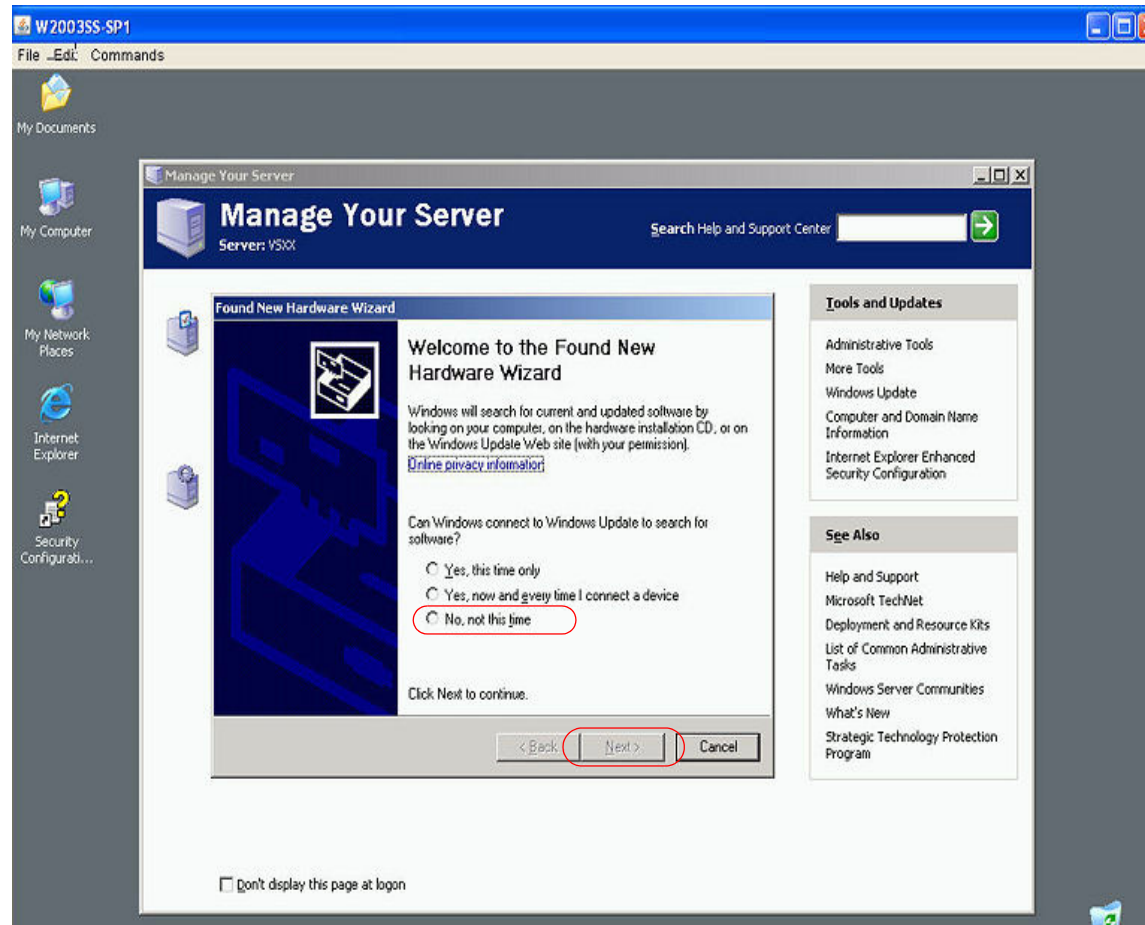
11. Click **Finish**.



12. After the virtual server stops, open the VS Configuration window, and check **VS Tools Installed**. Select **Disk** in the **Boot Options** section of the window. Click **OK**.

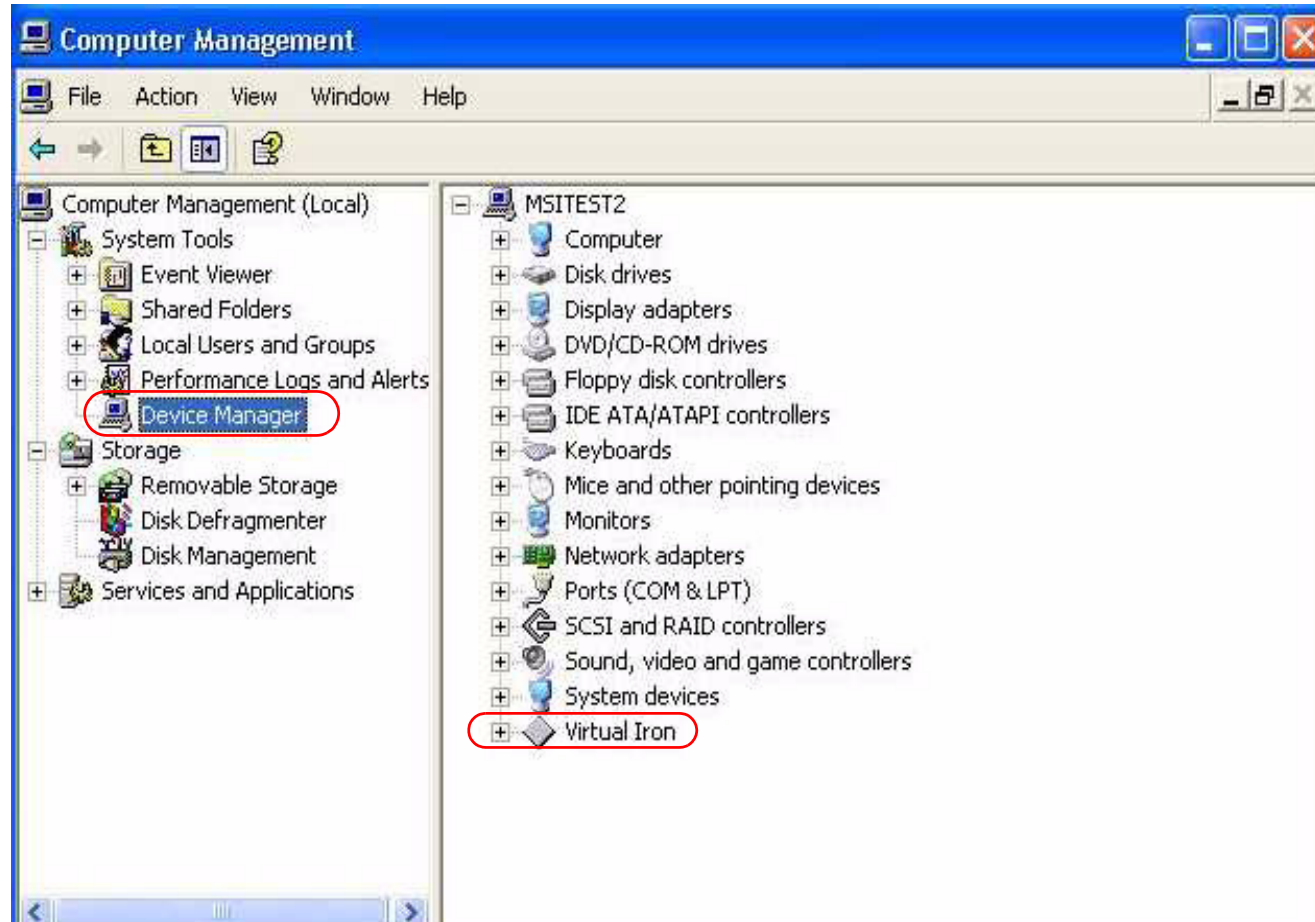


13. **Start** the virtual server. During boot, Windows® discovers the Virtual Iron® Ethernet driver. In the Found New Hardware Wizard, do the following:
- A. Select **No Not this time** when prompted to look for a driver update. Click **Next**.



- B. Check **Install Software Automatically**. Click **Next**.
- C. Windows begins installing the network driver.

4. This completes installation of the Virtual Iron® drivers, which appear under **Device Manager**.



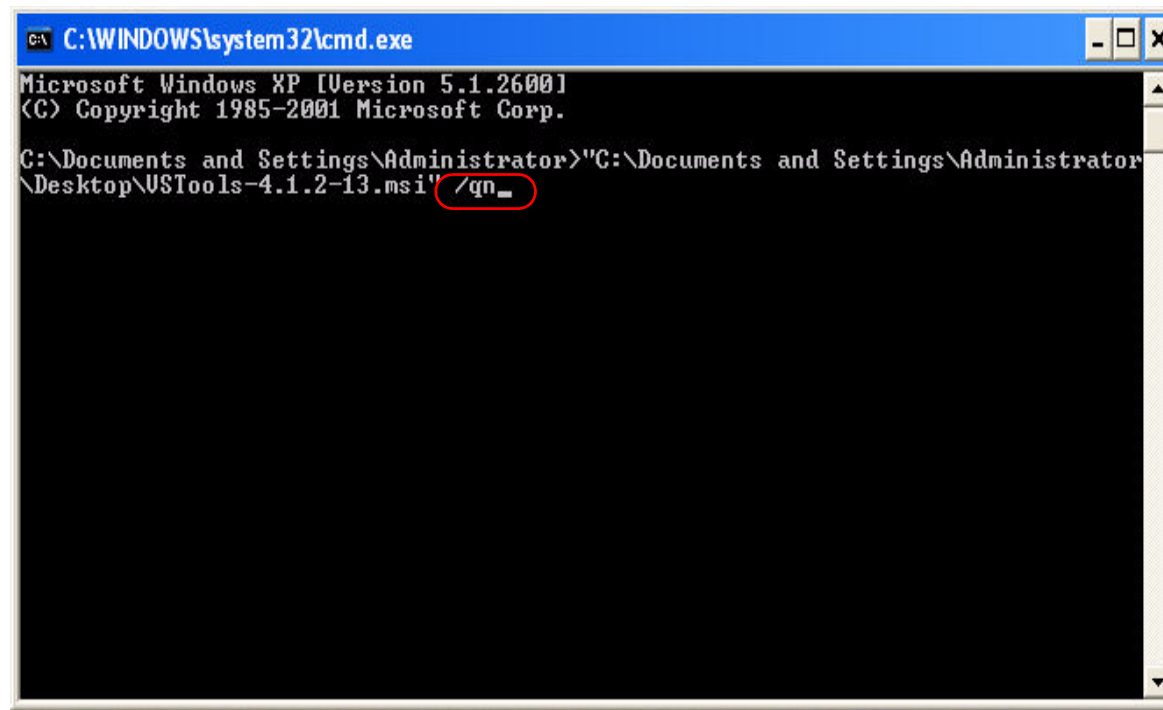
5. Restart the virtual server guest operating system.

VS Tools Silent Install

The following procedure automatically installs VS Tools for Windows XP and Windows 2003.

1. In Windows **Start** menu, select **Run**.
2. In the **Run** window, type **cmd**. Press **Enter**.
3. In the command console, click the **VSTools-4.x.x.x-xx.msi** icon and drag it into the console window.
4. The command string is automatically entered. Press the space bar.
5. In the console window, type **/qn**, as shown. Press **Enter**.

'I

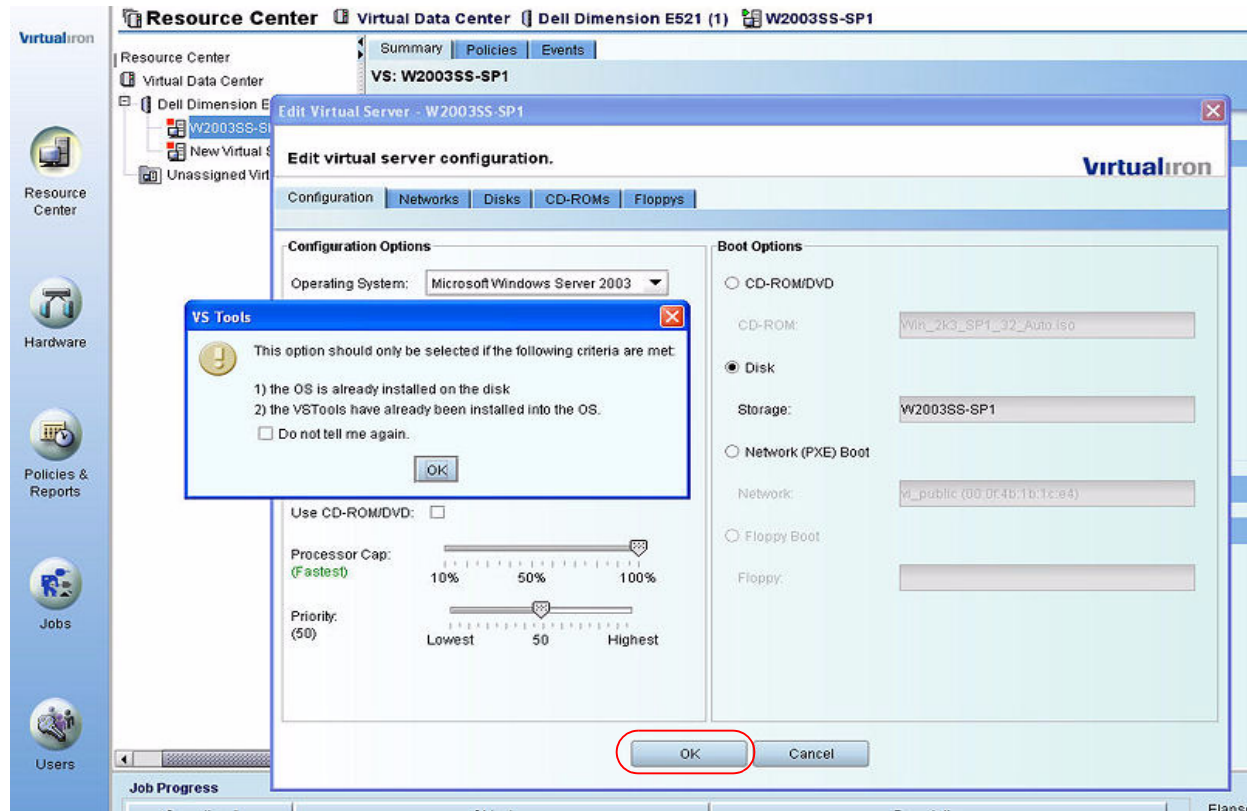


A screenshot of a Windows XP command prompt window. The title bar reads "C:\WINDOWS\system32\cmd.exe". The window content shows the following text: "Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp." followed by the command prompt "C:\Documents and Settings\Administrator>". The command entered is "C:\Documents and Settings\Administrator\Desktop\VSTools-4.1.2-13.msi" followed by "/qn" which is circled in red, and a cursor. The window has standard Windows XP window controls (minimize, maximize, close) in the top right corner.

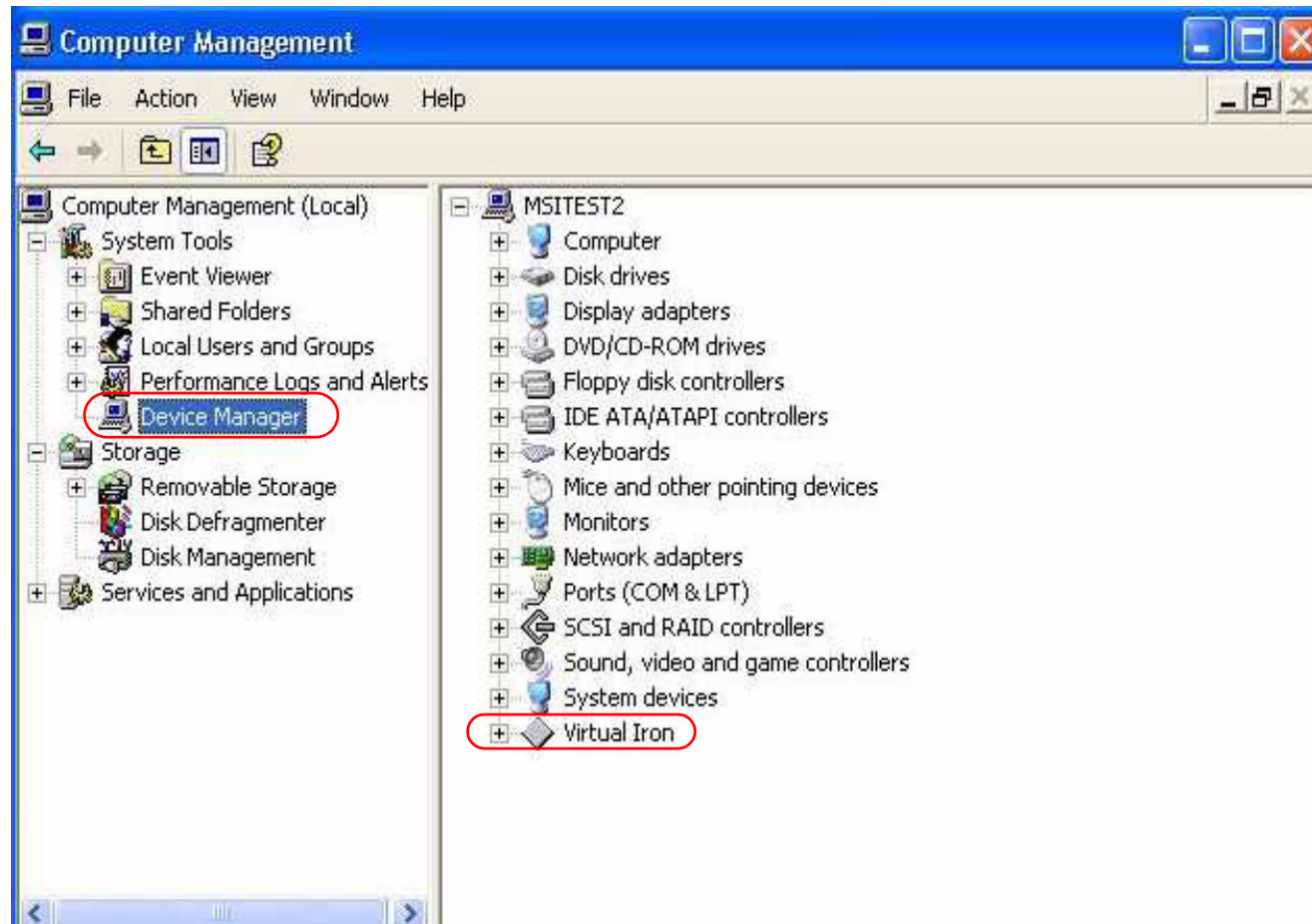
```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>"C:\Documents and Settings\Administrator\Desktop\VSTools-4.1.2-13.msi" /qn_
```

6. In Virtualization Manager, perform a **Hard Reset** on the virtual server. Open the VS Configuration window, and check **VS Tools installed**. Click **OK**.



7. This completes installation of the Virtual Iron® drivers, which appear under **Device Manager**.



Special Considerations for Windows 2000 OS

When a Windows 2000 system is idle, it will appear to be consuming no CPU resources. Task Manager will show that the CPU is idle. However, Windows 2000 is actually executing instructions in its idle loop. These cycles will not be available for use by other virtual servers on the same node. In order to get Windows 2000 to act like the other more recent Windows operating systems and actually relinquish the CPUs when idle, do the following:

1. Make sure VS Tools are loaded and running in the Windows 2000 virtual server.
2. Open a browser within the Windows 2000 virtual server, and navigate to the Virtualization Manager's IP address. You will see the Virtual Iron Virtualization Manager home page.
3. Click the **VS Tools Installers** link. Click the **win /link**.
4. Click the **Win2000_idler_on.reg** link and download that file to the virtual server. Do the same for **Win2000_idler_off.reg**.
5. Double click **Win2000_idler_on.reg** to read the idler information into the Windows Registry.
6. On the Windows 2000 desktop. Right click the **My Computer** icon and select **Manage**.
7. Navigate to **Services** and **Applications > Services**.
8. Find the Virtual Iron Service and right-click **Restart**.

A side-effect of the idler is that it will appear that the **ViStats.exe** process is consuming all idle cycles in the virtual server. In fact, it only appears this way; it is actually releasing control to the underlying virtualization services so that idle cycles can be used by other virtual servers.

Turn the idler off by double-clicking the **Win2000_idler_off.reg** file and then restarting the Virtual Iron Service. Virtual Iron recommends that the idler is turned on.

