
Applications Note

VMware Online Data Migration Service Using the iSR6200

Products Affected

QLogic Storage Router	Part Number
iSR6240	6240-C12-X
iSR6250	6250-C12-X
iSR6260	6260-C12-X

1 Introduction

This document describes the verification steps required to successfully insert a QLogic iSR6200 Series Intelligent Storage Router in the data path of a VMware server that is used to perform I/O operations on LUNs that must be migrated online to another storage array. It also covers the post migration steps required to fully utilize the

additional space resulting from data migration to a larger LUN.

For details on the configuration and zoning changes required to introduce the router in the data path, refer to the *Data Migration Service for iSR6200 User's Guide*.

2 Verifying Original Multi-Pathing Configuration

Follow these steps to verify the original multi-pathing configuration (see [Figure 2-1](#)):

1. In the vSphere Client, click the **Configuration** tab.
2. In the left pane under **Hardware**, click **Storage**, and then in the right pane, click **Devices**.
3. Select the device, and then click **Manage Paths**.
4. On the Manage Paths dialog box, verify the available paths and their status for each device.

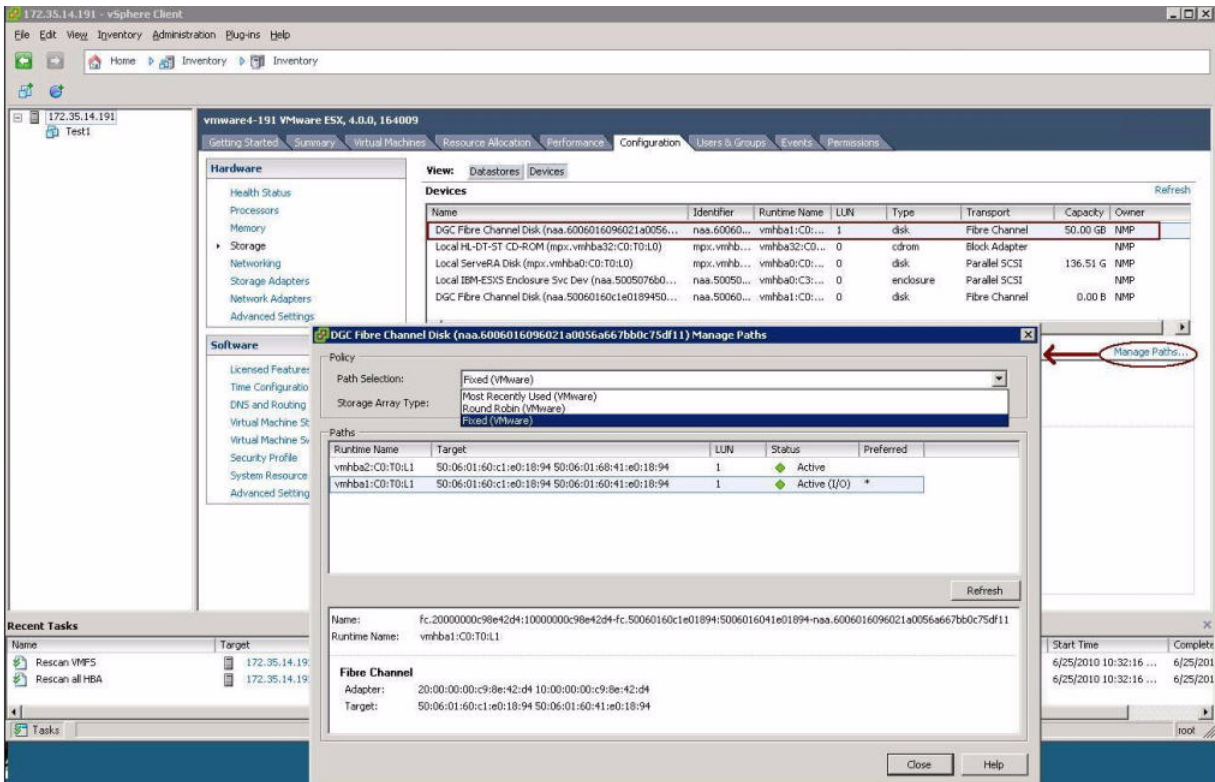


Figure 2-1. Verifying Original Multi-Pathing Configuration

3 Inserting the Router in the Data Path

Follow these steps to insert the iSR6200 in the data path:

1. Remove the first direct path from the controller port (for example, Port A) by zoning out the first direct path from the Fibre Channel switch. The path should disappear from the Manage Paths dialog box shown in Figure 2-1.
2. Add the first router path for the removed controller port (for example, Port A) by zoning the target map and host ports. The new path should appear in the Manage Paths dialog box.
3. Remove the second direct path from the controller port (for example, Port B) by zoning out the second direct path from the Fibre Channel switch. To confirm that the path has been removed from the path list on the Manage Paths dialog box, click **Refresh**.
4. Add the second router path for the removed controller port (for example, Port B) by zoning the target map and host ports. The new path should appear in the Manage Paths dialog box.

4 Presenting Destination LUNs on VMware ESX 3.5

After data migration is complete and the destination LUN is ready, follow these steps. This example uses the source LUN as the data storage on which virtual machines are installed. The destination LUN has a larger capacity to show how to expand the data storage after migration.

NOTE:

- Do not remove the virtual machine from the inventory ([Step 2](#)) if the virtual machine is the only accessible machine.
- The following procedure is specific to ESX 3.5. For VMware ESX 4.0, see [“Presenting Destination LUNs on VMware ESX 4.0”](#) on page 5.

1. Zone the destination LUN with the VMware host and re-scan the host to show the destination LUN online on the host (see [Figure 4-1](#)).

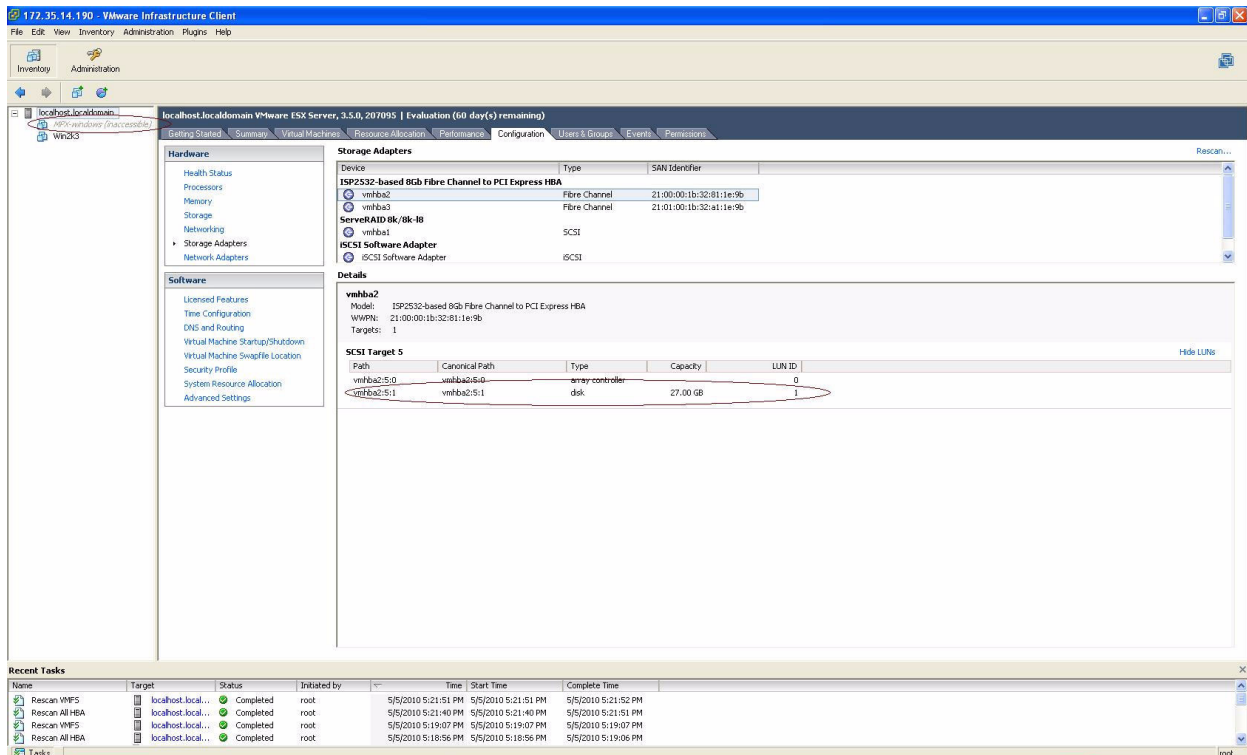


Figure 4-1. Zoning the Destination LUN (ESX 3.5)

2. In the VMware Infrastructure Client, access the Inventory page. Right-click the name of the inaccessible virtual machine, and then on the shortcut menu, click **Remove from Inventory**. (Do not remove accessible virtual machines from the inventory.)
3. In the VMware Infrastructure Client, select the host and then follow these steps:
 - a. Click the **Configuration** tab.
 - b. On the Configuration page under **Software**, click **Advanced Settings**.
 - c. On the Advanced Settings dialog box, expand the **VMkernel** node, and then click **LVM**.
 - d. In the **LVM EnableResignature** box, change the value from 0 (zero, the default) to **1**, and then click **OK**.
4. In the VMware Infrastructure Client, click **Refresh** to view the new data storage on the host on both the Configuration and Summary pages.

5. Repeat [Step 3](#) and change the **LVM EnableResignature** value back to **0**.
6. Optional. Rename the new data storage as follows:
 - a. On the Configuration page, right-click the data storage, and then on the shortcut menu, click **Rename**.
 - b. Type a new name for the data storage, and then press ENTER.
7. Optional. If the destination data storage has more capacity than the source, maximize the size as follows:
 - a. On the Configuration page, right-click the data storage, and then on the shortcut menu, click **Properties**.
 - b. On the data storage Properties dialog box under **Extents**, click **Add Extent**.
- c. Complete the Add Extent wizard as follows:
 - On the Extent Device window, select a device, and then click **Next**.
 - On the Current Disk Layout window, review the current disk setup, and then click **Next**.
 - On the Extent Size window, select the **Maximum capacity** check box, and then click **Next**.
 - On the Ready to Complete window ([Figure 4-2](#)), verify that the selected extent device is configured correctly, and then click **Finish**.

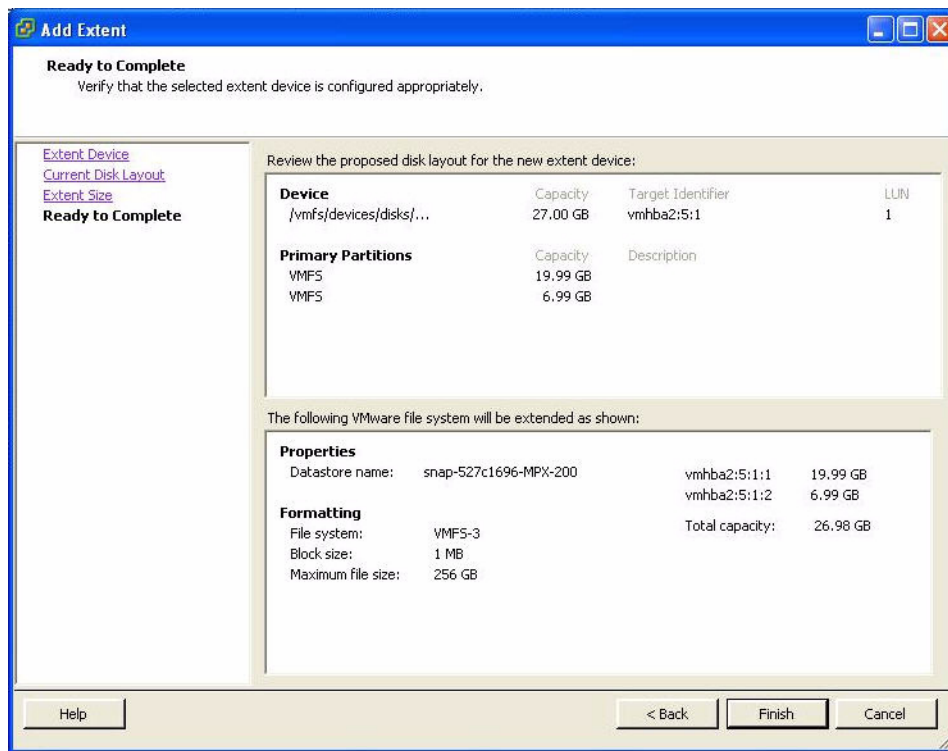


Figure 4-2. Completed Add Extent Wizard (ESX 3.5)

8. Make the virtual machine available to the VMware host as follows:
 - a. On the Configuration page under **Storage**, right-click the destination data storage, and

then on the shortcut menu, click **Browse Datastore**.

- b. On the Datastore Browser dialog box, right-click the **filename.vmx** (virtual machine) file, and then on the shortcut menu, click **Add to Inventory**.
- c. On the Add to Inventory Wizard, confirm the virtual machine name, and then click **Next**.
- d. Review the summary information, and then click **Finish**.

The virtual machine is now available to the VMware host and ready to use.

9. Create a universally unique identifier (UUID) as follows:
 - a. When you reboot the new virtual machine for the first time after the migration, the system prompts you to create a new UUID. By default, the **Keep** option is selected.
 - b. To create a UUID, change the **Keep** option to **Create**.

5 Presenting Destination LUNs on VMware ESX 4.0

After data migration is complete and the destination LUN is ready, follow these steps. This example uses the source LUN as the data storage on which virtual machines are installed. The destination LUN has a larger capacity to show how to expand the data storage after migration.

NOTE:

- Do not remove the virtual machine from the inventory ([Step 8 on page 7](#)) if the virtual machine is the only accessible machine.
- The following procedure is specific to ESX 4.0. For VMware ESX 3.5, see [“Presenting Destination LUNs on VMware ESX 3.5” on page 2](#).

1. Zone the destination LUN with the VMware host and re-scan the host to show the destination LUN online on the host (see Figure 5-1).

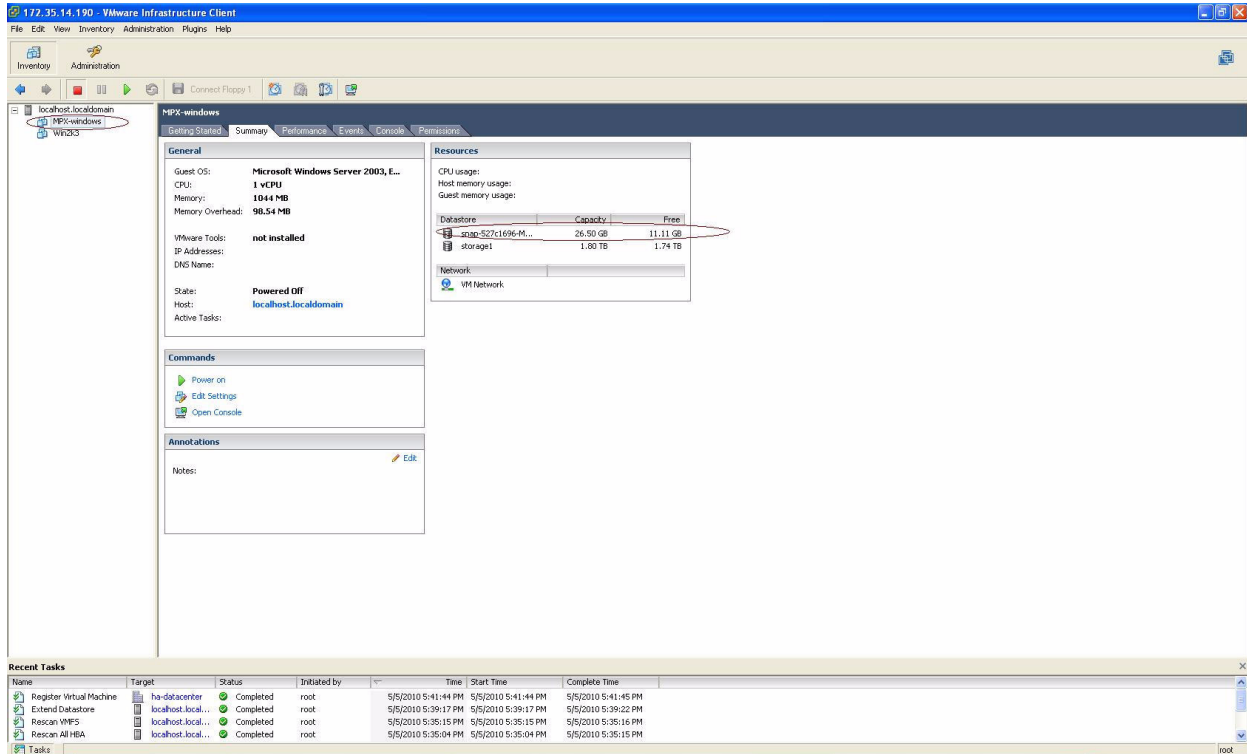


Figure 5-1. Zoning the Destination LUN (ESX 4.0)

2. In the vSphere Client, select the host in the left pane, and then click the **Configuration** tab.
3. On the Configuration page, click **Add Storage**.
4. Complete the Add Storage wizard as follows:
 - a. On the Select Storage Type window, click **Disk/LUN**, and then click **Next**.
 - b. On the Select Disk/LUN window, select a LUN, and then click **Next**.
 - c. On the Select VMFS Mount Options window, click **Assign a new signature**, and then click **Next**.
 - d. On the Current Disk Layout window, click **Use 'Free space'**, and then click **Next**.
 - e. On the Ready to Complete window, review the disk layout, and then click **Finish** to add this new storage.
5. In the vSphere Client, click **Refresh** to view the new data storage on the host on both the Configuration and Summary pages.

The virtual machine installed on the source data storage shows as “inaccessible.”

 - a. On the Configuration page, right-click the data storage, and then on the shortcut menu, click **Rename**.
 - b. Type a new name for the data storage, and then press ENTER.

7. Optional. If the destination data storage has more capacity than the source, maximize the size as follows:
 - a. On the Configuration page, right-click the data storage, and then on the shortcut menu, click **Properties**.
 - b. On the device Properties dialog box under **Volume Properties**, click **Increase**.
 - c. Complete the Increase Datastore Capacity wizard as follows:
 - On the Extent Device window, select a device, and then click **Next**.
 - On the Current Disk Layout window, review the current disk layout and available expansion space, and then click **Next**.
 - On the Extent Size window, increase the capacity of the selected disk to either the maximum or intermediate size.
 - On the Ready to Complete window, review your changes, and then click **Finish**.

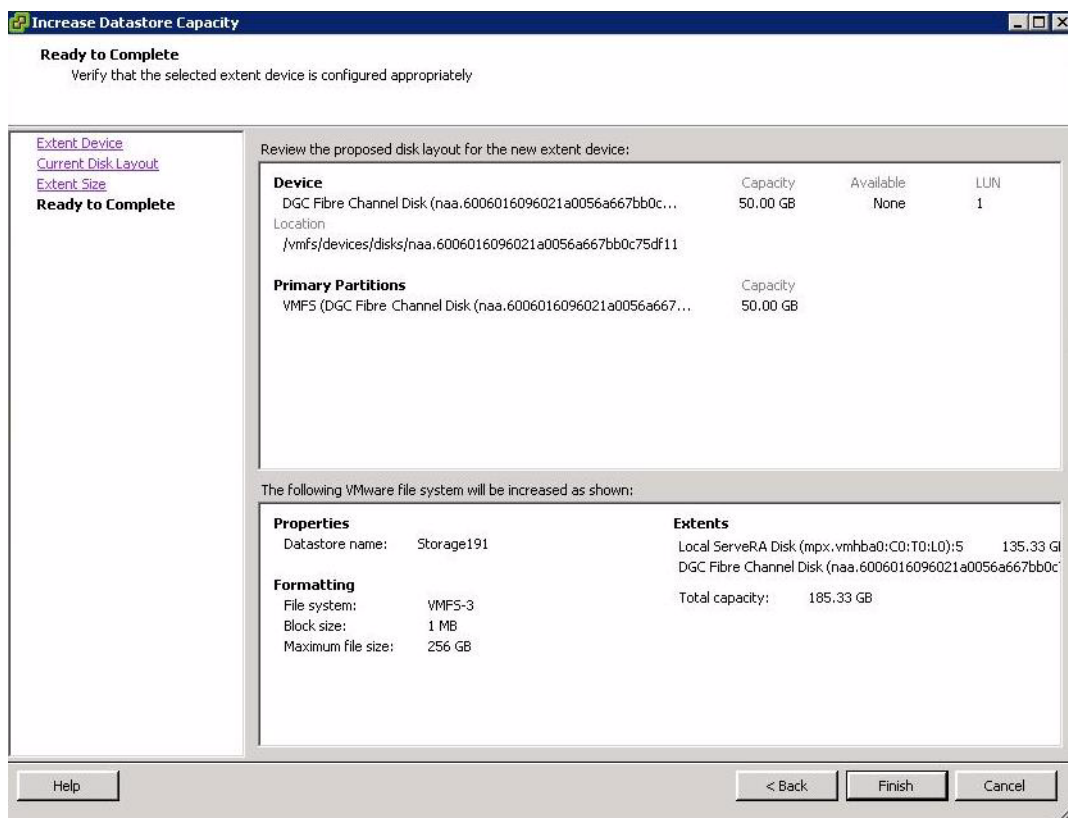


Figure 5-2. Increase Datastore Capacity Wizard (ESX 4.0)

8. Remove the “inaccessible” virtual machine from the VMware host inventory as follows:
 - a. On the vSphere Client dialog box in the left pane, select the “inaccessible” virtual machine.
 - b. Right-click the virtual machine, and then on the shortcut menu, click **Remove from Inventory**.
9. Add the new virtual machine as follows:
 - a. On the vSphere Client dialog box, click the **Summary** tab.
 - b. On the Summary page under **Datastores**, right-click the destination data storage, and then on the shortcut menu, click **Browse Datastore**.

- c. On the Datastore Browser dialog box, right-click the **filename.vmx** (virtual machine) file, and then on the shortcut menu, click **Add to Inventory**.
 - d. On the Add to Inventory wizard, confirm the virtual machine name, and then click **Next**.
 - e. On the Ready to Complete window, review the summary for the new virtual machine, and then click **Finish**.
- The virtual machine is now available to the VMware host and ready to use, as shown on the Summary page (Figure 5-3).

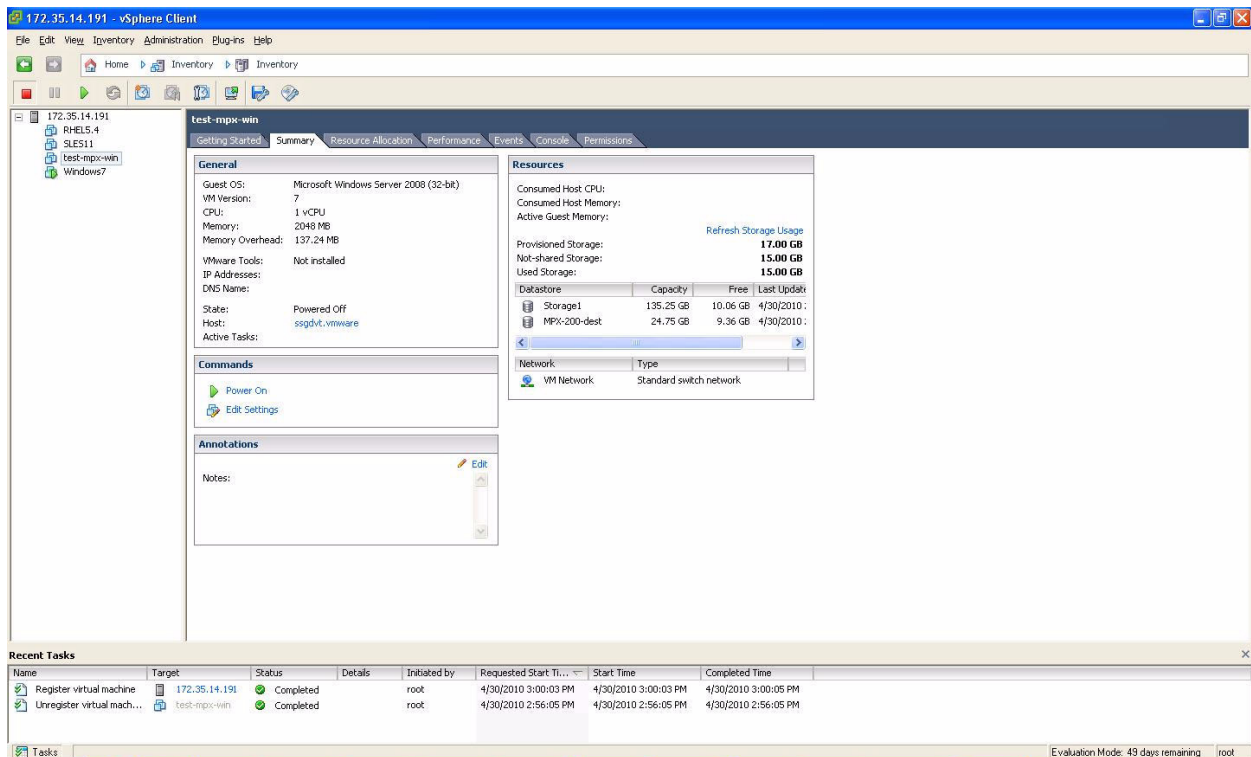


Figure 5-3. Virtual Machine Summary Page (ESX 4.0)

Document Revision History	
Revision A, July 15, 2010	
Changes	
Initial release of applications notes	