

IBM Open Cloud Architecture



Agenda

- Introduction
- IBM Open Cloud Architecture
- Softlayer an IBM Company
- Summary
- Backup
 - Managing SaaS Environments with SmartCloud Orchestrator and Service Engage – the Novatec Example

IBM

We are at an inflection point in the industry

Technology is increasingly the most critical driver for business growth

The emergence of **big data**, **social**, **mobile**, **cloud** and **analytics** are fundamentally changing how we live, work and interact

Digital transformation forces



67% of global consumers

want to use mobile devices to complete retail transactions

1 out of every 7

minutes spent online is spent on social network

80% of new apps

will be distributed or deployed via the cloud

30%+ of Asia's GDP

is expected to be handled through mobile money transfers by 2015

40% of people

socialize more online than they do face-to-face

1/3 of consumer data

will be stored in the cloud by 2016

Some Use Cases



Expectations on how Business and IT want to interact with systems and applications are driving disruptive technologies



The IT landscape is changing due to these dynamics



Organizations must embrace new business models and disruptive technologies to be competitive, meet business need, and innovate

Systems of Record



Optimize

Focus on Operational Costs

- Consolidation and modernization
- Operations Automation
- Risk and compliance Management
- Manual policy to analytics driven optimization

Drives Need

Drives Investment

Business Models

- - MSPs
 - Brokers

Systems of Engagement



Innovate

Focus on Speed and Agility

- Assemble solutions from verified components and services
- Fast deployment and redeployment
- Agile to DevOps model
- User first delivery model

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IBM Open Cloud Platform Architecture



API Economy







http://ibm.com/cloud and click on Marketplace

- Comprehensive catalog supported by multi-billion dollar investments:
 - Biz (line of business) features IBM's world class SaaS portfolio
 - Dev (developer) supports traditional application styles (patterns) and new application styles (composable services/Bluemix)
 - **Ops** (IT operations) features Management Services
- Purpose built Solutions (e.g., Mobile, DevOps) help you navigate the catalog
- Enables IBM customers to discover and experiment with a broad portfolio of offerings in a consistent way

Developer Centric Platform, Marketplace & Services in a Cloud Operating Environment

Value Capability Fast, automated composition of services OPEN ecosystem of composable services Repeatable patterns-of-expertise Optimized workload deployment Integration patterns with systems of record cloudfoundry.org **API & Integration** Traditional Cloud **Services & Composition Patterns** Services **Workloads** Operating Environment Services dev mobile middleware security ops datastore Software as a Service **Platform** as dōjō W3C a Service Workload definition, Optimization, & Orchestration Software Infrastructure as a Service **Resource Abstraction & Optimization** Defined Environment Software Defined Storage Networking

Smart**Cloud**

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Evolving IaaS to a More Dynamic, Analytics Based Software Defined Environment

Value





What is a pattern?

- A pattern describes infrastructure and application components required to deliver a Cloud Service
- A pattern is a single point of control to deploy, manage and scale a Cloud Service
- Examples for pattern components are definitions of network/storage elements, image, software binaries, install scripts, chef recipes etc.
- Also known across the industry as:
 - Templates
 - Heat/HOT, Amazon CloudFormation
 - ServerTemplate
 - Rightscale
 - Stack
 - Rackspace, Amazon CFN (for a template instance)
- Think about Patterns as "WhiteBox PaaS", where you get insights into all components being deployed, e.g. definition of application topology, including scaling. Applications built on PaaS offerings like BlueMix are "BlackBox PaaS", where you do not get any insights in the underlying infrastructure/middleware topology.





Enable **portability** and **automatic management** of cloud applications across clouds, thus expanding customer **choice**, improving **reliability**, and **reducing cost** and **time-to-value**.

The TOSCA standard...

provides the <u>Interoperable Description</u> and <u>Solution Portability</u> for:

Applications, their component Services and Artifacts, including *Relationships* of these services



- Platform and Infrastructure services
- Management and Operational behavior of these services

Contributing Members



is an <u>approved OASIS Standard</u> since Nov. 25th 2013:

http://docs.oasis-open.org/tosca/TOSCA/v1.0/os/TOSCA-v1.0-os.pdf

OASIS Interop Successful Demonstration of TOSCA Portability

IBM-Lead, OASIS Sponsored Multi-Company Interop. Demo

Slides, videos: https://www.oasis-open.org/events/cloud/2013/toscademo

Private demos of SAP CRM, ERP and Mobile application portability



October 15-16, Luxembourg



Different partner cloud orchestration engines & tools interpreting and <u>seamlessly deploying</u>, running and monitoring the same TOSCA service templates on <u>different clouds</u>.



About OpenStack Heat

- A pattern-based orchestration engine on-top of OpenStack APIs
- Consumes templates that declaratively describe a workload consisting of a set of OpenStack resources (e.g. servers, storage volumes, networks)
- Instantiates and manages instances of those workloads ("stacks") by orchestrating over the respective OpenStack APIs



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TOSCA and Openstack HOT Alignment





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Softlayer – an IBM Company



Acquired by IBM in July 2013

13 Data Centers globally, aggressive expansion





Bare-Metal / Cloud Servers / Private Clouds Common Management Interface Deployed on-demand and provisioned in real-time



Object Storage

Store a large amount of unstructured data. Highly available with built in search and CDN integration.

Block Storage

Multiple options. Local / NAS / iSCSi Choose the right option based on cost and speed needed

Triple-network architecture



High-performance public network with transit from multiple tier-1 carriers

Secure OOB management via VPN

Private network for intra-application and inter-facility communications,

access to shared services

Native IPv6 support

Complete suite of network services

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- IBM
- Mobility, big data, analytics, social collaboration and cloud are creating a new wave of business opportunities and IT challenges
- IBM Open Cloud Architecture supporting rapid composable application development and continuous delivery in these environments is build on these three layers:
 - API Economy exposing SaaS Services through web based APIs
 - Cloud Operating Environment (Bluemix) allowing rapid application development and services composition ("Blackbox PaaS")
 - Software Defined Environment enabling rapid and continuous delivery of diverse set of workloads on a programmable heterogeneous infrastructure
- IBM Softlayer is an IaaS Cloud with Global Presence
- Cloud Content (aka Patterns) describe how to deploy, manage and scale Cloud Service Instances ("Whitebox PaaS")
 - IBM's products will converge on OpenStack Heat as the unified IBM pattern engine
 - IBM will converge on TOSCA/HOT as the mechanism for interop across workload definitions

Thank You!

... If you are interested in more ... grab me in one of the breaks...



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B2B SaaS use case and the solution to it



Bringing IT together

Sauromair does

- Advanced configuration for a large set of application and middleware components on many OSes
- Instance visualization and management
- Update handling for deployed components

Sautomait does not

- Deploy and manage cloud infrastructure
- Overall orchestration and integration with existing enterprise environments





Bringing IT together

- Does not focus on deployment details for software components, but
- Provides a framework for plugging in orchestration content using different technologies
- Overall orchestration across software and infrastructure

IBMSmartCloud Orchestrator

- Deploy and manage cloud infrastructure
- Support for various infrastructure components and platforms
- Support for on prem and hybrid cloud deployments



Bringing IT together



Pulse2014

Basic deployment of "sprIT" aaS





Gaining application performance insight ... in 3 steps



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Open Pattern as a Service – a thought experiment

... ServiceEngage would offer a simple solution to build and test existing and new patterns?

... a service owner could just use ServiceEngage to import a pattern comprising infrastructure and software and deploy it to various, hybrid clouds?

... a service designer could drag and drop standard server-, storage-, network- and middleware building blocks onto a canvas, combine them and add his own software and configuration scripts in less than an hour?

... ISVs could upload standard pattern building blocks that can then be reused by customers, partners and IBM teams

