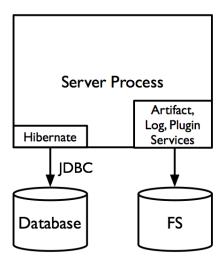
IBM **Software**

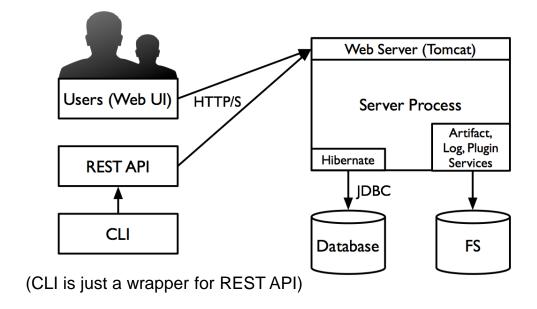
IBM Urbancode Deploy

Architecture Overview

All configuration stored in DB Logs, artifacts, plugin files stored on filesystem

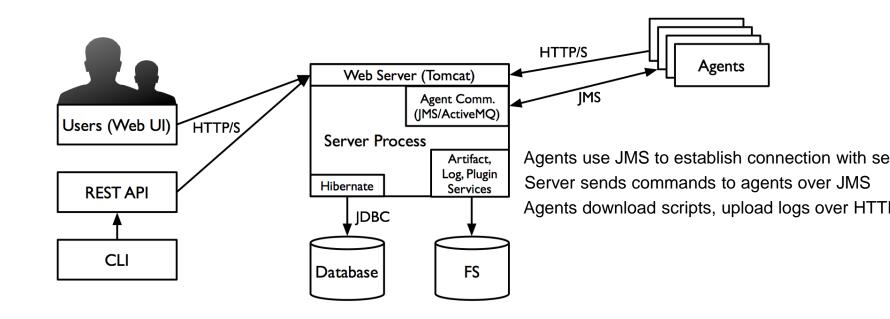


Architecture Overview: Front-End

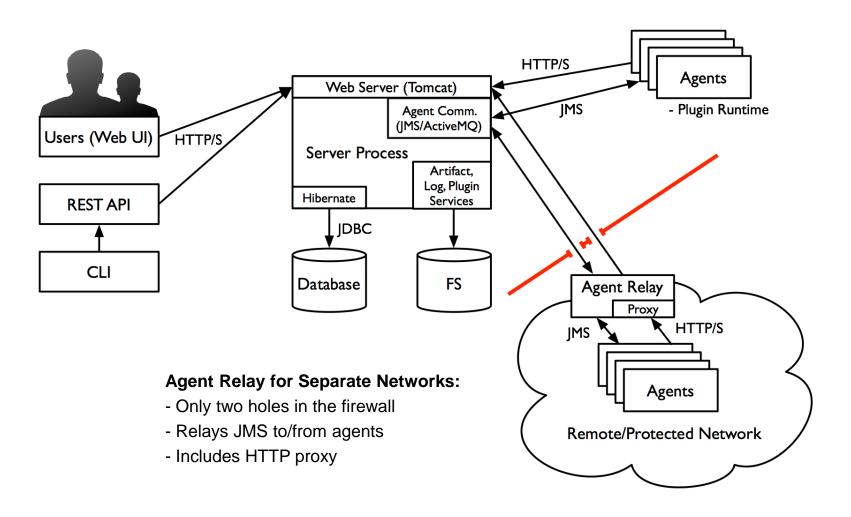




Architecture Overview: Agents

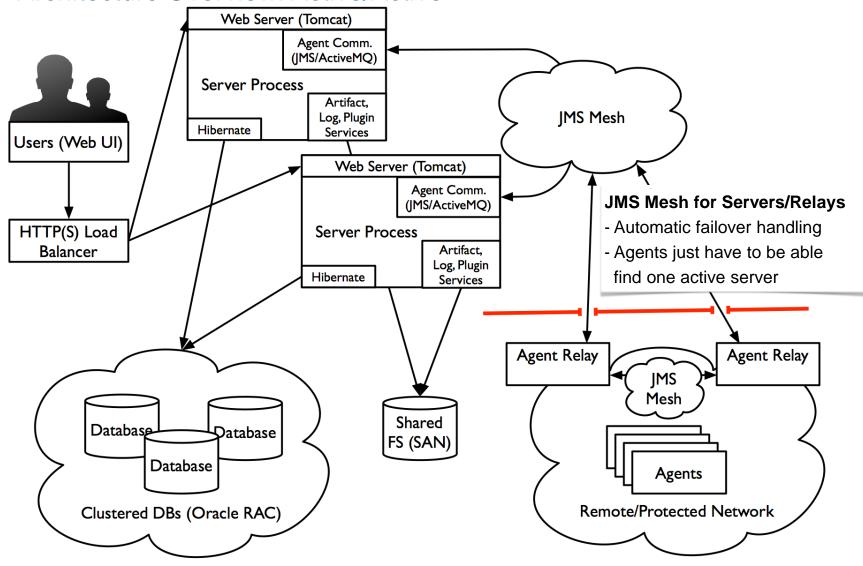


Architecture Overview: Agent Relay

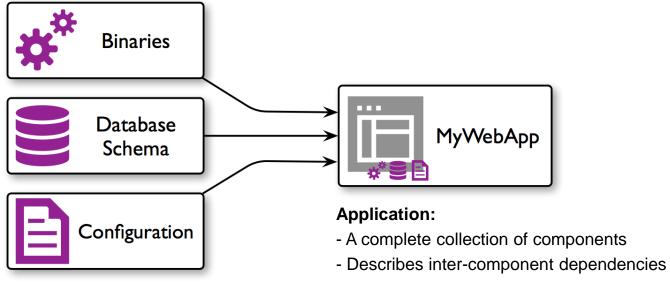


6

Architecture Overview: Active/Active



Applications and Components



Components:

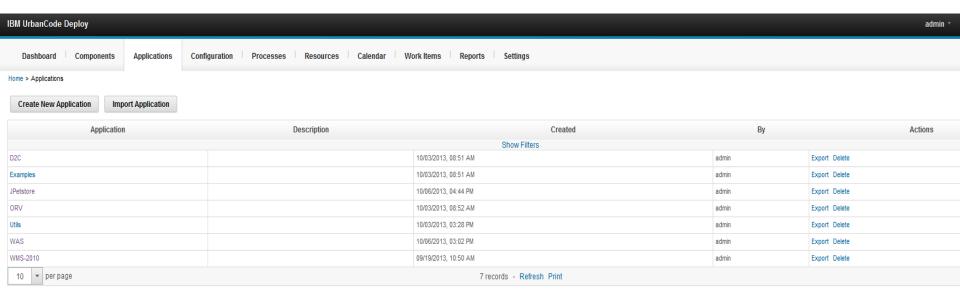
- Individual deployable projects





Applications

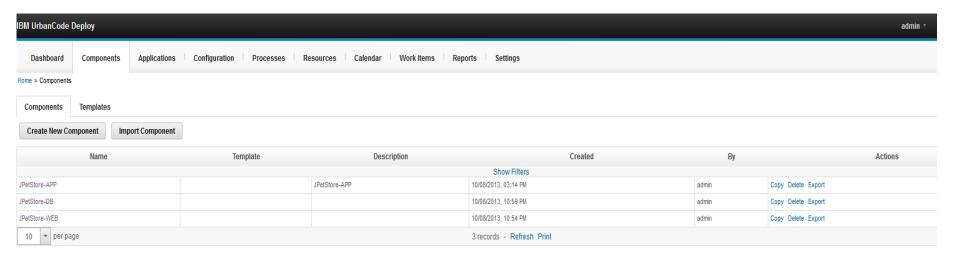
Applications handle orchestration of deployments to target environments





Components

Consists of an artifact set (version), and automation to deploy artifacts



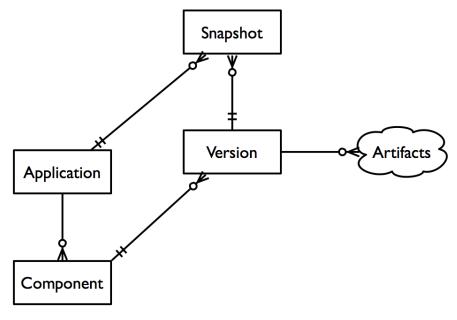
IBM UrbanCode Deploy Model - The "What"

Version:

- Contains the actual deployment artifacts
- Typically produced by an automated build (one component version per build)

Snapshot:

- Groups component versions and configuration versioning into one entity
- 0+ versions for each component in the application
- Guarantees repeatability, reduces user error





IBM UrbanCode Deploy Model - The "Where" (1/2)

Agent:

 Represents the IBM UrbanCode Deploy agent software running on a server

- Installed on each server on which commands must be executed

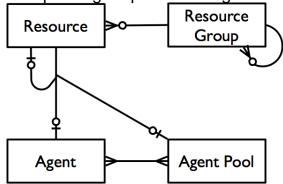
- Runs plugin steps (scripts to perform various actions)

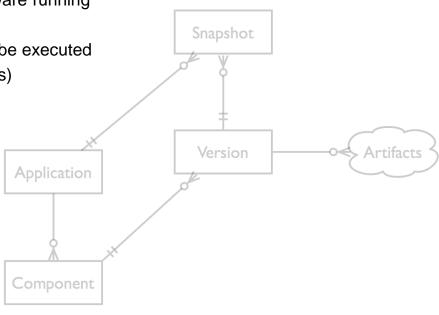
Resource:

 Translates between agents (actual execution) and logical deployment targets for IBM UrbanCode
 Deploy

- Can point to another resource, agent, or pool, but it must be able to resolve to an agent somehow

- Best place to put target-specific configuration





Resource Group:

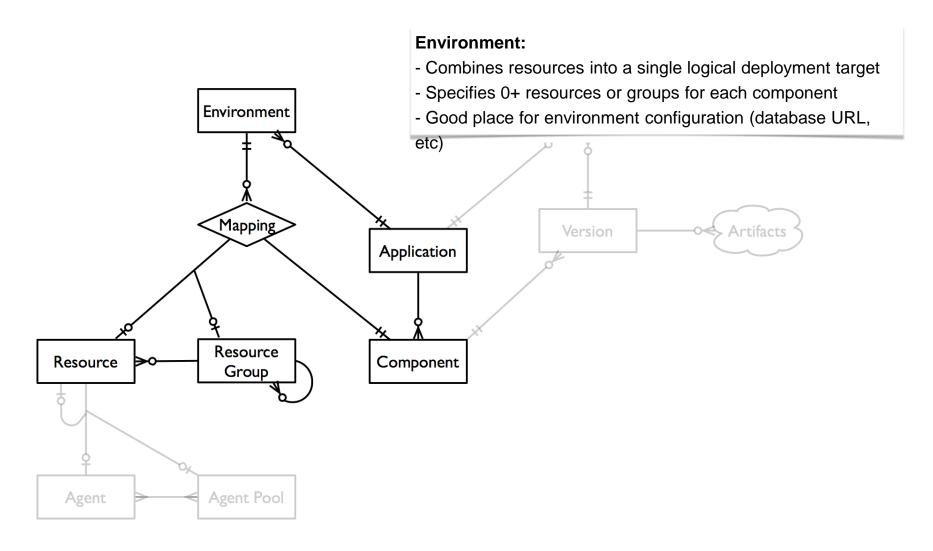
- A simple group of resources
- Any actions targeting this group will just target all group members
- Can contain other groups (it's a hierarchy)

Agent Pool:

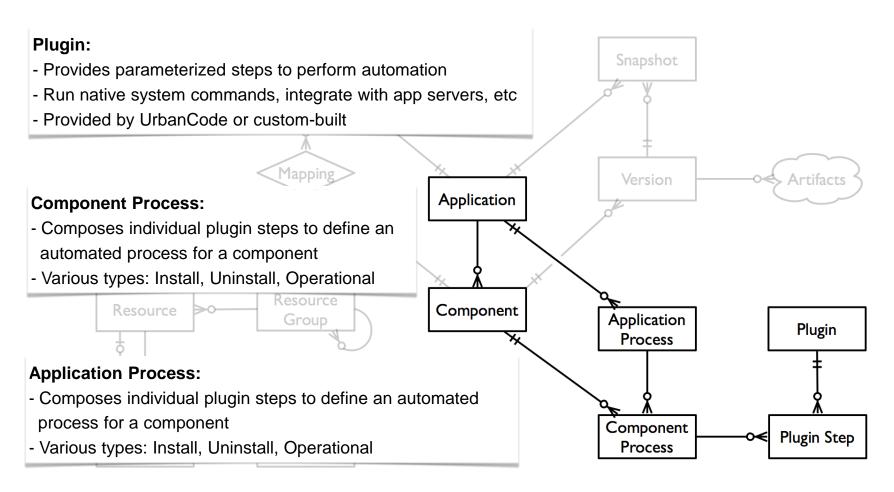
- Represents a set of agents which can be used for some automated action
- Randomly resolves to one of the member agents on demand

- Rarely used

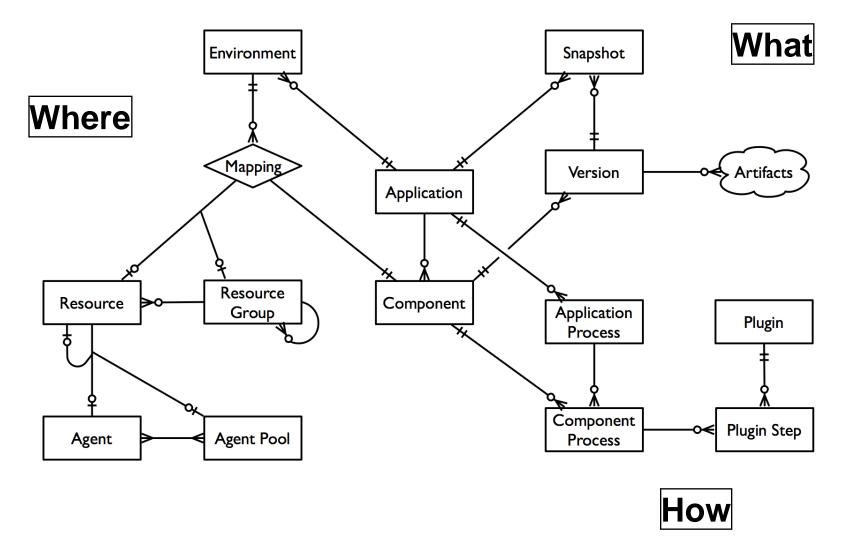
IBM UrbanCode Deploy Model - The "Where" (2/2)



IBM UrbanCode Deploy Model - The "How"

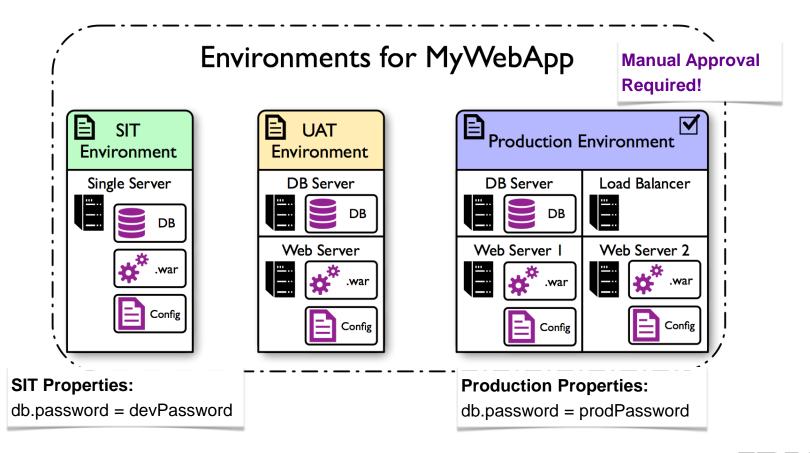


IBM UrbanCode Deploy Model - The Big Picture



Application Environments

- Model different topologies for the same application
- Set environment-specific configuration
- Environments may require manual approvals for deployments

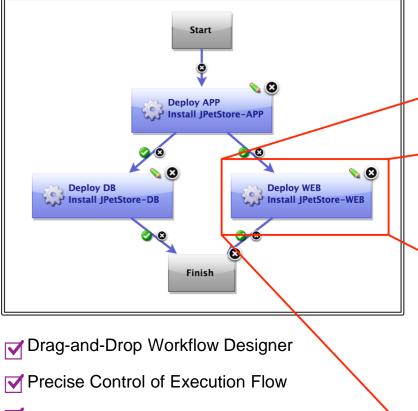




Deployment Automation

Deploy Application

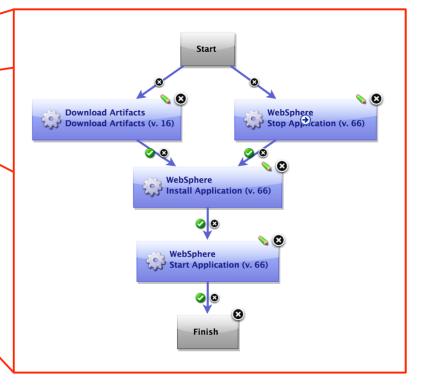
- Orchestrate deployment of many components
- Represents deploy-time dependencies



- ✓ Hundreds of Integration Steps Provided

Deploy Component

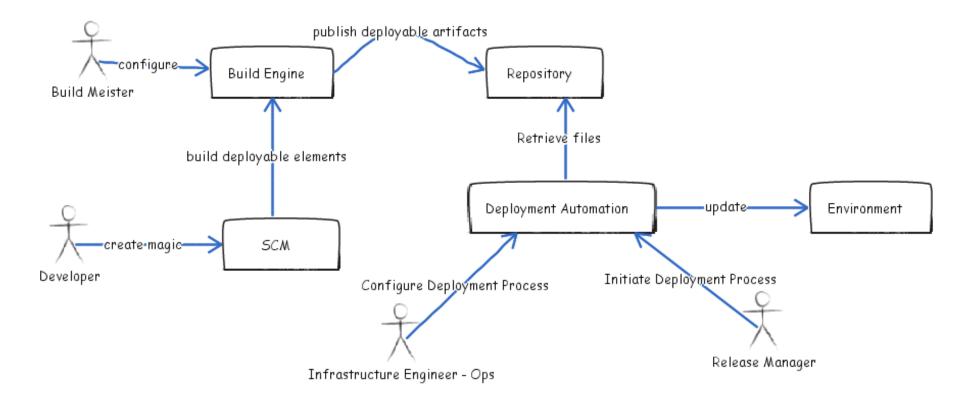
 Create a fully automated workflow to be executed on target servers





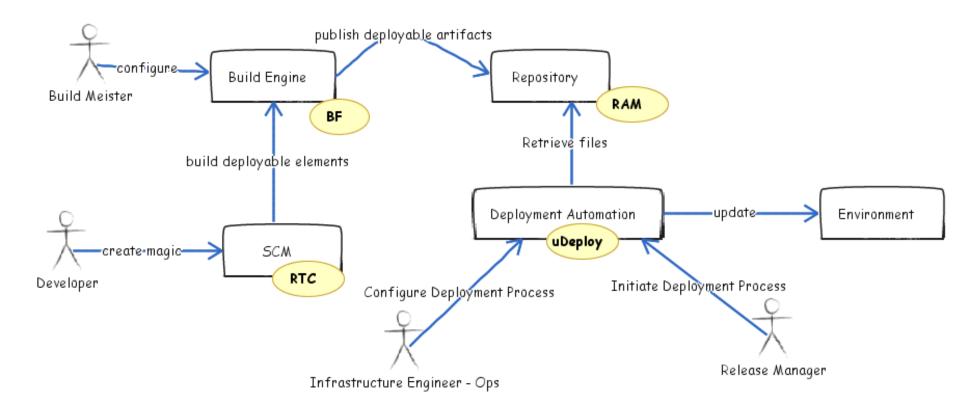


Basic Usage Model

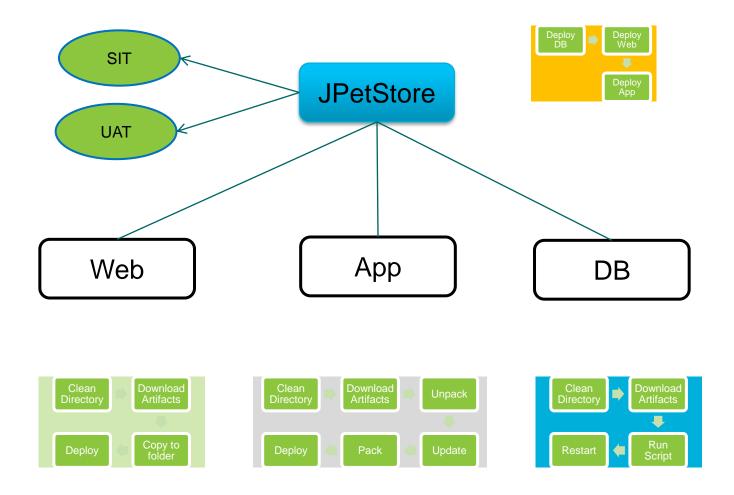




Basic Usage Model with Example Tools



Model for this Training



Exploring Components

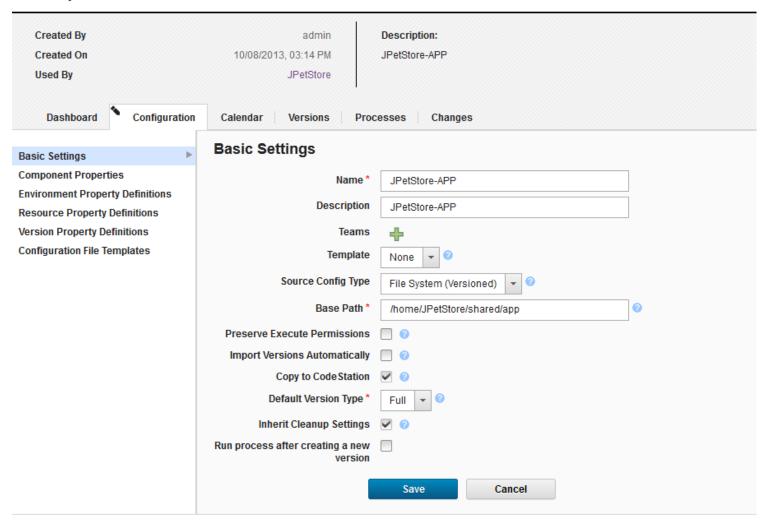
- Source Configuration Setup
- Version Import
- Processes
- Component Templates
- Importing/Exporting



Source Configuration Setup

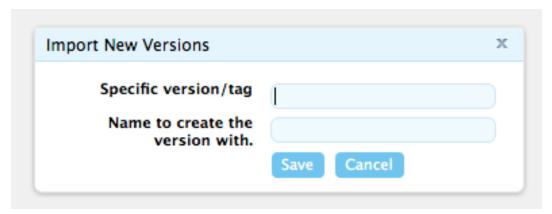
Home > Components > JPetStore-APP

Component: JPetStore-APP

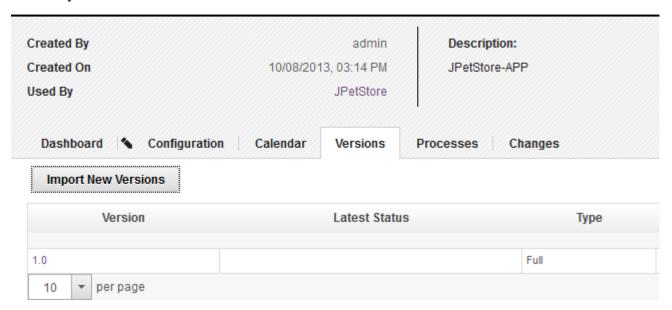




Version Import



Component: JPetStore-APP

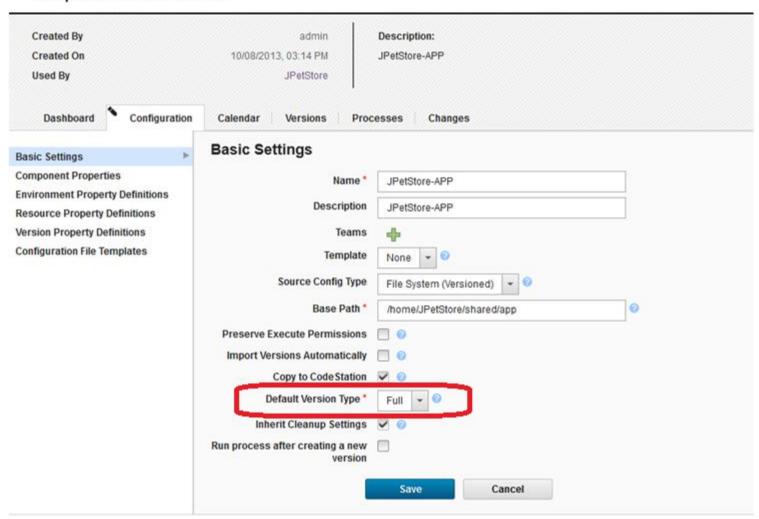




Version Types

Home > Components > JPetStore-APP

Component: JPetStore-APP

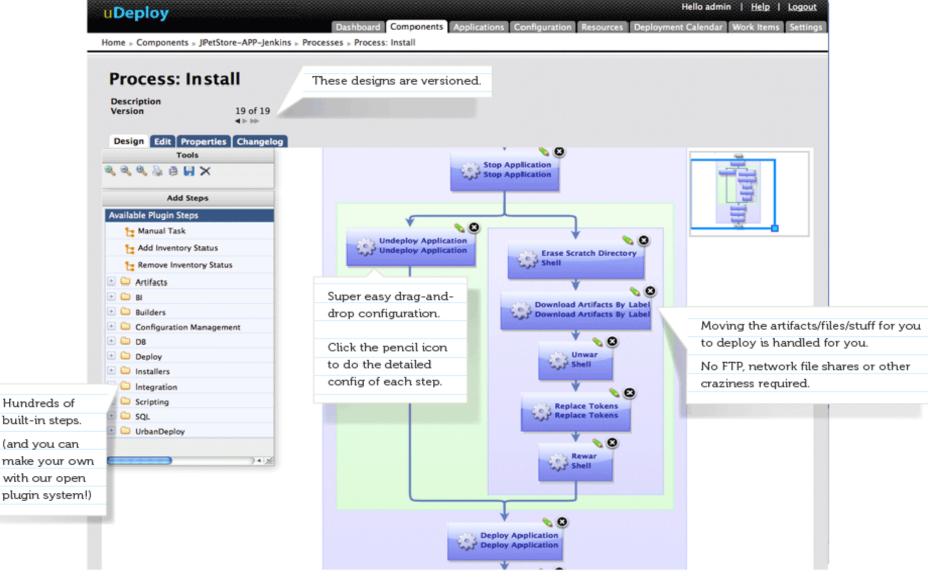


Artifacts

- Each component imports artifacts from a source configuration
 - -i.e. Maven/Nexus, Jenkins, TFS, Git, SVN, File System
- Artifact sets can consist of the following:
 - -Files
 - -Images
 - –Database scripts / backups
 - -Configuration files
- Content addressable repository stores files and keeps track of metadata for artifact sets



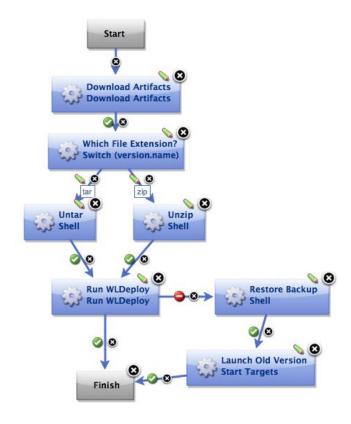
IBM UrbanCode Deploy Process Designer





Component Processes

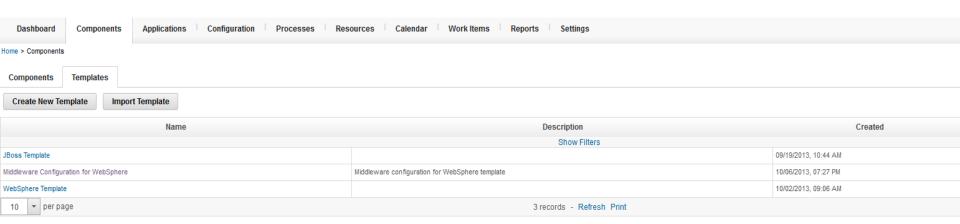
Model automation of artifact deployment using plugin steps





Component Templates

- Enables maximizing reuse of configurations
 - Create New components from templates
 - Template-based components inherit the template's processes and properties
 - Templates and be imported and exported





Importing/Exporting Components & Applications

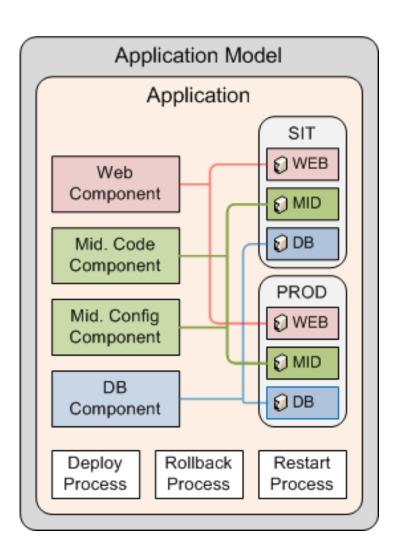
```
JPetStore.json (~/Downloads) - VIM6
         "name": "JPetStore-WL".
         "description": "",
  3
         "enforceCompleteSnapshots": true,
         "propSheet": {"properties": []},
  6
         "components": [
  8
                 "name": "Apache Tomcat",
                 "description": "",
  9
                 "created": 1323462326603,
  10
  11
                 "importAutomatically": false,
  12
                 "useVfs": true,
  13
                 "statusPluginName": "Default",
  14
                 "active": true,
  15
                 "deleted": false,
 16
                 "defaultVersionType": "FULL",
  17
                 "cleanupDaysToKeep": 0,
  18
                 "cleanupCountToKeep": 0,
  19
                 "sourceConfigPluginName": "File System (Versioned)",
  20
                 "envPropDefs": [
  21
  22
                         "name": "base.install.dir",
                         "label": "base.install.dir",
  23
  24
                         "type": "TEXT",
  25
                         "value": "\/opt",
  26
                         "required": false,
                         "description": ""
  27
  28
  29
  30
                         "name": "http.connector.port",
  31
                         "label": "http.connector.port",
 32
                         "type": "TEXT",
 33
                         "value": "8090",
  34
                         "required": false,
  35
                         "description": ""
  36
 37
 38
                         "name": "manager.username",
  39
                          "label": "manager.username",
 40
                          "type": "TEXT",
  41
                         "value": "tomcat"
~/Downloads/JPetStore.json (unix){JAVASCRIPT} [4,5][0%]
```

Application Topics

- Creating
- Environments
- Processes
- Approvals, Notifications
- Properties

Applications

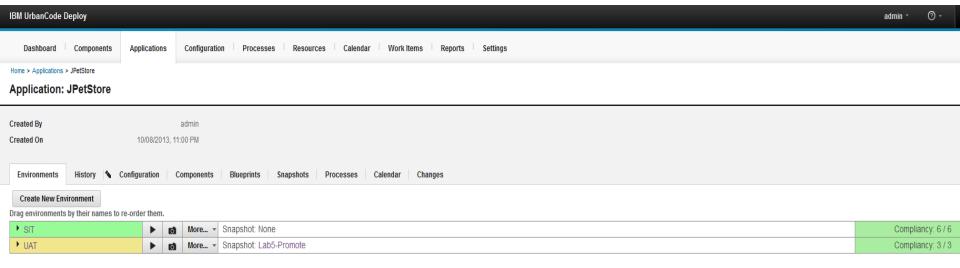
- Components
- Environments
 - -Target servers
 - -Servers have roles
 - -Env. Specific Config
- Processes
 - Orchestrates the Component processes





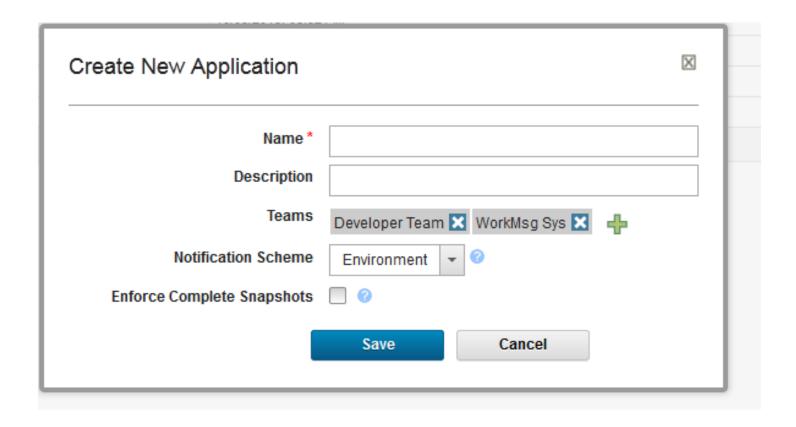
Applications

Applications handle orchestration of deployments to target environments





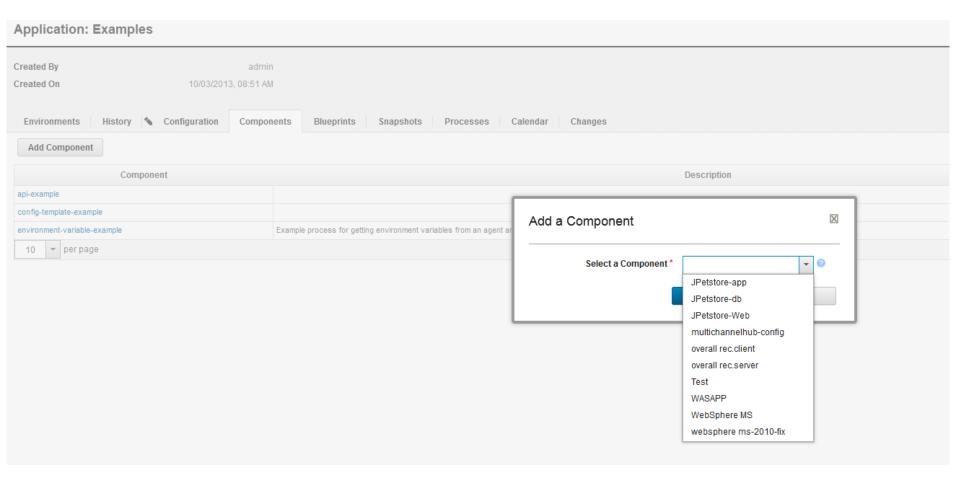
Creating Applications







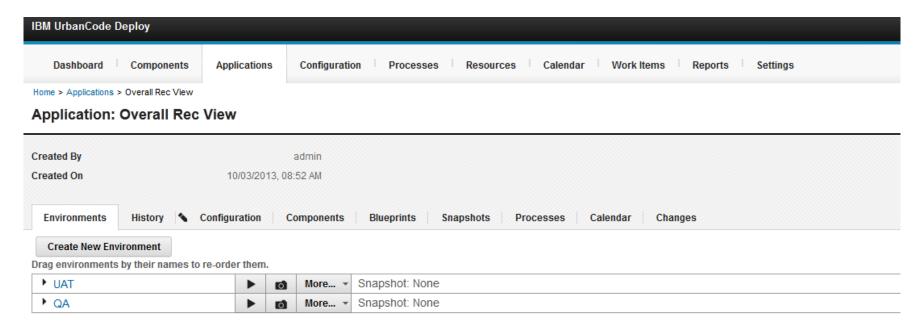
Creating Applications

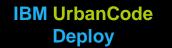




Environments

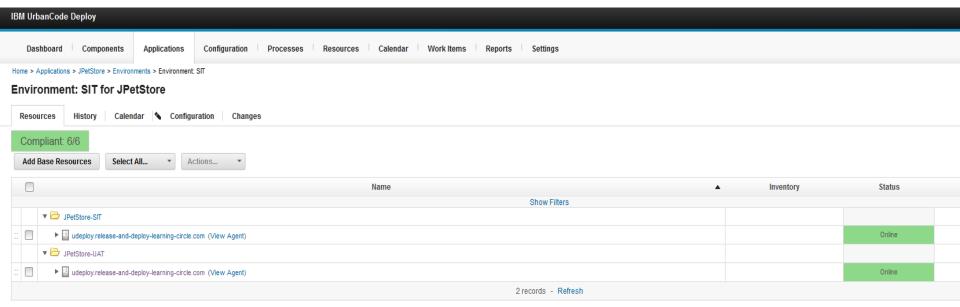
- Components are mapped to resources on an environment
- Environments can be locked down with role-based security
- Provide visibility of inventory







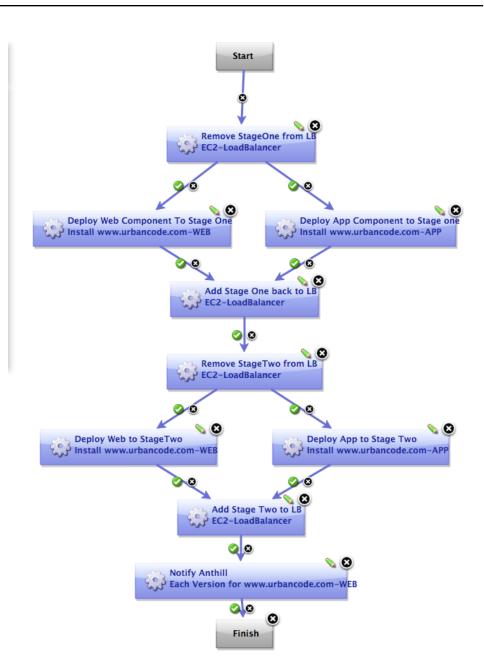
Environments



Application Processes

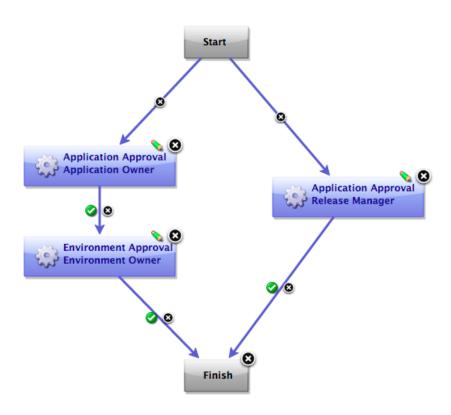
 Overall deployment orchestration is modeled in an application process

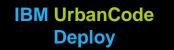
 Component processes are represented as steps in an application process workflow





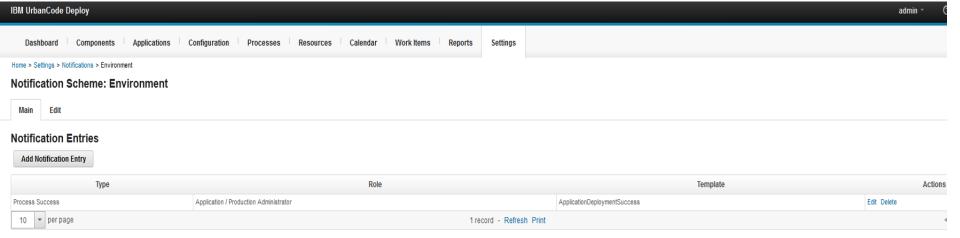
Approvals







Notifications





Notifications

Dashboard Components	Applications Configuration Processes	Resources Calendar W	le
Home > Settings > System			
Licenses Logging Netwo	rk Notifications Audit Log Patches	Properties System Settings	
	General Settings		
External Agent URL *	https://ADMINIB-GJS4P5E:8443	②	
External User URL *	https://ADMINIB-GJS4P5E:8443	②	
Automatic Version Import Check Period (seconds) *	15	0	
Validate Agent IP	■ ②		
	Mail Server Settings		
Mail Server Host	smtp.example.com	0	
Mail Server Port	25	0	
Secure Mail Server Connection		_	
Mail Server Sender Address	sender@example.com	0	
Mail Server Username	username	②	
Mail Server Password		0	
	Artifact Cleanup	_	
Hour to Clean Versions *	0	②	
Days to Keep Versions *	-1		
Number of Versions to Keep *	-1		
Archive Path			
	Preview Version Cleanup		

Properties

- Allow for process reuse
- Secure properties are obfuscated throughout the UI and logs
- Can be set in the following contexts:
 - Environment
 - Resource
 - Resource Role
 - Application
 - Component
 - Process
 - System

Property Syntax

- General: \${p:source/propName}
 - Where source is application | environment | resource | component | ...
- Plugin/process property: \${p:propName}
- Switch step: propName | source/propName
- Resource role: \${p:resource/roleName/propName}

Property Hierarchy

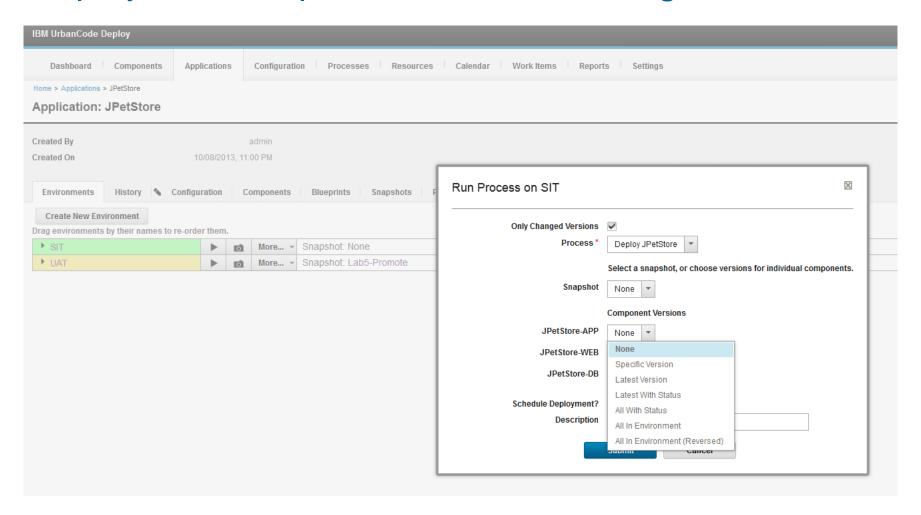
\${p:propName} resolves to the first defined property on the:

- Process (Component, Application)
- Component Version
- Resource
 - Subresource
 - Parent Resource
- Agent
- Environment
- Component
- Application
- System





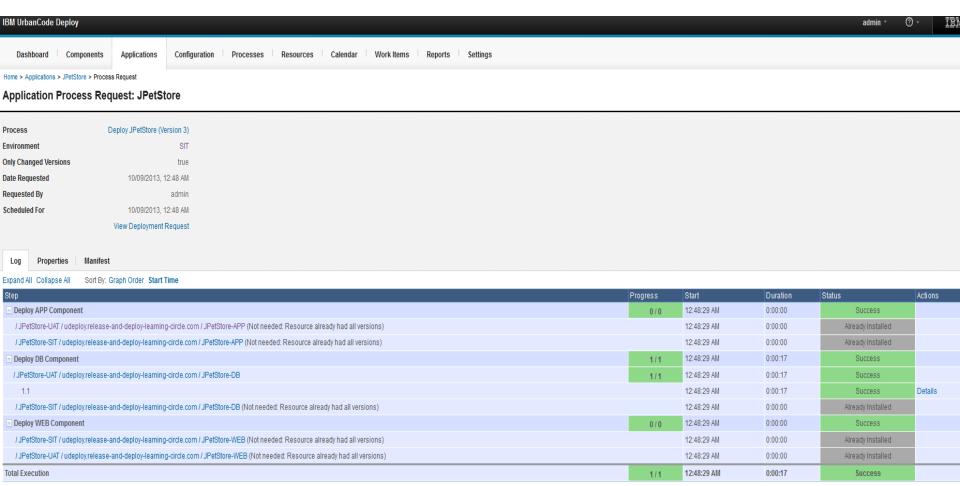
Deployment Requests & Execution Logs







Deployment Requests & Execution Logs



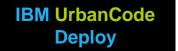


Deployment Requests & Execution Logs



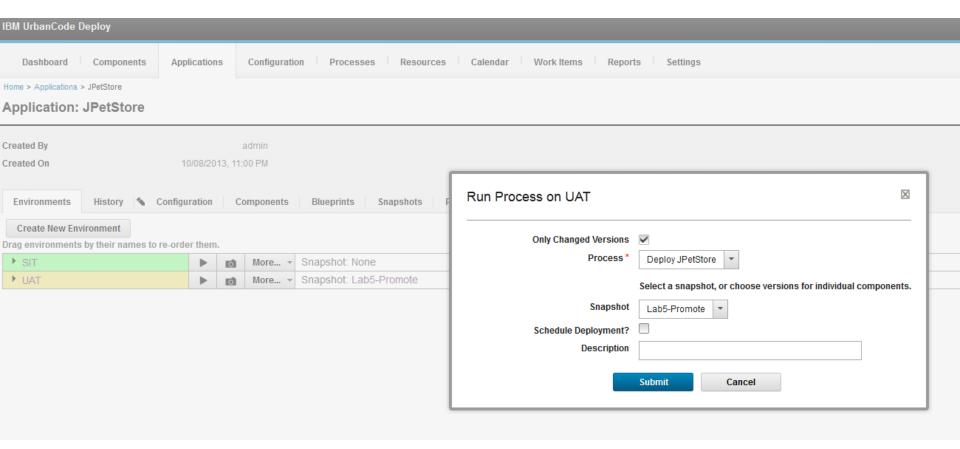
Deployments

- Snapshots
- Process Requests
- Environments
- Logging
- Reports

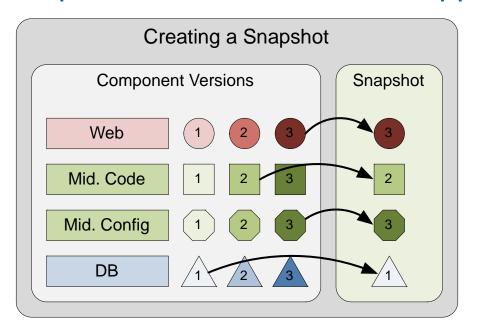


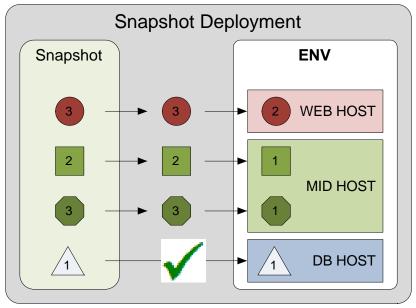


Deployments



Snapshots – A Version of the App





Contents of environments that pass tests

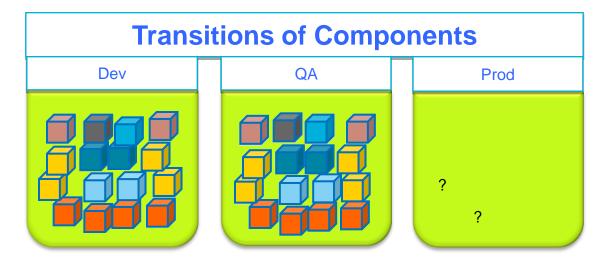
- contain deployable version and configuration
 Snapshots can be deployed to an environment, updating necessary component versions and configuration
 - Dependency and order aware

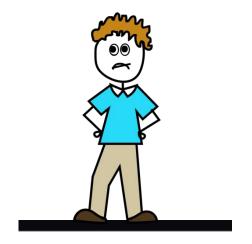
Deployments are based on deltas

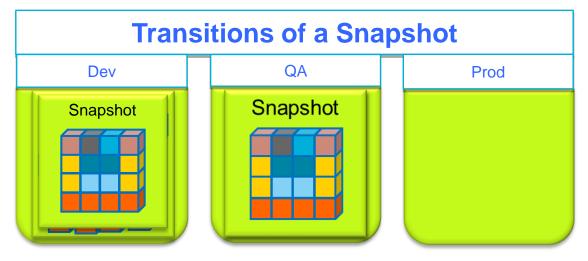
They help with:

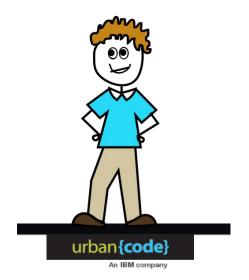
✓ Automation, Audit, and Visibility

Snapshots



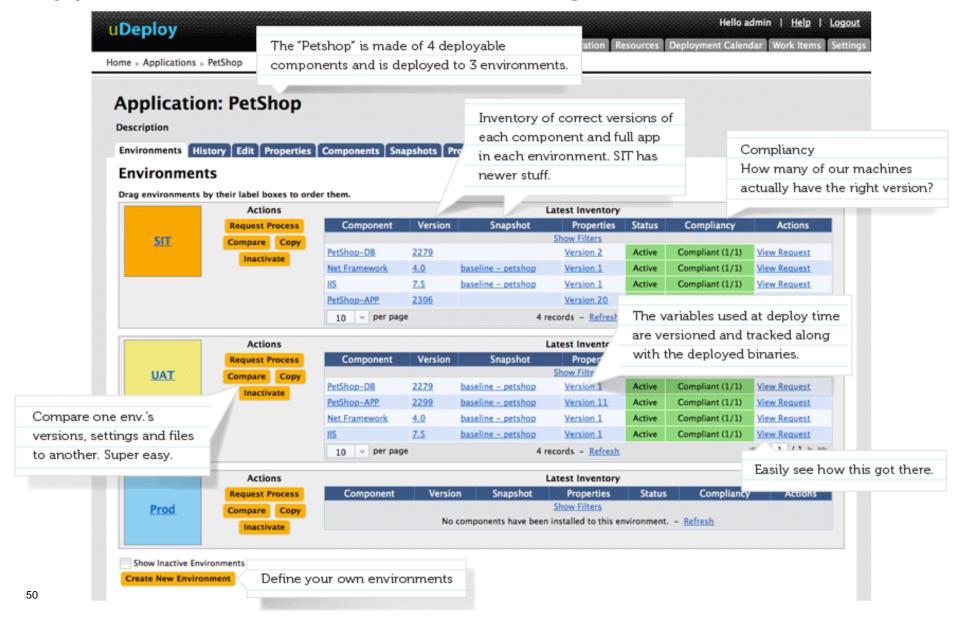








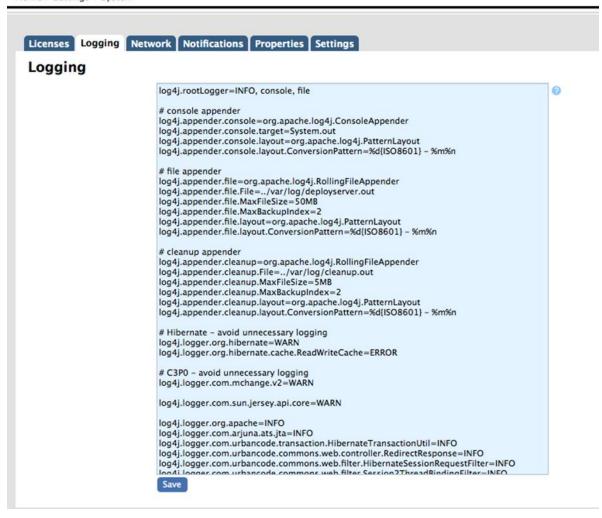
Application environment inventory





Logging

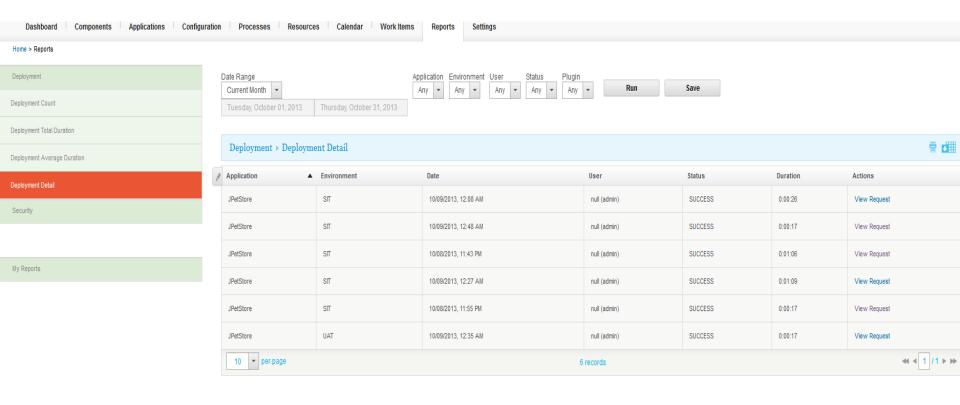
Home ▶ Settings ▶ System





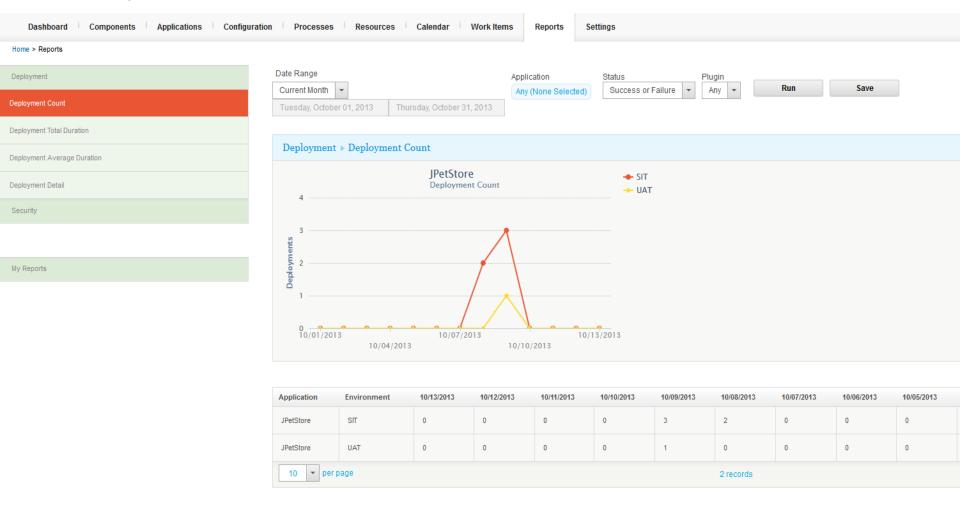


Deployment Reports





Deployment Reports



Thank You

www.ibm.com/software/rational

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