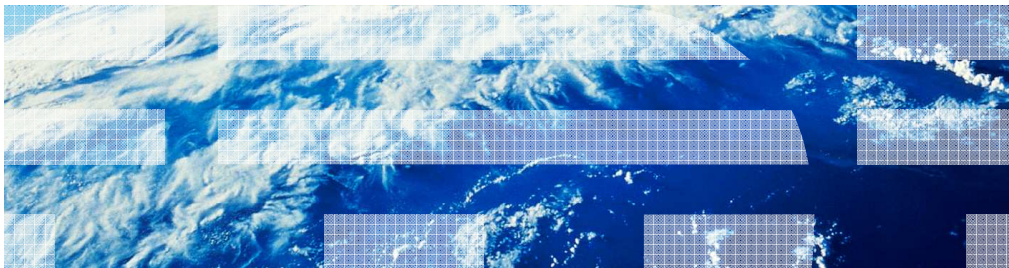


IBM WebSphere CloudBurst Appliance V2.0

Multi-image composition



This presentation will cover multi-image composition introduced in WebSphere® CloudBurst™ Appliance V2.0.

Agenda

- Overview
- Multi-image pattern composition
- Command-line interface changes
- Summary

This presentation will start by giving an overview of multi-image composition. It will then go over the steps needed to compose a pattern using this new multi-image composition support. It will end by going over a brief summary of what was discussed.

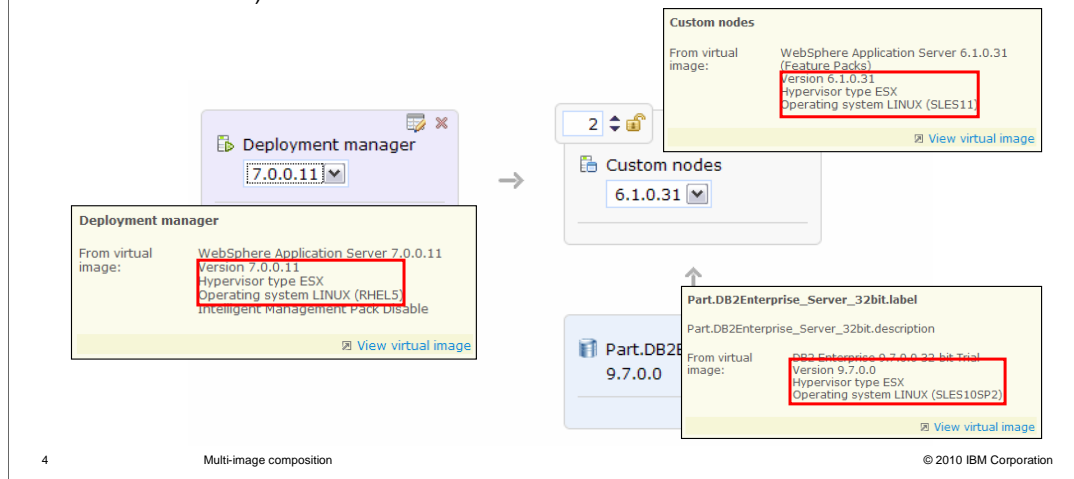
Section

Overview

This section will cover the overview.

Overview

- Allows you to compose a single pattern that spans multiple IBM products and versions
- All virtual image parts making up a pattern must come from the same architecture (ESX, PowerVM or z/VM)



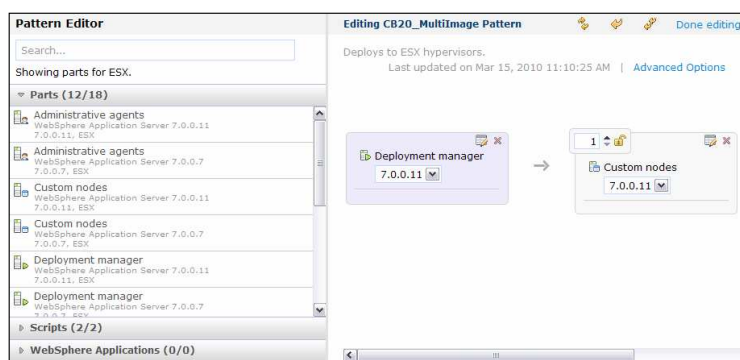
Multi-image composition allows you to create a single pattern that consists of different IBM products and versions. In V1.0 and for much of V1.1 of the WebSphere CloudBurst Appliance this was not a big issue. However, as more IBM products enter the mix this would have become an issue if it were not for the multi-image support introduced in V2.0.

You can mix and match IBM products and versions. The only restriction is that the hardware architecture for the entire pattern must be of one type, either ESX, PowerVM or z/VM. This restriction is not a restriction imposed by the pattern directly, but rather the fact that in V2.0 you are still only able to deploy a single pattern to a single cloud group. A cloud group is homogeneous when it comes to the hardware architecture that makes up the cloud group.

The screen capture on this slide shows a single pattern consisting of three virtual image parts each of which is of a different version or product. Before V2.0, this configuration would have required three separate patterns.

Pattern Editor UI updates

- Pattern Editor UI went through a few updates in V2.0
 - Palette replaced the drop-down field to switch between virtual image parts and script packages to an accordion style
 - The drop-down to choose your source virtual image and corresponding hardware architecture has been removed



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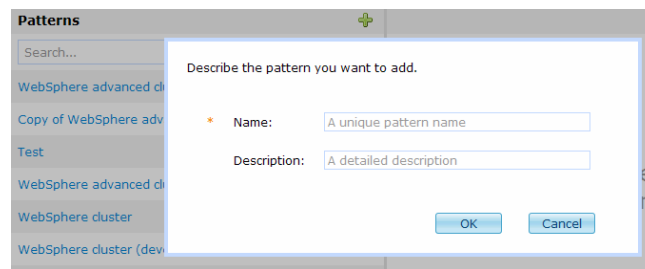
The Pattern Editor UI went through a few updates in V2.0. The drop-down field to switch between your virtual image parts and script packages has been replaced with an accordion style UI component. To switch between your parts and script packages you click the bar marked “Parts” or “Scripts” which will expand showing all of the supported artifacts. The drop-down to set the source virtual image and corresponding hardware architecture has been removed. The hardware architecture that the pattern is based on is determined by the first virtual image part that you drop onto the canvas.

Multi-image pattern composition

This section will cover the actual composition of a multi-image pattern.

Create pattern

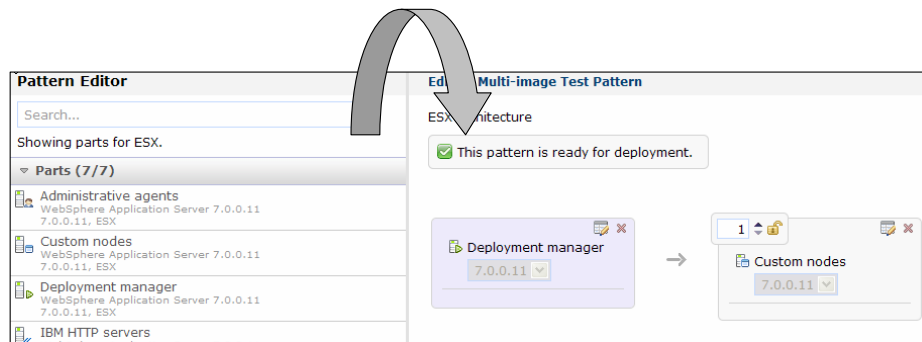
- Navigate to: **Patterns** > 
- Specify a name and description only
 - No longer required to specify a source virtual image for the entire pattern (specified at the virtual image part level)



Creation of a pattern begins with navigating to the “Pattern” tab and clicking the green plus icon. This has not changed since V1.0. What has changed is that you no longer specify a source virtual image to base your pattern on.

Drag-and-drop assembly

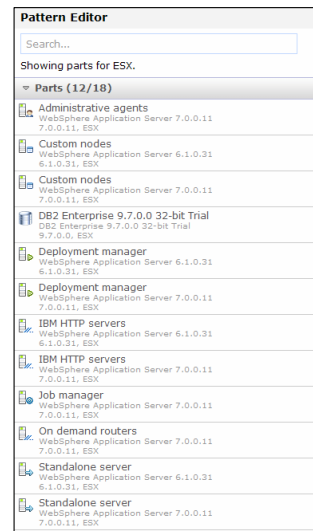
- Drag and drop virtual image parts from palette over to the canvas to assemble pattern



The “drag-and-drop” action of assembling a pattern has not changed in V2.0 of the product.

Smart palette technology

- Smart palette search
 - Results are dynamically filtered when the search criteria is specified
 - Virtual image name
 - Part name
 - Version number
 - Architecture
- Smart palette filtering
 - Filtering automatically happens when you place items onto the canvas
 - For example, if you place a ESX part onto the canvas, all PowerVM and z/VM parts are removed



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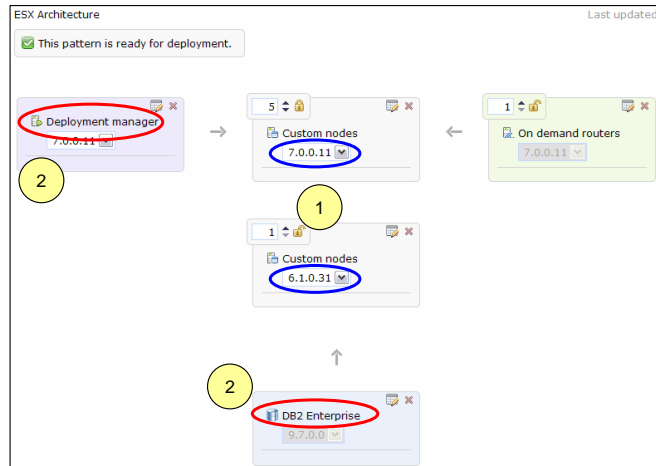
The pattern editor contains smart palette technology. There are two components to this technology.

The first component is 'smart palette search'. This feature allows you to search on virtual image name, part name, version and architecture. The results are filtered dynamically.

The second component is 'smart palette filtering'. This feature will automatically filter the remaining parts in the palette as you drag them onto the canvas. Here is an example that will help clarify this feature. If you start with a fresh pattern, your palette will contain all available parts. Next, you drag a part based on the ESX hardware architecture onto the canvas. The palette parts will dynamically be refreshed to remove all non ESX parts, leaving you with only valid parts.

Single pattern – multi product and version support

- Version information is specific to the virtual image part, which allows you to mix and match versions in a single pattern
- Single pattern can contain multiple products



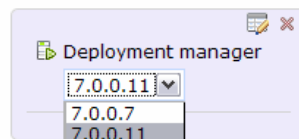
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Starting in V2.0 a single pattern can be composed of multiple products and versions. This screen capture is made up of a mixed node environment, where the deployment manager is at V7.0 and the custom nodes are at V7.0 and V6.1. In addition, there is a V9.7 DB2[®] component in the mix. The only restriction is that all of the virtual image parts must be of one hardware architecture type.

Source virtual image decided at virtual image part level

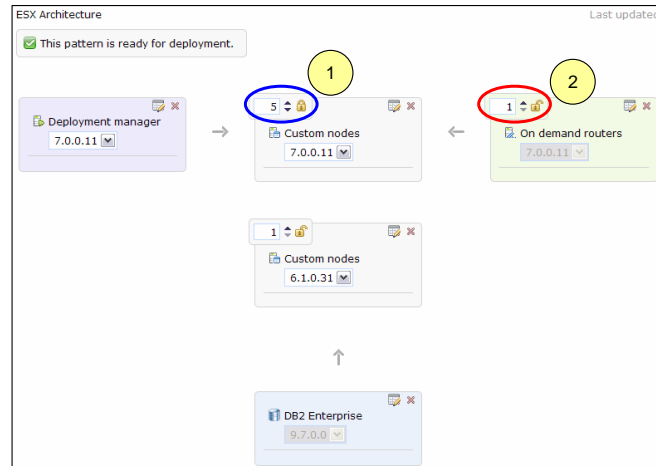
- Source virtual image is determined at the virtual image part level
- Source virtual images with the same hardware architecture are made available
 - If you want to change hardware architecture you will need to create a new pattern or remove all parts from the pattern and start over



During the composition of your pattern there are two ways to specify the source virtual image of your virtual image parts. The first approach is to explicitly choose the virtual image part from the palette that is based on the required source virtual image. The second approach is to choose the source virtual image from the drop-down located on the virtual image part. The second approach has a limitation in that only the source virtual images of the same hardware architecture are available. If you want to change the hardware architecture of your pattern you can either create a new pattern from scratch or remove all virtual image parts from the canvas and start over.

Virtual image part lock

1. Locking a part will prevent virtual machine creation after the pattern has been deployed
2. Locking a part will prevent virtual machine deletion after the pattern has been deployed



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WebSphere CloudBurst V2.0 comes with the ability to dynamically add or remove virtual machines. Put another way, once the pattern is deployed, you navigate to the virtual machines section of your virtual system and choose to clone or delete the virtual machine. This is covered in another education module, under the heading “Dynamic virtual machine operations”. You can limit this ability by locking the virtual image part, circled here in red. If you lock the part, you are not able to make clones of this virtual machine.

The screen capture here shows the lock icon highlighted in red and blue circles. The red circles show a virtual image part that has not been locked. After pattern deployment you will have the ability to create or delete virtual machines. In the case of the blue circle, you are not able to clone or delete the virtual machines.

Command-line interface changes

This section will cover the command-line interface changes.

Command-line interface changes

- Small changes to the command-line interface introduced
- Parts belong to specific virtual images in V2.0

- Pre V2.0

```
mypattern.parts << cloudburst.parts['Deployment manager'][0]
```

- Post V2.0

```
myvirtualimage = cloudburst.virtualimages[0]  
mypattern.parts << myvirtualimage.parts['Deployment manager'][0]
```

The command-line interface changes are small. The slide includes two example script snippets, one for pre V2.0 and one for post V2.0. Notice, in post V2.0, the virtual image part you are assigning to the pattern is coming from a specific virtual image. This is different than in pre V2.0 where the virtual image part comes from the generic “cloudburst” object.

Section

Summary

This section will cover the summary.

Summary

- Composition of patterns consisting of multiple IBM products and versions is now possible
- Assembling a pattern occurs in much the same way as versions before V2.0 with a few minor differences
 - Each part is source individually rather than at the pattern level

The addition of multi-image composition has brought with it a few changes. WebSphere CloudBurst patterns now can be composed using multiple IBM products and versions. Before V2.0, this can only be accomplished using multiple patterns. There was one paradigm shift in that now you are working with concrete parts rather than conceptual parts. This has its benefits, such as allowing you to independently configure a virtual image part's version rather than configuring it pattern-wide. Physically, the composition of a pattern has not changed; you drag a part from the palette and drop it onto the canvas to build a pattern.

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