

Managing images using VMControl and NIM

This quick start guides describes how to use an existing NIM server together with VMControl to help manage your virtualization environment.

Prerequisites:

Make sure that you have met the following prerequisites before you complete the steps in this quick start guide:

- An IBM Flex System Manager management node is installed in a chassis and is managing the devices in that chassis, which include one or more compute nodes and I/O modules. All devices have been discovered by the IBM Flex System Manager management node. For more information, 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 or Adding a chassis to an existing Flex System Manager management domain*
 - *Configuring network resources to support deployment and virtual server relocation*
- VMControl has been activated on the IBM Flex System Manager management node.
- An IBM Storwize v7000 storage system is available and accessible by the IBM Flex System Manager management node. For more information, see the *Discovering IBM Storwize V7000 storage resources* quick start guide.

Steps:

Refer to the following topic for reference as you complete the steps in this quick start guide:

In the 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_nim.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 AIX, IBM I, and Linux on Power Systems → Creating and discovering NIM image repositories for AIX

1. Install the NIM subagent on the NIM master:
 - a) Install all AIX prerequisites for the NIM agent installation using the information in the following topic:

Note: if you do not install the prerequisites, the installation of the subagent will fail.

In the 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_agent_NIM.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 re-sources→VMControl→Installing VMControl→Installing VMControl agents and sub-agents

b) Install the subagent using the information in the following topic:

In the 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_agent_wizard.html

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IBM Flex System information→Management devices and solutions→IBM Flex System Manager management node→ Managing virtualized re-sources→VMControl→Installing VMControl→Installing VMControl agents and subagents

If the subagent install fails, see the VMControl for Power Systems Using NIM Troubleshooting Guide on the IBM developerWorks site (Internet).

Additional information that may be useful for this step:

- [IBM Systems Director Common Agent Request Access Troubleshooting](#) on the IBM developerWorks site (Internet).
- [Common Agent versions shipped with AIX and VIOS](#) on the IBM developerWorks site (Internet).

2. Discover the NIM server as an image repository.

This step establishes a VMControl image repository on your NIM server. The image repository becomes the container or library for any NIM-based virtual appliances that you import or capture. Once you have completed this step you can import existing virtual appliances or you can capture new virtual appliances into your image repository.

The steps for completing this task are described in the following topic:

In the 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_nim.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 AIX, IBM i, and Linux on Power Systems→ Creating and discovering NIM image repositories for AIX

3. Capture an AIX virtual appliance.

You can easily create a virtual appliance by capturing an existing virtual server or capturing existing NIM resources into a virtual appliance in your NIM repository. You can then deploy multiple workloads (virtual servers) from a single virtual appliance image.

One or all of the following methods may be used to create a virtual appliance that can be deployed using VMControl's NIM support:

- Capture a running virtual server to create a new virtual appliance.

In the 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

- Capture a mkysb image on the NIM server to create a virtual appliance.

In the 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_image.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

- Capture an lpp_source resource or directory on the NIM server to create a virtual appliance.

In the 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_NIM_lpp_source.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

Additional information that might be useful for this step:

- Virtual appliances

In the 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_virtual_appliances.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→Overview of IBM Flex System Manager VMControl→Understanding the components of your environment→Virtual appliances

- Getting started with virtual appliances and workloads

In the 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_getting_started_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.

In the 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_source.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

4. Deploy a virtual appliance from your NIM repository to your Power Systems compute node. You can deploy multiple workloads (virtual servers) from a single virtual appliance image.

Note: This step assumes you have imported or captured a virtual appliance into your NIM-based image repository.

When you deploy a virtual appliance using VMControl:

- A virtual server is automatically created based on the virtual appliance metadata.
- A pre-provisioned SAN storage volume is attached to the virtual server or a newly allocated SAN storage volume is allocated and attached as the rootvg disk.
- The virtual server is set up such that the NIM server network boots the virtual server from the image on the NIM server.

The steps for completing this task are described in the following topic:

In the 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_deploying.html

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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 → Deploying a virtual appliance

The following topic might be useful for this step:

In the 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_r_power_deploy_reqs.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 → Planning for VMControl → Supported virtualization environments → Power Systems → Requirements and support for AIX using Network Installation Manager (NIM) → Deploy support and requirements in a NIM-based Power Systems virtualization environment

Additional information: Ways to capture or import NIM images into VMControl

What you have	How to get an image that can be deployed by VMControl
<p>You have an existing AIX virtual server (LPAR) in your environment that is reachable from the NIM Master and the IBM Flex System Manager node.</p>	<p>Capture from Server</p> <p>This captures the virtual server's existing hardware attributes and sets default network settings in the virtual appliance. The image and OVF are stored in VMControl's image repository on the NIM Master.</p> <p>Steps: (GUI, CLI or REST)</p> <ol style="list-style-type: none"> 1. Discover/access OperatingSystem object for LPAR. 2. From GUI: VMControl->Virtual Appliances->Capture Virtual Appliance, and select the virtual server to capture
<p>You have existing mksysb or lpp_source images on your NIM Master that are already managed by NIM.</p>	<p>Capture from mksysb or lpp_source resource</p> <p>This adds a reference to the resource in VMControl's image repository on the NIM Master.</p> <p>You can set the memory and processor values as capture attributes. Otherwise, VMControl uses default values.</p> <p>Steps: (CLI or REST only)</p> <ol style="list-style-type: none"> 1. From CLI: smcli lsrepos -o <==== list repositories as input for step 2 "repositoryOID". 2. From CLI: smcli captureva -r <repositoryOID> -n <va_name> -F repos:<mksysb_resource_name> -A <attrs> <p>For example:</p> <pre>smcli captureva -r 1234 -F repos:myFavoriteMksysbResource -n MyFavoriteVA -A "cpushare=2.1,memsize=4096"</pre> <p>Note: If you have many NIM resources, you could create a script that would run several captureva commands.</p>
<p>You have existing mksysb images or lpp_source directories on the NIM Master, that are not managed by NIM.</p>	<p>Capture from mksysb file or lpp_source directory</p> <p>Makes a copy of the mksysb or lpp_source in VMControl's image repository on the NIM Master and creates a NIM resource and OVF.</p> <p>You can set the memory and processor values as capture attributes. Otherwise, VMControl uses default values.</p>

What you have	How to get an image that can be deployed by VMControl
	<p>Steps: (CLI or REST only)</p> <ol style="list-style-type: none"> 1. From CLI: smcli lsrepos -o (list repositories) 2. From CLI: smcli captureva -r <repositoryOID> -n <va_name> -F re- pos:/<pathname> -A <attrs> <p>For example:</p> <pre>smcli captureva -r 1234 -F re- pos://images/nim/mksysb/favorite.mksysb -n MyFavoriteVA -A "cpushare=2.1,memsize=4096"</pre>
<p>You have existing virtual appliance (OVF + image) on the IBM Flex System Manager node or on the Internet.</p>	<p>Import virtual appliance Imports the OVF and image to the VMControl image repository on the NIM Master.</p> <p>Steps: (GUI, CLI or REST)</p> <ol style="list-style-type: none"> 1. From GUI: VMControl->Virtual Appliances->Import Virtual Appliance. Enter a filename or URL of OVF or OVA (tarfile containing OVF + image).