Protecting Microsoft SharePoint 2010 using Symantec NetBackup

Implementation Guide

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Microsoft Partner
Gold Server Platform
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Protecting Microsoft SharePoint 2010 using Symantec NetBackup

Implementation Guide

Follow these instructions to use Hitachi Virtual Storage Platform to implement Symantec NetBackup in a 200,000-seat Microsoft SharePoint 2010 farm. SAN-attached volumes on Hitachi Virtual Storage Platform provide NetBackup storage using SATA volumes.

This describes how to implement the environment found in Protecting Microsoft SharePoint 2010 on Hitachi Virtual Storage Platform with Symantec NetBackup Reference Architecture Guide.

The SharePoint farm environment implemented in this guide is the same as in Microsoft SharePoint 2010 with Hitachi RBS Provider Adapter Implementation Guide without the RBS components.

The naming conventions used in this document are from the Hitachi Data Systems lab. Adapt all object naming, such as SAN zones, machine names, and LUN names, to fit conventions used in your deployment environment.
Tested Solution Components

These are the major components used in this tested solution.

Hardware Components

Table 1 describes the hardware resources used in the SharePoint farm.

Table 1. Hardware Resources

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
</table>
| Hitachi Virtual Storage Platform| ▪ 4 × 8 Gb/sec Fibre Channel ports
▪ 69 GB cache memory
▪ 376 × 300 GB 10k RPM SAS drives
▪ 64 × 2 TB 7.2K RPM SATA drives | 1    |
| Hitachi Compute Blade 2000 chassis | ▪ 2 × 1/10 Gb/sec Ethernet switch modules                                           | 1    |
| Hitachi E55-A2 Server Blade     | ▪ 2 × Intel X5670 core processors
▪ 72 GB RAM
▪ 2 × 300 GB 10k RPM SAS hard drives
▪ 4-Port, 1 Gb/sec Ethernet Mezzanine card
▪ 2 × Hitachi GVX-CC2N8G2X1 2-port PCIe HBA Fibre Channel cards | 4    |
| Brocade 5340 SAN Switch         | ▪ 8 Gb/sec Fibre Channel ports                                              | 2    |
The physical server configuration of the SharePoint farm is in Figure 1.
Software Components

Table 2 shows the operating system and applications installed on each server blade.

Table 2. Server and Role Details for the Server Blades

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Virtual Machine</th>
<th>Installed Operating System</th>
<th>Applications and Roles Installed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blade 4</td>
<td>N/A</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SQL Server 2008 R2 Enterprise</td>
</tr>
<tr>
<td>Blade 5</td>
<td>LPAR 1</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>□ Microsoft SQL Server 2008 R2 Enterprise</td>
</tr>
<tr>
<td></td>
<td>LPAR 2</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Symantec NetBackup 7.1.0.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>□ Master server and media server</td>
</tr>
<tr>
<td>Blade 6</td>
<td>N/A</td>
<td>Microsoft Windows 2008 R2 Datacenter SP1</td>
<td>□ Microsoft Windows 2008 R2 Hyper-V</td>
</tr>
<tr>
<td></td>
<td>SP-WS01</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
<tr>
<td></td>
<td>SP-WS02</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
<tr>
<td></td>
<td>SP-WS03</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
<tr>
<td></td>
<td>SP-WS04</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
<tr>
<td>Blade 7</td>
<td>N/A</td>
<td>Microsoft Windows 2008 R2 Datacenter SP1</td>
<td>□ Microsoft Windows 2008 R2 Hyper-V</td>
</tr>
<tr>
<td></td>
<td>SP-WS05</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
<tr>
<td></td>
<td>SP-WS06</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
<tr>
<td></td>
<td>SP-WS07</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
<tr>
<td></td>
<td>SP-WS08</td>
<td>Microsoft Windows 2008 R2 Enterprise SP1</td>
<td>□ Microsoft SharePoint 2010</td>
</tr>
</tbody>
</table>

Note—Microsoft SharePoint 2010 requires the support of an Active Directory environment. In production environments, join the servers to the existing Active Directory domain before the installation of any components of Microsoft SQL Server and Microsoft SharePoint.
Solution Implementation

These instructions assume the previous installation and connection of all hardware.

To deploy this NetBackup for Microsoft SharePoint Server 2010 solution, follow these steps:

1. “Configure Fabric Switch Zones” on page 5
2. “Configure Hitachi Virtual Storage Platform” on page 5
3. “Prepare the Server Operating System for NetBackup” on page 8
4. “Install NetBackup” on page 8
5. “Configure NetBackup Backup Policies” on page 9
6. “Manually Run Backups” on page 15

Configure Fabric Switch Zones

Configure zones on your fabric switches according to the manufacturer’s guidelines, following these recommended practices:

- Use world wide port name (WWPN) identification for all zoning configuration.
- Connect a minimum of two HBAs per server for multipath high availability.
- Disable all unused switch ports to increase security.
- Configure ports for point-to-point topology.
- Set ports to a specific speed. Do not use the auto negotiate setting.
- Use single initiator zoning.

Table 3 has the Fibre Channel fabric zoning details used in the Hitachi Data Systems lab environment. Alter the server names and switch zone names to the standards in your environment.

<table>
<thead>
<tr>
<th>Server</th>
<th>HBA Ports</th>
<th>Switch Zone</th>
<th>Storage Port</th>
<th>Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-NBU</td>
<td>HBA1-1</td>
<td>BS2K_01_B5_L2_HBA1_1_ASE45_36_1D</td>
<td>1D</td>
<td>5300-01</td>
</tr>
<tr>
<td>SP-NBU</td>
<td>HBA2-2</td>
<td>BS2K_01_B5_L2_HBA2_2_ASE45_36_6D</td>
<td>6D</td>
<td>5300-02</td>
</tr>
</tbody>
</table>
Configure Hitachi Virtual Storage Platform

This is the storage architecture used for the NetBackup storage volume. Because 95% of the writes by NetBackup to backup storage is in a continuous stream, SATA volumes make an ideal choice for backup data.

This document uses Hitachi Storage Navigator as the interface to manage Hitachi Virtual Storage Platform. The specific configuration dictates pool sizing and arrangement of available parity groups on Virtual Storage Platform.

Dynamic Provisioning Pool Details
Symantec NetBackup uses a single LU from a 7.7 TB dynamic provisioning pool. Details about the SharePoint farm pools are contained in Microsoft SharePoint Component Configuration Information.

Table 4 provides details on the pool configuration.

<table>
<thead>
<tr>
<th>Dynamic Provisioning Pool Name (ID)</th>
<th>RAID Group Config.</th>
<th>Drive Type</th>
<th>Number of RAID Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-NBU (34)</td>
<td>RAID-5 (7D+1P)</td>
<td>2 TB 7.2k RPM SATA</td>
<td>3</td>
</tr>
</tbody>
</table>

Launch Hitachi Storage Navigator
To launch Hitachi Storage Navigator, do the following.

1. Open Microsoft Internet Explorer.
2. Type the following in the address bar:
   http://<SVP IP ADDRESS> /
3. Log on to the SVP console.
The Hitachi Storage Navigator console opens.

The links to the wizards referred to in this guide are located on the General Tasks pane in the main window.
Create Dynamic Provisioning Pool

Follow these steps to create the dynamic provisioning pool.

1. Open the Create Pools Wizard.
   
   (1) From the Explorer panel, click **Pools**. The right panel shows previously configured pools on the storage system.
   
   (2) At the bottom of that window, click **Create Pools**.

2. Add one or more LDEVs to a dynamic provisioning pool.
   
   (1) From the **Pool Type** list, click **Dynamic Provisioning**.
   
   (2) Click **Select Pool VOLs**. The **Select Pool VOLs** dialog box opens.
   
   (3) In the new dialog box, click the column heading **Drive Type/RPM** to sort the LDEVS.
   
   (4) Select one or more LDEV to add them to the pool.
   
   (5) Click **OK**.

   The **Select Pool VOLs** window closes. Return to the Create Pools wizard.

3. Check the quantity of the pool volumes and pool size numbers under **Select Pool VOLs**.

4. Name and set other details for the dynamic provisioning pool.
   
   - Type a prefix for the pool name in **Prefix**.

5. (Optional) Type the initial number for the first pool name in **Initial Number**.

6. Make the settings for the pool.
   
   (1) Expand the **Options** area.
   
   (2) Type the ID in **Pool ID**.
   
   (3) Assign a subscription limit in **Subscription Limit**.

   This sets the percentage of oversubscription allowed for this pool in your environment.

   (4) Click a value from the **User-Defined Threshold** list and then click **Add**.

   The value in **User-Defined Threshold** determines when to trigger a pool capacity alert.

   The **Selected Pools** pane shows each pool being created.

   (5) Click **Finish**.

   The **Create Pools** dialog box opens.
(6) (Optional) From the **Create Pools** dialog box, click **Next** to start the following:

- The creation of LDEVs within the pool. See “Create LDEVs Within the Pools” on page 18.
- The selection of the host groups to assign the LDEVs. See “Create Host Groups” on page 19.

7. Click **Apply**.

**NetBackup LDEV Details**

The NetBackup backup volume is a single LDEV contained within the pool using the full capacity of the pool.

The LDEV is presented to the host, where you create the GPT partition and assign a drive letter. The volume is quick-formatted on the host with NTFS for the file system.

**Prepare the Server Operating System for NetBackup**

NetBackup runs on Windows 2008 R2. The recommendation is that the server chosen as the NetBackup host have 8 GB of RAM, four or more processors, and direct Fibre Channel connectivity.

To prepare the server operation system for NetBackup, do the following.

1. Install Windows 2008 R2 Enterprise edition and join it to the domain.
2. Run Windows update until the system is fully up to date.
3. Within the **Server Manager/Storage/Disk Management** menu do the following:

   (1) Locate the volume mapped from Virtual Storage Platform.

   (2) Create a GPT partition.

   (3) Assign a drive letter.

   (4) Quick-format the volume with NTFS.

4. Add the **Services for Network File System** role services on the following:

   - NetBackup server
   - SharePoint web front end servers
   - SharePoint search crawl server

This installs the **Client for NFS** and **Server for NFS** services on each system.
5. Open up the **Services** administrative tool on each server where you installed NFS and do the following:

   (1) Stop and disable the **Client for NFS** service on the NetBackup server.

   (2) Stop and disable the **Server for NFS** service on the other SharePoint systems.

**Install NetBackup**

Insert the NetBackup installation media. This can be from a zip file downloaded from Symantec.

To run the installer, do the following.

1. Right-click **Browser.exe** from the root of the **NetBackup_7.1_Win** folder.

   Figure 2 shows the browser window.

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**Figure 2**

![Symantec NetBackup(TM) for Windows DVD](image)

**Symantec NetBackup(TM) for Windows DVD**

Symantec NetBackup(TM) for Windows - from the leader in Windows data protection - the next generation backup and restore solution providing comprehensive, cost effective and certified protection for Microsoft Windows server environments.

Click the links on the left to access the various areas of this DVD.
2. Click the **Preinstallation** link, and then run **Local Environment Check**.

3. Verify that the report shows that the system is ready and then click **Finish** at the bottom of the report.

   The software returns you to the DVD browser window.

4. Click the **Installation** link.

   Figure 3 shows the Installation window.

5. Click **Server Software Installation** to start the installation wizard.

   Install the media server role on the server adjacent to the SharePoint farm.

   For further details, refer to *NetBackup Installation Guide for Windows*, included with the NetBackup 7.1 distribution.
6. After performing the server software installation on the NetBackup server, perform the client software installation.

   The machine names all the SharePoint web front-ends.

   Insert and then perform a push install of the search crawl server, the Active Directory domain controllers, and the SQL server from the NetBackup server.

   For further details, refer to the *NetBackup Installation Guide for Windows* included with the NetBackup 7.1 distribution.

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**Note**—After installation, install the patch for the latest revision of NetBackup. In your environment, apply the patch file to every NetBackup server and NetBackup client system before proceeding.

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### Configure NetBackup Backup Policies

Configure Symantec NetBackup from the *NetBackup Administration Console*. Symantec Support recommends setting the console on the master server to run as administrator.

To setup NetBackup and configure backup policies, do the following.

1. From the **Start** menu, right click the *NetBackup Administration Console*, and then click **Properties**.
2. On the **Properties** dialog box, click **Advanced**.
3. Select **Run as administrator**, and then click **OK**.
4. Click **OK** to close the **Properties** dialog box.

   Every time you launch the console, there is a request for administrative permission to run the application.
5. Open the **NetBackup Administration Console**.

Figure 4 shows the main screen of the console.

![NetBackup Administration Console](image)

5. Open the **NetBackup Administration Console**.

Figure 4 shows the main screen of the console.

6. Use the Getting Started wizard to do the following:
   - Arrange the basic setup of NetBackup
   - Configure a catalog backup policy. A catalog backup saves the NetBackup configuration.

Storage devices are tape drives and robots that the NetBackup media server addresses directly.
Configure the NetBackup Storage Unit

To configure the NetBackup storage unit, do the following:

1. From Windows Explorer, on the designated disk for NetBackup storage, create folders for each of these:
   - NetBackup catalog
   - SharePoint content
   - SharePoint administrative data
   - System volumes

2. Define the disk as a NetBackup storage unit.
   (1) In the NetBackup Administration Console, open the **NetBackup Management** branch in the left pane by clicking the plus symbol (➕).
   (2) Open the **Storage** subheading by clicking the plus symbol (➕).
   (3) Right-click **Storage Unit**, and then click **New Storage Unit**.
The **New Storage Unit** dialog box opens, as shown in Figure 5.

![New Storage Unit dialog box](image)

**Figure 5**

(4) Type the **Storage unit name** for NetBackup.

- **Suggestion**—Use a name that corresponds to the folder on the disk for each storage unit.

**Note**—NetBackup does not allow spaces in the name. If you want a space, use an underscore ( _) in its place.
(5) Do not change the following settings:

- **Storage unit type**—Disk
- **Disk Type**—BasicDisk
- **Media server**—Fully qualified domain name (FQDN) of the server

(6) In **Absolute pathname to directory**, enter the path to the folder on the disk.

(7) Set the **Maximum Concurrent Jobs** number to a number greater than one.

- Use an appropriate number of jobs for your environment.

3. Click **OK**.

   This saves the storage unit for later use.

**Configure the NetBackup SharePoint Backup Policies**

Create main backup policies for the following:

- SharePoint data
- SharePoint administration content

To create backup policies, do the following.

1. Under **NetBackup Management**, right-click **Policies** and then click **New Policy**.

2. Type a policy name, such as **SharePoint_Content**, and then clear **Use Backup Policy Configuration Wizard**.

3. Click **OK**.
The **Add New Policy** dialog box opens, as shown in Figure 6.

![Add New Policy - SharePoint_CDR_01-04](image)

**Figure 6**

4. Make settings on the **Attributes** tab.

   (1) In the top right area, select the following check boxes:
   - **Allow multiple data streams**
   - **Enable granular recovery**
   - **Go into effect at**, and enter a date and time when this policy is to go into effect

   (2) In the top left area, do the following:
   - For **Policy Type**, click **MS-SharePoint** from the list.
   - For **Policy storage**, click **SharePoint_Content** from the list.
5. Create a full backup schedule on the Schedules tab.

   (1) Click the Schedules tab.

   (2) Click New.

   The Add New Schedule dialog box opens, as shown in Figure 7.

   

   ![Add New Schedule - Policy NBU_Catalog_1](image)

   Figure 7

   (3) For Name, type Full Backup.

   (4) From the Type of backup list, click Full Backup.

   (5) From the Retention list, click 2 weeks (level 1).

   (6) For the Frequency option, set it to 1 Weeks.

   (7) Click OK.

   The dialog box closes with a full backup schedule item displaying for this policy,
6. Create a daily backup schedule on the **Schedules** tab.

   (1) Click the **Schedules** tab.

   (2) Click **New**.

   (3) For **Name**, type **Daily Backup**.

   (4) From the **Type of backup** list, click **Differential Incremental Backup**.

   (5) From the **Retention** list, click **2 weeks (level 1)**.

   (6) For the **Frequency** option, set it to **1 Days**.

   (7) Click **OK**.

   The dialog box closes with a daily schedule item displaying for this policy.

7. Set the clients for the backups.

   (1) Click the **Clients** tab.

   (2) Click **Add**.

   A new text box displays, as shown in Figure 8.

   ![Figure 8](image)

   (3) In the text box, type the FQDN for the search crawl server and then press Enter.

   NetBackup looks up the client machine. The operating system information populates to the right of the system name.

8. Create multiple backup policies.

   Recommended practice is to create several backup policies, with each policy covering only some of the content databases in the SharePoint farm. Create enough backup policies so each content database in the farm is in a backup policy. In addition, create a separate policy for the administrative databases. Schedule all policies to run concurrently to maximize NetBackup throughput.

   (1) Create a backup policy for content databases.

   i. Click the **Backup Selections** tab.

   ii. Click **New** to display a new text box.

   iii. Click the **Browse** button ( ) to open the **Browse** dialog box, as shown in Figure 9.
iv. On the **Browse** dialog box, in the left pane, open each content database branch as far as **SharePoint - 80** (see Figure 9). When you do this, the right pane shows the content databases in your farm.

v. Select one database.

vi. Click **OK**.

vii. Repeat these steps to add additional content databases to this backup policy.

(2) Repeat creating backup policies until each content database is in a backup policy.
(3) Follow the same steps used to create a content database to create a backup policy for administrative databases. Open the administrative databases from **Microsoft SharePoint Resources** in the left pane.

When done, there should be multiple policies to cover all of SharePoint content databases, and one policy to cover all of SharePoint administrative databases.

**Configure the Systems Backup Policies**

Create backup policies of the policy type **MS-Windows** to back up the drive C on every client machine. Selecting MS-Windows for the policy type changes the **Change Policy** dialog box, as shown in Figure 10.

![Figure 10](image-url)
For this policy type, select the following check boxes:

- **Bare Metal Restore**
- **Allow multiple data streams**
- **Enable granular recovery**

As with the backup policies created in “Configure NetBackup Backup Policies” on page 11, set a schedule for **Full Backups** to once a week and **Differential Incremental backup** to once a day.

On the **Clients** tab, choose one server in your farm for the backup.

After adding the client to the policy, you have the option to select the volumes to back up. Select drive C for the policy.

Create one policy for each system in the SharePoint farm.

**Configure the NetBackup Catalog Backup Policy**

To protect the NetBackup configuration catalog, do the following to create a catalog backup policy.

1. On the **NetBackup Administration Console**, click **NetBackup Management** to open it.
2. Right-click **Policies** and click **New Policy**.
3. Type a **Policy Name**, such as **NBU_Catalog**, and clear the **Use Backup Policy Configuration Wizard** check box.
4. Click **OK**.
The **Add New Policy** dialog box opens, as shown in Figure 11.

![Add New Policy dialog box](image)

**Figure 11**

5. **Follow these steps to create the NetBackup Catalog backup policy:**

   (1) From the **Policy Type** list, click **NBU-Catalog**.

   (2) From the **Policy storage** list, click **NBU_Catalog**.

   (3) Select the **Go into effect at** check box, and set a date and time for when this policy goes into effect.

   (4) Click the **Schedules** tab, and click **New**.
The **Add New Schedule** dialog box opens, as shown in Figure 12.

![Add New Schedule - Policy NBU_Catalog_1](image)

**Figure 12**

(5) Configure the new schedule.

- Type a **Name** for the new schedule.
- From the **Type of backup** list, click **Full Backup**.
- From the **Retention** list, click **2 weeks (level 1)**.
- For the **Frequency** option, choose **1 Days**.
- Click **OK**.

The window closes and a new schedule item displays for this policy.
6. Click the **Disaster Recovery** tab on the **Add New Policy** window. The dialog box changes, as shown in Figure 13.

![Change Policy - NBU_Catalog](image)

**Figure 13**

7. Configure the disaster recovery policy.

   1. Enter the path to the storage location on the backup disk for the catalog backups.
   2. Add each of the configured backup policies to the main window.
      - To add a policy, select a policy and then click **Add**.
   3. Click **OK**.
Manually Run Backups

After creating all the policies, do the following start each policy.

1. On the **NetBackup Administration Console**, open the **Policies** branch.

   All backup policies display, as shown in Figure 14.

![Figure 14](image-url)
2. Start each policy.
   (1) Right-click a policy in either pane.
   (2) Click **Manual Backup**.
      A dialog box displays.
   (3) Select the type of backup to perform and the client to backup.
      As this is the first run of the backup, do not change anything.
   (4) Click **OK**.
      The backup job starts.
3. Repeat to start each backup manually.
Microsoft SharePoint Component Configuration Information

This is how to configure Microsoft SharePoint components.

Create LDEVs Within the Pools

To create a LDEV, follow these steps.

1. Start creating the LDEV or LDEVs.
   (1) On the Explorer panel, select Pools.
   (2) Click the pool name in which to create one or more LDEVs.
   (3) Click Create LDEVs.

2. Enter the size of each LDEV and number of LDEVs to create.
   (1) Type a size for each LDEV to be created in LDEV Capacity.
   (2) Type the number of LDEVs to be created in Number of LDEVs.

3. Enter the prefix and starting number for the LDEVs.
   (1) Type a prefix for the LDEV or LDEVs that you are creating in Prefix.
       Use something descriptive, like SP-CDB-.
   (2) Type the starting number in Initial Number using two digits when creating more than one LDEV (for example, 01).
       This number increases by 1 for each LDEV created.

4. Set the pool number and starting number of the LDEV.
   (1) Expand the Options section under the LDEV Name section.
   (2) In the CU list, click the number of the pool that you are using (for example, 30).
       Use the pool ID to identify the source pool for the LDEVs.
   (3) In the DEV list, click the starting number of the LDEV that you are creating.
       You cannot create more than one LDEV with the same CU:DEV combination.

5. Click Add. The created LDEV or LDEVs populate the Selected LDEVs column.

6. Click Finish, and then click Apply.
Create Host Groups

Enable port security on the Hitachi Virtual Server Platform ports used for this solution before creating host groups.

To create a host group using Hitachi Storage Navigator, follow these steps.

1. Start the Create Host Groups Wizard.
   
   (1) From the Explorer panel, click Ports/Host Groups.
   
   (2) At the bottom of the Storage Systems panel, click Create Host Groups.

   The Create Host Groups wizard opens.

2. Type a name for the group in **Host Group Name**.

3. From the **Host Mode** list, click **2C [Windows Extended]**.

4. In the **Available Hosts** area, select one or more hosts.

5. In the **Available Ports** pane, select one or more ports.

6. Click **Add**.

   The Selected Host Groups area populates with the selected port.

7. Click **Finish**.

   The Create Host Groups window opens.

8. Click **Apply**.
For More Information

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