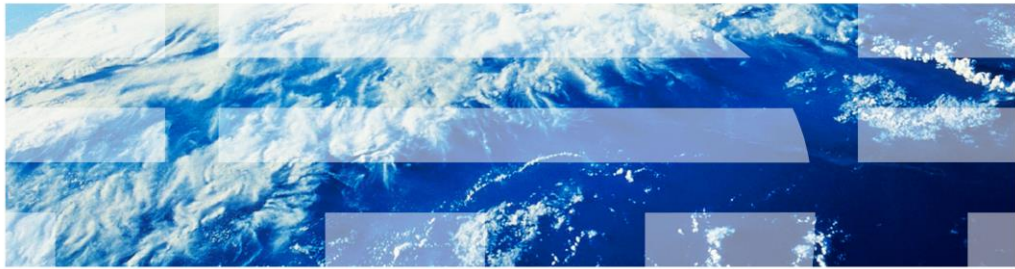

IBM Workload Deployer Appliance

Using PowerVM hypervisors



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This presentation describes how to set up your PowerVM™ hypervisors from within the IBM Workload Deployer Appliance to prepare for deploying virtual systems.

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The first section of the presentation covers how to set up the PowerVM cloud from within IBM Workload Deployer, including creating the cloud group and activating the hypervisors. The last section provides some tips for documentation that you should gather if you encounter any problems deploying virtual systems to your PowerVM hypervisors.

Using PowerVM Hypervisors

This section of the presentation describes how to use PowerVM hypervisors with IBM Workload Deployer.

Using PowerVM hypervisors

- To use a PowerVM hypervisor:
 - Define IP group to use with your PowerVM hypervisor
 - Create a PowerVM cloud group
 - Select the PowerVM IP group within your hypervisor
 - Select appropriate storage device within your hypervisor
 - Do not assign rootvg as a storage device
 - Start the hypervisor
 - Import PowerVM virtual images into your appliance catalog
 - Deploy patterns to your PowerVM cloud group

The first step to enabling your IBM Workload Deployer Appliance is to define the IP group that you intend to use with the PowerVM hypervisor. Now you are ready to create the PowerVM cloud group. When you create the cloud group, the appliance will automatically discover the related PowerVM hypervisor and add it to the cloud group. Then, you need to assign the PowerVM IP group to the PowerVM hypervisor. You then select the appropriate storage device for the hypervisor to use. Note that you must not assign the rootvg storage pool to the hypervisor as a storage device, although it displays in the list as a selectable device. Now you are ready to start the hypervisor. Before deploying any virtual systems, you must have PowerVM virtual images in your appliance catalog. If your appliance did not come with PowerVM images pre-installed, then you need to download the appropriate images from Passport Advantage and import them into your appliance catalog. Then, you are ready to deploy patterns into your PowerVM cloud group.

Creating a PowerVM cloud group (1 of 2)

1. From the appliance menu, select **Cloud > Cloud Groups**, then click the plus icon

2. Provide a cloud group name

3. Select **PowerVM** as the hypervisor type – the configuration menu then expands

The screenshot shows the 'Cloud Groups' configuration interface. A dropdown menu is open, showing options: Shared Services, System Plug-ins, Pattern Types, Platform Service Settings, Product Licenses, IP Groups, Cloud Groups (highlighted), Hypervisors, and Environment Profiles. The main form has the following fields:

- Name: PowerVM cloud group
- Description: For PowerVM deployments
- Hypervisor type: ESX (dropdown menu expanded to show ESX, PowerVM, and z/VM)
- Group type: (empty field)

Buttons: Create, Cancel

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Using PowerVM hypervisors

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In the PowerVM environment, when you create the cloud group, the PowerVM hypervisor is discovered and created automatically. To create a PowerVM cloud, click **Cloud** and select **Cloud Groups** in the IBM Workload Deployer administrative console. First, type the cloud name and optionally a description. In the pull down, select **PowerVM** as the hypervisor type. When you select the **PowerVM** hypervisor type, the remainder of the definition screen will dynamically change to allow you to type in the VMControl and operating system information.

Creating a PowerVM cloud group (2 of 2)

4. Provide the host name or IP address for VMControl – this is the same as the IP for Systems Director

5. Provide the credentials for VMControl

6. Provide the credentials for the operating system where Systems Director is running

Describe the cloud you want to create.

* Name:

Description:

* Hypervisor type:

Group type:

Provide the credentials for VMControl

4 * Host name:

5 * User name:

6 * Password:

* Verify password:

6

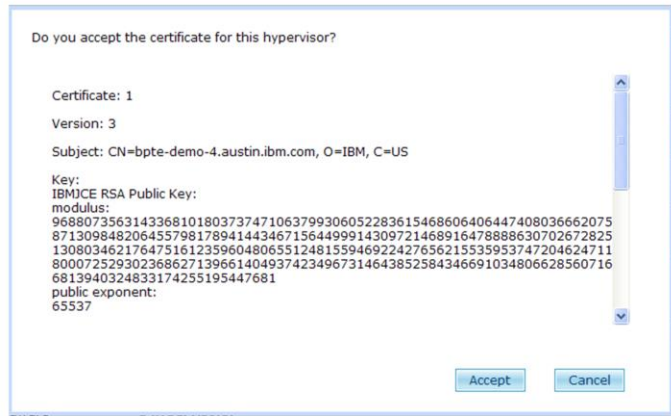
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After the cloud group configuration display expands, you need to provide information for connecting to VMControl and provide operating system credentials where VMControl is running. Type the IP address or host name for VMControl; this is the same IP or host name that is assigned to IBM Systems Director. Type the credentials for VMControl, which includes the user name and password, and the password verification. Then, provide the operating system credentials. Finally, click **Create**. The cloud group definition is saved, and the appliance launches the discovery process for the PowerVM hypervisors.









Hypervisor certificate

- Certificate request is issued before cloud group is created
- Click **Accept** to accept the hypervisor certificate



Immediately after you start the creation of your PowerVM cloud group, you see a certificate prompt to allow you to access VMControl. Accept the certificate to continue the discovery process.

PowerVM hypervisor discovery initiation

PowerVM cloud group 	
Description:	For PowerVM deployments 3
Created on:	Sep 17, 2011 10:16:51 AM
Type:	 Managed by a VMControl
Version:	
Current status:	Discovering hypervisors, networks, and storage devices 1
Updated on:	Sep 17, 2011 10:16:51 AM
Hypervisor type:	PowerVM
CPU allocation:	<input type="text" value="100 %"/>  The specified CPU will be allocated for deployments.
Cloud memory allocation:	<input type="text" value="100 %"/>  The specified memory will be allocated for deployments.
Hardware PVUs:	0
URL:	https://bpte-demo-4.austin.ibm.com:8422/ibm/director/rest
Security certificate:	 Accepted
NIM:	<input type="text" value=""/> 
 Cloud hardware	0 hypervisors: 2
 Login information	
Access granted to:	Administrator [owner] <input type="text" value="Add more..."/>

1. After creating cloud group, appliance begins discovering hypervisors, networks, and storage devices
2. Notice no hypervisors are discovered yet
3. Press refresh icon to see updated information

When creating the cloud group, the discovery process begins for the hypervisors, networks, and storage devices. Item one shows you the typical message you see when discovery is active: “Discovering hypervisors, networks, and storage devices”. Item two indicates that no hypervisors are yet discovered. Within a few seconds the status should change if you click the refresh icon, indicated by item three. Wait another minute and click refresh again.

PowerVM hypervisor discovery completion

PowerVM cloud group

Description: For PowerVM deployments

Created on: Sep 17, 2011 10:16:51 AM

Type: Managed by a VMControl

Version: IBM Systems Director VMControl

Current status: **1** You must start at least one hypervisor to create virtual systems.

Updated on: Sep 17, 2011 10:16:51 AM

Hypervisor type: PowerVM

CPU allocation: 100 % The specified CPU will be allocated for deployments.

Cloud memory allocation: 100 % The specified memory will be allocated for deployments.

Hardware PVUs: 0

URL: https://bpte-demo-4.austin.ibm.com:8422/ibm/director/rest

Security certificate: Accepted [remove]

NIM: 16% [cleanup] [show more] **2**

Cloud hardware: 1 hypervisors: 1 maintenance mode

Login information

Access granted to: **3** Administrator [owner] Add more...

Cloud hardware

1 hypervisors: 1 maintenance mode

CPU: 1% Memory: 40% Storage (MB): None Shared network: None

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- 1.** When discovery completes, the **Current status** message reminds you to complete work with the discovered hypervisor
- 2.** The Network Installation Manager associated with hypervisor is discovered
- 3.** Grant necessary access so others can see and deploy to the PowerVM cloud group
- 4.** Expand **Cloud hardware** section to see “clickable”

When discovery completes, typically after one or two minutes, a status message is issued in the cloud entry to remind you to start at least one hypervisor, shown near item one.

Near item two, you see that not only the hypervisor is discovered but also the associated Network Installation manager.

Item three points out the **Access granted to** area. Before you begin deployments, you must add user or group names here so that others can see and deploy systems to your PowerVM cloud group.

Item four highlights the **Cloud hardware** section. If you expand this section, you see the hypervisor name with some hypervisor detail. The hypervisor name is an active link which you can click to take you to the hypervisor details screen. To navigate to the next screen, you can click directly on the hypervisor name within the expanded **Cloud hardware** section, or you can click **Cloud > Hypervisors** to see the hypervisor definition. The next slide describes how you can prepare the hypervisor so you can start it, which allows you to use the PowerVM cloud you defined.

Preparing the PowerVM hypervisor

1. Navigate to **Cloud > Hypervisors**, then select the name of the hypervisor to configure

2. Expand Networks and assign an IP group to the virtual network

3. Select the proper storage device

4. Click start icon to start the hypervisor

The screenshot shows the IBM Workload Deployer console for a PowerVM hypervisor. The 'Cloud' menu is open, with 'Hypervisors' selected. The main area displays the hypervisor's status, including CPU and memory usage, and a list of virtual machines. The 'Networks' section shows 'Virtual Network 1' with a dropdown menu for 'IP group' set to 'PowerVM Daytona IP 45-50'. The 'Storage devices' section shows two devices: 'rootvg:VIOS daytona_vios' and 'datavg:VIOS daytona_vios', with the latter selected. A 'start' icon is visible in the top right corner.

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After discovery completes, you can click **Cloud > Hypervisors** – shown by item one – within the IBM Workload Deployer console and see the PowerVM hypervisor that was discovered. To enable a PowerVM hypervisor to be started, you must select an IP group under the Networks portion of the hypervisor details screen – highlighted near item 2. You select the IP group to use within the dropdown selection box, and then you check the **In use** box to allow it to be used. Finally you must select the proper storage device that the hypervisor is to use for deployments by checking the associated **In use** check box, illustrated by item 3. Then click the “start” icon, indicated by item four. The PowerVM cloud that is associated with this hypervisor is now available to be used for deployments.

Virtual images for PowerVM

- There are two PowerVM virtual images pre-loaded into the virtual image catalog:
 - DB2 Enterprise 9.7.3.1 (PowerVM)
 - WebSphere Application Server 7.0.0.17 (PowerVM)
 - Intelligent Management Pack can be enabled on this image if you clone it
- Import any additional PowerVM images to the appliance and deploy patterns based on the images
- Only IBM Workload Deployer can provision the PowerVM images
 - These images cannot be used outside of the appliance

The IBM Workload Deployer appliance comes pre-loaded with two PowerVM images: the DB2 Enterprise 9.7.3.1 PowerVM image, and the WebSphere Application Server 7.0.0.17 PowerVM image. Note that you can enable Intelligent Management Pack on the WebSphere Application Server 7.0.0.17 image if you clone it. If there are images you need that are not in your catalog, then you must use download the required images through Passport Advantage. The PowerVM virtual images are designed for use with IBM Workload Deployer only. Unlike the VMware ESX images, PowerVM images can only be provisioned by the appliance. In all other ways, PowerVM images behave in a similar fashion to the ESX images and are deployed using standard IBM Workload Deployer administrative tools.

Differences between PowerVM and ESX

Cli system 15

Created on: Sep 13, 2011 11:38:32 AM

From pattern: Test CLI PowerVM pattern 15

Using Environment profile: None provided

Current status: ✔ The virtual system has been deployed and is ready to use

Updated on: Sep 13, 2011 11:59:18 AM

Access granted to: deployer15 [owner]
Add more...

Snapshot: Snapshots are not currently supported by IBM:POWER:AIXLINUX

History: The virtual system has been deployed and is ready to use

Virtual machines: 1 total - 1 started

Snapshots are not supported for PowerVM virtual systems

ESX images support VNC, but PowerVM virtual images do not – no VNC link available for PowerVM virtual systems

Consoles

VNC WebSphere

For VMWare ESX deployments, you can create a “snapshot” backup of a virtual system and later restore from that snapshot to recover the state of the virtual system. The snapshot functionality is not available in the PowerVM environment. The virtual systems detail screen displays a reminder message about the restriction.

A VNC interface is available in the deployed ESX virtual systems. However, PowerVM virtual images do not include the required libraries to support a VNC interface, so a VNC interface is not available for deployed PowerVM virtual systems. The screen capture for the consoles on the bottom of this slide was captured from an ESX virtual system, so it includes the VNC link. For a PowerVM virtual system, the VNC link is not be present in the console.

Gathering documentation for problems

This section describes how to gather documentation if you experience any PowerVM deployment problems from IBM Workload Deployer.

Documentation for deployment errors

- IBM Workload Deployer appliance log files
 - **Appliance >Troubleshooting**, then expand **Logging** and select **Download log files**
- Take screen snapshot of the error on the appliance
- IBM Systems Director – create tar file of logs
 - **/opt/ibm/director/bin/logcollector** - creates tar file of log files and places into /tmp
- NIM – create tar file of NIM director agent logs
 - **tar -cvf /tmp/dir_agent_logs.tar /opt/ibm/director/agent/logs**

For some errors, the IBM Workload Deployer appliance log files are sufficient, along with a screen snapshot of the appliance screen that shows the error. But if the appliance has been communicating with the PowerVM environment when the error occurs, often you will need logs from the PowerVM environment. On the IBM Systems Director partition, use the **logcollector** shell script in the IBM Systems Director's bin library to create a tar file of the IBM Systems Director logs. On the NIM partition, tar the logs directory for the director agent. To save space and transmission time, gzip the tar files and compress any bmp screen captures before sending to IBM support.

Section

Summary

The next section provides a summary of this presentation.

Summary

- To use PowerVM hypervisors:
 - Create a PowerVM IP group
 - Create a PowerVM cloud group
 - Assign an IP group
 - Select a storage device
 - Start the PowerVM hypervisor
 - Import PowerVM virtual images, if needed
 - Deploy virtual systems

This presentation discussed how to set up your PowerVM cloud resources from within the IBM Workload Deployer Appliance. You create a PowerVM IP group. Then you create a PowerVM cloud group. You assign the PowerVM IP group to the discovered hypervisor. You select the storage device to use for the hypervisor. Then you start the hypervisor. Although two PowerVM images are pre-loaded into the appliance catalog, you might need to import other PowerVM virtual images into the appliance catalog, which you can obtain from Passport Advantage. You are then ready to deploy virtual systems based on those images to your PowerVM cloud group.

References

- IBM Workload Deployer Information Center
 - <http://publib.boulder.ibm.com/infocenter/worlodep/v3r0m0/index.jsp>
- HMC
 - <http://www.ibm.com/developerworks/wikis/display/virtualization/HMC>
- IBM Systems Director
 - <http://www-03.ibm.com/systems/management/director/>
- VMControl
 - <http://www.ibm.com/systems/management/director/plugins/syspools/index.html>
- VMControl troubleshooting
 - <http://www.redbooks.ibm.com/abstracts/sq247829.html?Open>.
- Step-by-step movie demos
 - <http://www.ibm.com/developerworks/wikis/display/WikiPtype/Movies>
- YouTube channel
 - http://www.youtube.com/results?search_query=ibm+workload+deployer&aq=f
- IBM Workload Deployer V3 Information Center – PowerVM requirement
 - http://publib.boulder.ibm.com/infocenter/worlodep/v3r0m0/index.jsp?topic=/com.ibm.worlodep.doc/gsr_powvmtsp.html

Here are some references for more information about the PowerVM environment.

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