DevOps: Multiplatform Application Deployment

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Multi-Platform Application Deployment Automation

Visibility and automated control of your application deployment process

- Manage application components and versions
- Manage configurations across all environments
- Offer secure ‘self-service’ capabilities
- Increase transparency
- Ensure governance and compliancy

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Intuitive and Scalable Model Driven Deployment

Composite Applications

Environment Management

The “Where”

Re-usable Workflows

The “How”

The “What”

Components

Deployment Automation

SIT

PROD

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IBM UrbanCode Deploy
Application deployment automation

- Manage application components and versions
- Manage environment configuration from dev/test through production
  - Ensure compliance
    - Audit history
    - Quality gates
  - Easy to use process designer
    - Automate and reuse deployment processes
- Automates deployment to existing and new resources
- Environment Inventory
  - What is deployed where?

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Key Features

- Intuitive Deployment Model
- Environment Configuration Management
- Rich Drag-and-Drop Workflow Designer
- Distributed Deployment Automation
- Deployment Inventory
Reliable Middleware Configuration Management

WAS Configuration Template Creation

- IBM UrbanCode Deploy + Plugin
- Template Assembled

Import configuration

Exemplar WAS Cell

Artifact Library

- EAR
- WAR
- DB
- Cluster template

Application

Deploy and promote application and configuration across environments

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The new plugin enables automated deployment to Worklight Console and Application Center.

Supports Worklight Apps targeting iOS and Android.

Use App Server, Database and other plugins to configure environments and Worklight projects.
Extend support to back-end Systems of Record

- **Push button deployments** to the mainframe
- **Secure and reliable** deployment and promotion of incremental native file system changes across environments
- **Greater visibility** of “what is where” with the ability rollback to any prior version at ease

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Enable rapid delivery of multi-tier applications

- Automate deployment of mainframe to mobile applications

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High Level Overview of Deployment Capabilities

Note: LPARs can be the same or different LPARs
High Level Overview of Deployment Capabilities

**Build System**
- Post build script

**UrbanCode Deploy**
- Create new version
- Store meta data
- Store version artifacts

**UrbanCode Deploy**
- z/OS LPAR, Build system

**Agent**
- Fetch artifacts via copy or FTP
- Review PDS in version and request deploy process
- Pre-processing steps TSO, REXX, SHELL
- Deploy data sets
- Post-processing steps TSO, REXX, SHELL
- Update Inventory status

**Server**
- Download artifacts

**PDS**

Note: LPARs can be the same or different LPARs
z/OS deployment both traditional applications and HFS artifacts

- Deployment support for artifacts in the HFS
- Allows coordination between Load module deploy and service artifacts or Java on z.

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JCL Plug-in V6.1.0.2

- **Mode**
  - Synchronized (Submit & wait for completion)
  - Asynchronized (Submit, check status later)

- **Source of JCL**
  - MVS Data Set
  - Unix file
  - Input JCL content in the step
  - Replace tokens

- **Logs & Status**
  - Select output data set to be printed in log
  - Status based on MaxCC (default)
  - Customize status
Managing Redundant Versions V6.1.0.2

- Redundant versions are versions replaced by one or more subsequent incremental versions.

<table>
<thead>
<tr>
<th>Sequence of Versions</th>
<th>Deployed System State</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Version1 A₁</td>
<td>A₁ B₀ C₀</td>
<td>D₀ E₀ F₀</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Version2 A₂ B₂ C₂</td>
<td>A₂ B₂ C₂</td>
<td>D₀ E₀ F₀</td>
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<td></td>
<td></td>
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<tr>
<td>Version3 A₃</td>
<td>A₃ B₂ C₂</td>
<td>D₀ E₀ F₀</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Version4 B₄ C₄</td>
<td>A₃ B₄ C₄</td>
<td>D₀ E₀ F₀</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At this point Version 1 is replaced

At this point Version 1 & 2 are replaced

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RTC Packaging for UrbanCode Deploy

Package Definition

- **Project or Team Area:** listed
- **Build Direction:** listed
- **z/OS SPF gateway script:** listed

**UrbanCode packaging options**
- **Generate UrbanCode Deploy package:** checked
- **UrbanCode Deploy Toolkit script:** listed
- **UrbanCode Deploy component name:** listed
- **UrbanCode Deploy version naming conventions:**
  - **Timestamp:** checked
  - **First work item number:** checked
  - **Prompt on request:** checked
- **Prefix for UrbanCode version name:** listed
- **Zero padding for work item number:** listed

**Artifacts**
- **Total:** 4 members in 2 data sets

<table>
<thead>
<tr>
<th>Name</th>
<th>Deploy Type</th>
<th>Last Modified</th>
<th>Properties</th>
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<tr>
<td>BABINS DEV0 TST1 DBRM</td>
<td>DBRM</td>
<td>3/16/2015, 11:44 PM</td>
<td></td>
</tr>
<tr>
<td>BABINS DEV0 TST2 LOAD</td>
<td>LOAD</td>
<td>3/16/2015, 11:44 PM</td>
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<tr>
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<td>3/19/2015, 11:42 PM</td>
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<tr>
<td>EPSCSRRD</td>
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<td>3/19/2015, 23:59 PM</td>
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<tr>
<td>EPSPMRT</td>
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</table>

**DD allocations:**

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<th>O.</th>
<th>C.</th>
<th>Keep</th>
<th>Mod</th>
<th>Out.</th>
<th>Deployment Type</th>
<th>Publ.</th>
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<td>SYSLIN</td>
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<td>no</td>
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<td>no</td>
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</tr>
<tr>
<td>DBRMLIB</td>
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<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>DBRM</td>
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<tr>
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</tbody>
</table>

**Variables**

Define variables and values used by this translator.

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
<th>Add...</th>
</tr>
</thead>
</table>

Complete your session enterprise-wide...
...and deployTypes can direct UCD actions

- And UrbanCode Deploy processes can use these deploy types to determine and execute special actions at deploy time...
DevOps: Continuous Testing

Deployment automation and service virtualization for reducing time to market and improving quality

IBM UrbanCode Deploy

Integrated with

IBM Rational Test Virtualization Server

IBM Rational Test Workbench

Network Virtualization

Deploy what is ready, virtualize the rest

Continuously test in production-like env.

Test using real world network conditions

Test Environments

virtual components

Databases
Internal Messages
Third-party Services

Simultaneously test across multiple test stages

Dev
QA

IBM SmartCloud

Dynamic Infrastructure

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  Monday and Tuesday 6-7:30 PM
  First 250 copies

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2. Typical Mainframe Application Development Challenges
3. DevOps and Mainframe: Mission Possible?
4. DevOps Best Practices for z Systems
5. Building for the modern omni channel world
6. DevOps Success Stories in the Enterprise

Why the unique power of the mainframe is perfect for developing hybrid cloud applications

How mobile front ends can rejuvenate those back-end systems to reach new customers

The special considerations of using DevOps to accelerate mainframe software delivery

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