

# Getting to the DevOps Promised Land with Continuous Release and Deployment Across Mainframe Environments



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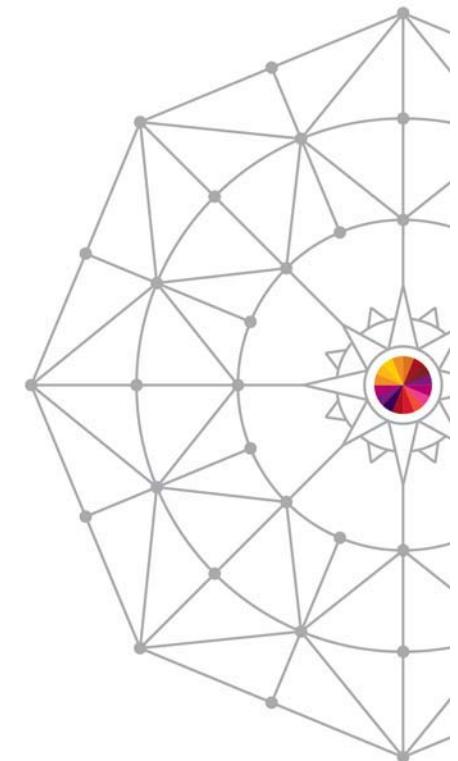
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# Software delivery is at the heart of today's top technology trends

## Big Data

Insights on new products by more efficiently interpreting massive quantities of data



## Cloud

Demand for apps requires fast, scalable environments for dev and test, as well as production



## Social Business

Broader set of stakeholders collaborates to deliver continuous innovation and value



## Instrumented Products

Industry requirements demand faster response to regulations and standards, with traceability and quality



## Mobile

Modern workforce expects constantly updated software to connect to enterprise systems



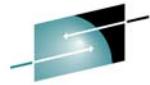
## Software delivery



## Intelligent/ Connected Systems

Software component in smart products driving increased value and differentiation

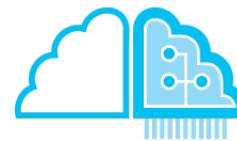




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# Demands on IT have increased dramatically

## Optimization



Next Generation  
of Hybrid  
Architectures

## Innovation



Innovation drives  
need for continuous  
IT optimization

New economics of IT  
fuels investments in  
innovation

“Don’t be afraid to make mistakes, just be afraid of  
not learning from them.” – Thomas Edison

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# Lifecycle Integration for DevOps

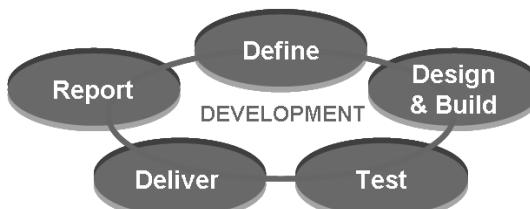
## People



Culture  
Collaboration  
Communication



## Process



Management  
Accountability  
Integration



## Technology



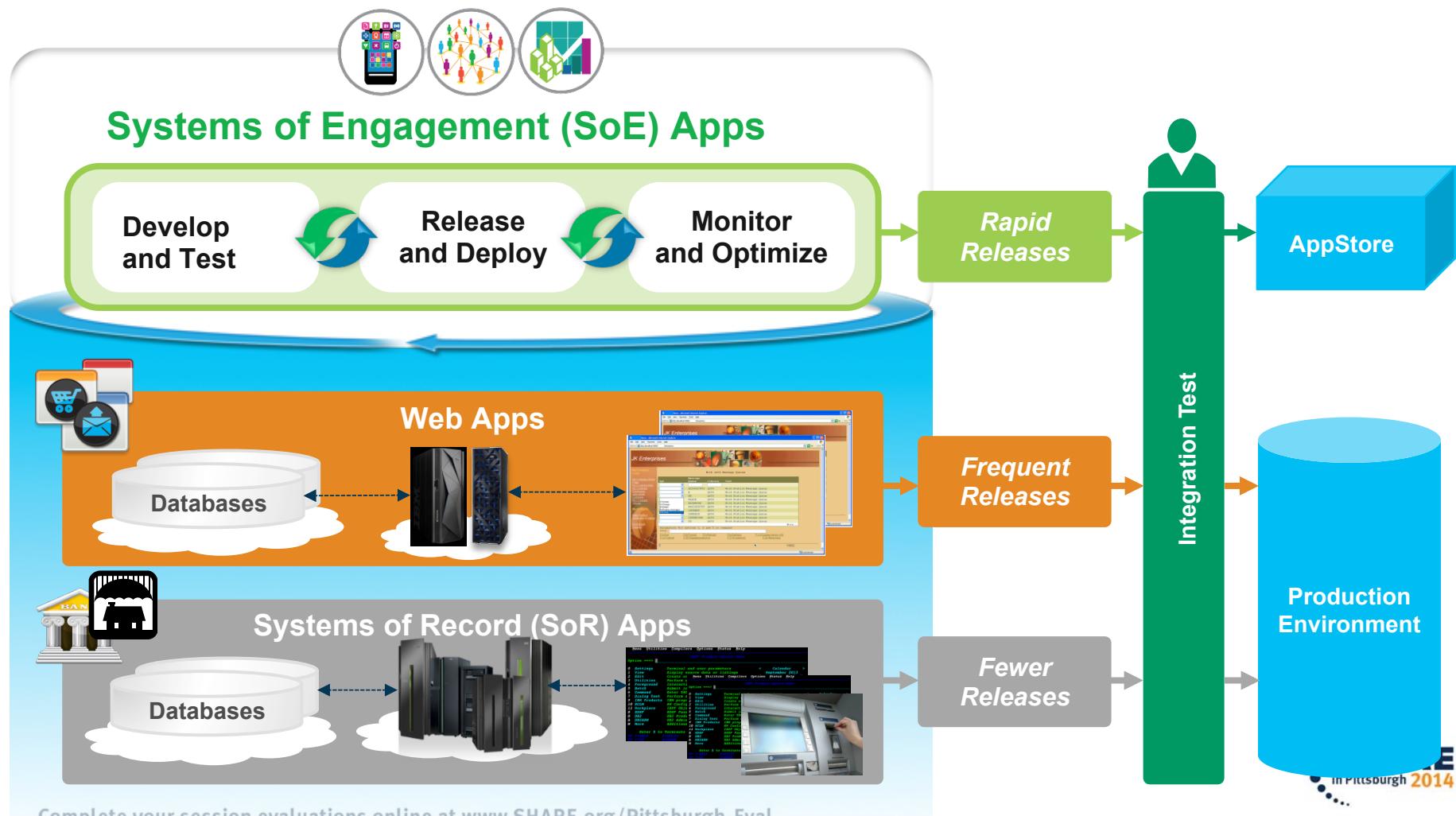
Automation  
Integration  
Visibility



# The need: Integrate systems of engagement with systems of record



*By bringing together the culture, processes, and tools across the entire software delivery lifecycle – spanning mobile to mainframe platforms*



# Customer's Release and Deploy challenges impact their entire business

## CHALLENGES

**Costly, error prone**  
manual processes and  
efforts to deliver software  
across an enterprise

**Slow deployment**  
to development and test  
environments leave teams  
**waiting and unproductive**

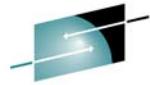
**Upgrade risk** due to  
managing multiple application  
configurations and versions  
across servers



Knight Capital lost **\$440 million in 45 minutes** due to a misconfigured release

New Zealand's biggest phone company, Telecom paid out **\$2.7 million** to some **47,000 customers who were overcharged** after a software glitch

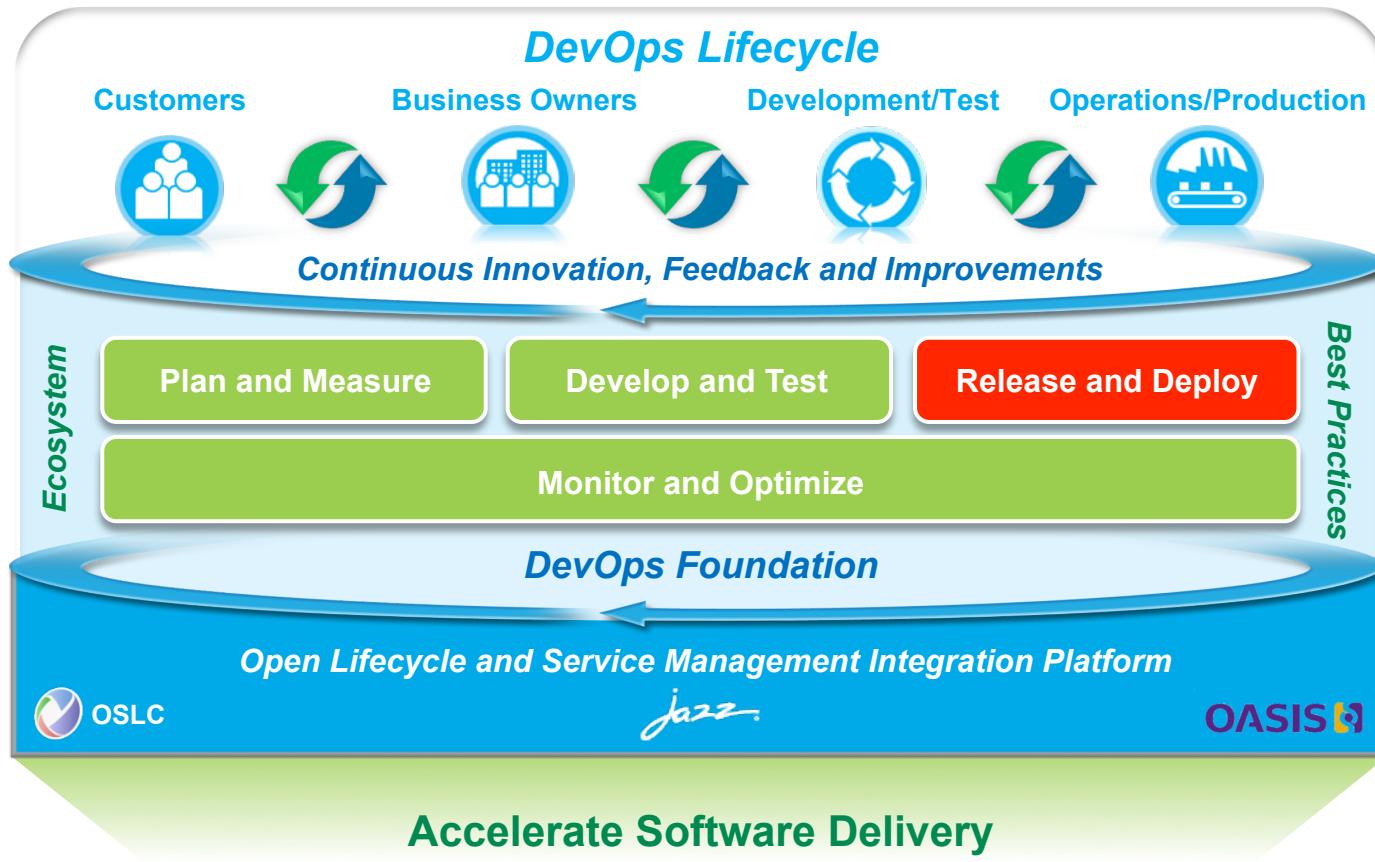
A bad software upgrade at a Canadian Bank left **millions unable to access money for 4 days**



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# IBM DevOps Solution: The Big Picture

IBM UrbanCode products provide Continuous Release and Deployment capabilities



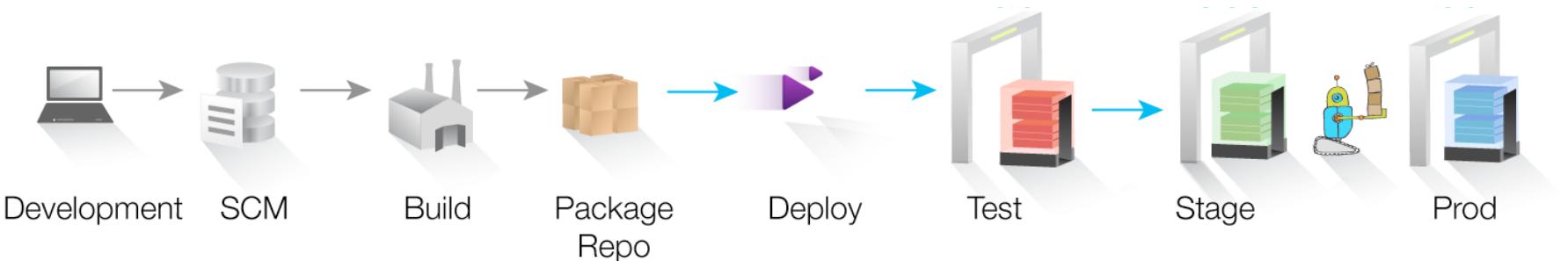
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# UrbanCode for *Release and Deployment* automation



*Enabling clients to more rapidly deliver mobile, cloud, big data and traditional applications with high quality and low risk*



## Drive down cost

Remove manual effort and wasted resource time with push button deployment processes

## Speed time to market

Simple, graphical process designer, with built-in actions to quickly create deployment automation

## Reduce risk

Robust configuration management, coordinated release processes, audits, and traceability

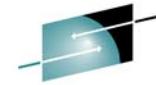
**IBM UrbanCode Deploy** automates the deployment of applications, databases and configurations into development, test and production environments, helping to drive down cost, speed time to market with reduced risk.

**IBM UrbanCode Release** is an intelligent collaboration release management solution that replaces error-prone manual spreadsheets and streamlines release activities for application and infrastructure changes.

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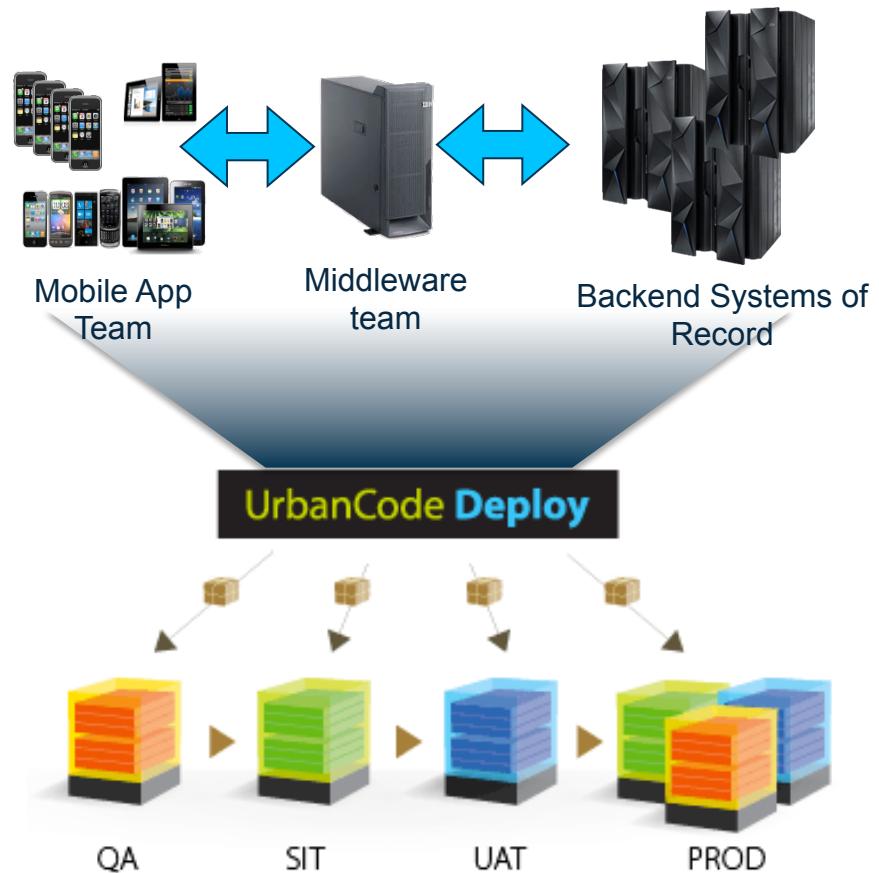


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# Multi-Platform Application Deployment Automation

*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 compliance



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# Intuitive and Scalable Model Driven Deployment

The “Where”

Environment Management

SIT

PROD

Composite Applications

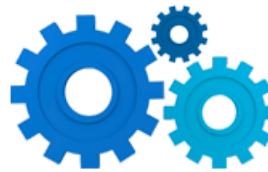


The “What”

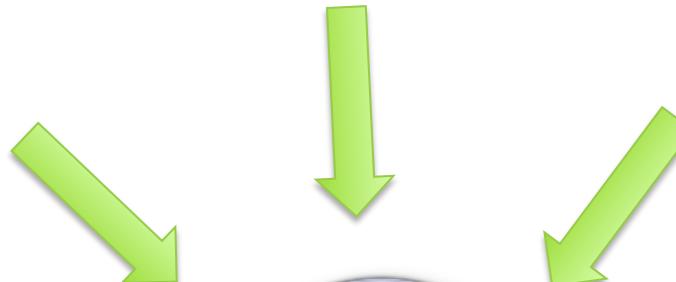


Components

Re-usable Workflows



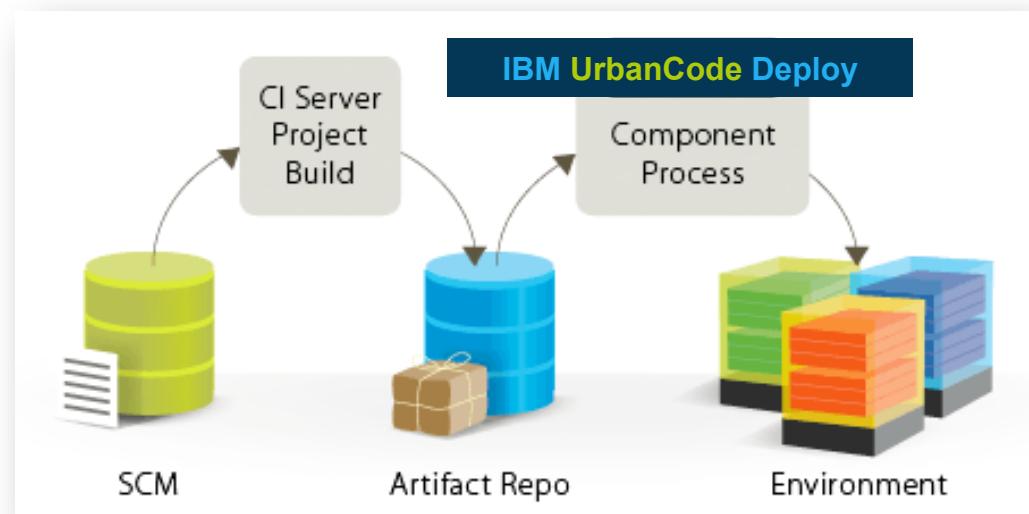
The “How”



# 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?

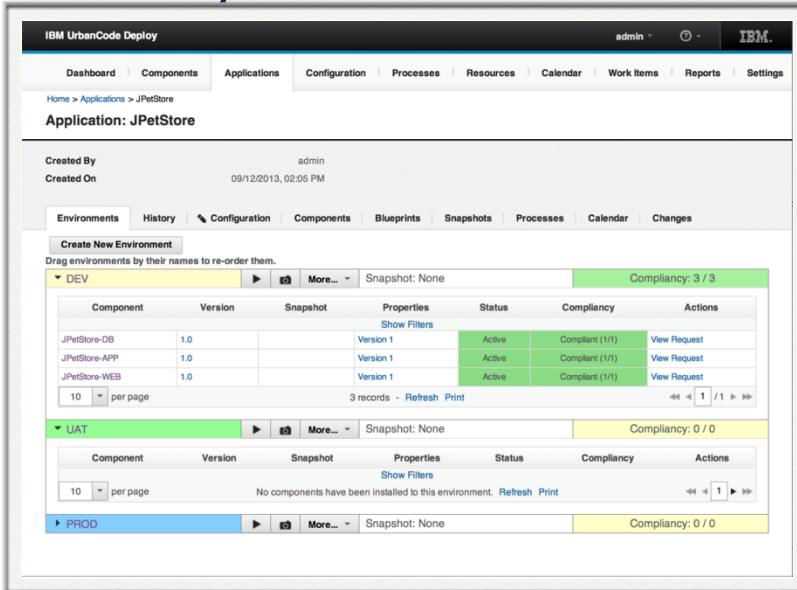


*Enterprise quality and scale*

# IBM Urban Code Deploy Key Concepts

- IBM UrbanCode Deploy Server
  - Rest-based services for Web UI and CLI client
  - Manage Application, Component, Process, Resource, Security, Environment etc.
  - Workflow engine for Application and Component process
- Component: deployable artifacts with versions
- Application
  - Components need to be deployed together (Snapshot)
  - Environments which components will be deployed on
- Process: series of steps operate on artifacts
- Agent/Resource: Lightweight process runs on target host

# Key Features



The screenshot shows the IBM UrbanCode Deploy application management interface. It displays three environments: DEV, UAT, and PROD. Under each environment, there is a table showing components (JPetStore-DB, JPetStore-APP, JPetStore-WEB), their versions (1.0), snapshots (Version 1), properties, status (Active), and compliance (Compliant). The DEV environment has 3 records.

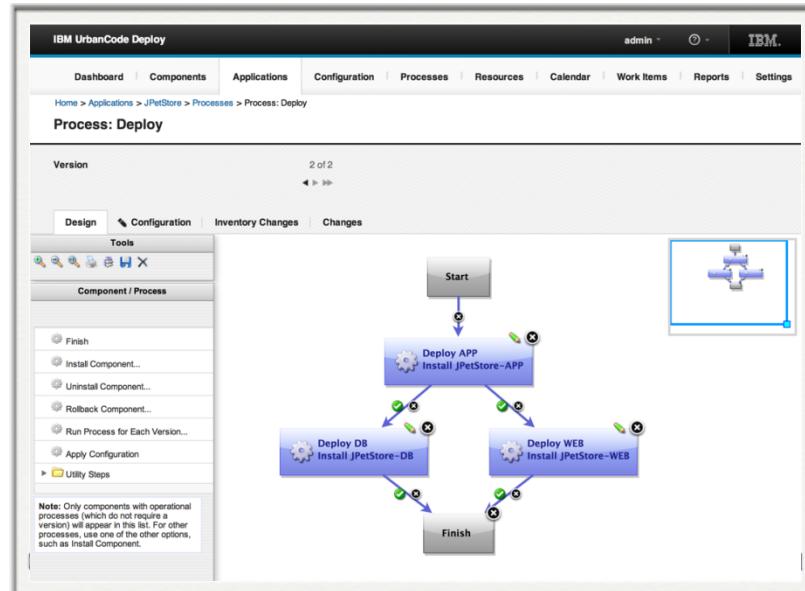
## Intuitive Deployment Model

## Environment Configuration Management

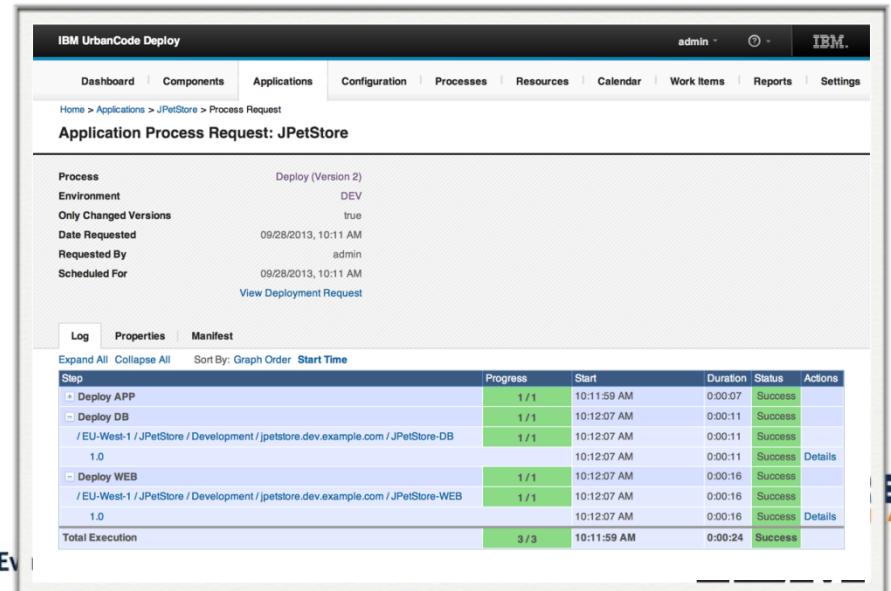
## Rich Drag-and-Drop Workflow Designer

## Distributed Deployment Automation

## Deployment Inventory

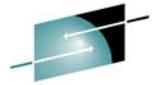


The screenshot shows the IBM UrbanCode Deploy workflow designer. It displays a process named "Deploy" with 2 of 2 versions. The flowchart starts at a "Start" node, which leads to a "Deploy APP / Install JPetStore-APP" step. This step branches into two parallel paths: "Deploy DB / Install JPetStore-DB" and "Deploy WEB / Install JPetStore-WEB". Both of these paths converge back to a final "Finish" node. On the left, there is a sidebar with various icons for actions like "Design", "Configuration", "Tools", "Component / Process", and "Utility Steps". A note at the bottom states: "Note: Only components with operational processes (which do not require a version) will appear in this list. For other processes, use one of the other options, such as Install Component."



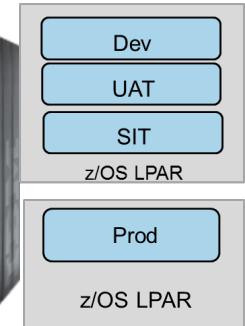
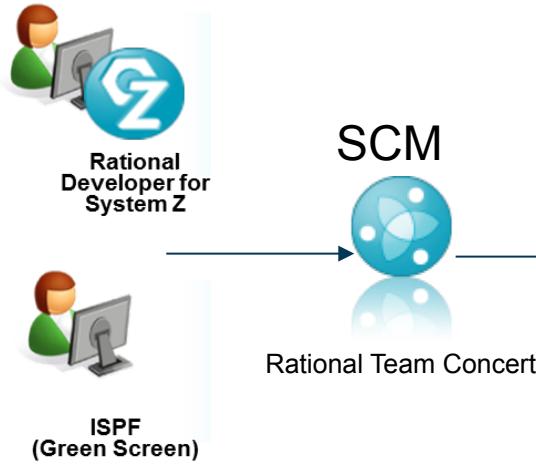
The screenshot shows the IBM UrbanCode Deploy application process request interface for the JPetStore application. It displays a deployment request for "Deploy (Version 2)" in the "DEV" environment. The request was made by "admin" on 09/28/2013, 10:11 AM. The deployment log shows the following steps:

Step	Progress	Start	Duration	Status	Actions
Deploy APP	1 / 1	10:11:59 AM	0:00:07	Success	
Deploy DB	1 / 1	10:12:07 AM	0:00:11	Success	
/ EU-West-1 / JPetStore / Development / jpetstore.dev.example.com / JPetStore-DB 1.0		10:12:07 AM	0:00:11	Success	
Deploy WEB	1 / 1	10:12:07 AM	0:00:16	Success	<a href="#">Details</a>
/ EU-West-1 / JPetStore / Development / jpetstore.dev.example.com / JPetStore-WEB 1.0		10:12:07 AM	0:00:16	Success	<a href="#">Details</a>
Total Execution	3 / 3	10:11:59 AM	0:00:24	Success	

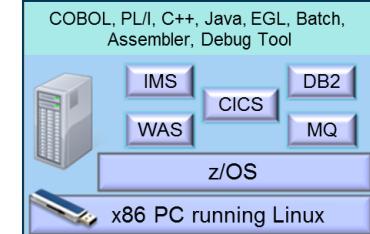


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# Extend support to back-end Systems of Record



## RD&T Test Environment



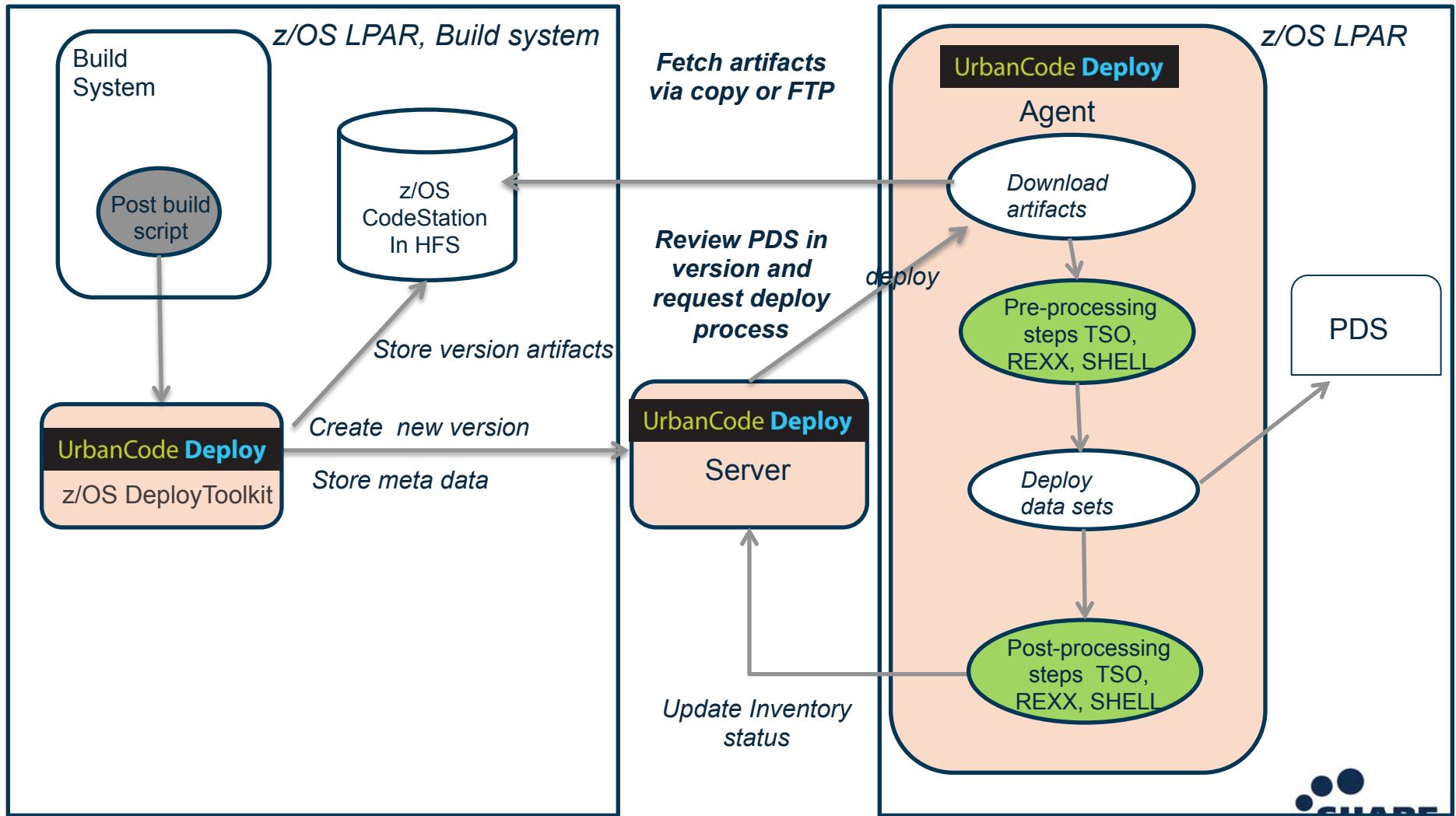
IBM Rational  
Test Workbench

NEW in  
v6.1!



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# High Level Overview of Deployment Capabilities



Note: LPARs can be the same or different LPARs  
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# Continuous Delivery for Enterprise Systems

## Detailed Overview and Roadmap

### Supported Today

- Agent platform support - zLinux and z/OS
- Ability to interact with USS file system and deploy Java applications

### Available in 2Q

- SCM agnostic artifact packaging capability for PDS members
- Artifact repository support directly on z/OS
- Incremental deployment and rollback of versions – native file system support
- Support deployment of load modules to target partitioned data set (PDS) on z/OS
- OOTB plugin to enable copy of load modules between two PDS
- OOTB plugin to execute TSO/ISPF commands on PDS (and members)
- Application deployment and configuration support for Websphere Application Server on z/OS

### Future Roadmap

- Support to run JCL
- OOTB integrations for key z/OS Middleware (CICS, DB2, IMS)
- Improved usability enhancements to base capabilities
- SMP/E installable
- UCD agent platform support – IBM i
- Ability to interact with file system, deploy Java apps and application components to WAS on IBM i

### Key Differentiators

- **Single solution** to automate and orchestrate consistent, reliable multi-platform application deployments
  - **Better inventory tracking capabilities** than existing mainframe SCM tools enabling rollback to any prior version
  - Optimize across the entire enterprise and **remove dependency on rigid, heavily structured processes**
  - **Streamline enterprise level release planning** across all teams leveraging UrbanCode Release
  - Tightly integrated with Rational Test Virtualization Server to **virtualize back-end services** as part of application testing and reduce MIPS usage on enterprise systems
  - **Easy to add additional testing LPARS** with Rational Development and Test Environments for System z...
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# UrbanCode Release

*Transform chaotic release planning into streamlined release events*

## Planning

*Prepare Releases for Development*

- Schedule releases
- Release content impacting multiple applications
- Project and release kickoff
- Include: Dev, Vendors, COTs & infrastructure

## Tracking

*Focus release effort appropriately for successful delivery*

- Development & test efforts are on-track
- Dependencies & impacts of changes are accounted for
- Risks monitored and mitigated
- Release-day planning

## Governance

*Rapidly move changes through pipeline w/o destabilizing envs*

- Deployments controlled via quality gates & approvals
- Detailed deployment plans
- Audit trail

## Automation

*Guarantee deploys are identical across envs & reproducible*

- Push-button, standard processes
- All deployment artifacts versioned
- Inventory of artifacts deployed to each environment

# Risk Management – Impact Analysis

- Track your changes and dependencies in the context of a release
- Detect what application is at risk
- Integrate with Rational Team Concert



## Impacted Applications

Name
JPetStore
Pet Grooming Reservations
Pet Sourcing

## Scheduled in Releases

Name	Description	Lifecycle	Team
Pets Financials 1.1.x	March Release	Default Lifecycle	Core1 Release Team
Pets Online 1.1.x	March Release for Pets Online Retail	Default Lifecycle	Core1 Release Team

IBM UrbanCode Release      Releases & Plans

Home ▶ Releases & Plans ▶ Pets Online 1.1.x

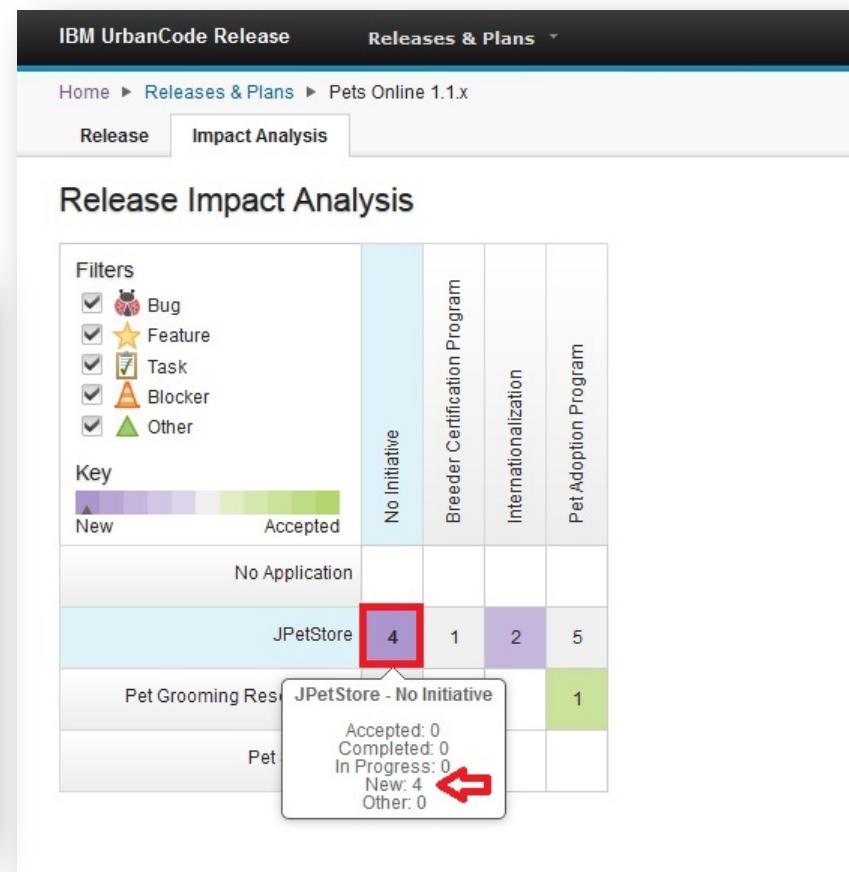
Release      Impact Analysis

### Release Impact Analysis

	No Initiative	Breeder Certification Program	Internationalization	Pet Adoption Program
New	Accepted			
No Application				
JPetStore	4	1	2	5
Pet Grooming Res...				1
Pet...				

**JPetStore - No Initiative**

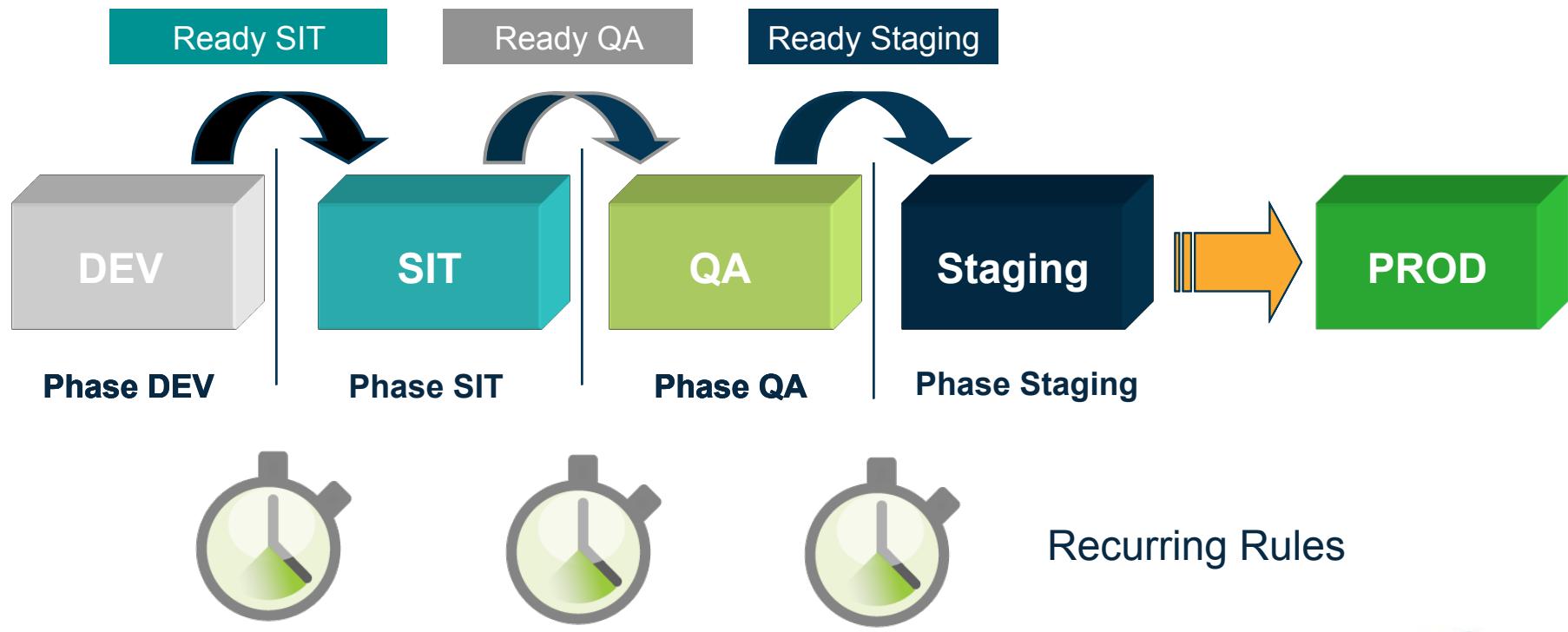
Accepted: 0  
Completed: 0  
In Progress: 0  
New: 4  
Other: 0



# Boost your Release Process with Auto Progression



- Recurring scheduled deployments
- Fully automated deployments
- Quality status enforced by the gates



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# Increased Visibility and Control - Pipeline View

- Keep track of the inventory across the entire life cycle of the release
- Control the entire release lifecycle in an easy to use view

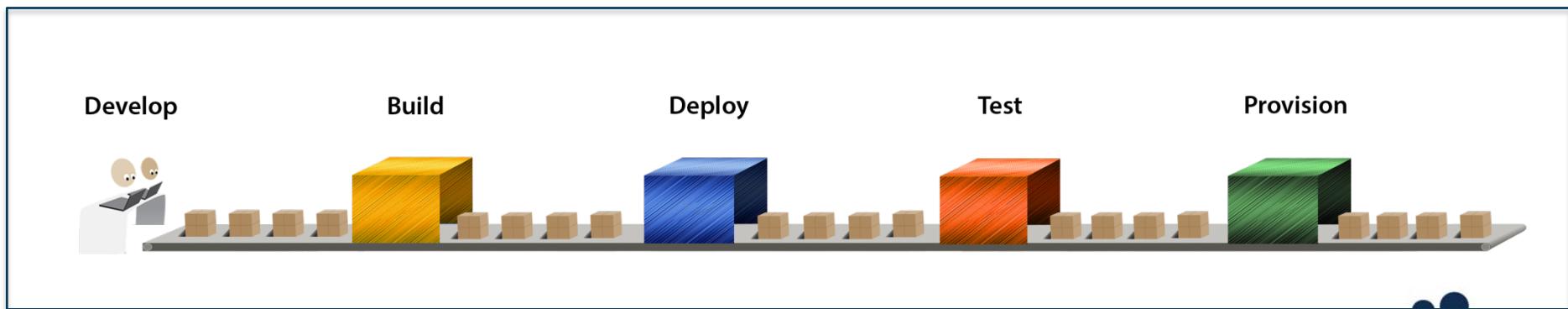
Pets Online 1.1.x [View this release](#)      Default Lifecycle [View this lifecycle](#)

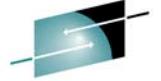
Phases	LATEST	DEV	CERT	QA	PT	PROD
Environments		DEV-1 12/10 05:00a <span style="color:red;">!</span> 11/25 11:37a	CERT-1 Schedule <span style="color:green;">✓</span> 11/21 01:00p	QA-1 12/9 09:45a <span style="color:green;">✓</span> 12/9 07:45a	PT-1 11/26 12:49p <span style="color:red;">✗</span> 11/21 02:46a	PROD-1 11/21 03:01a <span style="color:green;">✓</span> 11/6 02:37p
Applications		JPetStore Baseline 2.0.1 2.0.0 2.0.1	Pet Breeder Site Baseline 2.0.1 2.0.0 2.0.1	Pet Grooming Reservations Baseline 1.1.1 1.1.2 1.1.2 2.0.0	Pet Sourcing 1.1.1 1.1.2 1.1.2 2.0.0	Pet Transport 1.0.2 1.0.2 1.0.1 1.1.0 1.0.1
Release Version		1.1	2.0.1	1.1.1	1.0.2	1.0.1

1 to 5 of 5 items, Page:1/1      < 1 >      Updated: 11/25/13, 8:55 AM      Rows Per Page: 10 25 50 100

# Summary

A balanced software delivery pipeline requires automated release and deploy capabilities supporting DevOps practices.





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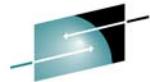
# QUESTIONS

The word "QUESTIONS" is rendered in large, bold, white letters. The letters are partially filled with a collage of various people's faces, showing diverse ethnicities and expressions, such as smiling and looking thoughtful.

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