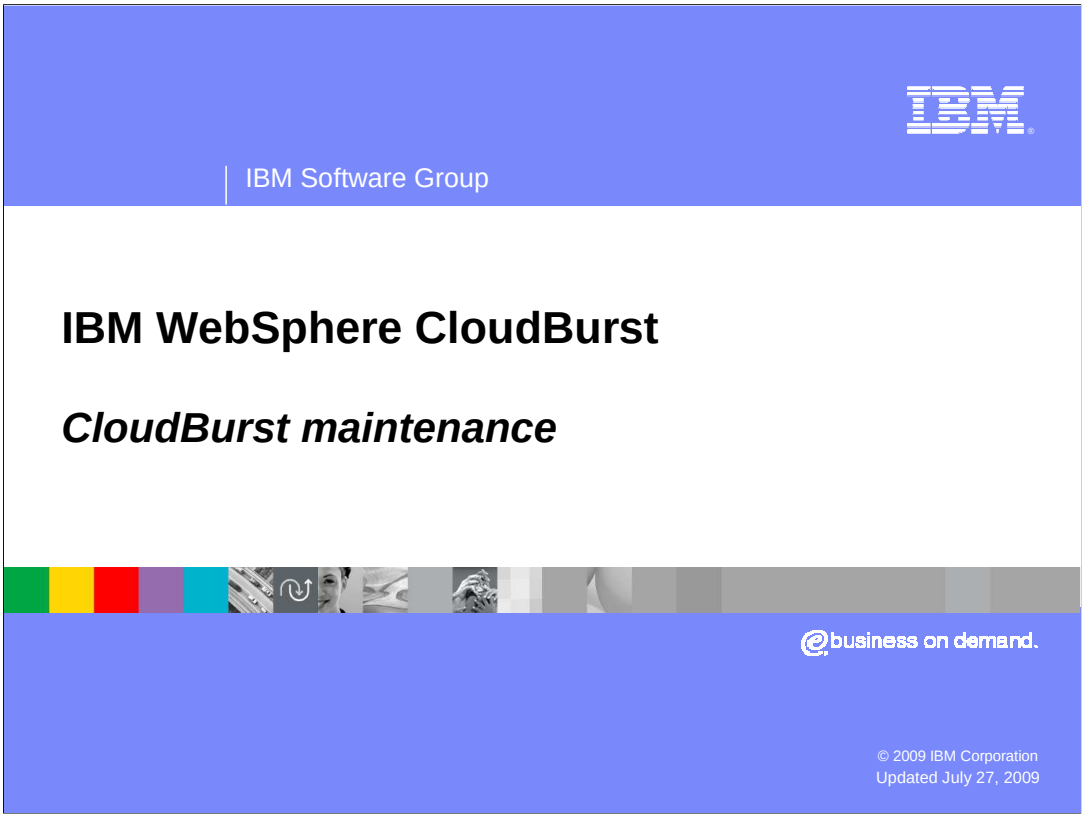

This presentation covers CloudBurst's maintenance.

Agenda

- Approaches to applying maintenance
- Redeploy virtual systems with updated virtual images
- Creating emergency fixes
- Applying service to virtual systems
- Summary

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This presentation will cover the two different approaches to applying service to your WebSphere® Application Server environments. Approach one is importing an updated virtual image and approach two is applying service directly against a deployed virtual system.

Section

Approaches to applying maintenance

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This section will go over at a high level the two approaches to applying service to your WebSphere Application Server environments.

Approaches to applying maintenance

- There are three approaches
  - Redeploy virtual systems with updated images
    - Recommended approach
  - Apply fixpacks and emergency fixes directly to virtual system using CloudBurst
  - Apply fixes directly to virtual systems (no CloudBurst intervention)
    - Not recommended, but possible using existing fix automation tools

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There are three ways in which you can apply maintenance to your WebSphere Application Server environments. The first and recommended approach is to redeploy the virtual system with an updated image. The second approach is to apply fixpacks and emergency fixes directly to the virtual system using CloudBurst. The third and not recommended approach is to apply fixes directly to the virtual system bypassing CloudBurst altogether. This presentation does not discuss this third approach.

Section

Redeploy virtual systems with updated images

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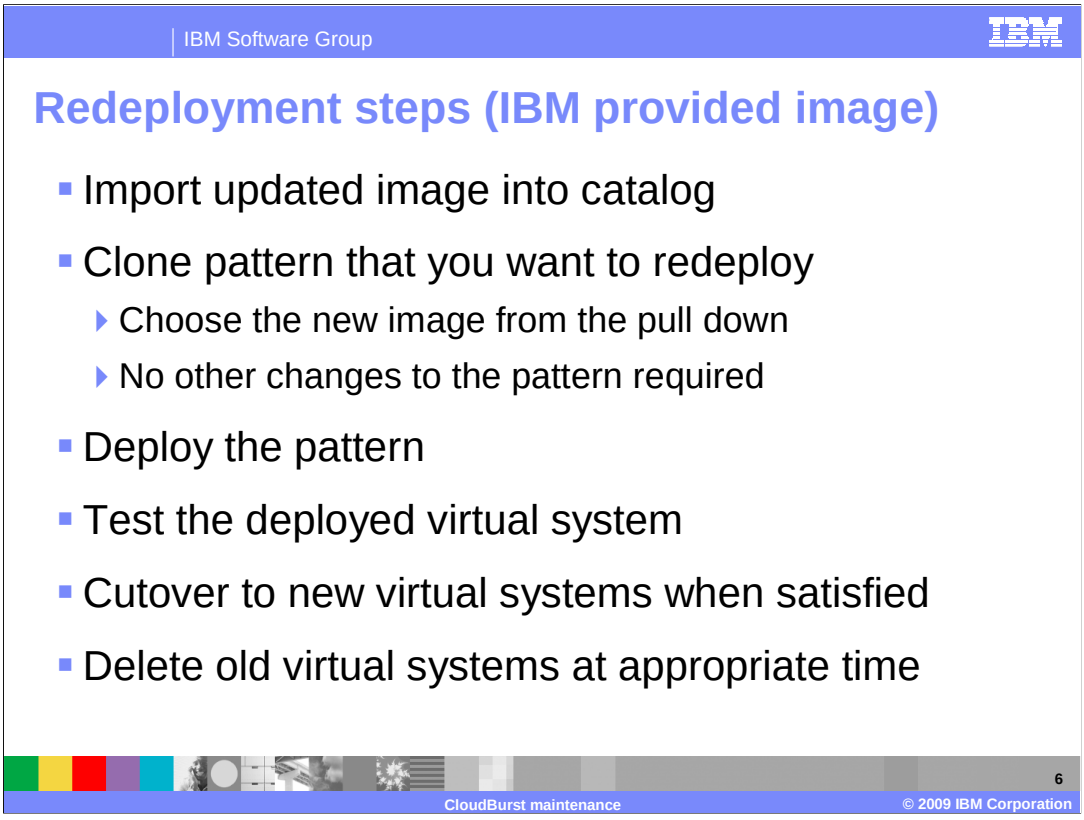
This section will cover the redeployment of virtual systems using updated images.



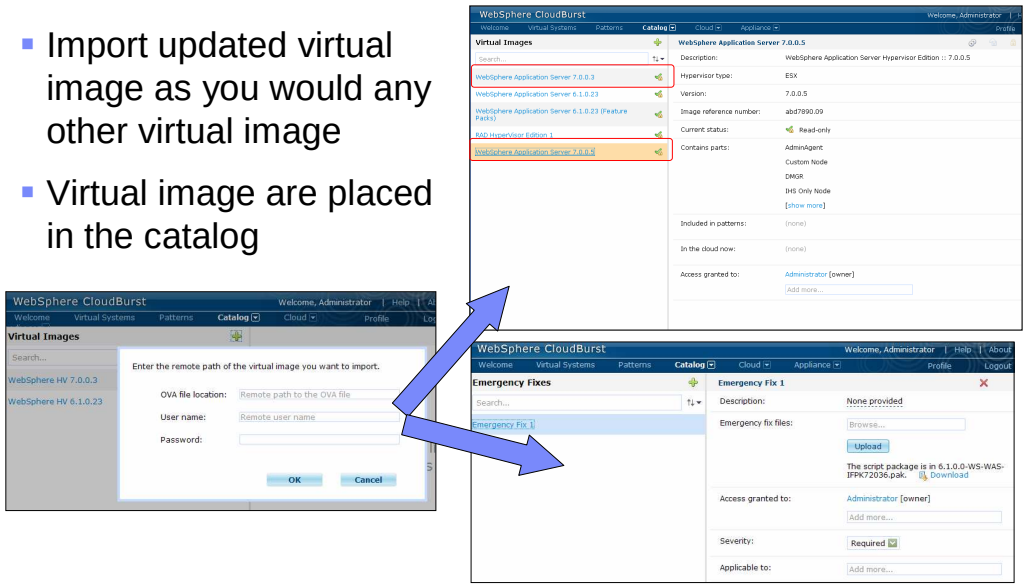
The recommended approach to upgrading your virtual system is to redeploy the virtual system with an updated virtual image. This process consists of three steps to get the updated virtual system redeployed and an additional three steps to complete the process.

First you will need to import an updated virtual image from IBM when it is available. The next step is to clone the pattern (if locked) that you want to redeploy choosing the updated virtual image as the source. The final step is to deploy the pattern.

To round out the process there is an additional three steps. Those steps include testing the redeployed virtual system, cutover to the updated virtual system and finally delete the old virtual system.

Import updated virtual image into catalog

- Import updated virtual image as you would any other virtual image
- Virtual image are placed in the catalog



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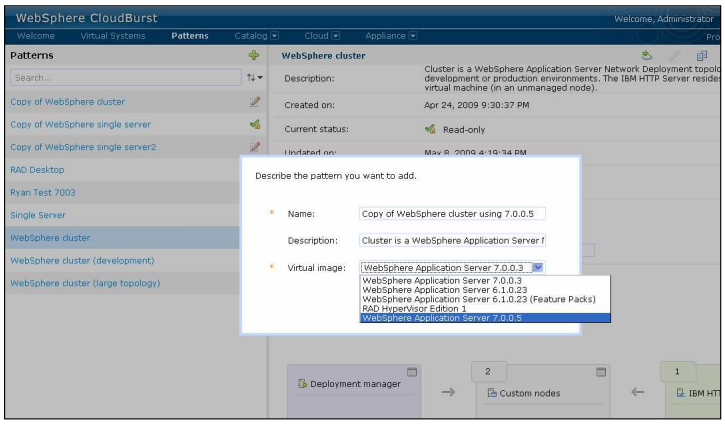
IBM will release updated virtual images on a regular schedule. You will import these updated virtual images into your catalog. Importing these updates is no different than importing other virtual images. When you import an updated virtual image two artifacts are created. The import will create a new virtual image that will be used in the redeployment and an emergency fix which can be applied directory against a deployed virtual system.

This screen capture shows the addition of a WebSphere Application Server V7.0.0.5 updated virtual image.

Clone pattern that you want to redeploy

- Clone pattern that you want to redeploy
  - Choose the new image from the pull down
  - No other changes to the pattern required



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After the updated virtual image has been imported you are now ready to redeploy your virtual system. The first step is to clone the pattern if it is locked down or deploy an existing pattern. The next step is to choose the updated virtual image from the drop down. No other changes to the pattern are required. The final step is to deploy the pattern.

To round out the process there is an additional three steps. Those steps include testing the redeployed virtual system, cutover to the updated virtual system and finally delete the old virtual system.

Redeployment steps (extended image)

- Import updated image into catalog
- Extend previously extended image
- Apply fixpack to extended image
- Capture extended image
- Clone pattern that you want to redeploy
  - Choose the new image from the pull down
  - No other changes to the pattern required
- Deploy the pattern
- Test the deployed virtual system
- Cutover to new virtual systems when satisfied
- Delete old virtual systems at appropriate time

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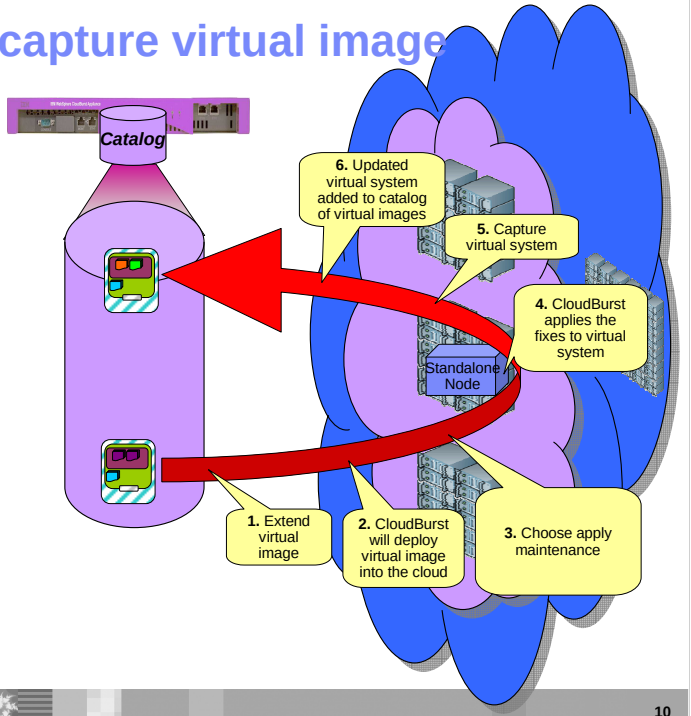
The previous slides covered the redeployment of a virtual system that was deployed based on one of IBM's virtual images. If you have extended one of these virtual images, you will need to perform three additional steps. These additional steps include extending your previously extended virtual image, applying service to the virtual system and then capturing the updated virtual image back into the catalog. All remaining steps do not change. Applying service to the virtual system is discussed in the next sections.

"ReExtend" and capture virtual image

- Create new version with IBM supplied fixes
  - Extend
  - Apply Maintenance
  - Capture
- Fixpack updates or Emergency fixes



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The additional step referenced in the previous slide is shown here graphically for clarification. Using the extend and capture capabilities of CloudBurst you would take your extended virtual image and extend it. CloudBurst will deploy the extended virtual image into the cloud. In addition CloudBurst will create a virtual system to manage the deployed virtual image. You would then apply service directly to the virtual system. Once service has been applied you will then capture the updated extended virtual image back into the catalog.

Section

Creating emergency fixes

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This section will cover the creation of emergency fixes.

Two ways to create an emergency fix

- There are two ways in which emergency fixes are created
  - Create an emergency fix by specifically importing a fix
  - Automatically created when a virtual image containing a fixpack is added to the catalog

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Emergency fixes are created explicitly by you or are automatically created when you import an updated virtual image into the catalog.

Location of emergency fixes in CloudBurst

- Emergency fixes are located under the “Catalog” tab

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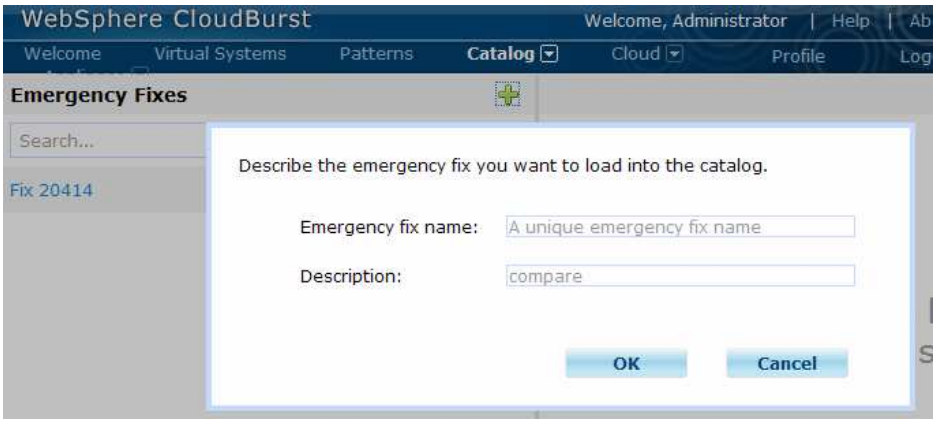
An emergency fix allows you to apply a WebSphere Application Server or OS fix directly against the virtual system. An emergency fix does not modify the underlying virtual image located in the catalog for which the virtual system was based off of. This means that the next deployment of the virtual system will not contain the fix. It will need to be reapplied to the virtual system. If you want a more repeatable solution, you should apply the fix pack to the virtual image.

Emergency fixes are good in situations where you can not wait until the next fixpack is available from IBM or if you already have a running virtual system.

Adding an emergency fix

- The name of the emergency fix and a short description are required to start the process of creating an emergency fix



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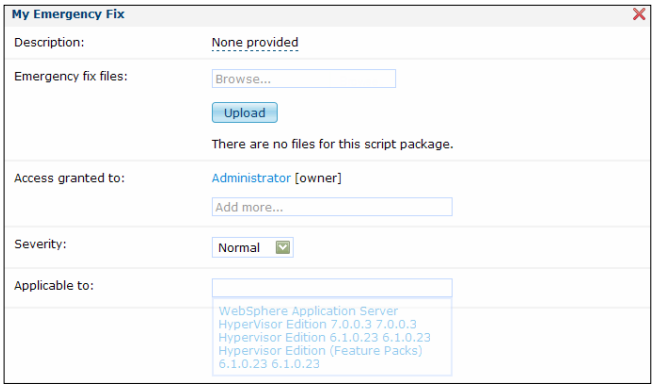
Creating an emergency fix starts with supplying a name, description and pressing the “OK” button.

Emergency fix attributes

- Emergency fix attributes view
  - Actual file containing the fix
  - Give other users access to this fix
  - Set the severity level of this fix
  - Set which images this fix can be applied against



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Emergency fixes like virtual images and script packages reside in the catalog located on the CloudBurst appliance. Before an emergency fix can be applied against a virtual system it needs to be uploaded to the catalog.

Besides uploading the fix into the catalog you also need to set the “Applicable to” field. This field indicates which virtual image this fix is applicable to. Any virtual system based off of the chosen virtual image can have this fixed applied.

Section

Applying service to virtual systems

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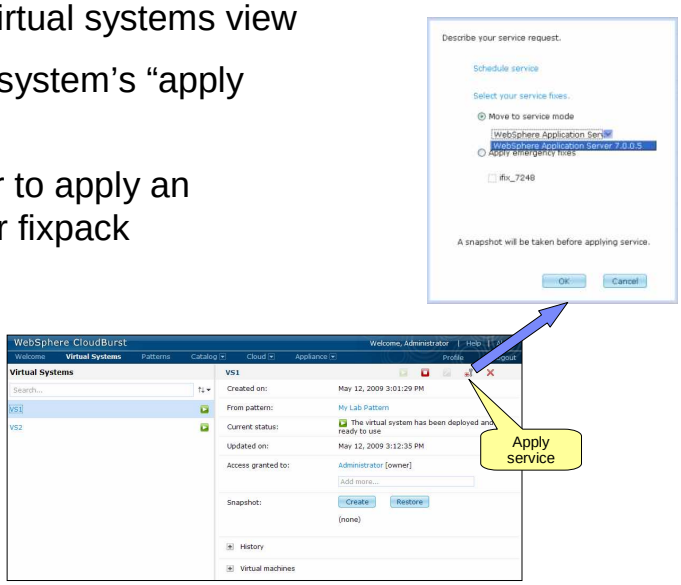
This section will cover the application of service to virtual systems.

Applying service to virtual systems

- Located in the virtual systems view
- Click the virtual system's "apply service" button
- Choose whether to apply an emergency fix or fixpack



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Applying a fixpack or emergency fix is accomplished in the same way. You locate the virtual system in which you want to update. You click the "Apply Service" button. This will bring up a window where you can choose to either apply a fixpack or emergency fix.

If you choose to apply an emergency fix you will also need to choose the specific fixes you want applied. If you choose to apply a fixpack then you will need to choose the specific fixpack you want applied.

The specific screen captures in this slide show the application of V7.0.0.5 fixpack.

Process flow of applying service

- The application of fixpacks and emergency fixes both follow the same process
  - Stop WebSphere Application Server services
  - Take snap-shot
  - Apply fixpacks and emergency fixes using standard mechanisms (that is, UpdateInstaller)
  - Restart services

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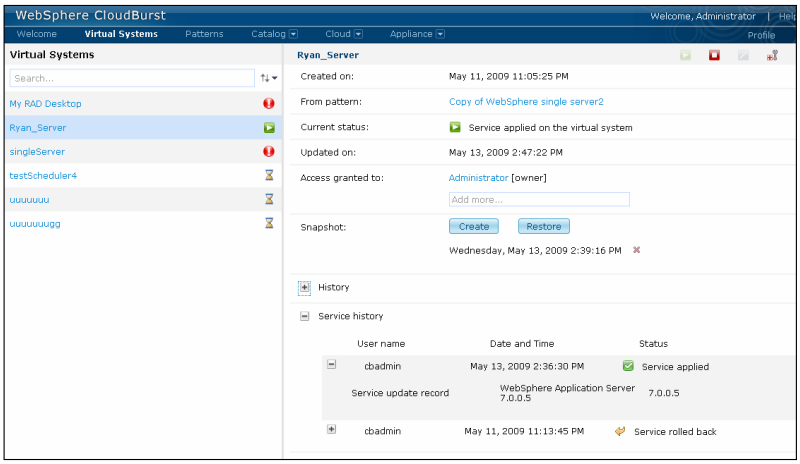
The process that CloudBurst follows when installing fixpacks and emergency fixes is the same. First all services are stopped. Next a snapshot is taken of the virtual system. This allows you to back out your service. Next the fixpacks and emergency fixes are applied using standard mechanisms such as UpdateInstaller. The final step is that the stopped services are restarted.

Service history maintained

- Service history maintained
  - Allows you to back out service upgrade



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Service history is maintained. From this view you can view the service that has been applied. You can also rollback service.

Section

Summary

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The next slide provides a summary of this presentation.

Summary

- Redeploy virtual systems with updated images
- Apply fixpacks and emergency fixes directly to virtual system using CloudBurst
- Apply fixes directly to virtual systems (no CloudBurst intervention)
  - Not recommended, but possible using existing fix update tools

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You were shown three approaches to applying service to your WebSphere Application Server environments. You can import an updated image and redeploy your patterns. You can apply service directly against a virtual system using CloudBurst. You can even apply service directly against a virtual system without the intervention of CloudBurst by using the WebSphere Application Server environments existing update tools.

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