Checklist for setting up virtualization for KVM-based Systems

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

- X-Architecture compute nodes on which Linux Kernel-based Virtual Machine (KVM) virtual servers will be installed
- 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 X-Architecture compute nodes
  - 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*

- *The Red Hat Enterprise Linux Kernel-based Virtual Machine (KVM) hypervisor is installed on each of the X-Architecture compute nodes. See the Installing an operating system on an X-Architecture compute node quick start guide.*

  Note: You can deploy the hypervisor to multiple X-Architecture compute nodes from the IBM Flex System Manager management node using the

Deploy Compute Node Images task. More information about this option is available at:

Information Center (Internet):
http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.8731.doc/com.ibm.director.osdeployment_ngui.helps.doc/fsm_deploying_compute_node_images.html

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→Provisioning compute nodes from the management interface→Using the Deploy compute node images task to deploy operating systems

	What to do	Steps
Set up the compute nodes and I/O modules (switches) to support virtualization		
☐	1. Install the KVM platform agent. Note: If you used the Deploy Compute Node Images task from the IBM Flex System Manager to deploy the KVM hypervisor, you do not need to install the agent. The agent is installed during the deployment of the image. You can skip this step.	Install the KVM Platform Agent on all of the X-Architecture compute nodes that you plan to use in your virtualization environment. The Platform Agent enables the IBM Flex System Manager node to see these compute nodes as candidates for virtualization. Information about installing the KVM Platform Agent is available at this location: 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_installing_kvm_platform%20agent_on_linux_for_xseries.html 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→Installing VMControl→Installing VMControl agents and subagents→Installing and uninstalling KVM Platform Agent→Installing KVM Platform Agent

	What to do	Steps
☐	2. Perform switch configuration for both the Ethernet and the Fibre Channel switches.	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. For SAN switches, zoning can vary based on storage administrator preferences. This is done from the interface for the SAN switch element manager. The documentation for the switches that are supported in the IBM Flex System environment is available at this location: In the Information Center (Internet): http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.networkdevices.doc/network_iomodule.html 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
Configure IBM Storwize V7000 SAN Storage		
☐	3. Discover the IBM Storwize V7000 storage resources and the SAN switches	See the *Discovering IBM Storwize V7000 storage resources* quick start guide.
Discover and inventory compute nodes, KVM hosts, and guest operating systems		

	What to do	Steps
☐	4. Discover all KVM hosts and guest operating systems running on the KVM hosts **Note:** If you used the Deploy Compute Node Images task from the IBM Flex System Manager to deploy the KVM hypervisor, discovery of the KVM host occurs when the deployment of the image has completed.	The IBM Flex System Management node needs to discover all KVM hosts and guest operating systems. More information about discovering systems is available at this location: 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_discovering_systems_with_system_discovery.html 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→ Discovering systems with system discovery
☐	5. Collect inventory on KVM hosts **Note:** If you used the Deploy Compute Node Images task from the IBM Flex System Manager to deploy the KVM hypervisor, inventory of the KVM host occurs when the deployment of the image has completed.	Inventory should be collected for the compute node, KVM hosts, and guest operating systems. Information about collecting inventory is available at this location: 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 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
Collect inventory on SAN Storage		

	What to do	Steps
☐	6. Collect inventory on the storage farm. This will collect inventory on both the storage and the switch.	In the IBM Flex System Manager interface: 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 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 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 To verify the storage configuration and inventory using the *dumpstcfg* command. Make sure that: - There is a host container (this is the key requirement) - Switches are displayed - At least one storage subsystem is displayed in the output For more information about the dumpstcfg command, enter smcli dumpstcfg --help from a command line.
☐	7. Choose the X-Architecture server that will host the image repository.	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 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

	What to do	Steps
☐	8. Create and discover your image repository	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_kvm.html 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→Creating and discovering image repositories for KVM
Capture virtual servers		

	What to do	Steps
☐	9. 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.	**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. **3.** Ensure that the capture requirements are met, including installation of the activation engine on the virtual server: 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 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 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 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