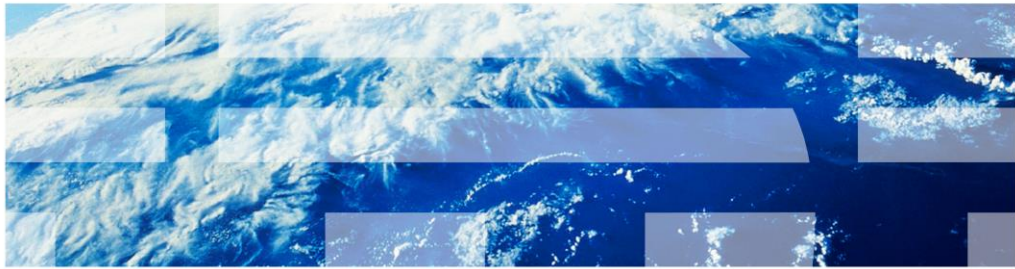


IBM Workload Deployer V3.1

Overview



© 2011 IBM Corporation

IBM Workload Deployer V3.1 offers powerful new capabilities to dispense and manage IBM middleware virtualized servers and private cloud computing environments. In this presentation you will see an overview of the enhancements that are included in the IBM Workload Deployer V3.1 release.

Table of contents

- IBM Workload Deployer V3.1 overview

This presentation will provide a high-level overview of what is new in IBM Workload Deployer V3.1.

IBM Workload Deployer V3.1 overview

This next section provides an overview of new product features in IBM Workload Deployer V3.1.

IBM Workload Deployer V3.1 – new capabilities (1 of 2)

Workloads on PowerVM™

Workload pattern support on AIX (includes IBM Web Application Pattern and IBM Database Pattern)

Extend/Capture support for AIX® base images

AIX base image available for customization by way of the extend/capture support of virtual images

High availability

IBM Workload Deployer appliance failover support added for high availability

Security enhancements

Security enhancements introduced to allow for greater separation of duties and new auditing support

IBM Workload Deployer as cloud provider in IBM Image Construction and Composition Tool

IBM Workload Deployer is added as a cloud provider in the IBM Image Construction and Composition Tool, allowing for more integrated image customizations

4

Overview

© 2011 IBM Corporation

IBM Workload Deployer V3.1 adds the workload pattern support on AIX®, allowing virtual application deployments using the PowerVM™ hypervisor. Like the VMware ESX hypervisor in V3.0, you are able to quickly define and deploy cross-product integrated solutions into your private cloud using the workload pattern for AIX. Like ESX, there are two workload patterns available with IBM Workload Deployer V3.1 – IBM web Application Pattern and IBM Database Pattern. Topology deployments are also still available, allowing for greater customization of middleware topologies when needed. The extend/capture support for AIX base images allows you to customize the AIX base image used in virtual application deployments or to create a new virtual system image that is customized with your software. This gives you a lot of flexibility in your deployments. High availability in IBM Workload Deployer V3.1 is provided with new appliance failover support. This ensures that there is always a backup ready to take over operations of your private cloud. Security enhancements exist in this release that allow for greater separation of duties and introduce some new auditing support. Finally, IBM Workload Deployer V3.1 is enhanced to work with the IBM Image Construction and Composition Tool to more seamlessly allow for image customization. This allows you to customize your IBM Workload Deployer images with bundles that have been created in the Image Construction and Composition Tool and deploy the customized images to your private cloud being managed by IBM Workload Deployer V3.1.

IBM Workload Deployer V3.1 – new capabilities (2 of 2)

New IBM database workload patterns

Transactional Database Pattern and Data Mart Pattern allowing provisioning databases and data marts with IBM Workload Deployer

IBM Workload Deployer V3.1 also has added two new database patterns that increase the functionality of Database as a Service in the appliance. A Transactional Database Pattern and Data Mart Pattern are new with IBM Workload Deployer V3.1 and include some exciting new functions that help reduce operational complexity.

Announcements – New Hypervisor Edition images available



In addition to the base appliance functionality that is coming in IBM Workload Deployer V3.1, you also have access to new WebSphere Application Server V8.0.0.1 Hypervisor Edition images. These include the VMware ESX, PowerVM and ESX platforms. On the z/VM® and PowerVM platforms, the images include both a 64-bit operating system and a 64-bit application server. On VMware ESX, there are both 32-bit and 64-bit operating system versions but the application server is 32-bit in both cases. Both Red hat and SLES versions of the images are available on ESX and z/VM. Again, the AIX base image is being made available not only for Workload deployments on PowerVM but also for virtual system 'black box' deployments there.

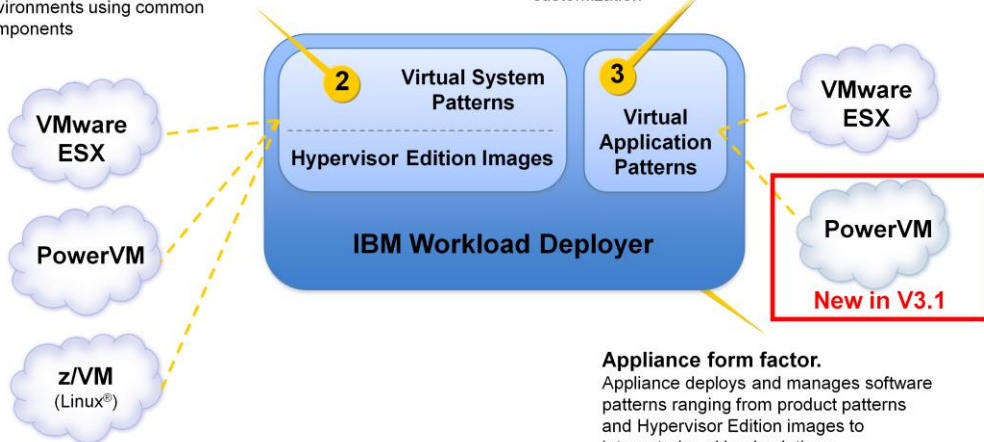
Workloads on PowerVM

Virtual system patterns.

Set of optimized product configurations (Hypervisor Edition products + base patterns) using IBM best practices; users build fully customized environments using common components

Virtual application patterns.

Integrated solutions, such as the Pattern for web Applications, delivered with integrated monitoring, life-cycle management, elasticity; limited ability for customization



7

Overview

© 2011 IBM Corporation

IBM Workload Deployer V3.1 introduces PowerVM to the virtual application pattern space as shown on the slide. Virtual application pattern deployment is now possible using PowerVM hypervisors. As with VMware ESX hypervisors, there are two workload patterns available with IBM Workload Deployer V3.1 – IBM web Application Pattern and IBM Database Pattern. These workloads are delivered as fully integrated solutions, with built-in monitoring, elasticity, and life-cycle management. They offer limited customization capabilities, but are extremely easy to build and deploy, offering exceptional value.

Workloads on PowerVM

- Support for workload-based virtual applications on PowerVM
 - Workload Deployer virtual image available for PowerVM
 - Web application pattern and database patterns
- AIX base image
 - Used for workload-based virtual application deployments
 - Can also be used for topology-based virtual system deployments
- Extend/Capture support for AIX base images

The support for the workload deployment model on PowerVM allows the deployment of virtual applications to a PowerVM-based cloud. There is a new Workload Deployer AIX virtual image made available. Like VMware ESX, a web application pattern and database pattern is available. While this Workload Deployer AIX virtual image for PowerVM is used for workload-based virtual application deployments, it can also be used for topology-based virtual system deployments. It provides a clean virtual machine with the AIX operating system deployed where you can then add your own software. If you need to deploy this environment again, it is possible to perform an extend and capture in order to create a new deployable image.

Extend/Capture support for AIX base images

- Allows customized software on the AIX base image provided
 - Once extended, can deploy again as virtual system

Virtual Images

AIX |

- IBM OS Image for AIX Systems
- IBM OS Image for AIX Systems - Large
- IBM OS Image for AIX Systems - Medium
- IBM OS Image for AIX Systems - Small
- IBM OS Image for AIX Systems - Tiny
- IBM OS Image for AIX Systems - Xlarge

Hardware

General information

Virtual CPU count: 1
 Virtual memory (MB): 3072
 Network interfaces: 1

Disk

Label	File name	Capacity (GB)
disk1	image1.mkysyb	30.88

9 Overview © 2011 IBM Corporation

The Workload Deployer base image for AIX gives you a lot of flexibility with your deployments. By using the extend/capture feature of virtual images, you can customize the base image to accommodate IBM products, which are not available as Hypervisor Editions, and vendor products. This provides a standardized way to customize your private cloud environment to meet your needs. This customized image can then be deployed as a 'stand-alone' virtual system or you can make it the default for your virtual application deployments as you will see on the next slides.

The different sizes are unique to the PowerVM system. There is only one OS Image for ESX (x86) systems. Each virtual image for the AIX System is deployed with a different disk size. This slide shows the size of the 'default' AIX image to be 30.88GB. The next slide will show the sizes of the other images. The different sizes allow Workload Deployer to deploy the chosen pattern into a virtual machine that is correctly sized for its use. The same is done for ESX deployments but Workload Deployer is able to adjust the size dynamically there.

Extend/Capture support for AIX base images (continued) (1 of 3)

– Or make it the default virtual image for virtual application deployments

Settings for Default Deploy
Define the default virtual image for deploying Shared Services and Virtual Applications
NOTE: Only supports 64-bit Hypervisors and images.

Hypervisor Type: ESX
Set the default image below:

Name	License Agreement	Version	Description	Reference ID
IBM Workload Deployer Image for x86 Systems	Accepted	1.0.0.2	IBM Workload Deployer Image for x86 Systems	117

Hypervisor Type: PowerVM
Set the image candidates in the list below:

Name	License Agreement	Version	Memory	Disk Size	Description	Reference ID	Action
IBM OS Image for AIX Systems	Accepted	1.0	3072MB	31GB	IBM OS Image for AIX Systems	60	Delete
IBM OS Image for AIX Systems - Tiny	Accepted	1.1	3072MB	44GB		aed201146.0	Delete
IBM OS Image for AIX Systems - Small	Accepted	1.1	3072MB	89GB		fbe201146.0	Delete
IBM OS Image for AIX Systems - Medium	Accepted	1.1	3072MB	119GB		ccb201146.0	Delete
IBM OS Image for AIX Systems - Large	Not Accepted	1.1	3072MB	449GB		dda201146.0	Delete
IBM OS Image for AIX Systems - XLarge	Not Accepted	1.1	3072MB	1535GB		eaf201146.0	Delete

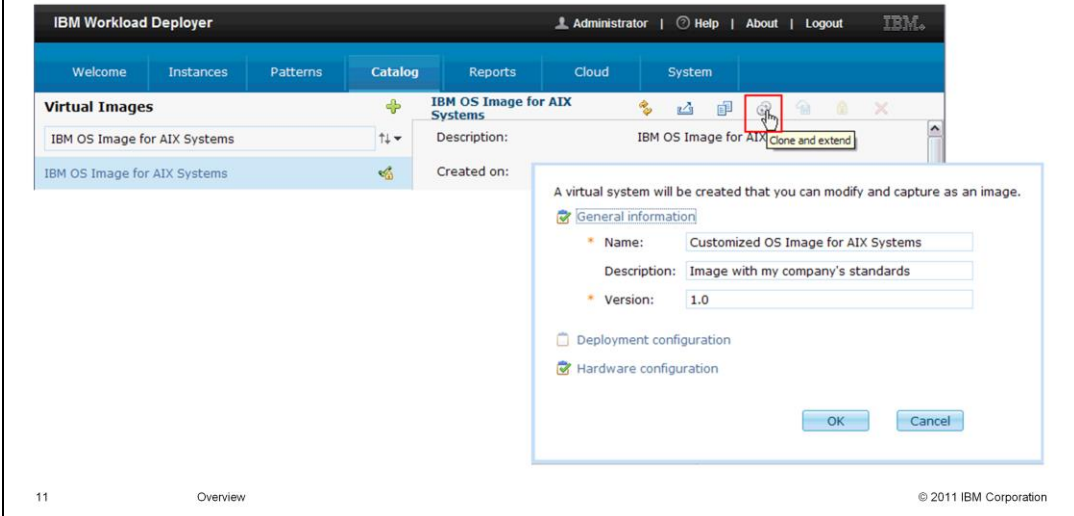
10 Overview © 2011 IBM Corporation

This slide shows the 'Default Deploy Settings' for shared services and virtual application deployments. By using extend and capture with the base OS images (x86 or AIX), you are able to tailor the base operating system deployed with virtual applications to meet your company standards. As mentioned on the previous slide, note the different disk sizes for the various OS Images for AIX. When shared services or virtual applications are deployed, Workload Deployer will select the size that is best suited for the virtual application being deployed. For instance, if you deploy a database pattern and specify a 'Maximum User Data Space' of 50G, Workload Deployer will select the 'Small' image at a minimum.

If you need to customize the OS Images for AIX, you need to 'replace' each of these images with your customized image using the 'extend/capture' function in the Virtual Image Catalog. The new images are then 'added' here and the default ones that are shipped with the appliance can be deleted. The extend/capture only needs to be done once, however, as shown on the next couple of slides.

Extend/Capture support for AIX base images (continued) (2 of 3)

- Virtual application deployments (customized images)
 - Start with 'Clone and extend' of the 'IBM OS Image for AIX Systems'



Starting from the IBM OS Image for AIX Systems, you can perform a 'clone and extend' on that image. That will copy the image and start a virtual system that you can SSH into and customize. Once customized as needed, the new image can be captured and specified as a candidate for deployment as seen on the previous slide.

Extend/Capture support for AIX base images (continued) (3 of 3)

– Clone that one with different disk sizes

The screenshot displays the IBM Workload Deployer web interface. The top navigation bar includes 'Welcome', 'Instances', 'Patterns', 'Catalog', 'Reports', 'Cloud', and 'System'. The 'Catalog' tab is active, showing a list of virtual images. One image, 'Customized OS Image for AIX Systems', is selected, and a 'Clone' button is highlighted with a red box. Below the list, a modal window titled 'An exact copy will be added to the catalog. No virtual system will be created.' is open. This modal contains two sections: 'General information' and 'Hardware configuration'. The 'General information' section has fields for 'Name' (set to 'Customized OS Image for AIX Systems - Large'), 'Description' (set to 'Image with my company's standards - Large'), and 'Version' (set to '1.0'). The 'Hardware configuration' section is expanded, showing fields for 'Network interfaces' (set to '1') and 'image1.mksysb (GB)' (set to '449'). An arrow points from the 'Hardware configuration' label in the left sidebar to the expanded configuration fields. The bottom of the interface shows '12 Overview' on the left and '© 2011 IBM Corporation' on the right.

As noted, different size images are provided for PowerVM deployments. In order to provide your newly customized image with different sizes, you can use the 'clone' operation in the Virtual Image Catalog. The disk size is specified under 'Hardware configuration'. These 'clones' can then be specified as candidates for virtual application deployments.

High availability

- New active/passive failover capability leveraging two IBM Workload Deployer appliances
 - One appliance is configured as the 'master' with the second appliance in standby as a 'slave' until needed
 - The 'slave' will have a replicated database and data so that it is ready to take over when needed
 - The administrator will configure the replication to define the master/subordinate relationship
- Allows customers to seamlessly continue managing their environments in the case of a failure on the primary, or 'master' appliance
- Needs to be initially setup and configured by the administrator
 - On failure of the master, the slave takes over control automatically
 - Eventually, the administrator can restart replication between the two appliances where now the 'slave' has become the 'master' and a new appliance becomes the slave

The IBM Workload Deployer appliance can still run in 'standalone' mode in V3.1. If high availability is required you can introduce a second appliance and configure the original one as the 'master'. This is done by configuring some IP addresses to allow for communication between the two appliances. Once the communication is set up, the administrator can designate the first appliance as the 'master' which then activates the master/slave data replication process. If a failure on the master appliance occurs, the slave automatically takes control by detecting that the master has failed. The slave will now start serving requests as a new master appliance. However, the new master does not have a slave monitoring it until such time that the administrator designates a new slave. This will again activate the master/slave data replication process but in the opposite direction.

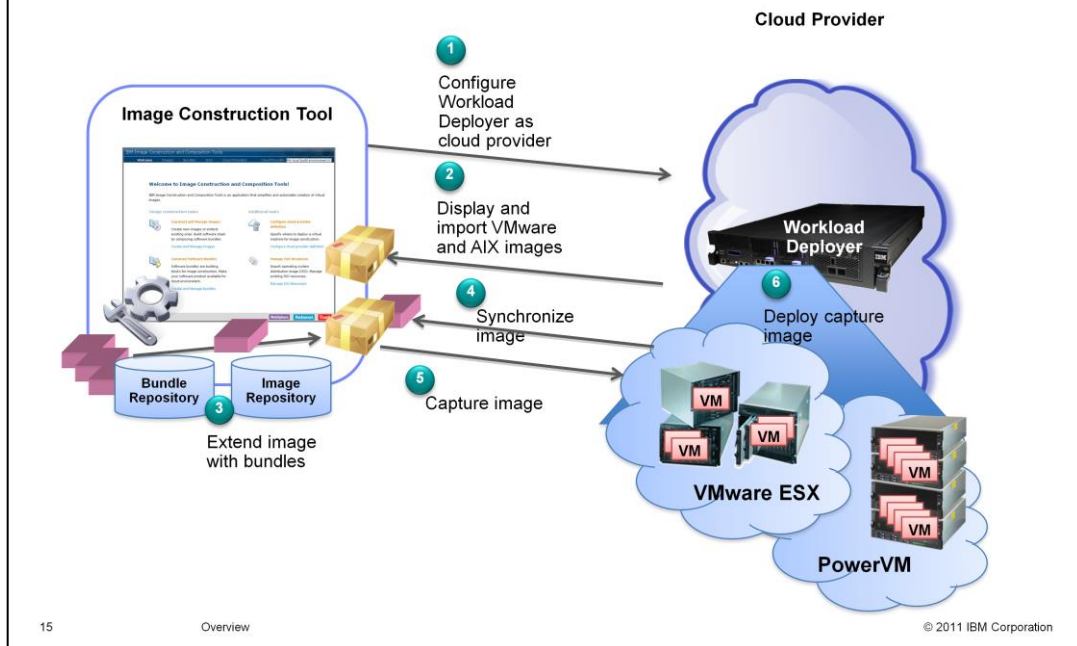
Security enhancements

- Separation of Duties
 - Purpose
 - To prevent abuse of power possible with a single all-powerful user account (for example, cbadmin)
 - To separate administration and auditing responsibilities and their associated privileges
 - To better isolate deployment resources
- Additional audit support
 - New security and administrative event auditing
 - Separate auditing roles introduced

Separation of duties will strive to isolate various responsibilities and tasks to prevent any abuses of power. This will reduce the risk of damage if the 'super-user' user account (cbadmin) is compromised in any way. Administrative and auditing tasks are separated for better security control. With the separation of these roles, better checks and balances can be implemented.

Additional audit support is included in IBM Workload Deployer V3.1. This includes additional log records for all security events and of all administrative configuration operations. A separate auditing role is also introduced. Users in the audit role will have the ability to monitor the audit subsystem resource consumption and download the audit records.

IBM Image Construction and Composition Tool with IBM Workload Deployer



New with IBM Workload Deployer V3.1, you are able to configure IBM Workload Deployer as a Cloud Provider in the IBM Image Construction and Composition Tool. Previously only ESX and the IBM Smart Business and Test Cloud were valid Cloud Providers for the Image Construction and Composition Tool. Once your IBM Workload Deployer appliance is configured as a cloud provider, the Image Construction and Composition Tool is able to display and import VMware and AIX images from the IBM Workload Deployer catalog. The Image Construction and Composition Tool allows you to extend these IBM Workload Deployer images with Image Construction and Composition Tool bundles, and synchronize/capture those images in IBM Workload Deployer. Finally, IBM Workload Deployer can deploy these images to either a VMware or a PowerVm hypervisor.

New IBM database workload patterns support

- PowerVM support
- Workload Standard
 - Transactional standard (OLTP)
 - Data Mart standard
- Cloning
- Scheduled Backup

The functionality of Database as a Service in the appliance has been significantly enhanced in the IBM Workload Deployer V3.1 release. As mentioned earlier, as part of the support for PowerVM with virtual application pattern deployments, the IBM Database Pattern is included. This means that you can now deploy database patterns (or virtual applications including a local database) to the PowerVM environment.

There are two workload standards that are now available with IBM Workload Deployer V3.1. They are the Transactional standard (OLTP) and the Data Mart standard. They are introduced with the two new pattern types that are now available: Transactional Database Pattern and Data Mart Pattern. The Transactional Database Pattern provides a set of capabilities that are essential to the provisioning and management of a transactional database infrastructure for datacentric applications in a secure, private cloud. Data Mart Pattern shares all the characteristics and key features of Transactional Database Pattern and is tuned for the unique I/O throughput required of data mart workloads, including data compression capabilities and data movement tools.

Database cloning is also introduced with IBM Workload Deployer V3.1. You can now capture changes to the database and data mart deployment through cloning.

Finally, IBM Workload Deployer V3.1 introduces the ability to schedule database backups to Tivoli® Storage Manager.

WebSphere Application Server V8.0.0.1 Hypervisor Edition images

- WebSphere Application Server Hypervisor Edition 8.0.0.1 for Red Hat Linux® Enterprise Server, Version 5.7 (32-bit) for VMware
- WebSphere Application Server Hypervisor Edition 8.0.0.1 for Red Hat Linux Enterprise Server, Version 5.7 (64-bit) for VMware
- WebSphere Application Server Hypervisor Edition V8.0.0.1 for Novell SUSE Linux Enterprise Server 11 (32-bit) for VMware
- WebSphere Application Server Hypervisor Edition V8.0.0.1 for Novell SUSE Linux Enterprise Server 11 (64-bit) for VMware
- WebSphere Application Server Hypervisor Edition V8.0.0.1 for IBM AIX 6.1 on PowerVM
- WebSphere Application Server Hypervisor Edition V8.0 for Red Hat Enterprise Linux, Version 5.7 (64-bit) for IBM System z®
- WebSphere Application Server Hypervisor Edition V8.0 for Novell SUSE Linux Enterprise Server 11, SP1 (64-bit) for IBM System z

This slide lists the WebSphere Application Server V8.0.0.1 images that are made available with IBM Workload Deployer V3.1. Note that the WebSphere Application Server images for VMware are 32-bit while the images for IBM System z and PowerVM are 64-bit. Intelligent Management Pack V7.0.0.2 is included in the virtual images as well but as always, requires a separate license to be enabled

Section

Summary

This next section provides a summary of the new product features introduced in IBM Workload Deployer V3.1.

Summary

- IBM Workload Deployer V3.1 overview
 - Workloads on PowerVM
 - Extend/Capture support for AIX® base images
 - High availability
 - Security enhancements
 - IBM Workload Deployer as cloud provider in IBM Image Construction and Composition Tool
 - New IBM database workload patterns
 - New Hypervisor Edition images available

In this presentation, you were introduced to the new features available for the IBM Workload Deployer V3.1 appliance. This release enhanced the support for virtual application deployments by adding the PowerVM hypervisor as an option in that space. Along with that ability came the new AIX base image that you are able to customize using extend and capture for either virtual application or virtual system deployments. High availability support is added with the option of adding a second appliance for redundancy. Security enhancements include some new auditing support that enhances the separation of duties in the appliance. If customized images are needed, the IBM Image Construction and Composition Tool is now delivered with IBM Workload Deployer V3.1 and introduces the ability to specify Workload Deployer as a cloud provider. This makes customizing images and deploying them to the appliance easier than ever. Finally, some new database workload patterns are introduced to enhance the ability to easily deploy databases using IBM Workload Deployer and you saw some new Hypervisor Edition images that are now available.

References

- developerWorks® IBM Workload Deployer Group:
<http://www.ibm.com/developerworks/groups/ibmworkloaddeployer>
- IBM Workload Deployer information center
<http://publib.boulder.ibm.com/infocenter/worlodep/v3r1m0/index.jsp>
- IBM Workload Deployer V3.1 announcement
<http://www.01.ibm.com/common/ssi/cgibin/ssialias?subtype=ca&infotype=an&appname=iSource&supplier=897&letternum=ENUS111-202>

Shown on this slide are some links to useful reference material.

Trademarks, disclaimer, and copyright information

IBM, the IBM logo, ibm.com, AIX, developerWorks, PowerVM, System i, System z, Tivoli, WebSphere, and z/VM 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>

THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. Other company, product, or service names may be trademarks or service marks of others.

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 2011. All rights reserved.