

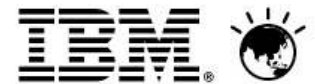
**Pulse**

IBM SolutionsConnect 2013

# DevOps – the path to continuous delivery

*Ruth Willenborg, Distinguished Engineer*

06/10/2013





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# Hey Ops, Let's play catch!

- Development does not understand production environments
- Different objectives, cultures, and practices
- Siloed processes and technology hinder delivery



Dev



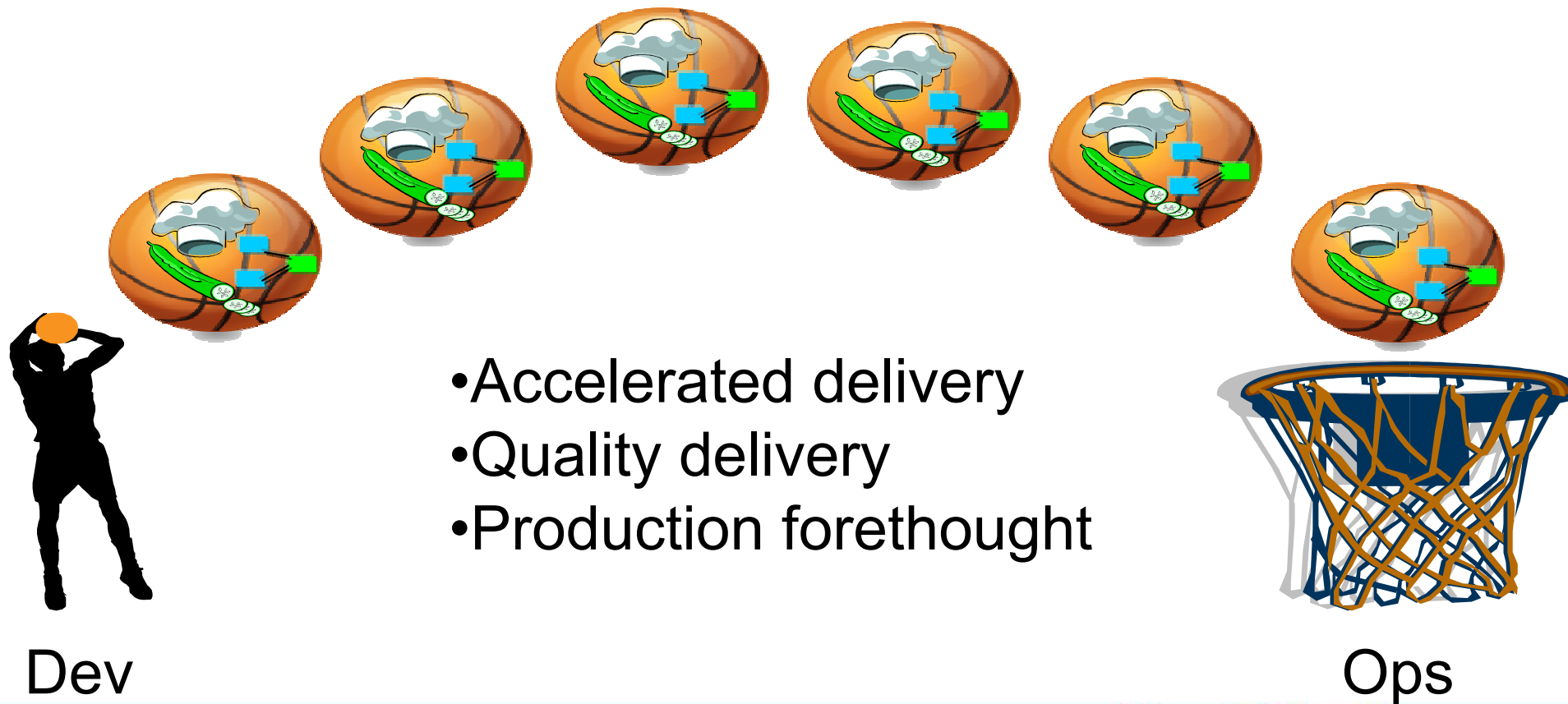
**Results:** IT can not respond quickly enough to business demands  
Long cycle times (average > 9 months) to deliver changes  
30% of all defects due to configuration errors

Ops



# DevOps: *Development and Operations working together*

## Continuous Delivery





# Lack of continuous delivery impacts the entire business

## CHALLENGES

**Costly, error prone** manual and duplicative processes **delay innovation** and impact competitiveness

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

**Risk of instability** due to managing multiple configurations and versions

Customers



Line of Business/  
Product Managers



Software & Product  
Development

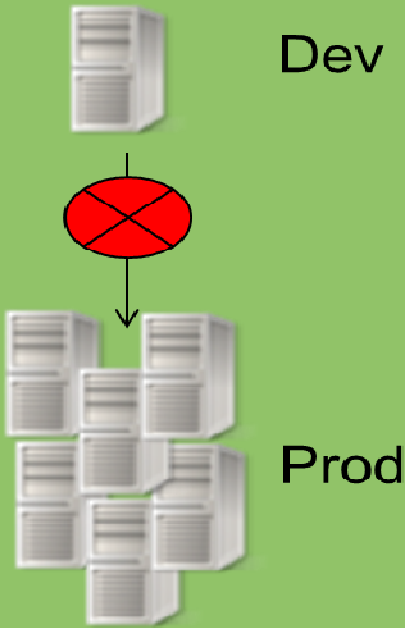
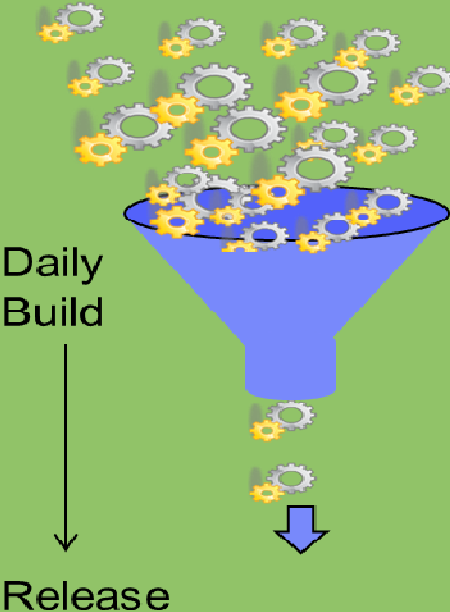

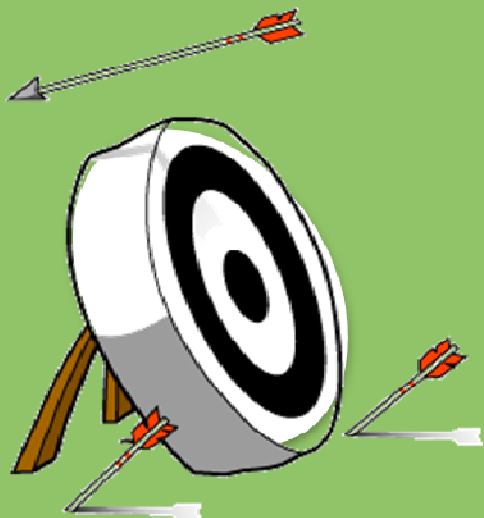


Operations/  
Manufacturing &  
Support

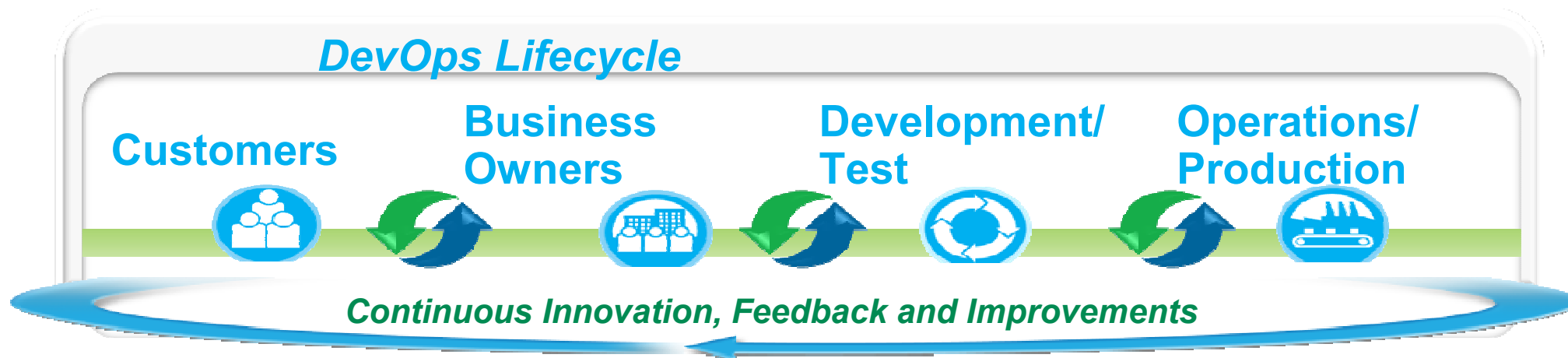




# Delivery Challenges

Differences in dev and ops environments cause failures	Greater demand for faster and more frequent releases	Manual (tribal) processes for release lack repeatability/speed	Lack of feedback and quality metric leads to missed service level targets
 <p>Dev</p> <p>Prod</p>	 <p>Daily Build</p> <p>Release</p>	 <p>Who did this last time?</p> <p>Dave...</p> <p>Dave's not here man...</p>	

- Enterprise capability for continuous software delivery that enables clients to seize market opportunities and reduce time to customer feedback



**Accelerate Software Delivery**

**Balance speed, cost, quality and risk**

**Reduce time to customer feedback**





# DevOps Principles and Values

Develop and test against a production-like environments

Iterative and frequent deployments using repeatable and reliable processes

Continuously monitor and validate operational quality characteristics

Monitor and improve

*People*



*Process*



*Tools*







# Adoption approaches

**Track and Plan** activities

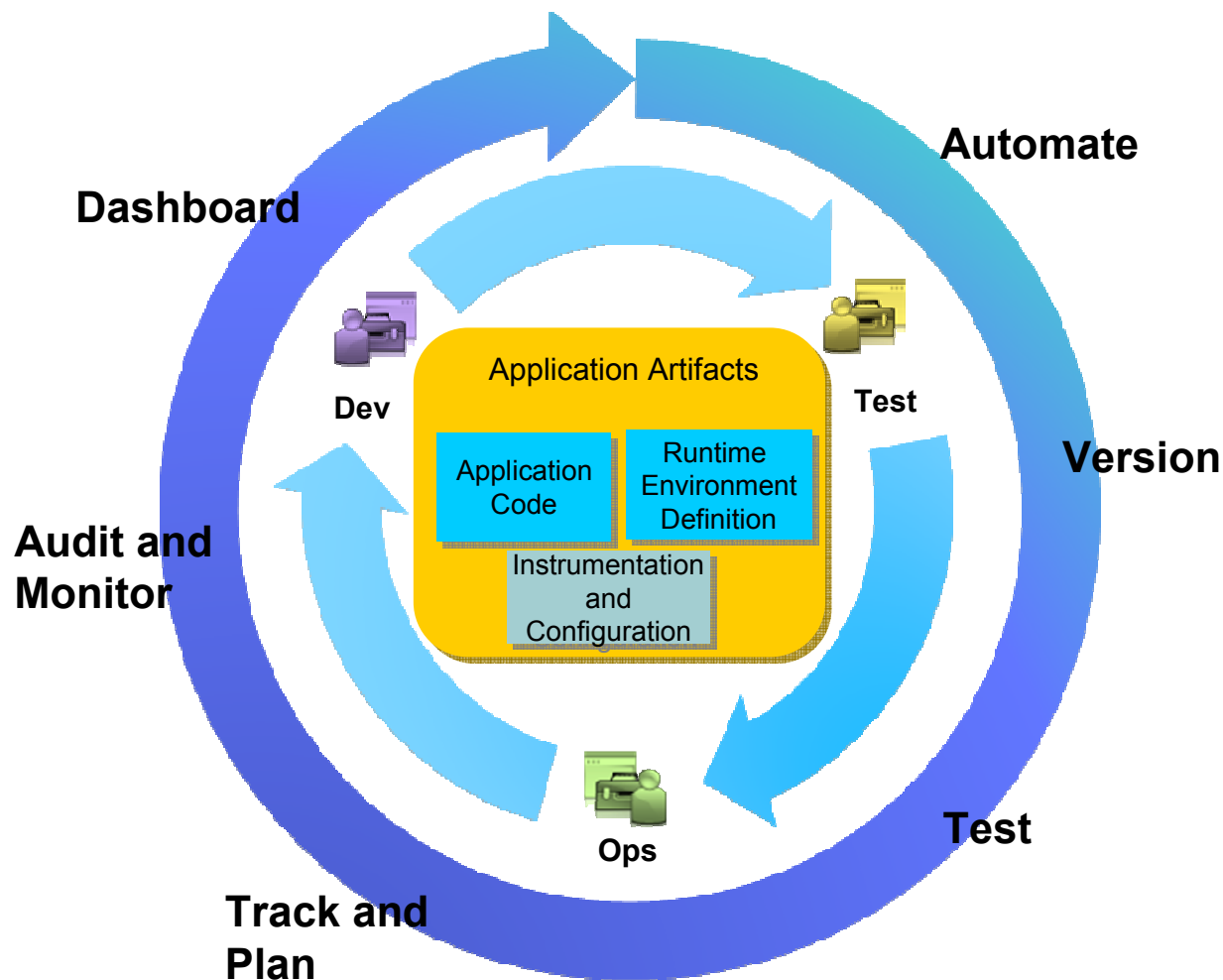
**Version** source and configurations

**Automate** as many manual processes as possible

**Test** user function

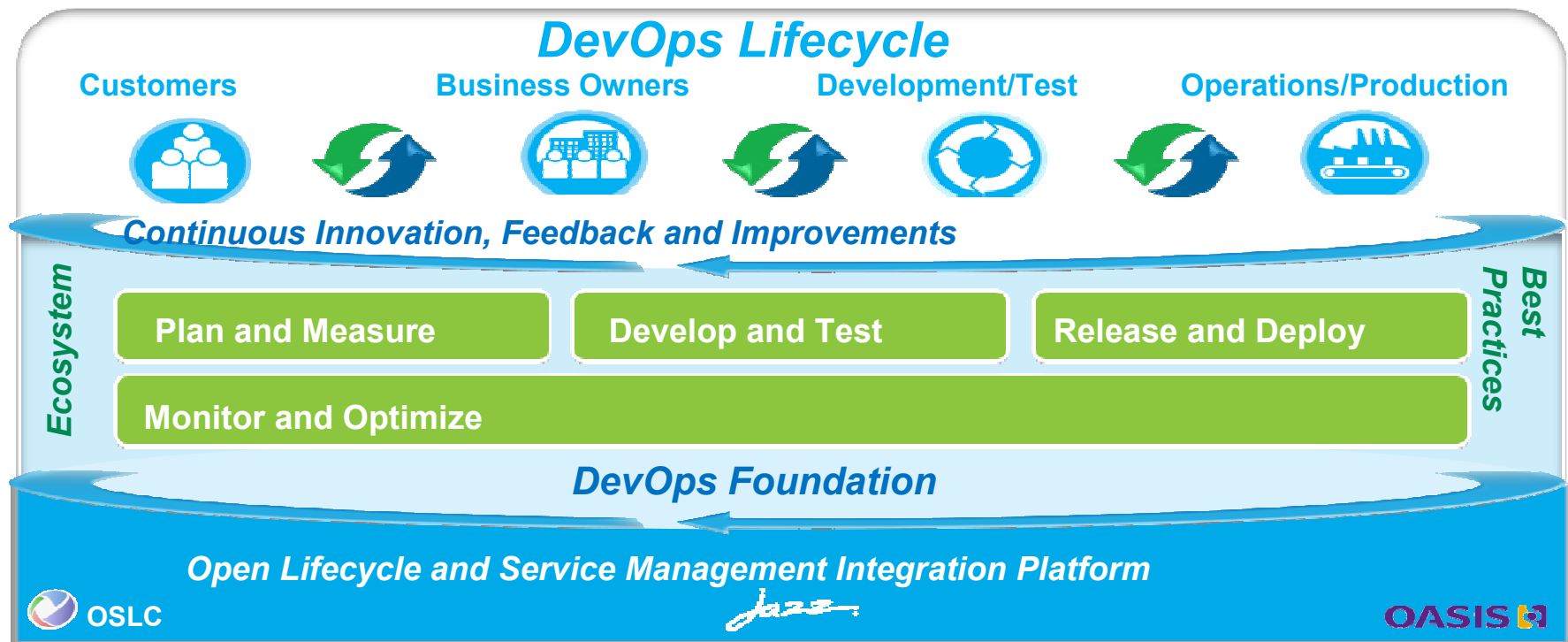
**Audit and Monitor** system and customer satisfaction

**Dashboard** results in highly visible and easy to read graphs





# Capabilities to enable a DevOps approach





# UrbanCode fills gaps

*Expand DevOps capabilities and accelerate plans*





# IBM announces the acquisition of UrbanCode Inc.

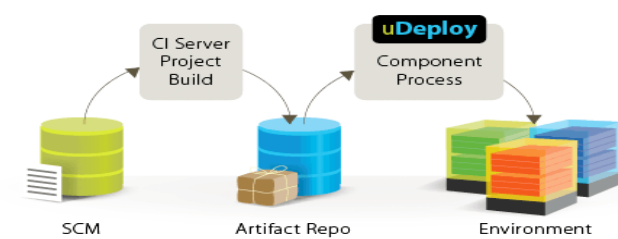
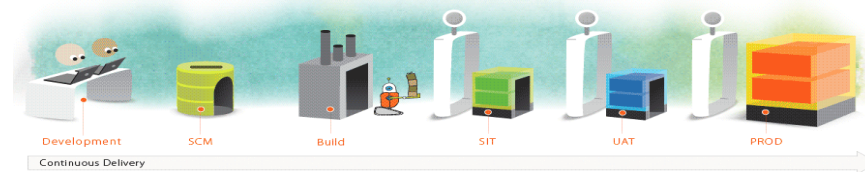
*Complementing our DevOps solution, combining IBM and UrbanCode, will enable clients to more rapidly deliver mobile, cloud, big data analytics and traditional applications. Enhancing Continuous Release and Deployment:*

- **Drive down cost** by automating manual tasks, eliminating wait-time and rework
- **Speed time to market** by increasing the frequency of software delivery
- **Reduce risk** through increased compliance of application deployments.



## Complements our DevOps solution:

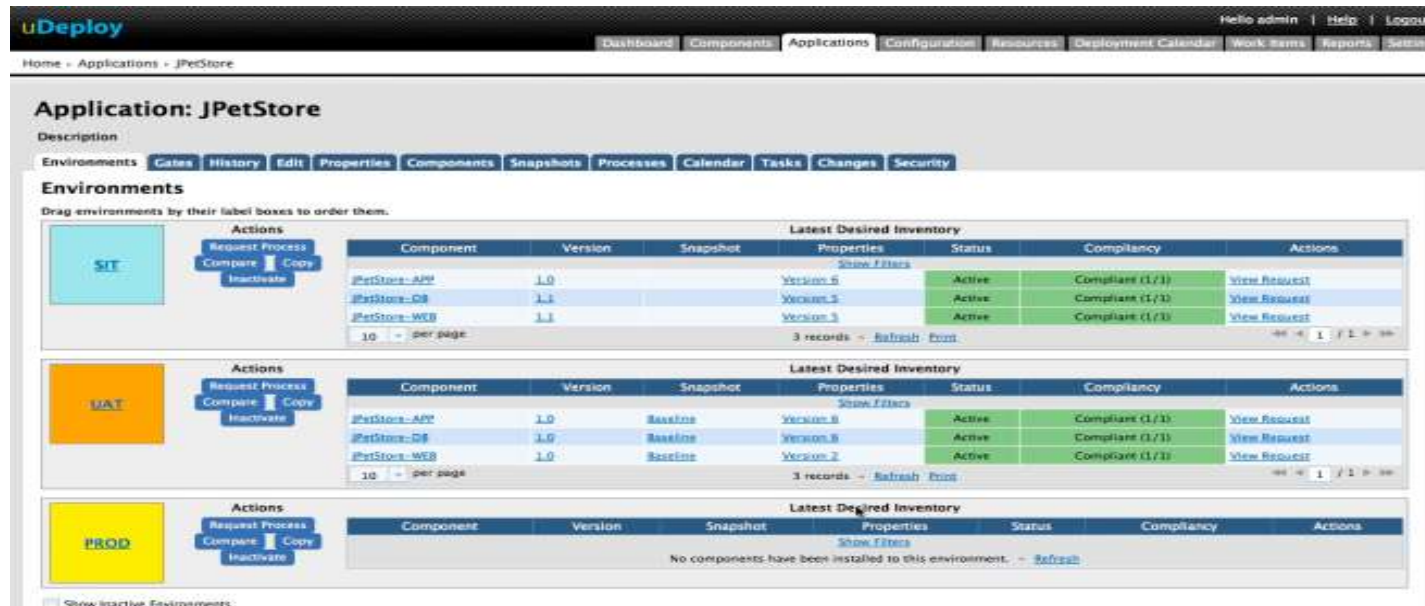
- **Deliver a differentiated and engaging customer experience** by reducing time to customer feedback
- **Quicker time-to-value** of software-based innovation with improved predictability and success
- **Increased capacity to innovate** by reducing waste and rework in order to shift resources to high-value activities



# Application Deployment Automation

uDeploy

*Deployment of Applications across Environments*



The screenshot displays the uDeploy web interface for the application 'JPetStore'. The interface is organized into several sections:

- Header:** Includes the uDeploy logo, user information ('Hello admin'), and navigation links like 'Home', 'Applications', 'JPetStore', 'Dashboard', 'Components', 'Applications', 'Configuration', 'Resources', 'Deployment Calendar', 'Work Items', 'Reports', and 'Settings'.
- Application Overview:** Shows 'Application: JPetStore' with a 'Description' section and a set of tabs for 'Environments', 'Gates', 'History', 'Edit', 'Properties', 'Components', 'Snapshots', 'Processes', 'Calendar', 'Tasks', 'Changes', and 'Security'.
- Environments Section:** Titled 'Environments', it instructs users to 'Drag environments by their label boxes to order them.' It features three environment cards: 'SIT' (blue), 'UAT' (orange), and 'PROD' (yellow).
- Latest Desired Inventory Tables:** Each environment card contains a table of components. The 'SIT' and 'UAT' environments show three components: 'JPetStore-APP', 'JPetStore-DB', and 'JPetStore-WEB'. The 'PROD' environment shows no components installed.

Environment	Component	Version	Snapshot	Properties	Status	Compliance	Actions
SIT	JPetStore-APP	1.0		Version 5	Active	Compliant (1/1)	View Request
	JPetStore-DB	1.1		Version 1	Active	Compliant (1/1)	View Request
	JPetStore-WEB	1.1		Version 1	Active	Compliant (1/1)	View Request
UAT	JPetStore-APP	1.0	Baseline	Version 8	Active	Compliant (1/1)	View Request
	JPetStore-DB	1.0	Baseline	Version 8	Active	Compliant (1/1)	View Request
	JPetStore-WEB	1.0	Baseline	Version 2	Active	Compliant (1/1)	View Request
PROD	No components have been installed to this environment.						

- Manage application components and versions
- Manage environment configuration from dev/test through production

- Compliance: audit trails quality gates
- Easy to use deployment designer
- Inventory: what is where

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# Release planning

## uRelease

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

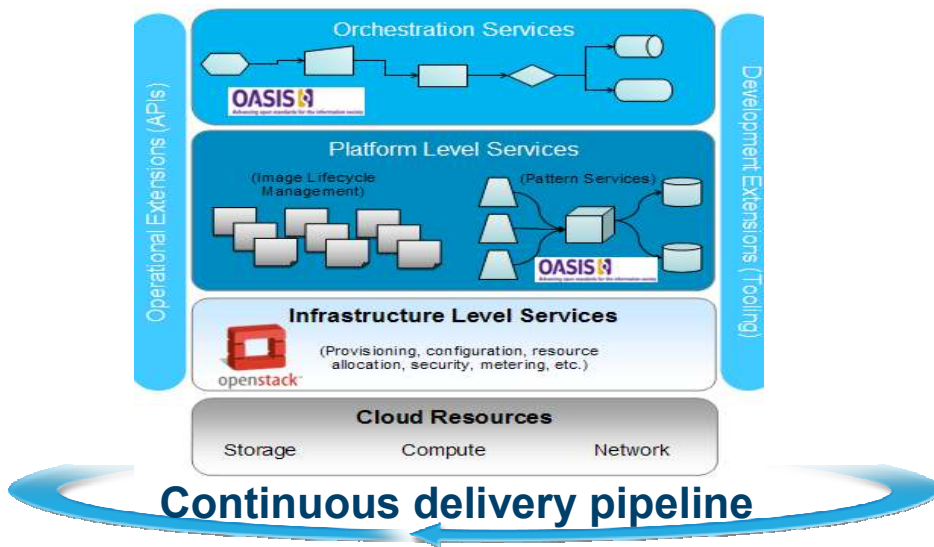
- Plan the release day
- Execute the release
- Communicate what's going on
- Allocate environments to releases
- Tie release back to development

*Because spreadsheets are a) terrible and b) normal*

The screenshot shows the uRelease web interface. At the top, it displays the uRelease logo and user information (Hello admin, Logout). Below that, it shows the current deployment: eComm 1.3 - Mar:PT-2 at Mon Feb 04 15:00:00 EST 2013. The interface is divided into three segments: SEGMENT PLAN NOT STARTED, SEGMENT PLAN IN PROGRESS, and SEGMENT PLAN COMPLETE. The 'COMPLETE' segment is active, showing a 'Time Remaining' of 00:00:00, 'Percent Complete' at 100%, and 'Waiting / Late Tasks' as zero. A 'Task Count' summary shows 14 Complete, 0 In Progress, 0 Aborted, and 0 Skipped. Below this, there is a table for 'Application' with columns for Application, Version, Stages, and Gate. The table lists 'BS Pay System' and 'Wire Transfer'. A 'Promote to Release Version' button is visible. The 'Segments' section shows a 'Middleware Config' segment with a 'Complete' button. A table below lists tasks with columns for Start Time, Duration, Name, Application, Type, Role, User, and Actions. The tasks include 'Convert Datasources to use Oracle RAC syntax', 'Do something else', and 'Update the datasource'.

# SmartCloud Orchestrator

## IBM SmartCloud Orchestrator



- Fully automates the deployment and lifecycle management of cloud services across resources, workloads and services
- Built on a foundation of open standards – TOSCA, OpenStack, OSLC
- Accelerated deployments with reusable workload patterns and Chef recipes
- Unified management of heterogeneous environments
- Supports deployment of hybrid & public clouds
- Works with uDeploy and uRelease to provide extended DevOps platform

Reduce time-to-market to deliver new business services

Improve administrator productivity

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# Standardize

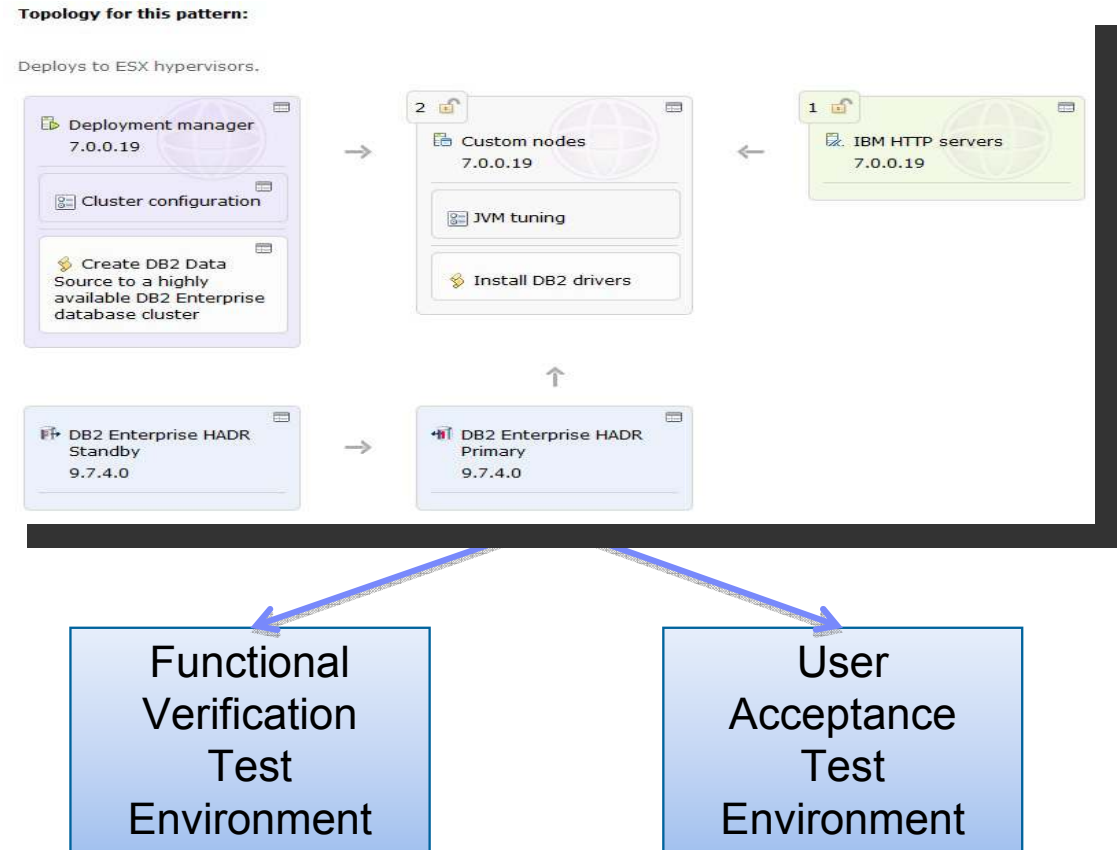
## Communicate and share environment patterns

### Issues

- Dev environments different from production environments
- Difficult to provision test environments
- Environment provisioning creates new “snowflakes”

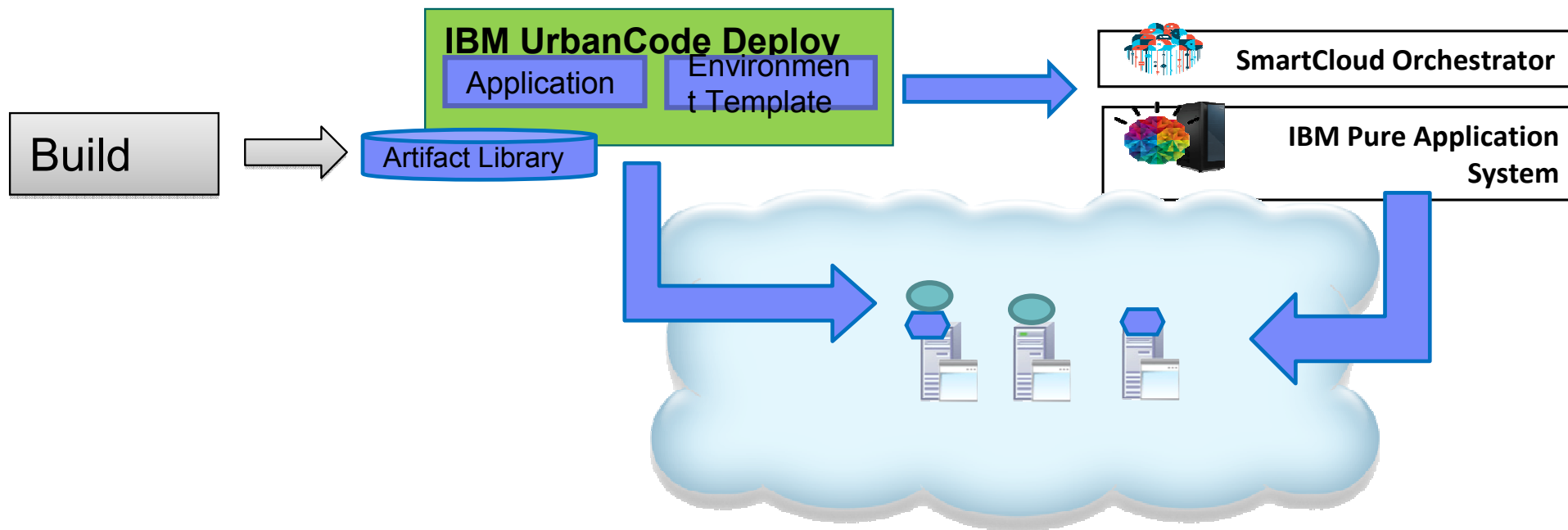
### Solution

- Define standard Virtual System Patterns for environments
- Share patterns between Dev and Ops to improve communications
- Repeatable and reliable process to provision base environments (rubber stamps)

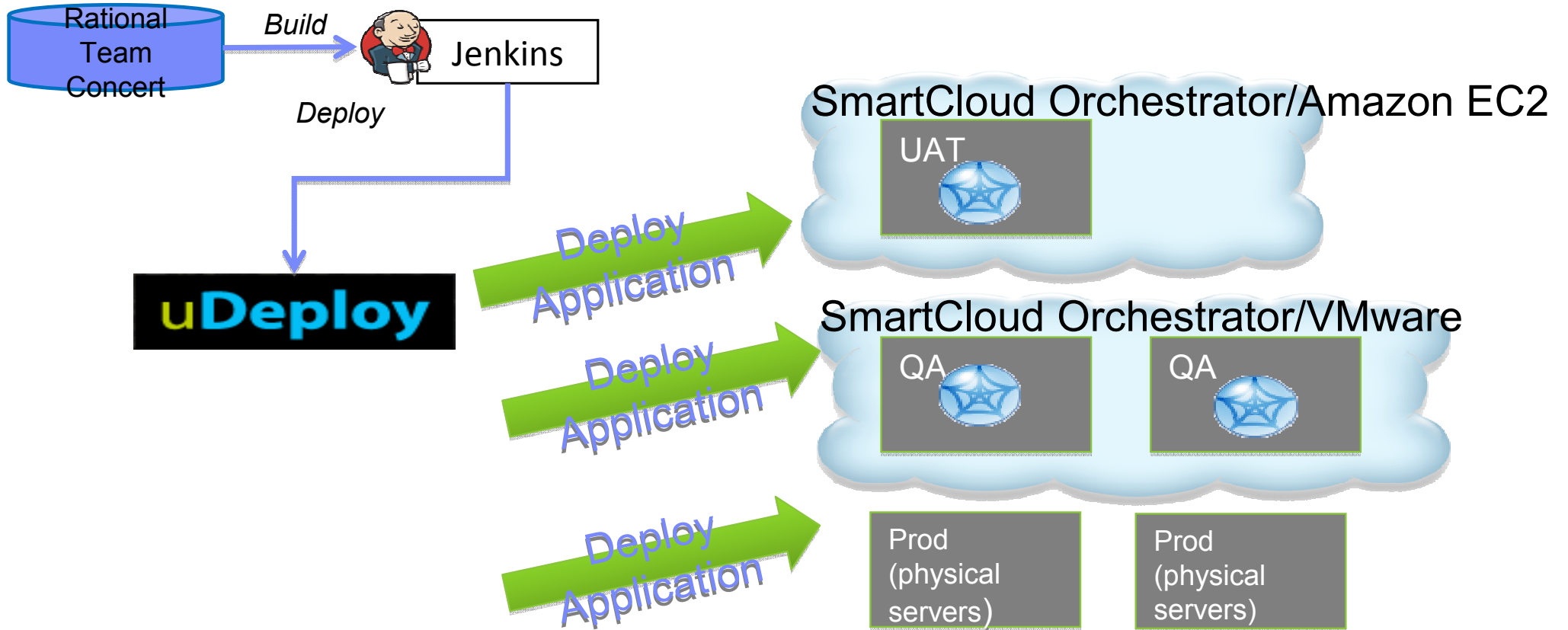




# Continuous Delivery with Cloud



# uDeploy environments can map to different resources






# Convergence and Integration Plans

## Converge Overlapping Function

**IBM UrbanCode Deploy**

<b>Extensions</b> IBM SmartCloud Continuous Delivery extensions	 <b>Chef</b> Rational Automation Framework actions
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**uDeploy**

**IBM UrbanCode Release**

**uRelease**

 *Proposed New Offering*

## Integration Themes

**Continuous Delivery to Cloud**

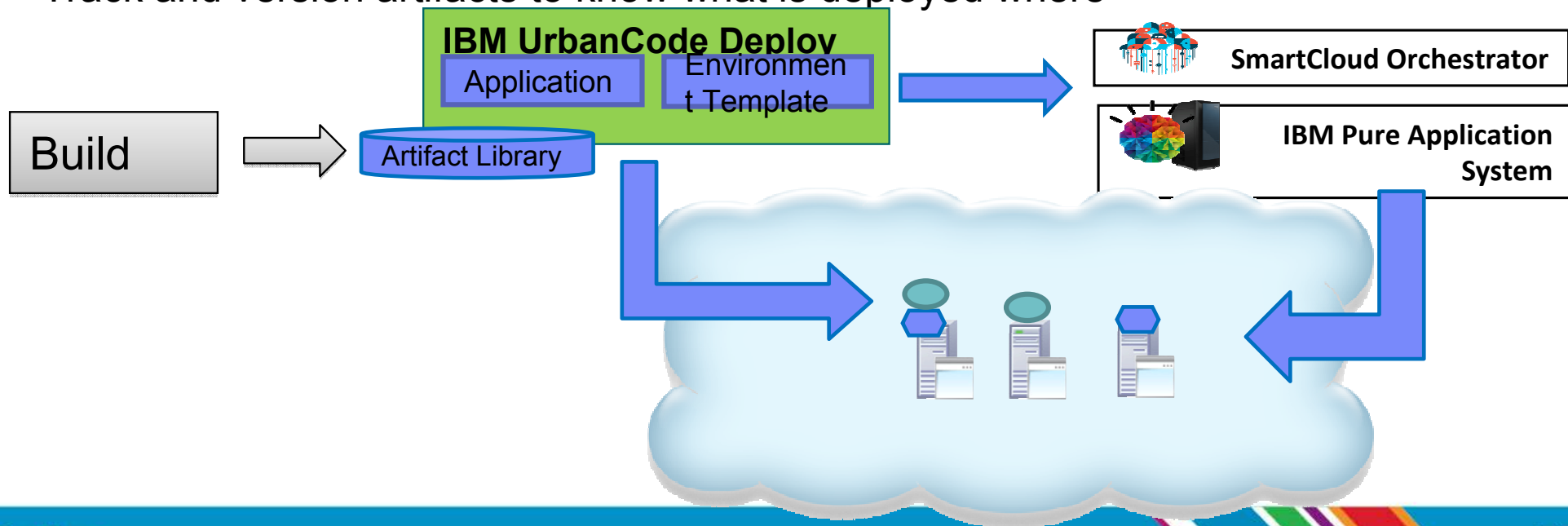
**Continuous Testing with Virtualized Services**

**DevOps for Mobile**

**Application Lifecycle Management Integrations**

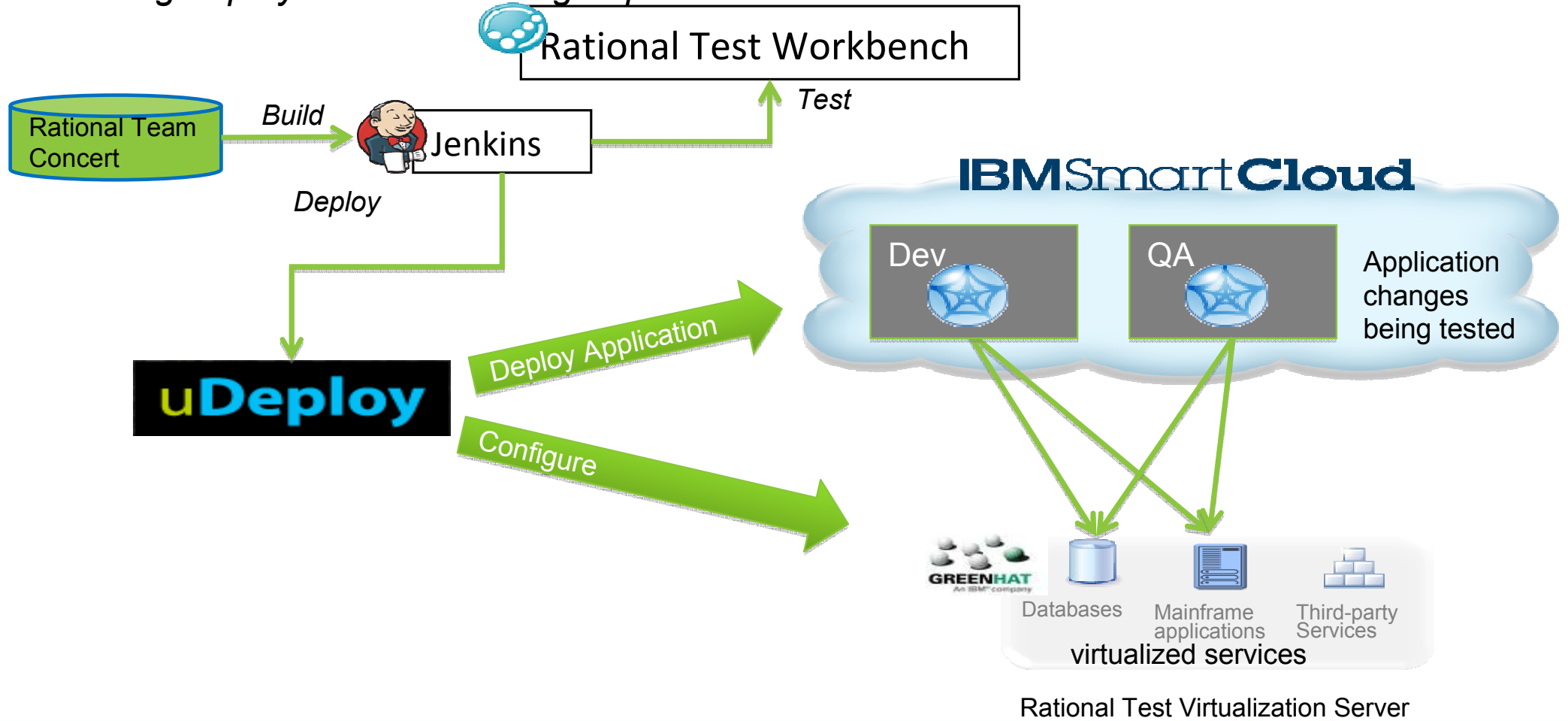
# Continuous Delivery with Cloud

- 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

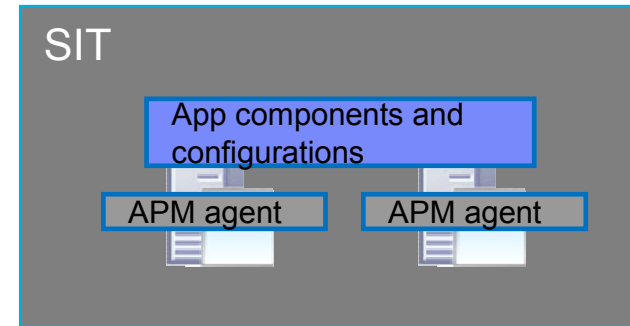
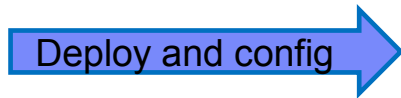




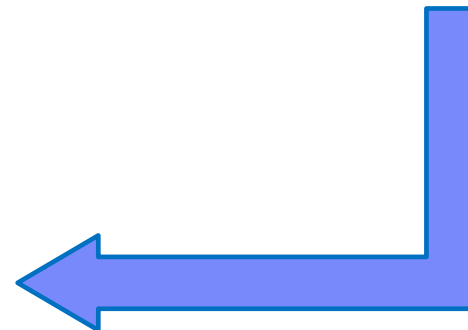
# Application Lifecycle Integration – Monitoring & Log Analytics

**IBM UrbanCode Deploy**

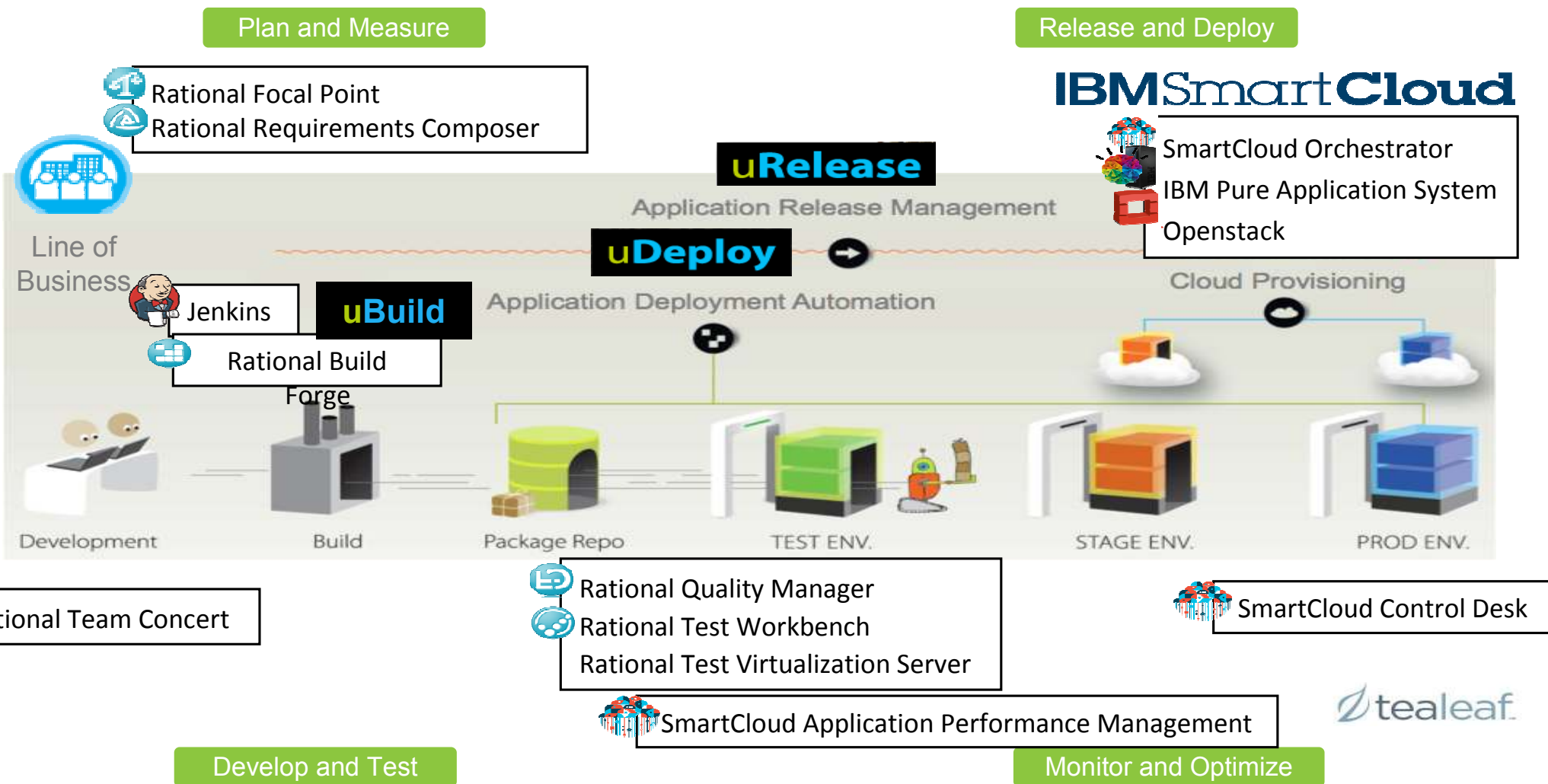
- IBM Log Analytics plugin
- Application Performance Management plugin



## Application Dashboard









## Phase 1

- Seamless **cloud** provisioning and application deployment as an integrated process
- Test environment provisioning with **virtualized services**
- **Lifecycle integrations** for Build Forge, test automation, Chef, and RTC

## Phase 2

- **DevOps for Mobile** tool chain integrations
- **Lifecycle integrations** with Rational Automation Framework, Monitoring, Rational Asset Management

## Phase 3

- Delivery pipeline visualization and automation
- Reporting and dashboarding
- Environment discovery and drift detection
- **Lifecycle integrations** with SmartCloud Control Desk and Continuous Integration for Z

## Summary

- Greater demands for faster and more frequent releases
- Multi-channel applications are more complex than ever
- DevOps is critical to the success of your business
- IBM with UrbanCode has first class DevOps solutions to make it easy to adopt DevOps



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