

Checklist for setting up virtualization for Power Systems

Use this checklist to set up a virtualized environment that includes the following components:

- Power Systems compute nodes
- Ethernet I/O modules (switches)
- Fibre Channel I/O modules (switches)
- IBM Storwize V7000

Prerequisites:

Make sure that you have met the following requirements before you complete the steps listed in this checklist:

- You are working with one IBM Flex System Manager Enterprise chassis that contains the following components:
 - An IBM Flex System Manager management node. The manage node can be installed in a different chassis. However, it must be configured and managing this chassis.
 - One or more Power Systems compute nodes with Virtual I/O Server (VIOS) deployed
 - One or more Ethernet I/O modules, such as the IBM Flex System EN2092 1Gb Ethernet Scalable Switch or the IBM Flex System Fabric EN4093 and EN4093R 10Gb Scalable Switches.
 - One or more Fibre Channel I/O modules, such as the IBM Flex System FC3171 8Gb SAN switch or the IBM Flex System FC5022 16Gb SAN Scalable switch

For more information about installing components in a chassis and configuring those components, see the following quick start guides:

- *Installing the IBM Flex System Enterprise Chassis*
- *Configuring components of the IBM Flex System Enterprise Chassis*
- *Configuring the IBM Flex System Manager management node*
- *Selecting one or more chassis to be managed in the IBM Flex Systems Manager domain*

	What to do	Steps
Set up the compute nodes and I/O modules (switches) to support virtualization		
□	1. Verify that a shared Ethernet adapter (SEA) on each Virtual I/O Server that owns a physical Ethernet adapter.	<p>The SEA connects the physical Ethernet network to your virtual Ethernet network(s). The SEA hosted in the Virtual I/O Server acts as a layer-2 bridge between the internal and external network.</p> <p>To verify that the adapter has been created, sign on to the VIOS using the padmin user account and run the following command:</p> <pre>\$ lsmap -all -net</pre> <p>Make sure that at least one SEA is configured.</p> <p>If you need to create a shared Ethernet adapter on each Virtual I/O Server, perform the steps listed at this topic:</p> <p>Information Center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.psm.resources.doc/vs/sdmc_vs-creating_sea_for_vios_vs.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System information → Management devices and solutions → IBM Flex System Manager management node → Managing compute nodes → Managing Power Systems compute nodes → Managing system resources with the management software → Virtual servers → Configuring virtual resources for virtual servers → Creating a shared Ethernet adapter for a VIOS virtual server using the IBM Flex System Manager management software</p>

	What to do	Steps
<input type="checkbox"/>	2. Perform switch configuration for both the Ethernet and the Fibre Channel switches.	<p>For Ethernet switches and virtual LANs (VLANs), zoning can vary based on network administrator preferences for Ethernet and virtual LANs (VLANs). This is done from the Ethernet switch element manager.</p> <p>For SAN switches, zoning can vary based on storage administrator preferences. This is done from the interface for the SAN switch element manager.</p> <p>The documentation for the switches that are supported in the IBM Flex System environment is available at this location:</p> <p>In the Information Center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.networkdevices.doc/network_iomodule.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System→Network devices→Network Switches</p>
Configure IBM Storwize V7000 SAN Storage		
<input type="checkbox"/>	3. Discover the IBM Storwize V7000 storage resources and the SAN switches	See the <i>Discovering IBM Storwize V7000 storage resources</i> quick start guide.
<input type="checkbox"/>	4. If you are adding a new Power Systems compute node to an existing chassis, run the cfgdev command on Virtual I/O Servers that will be serving storage I/O to virtual servers.	<p>Sign on to the VIOS using the padmin userid and run the following command:</p> <pre>\$ cfgdev</pre> <p>This command will find all of the storage that is being served up by the IBM Storwize V7000.</p> <p>Information about the cfgdev command is available at this location:</p> <p>Power Systems information center (Internet): http://pic.dhe.ibm.com/infocenter/powersys/v3r1m5/topic/p7hcg/cfgdev.htm</p>

	What to do	Steps
□	5. Create the host and storage pool on the IBM Storwize V7000 using the V7000 management interface.	<p>During creation of the host you will list the WWPN of each fibre channel adapter (HBA) on the Power Systems nodes.</p> <p>IBM Redbook (Internet): Implementing the IBM Storwize V7000 V6.3</p>
Collect inventory on compute nodes and virtual servers		
□	6. Collect inventory on each Virtual I/O Server that was discovered.	<p>Inventory should be collected against the virtual server object representing the VIOS on the IBM Flex System Manager console.</p> <p>Run the collect inventory task from the IBM Flex System Manager management interface.</p> <p>Information Center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.discovery.helps.doc/fqm0_t_collecting_inventory.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System information → Management devices and solutions → IBM Flex System Manager management node → Managing all resources → Discovering systems and collecting inventory data → Collecting and viewing inventory data → Collecting inventory</p> <p>To verify when inventory was last collected for the Virtual I/O Server, select the virtual server object for the VIOS on the IBM Flex System Manager interface, and then select Inventory --> View and Collect Inventory. Then, click View report. The box in the upper left corner shows a Last collected date. This indicates when inventory was last collected by the user. However, the information does not indicate if errors occurred during inventory collection.</p> <p>To verify that the inventory collection completed successfully, you can select Inventory --> Virtual Configuration --> Storage Pool data. The list of hdisks that represent the storage volumes on the VIOS should be displayed.</p> <p>Verify that Virtual I/O Server (VIOS) release 2.2.1.4 is installed on each Power Systems compute node that you plan to virtualize</p>

	What to do	Steps
<input type="checkbox"/>	7. Collect inventory on all Power Systems compute nodes (Power CECs)	<p>Use the collectinv command or Inventory task in the IBM Flex System Manager interface.</p> <p>Internet information center: http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.discovery.helps.doc/fqm0_t_collecting_inventory.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System information→ Management devices and solutions→ IBM Flex System Manager management node→ Managing all resources→ Discovering systems and collecting inventory data→ Collecting and viewing inventory data→ Collecting inventory</p>
<input type="checkbox"/>	8. Collect inventory on all virtual servers that were discovered during the inventory of the compute nodes.	<p>Once the compute node inventory completes you see any existing virtual servers in resource explorer views. You can use the Virtual servers and hosts view on the IBM Flex System Manager interface to see the virtual servers that require inventory.</p> <p>Use the collectinv command or Inventory task in the IBM Flex System Manager interface.</p> <p>In the information center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.discovery.helps.doc/fqm0_t_collecting_inventory.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System information→ Management devices and solutions→ IBM Flex System Manager management node→ Managing all resources→ Discovering systems and collecting inventory data→ Collecting and viewing inventory data→ Collecting inventory</p>

	What to do	Steps
Collect inventory on SAN Storage		
<input type="checkbox"/>	<p>9. Collect inventory on the storage farm. This will collect inventory on both the storage and the switch.</p>	<p>In the IBM Flex System Manager interface:</p> <ol style="list-style-type: none"> 1. Go to resource explorer 2. Select All systems 3. Locate Farm under the Type column and then right click, select Inventory, and then run now 4. In the resource explorer, you should now see the Storwize V7000 device. The name will say Storwize V7000 and the type is Storage Array <p>In the information center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.discovery.helps.doc/fqm0_t_collecting_inventory.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System information → Management devices and solutions → IBM Flex System Manager management node → Managing all resources → Discovering systems and collecting inventory data → Collecting and viewing inventory data → Collecting inventory</p> <p>To verify the storage configuration and inventory using the <i>dumpstcfg</i> command. Make sure that:</p> <ul style="list-style-type: none"> ■ There is a host container (this is the key requirement) ■ Switches are displayed ■ At least one storage subsystem is displayed in the output <p>For more information about the <i>dumpstcfg</i> command, enter <code>smcli dumpstcfg --help</code> from a command line.</p>
<input type="checkbox"/>	<p>10. Choose the virtual server that will host the image repository. The image repository will reside on a Virtual I/O Server virtual server</p>	<p>Information Center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.vim.helps.doc/fsd0_vim_c_learnmore_repositories.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System information → Management devices and solutions → IBM Flex System Manager management node → Managing virtualized resources → VMControl → Managing virtual appliances and workloads → Creating and discovering image repositories</p>

	What to do	Steps
Set up an image repository for VMControl		
<input type="checkbox"/>	11. Create and discover your image repository	See the <i>Creating an image repository</i> quick start guide.
Capture virtual servers		

	What to do	Steps
□	<p>12. Capture an image based on an existing virtual server. Optionally you can import an existing virtual appliance from elsewhere in your environment. Either mechanism can be used to seed the image repository with a virtual appliance.</p>	<ol style="list-style-type: none"> 1. Ensure there is a virtual server running on one of the compute nodes. This virtual server will be captured into an image. Alternatively if you have an existing image elsewhere in your environment you can import that image into your image repository. 2. Perform discovery, request access, and inventory on the operating system of the virtual server that is to be captured. <p>Ensure that the capture requirements are met, including installation of the activation engine on the virtual server:</p> <p>Information Center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.vim.helps.doc/fsd0_vim_t_capturing_workloads.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System information → Management devices and solutions → IBM Flex System Manager management node → Managing virtualized resources → VMControl → Managing virtual appliances and workloads → Getting started with virtual appliances and workloads → Capturing a source to create a virtual appliance → Capturing a virtual server or workload to create a virtual appliance</p> <p>Information Center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.vim.helps.doc/fsd0_vim_t_importing_virtual_appliance_package.html</p> <p>The IBM Flex System product documentation is also available on the IBM Flex System Manager management node. To access the installed documentation, click Information Center from the IBM Flex System Manager Home page and then navigate to: IBM Flex System information → Management devices and solutions → IBM Flex System Manager management node → Managing virtualized resources → VMControl → Managing virtual appliances and workloads → Getting started with virtual appliances and workloads → Importing a virtual appliance package</p>