Using ESXi with PowerChute Business Edition

This help covers the following topics:

Installing vMA for an ESXi Host Server

vSphere Management Assistant (vMA), from the VMware® company, enables you to manage your ESXi host servers.

You need to install it in order to use PowerChute Business Edition with an ESXi host, as that OS does not allow a direct installation.

The installation steps below assume that you have:

- An operational ESXi host server.
- An operational vSphere Client in order to log on to the host server.

  You can download the vSphere Client from www.vmware.com or by browsing to `https://<ESXi Host IP Address>` and clicking on the **Download vSphere Client** option.

  The Client requires AMD Opteron, rev E or higher CPU or Intel processors, with EM64T and VT support.

To perform the vMA installation, you should be an administrator with basic knowledge of Linux. The web page vSphere Management Assistant has in-depth background information on the topics mentioned above. Alternatively, you can call VMware customer support.

The APC by Schneider KBase (http://www.apc.com/site/support/index.cfm/faq/index.cfm), has some information on installing the Client also. Type a search query like “vMA ESXi” to display the relevant articles.

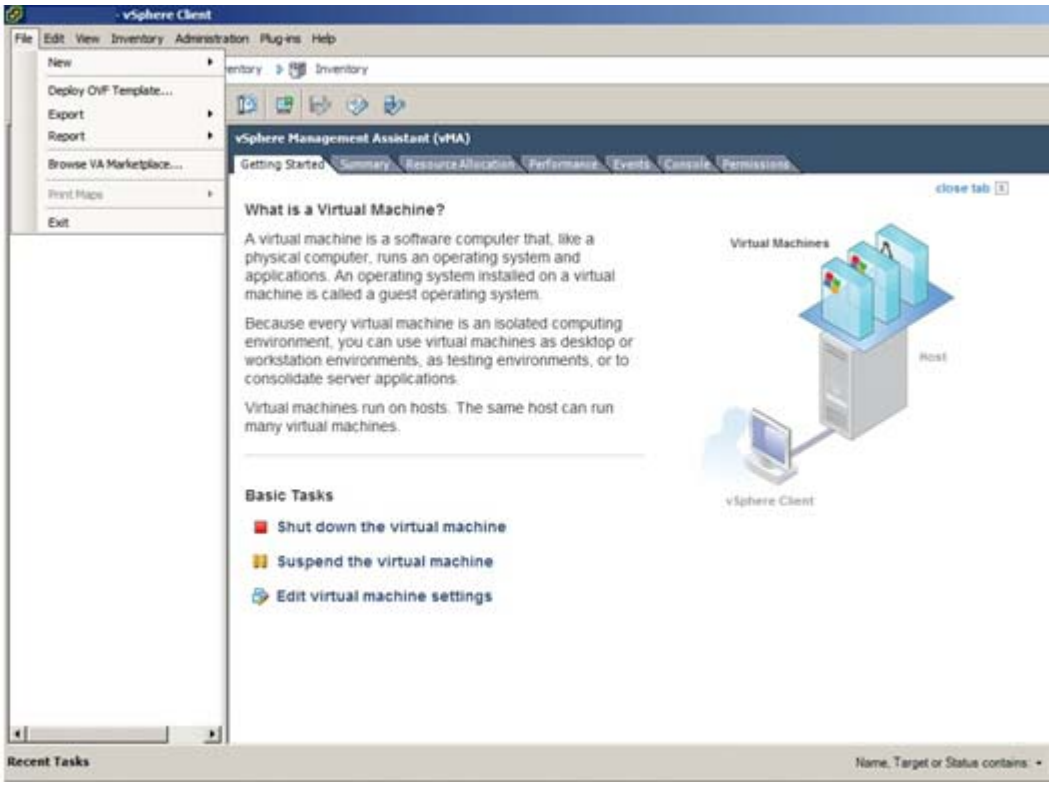
vSphere Management Assistant (vMA) was previously known as VMware Infrastructure Management Assistant (VIMA).

Installing vMA

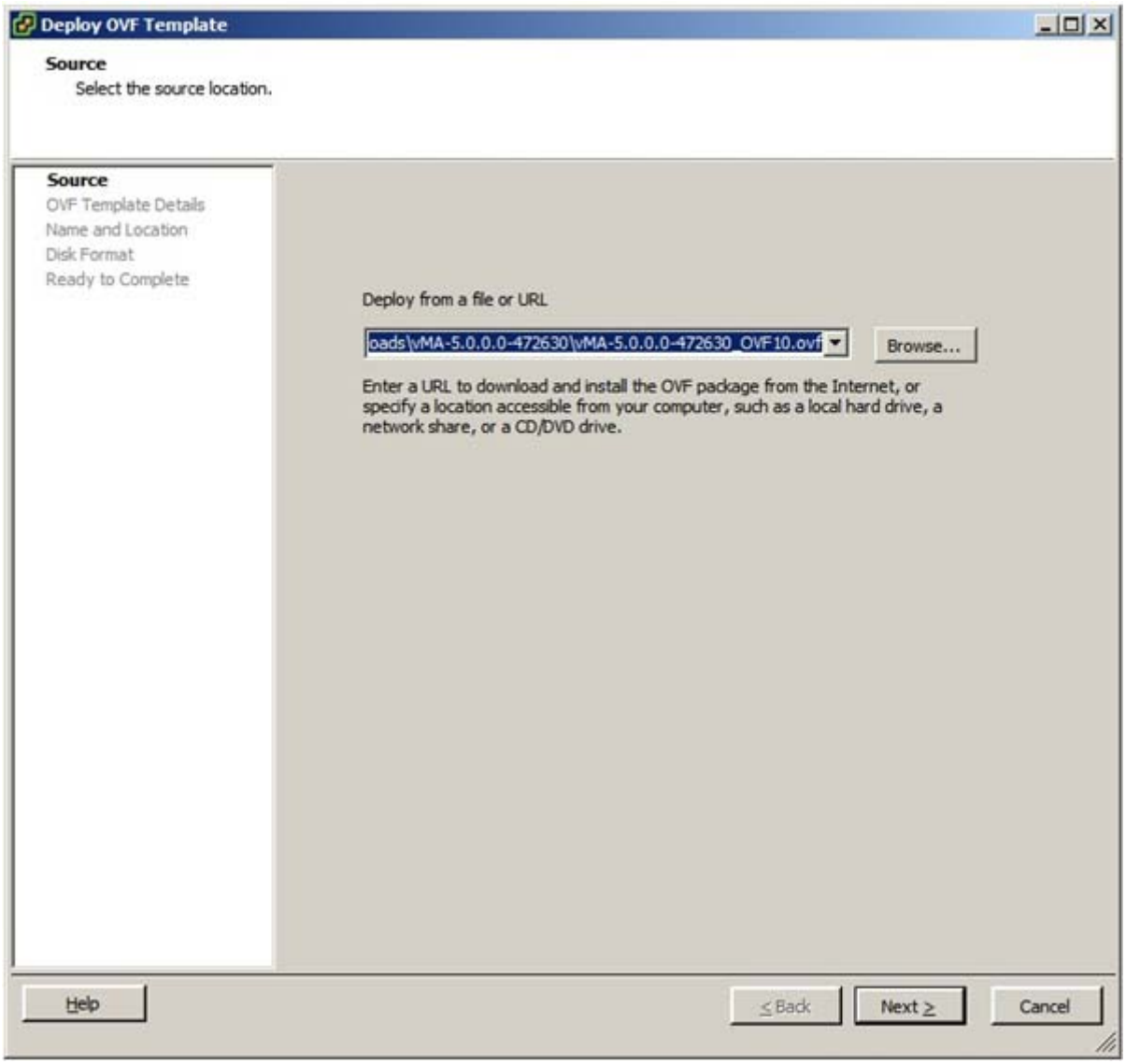
Note: VMware uses the term *deploy* with vMA and other applications, meaning to install, configure, test, and use the application.

1. Download the vMA installation files from vSphere Management Assistant , and extract the files.
2. Log on to the ESXi host or vCenter server using your vSphere Client.

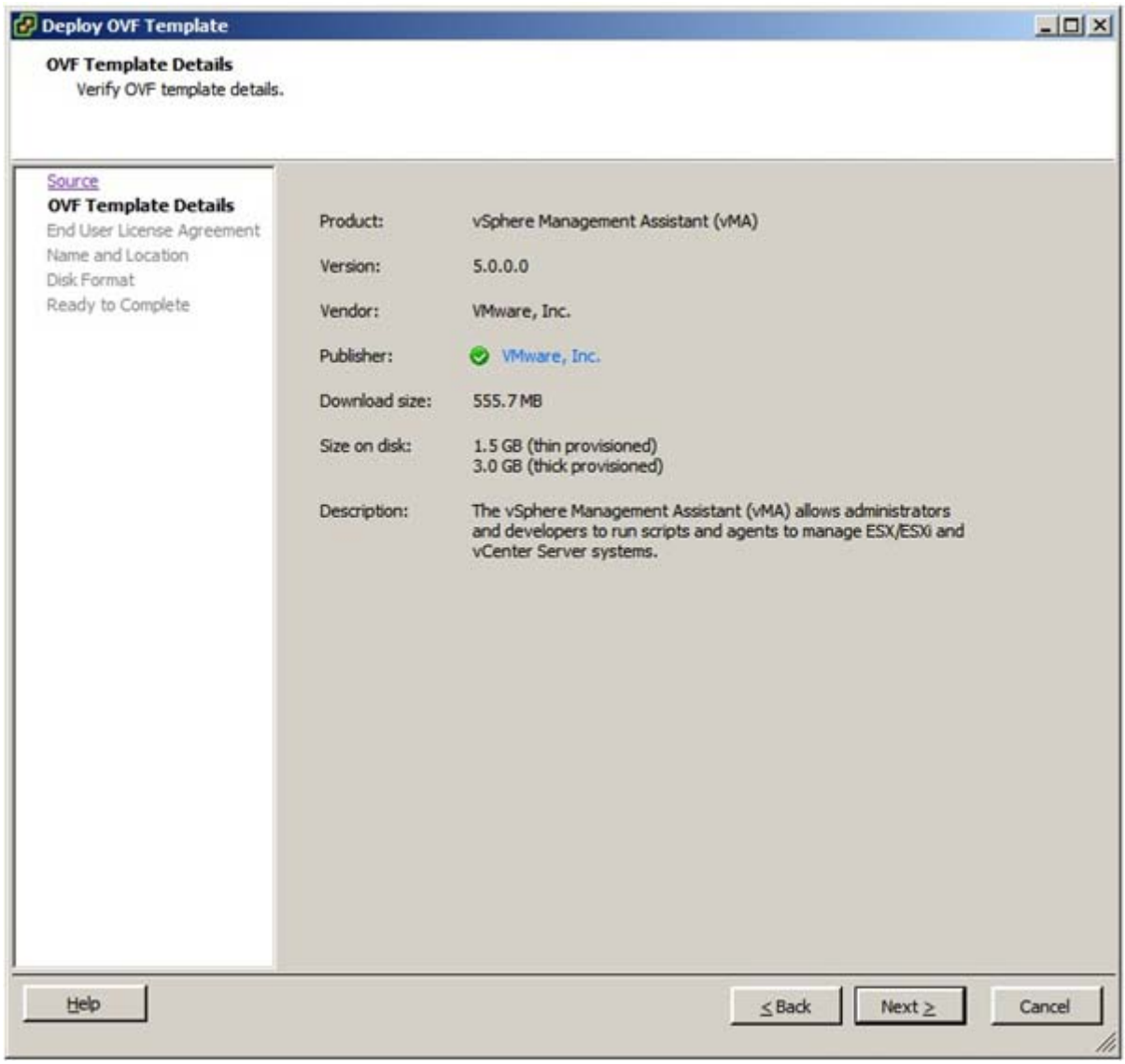
3. You need the URL of the host server, its user name, and password, in order to do this. Select **File** - **Deploy OVF Template** from the menu.



4. At the **Deploy from a file or URL** field, enter the path to the .OVF file you extracted at step 1 above.

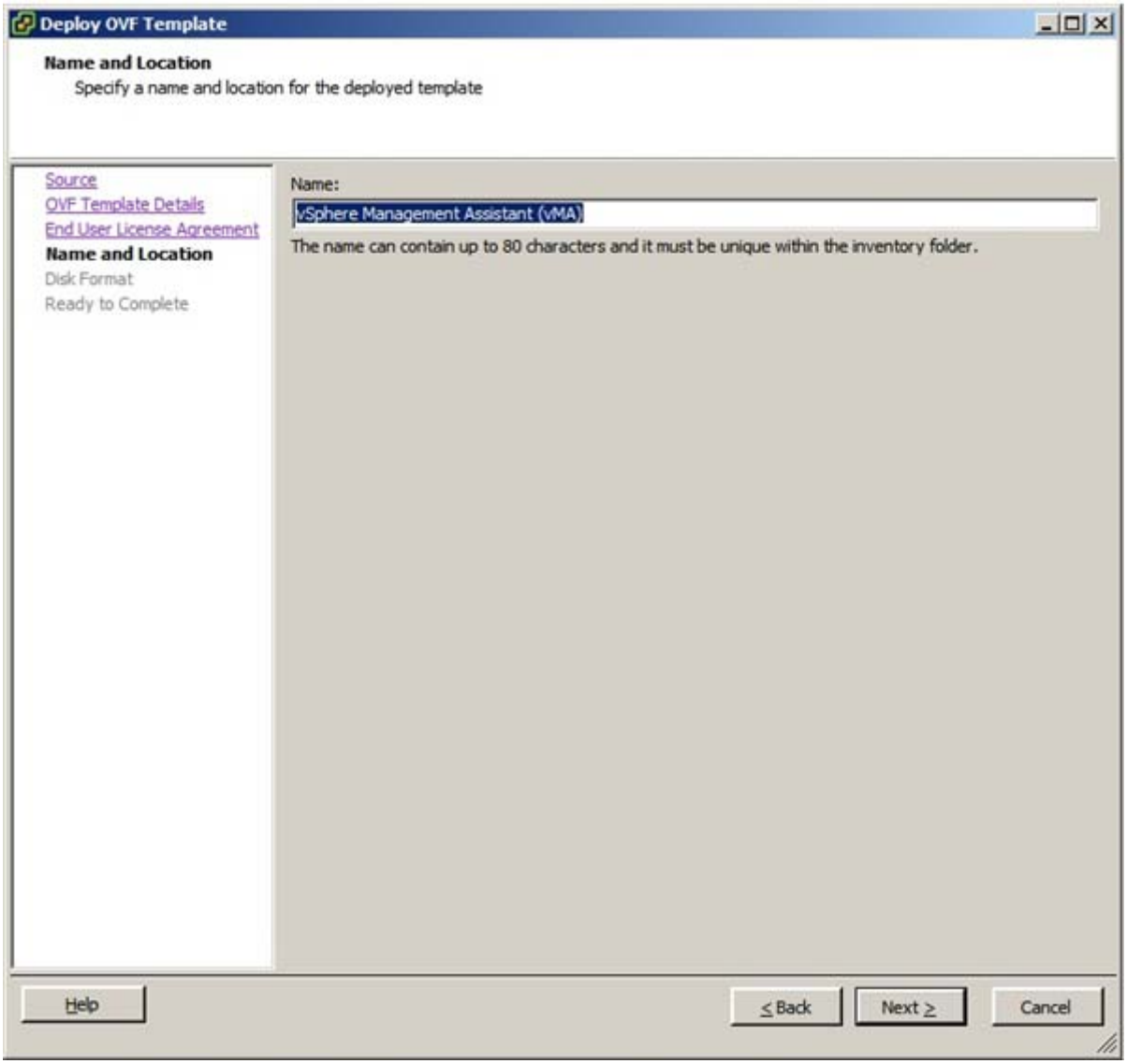


5. The vMA and OVF details are displayed. Click the Next button.

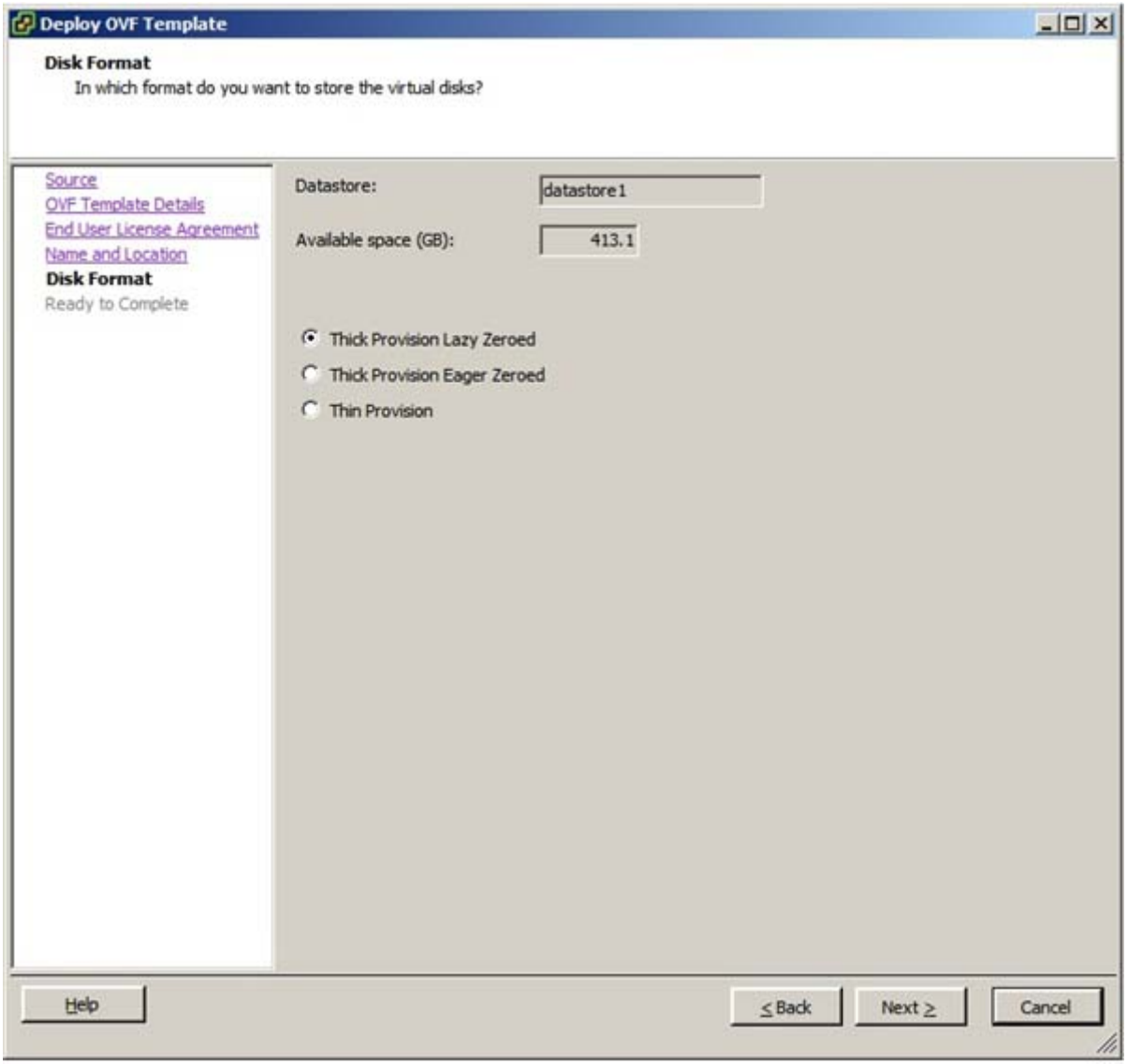


6. When the End User Licence Agreement (EULA) is displayed, click **Accept** and then Next.

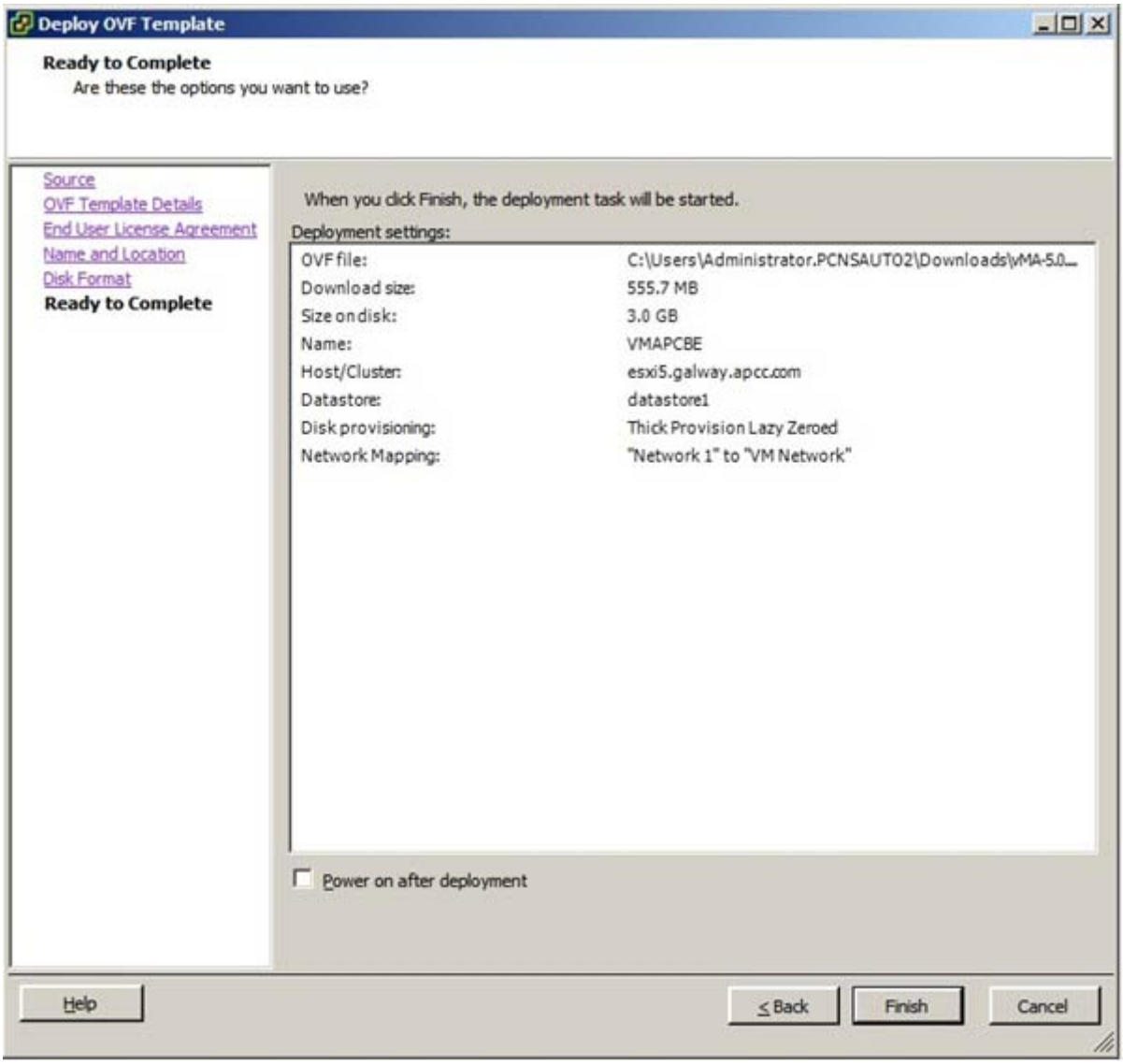
7. Accept the default vMA name (and location) or enter alternatives, and click Next.



8. At **Disk Format**, choose the default disk layout option by clicking Next.



9. The options you have chosen display again, click **Finish**.



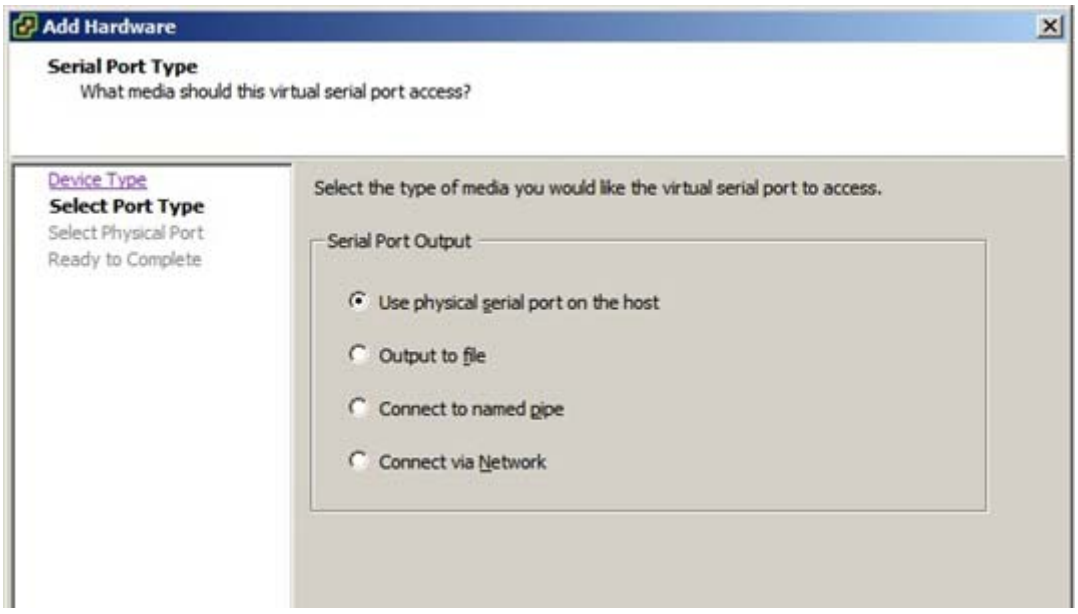
The vMA software is now installed, and it should be displaying in the left-hand pane.

10. Select the installed vMA in the left-hand pane.
11. Click on the **Getting Started** tab along the top of the screen and choose Edit Virtual Machine Settings in the right-hand pane.
12. In the Virtual Machine dialog, click the **Add**... button on the hardware tab.

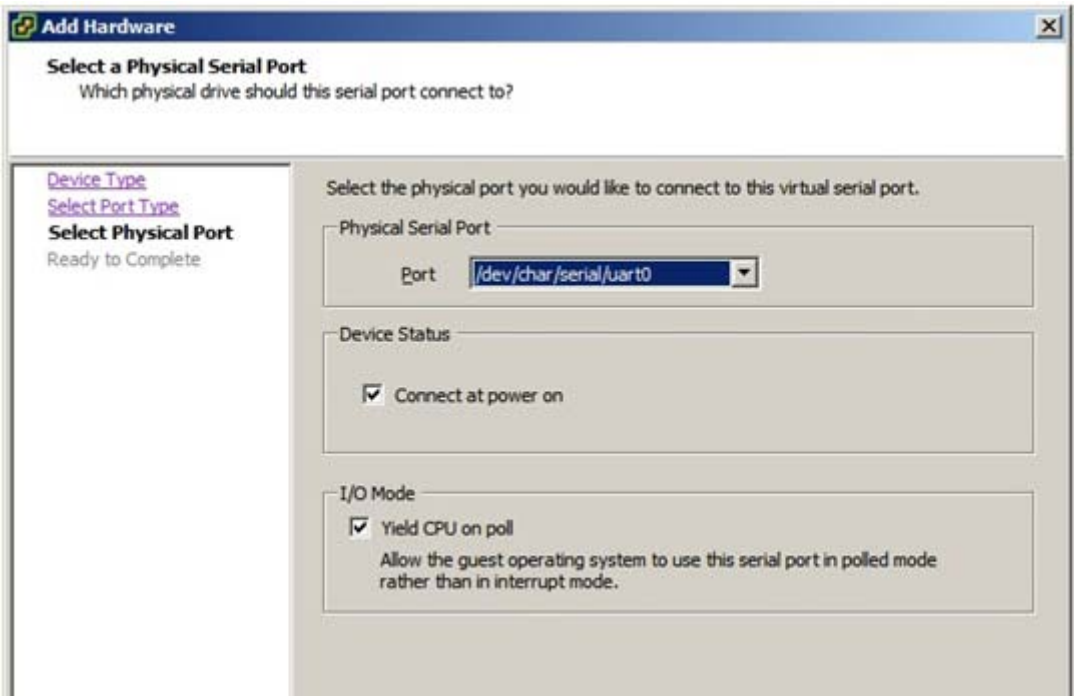
    This launches the **Add Hardware** wizard.

13. Select **Serial Port**, as the type of device to add and click Next:

14. Under Serial port type, select **User physical serial port on the host** and click Next:



15. Select your physical serial port from the drop down list, enable the option **Connect at Power on** and enable the option **Yield CPU on poll**. Click Next.



16. Click **Finish** and then click OK to finish adding the new serial port.

17. Power on the vMA virtual machine – follow the instructions on configuring IP address, setting vi-admin password etc.

18. Use WinSCP (Windows Secure CoPy) to copy the PowerChute Business Edition Agent installation directory to vMA. (WinSCP is available for free on the Internet).

    Note: With vMA 5 you cannot connect to vMA using SSH (required for SCP transfer) by default even though sshd is running. To allow access you need to edit /etc/hosts.allow and add this line below (otherwise the ssh connection will be refused).

    ```
    sshd : ALL : ALLOW
    ```

    You have two alternatives to using the WinSCP software.

    i. You can **map a network drive** by
    first creating a new folder, e.g. “share” where the network drive will be mapped:

    ```
    sudo mkdir /mnt/share
    ```

    then mounting the network share:

    ```
    sudo mount -t cifs //<server name or share name> /mnt/share -o
    username=<user name>,password=<password>
    ```

    For example:

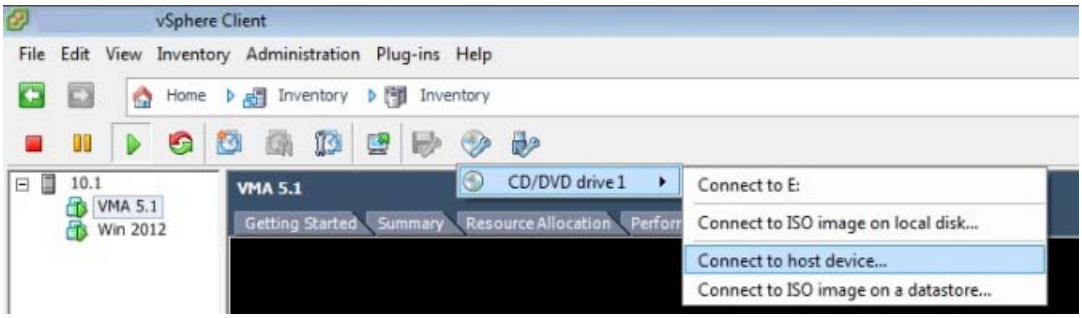
    ```
    sudo mount -t cifs //11.111.111.111/public /mnt/share -o
    username=mmmftp,password=rrrftp
    ```

    ii. Or you can **mount the CD**: *
    first create the directory if it does not already exist, then mount it.

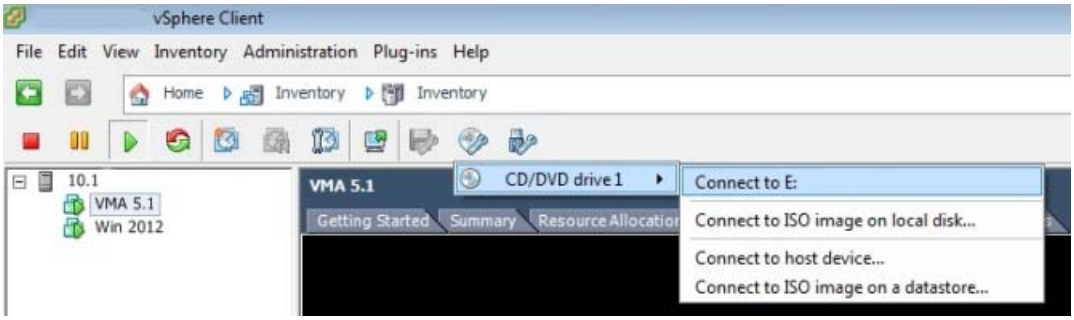
    ```
    sudo mkdir /mnt/cdrom
    sudo mount -o ro /dev/cdrom /mnt/cdrom
    ```

    * Prior to mounting the CD, you must edit the **CD/DVD Drive** (specifically its **Device Status** and **Device Type**) in the VM settings.

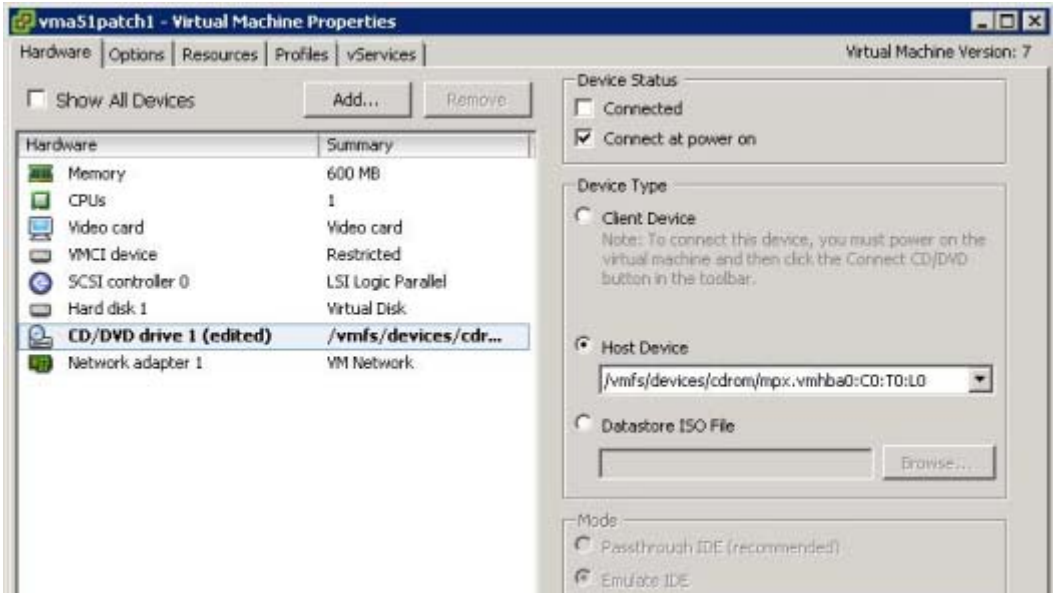
If you're inserting the CD in the host drive, select the relevant vMA in the left pane of vSphere Client, and click on the CD icon on the toolbar and select **Connect to host device**.



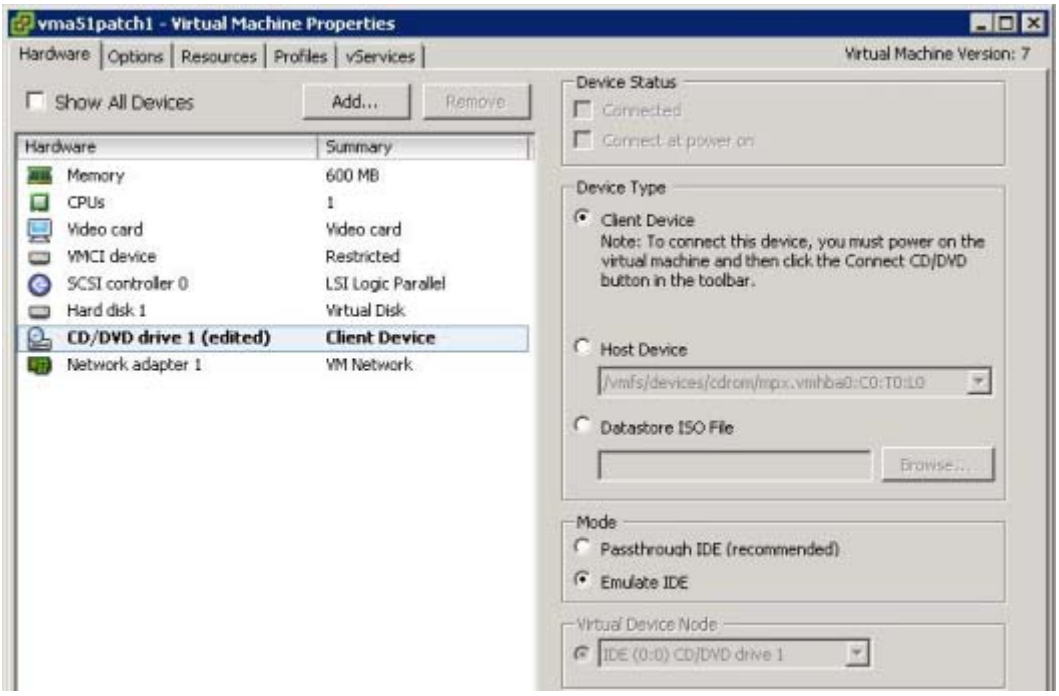
If you're inserting the CD in the client drive, select the relevant vMA in the left pane of vSphere Client, and click on the CD icon on the toolbar and select **Connect to <drive, e.g. E>**.



See graphic below for when the CD/DVD is placed in the CD drive of the ESXi host:



and this illustration below for when the CD/DVD is placed in the CD drive of a machine running vSphere client (a Windows or a Linux machine):

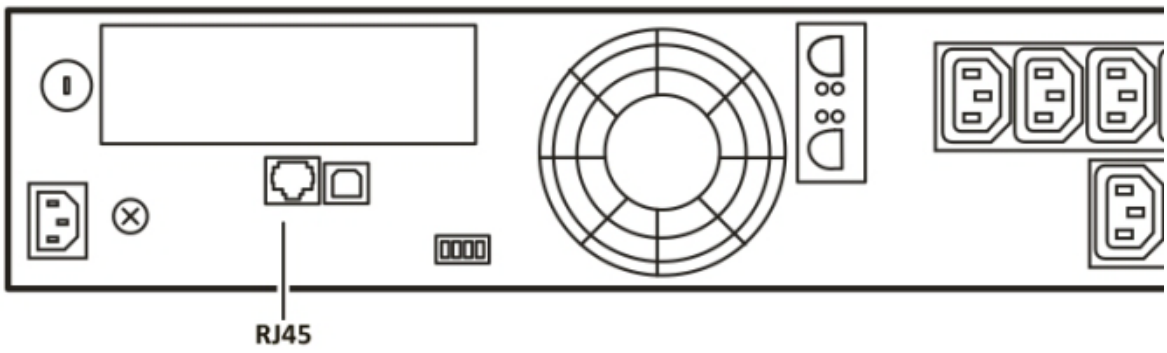


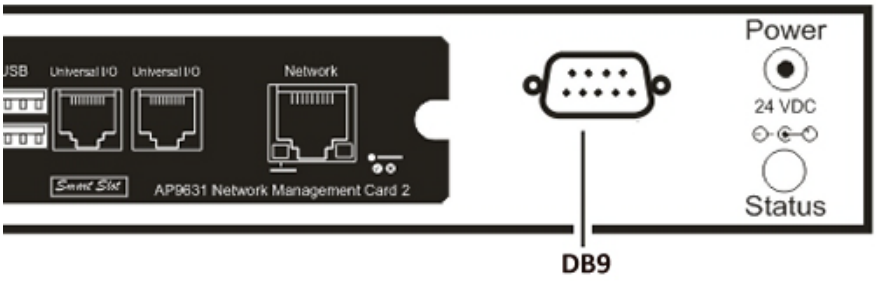
19. Start the installation with this command:
    `sudo ./install_pbeagent_linux.sh`

    You can find this script in the Linux directory off the root of your CD, or on the website.

20. On the following screen, answer the questions that determine which PowerChute Agent is suitable for your system.

    See the graphics below for illustrations of RJ45 and DB9 ports.





21. Enter a username and password, and a communications port.

    If you are using PowerChute Server or PowerChute Console to manage your Agents, then use the same values here as for those components.

22. On the following screen, check that the signal type and the communications port are correct.

23. In order to shut down the ESXi host using vMA, it must be added as a fastpass target. To do this, add the ESXi Host IP when prompted.

24. Choose whether to start the Agent immediately. Your installation is complete.

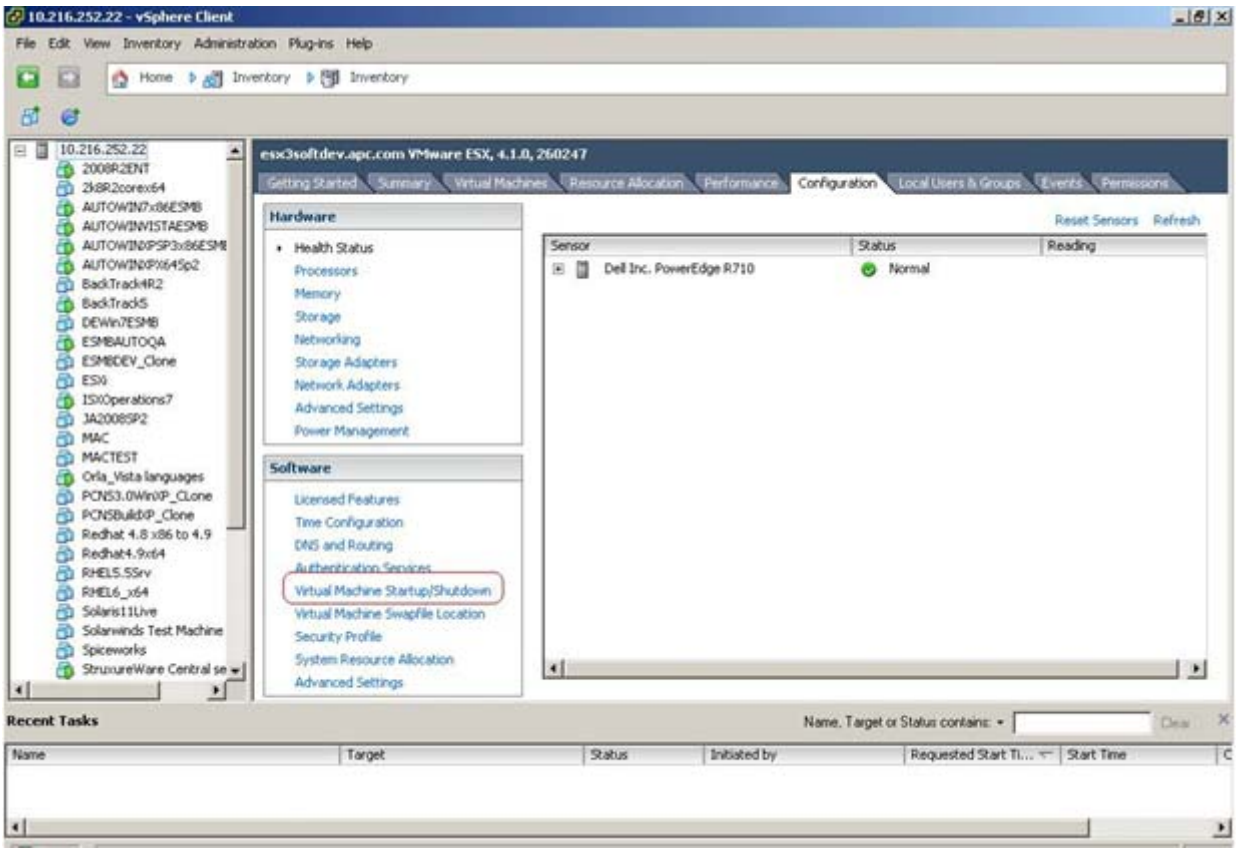
25. Confirm that the ESXi host has been added as a target server using the following command:

    ```
    sudo vifp listservers
    ```

    Note: To launch the Agent after installation, type one of the following in your browser:
    http://<vMA IP address>:3052
    https://<vMA IP address>:6547

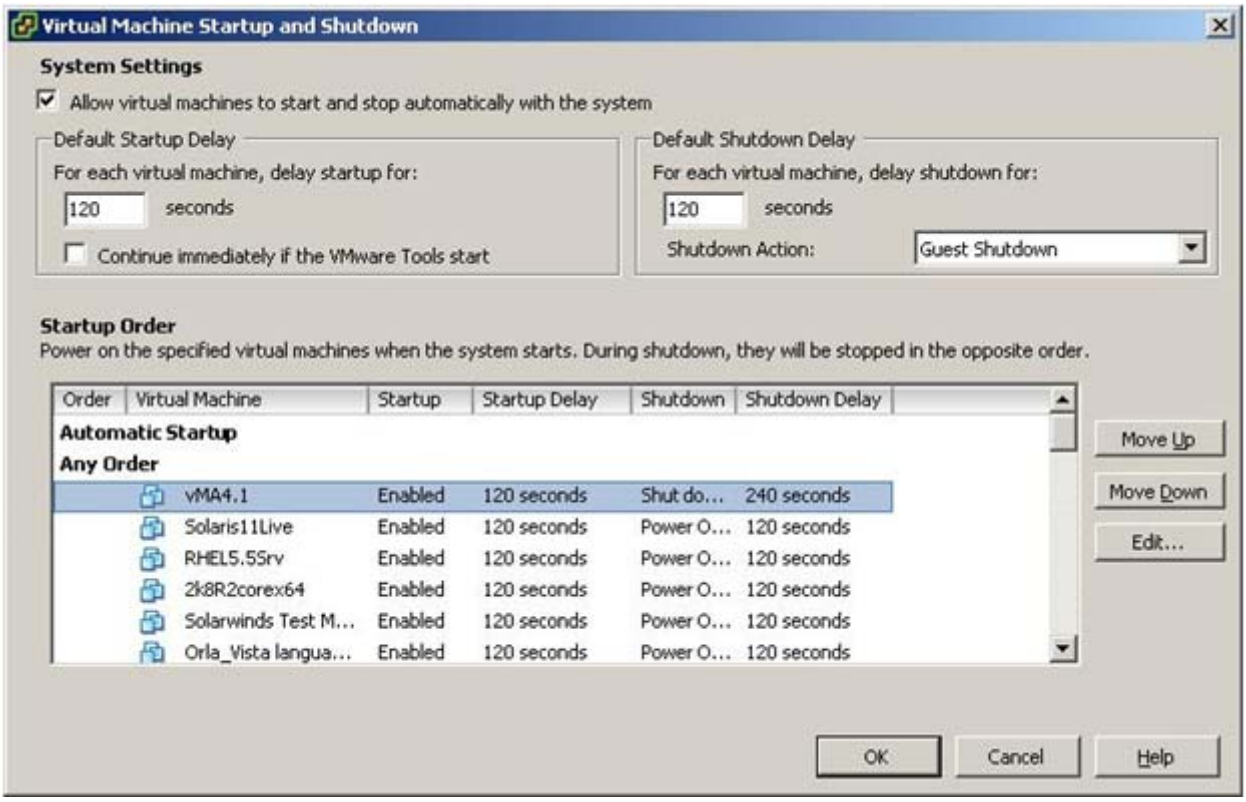
26. In order to ensure safe shutdown of the VMs running on the ESXi server you need to install VMWare tools on each VM. To do this right click on the VM in vSphere Client and select Guest - Install/Upgrade VMWare Tools.

27. Additionally you need to set Virtual Machine shutdown options. To do this select the ESXi host in VSphere and go to the Configuration tab. In the Software section select Virtual Machine Startup/Shutdown:



28. Click on **Properties** in top right corner.
29. Enable the check box **Allow virtual machines to start and stop automatically with the system**.
30. Set the shutdown delay (default 120 seconds) and set the shutdown action to **Guest shutdown**.

31. Select VMs listed under **Manual Startup** and use the **Move Up** button to move them to the section **Any order** or **Automatic Startup**. To prevent machines from starting up automatically move them back down to Manual startup section:



It is possible that your virtual machine might not shut down or might not shut down safely. This issue is recognized by the VMware company. Please refer to the workaround published by VMware (KB Article 1008182) on their Web site .

Configuring and Running ESXi

See the sections below to fully configure ESXi to facilitate using PowerChute Business Edition.

Fastpass Target

In order to shut down an ESXi host using vMA, you must add the ESXi server as a fastpass target for that vMA.

1. Use the command:
   `vifp addserver <hostname/ IP address of ESXi host>`.
2. When prompted, enter the root password for the ESXi host.
3. Confirm that the ESXi host has been added as a target server with this command:
   `vifp listservers`.

   Note: You are prompted to add the ESXi server during the installation. If you skipped this step or are doing a silent installation, you must manually add the ESXi server as a target host after the installation completes.

You can add additional ESXi hosts for shutdown if required by using the `sudo vifpaddserver` command.

See vSphere Management Assistant for further information on adding a target server to VIMA.

VMware Tools

You must have an installation of VMware Tools for each guest operating system on VMware. This ensures safe shut down of the virtual machines (VM) running on the ESXi server.

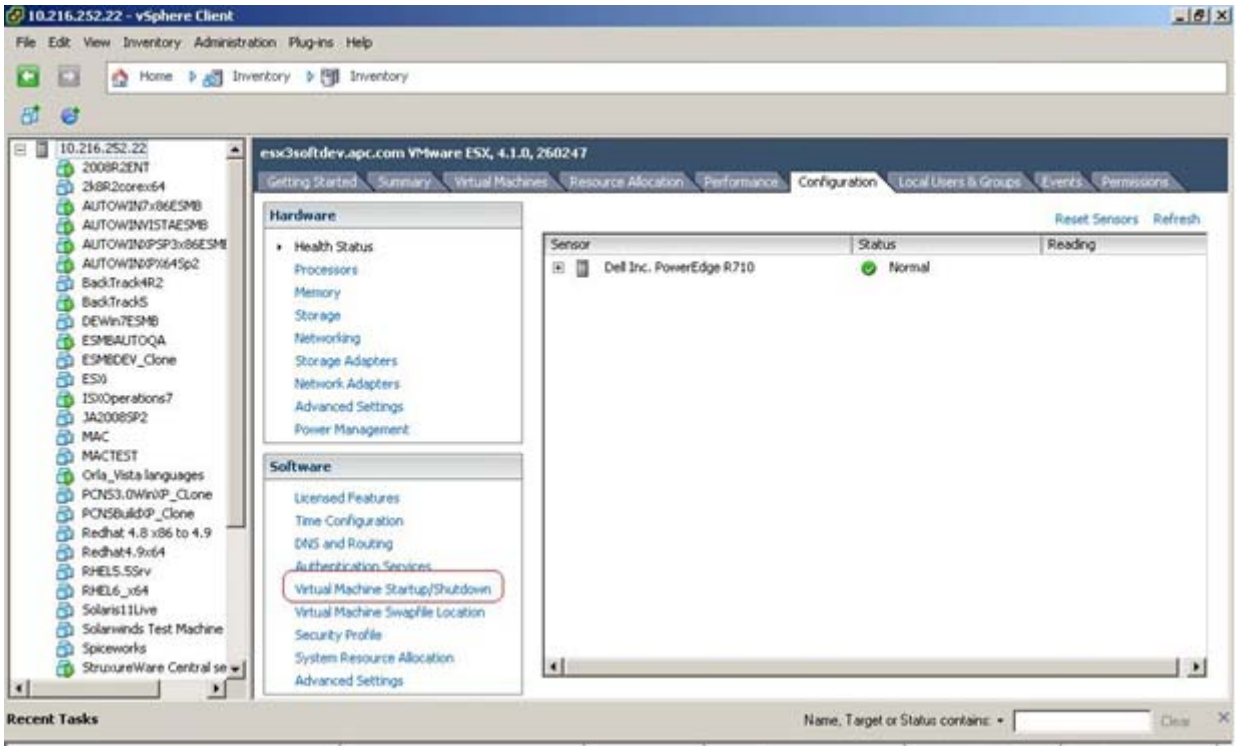
To install the VMware Tools, right-click on the VM in vSphere Client, and select **Guest** - **Install/ Upgrade VMWare Tools**.

For additional information, consult your ESXi documentation.

VM Shutdown Options

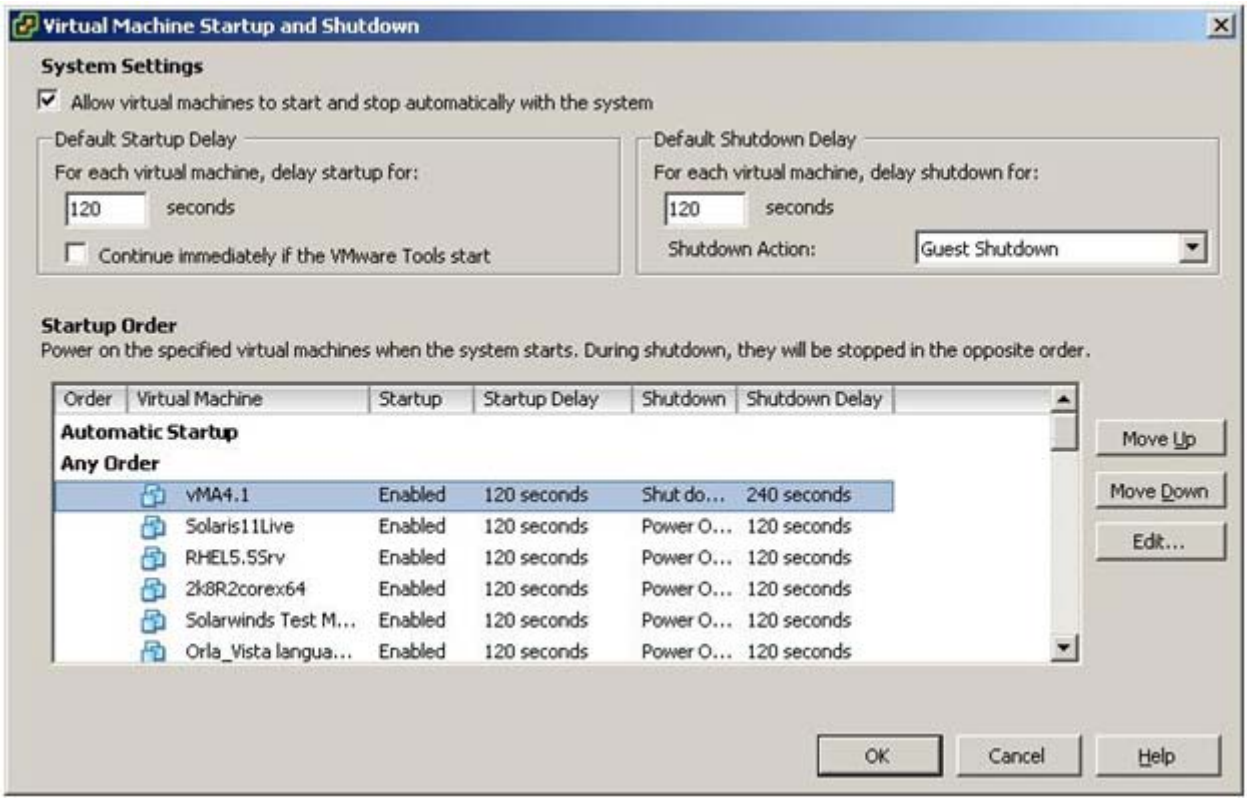
You need to set the virtual machine (VM) shutdown options.

1. Select the ESXi host in VSphere Client and choose the **Configuration** tab.
2. In the **Software** pane, select **Virtual Machine Startup/Shutdown**.



3. Click on **Properties** in the top-right corner.

4. Select the check box **Allow virtual machines to start and stop automatically with the system**.



5. Set the shutdown delay (which has a default of 120 seconds), and set the shutdown action to **Guest Shutdown**.
6. You can move VMs from **Manual Startup** to **Any order** or **Automatic Startup**, by selecting the VM and using the **Move Up** button.
7. To prevent machines from starting up automatically, move them under **Manual startup** by using the **Move Down** button.

It is possible that your virtual machine might not shut down or might not shut down safely. This issue is recognized by the VMware company. Please refer to the workaround published by VMware (KB Article 1008182) on their Web site .

vMotion

For ESXi, you can use DRS (Distributed Resource Scheduler) to disable a PowerChute vMA from automatically being vMotioned.

Alternatively, you can put the vMA on local storage (such as a local SCSI disk using the Disk/LUN option) so that it cannot be vMotioned.

You must not vMotion the PowerChute vMA manually.

Starting and Stopping

Use the commands below to stop and start PowerChute Business Edition on ESXi.

To stop PowerChute, type the following at the command line:

```
sudo /etc/rc.d/init.d/PBEAgent stop
```

To start PowerChute manually, type the following at the command line:

```
sudo /etc/rc.d/init.d/PBEAgent start
```

Uninstalling

To uninstall, type the following command:

```
sudo rpm -e pbeagent
```