

Pulse

IBM SolutionsConnect 2013

Take your Cloud to the Next Level with SmartCloud Orchestrator

Ruth Willenborg

06/10/2013





Please note:

- IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.
- The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

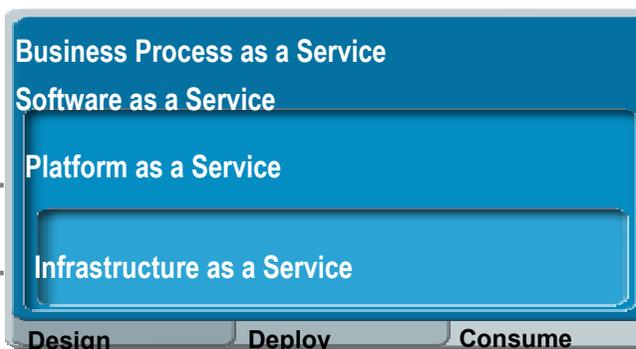


Agenda

- Overview
 - SmartCloud Orchestrator Example Flow

A next generation infrastructure powered by IBM SmartCloud is fundamental

IBMSmartCloud



IBMSmartCloud Foundation

Cloud Enablement Technologies

Enables private/hybrid cloud service delivery and management

IBMSmartCloud Services

Managed Cloud Services

Secure and scalable cloud managed services platform

IBMSmartCloud Solutions

Cloud Business Solutions

Pre-built Cloud SaaS business applications and solutions



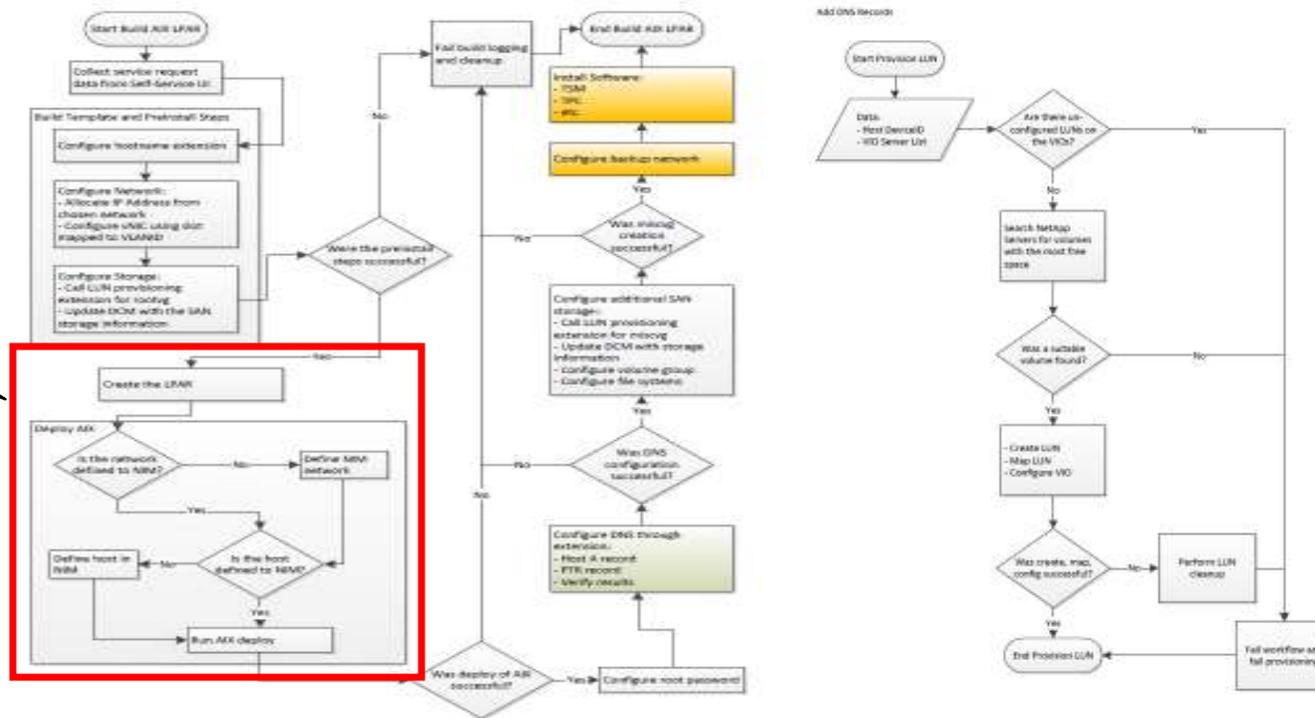
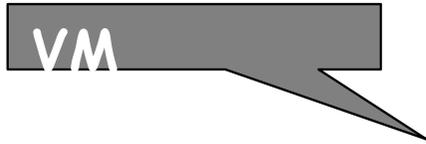
Common Cloud Management Services built on an open standards reference model





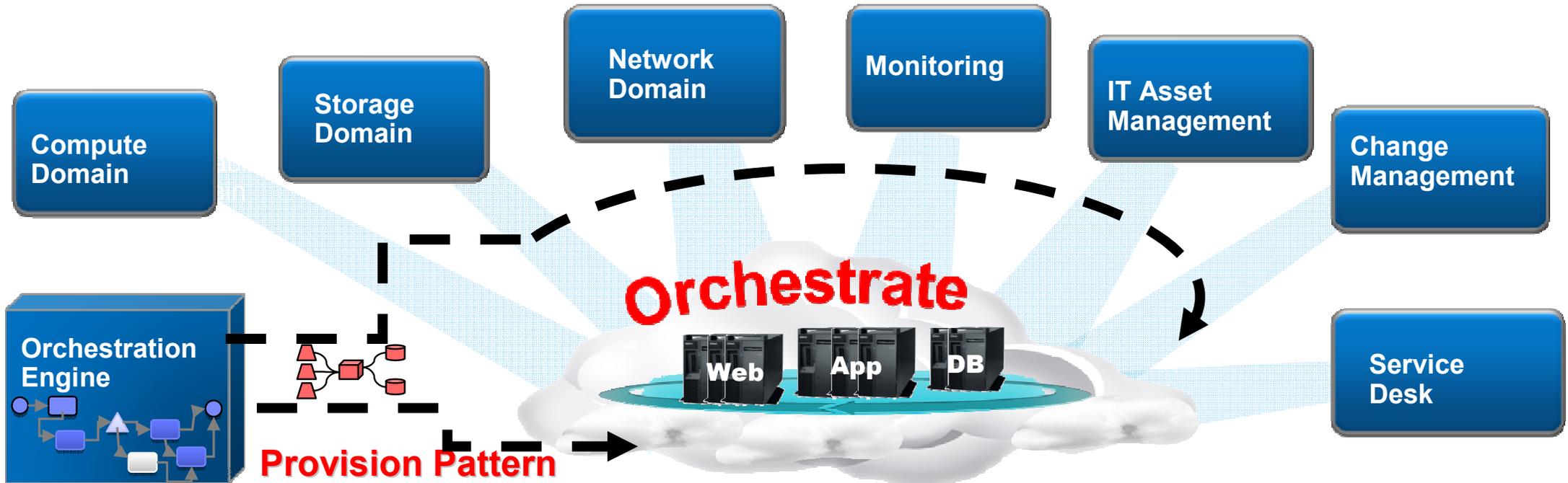
Why do we need an Orchestrator ?

1. Customers are looking for end to end automation of cloud service delivery to achieve greater returns
2. Provisioning play a key role, but is just one of many steps that must be automated
3. Each customer has unique requirements to integrate with existing data center processes and tools.



Real customer example

Managing workloads across the lifecycle requires orchestration



Resource Orchestration
Onboard, provision, manage CPU, Storage and Network

Workload Orchestration
Workload aware placement, optimization and operation

Service Orchestration
Manage the lifecycle of business applications

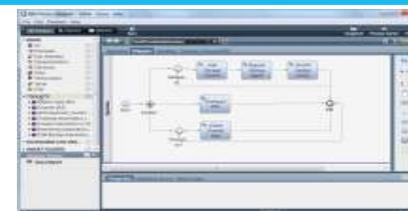


What is SmartCloud Orchestrator ...

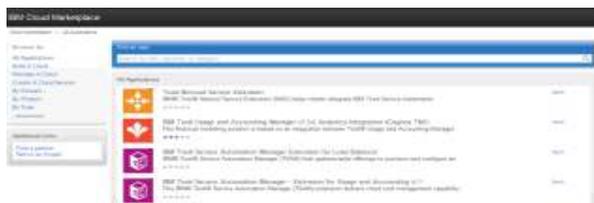
An open and scalable cloud platform



An easy to use orchestrator for cloud service automation



A marketplace for content sharing and re-use

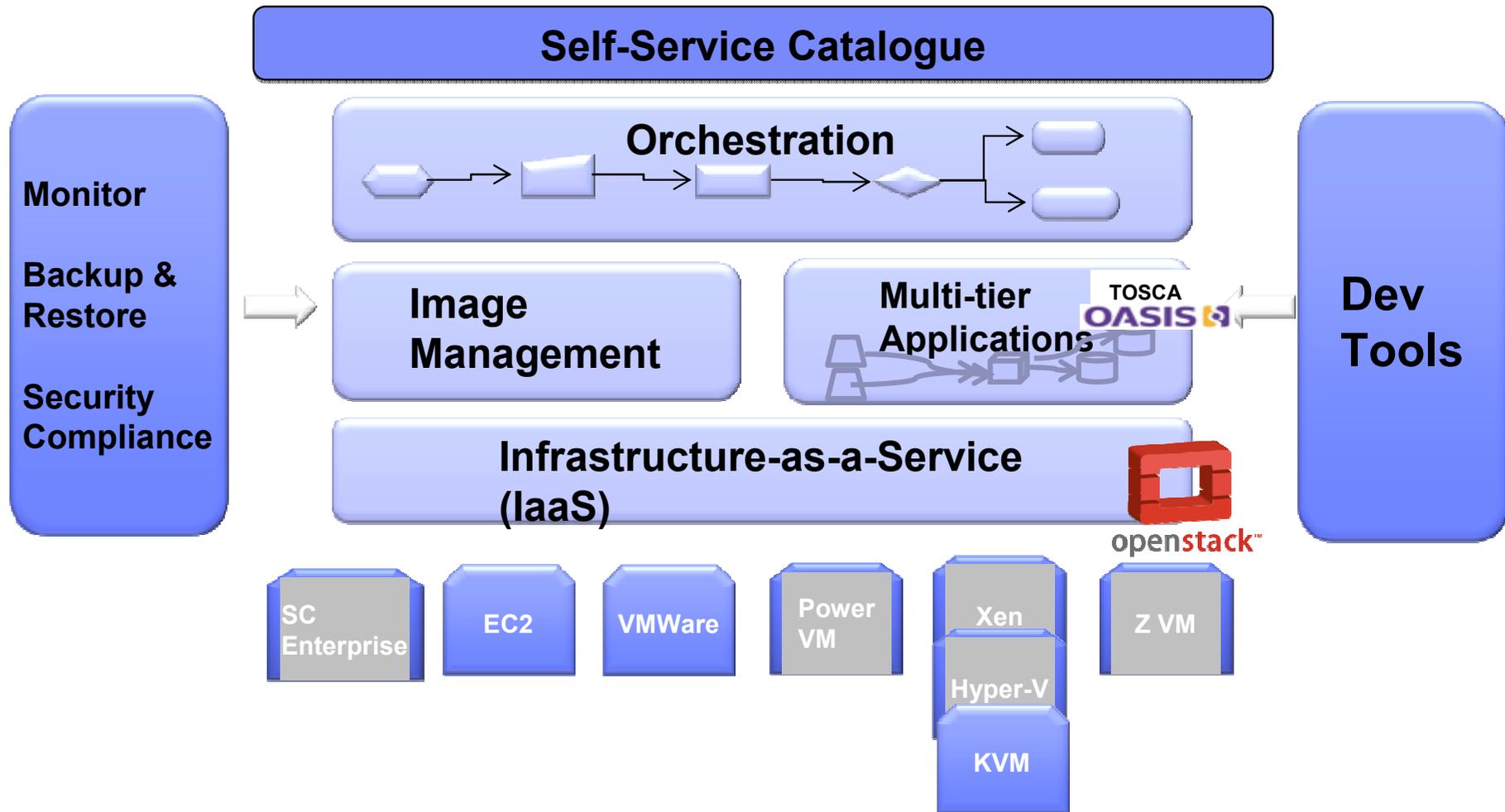


A ready to use automation library





SmartCloud Orchestrator: an open and scalable platform





IBM SmartCloud Offerings are built on OpenStack

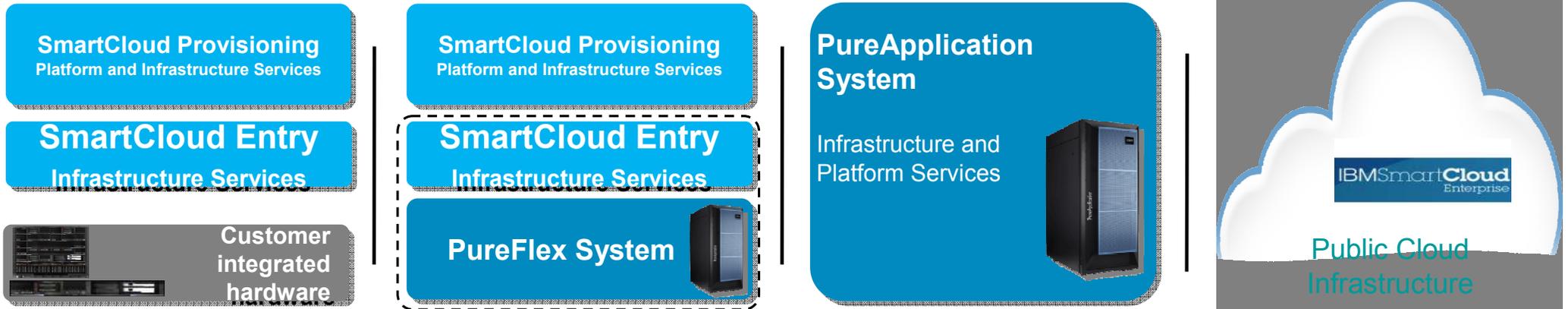
- Simple 3-tier structure, increasing client value at each tier and extending across hybrid cloud environments
- Using open, common, standards-based architecture providing choice, flexibility, interoperability and portability
- Clean upgrade paths with progression to fully integrated and factory optimized PureApplication System
- Significant benefits including ease of installation, enterprise hardening and additional capabilities above base OpenStack

Related Standards & Organizations



SmartCloud Orchestration

Orchestration, Platform and Infrastructure Services across multiple environments and domains



Key

- Software Offerings
- Factory Integrated
- Bundle Option



Agenda

- Overview
 - SmartCloud Orchestrator Example Flow



A typical scenario: create a new cloud service to deploy an application

Step 1 – Cloud Admin: Graphically compose the application topology

IBM SmartCloud Provisioning Administrator | Help | About | Logout

Welcome | Instances | **Catalog** | Reports | Cloud | System

Pattern Editor Editing Pulse pattern Done editing

Search...

Deploys to high scale low touch hypervisor managers
Last updated on Mar 19, 2013 3:09:27 PM GMT-04:00 | Ordering | Advanced Options

Parts (38/50)

Scripts (21/21)

- Add IBM HTTP Server node
- configure_chef_rhel
- configure_yum_dev6
- delete_yum
- HelloWorld
- HelloWorldJim1
- IBM_JAVA_16
- IBM_LAB_RH_ROOT_VNC
- ILMT Agent Install Package
- install_mysql
- install_packages
- install_vim
- install_weaver
- install_weaver_2
- SCD Automation for Windows
- shutdown_firewall
- SVT Chef Automation 25M2_2
- SVT Install 25M2_2

Add-Ons (4/4)

Library of virtual templates, sw packages, script, add on (disks, network cards, etc)

Graphical editor for composing and configuring workloads

RHES6.2 30GB extended
1.0.0.0

- configure_yum_dev6
- configure_chef_rhel
- install_mysql

RHES6.2 30GB extended
1.0.0.0

- configure_yum_dev6
- configure_chef_rhel
- install_vim

Reuse chef recipes from community

A typical scenario: create a new cloud service to deploy an application

Step 2 – Cloud Admin: Compose automations required at deployment

The screenshot displays the IBM Process Designer interface for an automation titled "MS SQL-WINDOWS AUTOMATION". The workflow is a sequence of steps: Start, Get VM Configuration, a Parallel split, Register Backup Agent, Create OS Backup Policy, a Join, Invoke MS SQL Server Configuration, Create DB Backup Policy, another Join, Change Ticket Status, and End. A callout points to the top toolbar, mentioning "Rich tooling functions to edit, version, debug, optimize workflows". Another callout points to the left-hand navigation pane, stating "Access to rich libraries (toolkits) of reusable automation assets that enable to speed automation creation". A third callout points to a palette of actions, noting "Palette of library assets enable easy workflow composition through drag and drop". A fourth callout points to the main workflow canvas, describing it as a "Graphical editor for composing and connecting workflows". A fifth callout points to the right-hand side, highlighting a "Rich set of actions types, flow control, data handling primitives that simplify creation of complex automations". A sixth callout points to the bottom right, mentioning "Easy workflow action editing for managing: data mapping, error recovery options, implementation details, etc.". The interface includes a menu bar (File, Edit, Playback, Help), a toolbar with icons for Save, Undo, and Redo, and a status bar at the bottom showing the system ID and date/time.

Rich tooling functions to edit, version, debug, optimize workflows

Access to rich libraries (toolkits) of reusable automation assets that enable to speed automation creation

Graphical editor for composing and connecting workflows

Rich set of actions types, flow control, data handling primitives that simplify creation of complex automations

Palette of library assets enable easy workflow composition through drag and drop

Easy workflow action editing for managing: data mapping, error recovery options, implementation details, etc.



A typical scenario: create a new cloud service to deploy an application

Step 3 – Cloud Admin: Design custom user experience

IBM Process Designer - admin - Sample_Support_vSys_ProcessApp - Main

File Edit Playback Help

Designer Inspector Optimizer Save

Snapshot Process Center Help

SAMPLE_SUPPOR...

All Processes User Interface Implementati... Decisions Data Performance Setup Files

TOOLKITS

System ... Coache... SCOrch... SCOrchestr... NetworkAtt...

All Processes User Interf... Implemen... Decisions Data Performan... Setup Files SCOrchestr... All Processes

Revision Histor...

Sprint 27 (2013013 - change pattern na Sprint 27 (2013013 - integrated with std

Deploy MediaWiki Application Environ...

Overview Diagram Variables Coaches

Media Wiki Appliaction Parameters

<p>Custom HTML</p>

Additional Filesy... Application Para... Pattern Summary Show Error and ...

HTTP Port

Capacity size

Owner

Comments

Back Cancel Next

Define UI

Drag and drop UI elements

Name and customize

Properties Validation Errors Where Used

General Configuration HTML Attributes

Common

Label: Comments

Help:

Behavior

Binding:

View: Text Coaches

Visibility: Default (inherit from parent)

Filter

Views

Control

Button

Checkbox

Date Time Picker

Output Text

Select

Table

Text

No Tags

FileSystemView

ListFileSystemsView

Number Spinner

Number Spinner 2

Number Spinner 3

Section

Advanced

Variables



A typical scenario: create a new cloud service to deploy an application

Step 4 – Cloud Admin: Register the new service

IBM SmartCloud Orchestrator

admin@admin | Help | About | Log Out

Home | Self-service | My Requests | Instances | Images & Patterns | Components | Reports | Configuration | Administration | My Inbox

Self-service

- All Offerings**
These are miscellaneous offerings with no specific categorization
- Storage and Backup Services**
These service offerings allow you to manage storage and backup services.
- Development and Test Services**
These service offerings allow you to define new development and test services.
- Software Installation**
These service offerings allow you to install software on a server.

Create MediaWiki Application Environment

Offering name:	Create MediaWiki Application Environment
Description:	Deploy MediaWiki with LB and FS
Offering icon:	Web Icon
Category:	Development and Test Services
Process:	Sample Deploy Pattern
Process application or toolkit of selected Process:	Sample_Support_vSys_ProcessApp
User Interface:	Sample Deploy MediaWiki Pattern to Environment Profile
Process application or toolkit of selected Human Service:	Sample_Support_vSys_ProcessApp
Access granted to:	admin [owner] Everyone [read] [remove] Add more...



A typical scenario: create a new cloud service to deploy an application

Step 5 – End user: Select service from catalog

The screenshot shows the IBM SmartCloud Orchestrator self-service catalog. The top navigation bar includes the IBM logo, the text "IBM SmartCloud Orchestrator", and user information "admin@admin" with links for "Help", "About", and "Log Out". Below this is a main menu with items: Home, Self-service, My Requests, Instances, Images & Patterns, Components, Reports, Configuration, Administration, and My Inbox. The current page is titled "Self-service > Development and Test Services".

Three service cards are visible:

- Create MediaWiki Application Environment**: Deploy MediaWiki with LB and FS. This card is highlighted with a green border.
- Deploy Linux VM**: Deploy a Linux VM on OpenStack or Amazon.
- Deploy PowerVM LPAR**: Deploy a PowerVM LPAR using TSAM.

On the right side, there are two informational boxes:

- A yellow speech bubble icon with the text: "Track progress of your submitted Self Service requests from here. [My Requests](#)".
- A blue box icon with a green arrow pointing down, with the text: "Find out if there are any tasks requiring your attention. [My Inbox](#)".



A typical scenario: create a new cloud service to deploy an application

Step 6 – End User: Interact with custom user experience

IBM SmartCloud Orchestrator

Home | Self Service | My Requests | Instances ▼ | Images & Patterns ▼ | Components ▼ | Reports ▼ | Con

My Offerings >> Submit offering



Create MediaWiki Application Environment
Deploy MediaWiki with LB and FS

Details of 'MediaWiki' pattern

Instance Name
MediaWiki-92ba8b38-de9c-4e5t

Pattern Name
MediaWiki

Data Center [] ▼ **Environment** [] ▼

Schedule Deployment

Start Date [2/5/2013] ▼ [11:56 AM] ▼ **End Date** [3/5/2013] ▼ [11:56 AM] ▼

Cancel **Next**



A typical scenario: create a new cloud service to deploy an application

Step 6 (con't) – End User: Interact with custom user experience

IBM SmartCloud Orchestrator

Home | Self Service | My Requests | Instances ▾ | Images & Patterns ▾ | Components ▾ | Reports ▾ | Conf

My Offerings >> Submit offering



Create "MediaWiki" Application Environment

Deploy a MediaWiki with load balancer and additional file system

Media Wiki Appliaction Parameters

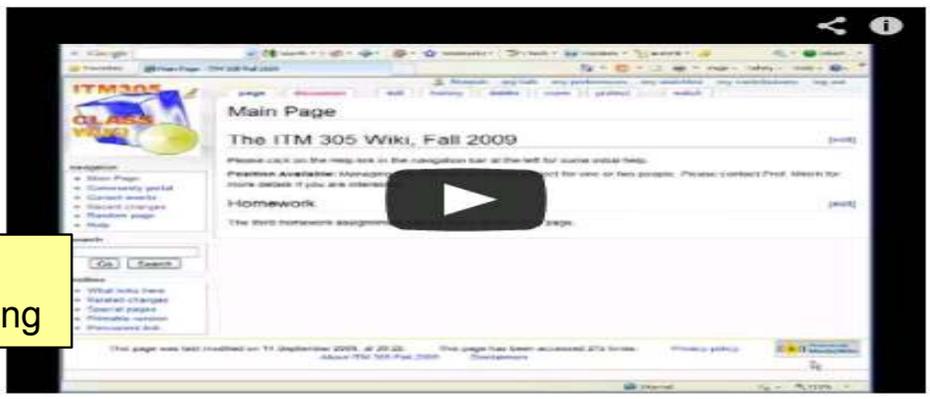


HTTP Port:

Capacity size:

Owner:

Comment:



Custom UI rendering



Cloud Marketplace

Establish cloud platform agility and value by rapidly delivering content (organic & partner ecosystem) using the AppStore model

Integrated Service Management Library
Cloud Marketplace

Find solutions:
By Provider +
By Content Type +
By Product +
By Solution Area +

What do you want to do?
E-mail us
Submit a solution
My favorites
My ISM Library profile
Show FAQs
Go to ISM Library home

Tags
Automation Extension
Automation Package

Featured solutions: 14

IBM SmartCloud Orchestrator
IBM SmartCloud Orchestrator
Network Connect and T...
TGT Bundle in Reply IB...
IBM Connectors Hyperio...

Search: [input] [Advanced] [Plus]

All | New | Updated | Popular | Top viewed | Top downloaded

Show details Filter by provider: All

Selection criteria:
Content Pack (X)
1-10 of 10 results

IBM SmartCloud Orchestrator Content Pack Documentation
Reviews: ★★★★★ Provider: IBM
Info Download Request info Subscribe

- Enable customers to rapidly discover and implement cloud solutions
- Enable business partners and ISVs to create value by adding content to IBM cloud solutions
- Enable IBM services and development to rapidly deliver & iterate on capabilities in response to changing customer requirements and integration needs
- Enable collaboration within the ecosystem to accelerate customer value creation

<https://www.ibm.com/software/brandcatalog/ismlibrary/cloudmarketplace>



Reusable Content

- Available now from the IBM Cloud Marketplace
 - Storage content pack (network attached storage)
NetApp and SONAS
 - Network content packs (firewall and load balancer integrations)
Juniper SRX content pack
F5 BigIP content pack
Netcool Configuration Manager Content Pack (load balancer and firewall integrations)
 - Problem management content packs
SmartCloud Control Desk content pack
 - Tivoli Provisioning Manager content pack
 - Opscode chef content pack
- Shipping with the product
 - Virtual System Pattern content pack
 - Infrastructure as a service content pack
- Also
 - Use chef recipes from the Opscode community
 - Use IBM Image Construction bundles on the IBM Cloud Marketplace
 - Reuse PureSystem images, pattern and scripts packages



Orchestration Action Integration Points

- Event-triggered
 - Pattern deployment process
 - Approval workflow (pre-provisioning)
 - Open port in Firewall (post-provisioning)
 - Add VM to Load Balancer (post-provisioning)
- User actions
 - Deployed VMs
 - Open Problem Report
 - Backup VM
- Self Service Offering
 - Standalone actions
 - Deploy pattern
 - Create file system
 - Invoke TSAM project



Orchestration Action – User Action Definition

IBM SmartCloud Orchestrator

Home Self Service My Requests Instances Images & Patterns Components Reports Configuration Administration

Orchestration Actions

Search... (none)

Configure an action that can be triggered either automatically or be made available to users for the selected patterns.

* Orchestration name: Problem Report

Description: Create a problem report on deployment

* Action type: User action

* Apply to: All Virtual System Patterns

Select the Business Process Manager process which fulfills this user action.

* Process: CreateTicketProcess (ServiceDesk_TK00)

If the selected process requires user interaction, specify a user interface by selecting the related Business Process Manager Human Service.

* User Interface: CreateTicketHS (ServiceDesk_TK001)

OK Cancel

Run on request for deployed VMs

Orchestration Action - User Action Invocation

The screenshot displays the IBM Smart Cloud Provisioning user interface. At the top, the navigation bar includes 'Home', 'Self Service', 'Instances', 'Images & Patterns', 'Components', 'Reports', 'Configuration', 'Administration', and 'My Inbox'. The main content area is titled 'Virtual System Instances' and shows a list of instances, with 'MediaWiki Development' selected. A modal dialog box titled 'Run an operation on this instance.' is open, displaying a list of available operations, with 'Problem Report: Create a problem report on a deployment' selected. The dialog includes 'Run' and 'Cancel' buttons. A status message at the bottom of the instance details indicates that the operation was processed successfully.

IBM Smart Cloud Provisioning cbadmin | Help | Logout

Home | Self Service | **Instances** | Images & Patterns | Components | Reports | Configuration | Administration | My Inbox

Virtual System Instances Refresh Start Stop Store Service Instance level operations Delete

Search... MediaWiki Development

MediaWiki Development ▶

MediaWiki Development

Created on: Feb 15, 2013 8:28:54 AM

From pattern: MediaWiki (2-Tier)

Using Environment profile: None provided

Updated

Current s

Access g

Snapshot

Run an operation on this instance.

Problem Report: Create a problem report on a deployment

Run Cancel

m MediaWiki Development was processed successfully.

History

Virtual

Comments: There are no comments yet

Deployed pattern

Instance action

List of orchestrations



Orchestration Action – User Action User Interface

IBM Smart Cloud Provisioning cadmin | Help | Logout

Home | Self Service | **Instances** | Images & Patterns | Components | Reports | Configuration | Administration | My Inbox

Virtual System Instances Refresh | Start | Stop | Store | Service | Instance level operations

MediaWiki Development Created on: Feb 15, 2013 8:28:54 AM

Search...

MediaWiki Development

Please fill in the required parameters.

Problem Report

Subject

Type

Priority

Severity

Date when the problem occurred

Problem description

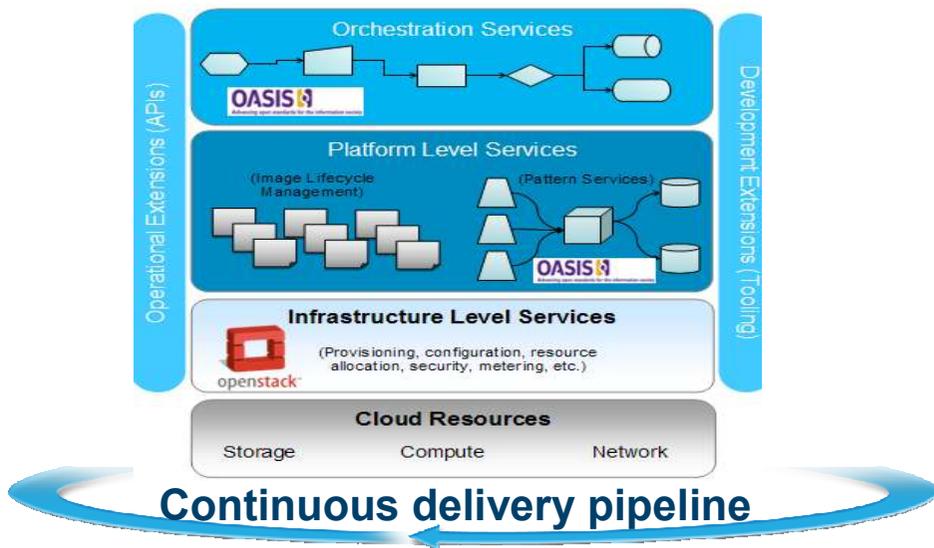
Submit

UI for orchestration

velopment was processed successfully.

Summary

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 SmartCloud Continuous Delivery to provide extended DevOps platform

Reduce time-to-market to deliver new business services

Improve administrator productivity

Pulse

Want to know more?

Visit the SmartCloud Orchestrator web site at <http://ibm.co/CPandO>

Thanks !

Welcome to the Cloud Provisioning and Orchestration Development Collaboration Community.
This sub-community of the Cloud/Virtualization Management community is for people interested in getting early access to and providing feedback on cloud provisioning and orchestration technologies.
Get engaged in evolving cloud provisioning and orchestration today!

- Join this group to ensure you will receive community mailings that provide important announcements and news once in a while. (→ "Join Group" button on the top right of this page)
- For feedback, questions, suggestions and comments on this program please send → email to our feedback address.

References in context to IBM products, software, programs, services or associated technologies do not imply that they will be available in all countries in which IBM operates. Content, including any plans contained in content, may change at any time at IBM's sole discretion, based on market opportunities or other factors, and is not intended to be a commitment to future content, including product or feature availability, in any way. Statements regarding IBM's future direction or intent are subject to change or withdrawal without notice and represent goals and objectives only. Please refer to the developer/Works terms of use for more information.

What you can do

-  **Use the hosted beta system**
Access a hosted system installed and configured with the latest evaluation code.
→ More ...
-  **Download beta code**
Download and install the latest beta code for evaluation in your own environment.
→ More ...
-  **Attend a live session**
See demos and designs, explore prototype UIs, share your feedback and discuss in live meetings with development.
→ More ...
-  **Comment and discuss**
Get engaged in existing discussion threads or start new ones.
→ More ...
-  **Watch videos and explore capabilities in the works**
Review brief feature demos at your leisure and provide feedback with a few mouse-clicks.
→ More ...