



IBM Software Group

IBM WebSphere CloudBurst Appliance V1.1

Overview



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Updated December 2, 2009

This presentation provides an overview of the new features in V1.1 of the IBM® WebSphere® CloudBurst™ Appliance.

Agenda

- Expanded hypervisor support
- Catalog management
- Command-line interface
- User management and security
- Problem determination enhancements



V1.1 of WebSphere CloudBurst offers expanded hypervisor support, including PowerVM™ and VMware ESX hypervisors managed by VirtualCenter. New virtual images have been made available to incorporate into the appliance catalog, and these virtual images can now be exported from the appliance and have their disk sizing adjusted during image extension. The command-line interface has added functionality in V1.1 to support appliance settings, virtual system maintenance, and new features that have been added in this release, like image export. In the security space, V1.1 offers improved integration with LDAP and group management. To assist with troubleshooting, the internal appliance database has been decoupled from other features, allowing you to reset the appliance database and access problem determination data even when the database cannot be reached.

Section

Expanded hypervisor support



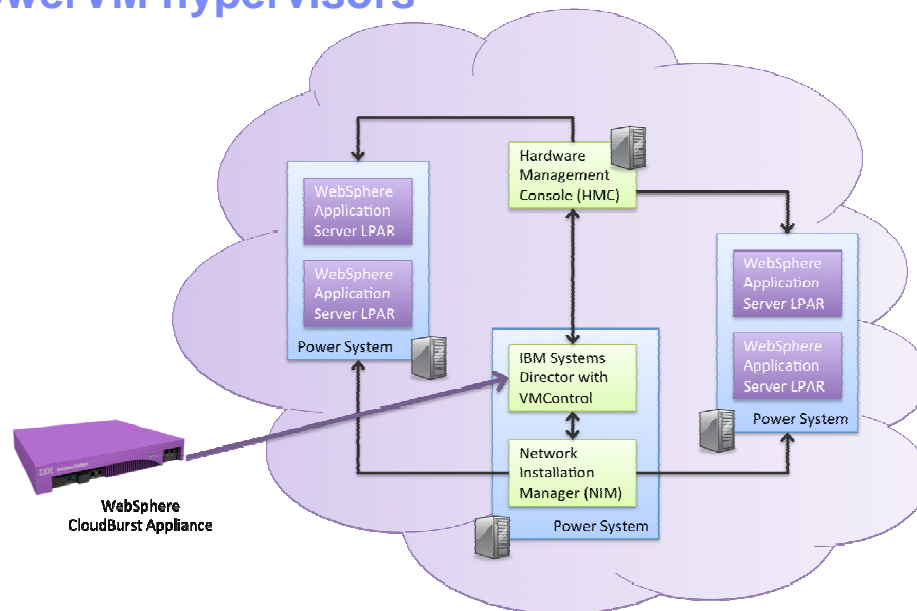
The first section of this presentation describes the hypervisor support available with WebSphere CloudBurst V1.1.

Hypervisor support

- PowerVM with IBM Systems Director VMControl
 - ▶ IBM Systems Director 6.1.1.2 and VMControl 2.1
 - ▶ 64-bit WebSphere Application Server on 64-bit AIX®
- Manage individual VMware ESX hypervisors or connect to a set of hypervisors managed by VirtualCenter
 - ▶ ESX 3.02, 3.03, 3.5, 4.0
 - ESXi no longer supported
 - ▶ VirtualCenter 2.5 with ESX 3.0.3 or higher
 - ▶ vCenter 4.0 with ESX 3.5 and 4.0 (vSphere)
- A single appliance can be used to manage multiple hypervisor platforms

In the previous release, VMware ESX was the only hypervisor supported with the IBM WebSphere CloudBurst Appliance. In V1.1, you can use a single appliance to directly manage ESX hypervisors, to connect to a group of ESX hypervisors managed by VMware VirtualCenter (or vCenter), and to managed PowerVM hypervisors through IBM Systems Director and VMControl.

PowerVM hypervisors



IBM WebSphere CloudBurst Appliance works with some versions of PowerVM hypervisors. PowerVM hypervisors, in WebSphere CloudBurst, are defined within cloud groups that are managed by IBM Systems Director VMControl. The diagram here shows a sample topology for using PowerVM with WebSphere CloudBurst. In this environment, the appliance communicates with IBM Systems Director using the VMControl plug-in to deploy and interact with virtual systems. VMControl coordinates with the Network Installation Manager (NIM) and the Hardware Management Console (HMC) to deploy virtual systems into the PowerVM cloud. Each virtual system is an LPAR running AIX 6.1.3 and WebSphere Application Server Hypervisor Edition.

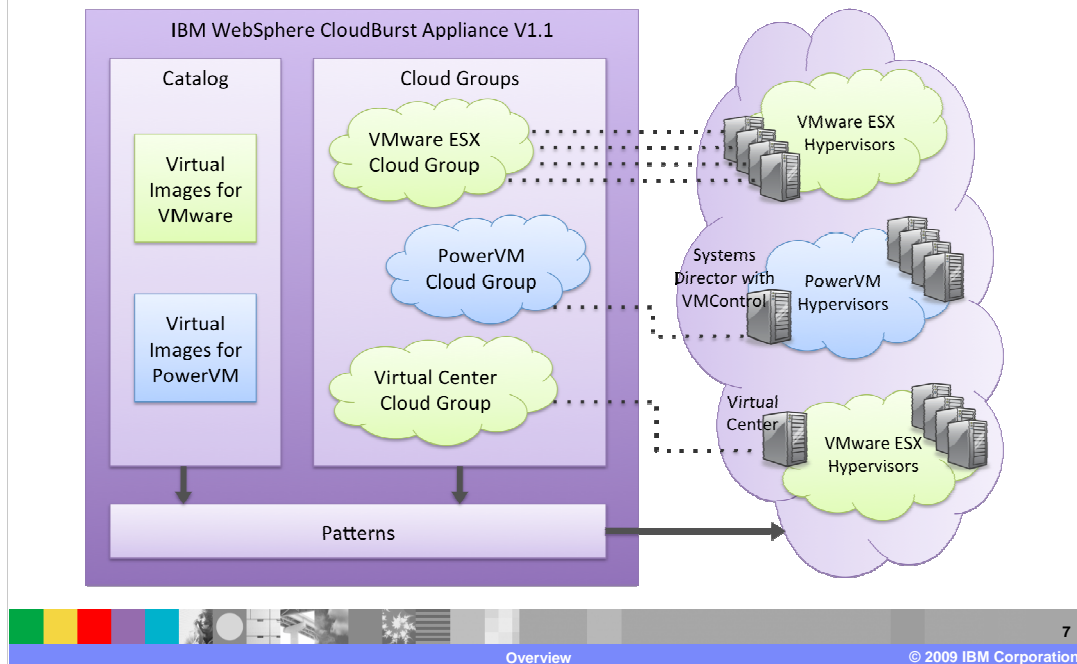
VirtualCenter support

- VMware VirtualCenter provides a centralized interface for managing multiple ESX hypervisors
- WebSphere CloudBurst can create cloud groups managed by VirtualCenter
 - ▶ Automatically detect ESX hypervisors managed by VirtualCenter and add them to the cloud group
 - ▶ VirtualCenter manages deployment
 - ▶ WebSphere CloudBurst manages placement
 - ▶ Does not support VMotion, Storage VMotion, Distributed Resource Scheduling (DRS)



VirtualCenter 2.5 – or vCenter 4.0 – are VMware products that provide a single interface to manage multiple ESX hypervisors. Rather than adding ESX hypervisors into your appliance configuration individually, you can create a cloud group that is managed by VirtualCenter. All ESX hypervisors that are managed by that VirtualCenter are detected and automatically added to the cloud group. VirtualCenter manages deployment and WebSphere CloudBurst manages placement of virtual systems. The VirtualCenter support provided in the V1.1 release does not include VMotion, Storage VMotion, or DRS.

Managing multiple hypervisors



This diagram illustrates how the IBM WebSphere CloudBurst Appliance manages different types of hypervisors and cloud groups. The top cloud group shown here is a collection of stand-alone ESX hypervisors. These hypervisors are defined individually within the appliance and then manually added to an ESX cloud group. The blue cloud group represents a collection of PowerVM hypervisors. PowerVM hypervisors are managed by IBM Systems Director with VMControl. In this case, rather than having to connect the hypervisor to each Power system directly, you just point the cloud group to the VMControl plug-in and the rest of the PowerVM environment is automatically discovered. The third cloud group shown here is a VirtualCenter cloud group. VirtualCenter cloud groups behave similarly to PowerVM cloud groups in that you just have to point the cloud group to the VirtualCenter and the connected ESX hypervisors are automatically discovered and added to the appliance configuration. Once you have defined your cloud groups, you can create patterns based on the virtual images in your appliance catalog and deploy them into your cloud. Virtual images are hypervisor-specific. To deploy ESX virtual systems, you need to use the VMware ESX virtual images; to deploy PowerVM virtual systems – AIX LPARs – you need to use the PowerVM virtual images.

Section

Catalog management



V1.1 of WebSphere CloudBurst provides new capabilities for managing the content in your appliance catalog.

Virtual images


- VMware ESX images are on SuSE Enterprise Linux® 10.2 (32-bit)
- PowerVM images are on AIX 6.1.3
 - ▶ Note: PowerVM images can only be used with WebSphere CloudBurst
- These versions of IBM WebSphere Application Server Hypervisor Edition are provided for both platforms:
 - ▶ V6.1.0.27, V6.1.0.27 with Feature Packs, V7.0.0.7
- Trial version of DB2® Enterprise Server V9.7



Updated versions of the WebSphere Application Server Hypervisor Edition virtual images are being provided with this release of WebSphere CloudBurst. The VMware ESX images have been updated to include new fix pack levels – V6.1 of the application server includes fix pack 27, and V7 of the application server includes fix pack 7. New virtual images are being released for use with PowerVM hypervisors. These images are built on AIX 6.1.3. Unlike the VMware ESX images, which can be used outside the scope of the appliance, the PowerVM virtual images can only be used with WebSphere CloudBurst. In addition to the WebSphere Application Server Hypervisor Edition images, IBM is also providing a trial version of a DB2 Enterprise Server V9.7 image for use with the appliance.

Image export

■ Exporting images

- ▶ Use either the console or command-line interface to export images
 - In the console, go to **Catalog > Virtual Images**, select the image you want to export, and then click the export icon 
- ▶ Exported as OVA files, can then import into another appliance's catalog

■ Importing images

- ▶ Use existing catalog functionality to import images, as in the previous release



In an environment where you have multiple appliances running, it can be useful to share virtual images across appliances to keep image content synchronized. In this release, the appliance has added the ability to export a virtual image from the appliance catalog. This image is copied off of the appliance in the format of an OVA file, and you can then import that image onto a different appliance using the standard image import capability. Any image can be exported from your appliance, including images provided by IBM, images that you have extended and modified using the appliance, and custom-built images.

Volume sizing on image extension

- During image extension, can modify the sizes of the different volumes that make up the image

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

[General information](#)

[Deployment configuration](#)

[Hardware configuration](#)

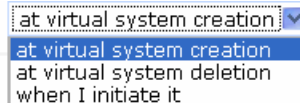
* Network interfaces:	<input type="text" value="1"/>
* SLES10SP2-32.vmdk (GB):	<input type="text" value="12"/>
* WebSphere_Binaries.vmdk (GB):	<input type="text" value="6"/>
* WebSphere_Profiles.vmdk (GB):	<input type="text" value="2"/>
* WebSphere_IHS.vmdk (GB):	<input type="text" value="1"/>

New hardware configuration options have been added to the image extension process. 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.

Script package execution options

- Script packages can be run at these times:
 - ▶ When the virtual system is created
 - ▶ When the virtual system is deleted
 - ▶ When initiated by a user
- Only one option can be selected per script package
- For user initiated packages, the scripts can be run multiple times

Executes:



When you are creating a script package in your appliance catalog, you have the option of specifying when that script package is going to be run. In the previous release, all script packages were run at virtual system creation time, and this is still the default option in V1.1. You have two other choices for when to run the script package – when the virtual system is deleted and when execution is initiated by a user. You can only choose one execution option per script package. For user initiated script packages, the scripts can be run multiple times.

Section

Command-line interface



This section describes new command-line interface features in this release.

Command-line interface

- Add support for additional function to the command-line interface
 - ▶ Appliance settings
 - ▶ Emergency fixes and maintenance
- Support new product functionality
 - ▶ Connecting to VirtualCenter and Systems Director
 - ▶ Image export
- Automatic updates to keep the command-line interface synchronized with the appliance
- Sample script for exporting and importing patterns



The command-line interface for WebSphere CloudBurst has been expanded in this release to include support for working with appliance settings – like time servers, domain name servers, and mail delivery options. You can also use the command-line to apply maintenance to your virtual systems with emergency fixes. Some of the new product features covered earlier in this presentation – the ability to create cloud groups based on VirtualCenter and Systems Director with VMControl, and the image export capability – are available through the command-line interface. The command-line interface includes new logic to automatically stay synchronized with the appliance it is connected to. There are also new script samples available, including a script that allows you to export and import patterns from one appliance to another.

Section

User management and security



This release of WebSphere CloudBurst offers improved integration with LDAP groups, and better linkage between groups and roles and permissions, regardless of whether LDAP is being used.

Passwords

- All password entry fields include:
 - ▶ Full password masking
 - ▶ Second password entry field for verification



The Web console user interface has full password masking on all entry fields, and a second password entry field has been added for verification.

Group-level operations

- Added group-level permissions
 - ▶ Set permissions for all group members at once
- Included user status icons on the group details page
 - ▶ Under **Appliance > User Groups > group_name**



End Users 🔍 ✖

Description: [Non-administrator users](#)

Created on: Nov 10, 2009 11:25:57 AM

Updated on: Nov 10, 2009 11:25:57 AM

Group members:

-  [user4](#) [remove]
-  [user6](#) [remove]

Permissions:

- Deploy patterns in the cloud
- Create new patterns
- Create new catalog content
- Cloud administration
- Appliance administration
- License tracking



Group-level permissions have been added in this release; previously, permissions can only be configured at the individual user level. You can use group-level permissions to set permissions for all members of a group at once. The group page in the Web console has been expanded to show the permissions settings for the group. User status icons for group members are also available on the group page.

Cloud group access restrictions

- Non-administrative users can only deploy to a cloud group if they have read permission to the group
- When upgrading from 1.0:
 - ▶ The superuser cbadmin is set as the owner of all existing cloud groups
 - ▶ The **Everyone** group is given read permission to all existing cloud groups



An appliance administrator can restrict access to subclouds by granting users or groups access to different cloud groups. A user cannot deploy patterns to a cloud group unless he has read access to that group. For example, you might have one cloud group that represents your production systems, and you do not want all users on your appliance to be able to deploy virtual systems to your production environment and consume resources there.

Cloud group permissions are configured on the cloud group page in the appliance console. When upgrading from V1.0, all users on the appliance are given read access to existing cloud groups so as not to change the behavior from the previous release. Any cloud groups added after the upgrade will need to have permissions set explicitly.

Integration with LDAP groups

- WebSphere CloudBurst recognizes users and groups in your LDAP configuration
- Add users and groups from your LDAP server to your appliance
 - ▶ When adding an LDAP group, the appliance adds existing users to the group if they are members
 - ▶ When adding an LDAP user, the appliance will automatically add the user to defined groups if the user is a member of the group
- With LDAP is enabled, the appliance can no longer modify group membership



WebSphere CloudBurst has the capability to recognize groups in your LDAP configuration. When LDAP is enabled on your appliance, you can add LDAP users and groups to your appliance configuration. When you add an LDAP group, the appliance adds existing users to the group if they are members of that group. When adding an LDAP user, the appliance automatically adds the user to defined groups of which that user is a member. LDAP group management capability and standard appliance user groups are strictly separate – when LDAP is enabled, you can no longer use the appliance to modify group membership.

Section

Problem determination enhancements



This section covers problem determination enhancements that are available with the IBM WebSphere CloudBurst Appliance V1.1 release.

Database recovery

- Accessing troubleshooting information is difficult if internal appliance databases are corrupted
- Database recovery tool allows writing over a corrupted database
 - ▶ Connect to the appliance using the serial console
 - ▶ Run a Repair Installation to return the database to a clean state
 - Returns the appliance data to its original factory settings
 - ▶ Restore from a backup to recover previous appliance configuration
- Adding capability to retrieve trace.zip and audit.zip log files when database is non-functional



When the internal appliance database becomes corrupted or unavailable, it can be difficult to access troubleshooting information to help figure out the source of the problem. You can now use the serial console to run a database recovery tool that writes over a corrupt database and returns your appliance to a clean state. After recovery, you can restore from a backup to recover your previous appliance configuration. In addition, even when the database is non-functional, you can still retrieve appliance log files to help with problem diagnosis.

Section

Summary

This section provides a summary of this presentation.

Summary

- The WebSphere CloudBurst V1.1 release provides:
 - ▶ Expanded hypervisor support, including PowerVM and VirtualCenter
 - ▶ Updated virtual images for WebSphere Application Server Hypervisor Edition
 - ▶ Catalog management enhancements, including image export, disk sizing, and script execution options
 - ▶ Support for additional appliance function from the command-line interface
 - ▶ Group-level security and improved LDAP integration
 - ▶ Problem determination tools for database recovery



IBM WebSphere CloudBurst Appliance V1.1 offers expanded hypervisor support, new virtual images and catalog management capability, command-line interface enhancements, security updates, and new problem determination tools.

References

- WebSphere CloudBurst V1.1 Information Center
 - ▶ <http://publib.boulder.ibm.com/infocenter/wscloudb/v1r1/index.jsp>
- YouTube channel with demonstration videos
 - ▶ <http://www.youtube.com/user/WebSphereClouds>



This slide provides references to useful links with information on IBM WebSphere CloudBurst.

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