

 Stay ahead.

Innovate2013

The IBM Technical Summit

開發者大會





軟體持續交付快狠準！ 企業開發平台 DevOps 大顯神威

IBM軟體產品處
Rational 資深資訊技術顧問
林裕隆 (Jason Lin)

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Agenda

- IBM DevOps overview
- UrbanCode 解決方案
- Demo



什麼是 DevOps (\dev-äps\) ?

- DevOps (英文Development和Operations的組合) 是一組過程、方法與系統的統稱，用於促進開發 (應用程序/軟體工程)、技術運營和質量保障 (QA) 部門之間的**溝通、協作與整合**。
- 它的出現是由於軟體行業日益清晰地認識到：為了**按時交付軟體產品和服務**，開發和運營工作必須**緊密合作**。

(摘自維基百科)



可以把DevOps看作開發 (軟體工程)、技術運營和質量保障 (QA) 三者的交集





什麼是IBM DevOps: 通過軟體驅動創新的產品 和軟體持續交付方法

企業通過持續的軟體交付能力，抓住市場機會，縮短獲得客戶回饋的時間。

DevOps Lifecycle(基於DevOps的產品和軟體生命週期管理)

最終客戶

業務部門&產品經理

軟體&產品開發

營運& 製造 & 售後



持續創新，回饋和改進

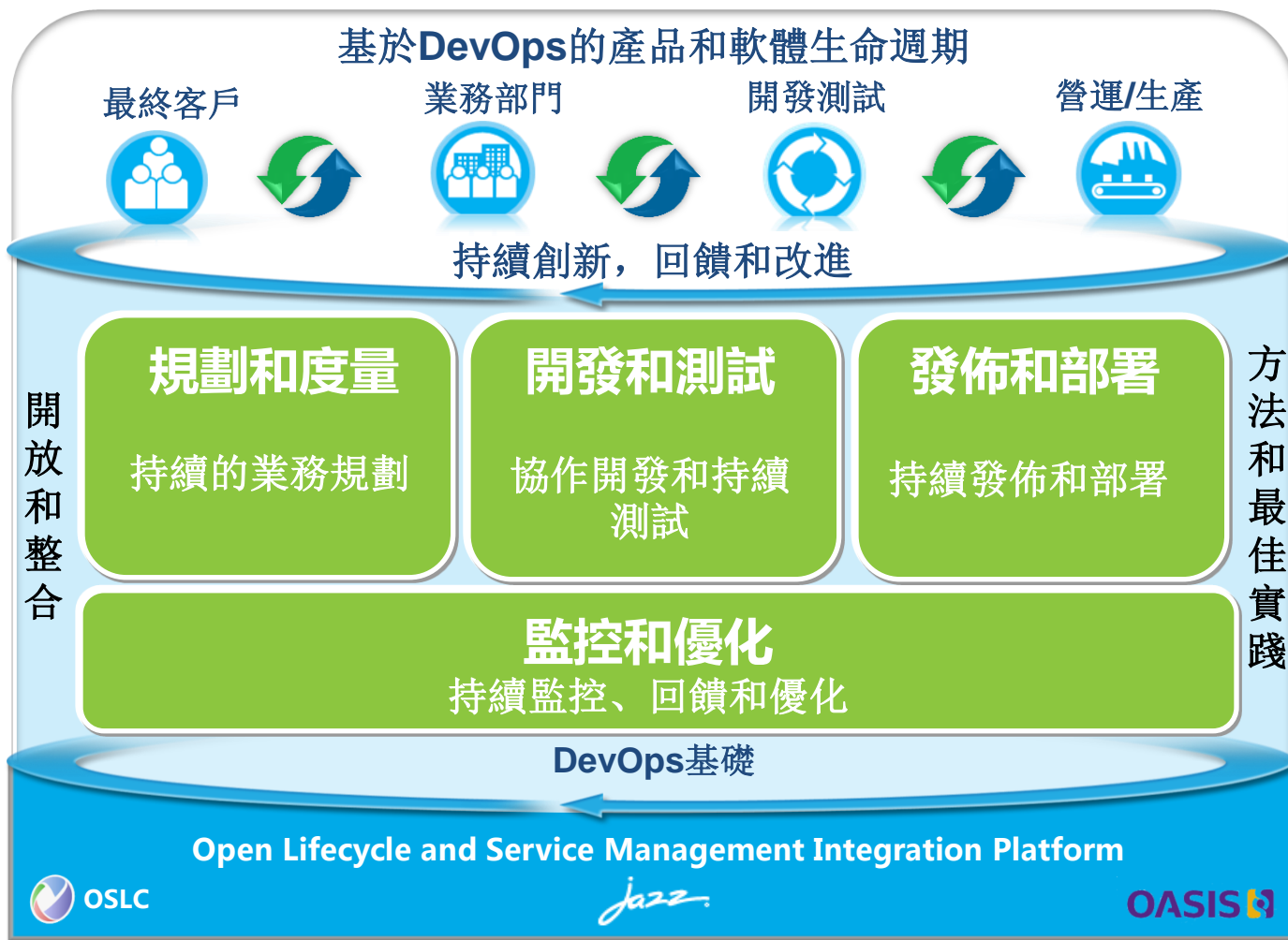
快速獲得和回
應客戶回饋

加速軟體交付

平衡速度、成本
、品質和風險

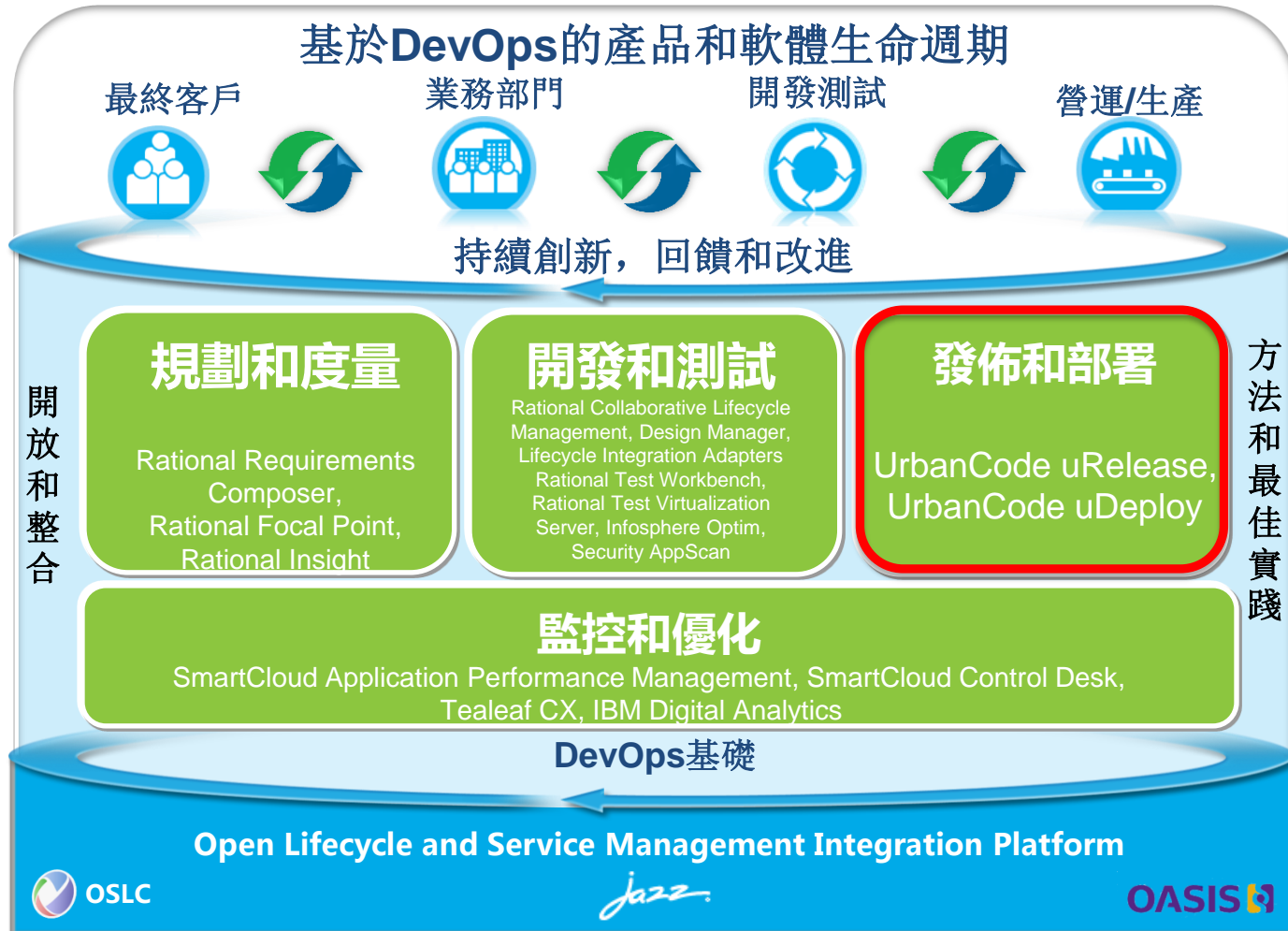


基於DevOps的產品和軟體生命週期 管理能力模型





基於DevOps的IBM產品家族





IBM DevOps Tool Chain

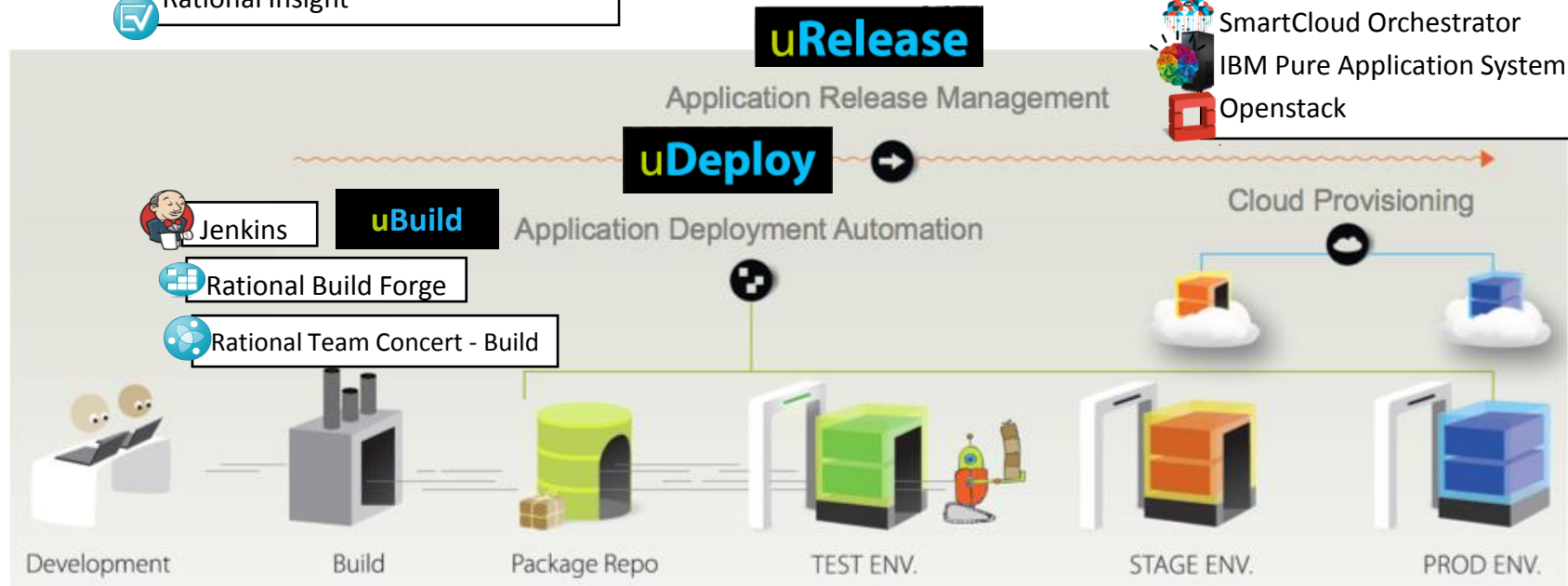
規劃和度量

- Rational Focal Point
- Rational Requirements Composer
- Rational Insight

發佈和部署

IBM SmartCloud

- SmartCloud Orchestrator
- IBM Pure Application System
- Openstack



- Rational Team Concert
- Rational Software Architect

- Rational Quality Manager
- Rational Test Workbench
- Rational Test Virtualization Server

- SmartCloud Control Desk

- SmartCloud Application Performance Management

開發和測試

監控和優化





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- IBM DevOps overview
- UrbanCode 解決方案
- Demo





UrbanCode, an IBM Company

- **11 Years Build, Release and Deployment Experience**
- **Global Customers**
- **Enterprise scalability, security, compliance and automation**
- **Training, consulting and implementation services**
- **Based in Cleveland, OH**

“One key benefit of UrbanCode is how quickly it can be implemented and used for deployments.”

Gartner





UrbanCode是什麼？

幫助快速部署企業應用程式的工具

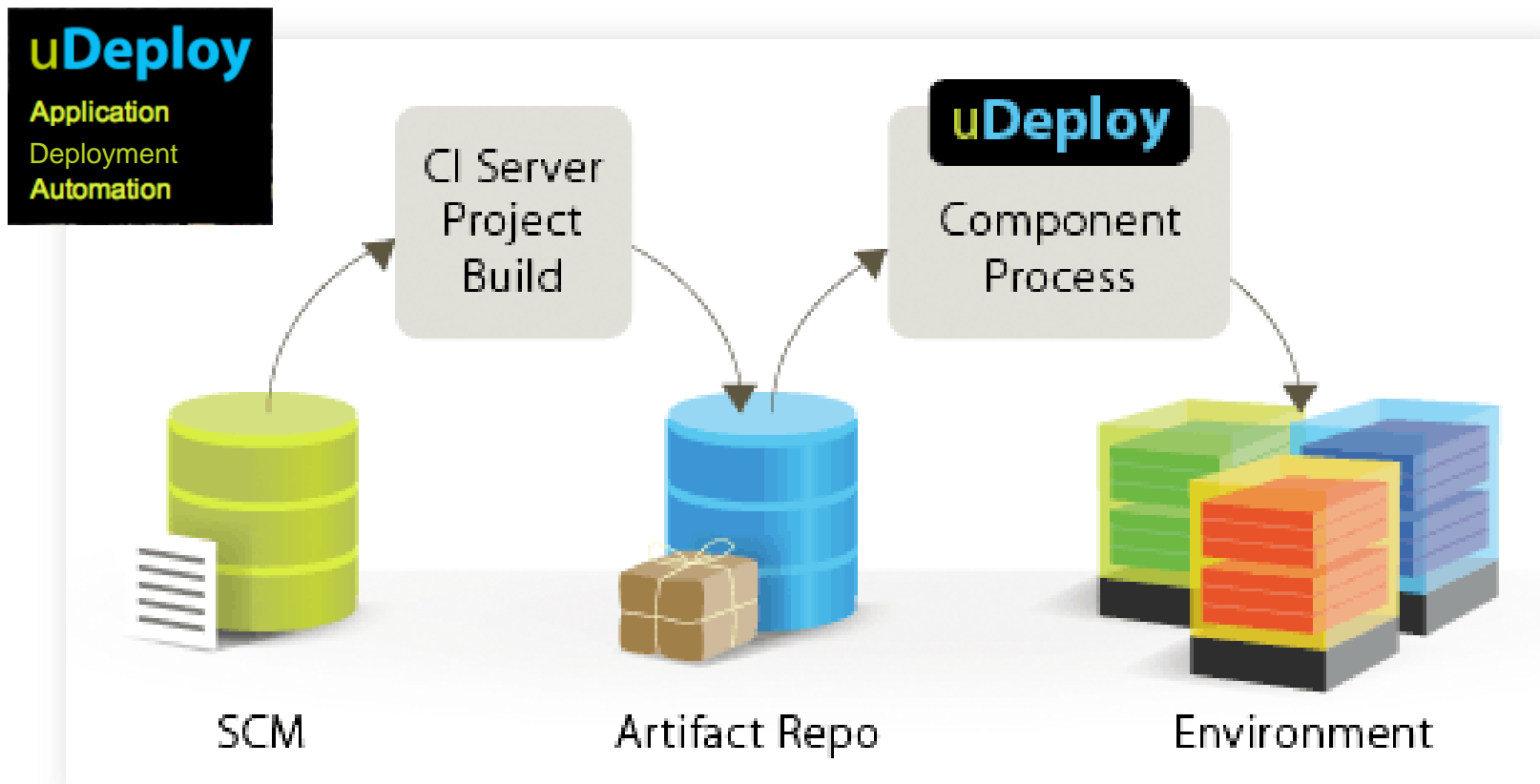
The screenshot shows the UrbanCode website interface. The main navigation bar includes 'Products', 'Solutions', 'Resources', 'Company', 'Contact Us', and 'Support'. A search bar is located on the right. The main content area features the headline 'Deploy enterprise apps at the speed of a startup' and a sub-headline 'With uDeploy, your deployments will be faster than ever and have fewer errors. Deploy as often as you like, on demand, on a schedule, and self-service - shortening your time to market.' A blue button labeled 'Learn about uDeploy' is present. Below the main content are sections for 'Webinars', 'News & Events', and 'Customer Success Story'. The right-hand navigation menu is open, showing 'Products' and 'Solutions'. Under 'Solutions', the following items are listed: 'DevOps Platform', 'uDeploy', 'uBuild', 'uProvision', 'uRelease', 'Terraform', and 'AnthillPro'. The 'uDeploy' and 'uRelease' items are highlighted with orange boxes.





uDeploy (持續部署解決方案)

Automating deployment of applications across dev, test, and production environments



uDeploy Platform Technology

uDeploy



Core

- Graphical Process Design
- Configuration Management
- Inventory



uDeploy Platform Technology

uDeploy



Core

- Graphical Process Design
- Configuration Management
- Inventory

Supporting

- Artifact Repository
- Calendars & Scheduling
- Intelligent File Transfer
- Compliance & Approvals
- Audits



Application – Component Model

uDeploy



Components

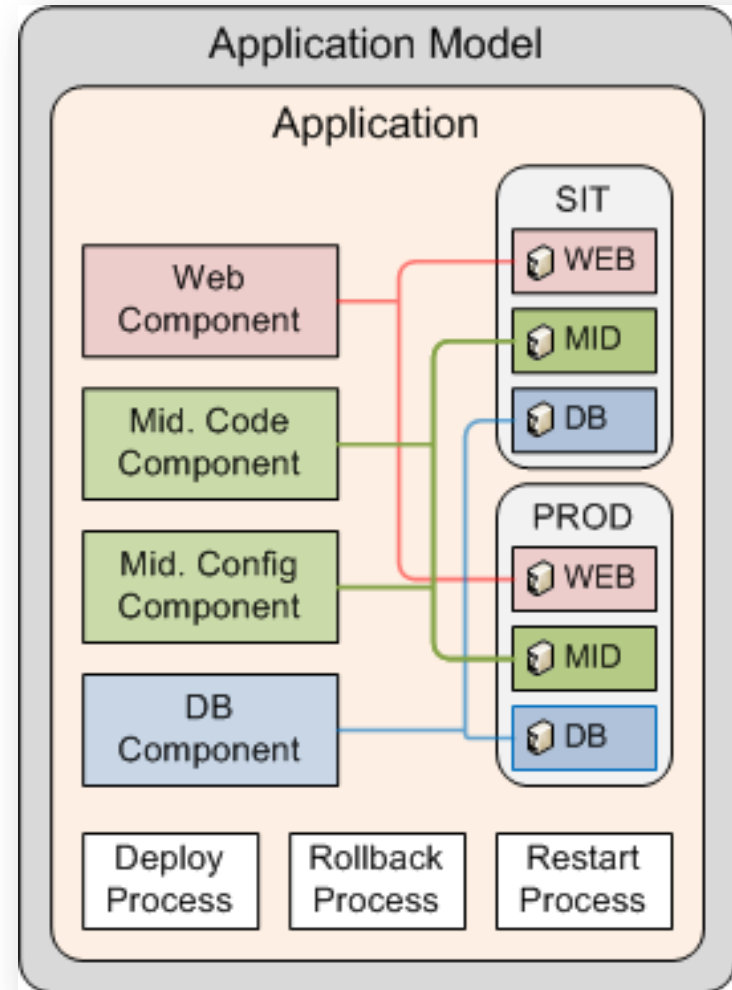
- Tiers or services

Environments

- Target servers
- Servers have roles
- Env. Specific Config

Processes

- Coordinates Component processes



uDeploy configuration settings



uDeploy

Hello admin | Help | Logout

Dashboard Components Applications Configuration Resources Deployment Calendar Work Items Settings

Home > Configuration

Component: PetShop-APP

Variables for this component regardless of environment.

Properties

Add Property

Name	Value	Description	Actions
appcmd.path	C:\Windows\System32\inetsrv		Edit Delete
code	78ecf0dfadfb6a38ea8f4bf8d8528950867a039c	trigger code for anthill	Edit Delete

1.0 per page 2 records - [Refresh](#)

Add Property

Environment Property Definitions

Define properties here to be given values on each environment the component is used in.

Add Property

Name	Label	Required	Default Value	Description	Actions
web.dir	web.dir	false	C:\Live		Edit Delete
db.server	db.server	true			Edit Delete
db.user	db.user	true			Edit Delete
db.password	db.password	true	****		Edit Delete
web.port	web.port	false			Edit Delete
web.url	web.url	false			Edit Delete

1.0 per page 6 records - [Refresh](#)

Add Property

Configuration Templates

Name	Actions
web.config	View Edit
applicationHost.config	View Edit

1.0 per page 2 records - [Refresh](#)

Create New Configuration Template

Application / Component / Environment

- JPetStore
- JPetStore-Jenkins
- JPetStore-Jetty
- PetShop
 - IIS
 - SIT
 - UAT
 - Prod
 - Net Framework
 - SIT
 - UAT
 - Prod
 - PetShop-APP
 - SIT
 - UAT
 - Prod
 - PetShop-DB

uDeploy is ready for lots of config.

This stuff changes across those environments

Secure stuff is secure.

You can even replace whole files with templated versions at deploy time.

Store app configuration in your deploy tool where it's safe from junior devs.

uDeploy process designer



uDeploy Hello admin | Help | Logout

Dashboard Components Applications Configuration Resources Deployment Calendar Work Items Settings

Home » Components » JPetStore-APP-Jenkins » Processes » Process: Install

Process: Install

Description Version 19 of 19

Design Edit Properties Changelog

Tools

Add Steps

Available Plugin Steps

- Manual Task
- Add Inventory Status
- Remove Inventory Status
- Artifacts
- BI
- Builders
- Configuration Management
- DB
- Deploy
- Installers
- Integration
- Scripting
- SQL
- UrbanDeploy

These designs are versioned.

Super easy drag-and-drop configuration.

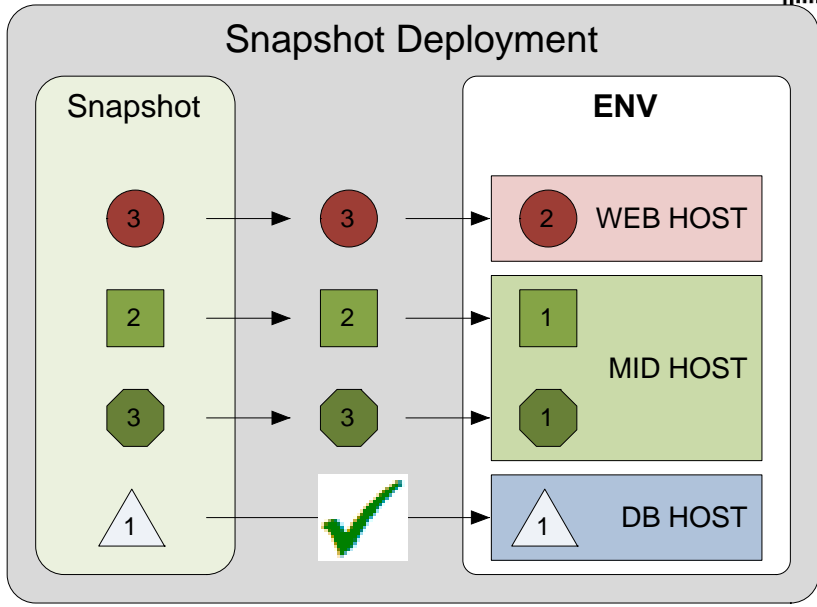
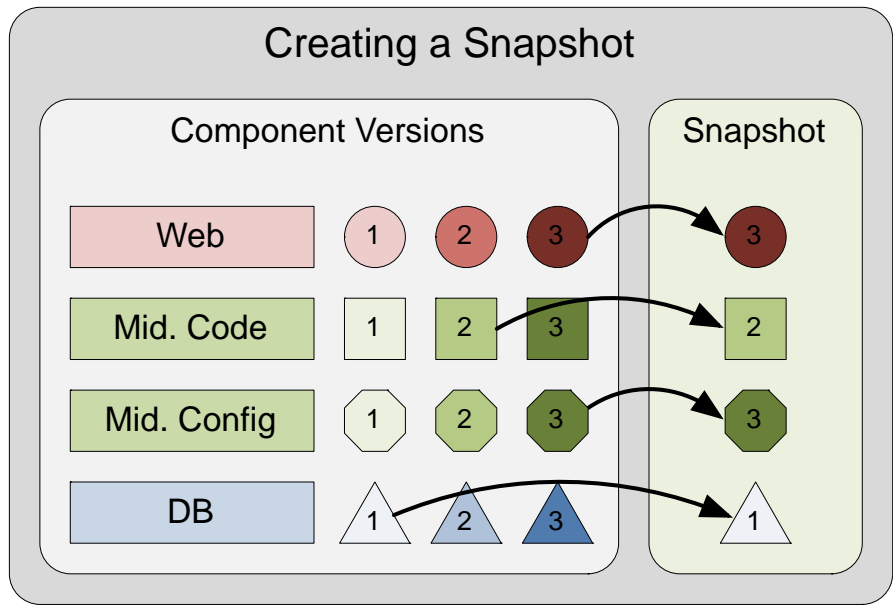
Click the pencil icon to do the detailed config of each step.

Moving the artifacts/files/stuff for you to deploy is handled for you.

No FTP, network file shares or other craziness required.

Hundreds of built-in steps. (and you can make your own with our open plugin system!)

Snapshots – A Version of the App



Contents of environments that pass tests

- contain deployables and config

Deployments are based on deltas

They help with:

✓ Automation, Audit, and Visibility

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Application environment inventory



uDeploy Hello admin | Help | Logout

Home » Applications » PetShop Application Resources Deployment Calendar Work Items Settings

Application: PetShop

Description

Environments **History** Edit Properties Components Snapshots Pro

Environments

Drag environments by their label boxes to order them.

SIT

Actions: Request Process, Compare, Copy, Inactivate

Latest Inventory

Component	Version	Snapshot	Properties	Status	Compliance	Actions
PetShop-DB	2279		Version 2	Active	Compliant (1/1)	View Request
Net Framework	4.0	baseline - petshop	Version 1	Active	Compliant (1/1)	View Request
IIS	7.5	baseline - petshop	Version 1	Active	Compliant (1/1)	View Request
PetShop-APP	2306		Version 20			

10 per page 4 records - Refresh

UAT

Actions: Request Process, Compare, Copy, Inactivate

Latest Inventory

Component	Version	Snapshot	Properties	Status	Compliance	Actions
PetShop-DB	2279	baseline - petshop	Version 1	Active	Compliant (1/1)	View Request
PetShop-APP	2299	baseline - petshop	Version 11	Active	Compliant (1/1)	View Request
Net Framework	4.0	baseline - petshop	Version 1	Active	Compliant (1/1)	View Request
IIS	7.5	baseline - petshop	Version 1	Active	Compliant (1/1)	View Request

10 per page 4 records - Refresh

Prod

Actions: Request Process, Compare, Copy, Inactivate

Latest Inventory

No components have been installed to this environment. - Refresh

Show Inactive Environments

Create New Environment

The "Petshop" is made of 4 deployable components and is deployed to 3 environments.

Inventory of correct versions of each component and full app in each environment. SIT has newer stuff.

Compliance
How many of our machines actually have the right version?

The variables used at deploy time are versioned and tracked along with the deployed binaries.

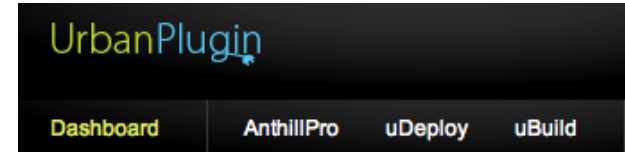
Compare one env.'s versions, settings and files to another. Super easy.

Easily see how this got there.

Define your own environments



uDeploy works in heterogeneous environments



<http://plugins.urbancode.com>

Deployment Sources

- Build servers
- Source control tools
- Maven repositories

IBM Integrations

- RTC / ClearCase / Synergy
- WebSphere Application Server
- MQ
- Message Broker

Other Java Platforms

- WebLogic, Tomcat, Jboss, etc

Quality & Change Management

- QualityCenter
- Remedy
- ServiceNow

Microsoft Platform

- IIS
- SharePoint & Biztalk

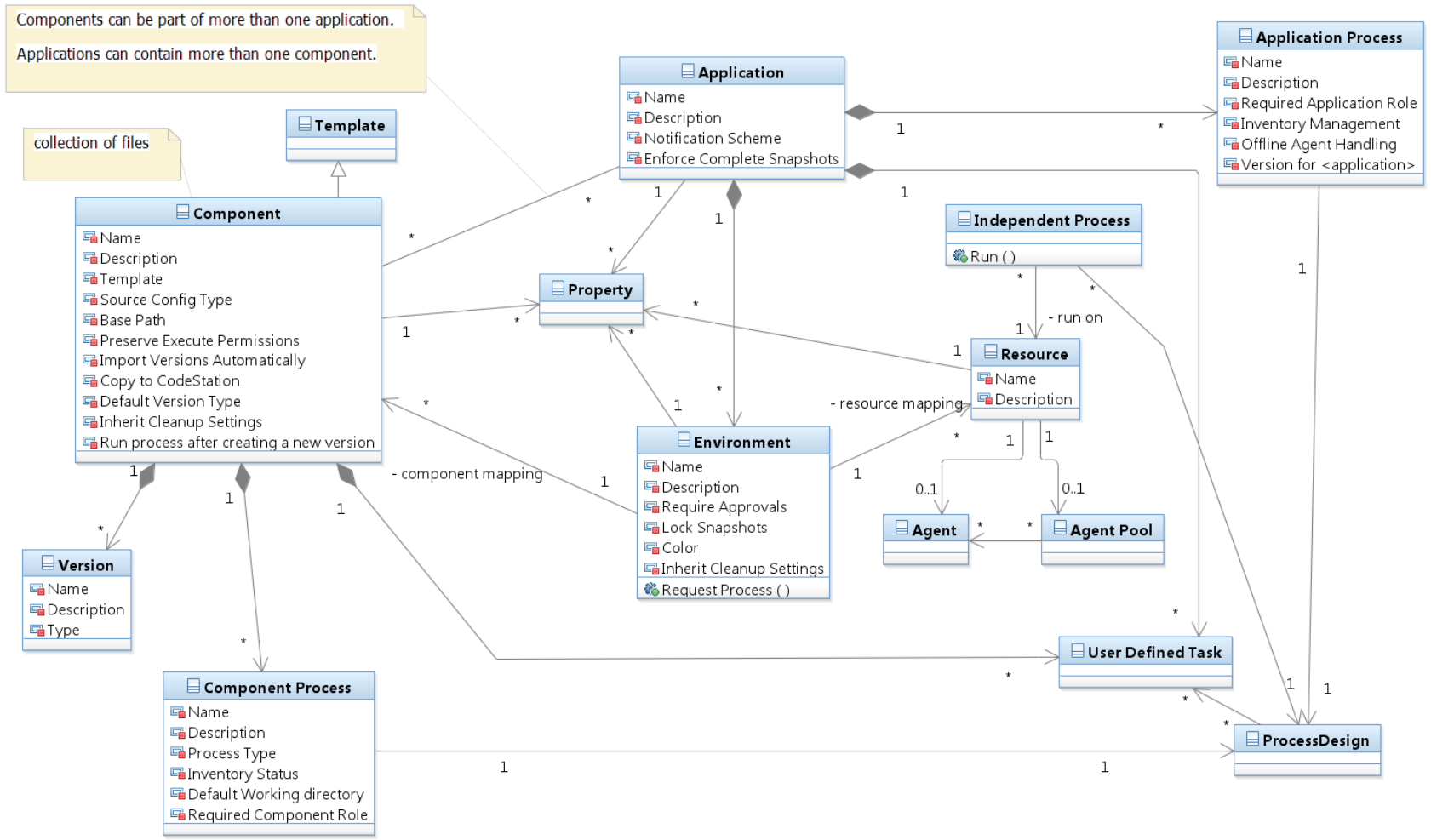
Infrastructure

- Public / Private Cloud
- Load Balancers
- DataBases





UrbanCode uDeploy Object Model



企業應用部署自動化平臺功能組件和特性



環境管理員



發佈工程師



部署工程師



基於urbanCode的企業應用部署管理平臺

環境
管理

組件
管理

應用
管理

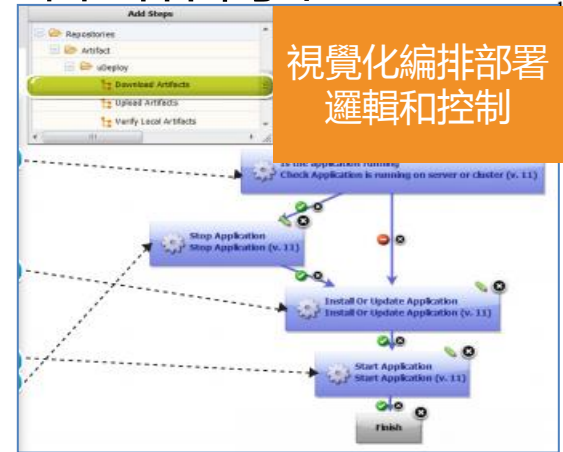
執行
管理

儀仗
板

部署Artifact管理

外掛程式管理

系統管理



視覺化編排部署
邏輯和控制

Application: JPetStore

Description

Environments

Drag environments by their label boxes to order them.

Environment	Component	Version	Snapshot	Properties	Status
SIT	JPetStore_DB	1.0	Version 2		Active
	JPetStore_APP	1.0	Version 5		Active
	JPetStore_WEB	1.0	Baseline	Version 2	Active
3 records - Refresh Print					
10 per page					

Latest Desired Inventory

Component	Version	Snapshot	Properties	Status
JPetStore_APP	1.0	Version 2		Active
JPetStore_DB	1.0	Version 5		Active
JPetStore_WEB	1.0	Baseline	Version 2	Active
3 records - Refresh Print				
10 per page				

Environments: SIT, UAT, Prod

同時支援多套環
境自動部署

7zip

Version 1.0 | Downloads 112 | Comments 1 | Mar 3, 2013

System Utility

WebSphere

Version 25.0 | Downloads 41 | Comments 0 | Jun 26, 2013

Application Server :: Java

Service Control Manager

Version 8.0 | Downloads 33 | Comments 0 | Mar 27, 2013

System Utility :: Windows

Windows System Tools

Version 12.0 | Downloads 30 | Comments 0 | Sep 19, 2012

System Utility :: Windows

uDeploy

Oracle SQL*Plus

Version 5.0 | Downloads 30 | Comments 0

Database

Deploy Tools

Version 3.0 | Downloads 28 | Comments 0

System Utility :: Windows

Quality :: Functional Testing

100 + 餘重開箱
即用的外掛程式
並可擴展



What troubles operational releases?

Releases encompass more than application deployment

- Examples: Middleware, network, hardware changes in addition to application changes
- Steps known in development and integration, but missed in Prod

Interaction between applications in a release

- Ordering of application deployment steps fails to account for dependencies between applications or deployment steps.
- Required artifacts or applications missed or wrong application versions deployed.

Difficulty coordinating dozens of participants

- Late breaking changes to deployment instructions or targeted artifacts are not communicated.
- Work product quality and process check lists scattered about many tools and not digested for at-a-glance status

Change Type

Applications

Vendor Software

Middleware

Database

Network

OS & Patches

VM platform





uRelease – (持續發佈解決方案)

Qualify with one question:

Do you have large monthly or quarterly releases that take hours/days and require dozens or that hundreds of people to get on a call?

uRelease delivers

- Plan the release day
- Execute the release
- Communicate what's going on
- Allocate environments to releases
- Tie release back to development

The screenshot shows the uRelease web interface for a deployment plan. The top navigation bar includes 'uRelease', 'Deployments', and user options like 'Otto Ops', 'help', and 'logout'. The main content area is titled 'Execution & Deployment Plan' and 'Contents & Notifications'. It displays a 'Deployment Plan' with a progress indicator showing 29% completion. A 'Time Remaining' section shows 00:01:04. A 'Task Count' section shows 13 Planned, 1 Waiting, 1 In Progress, and 3 Complete tasks. Below this, a table lists tasks such as 'Prep & Verify Readiness' (100% complete), 'Middleware Config' (0% complete), 'Bleed Over Sequence' (0% complete), and 'Deploy Database Changes' (0% complete). A table below the 'Middleware Config' section shows task details including Start Time, Plan, Actual, Name, Application, Type, Role, User, and Actions.

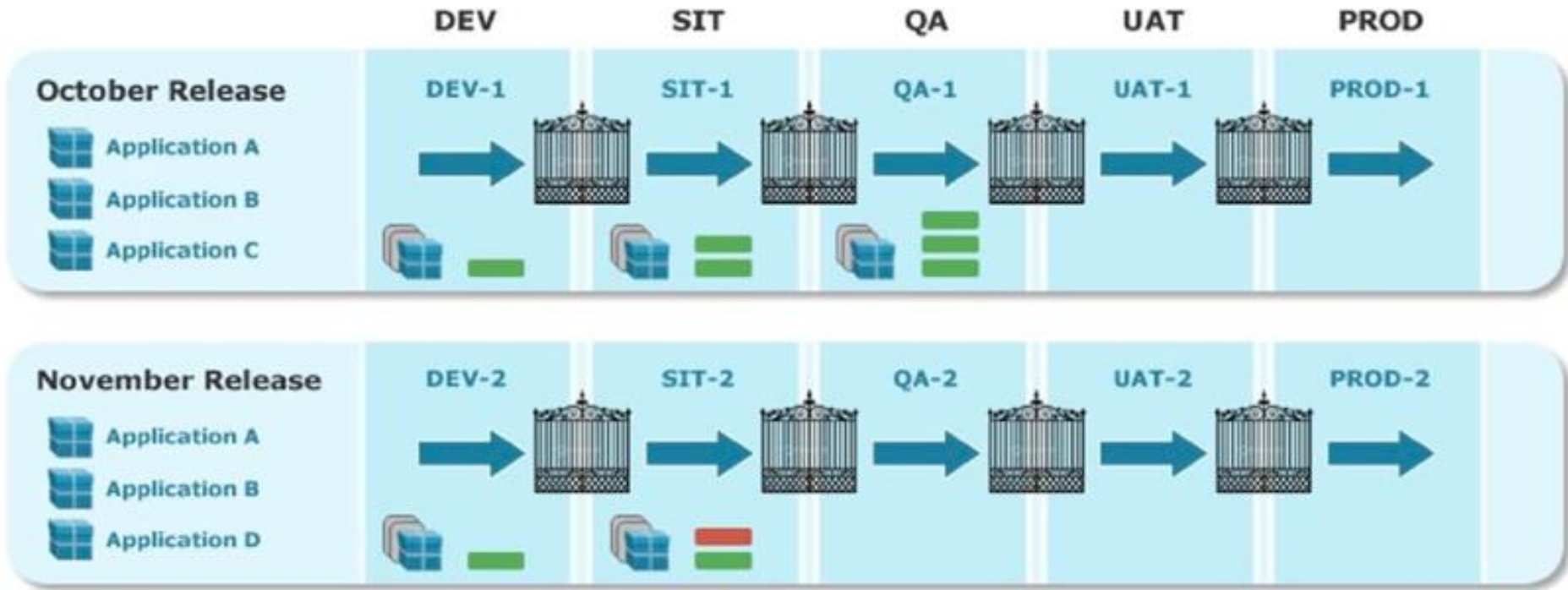
Start Time	Plan	Actual	Name	Application	Type	Role	User	Actions
(Not Applicable)	0h-15m	0h-00m	Convert-Datasources to-usc-Oracle-RAC syntax	None	Manual	Operations	otto_ops	-Reopen
6/2/13, 12:44 AM	0h 00m	0h 01m	Configure Something	None	Manual	Operations	otto_ops	Complete Skip Fail
6/2/13, 12:44 AM	0h 03m	-	Update server.properties	None	Manual	Operations	None (Claim)	Start Skip





uRelease delivers

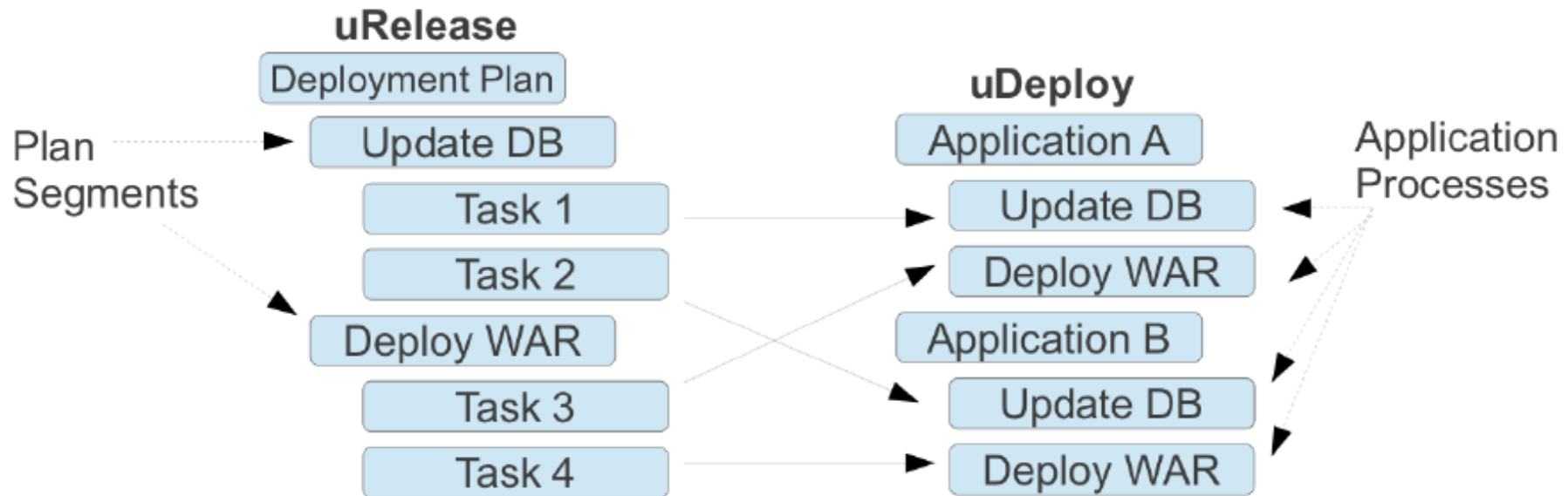
- Plan the release day
- Execute the release
- Communicate what's going on
- Allocate environments to releases



Because spreadsheets are a) terrible and b) normal

Deployment Plan

- **Deployment Plan** orchestrates both automated and manual steps across many applications.

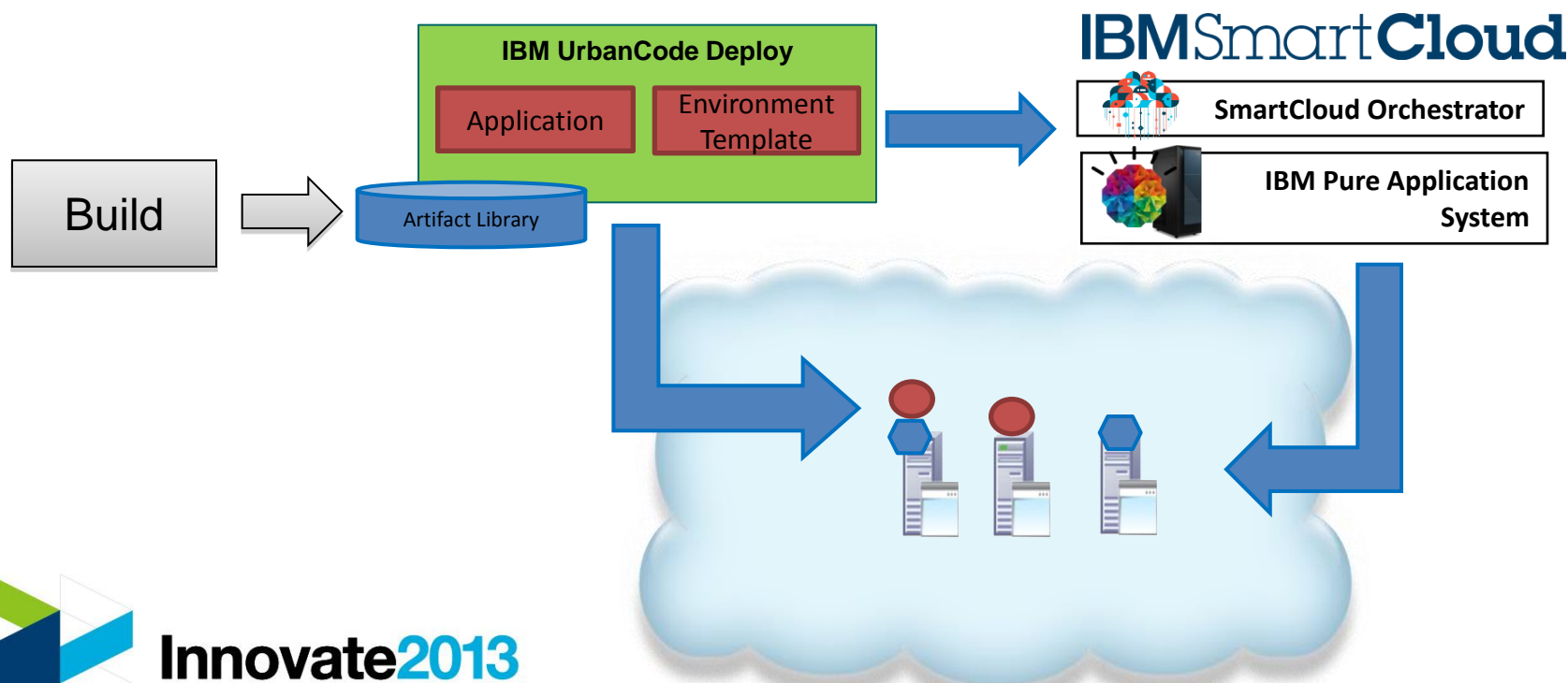


- Designed to be used for low-ceremony early integration environments as well highly orchestrated production deployments.
- Master Plan feature ensures that changes are immediately reflected across all scheduled and future deployments.



Continuous Delivery with Cloud

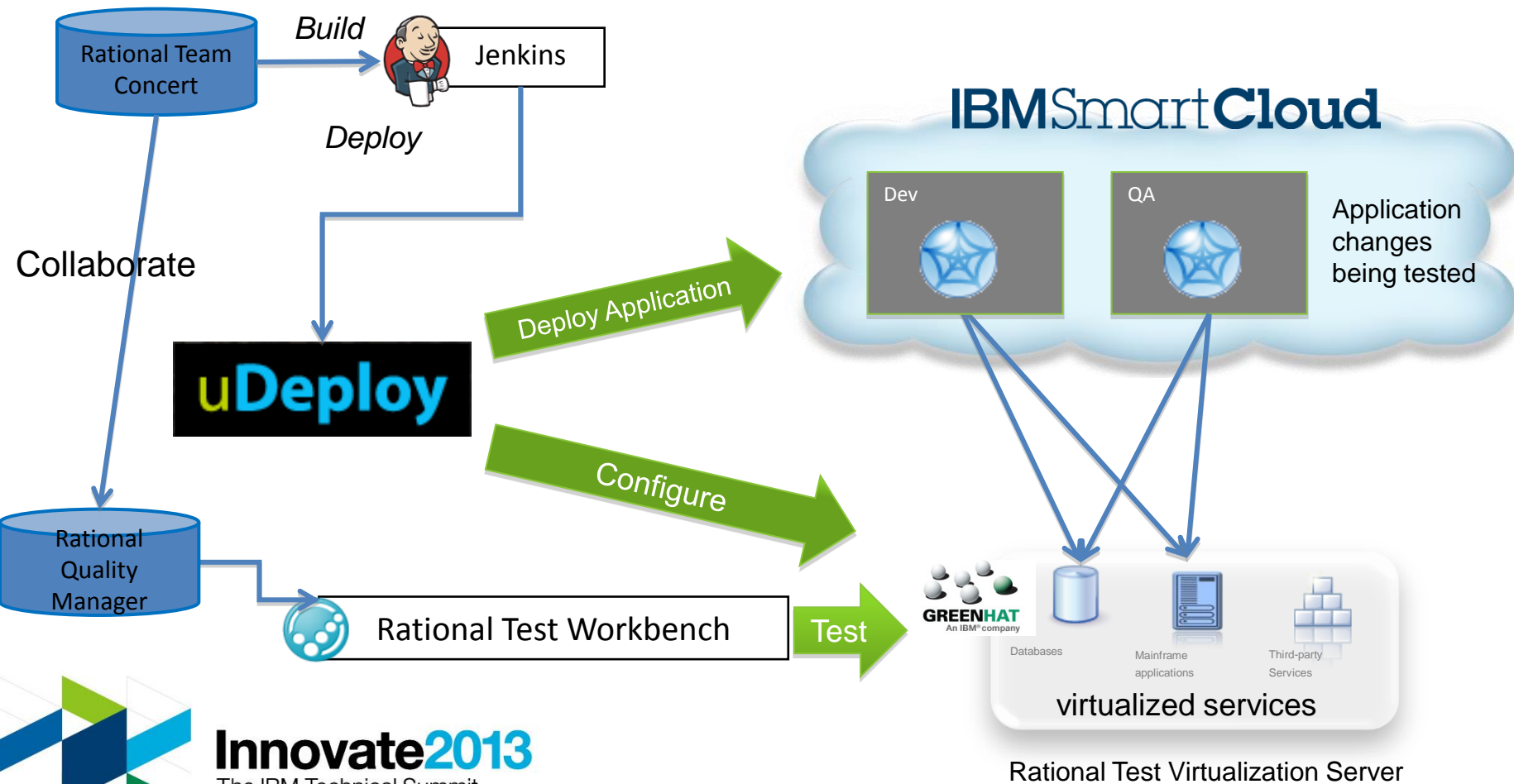
- Extend UrbanCode Deploy to capture **Environment Templates**
 - Describe desired environment infrastructure/platform
 - Define Application processes to run in scope of Environment Template
- Seamless process flow for incremental, full stack provisioning and application deployment automation
- Track and version artifacts to know what is deployed where





Continuous testing with virtualized services

Automating deployment and testing to production-like environments





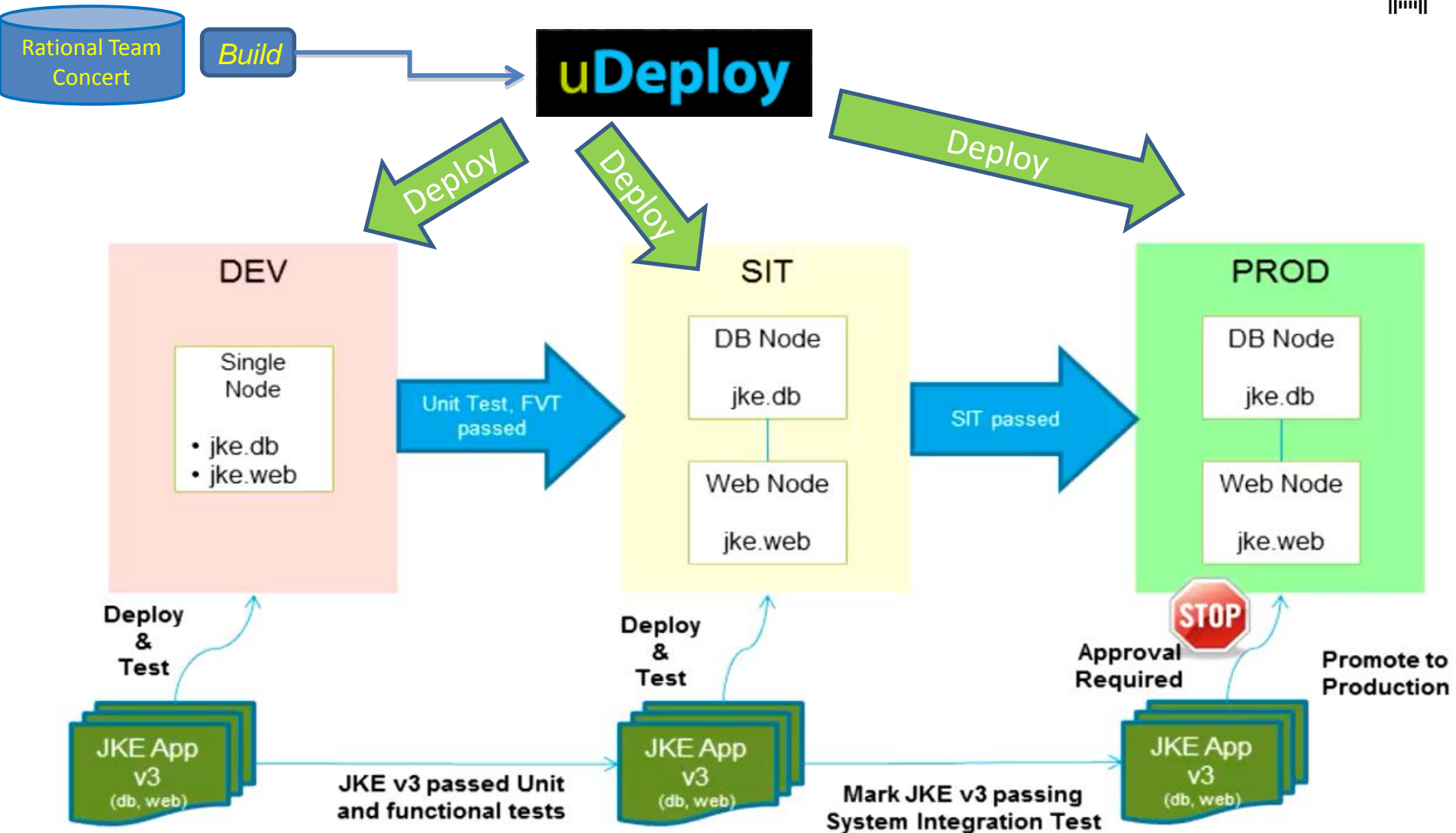
議程

- IBM DevOps Overview
- UrbanCode解決方案
- Demo





Demo 情境- JKE Deliver Process





UC#1-Deliver Development environment

Description:

- JKE Development team finished developing a new feature or fixing a defect, and wants to do testing of these features on a development environment. Dev sent a request to Ops for provide Dev environment.

Current Pain-point

- Operations not able to keep up with the number of requests coming from development
- Development productivity impacted as a result of wait-times.

uDeploy Value Proposition

- Automated and repeatable process to deploy applications to environments
- Integrations with development build (Cont. Integration) process reduces manual handovers and increases efficiency.





UC#2 – Deliver QA environment

Description:

- JKE development team completed the build and test of latest source code changes. SIT team wants to do testing of this build on a production-like QA environment. Request sent to Ops to update Test environment

Current Pain-point

- Rework resulting from deploying un-tested builds due to lack of visibility into the quality of build.
- Long wait-times to create or update test environments resulting from manual processes and configuration mismatch.

uDeploy Value Proposition

- Improved visibility into the quality of builds – resulting in better governance around the delivery process.
- Automated and repeatable process to deploy applications to environments reduces manual and configuration mismatch errors.





UC#3 – Promote to production

Description:

- JKE IT Operations team has received a build from JKE Development to deploy to production.

Current Pain-point

- Applications don't work in production.
- Long wait-times to create or update test environments resulting from manual processes

uDeploy Value Proposition

- Deployment Gates to enforce quality certified applications to be deployed to Production Environment
- Easy availability of Dev and Test environments matching Production environment reduces problem resolution time.
- Automated and repeatable process to deploy applications to production environments ensures faster deployment of releases to production.





UDeployDemo.mp4





THANK YOU



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