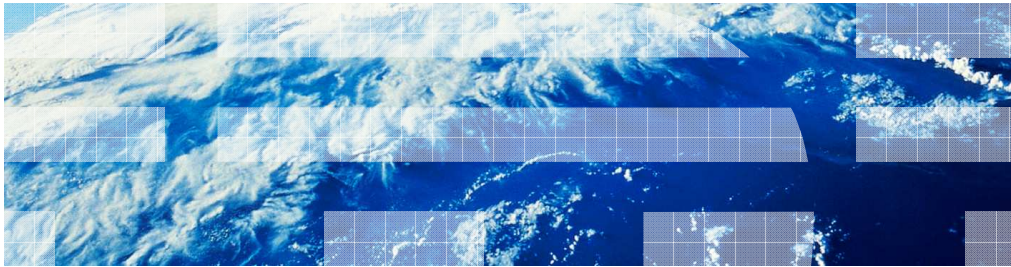




---

# IBM WebSphere CloudBurst Appliance V2.0

## WebSphere Business Monitor Hypervisor Edition



WebSphere software

© 2010 IBM Corporation

This presentation will discuss IBM WebSphere® Business Monitor Hypervisor Edition and WebSphere CloudBurst™.

---

## Table of contents

- WebSphere Business Monitor
- Importing the virtual images
- Pattern parts
- Patterns
- Applying fixes

This presentation will first cover a brief overview of WebSphere Business Monitor, followed by a detailed discussion of WebSphere Business Monitor Hypervisor Edition.

## ***WebSphere Business Monitor***

This section will discuss an overview of WebSphere Business Monitor.

## Business monitoring with WebSphere Business Monitor

- Understand the state of business performance measured against targets using key performance indicators
- Track processes and applications
- View metrics and business measures in customizable dashboards
- Notifications for business situations that require corrective action
- Report and analysis using historical and predictive information
- Monitor server
  - Standalone or network deployment environments
  - Monitor profiles on WebSphere Application Server, WebSphere Process Server, WebSphere Enterprise Service Bus



Business monitoring is the understanding, analysis and exploration of business operations. Business executives want the ability to easily and quickly verify business measurements against goals. This can be accomplished easily using key performance indicators which are visible in the monitor dashboard.

Business analysts want to track processes and applications running in disparate environments in near real-time. They might want to track the status of a specific order or identify bottlenecks and reallocate resources. This can be performed using a customized dashboard to display specific metrics for a process, such as duration or cost of an activity.

A complete monitoring system should also detect unusual situations and provide alerts and identify the need to take corrective action. For instance, if inventory levels are down, alerts should be sent in the form of e-mail or text messages to the appropriate individuals. It should also improve business users' decision making through embedded analytics to provide a deeper analysis of trends and data. You should be able to combine real-time performance and historical information to evaluate trends. And you should be able to evaluate predictions of future trends for improved decision making and faster reaction to business changes.

The monitor server is the runtime component that is used to run the monitor model applications for tracking business events and extracting event payloads for storing in monitor metrics and aggregating into business measures and key performance indicators. The monitor server can be installed in a stand-alone configuration for development environments or small scale production environments. It can also be installed in a network deployment environment for use with clusters for maximum scalability and high availability. The monitor profile can be installed on WebSphere Application Server, WebSphere Process Server or WebSphere Enterprise Service Bus.

## Using WebSphere Business Monitor and WebSphere CloudBurst

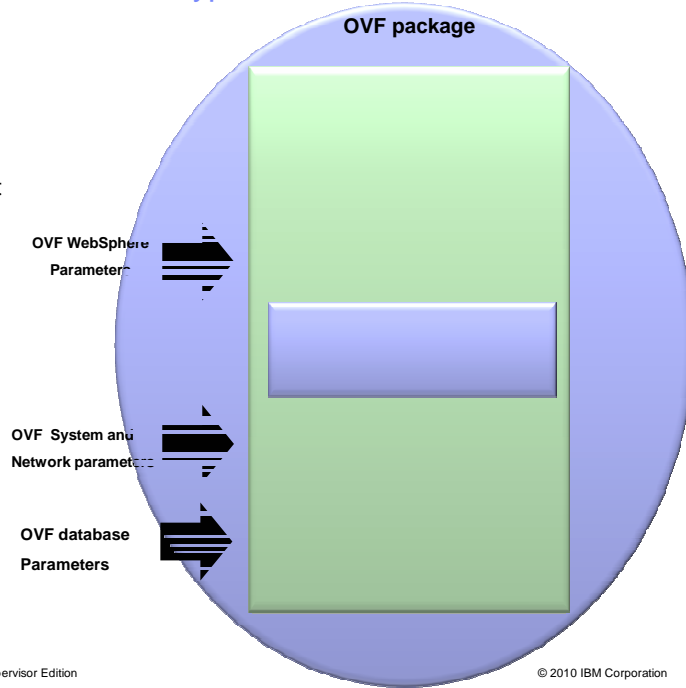
- WebSphere Business Monitor virtual image available for WebSphere CloudBurst 2.0
- Create WebSphere Business Monitor pattern
- Edit WebSphere Business Monitor pattern
- Specify deployment parameters
- Deploy WebSphere Business Monitor to virtual system
- Access WebSphere Business Monitor virtual system parts in their virtual machines
- Run scripts to setup access to a remote CEI server

When building monitoring applications for deployment on WebSphere Business Monitor, tools are required. WebSphere Integration Developer can be used to build and test monitoring applications. Once an application is designed, developed, and tested, it can be deployed on WebSphere Business Monitor. WebSphere Business Monitor Hypervisor Edition can be deployed and managed with WebSphere CloudBurst 2.0. You can use WebSphere CloudBurst 2.0 to import the WebSphere Business Monitor virtual image files into the catalog. You can then create, edit, and work with WebSphere Business Monitor based patterns, and deploy virtual systems with installed instances of WebSphere Business Monitor to run monitoring applications. You manage WebSphere Business Monitor patterns and deployments in the same manner as you deploy and manage WebSphere Application Server deployments when working with WebSphere CloudBurst. Initially you import the WebSphere Business Monitor virtual image into the WebSphere CloudBurst catalog. Once that is available, you can create and edit patterns of WebSphere Business Monitor components using the WebSphere CloudBurst pattern editor. You can import script packages that are used to deploy WebSphere Business Monitor applications into the WebSphere CloudBurst catalog in the same manner as you can for WebSphere Application Server applications. The monitoring applications can be deployed into a running instance of WebSphere Business Monitor at the time the server instance is deployed into the private cloud. WebSphere Business Monitor pattern parts are deployed into the virtual system into virtual machines on the Hypervisors that are configured for use by WebSphere CloudBurst.

The final step is required to access events from a CEI server in a different cell from WebSphere Business Monitor. You can deploy JEE applications directly into the Monitor server and then this step is not required. If you need to monitor a process server or another server in a remote cell then you need to run these scripts to configure the cross cell link.

## IBM WebSphere Business Monitor Hypervisor Edition

- Preinstalled, configured, and tuned
- Open Virtualization Format standard packaging
- WebSphere Business Monitor 7.0
- Available as a stand-alone image, or with WebSphere CloudBurst



6

WebSphere Business Monitor Hypervisor Edition

© 2010 IBM Corporation

The WebSphere Business Monitor Hypervisor Edition comes pre-packaged for use with WebSphere CloudBurst Appliance.

The package includes the operating system and the WebSphere Business Monitor patterns and pattern parts that are necessary to work with monitor deployments.

The virtual images are available as stand-alone Hypervisor edition images that can be used directly with the Hypervisor, and as images that can be imported into the WebSphere CloudBurst catalog.

WebSphere Business Monitor Hypervisor Edition version 7.0 is available.



## What is included in the WebSphere Business Monitor Hypervisor Edition

- WebSphere Business Monitor Hypervisor Edition images
  - WebSphere Business Monitor Hypervisor Edition V7.0 Novell SUSE Linux Enterprise Server for x86 (32-bit)
- What the image contains
  - Pre installed guest operating system (SUSE 11)
  - DB2® Workgroup Server Edition version 9.5 for 32-bit
  - Set of patterns that represent common WebSphere Business Monitor deployment topologies
  - Set of parts that can be used to configure your own custom topology

WebSphere Business Monitor Hypervisor Edition is available for x86 platforms.

32 bit SUSE Linux Enterprise server editions are available for ESX Hypervisors.

The images contain pre-installed guest operating systems, with pattern parts to build a WebSphere Business Monitor topology.

The pattern parts can be used individually, and can be deployed as part of pre-defined patterns.

## ***Importing the virtual images***

This section will discuss uploading the WebSphere Business Monitor Hypervisor Edition virtual images to WebSphere CloudBurst.



## Getting started

- Prerequisite requirements of the download target machine
  - Java™ 6 installed
  - 10 gig storage
- Actions:
  - Download the package
  - Unpack the package
  - Invoke image loader (GUI launcher or command line)
  - Supply properties

There is a special image loading tool that is provided with WebSphere Business Monitor Hypervisor Edition virtual images to help load the virtual image into the WebSphere CloudBurst catalog.

The virtual image is provided in a TAR archive, and that archive includes the image loading tool.

The virtual image archive should be downloaded to a machine on the local network that is hosting the WebSphere CloudBurst appliance.

Scripts are included in the archive to launch the image loading tool. The image loading tool requires Java 6 runtime to be installed on the computer loading the image to the appliance.

## Package format

- WebSphere\_Business\_Monitor\_Hypervisor\_Edition\_V<version\_number>\_<guest\_operating\_system\_type>.ova  
– virtual image that is loaded into the appliance
- loader.bat - command to start the image loading process for Windows®
- loader.sh - command to start the image loading process for UNIX®
- imageLoader folder - Folder that contains the scripts and log files folder

imageLoader	7 items	folder
images	10 items	folder
ibs	7 items	folder
logs	3 items	folder
resources	39 items	folder
scripts	3 items	folder
WebSphere_Process_Server_Hypervisor_Edition_V70_SLES_X86.ovf	30.8 KB	XML document
cb.p12	3.7 KB	PKCS#12 certificate t
WebSphere_Process_Server_Hypervisor_Edition_V70_SLES_X86.ova	6.3 GB	tar archive
loader.bat	993 bytes	plain text document
loader.sh	925 bytes	shell script

10

WebSphere Business Monitor Hypervisor Edition

© 2010 IBM Corporation

This slide shows an overview of the contents of the virtual image archive for WebSphere Business Monitor Hypervisor Edition.

In the archive is the OVA file to load into the WebSphere CloudBurst catalog. Also included are loader script files to launch the loader tool to import the image into the catalog. Supporting files are included that are used by the image loader tool. Separate script files are included for running in a Windows or Unix environment.

## Image loader

- Use the loader command in a command line without GUI
  - `loader.sh -silent -hostname <hostname> -userID <username> -password <password> -language <language> -acceptLicense <true or false>`
  - Virtual image loaded into catalog along with the predefined patterns
  - image reference number is used to distinguish between two virtual images
- Use the loader GUI
  - Invoked by using `loader.sh` or `loader.bat` with no arguments

```

CMLHV0008I: Welcome to Image Loader, a utility used to load the virtual image on
to the appliance and create predefined patterns for the image.
CMLHV0009I: Image Loader is verifying that you have an active network connection
.
CMLHV0010I: Image Loader established a connection to the following appliance: ai
mcp210.austin.ibm.com
CMLHV0011I: Starting to load the virtual image on to WebSphere CloudBurst Applia
nce.
CMLHV0025I: The WCA version is 2.0.0.0-22581.
CMLHV0026I: Begin to import virtual image WebSphere Process Server 6.2.0.2 for 3
2 bit SUSE 11 168.
CMLHV0015W: The virtual image you are loading already exists on the appliance.
CMLHV0021I: Creating predefined patterns for the virtual image.
CMLHV0023I: Image Loader is creating the following predefined pattern on the app
pliance.   Single Server for WebSphere Process Server V6.2.0.2 on 32 bit SUSE 11
168
CMLHV0023I: Image Loader is creating the following predefined pattern on the app
pliance.   Simulated Scalable Environment for WebSphere Process Server V6.2.0.2 o
n 32 bit SUSE 11 168
CMLHV0023I: Image Loader is creating the following predefined pattern on the app
pliance.   Scalable Environment for WebSphere Process Server V6.2.0.2 on 32 bit S
USE 11 168
  
```

The image loading tool can be used either graphically or in a command line format. Running the loader script file without any parameters launches the GUI by default.

## Image loader

- Use the loader GUI
  - invoked using loader.bat/sh without any arguments

12

WebSphere Business Monitor Hypervisor Edition

© 2010 IBM Corporation

When invoking the loader script without any arguments, the GUI is opened.

The image loader GUI has entry boxes for the IP address of the WebSphere CloudBurst appliance, and user and password credentials.

Entering this information is mandatory to get the image uploaded to the WebSphere CloudBurst catalog.

Once you have entered the host, user name, and password information, you can optionally click the test environment link to test the connectivity to your appliance.

When you are ready, you can click the load a virtual image link, and the process of uploading the virtual image to the WebSphere CloudBurst appliance, and creating the default patterns is started. A progress bar will display the progress of the upload and pattern creation.

## Load image using WebSphere CloudBurst console

- Use the WebSphere CloudBurst console
  - Catalog → Virtual Images → Add new Virtual image
  - Provide a path to remote OVA file. You need to configure http server on the image machine to serve this file
  - Provide username and password of the http server if security is on
  - Note: **images loaded using console will not have predefined patterns**



13

WebSphere Business Monitor Hypervisor Edition

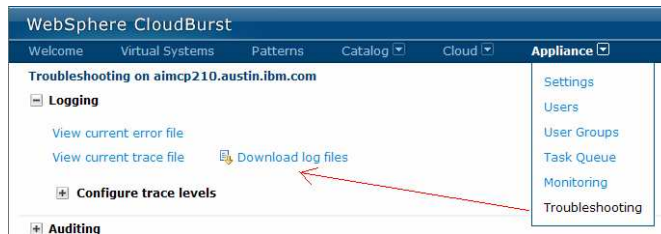
© 2010 IBM Corporation

You can also load the WebSphere Business Monitor virtual image using the default method in the WebSphere CloudBurst administrative console, or the command line interface.

Loading the virtual image for WebSphere Business Monitor Hypervisor Edition will not create the predefined patterns.

## Loader logs

- If using image loader, check for logs under
  - imageloader/logs/imageloader.log
- You can also check the cloudburst logs by logging into console
  - Appliance → troubleshooting → logging



When using the image loader tool to upload the virtual image to the WebSphere CloudBurst catalog, logging information is captured in the imageloader/logs/imageloader.log file at the location where you started the image loader script file.

Additional logs are available from the WebSphere CloudBurst appliance in the troubleshooting page.

## ***Pattern parts***

This section will discuss the pattern parts that are available with the WebSphere Business Monitor Hypervisor Edition virtual images.

## WebSphere Business Monitor Hypervisor Edition - Parts

- Database
- Extendable nodes
- Stand-alone server
- Deployment manager
- Custom nodes
- Proxy server
- Basic function nodes
- Basic function control node
- Full function control node

WebSphere Business Monitor Hypervisor Edition has nine pattern parts.

There are several simpler pattern parts, including a database part, extendable nodes, a stand-alone server, a deployment manager, custom nodes, and a proxy server.

There are three pattern parts that are more advanced parts, including a basic function node, a basic function control node, and a full function control node.

The best practices for working with individual pattern parts when editing a pattern are discussed later in this presentation.



## Parts description

- Standalone server
  - Contains WebSphere Business Monitor installation with stand-alone server instance and DB2 installed
- Extendable node
  - Contains just the installation of WebSphere Business Monitor
- Database part
  - Contains the installation of DB2 database.
  - Can be configured for deployment manager or for the clustered topology
- Custom node
  - Provides an un-configured node for use with a deployment manager or a part with control nodes
- Proxy server
  - Contains of a proxy server instance used for load distribution

The stand-alone server part contains an operating system with a pre-installed WebSphere Business Monitor, with a single server profile created and a DB2 database installed.

The extendable node pattern contains the operating system with only the WebSphere Business Monitor part installed.

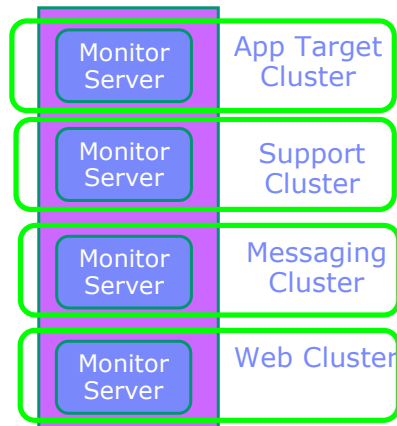
The database pattern part contains only the operating system with a DB2 database instance installed.

The custom node pattern part contains an un-configured node that can be used in conjunction with a deployment manager, or a pattern part that contains a deployment manager such as one of the control nodes.

The proxy server pattern part contains an operating system deployment with a single proxy server installed to handle load distribution for your deployment.

## Parts description - Basic function nodes

- Basic function nodes



18

WebSphere Business Monitor Hypervisor Edition

© 2010 IBM Corporation

The WebSphere Business Monitor basic function node pattern part is the first part that is more complex than the other simpler pattern parts.

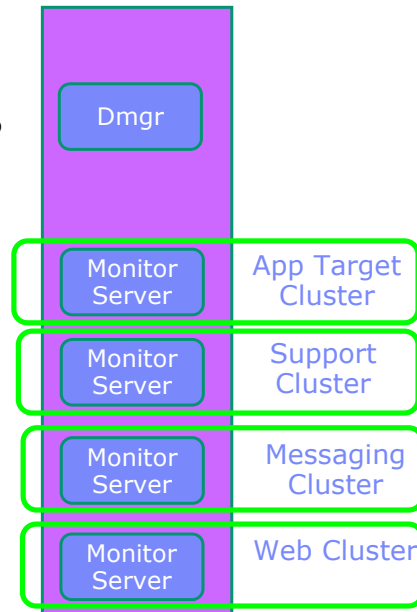
The pattern part contains four server instances deployed in a single virtual machine.

This pattern part cannot be used on its own, it must be deployed as part of a larger pattern that contains a deployment manager in order for it to be of any use.

This pattern part can be used when building a custom pattern with clustering support for WebSphere Business Monitor deployments.

## Parts description - Basic function control nodes

- Basic function control node
  - Remote messaging, remote support, remote Web deployment pattern in a single virtual machine.
  - No DB2 server and no proxy server



19

WebSphere Business Monitor Hypervisor Edition

© 2010 IBM Corporation

The second of the more complex pattern parts is the basic function control node.

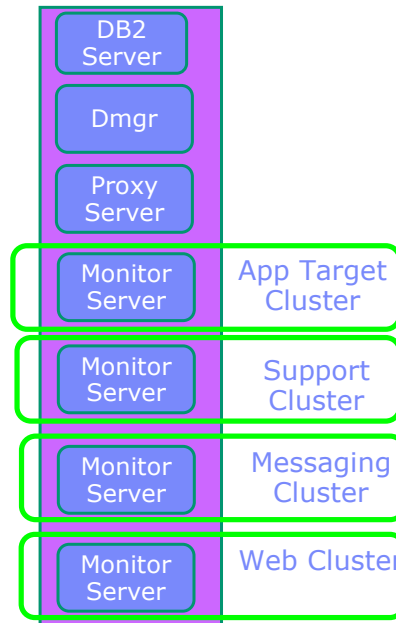
The word control in the description of this pattern part helps to identify it as a pattern part that contains a deployment manager.

This pattern part is an extension of the basic function node, with a deployment manager as part of the same virtual machine.

The pattern part does not contain a DB2 database or a proxy server as part of its topology.

## Parts description - Full function control nodes

- Full function control node
  - consists of all the components running in a single virtual machine organized similarly to a production environment
  - contains deployment manager, a database instance, a proxy server and cluster members



20

WebSphere Business Monitor Hypervisor Edition

© 2010 IBM Corporation

The final complex pattern part that is provided with WebSphere Business Monitor virtual image is the full function control node.

The use of the word control in the description of this pattern part helps you identify that it is a pattern part that contains a deployment manager.

This pattern part contains a DB2 server instance, a deployment manager, a Proxy Server instance, and a basic control node with four servers.

All of the included components run on a single virtual machine instance.

This pattern part can be used with a basic function node to begin to build a scalable deployment of WebSphere Business Monitor.

## ***Patterns***

This section will discuss the pre-defined patterns that are included with the WebSphere Business Monitor Hypervisor Edition virtual images.



## WebSphere Business Monitor Hypervisor Edition - Patterns

- WebSphere Business Monitor comes preconfigured with three patterns
  - Single Server
  - Simulated Scalable Environment
  - Scalable Environment
  
- Use pattern parts to create custom patterns

WebSphere Business Monitor Hypervisor Edition has three preconfigured patterns for use with WebSphere CloudBurst.

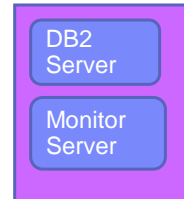
The patterns are created when the virtual image is added to the WebSphere CloudBurst catalog using the image loading tool.

The three patterns that are defined by the WebSphere Business Monitor image loading tool include a single server pattern,

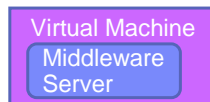
a simulated scalable environment pattern that contains a simple gold topology pattern, and a scalable environment pattern that is essentially a scalable gold topology pattern.

## Patterns – Single server

- Uses the stand-alone server part
- Deployed to one virtual machine
- Single Java Virtual Machine (JVM)
- Stand-alone profile



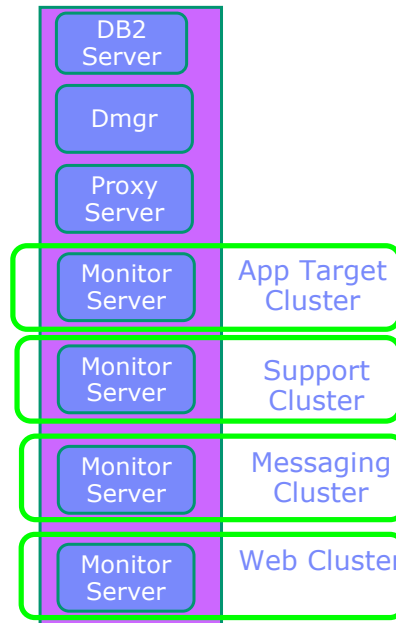
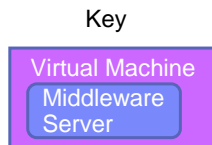
Key



The single server WebSphere Business Monitor pattern is a single virtual machine that is composed of the operating system, a DB2 server, and a WebSphere Business Monitor installed with a single stand-alone server instance defined.

## Patterns – Simulated scalable environment

- Uses the full function control node part
- Deployed to one virtual machine
- Remote messaging, remote support, remote Web application deployment pattern
- Single Virtual Machine (VM)



24

WebSphere Business Monitor Hypervisor Edition

© 2010 IBM Corporation

The simulated scalable environment is a pattern that contains the full function control node pattern part. This pattern part includes a DB2 server, a deployment manager, a proxy server, and four WebSphere Business Monitor clusters. There is a cluster defined for the application target, support, messaging and Web applications.

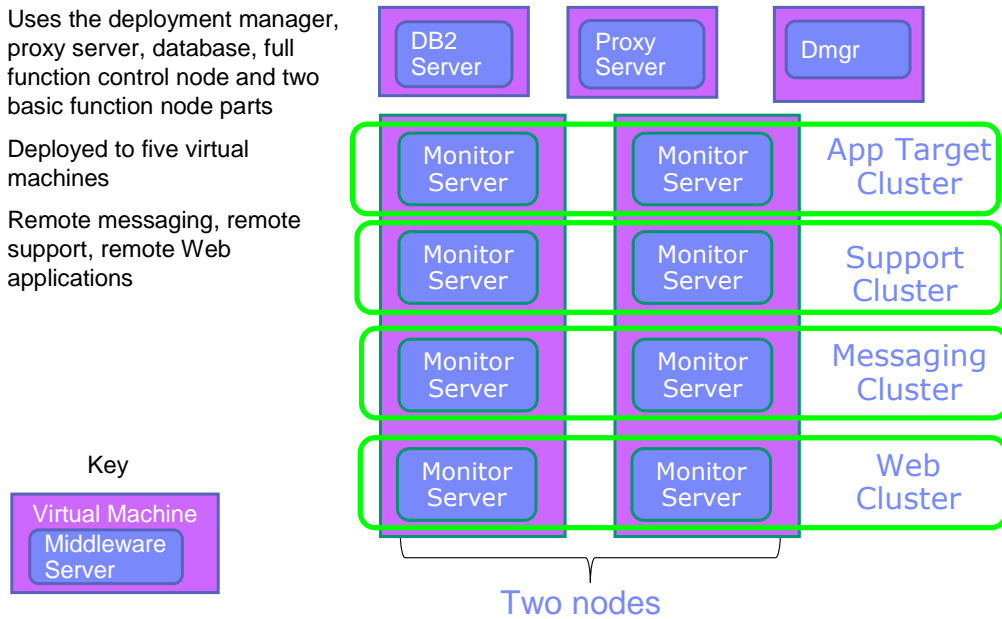
All of the components of this pattern are deployed in a single virtual machine, and the pattern is ideal for testing a simple scalable environment.

It is not a suitable production pattern as it does not include failover support in the defined topology.



## Patterns – Scalable environment

- Uses the deployment manager, proxy server, database, full function control node and two basic function node parts
- Deployed to five virtual machines
- Remote messaging, remote support, remote Web applications



25

WebSphere Business Monitor Hypervisor Edition

© 2010 IBM Corporation

The scalable environment pattern represents a sample production WebSphere Business Monitor gold topology pattern.

The different pattern parts are broken into several virtual machines that are ideal for a production environment when failover support is important.

The DB2 server, the proxy server, and deployment manager are all deployed in their own virtual machines.

Two more virtual machines are defined with four clusters spanning them. Each cluster has two servers for application target, support, messaging and Web applications.

Each of the virtual machines containing the clusters has a single node agent.

## Custom patterns – Some guidelines

- Two stand-alone servers in one pattern are two individual entities. No communication between them
- Stand-alone server and deployment manager in one pattern
  - Stand-alone not federated to deployment manager
  - Two individual entities . No interaction between these two parts
- Use database part with either basic function control node, deployment manager
  - Don't add more than database part
- Basic function node and custom node parts should be only used in a pattern that contains a deployment manager or a control node
- Do not include more than one control node in a pattern
- Do not use deployment manager with a control node

There are some guidelines that should be followed when creating customized patterns for WebSphere Business Monitor deployments.

You should not have more than one stand-alone server in a pattern. If two stand-alone servers are deployed in a pattern, they are deployed as single entities that do not communicate with each other, and provide no advantages to being in a single virtual system.

If a stand-alone server is deployed in the same pattern as a deployment manager, the stand-alone server is not federated to the deployment manager.

They are deployed as two separate entities.

The DB2 database server instance should be deployed in a pattern that contains a basic function control node, or a stand-alone deployment manager.

Adding more than one DB2 server instance to your pattern does not provide extra database processing power to your deployment.

The basic function node and custom node parts should be deployed in part of a pattern that contains a deployment manager, such as the basic or full function control nodes, or deployment manager pattern parts. Without a deployment manager, there is nothing to federate the basic function nodes to, and the nodes will just unnecessarily consume resources on your Hypervisor.

More than one deployment manager should not be added to your pattern and does not provide extra computing power to your topology. This includes any pattern parts that contain a deployment manager such as the control nodes, or extra single deployment manager parts.

## ***Applying fixes***

This section will discuss applying fixes to WebSphere Business Monitor deployments with WebSphere CloudBurst.

## Applying fixes

- Fixes for WebSphere Business Monitor = Installation manager
- Fixes for WebSphere Application Server = Update installer
- Operating system fixes = RPM
- GUI selection for applying emergency fixes with WebSphere CloudBurst
  - Installation manager
  - Update installer
  - RPM

The IBM Installation manager and update installer are both installed on the virtual system during deployment of WebSphere Business Monitor.

WebSphere Business Monitor has some particular requirements for applying fixes to deployments using the installation manager and update installer.

I-Fixes and fix packs that contain modifications to the WebSphere Business Monitor components of a deployed virtual system must be applied using the installation manager.

I-Fixes and fix packs that contain fixes for the underlying WebSphere Application Server components of the WebSphere Business Monitor deployment are applied using the update installer.

When applying emergency fixes with WebSphere CloudBurst, additional options are displayed when applying the fixes. You can choose to apply the emergency fix using the update installer or installation manager when applying an emergency fix to a virtual system.

There is also the option to use the RPM Package Manager to install fixes related to the operating system.

These options to use the installation manager, update installer, or RPM to apply emergency fixes are available only on WebSphere Business Monitor deployments that are managed by WebSphere CloudBurst.

## ***Summary***

This section will summarize the WebSphere Business Monitor Hypervisor Edition with WebSphere CloudBurst presentation.

## Summary

- WebSphere Business Monitor Hypervisor Edition image available for WebSphere CloudBurst 2.0
- Load WebSphere Business Monitor Hypervisor Edition images using the image loader tool
- WebSphere Business Monitor in CloudBurst
  - Create, clone, and edit patterns
  - Deploy WebSphere Business Monitor virtual images
  - Deploy WebSphere Business Monitor applications using script packages

WebSphere Business Monitor Hypervisor Edition image version 7.0 is available for WebSphere CloudBurst 2.0.

The WebSphere Business Monitor Hypervisor Edition images can be loaded onto the WebSphere CloudBurst appliance using an image loading tool. Loading the images using the image loader tool generates the default patterns for WebSphere Business Monitor.

The WebSphere Business Monitor image provides pattern parts that can be used to create custom patterns; that includes WebSphere Business Monitor instances, DB2 database support, a Proxy server, and a deployment manager. WebSphere Business Monitor basic function nodes contain four clusters for application target, support, messaging and web applications.



## Feedback

Your feedback is valuable

You can help improve the quality of IBM Education Assistant content to better meet your needs by providing feedback.

- Did you find this module useful?
- Did it help you solve a problem or answer a question?
- Do you have suggestions for improvements?

Click to send email feedback:

[mailto:iea@us.ibm.com?subject=Feedback\\_about\\_CB20\\_Monitor.ppt](mailto:iea@us.ibm.com?subject=Feedback_about_CB20_Monitor.ppt)

This module is also available in PDF format at: [../CB20\\_Monitor.pdf](#)

You can help improve the quality of IBM Education Assistant content by providing feedback.



## Trademarks, disclaimer, and copyright information

IBM, the IBM logo, ibm.com, AIX, AIX 6, CloudBurst, DB2, IBM, and WebSphere are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of other IBM trademarks is available on the web at "[Copyright and trademark information](http://www.ibm.com/legal/copytrade.shtml)" at <http://www.ibm.com/legal/copytrade.shtml>

Windows, and the Windows logo are registered trademarks of Microsoft Corporation in the United States, other countries, or both.

Java, and all Java-based trademarks and logos are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. WHILE EFFORTS WERE MADE TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION CONTAINED IN THIS PRESENTATION, IT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. IN ADDITION, THIS INFORMATION IS BASED ON IBM'S CURRENT PRODUCT PLANS AND STRATEGY, WHICH ARE SUBJECT TO CHANGE BY IBM WITHOUT NOTICE. IBM SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES ARISING OUT OF THE USE OF, OR OTHERWISE RELATED TO, THIS PRESENTATION OR ANY OTHER DOCUMENTATION. NOTHING CONTAINED IN THIS PRESENTATION IS INTENDED TO, NOR SHALL HAVE THE EFFECT OF, CREATING ANY WARRANTIES OR REPRESENTATIONS FROM IBM (OR ITS SUPPLIERS OR LICENSORS), OR ALTERING THE TERMS AND CONDITIONS OF ANY AGREEMENT OR LICENSE GOVERNING THE USE OF IBM PRODUCTS OR SOFTWARE.

© Copyright International Business Machines Corporation 2010. All rights reserved.