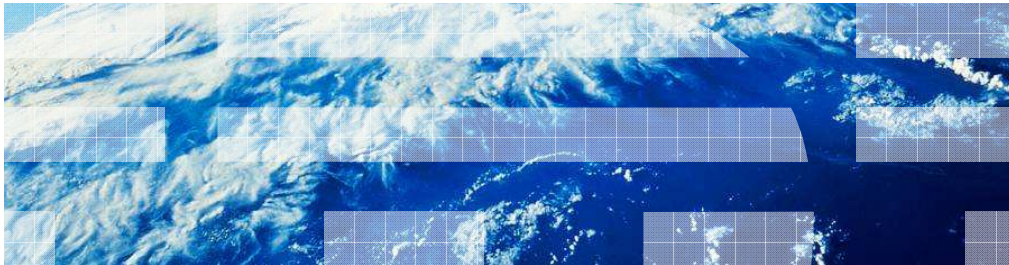


IBM WebSphere CloudBurst Appliance

Image extension



This presentation provides an overview of the extend and capture process used to create a customized virtual image on V1.1 of the IBM WebSphere® CloudBurst™ Appliance.

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This presentation starts with an overview and then provides more details of the extend and capture process.

Overview

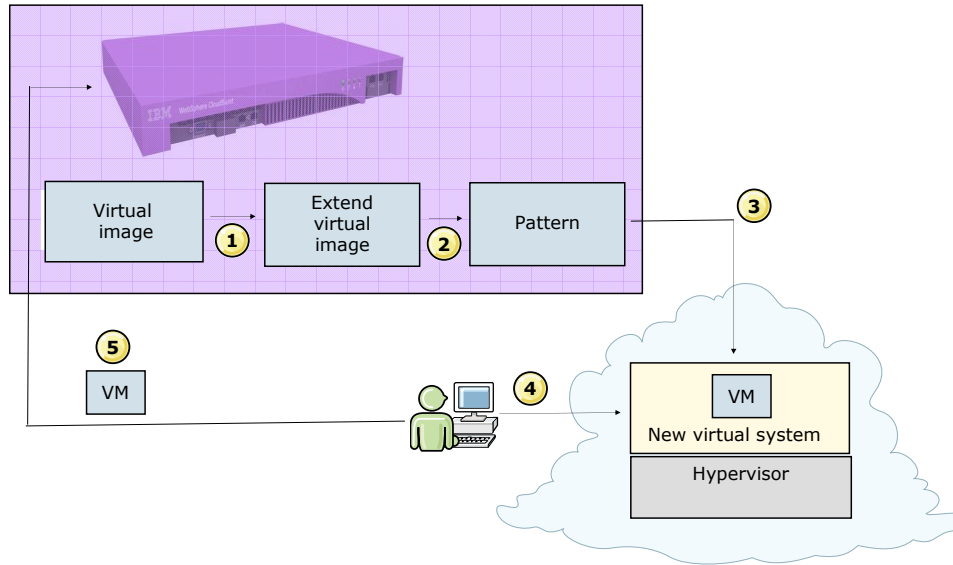
This section of the presentation provides an overview of the virtual image extend and capture process.

Overview

- Virtual images provide the product binaries and the operating system required to create a virtual system
- WebSphere CloudBurst stores virtual images in a catalog
- Extend an existing virtual image to create a clone of the virtual image and to deploy a new virtual system that can be modified to include custom software or changes
- Capture changes made to your virtual system to create a customized virtual image and to save it back to the catalog

WebSphere CloudBurst uses a catalog to store virtual images that can be used to create new virtual systems. To create a customized virtual image, the first step is to “extend” an existing virtual image. The extension process makes a copy, or clone, and deploys a new virtual system into the cloud based on the existing virtual image. The new virtual system can then be modified with your required changes you want to store. The next step is to “capture” the modifications that save the changes made to the virtual system back to the catalog as a new, customized virtual image.

Extend and capture process



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It is important to understand the details of what happens to a virtual image when it is extended. The appliance creates a copy of an existing virtual image as shown by item one. Item two shows that the copy of the virtual image is made and a pattern is automatically deployed into the cloud. Deployment of the pattern to the cloud, shown by item three, creates a new virtual system in the cloud. As shown in item four, you log into the virtual system and make any necessary changes to the virtual system. You then return to the appliance interface, item five, to capture changes made to the virtual system. The changes made to the virtual system are copied from the hypervisor to the appliance. Once the copy process is done, a new virtual image is created based on the modified virtual system.

Extend and capture uses and limitations

- Why perform extend and capture process?
 - Modify product environment
 - Modify the operating system
- Note: changes made to the application server profiles directory are ignored during extend and capture

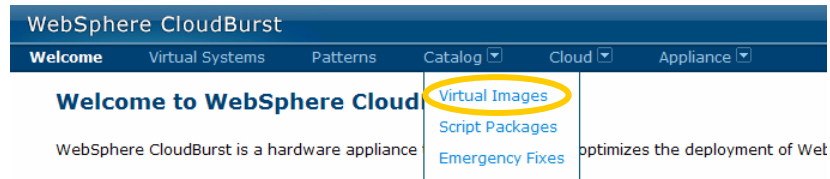
The extend and capture procedure is helpful in situations where you want to make system modifications or changes to the product environment, like adding maintenance files or other product installation packages, that are common among all deployments. The resulting custom virtual image can then be used to create new virtual systems that already contain the changes you made when you created the new virtual image. Therefore, you perform the changes once, and by creating this custom image through the extend and capture process, you can easily generate additional virtual systems without having to make the same change again across the new systems in your environment. A limitation of extend and capture is that you can not make any changes to the WebSphere Application Server profiles directory in the extended image. If changes are made, those changes are ignored.

Extending a virtual image

This section of the presentation focuses on the first step of the process, the virtual image extension.

Initial steps for extending a virtual image

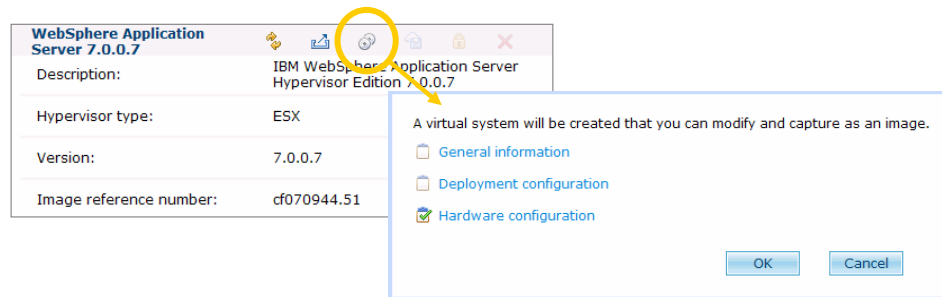
- Pre-requisite: User must be assigned “Create new catalog content” or “Cloud administration” permission
- Navigate to virtual images panel under **Catalog > Virtual images**



Before you begin, ensure that you are assigned either the “Create new catalog content” or “Cloud administration” permission, so the clone can be created and the new virtual image you will ultimately generate can be saved to the catalog. To begin the image extension process, navigate to the “Virtual Images” panel from the “Catalog” menu at the top of the WebSphere CloudBurst Web console.

Begin extending a virtual image

- Select the virtual image you want to extend
- Click the extension icon and to start to create a new extension



Then click the name of the existing virtual image you want to use as the basis for your extension. Click the extension icon to begin the image extension.

Extending a virtual image - deployment information

- Provide name and version information for the virtual system
- Select a cloud group as a deployment target
- Set the password for the virtual system (root and virtuser)

A virtual system will be created that you can modify and capture as an image.

General information

- Name: Copy of WebSphere Application Server 7.0.0
- Description: Extended version of WAS V7.0.0.7 virtual im
- Version: 1.0

Deployment configuration

Hardware configuration

OK Cancel

A virtual system will be created that you can modify and capture as an image.

General information

Deployment configuration

- In cloud group: ESX CloudGroup
- Password:
- Verify password:

Hardware configuration

OK Cancel

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Enter your custom values for the virtual system in the image extension window, such as system name, a version number for the administrator to keep track of the changes made, and which cloud group to deploy to. When you deploy the virtual system, two user IDs will be configured, “virtuser” and “root”. You can then log in to the virtual system with the password specified here and either of those two user IDs.

Extending a virtual image – volume resizing

- During image extension, optionally modify the sizes of the different volumes that make up the image
- A copy of the existing virtual image is generated
- A new virtual system is created using the default pattern and the values you enter

A virtual system will be created that you can modify and capture as an image.

General information

Deployment configuration

Hardware configuration

- * Network interfaces: 1
- * SLES10SP2-32.vmdk (GB): 12
- * WebSphere_Binaries.vmdk (GB): 6
- * WebSphere_Profiles.vmdk (GB): 2
- * WebSphere_IHS.vmdk (GB): 1

OK Cancel

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Continue entering the “Hardware configuration” section parameters into the image extension window. When extending a virtual image, you have the option of adjusting the volume size for different parts of the image, including the operating system, the application server binaries, the application server profiles, and the HTTP server. The volume sizing options are an important new feature in WebSphere CloudBurst V1.1, because this is the only time that you get the opportunity to change the sizing of the virtual disks inside the image.

Click the “OK” button and a clone of the existing virtual image is generated and a default pattern from that virtual image, along with the values you entered, is automatically deployed into the cloud to create a new virtual system.

Verifying the new virtual system details

- Click extended virtual image name to view the details of the new virtual system
- Status changes to **Draft** when virtual system is available to customize

Copy of WebSphere Application Server 7.0.0.7	
Description:	Extended version of WAS V7.0.0.7 virtual image
Hypervisor type:	ESX
Version:	7.007
Image reference number:	bfa20105.0
License agreement:	Accepted
Current status:	Creating a virtual system for virtual image extension
Contains parts:	(none)
Included in patterns:	(none)
In the cloud now:	(none)
Access granted to:	Administrator [owner] <input type="text" value="Add more..."/>
Extended from:	WebSphere Application Server 7.0.0.7 [compare]

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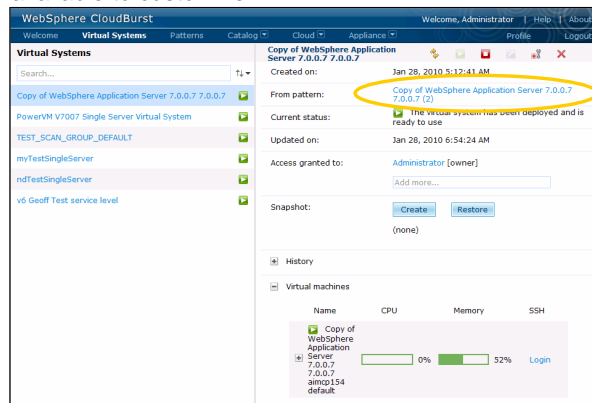
Image extension

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You can verify the details of the new virtual system you just created, by clicking the extended virtual image name. The “current status” will change from “Creating a virtual system for virtual image extension” to “Draft” when the new virtual system is successfully deployed into the cloud. The deployment does not happen instantly and the amount of time it takes depends on the level of system activity in progress and on the size of the virtual image. You will need to manually refresh the webpage occasionally to get updated status messages.

Verifying the deployment of the new virtual system

- Navigate to **Virtual Systems**
- Select the virtual system you created during the image extension process
- Status changes to **The virtual system has been deployed and is ready for use** when virtual system is available to customize



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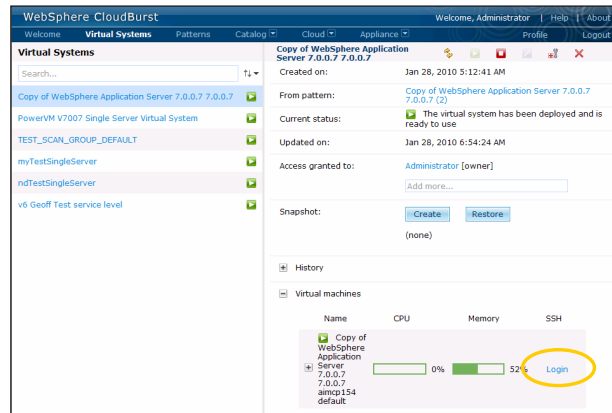
Click the “Virtual Systems” menu at the top of the WebSphere CloudBurst Web console and select the virtual system you just created during the image extension process. You can verify the details of the new virtual system you just created in the panel to the right. Verify that the current status states “The virtual system has been deployed and is ready for use” before customizing.

Capturing a virtual system

This section of the presentation focuses on the second step of the process, making modifications to a virtual system and capturing them.

Making modifications to the virtual system

- Navigate to **Virtual Systems**
- Select the virtual system you created during the image extension process
- Log in to make the necessary modifications to the virtual system



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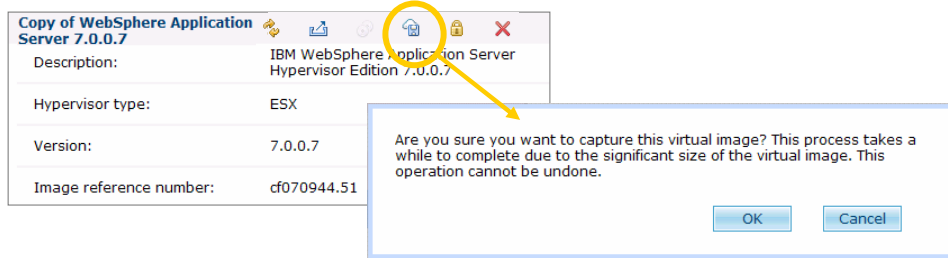
Once your virtual system is successfully deployed, you can log in and make the modifications you intend to store in your new virtual image. These modifications can be changes to the product environment or changes to the operating system.

To access the virtual system, click the “Login” link under the “SSH” column header. When you deployed the virtual system, two ids were configured, “virtuser” and “root”. Login with one of these user IDs and with the password you specified when you extended the virtual image. A new window will open that is connected through SSH directly to the native operating system console.

The key limitation of image extension is that you can not capture any changes that are made to the WebSphere Application Server profiles directory.

Capturing the virtual system

- Navigate back to virtual images panel under **Catalog > Virtual images**
- Select the virtual image you want to capture
- Click the capture icon and to create a new virtual image in your catalog based upon the extended virtual image



After you have made your changes, return to the “Virtual images” WebSphere CloudBurst Web console panel to store the changes. Click the capture icon to copy the changes you made to the virtual system from the hypervisor to the appliance. Like the displayed message states, there is a significant amount of data processing required to capture the image, so the process will take a while to complete. Also, while more than one image capture can be scheduled and added to the task queue, no more than two image captures are performed concurrently.

After successfully completing these steps, you have a new virtual image in your catalog that is based upon the virtual image you extended.

Summary

This section provides a summary of the presentation.

Summary

- The extend and capture process provides a mechanism for saving modifications to existing virtual images to create customized virtual images
- Custom virtual images can then be used to generate new virtual systems with your required changes/updates

Extending a virtual image means taking an existing virtual image, modifying it and then capturing the resulting customized virtual image in the catalog. There are numerous reasons for using the extend and capture process, among them is the need to change the product environment or the operating system. The generated virtual image can be saved and then used to create new, custom virtual systems with your required changes or updates already included.



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