Deployment Planning and Automation Solution from Rational and Tivoli



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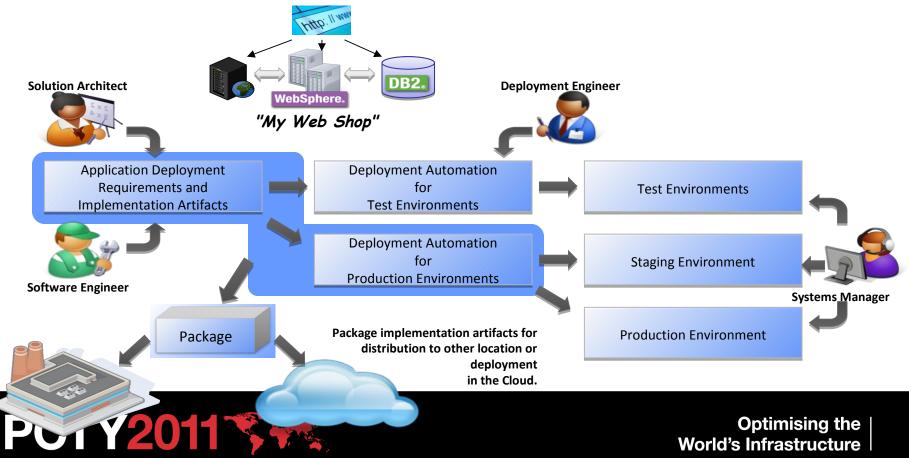
Agenda

- The Problem
- The IBM Solution
- Demo
- Summary





Example Scenario



Deployment is a Complex Problem

Development and Operations teams collaboration challenges

- Hand-off from development teams is inconsistent and manual
- Application component requirements do not match IT infrastructure

Deployment requirements are difficult to validate

- Enterprise, Software & IT architects all use different formats
- No standardization or templates for reuse

Complex series of steps

- Deployment engineers often execute manual steps
- Not repeatable, prone to error
- Automations are hard to build, maintain and reuse
- Hard to tell what if the right things were installed



✓ 50% of applications put into production are later rolled back (Gartner)

- ✓ 60% 80% of an average company's IT budget is spent on maintaining existing applications (Intelligent Enterprise.com)
- Software related downtime cost industries almost \$300 billion annually (CENTS Comparative Economic Normalization Technology Study)

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Variability During Development Lifecycle

Quickly Changing Stuff

- Example: The component(s) under development
- Impossible to standardize the bits
- Desirable to standardize the deployment automations

Stuff with unknown change rates

- Example: OS, Middleware, dependent components
- Reasonably easy to automatically deploy
- High variability hinders automated deployment of the next level

Slowly Changing Stuff

- Example: the processor architecture
- Easy to standardize
- Easy to automatically deploy
- Because this is standard, it is easy to automate deployment of the next level



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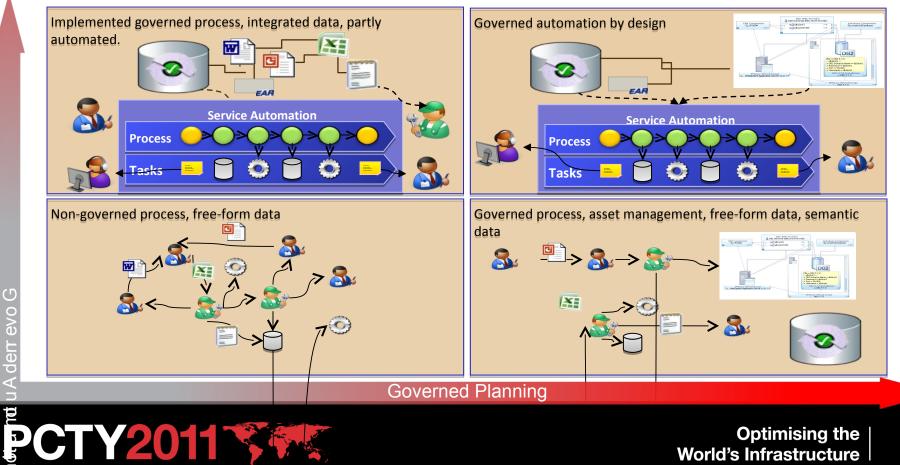
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The IBM Solution Integrated Rational and Tivoli tools



Introduction of Service Automation is an Evolutionary Process

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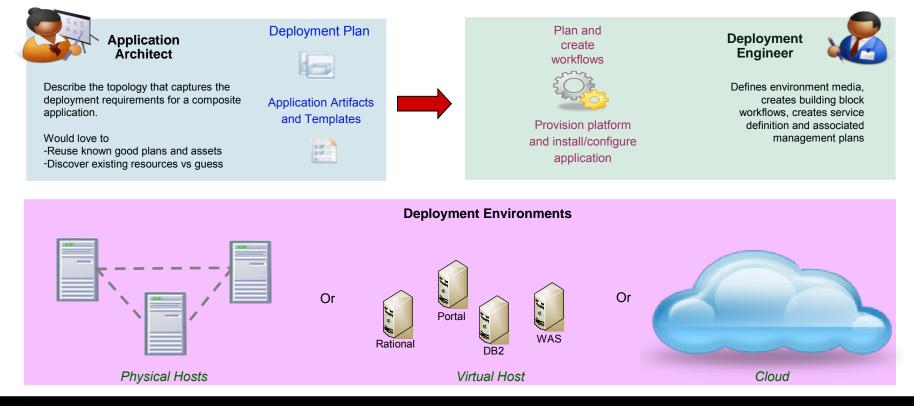
IBM Deployment Planning and Automation An Integrated Solution

- **Plan** composite application deployments using organizational standards
 - Reduce time and errors
 - Improve communication
- **Automate** infrastructure provisioning, middleware configuration, and application installation
 - Repeatedly setup standardized environments
 - Remove costly manual errors
 - Reduce provisioning times
- **Govern** and application artifacts, standards, and deployed resources
 - Adhere to organizational standards





Scenario



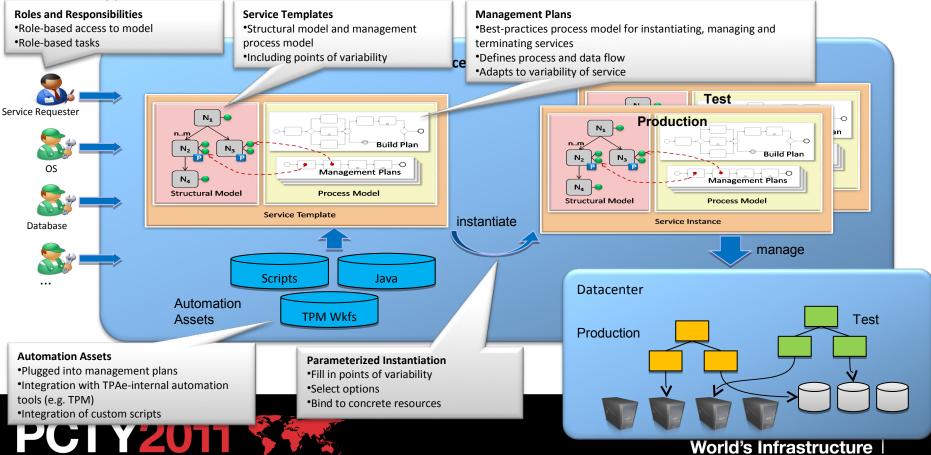




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Tivoli Service Automation Manager's Approach for IT- and Cloud Service Management



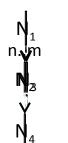
Tivoli Service Automation Manager implements a holistic Model for Service Lifecycle Management

- (1) Service topology templates capture IT- and Cloud Service reference architectures
 - Service as a composition of its components, and their relationships and dependencies
 - Configuration templates and allowed variations
 - Including non-functional aspects and policies

(3) Service lifecycle management

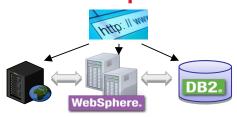
- Initial deployment of services
- Operational management of services

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- (2) Integrate structural and management process models enable architecture-compliant automation
 - Management processes as an orchestration over service components, invoking operations on service components
 - Including integration into surrounding enterprise processes

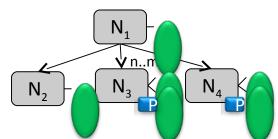
The IT Service Lifecycle Supported by Our Concepts



IT service to be managed with specific solution- and deployment architecture

Design guidelines and programming models, integrated platform tooling





Service Template executable by service management runtime, capturing solutionand deployment archicture including variation options



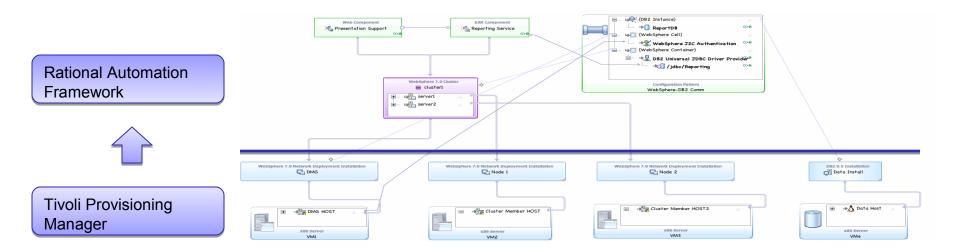
Management process model for the template-based instantiation of service deployments

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Management process model for the operational management of deployed service instances



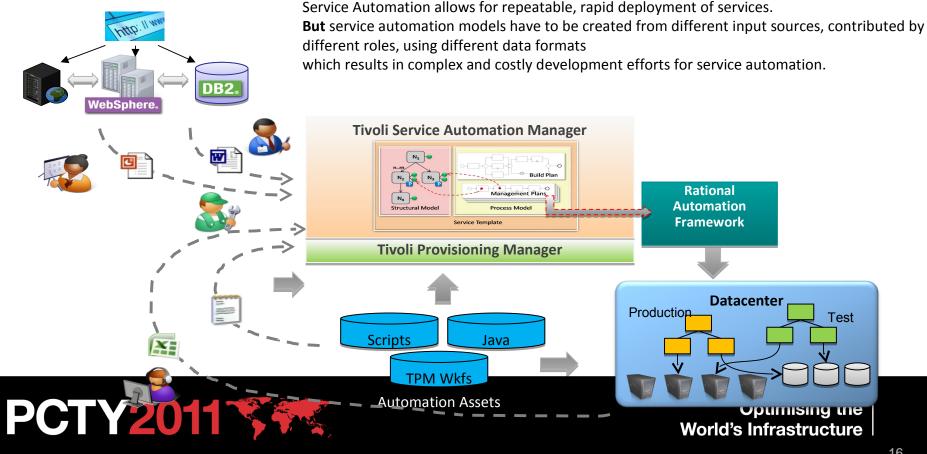
Tivoli Provisioning Manager and Rational Automation Framework Positioning



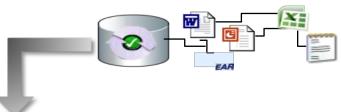
Rational Automaton Framework package available on Integrated Service Management Library to integrate TPM workflows with RAF workflows



The Remaining Challenge...



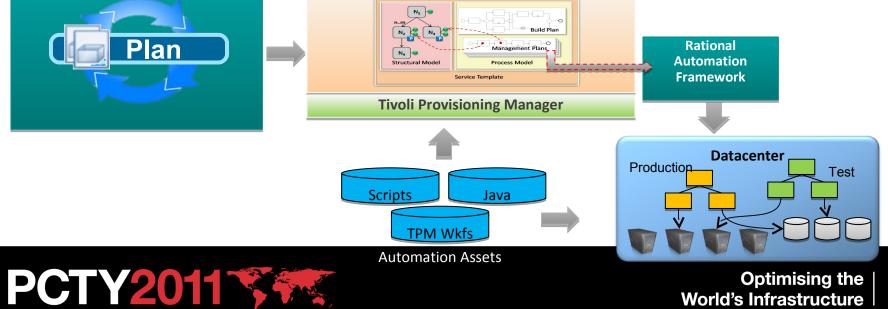
Automation by Design as the Next Step



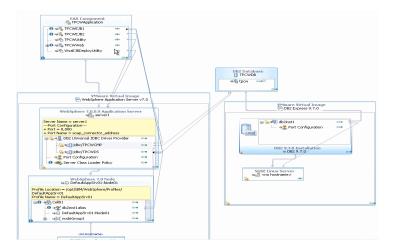
Integrated architecture and design tooling supporting different roles, and generation of automation models and flows out of design models leads to and end-to-end integrated flow of design \rightarrow deployment \rightarrow management of IT- and Cloud Services.

Plan

Tivoli Service Automation Manager





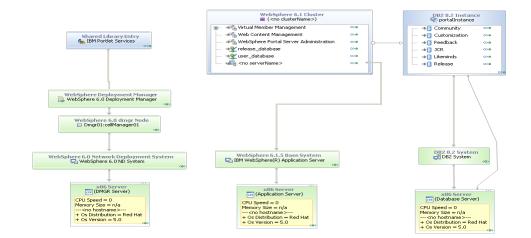




Rational Software Architect

Smarter IT Deployment Planning

- Communicate and validate IT deployments to avoid costly problems late in the application lifecycle
- Deployment Template Design and Reuse
 - Capture and reuse organizational standards to quickly and easily plan deployments



Datacenter Discovery

 Quickly construct a topology describing what you have in your infrastructure

RSA Extension for Deployment Planning

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Deployment Planning Capabilities

Rich UI Diagraming

- Multiple views over the same data
- Layers and re-usable appearances
- Validation feedback in diagrams
- Flexible representations

Backed by a rich semantic model

- Simple Extensible XML format
 - Dynamic extensions as well as static supported by a simple to use SDK
- Technology domains (over 25 domains and growing)
- Model changes reflected automatically in all diagrams
- Constraints and validation with Quick Fix resolutions
- Which can be reported upon
 - BIRT report templates

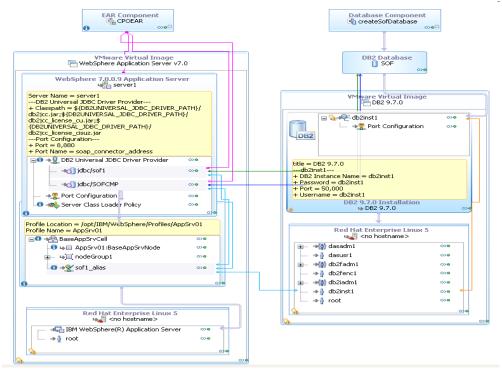
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Automation By Design Focuses on Topology

- Specify resources to satisfy application needs such as datasources and authentication
- Incorporate assumptions about middleware such as version
- Describe dependencies between separate nodes in the Topology

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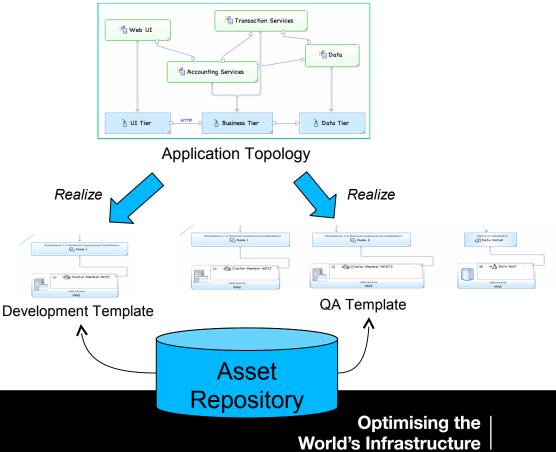




Standardize with Deployment Templates

- Define and capture organizational standards with deployment templates
- Govern using an asset repository
- Reuse to guide deployment placement and implementation choices
- Ideal for capturing standard environment patterns and configurations



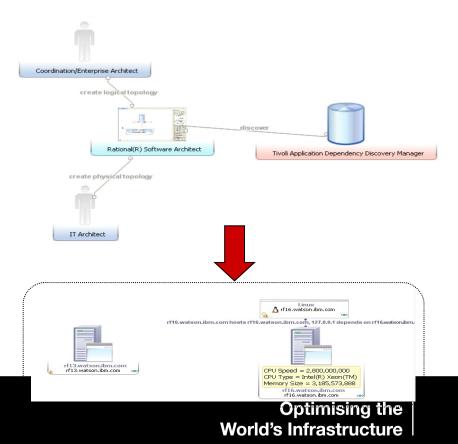


Datacenter Discovery

Leverage discovered operational data to expedite new designs & updates

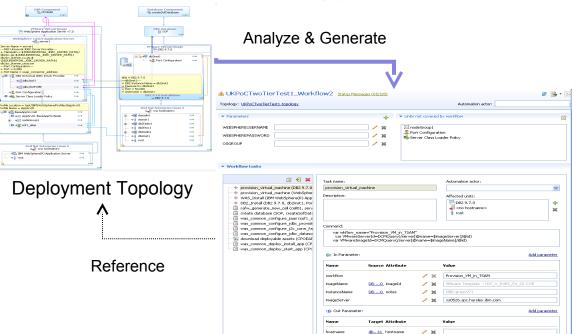
- Reduce manual creation of topologies representing the current state of the datacenter
- Quickly understand structure of an existing datacenter
- Starting point for defining datacenter changes
- Import data from manually defined spreadsheets.

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Plan Automation from Deployment Topology

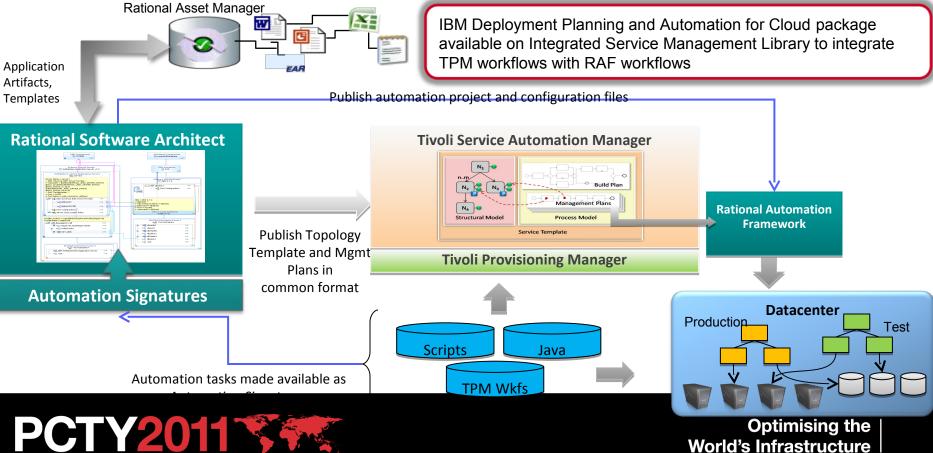
- Parameters and configuration files derive their values from the model
- Single source of truth provides pre-deployment validation and problem identification
- Allows post-generation adjustments as needed



Automation Plan

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IBM Deployment Planning and Automation Architecture





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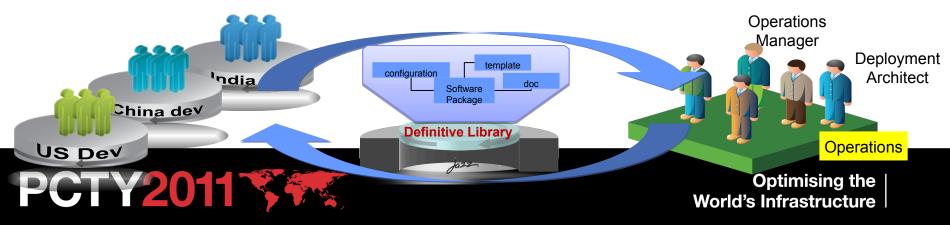
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Govern your deployments using a definitive library Deploy the right deliverables, with the right plan, using the right automation

Gain control over the:

- People who are stakeholders in the decision making
- Workflow to manage sharing
- Policies to enforce rules
- Access permissions to control access
- Traceability and auditing for plans and automations

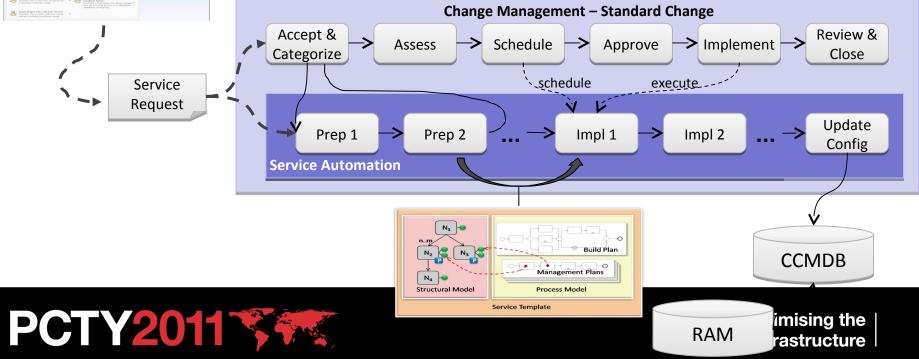




Integrated Service Automation, Change and Configuration Management



Service automation can be used stand-alone for lean and rapid service management **or** it can be configured to integrate with change management to have ITIL-aligned governance over the IT environment, including automated configuration updates

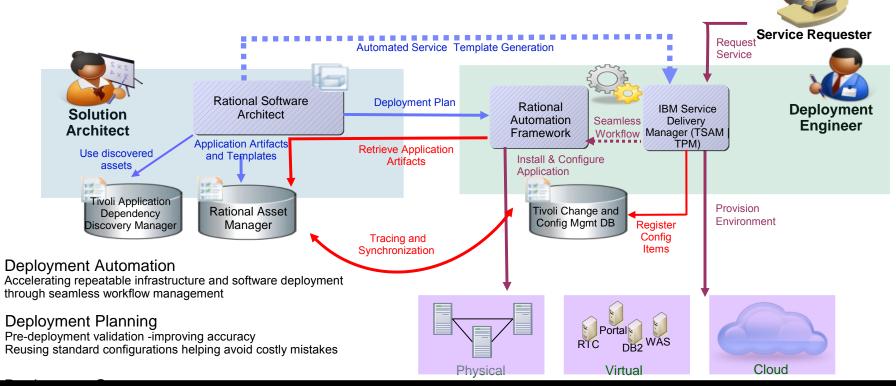


Understanding the Flow -Demo





Deployment Planning, Automation, and Governance



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Summary

- Cloud Computing provides virtualization, standardization and automation to increase flexibility and reduce costs for software delivery
- IBM Deployment Planning and Automation speeds the delivery of high quality applications to the cloud
- We have services offerings to help you plan, manage and secure your IT transformation onto cloud



For more information: http://www.ibm.com/rational/cloud

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