

Innovate2011

The Rational Software Conference

11th and 12th of October

Let's **build** a smarter planet.



Beyond Deployment Automation

David Sayers

Technical Services Director, Midvision LTD



Agenda

Overview & benefits of automation

Automation Framework Capabilities

Version Control and the Deployment Package

Template driven provisioning

Demo

Summary & QA



Overview

- Increasingly organizations seek sophisticated approaches to releasing multi-tier “Business Applications” – as opposed to individual technology components
- Move towards higher levels of automation in all areas of the application lifecycle
 - For instance, RTC / Hudson / Maven2 in source code build space
- Build processes were once complicated and error prone – but they are now push button solutions that simply work
- Middleware “deployments” need to be similar – if we can’t reliably deploy to one target how can we hope to deploy to many?

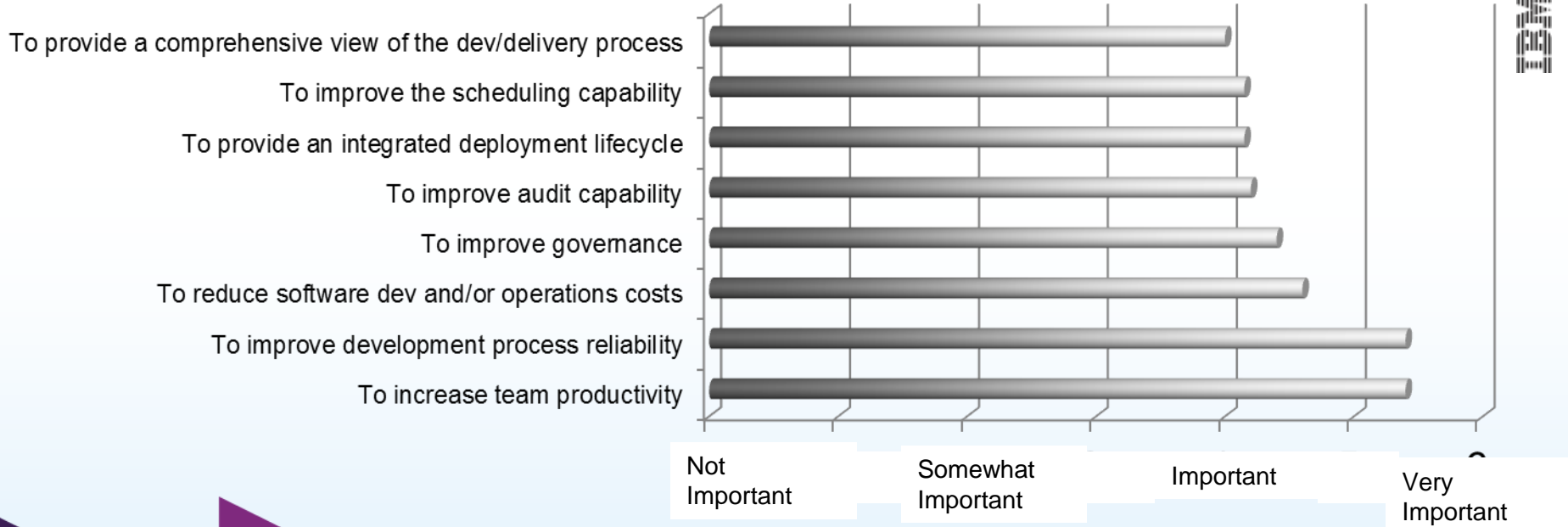




Cloud is driving the market

- Cloud computing models are driving requirements in release automation:
“I can have my OS in 20 minutes... and then wait 4 weeks for the applications to be available on them...”
- Cloud provisioning is based on a manufacturing approach – high volume, quick, reliable and consistent
- So why is middleware management such an art? Complex? Too many working parts / interconnected components?
- Why has the adoption been so slow?

Why Automate the Application Release Process?



(Source: Hurwitz & Associates, 2011)

Benefits Achieved from Automating Application Releases



Benefit	Average Improvement	Maximum Improvement
Increase speed of software builds	87%	>140%
Increase in frequency of software releases	60%	>140%
Reduction in software errors	25%	40-60%
Increase in ability to meet compliance requirements	63%	>140%
Increase in ability to meet deadlines	40%	60-80%
Increase in developer productivity	30%	40-60%
Decrease in hardware or resources	88%	100-120%
Development cost savings	25%	60-80%
Increase in developer job satisfaction	38%	60-80%

(Source: Hurwitz & Associates, 2011)



Rational Automation Framework

Customizable and extensible framework that delivers...

- ⚙️ Configuration management automation
- ⚙️ Application deployment automation
- ⚙️ Product installation & patching automation

Core Strengths...

Accuracy

“Data Driven” - Maintains normalized configuration data

Reliability

Apply right data to the right target environment

Consistency

Apply data in repeatable manner to target environments



Innovate2011



Software. Everywhere.

MidVision Extensions to RAFW (2Q2011)



MidVision Extension for WebSphere Connectivity

Supports WebSphere MQ and WMB version 6 / 7

Ability to create MQ configuration objects (Queue Managers, Queues, Channels, etc.)

Ability to create Brokers, Execution Groups, Deploy Bars, XSD schema, Jplugins, etc.



MidVision Extension for Oracle WebLogic Application Server

Supports versions 9, 10 and 11g

Ability to configure and deploy WLS, including create Domains, Machines, Clusters, JMS/JDBC resources, deploy EAR's, etc.

MidVision Extension for JBoss Application Server

Supports versions 5.1 and 6.x

Provision instances, configure, deploy (server config, JDBC, JMS, deploy EAR's, etc.)

Innovate2011



Imports / Snapshots are the defining leap

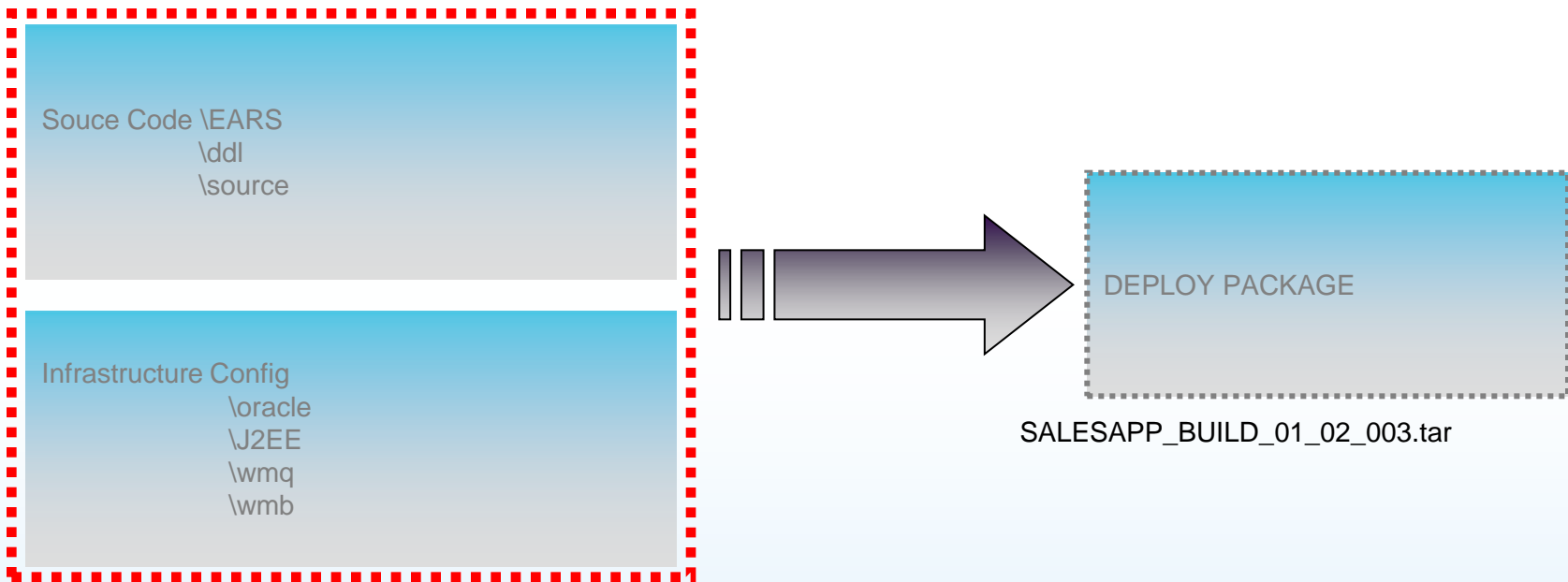
- We have moved from:
Scripts > Abstracted Scripts > Frameworks
 - The next place is a Blackbox
- If virtualization has revolutionized OS provisioning - snapshots/imports are doing this for Release Automation
- The hard thing about Release Automation is not deploying application archive X to environment Y:
“it is environments Y’s configuration and dependencies”



Importance of Version Control

- Mature Version Control strategy is a key component of composite application release automation
- Includes both code and some metadata about infrastructure
- Label / baseline code and/or infrastructure configuration together
- Link labels from source control to release tool and runtimes
- Concept of a “Deployment Package” – archive containing infrastructure configuration and/or code

Creating the Deploy Package



Baseline File: SALESAPP_BUILD_01_02_003

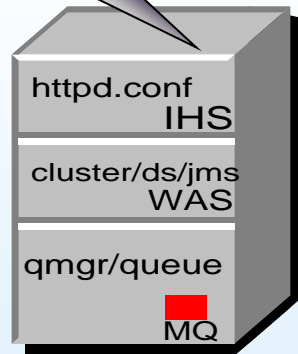
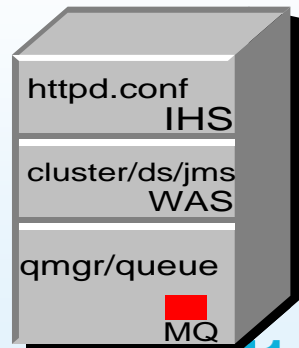
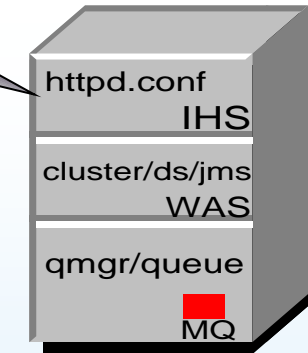
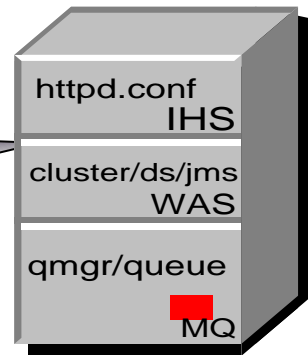
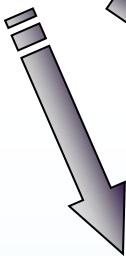
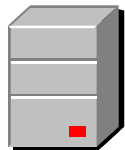




Release Manager

SALESAPP_BUILD_01_02_003.tar

Deployment Server



Implementation Manager selects:

- Application
- Version of the Application
- Environment

Innovate2011





Principles

- Version control and build configuration
- Release versions of configuration change in the same way as code
- Allows linking of configuration releases and application releases – together comprising a business application
- “Build Once, Deploy Anywhere”
- Bringing established best practice from application development to infrastructure management

Demonstration

- WebSphere MQ:
 - QMGR Creation and MQ Artifacts
 - Snapshot / Import
 - Template
 - Clone



To ensure consistency – always deploy the same thing!

- Templates created that define infrastructure or application configuration
- Templates are environment neutral and usually stored in the target platform format (i.e. ddl, mqsc, etc.)
- Contain the complete configuration for a target technology
- Deltas become part of the template – so configuration changes are not made in isolation



Properties / Template

DevTst01	
QMGR_NAME	SALESDEVQM01
QMGR_HOST	Inxdev01
QMGR_PORT	1414

MQSC Template
-----<QMGR_NAME>-----
-----<QMGR_HOST>-----
-----<QMGR_PORT>-----



Properties / Template

DevTst01	
QMGR_NAME	SALESDEVQM01
QMGR_HOST	Inxdev01
QMGR_PORT	1414
DB_USER	devtstuser

MQSC Template
-----<QMGR_NAME>-----
-----<QMGR_HOST>-----
-----<QMGR_PORT>-----
-----<DB_USER>-----



Properties / Template

DevTst01	
QMGR_NAME	SALESDEVQM01
QMGR_HOST	Inxdev01
QMGR_PORT	1414
DB_USER	devtstuser

SysTst01	
QMGR_NAME	SALESTSTQM02
QMGR_HOST	Inxtst01
QMGR_PORT	1415
DB_USER	syststuser


MQSC Template
-----<QMGR_NAME>-----
-----<QMGR_HOST>-----
-----<QMGR_PORT>-----
-----<DB_USER>-----





Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle



Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel 			



Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel	SALES_MQ_01_02_033.zip		





Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel	SALES_MQ_01_02_033.zip	SALES_MQ_01_02_033	WMQ





Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel	SALES_MQ_01_02_033.zip	SALES_MQ_01_02_033	WMQ
x.py	JMS Queue Dest			





Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel	SALES_MQ_01_02_033.zip	SALES_MQ_01_02_033	WMQ
x.py	JMS Queue Dest	SALES_WAS_01_02_046.zip		





Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel	SALES_MQ_01_02_033.zip	SALES_MQ_01_02_033	WMQ
x.py	JMS Queue Dest	SALES_WAS_01_02_046.zip	SALES_WAS_01_02_046	WAS





Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel	SALES_MQ_01_02_033.zip	SALES_MQ_01_02_033	WMQ
x.py	JMS Queue Dest	SALES_WAS_01_02_046.zip	SALES_WAS_01_02_046	WAS
x.ddl	Column, View, etc			



Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel	SALES_MQ_01_02_033.zip	SALES_MQ_01_02_033	WMQ
x.py	JMS Queue Dest	SALES_WAS_01_02_046.zip	SALES_WAS_01_02_046	WAS
x.ddl	Column, View, etc	SALES_DB_01_02_012.zip		



Version Control	Configuration Management Tool	Build Process	Release Mechanism	Middleware
Code Configuration	Eclipse or Web based config. UI	Generate Versioned Release Components	Ideally web based, self service	<ul style="list-style-type: none">•WAS / Portal / WPS• WebLogic / JBoss• MQ / Broker•DB2 / Oracle
x.mqsc	Alter channel	SALES_MQ_01_02_033.zip	SALES_MQ_01_02_033	WMQ
x.py	JMS Queue Dest	SALES_WAS_01_02_046.zip	SALES_WAS_01_02_046	WAS
x.ddl	Column, View, etc	SALES_DB_01_02_012.zip	SALES_DB_01_02_012	Oracle

Provisioning New Environments

Products > Configuration > Code

AppServer - products

IBM HTTP Server

WebSphere AS 6.1.0.29

WMQ6 ML72

AIX 6 TL10

Database - products

Oracle 11.1.0.7.0

AIX 6 TL10



Provisioning New Environments

Products > Configuration > Code

AppServer - products	Configuration / App
IBM HTTP Server	WEB_CONFIG_SALES_1_2_056
WebSphere AS 6.1.0.29	WAS_CONFIG_SALES_1_2_087
WMQ6 ML72	WMQ_CONFIG_SALES_1_2_032
AIX 6 TL10	STANDARD ORG IMAGE

Database - products	Configuration / App
Oracle 11.1.0.7.0	ORA_CONFIG_SALES_1_2_042
AIX 6 TL10	STANDARD ORG IMAGE



Provisioning New Environments

Products > Configuration > Code

AppServer - products	Configuration / App
	APP_CONTENT_SALES_1_2_124
IBM HTTP Server	WEB_CONFIG_SALES_1_2_056
WebSphere AS 6.1.0.29	WAS_CONFIG_SALES_1_2_087
WMQ6 ML72	WMQ_CONFIG_SALES_1_2_032
AIX 6 TL10	STANDARD ORG IMAGE

Database - products	Configuration / App
Oracle 11.1.0.7.0	ORA_CONFIG_SALES_1_2_042
AIX 6 TL10	STANDARD ORG IMAGE



Sales
Release 1.2

