

Strategies and Tools to Ensure a Seamless Migration of Business Objects Content from Development to Production Environments

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In This Session ...

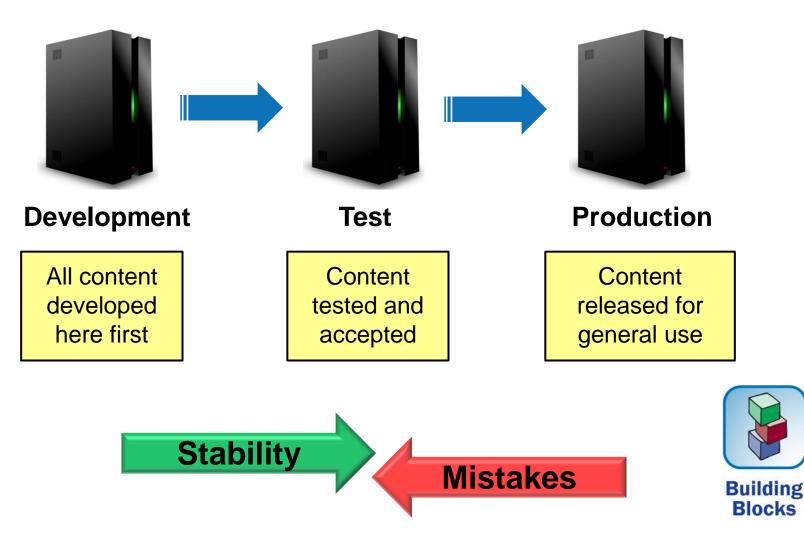
- Understand what Lifecycle Management (LCM) is ... and isn't
- Compare it to federation, upgrade management, and version control
- Examine possible architectural layouts for LCM
- Learn life cycle best practices
- Discover the enterprise processes behind the technology
- See tools used to implement life cycle migrations
- Step through a migration using Lifecycle Manager
- Understand LCM-based version control and auditing
- See the functionality gaps within the current offering

What We'll Cover ...

- Lifecycle Management (LCM) Overview
- Architecture
- Migration Walkthrough
- Version Control
- Auditing
- Best Practices
- Wrap-up

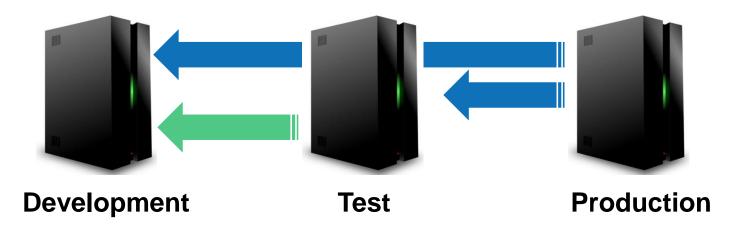
Lifecycle Management Concepts

- The preferred method to promote content between platforms
- Same software version per platform



Lifecycle Management Concepts (cont.)

• <u>Back-migration</u> allows refresh of previous platforms

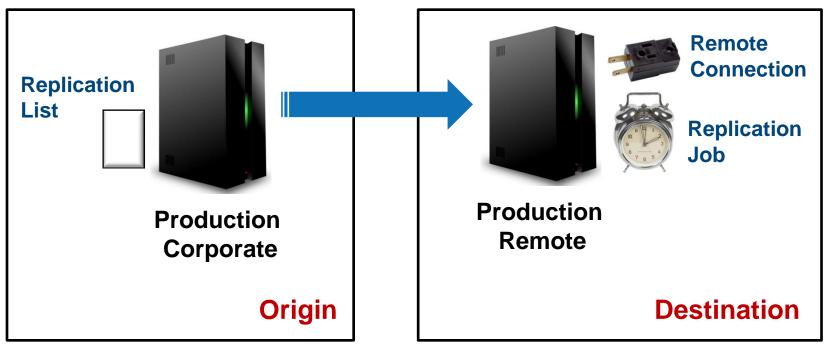


- Production can refresh Test and Development environments
- Test can refresh Development
 - Care needs to be taken here
 - Don't want to inadvertently overwrite new development efforts



Replication

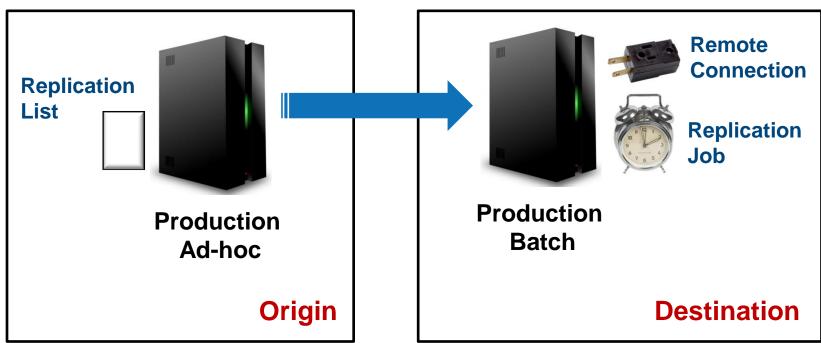
- Synchronizes content across platforms for <u>one</u> life cycle stage
 - A replication list contains content to synchronize on Origin
 - Destination establishes connection and runs scheduled job



One-Way Replication

Replication (cont.)

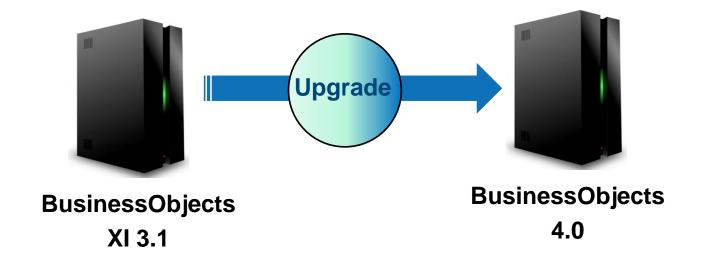
- Can be used to synchronize multi-part Production environments
 - Below is an example of a Production ad-hoc environment refreshing a batch environment
 - Two-way replication is possible (and more tricky)



One-Way Replication

Upgrade Management

- Upgrades content between versions of Business Objects
 - Ideally, those versions are different as shown below
 - Content can be transferred between platforms at the same version
 - That task is usually delegated to Lifecycle Management
 - ... with a few exceptions that will be covered later



Version Control

- Archive BI content like companies control source code
 - Programs are checked in at various release levels
 - BI content (universes, reports, ...) can also be checked in/out
 - This does not serve as a backup solution
 - ► Save a master version of a report, not 1000 of its instances



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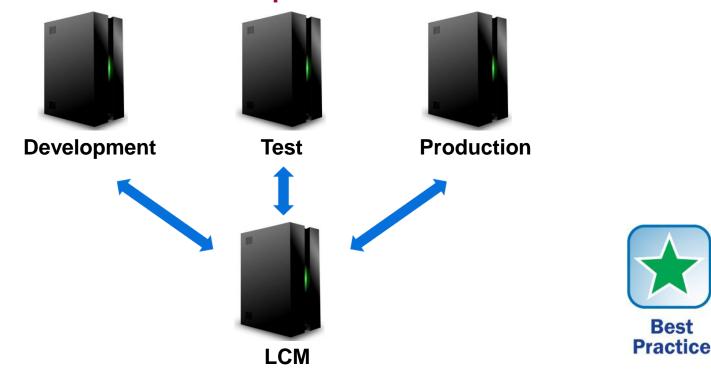
Lifecycle Management Software (LMS)

- SAP BusinessObjects v3.1 offers several choices
 - Lifecycle Manager
 - Web-based application
 - Import Wizard
 - Windows desktop application
- SAP BusinessObjects 4.0 choices
 - Lifecycle Manager Console
 - Web-based application
- The reduction in choices will lead to some interesting decisions
 - We'll explore feature gaps later in our presentation



LMS Architecture — Independent Approach

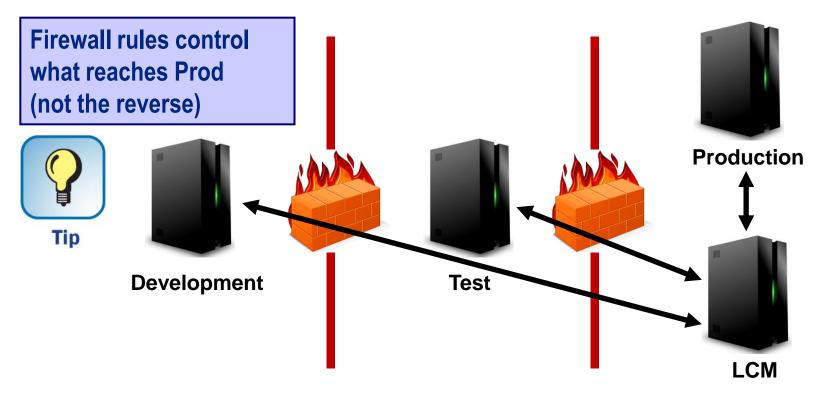
- Either SAP BusinessObjects XI 3.1 or SAP BusinessObjects 4.0 • Lifecycle Management solution can be installed on its own platform
 - Independent of any lifecycle environment
 - **Requires separate install of Business Objects Enterprise (BOE)**
 - No additional license requirement



Best

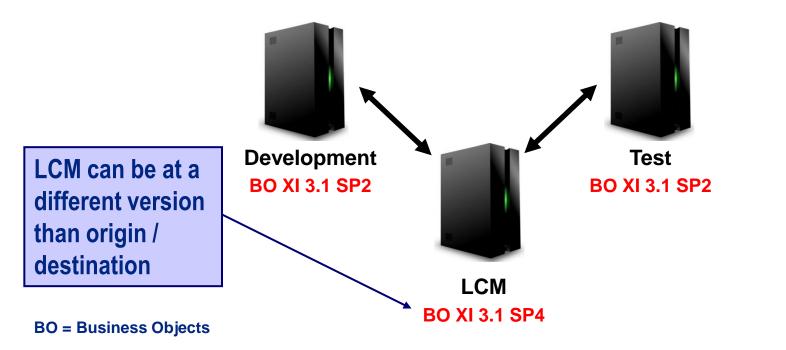
LMS Architecture — Independent Approach (cont.)

- Other items to consider
 - For firewall-controlled networks, install LCM on a Production machine
 - This allows LCM to distribute content to Prod, Test, or Development environments



LMS Architecture — Independent Approach (cont.)

- Benefits of the Independent Approach
 - LCM not tied to a particular Business Objects version
 - Can promote content between any source destination combination
 - Origin and destination version must be identical
 - A best practice at most companies



13

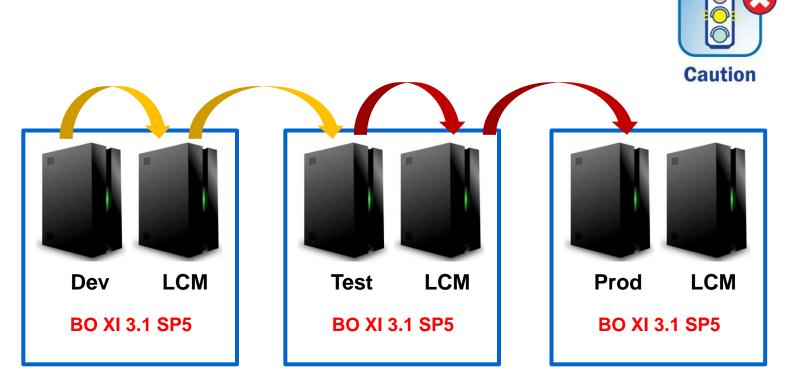
LMS Architecture — Platform Dependent

- Lifecycle Manager is installed in one life cycle environment
 - Enterprise version must match the cluster
 - Often installed on the same Enterprise server
 - Shares resources with that environment
 - Busy servers, slower migrations



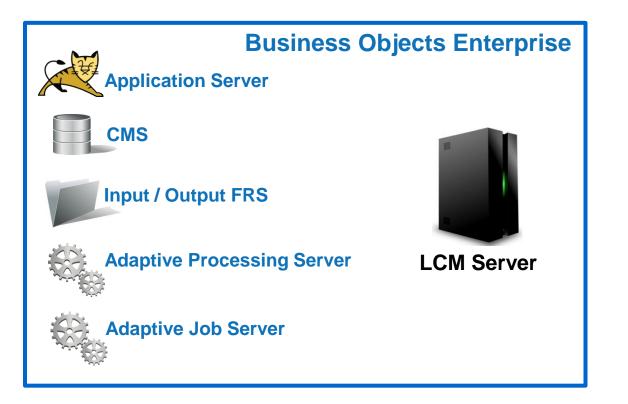
LMS Architecture — Platform Dependent (cont.)

- Lifecycle Manager is installed in <u>every</u> life cycle environment
 - Sometimes required for security (firewall) reasons
 - Much more overhead
 - Try to avoid this layout if you can



Architecture: Piece by Piece

The Lifecycle Management solution consists of the following components





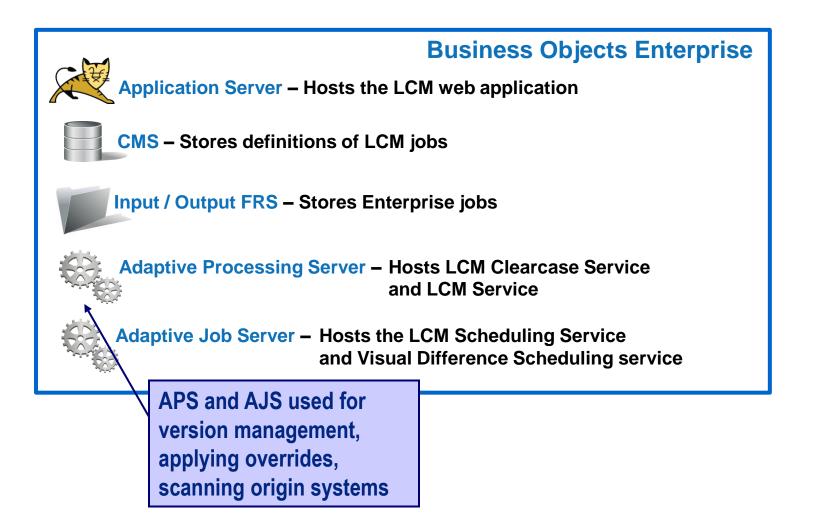
Version Management System Subversion, ClearCase



Blocks

Architecture: Piece by Piece (cont.)

Role each component plays within Business Objects Enterprise



LCM Concepts

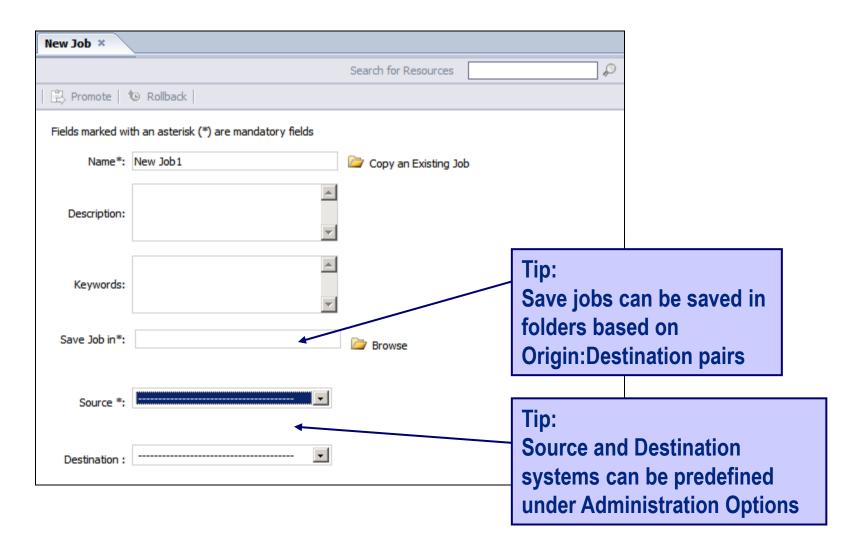
- The Lifecycle Management workflow consists of the following pieces:
 - Promotion job
 - Content to be promoted
 - Dependencies
 - Overrides
 - LCM Business Intelligence Archive Resource (BIAR) files
 - Rollbacks
- Details on each in the slides to follow
 - Including the differences per version (Business Objects 3.1 vs. Business Objects 4.0)



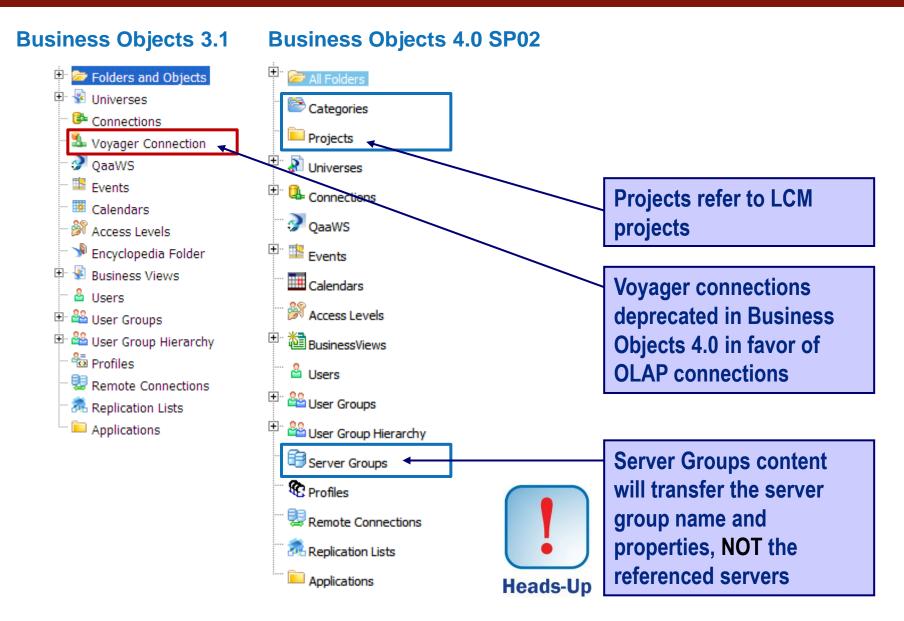


Job

• The Promotion Job



Content



Dependencies

- Dependencies allow related content to be migrated
 - In the snapshot below, Web Intelligence (Webl) report chosen as content
 - Related universe and connection flagged as dependencies
 - Dependencies are optional
 - No difference between Business Objects v3.1 and 4.0

Select Dependents Search Dependents Type Objects in Job Fold Unfold Sample Image: Type ima

Business Objects 4.0 SP02

Overrides

- Overrides allow database connections to be remapped
 - Different database instances per environment
 - Content (queries) should be remapped to the destination database
 - LCM 4.0 overrides can be set prior to any promotion
 - Steps given over the next few slides
 - LCM 3.1 overrides were set per job
 - This required manual corrections per override
 - Mapping logic was never saved

Setting up LCM 4.0 Overrides

- Step 1: Setting up Origin and Destination Servers
 - Administration Options → Manage Systems
 - Add Servers That Will Serve as an Origin for the Promotion
 - Good Idea to Set up Other Servers at This Time

Man	Manage Systems (2									
•	Add Edit X Remove Origin									
	Host Name Port Number			Display Name	De	escription				
] b	oxi4vm05		6400		Test	No	ot Defined	d	
	í b	oxi4win05	;	6400		Development (Origin)	No	ot Defined	d	
								Ν.		
									Many origin sy	vstems can
	Heat No.	me*: box	duie0E					Ì	be added, but	
		ber*: 640								-
		me*: Dev							origin used pe	r promotion
		SAP	SAP BO 4.0 SP02 Development							
	Descrip	otion:			-					
		•	Mark as Origin							

Setting up LCM 4.0 Overrides (cont.)

- Step 2: Scanning Origin Connections
 - Administration Options → Override Settings

	an Origin	system							
	xi4win05:6400	Type: Orig	gin 🥑 Log Off						
List of Overrides :									
Updated on : Dec 12, 2011 6:34 PM 🐉 Scan : Stop 🔹 (Last Scan : Success									
Connection Override QaaWS Override Crystal Report Override									
Active	🗙 Delete 🛛 🕉	Refresh							
Select	Status	LCM Connection	Database Type	Last updated on					
	Inactive •	Conversion Audit Connection	CCIS.DataConnection	Dec 12, 2011 4:27 PM					
	Active	efashion	CCIS.DataConnection	Dec 12, 2011 4:30 PM					
	■ Inactive ▼	efashion-webi	CCIS.DataConnection	Dec 12, 2011 4:27 PM					
	Inactive •	club	CCIS.DataConnection	Dec 12, 2011 6:09 PM					
		nose connections motion as "Activ							

Setting up LCM 4.0 Overrides (cont.)

- Step 3: Promote Overrides
 - Administration Options → Override Settings

Promote Object	Promote Objects list								
From System: b	oxi4win05 Promotion	n Options: Promot	e with BOE						
1) Choose	a Destinatio	on system							
Host Name	Port Number	Display Name	Description	Login Status					
boxi4vm05	6400	Test	Not Defined	Not Connected		ogin			
Total Destination	Systems: 0								
External Change I	Management ID:								
Password Enc	ryption Password :			Confirm Password	i:	Export			
					E	xport Cancel			

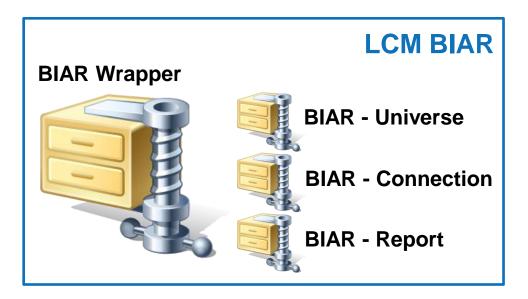
Setting up LCM 4.0 Overrides (cont.)

- Step 4: Edit Destination Connection(s)
 - Administration Options → Override Settings

1) Choo	se a Destina	tion system							
System :	boxi4vm05:6400	Type: Desti	nation						
List of Ove	List of Overrides :								
Connect	Connection Override QaaWS Override Crystal Report Override Active								
Selec		LCM Connection	Database Type	Last updated on					
	Active •	efashion	CCIS.DataConnection	Dec 12, 2011 11:59 AM					
	4 Edit th		sing Universe De	esigner or					
	Inform	ation Design To	ו עון)						

LCM BIAR Files

- Normal Business Objects objects are archived as BIAR files
 - BIAR = Business Intelligence Archive File
- LCM, however, uses a hybrid form of BIAR
 - Each object to be archived is encased in a BIAR file
 - All those BIAR files are placed in an overall BIAR file
 - Like a "BIAR of BIARs"



Using LCM BIAR Files

- Business Objects content can be promoted as an LCM BIAR
 - This allows the promotion to be archived
 - Business Objects can create an LCM BIAR per promotion
 - Rollback feature must be enabled
- LCM BIAR files allow administrators to roll back a promotion
 - Only the most recent promotion can be rolled back
 - Partial rollbacks are possible
 - ► That's why each object is stored in a BIAR file

Rollbacks

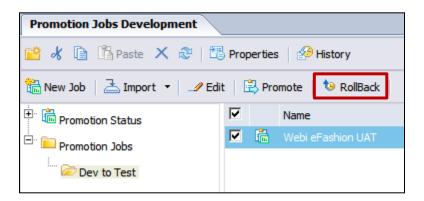
- Rollback must be enabled before using it
 - Administration Options → Rollback Settings
 - Default = Turned on per registered server
- Space is the biggest price for this feature
 - LCM BIAR files can grow large



Administration Options								
Manage Systems Override Settings	Rollback Settings							
Rollback Settings	System	Rollback						
Job Settings	boxi4vm05:6400	2						
VMS Settings	boxi4win05:6400							

Rolling Back a Promotion

Select a promotion job then click the Rollback button



• The job can be completely rolled back

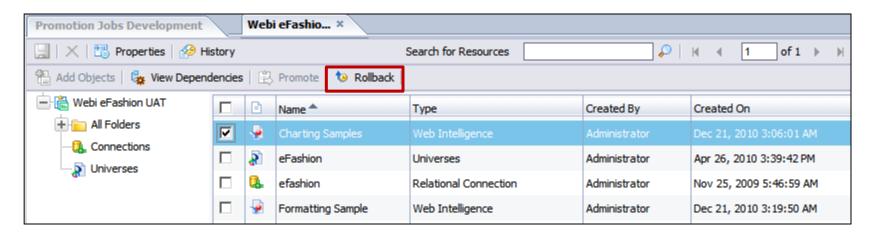
Rolli	RollBack - Webi eFashion UAT										
10	😢 Partial Rollback 😻 Complete Rollback 🍣										
	B		Instar	nceTime	Name	Source	Destination	Run By	Status		
	6	1	Dec 1	2, 2011 7:29:22 PM	Webi eFashion UAT	boxi4win05	boxi4vm05	Administrator	Success		

Rolling Back a Promotion (cont.)

Jobs can also be partially rolled back

Roll	RollBack - Webi eFashion UAT 📃 💥										
1	😢 Partial Rollback 😺 Complete Rollback 🕺										
	B		InstanceTime	Name	Source	Destination	Run By	Status			
	6	1	Dec 12, 2011 7:29:22 PM	Webi eFashion UAT	boxi4win05	boxi4vm05	Administrator	Success			

Once you selected Partial Rollback, LCM will present a list of objects within that promotion

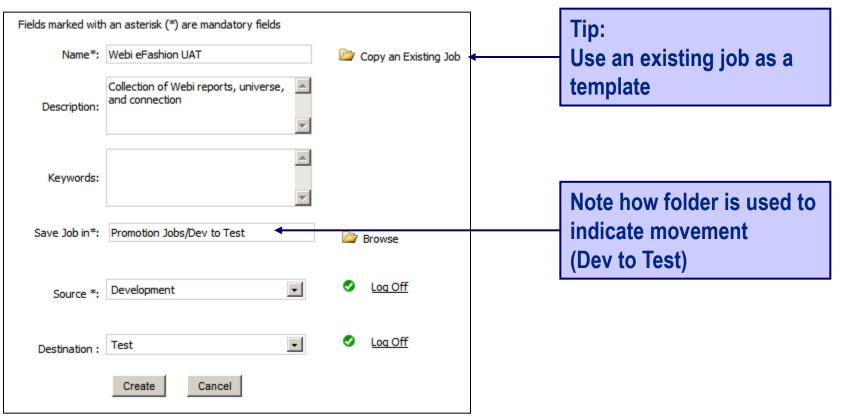


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Migration Walkthrough

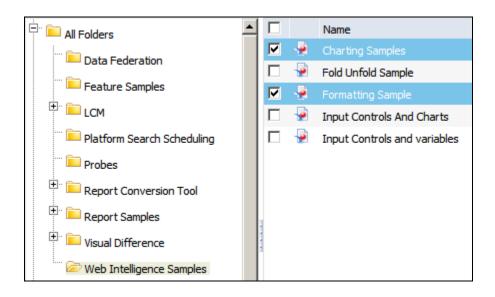
• Step 1: Create the LCM job





Migration Walkthrough (cont.)

- Step 2: Add object(s)
 - Universe and connection could have been added here
 - Left out intentionally to show how Dependencies work



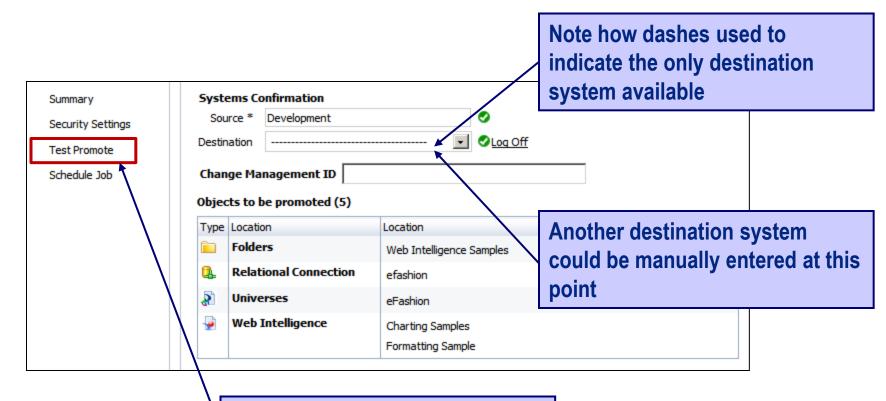
Migration Walkthrough (cont.)

- Step 3: Detect and add dependencies
 - Note how universe and connection display for each report

Select Depe	Select Dependents Search Dependents Search Dependents											
Type 🍸	Objects in Job 📥		Туре 🌱	Dependents								
	Charting Samples		2	eFashion								
			L	efashion								
9	Formatting Sample		8	eFashion								
			₽_	efashion								
					Tip:							
					•	ype icon to discover						
						lency was detected						
						onnection,)						

Migration Walkthrough (cont.)

• Step 4: Begin the promotion



Always test your promotion at least once

Migration Walkthrough

- Step 5: Test Promote
 - Read the output from this test promotion
 - ► Fix any errors <u>before</u> performing an actual promotion

0bject	s to	be promoted (Success) Test Promo	ote
Status		Objects	Details
		Web Intelligence Samples	Resolution Status=Mapped(Web Intelligence Samples), Dependency Status=Som of the required dependencies are not selected., Commit Status=Commit is not required., Promotion Status=No errors detected
	Q _	efashion	Resolution Status=Overwritten, Dependency Status=Some of the required dependencies are not selected., Commit Status=Commit just tested, Promotion Status=No errors detected
	8	eFashion	Resolution Status=Overwritten, Dependency Status=Some of the required dependencies are not selected., Commit Status=Commit just tested, Promotion Status=No errors detected
	-	Charting Samples	Resolution Status=Overwritten, Dependency Status=All the required dependencies are included., Commit Status=Commit is successful., Promotion Status=Warning : The destination system has a newer version
		Formatting Sample	Resolution Status=Overwritten, Dependency Status=All the required dependencies are included., Commit Status=Commit is successful., Promotion Status=Warning : The destination system has a newer version

Migration Walkthrough (cont.)

• Step 5: Promote

- Your request is submitted as a scheduled job
- Right-click and select History to check its status

◄	Name	Status	c	reat	ed	×					
	Webi eFashion UAT	Created	C		2, 2	0116:04 PM					
			1	New :	lob						
			E	Edit							
			F	Prom	ote						
			ŀ	listor	y			-			
			F	Prope	rtie	s					
			[Delet	2						
			1	ímpor	tL	OMBIAR					
			F	RollBa	k						
								↓			
			R	Recu	rrin	g & Pending Instance	s 🔁	•		∈ € 1	of 1 🕅
						InstanceTime	Name	Source	Destination	Run By	Status
				a	1	Dec 12, 2011 7:29:22 PM	Webi eFashion UAT	boxi4win05	boxi4vm05	Administrator	Running

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Introducing Version Control

- LCM can be used to manage different versions of Business Objects content
 - This is done through its Version Management System (VMS)
 - Supports Subversion and ClearCase
 - Installs Subversion as an option when LCM is installed
 - In LCM 3.1, only the Windows version installed Subversion
 - UNIX ports of LCM 3.1 required a separate install
 - THAT required the **root password** to complete



Any application owner knows that this is not an easy item to obtain in the UNIX world ...

Introducing Version Control (cont.)

- Other interesting tidbits that will save you some time
 - In LCM 4.0, both SVN and HTTP protocols are supported for Subversion
 - Only SVN protocol was supported for LCM 3.1
 - This made versioning lots of fun when the corporate standard for versioning was HTTP



Initializing the Version Management System (VMS)

- Normal LCM 4.0 installs should take care of these details for you
 - Administration Options → VMS Settings
 - Just in case ...

Version Manage Systems	SubVersion 💌
SubVersion Set	ttings
	Use as Default VMS
Server Name	localhost
Server Port	3690
User name	LCM
Password	•••••
Install Path	C:\Program Files (x86)\SAP BusinessObjec
Repository Name	svn_repository
Workspace Directory	C:\Program Files (x86)\SAP BusinessObjec

Checking In Objects

Switch to Version Management

LIFECYCLE MANAGEMENT CONSOLE
Promotion Jobs Promotion Jobs Version Management Promotion Jobs Development



- Log into a Business Objects Enterprise system
- Select one or more objects, then click the Add to VM button

Ve	rsio	n Ma	nagement -Develop	ment					
2	8		Add to VM	eckin 👼 Get	Latest Version	🕽 Create Copy 🔗 Hi	story 🛛 🗐 View Deleted	Resources	🛱 Lock 🗟 UnLock 🛅
			Name 📤	Туре	Created By	Modified on	Created On	CMS Version	VMS Version Locked By
	•	-	Charting Samples	Web Intelligence	Administrator	Dec 21, 2010 2:06 AM	Dec 21, 2010 2:06 AM		0
		.	Fold Unfold Sample	Web Intelligence	Administrator	Dec 21, 2010 2:07 AM	Dec 21, 2010 2:06 AM	0	0
		-	Formatting Sample	Web Intelligence	Administrator	Dec 21, 2010 2:19 AM	Dec 21, 2010 2:19 AM	0	0
		•	Input Controls And Charts	Web Intelligence	Administrator	Dec 21, 2010 2:24 AM	Dec 21, 2010 2:24 AM	0	0
		•	Input Controls and variables	Web Intelligence	Administrator	Dec 21, 2010 2:08 AM	Dec 21, 2010 2:07 AM	0	0

Checking in Objects (cont.)

• The VMS will ask for an optional description to associate with the object

Description		
Test version 1.0	A	
	-1	
I	(Maximum Characters: 255)	
	characters left: 239	

- Once added, a more recent version can be checked in
 - Additional comments can be added per check-in

V	ersio	n Ma	nagement -Development						
	9		Add to VM 🛉 Checkin	👼 Get Latest Ve	ersion 👼 Crea	te Copy 🛛 🤔 History		es 🛛 🔒 Lock	🗟 UnLock
Ē			Name 📤	Туре	Created By	Modified on	Created On	CMS Version	VMS Version
		-	Charting Samples	Web Intelligence	Administrator	Dec 21, 2010 2:06 AM	Dec 21, 2010 2:06 AM		1
		-	Fold Unfold Sample	Web Intelligence	Administrator	Dec 21, 2010 2:07 AM	Dec 21, 2010 2:06 AM	0	0
		-	Formatting Sample	Web Intelligence	Administrator	Dec 21, 2010 2:19 AM	Dec 21, 2010 2:19 AM	0	0
		-	Input Controls And Charts	Web Intelligence	Administrator	Dec 21, 2010 2:24 AM	Dec 21, 2010 2:24 AM	0	0
		-	Input Controls and variables	Web Intelligence	Administrator	Dec 21, 2010 2:08 AM	Dec 21, 2010 2:07 AM	0	0

Checking Out Objects

• The latest copy of an object can be retrieved by clicking the Get Latest Version button

V	ersio	n Ma	nagement -Development						
N IZ	> 8		🛛 Add to VM 🖄 Checkin	👼 Get Latest Ve	ersion 🛛 👼 Crea	ate Copy 🛛 🤔 History	🗐 View Deleted Resource	es 🛛 🔒 Lock	🗟 UnLock
Ē			Name *	Туре	Created By	Modified on	Created On	CMS Version	VMS Version
		-	Charting Samples	Web Intelligence	Administrator	Dec 21, 2010 2:06 AM	Dec 21, 2010 2:06 AM		
		-	Fold Unfold Sample	Web Intelligence	Administrator	Dec 21, 2010 2:07 AM	Dec 21, 2010 2:06 AM	0	0
		-	Formatting Sample	Web Intelligence	Administrator	Dec 21, 2010 2:19 AM	Dec 21, 2010 2:19 AM	0	0
		-	Input Controls And Charts	Web Intelligence	Administrator	Dec 21, 2010 2:24 AM	Dec 21, 2010 2:24 AM	0	0
		.	Input Controls and variables	Web Intelligence	Administrator	Dec 21, 2010 2:08 AM	Dec 21, 2010 2:07 AM	0	0

• Older copies can be retrieved using the History button

Get	Version Get Copy	1 of1 ▶			
	Revision Number	Modified Date	User Name	CMS Name	Message
		Dec 16, 2011 3:57:55 PM	Administrator	boxi4win05:6400	Test version 1.1
	1	Dec 22, 2011 7:54:38 PM	Administrator	boxi4win05:6400	Test version 1.0

Version Management System Backup Requirements

- The VMS needs to be backed up on a regular basis
 - Backup instructions will vary based on software used
 - For Subversion, back up these two directories:
 - Checkout (copies of versioned content)
 - LCM_Repository (SVN repository)



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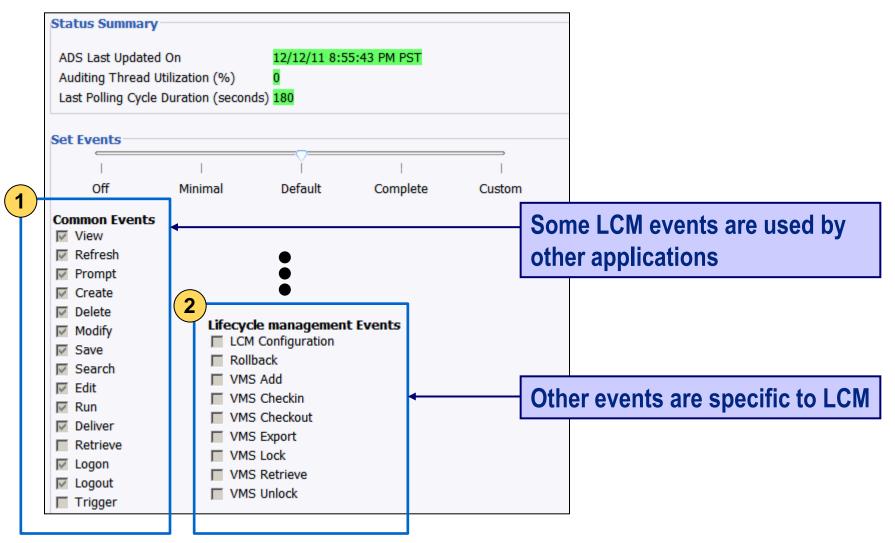
Introducing Auditing

- Business Objects 4.0 offers a completely revamped auditing system
- Lifecycle Management benefits from this new auditing scheme
- Before using, auditing must be enabled for the LCM job server(s)
 - This is activated using the Central Management Console
- Once audit data is captured, reports based on universes can retrieve the information
 - Starter universes and reports are available on the SAP Community Network



Initializing Auditing for LCM

Navigate to the Auditing page of the Central Management Console



Initializing Auditing for LCM (cont.)

- Move the Set Events slider to Custom
- Check all LCM specific events

imal Default	 Comple	ete	Custom
imal Default	Compl	ete	Custom
• • •		L	
fecycle managemer LCM Configuration Rollback VMS Add VMS Checkin VMS Checkout VMS Export VMS Lock VMS Retrieve	nt Events		
	VMS Add VMS Checkin VMS Checkout VMS Export VMS Lock	VMS Add VMS Checkin VMS Checkout VMS Export VMS Lock VMS Retrieve	VMS Add VMS Checkin VMS Checkout VMS Export VMS Lock VMS Retrieve

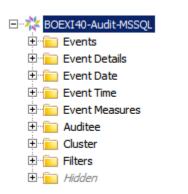
Using LCM Audit Data

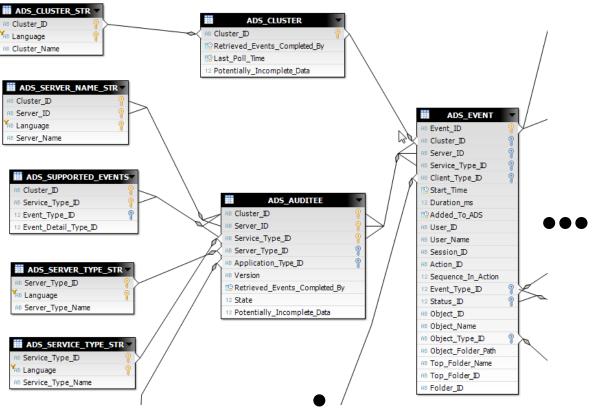
- Specific LCM events have Event IDs that can be decoded:
 - 10901 Rollback
 - 10902 VMS Add
 - 10903 VMS Retrieve
- Common events also contain LCM audit information
 - Create
 - Creation of LCM job
 - Job copied from existing job
 - Modify
 - Existing job modified in some way

• •••

Retrieving LCM Audit Data

- Use the sample .UNX uploaded on the SAP Community Network
 - http://tinyurl.com/73j85eo
 - Created at the time of this writing for MS SQL Server and Sybase





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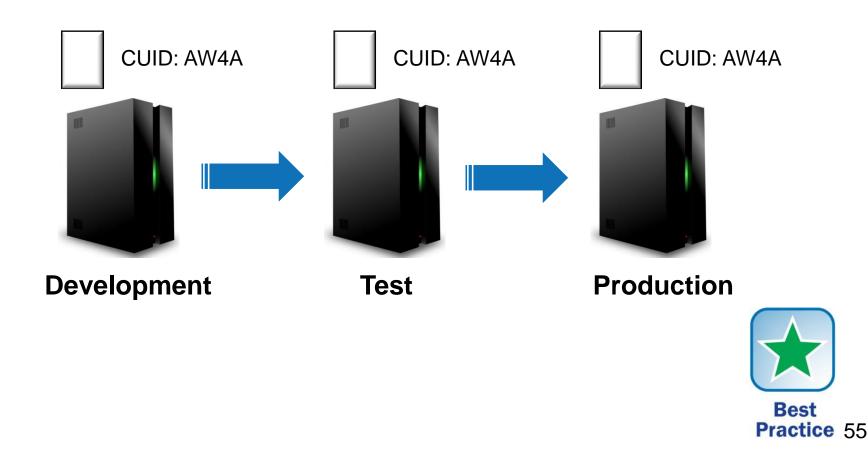
What's Missing?

- LCM will currently NOT migrate the following content
 - Personal folders / Favorites
 - Instances from personal content
- Problem?
 - Business Objects v3.1 Import Wizard could migrate these content types
 - But ... this application was deprecated in favor of the Upgrade Management Tool (UMT)
 - UMT is better in <almost> every way except one
 - It migrates content between systems of different versions
 - ► The above life cycle cases are always on the same version
- Any options?
 - Federation / replication



Best Practices

- Always start all object development in one environment
 - Most IT-developed content will start in Development
 - Objects will be migrated using LCM to Test and Prod



Best Practices (cont.)

- Cap the number of objects in a promotion
 - Limit jobs to 100 objects or less
- Don't use Version Management as your backup system
 - Designed to store versioned releases of your BI content
 - Not every copied report and instance
- Only include dependencies that have changed
- Rollback tips
 - Only rollback as a last resort
 - Don't rollback more than one promotion (version) at a time



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Additional Resources

- Business Intelligence Platform Installation Guide (UNIX) BO 4.0 SP02
 - http://help.sap.com/businessobject/product_guides/
- Business Intelligence Platform Administrator Guide, BO 4.0 SP02
 - http://help.sap.com/businessobject/product_guides/
- Lifecycle management console for SAP BusinessObjects
 Business Intelligence Platform, BO 4.0 SP02
 - http://help.sap.com/businessobject/product_guides/
- Improved Lifecycle Management for BI, David Brockington, GBN 2009 SAP BusinessObjects User Conference
 - http://www.forumtopics.com/busobj/viewtopic.php?t=120212

7 Key Points to Take Home

- Lifecycle Management is a promotion methodology, and does not federate or upgrade content
- A standalone LCM installation offers key advantages
- Lifecycle Management depends on existing Business Objects
 Enterprise servers to function
- Creating and versioning BI content is easy
- Versioned content must be backed up
- There are still a few functionality gaps
- Employing LCM best practices increases your chance of success



Questions?

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