IBM SolutionsConnect 2013
Turning Opportunity into Outcomes.

Cloud Computing Reference Patterns and Open Standards within IBM Cloud Solutions

Kristof Stroobants

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Kristof Stroobants

Service Management Solution Architect
IBM Belgium
+32 474 99 19 66
kristof.stroobants@be.ibm.com
http://be.linkedin.com/in/kristofstroobants/

Agenda

1. Open Standards – Open Stack – IBM
2. Cloud Enabled DataCenter: Reference Pattern
3. SmartCloud Foundation Solutions in a Nutshell
4. Q&A

A history of collaborative participation

IBM contributes to the standards & open source imperatives across the market as well as developing standards-based solutions

IBM recognizes there are different types of standards & open source development organizations, each contributing to a robust ICT landscape. We participate in discussions at all levels, from member to board member. We contribute our insight on a range of topics, from global Accessibility standards policy to HTML5 to and Open Cloud. Wherever we engage, our commitment to open collaboration and excellence remains constant.

IBM

DIGITALEUROPE

Openforum europe
open, competitive choice for IT users

ECIS European Committee for Interoperable Systems

ITI Information Technology Industry Council
Leading Policy for the Innovation Economy

USITO United States Information Technology Office

European Internet Foundation
Political Leadership for Network Society

Standards Policy Development

IMS Innovation Adoption Learning

openstack

AIAG Automotive Industry Action Group

opensocial

tmforum

arts

XBRL

W3C

DMTF

OMG WE SET THE STANDARD

OASIS
Advancing open standards for the information society

Standards & Open Source Development

IETF

IEEE Advancing Technology for Humanity

ISO/IEC JTC 1

ISO International Organization for Standardization

International Engineering Consortium
Catalyzing positive change in the Industry and University Communities
www.iec.org

Global Standards Harmonization

Open Standards in a Cloud Concept

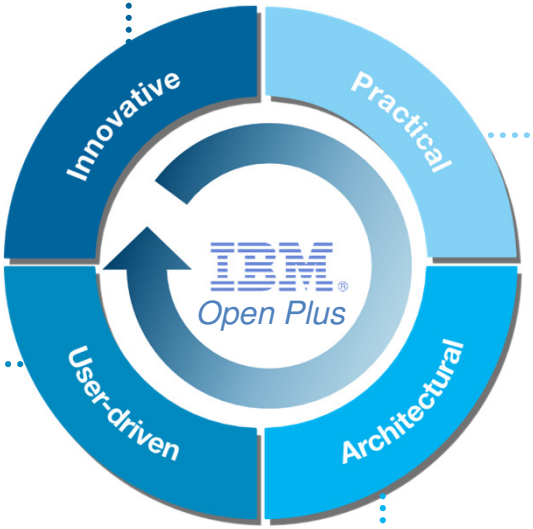
Innovative

W3C
Linked Data (Leader)
OASIS
Topology & Orchestration Specification for Cloud Apps (Leader)
Open-services.net
Open Services for Lifecycle Collaboration (Leader)
OpenSocial Foundation
OpenSocial (Leader)

Lifecycle & DevOps

Practical

OpenStack
OpenStack Open Source Reference (Leader)
Apache Software Foundation
Apache Shindig



User-driven

Cloud Standards Customer Council
SLA Working Group (Leader)
W3C
Social Business Community Group (Leader)

Architectural

The Open Group
Cloud Computing Reference Architecture (Leader)
ISO SC38
Cloud Computing Reference Architecture (Leader)

Ecosystem: Building real-world use cases

The Cloud Standards Customer Council (CSCC) is the premier open, end-user advocacy group for cloud standards, interoperability & best practices.

400+
Organizations participating

- Providing customer-lead guidance to the multiple cloud standards & open source defining bodies
- Establishing criteria for interoperable cloud computing that address customer pain points

"CSCC forms new Security Working Group"
- Established Feb 2012; Co-chairs: The Kroger Co. & Boeing

"CSCC forms new SLA Working Group"
- Established Feb 2012; Co-chairs: Boeing & IBM

2011 Deliverables	2012 Deliverables
Practical Guide to Cloud	Practical Guide to Cloud SLAs
Cloud Computing Use Cases	Security for Cloud Computing

Projected 2013 Projects

- Use Cases: Entry. Provisioning, Orchestration & Continuous Delivery
- Gap Analysis: DMTF CIMI (IaaS API) & OASIS TOSCA
- Banking, Healthcare & Government working groups

Source: http://cloud-council.org

OpenStack Foundation: Exponential Ecosystem Growth

OpenStack is a global collaboration of developers & cloud computing technologists working to produce an ***ubiquitous Infrastructure as a Service (IaaS) open source*** cloud computing platform for public & private clouds.

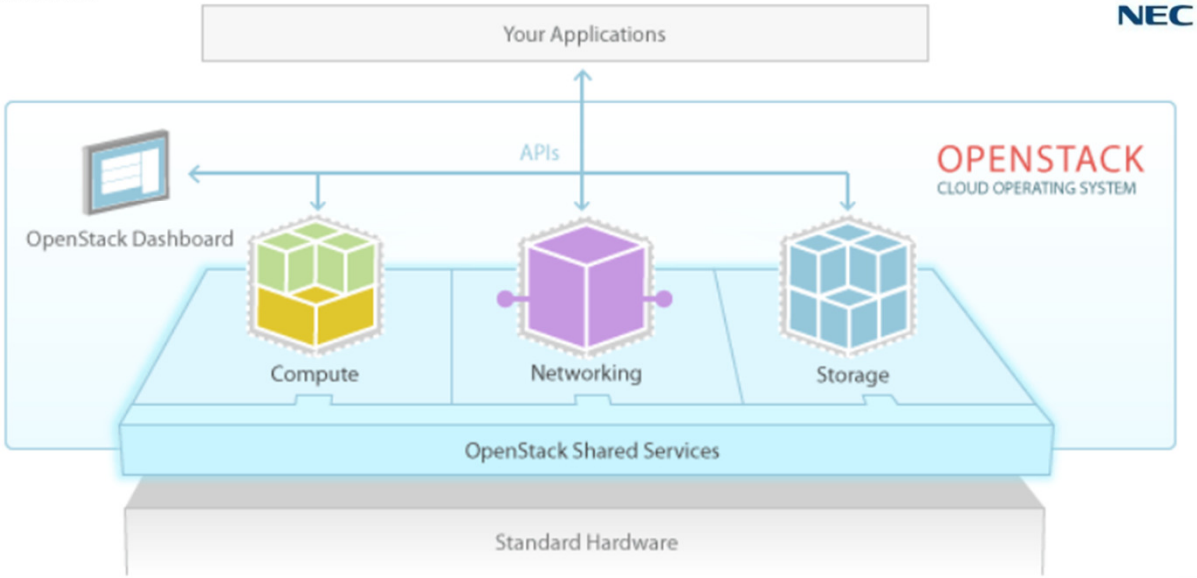
Platinum Sponsors

nebula, rackspace, redhat, SUSE, IBM, hp, at&t, ubuntu

April 2012	*Exponential growth in 1 YR*	April 2013
150 Contributors		859 Contributors
2600 Individuals		8900+ Individuals

Gold Sponsors

NetApp, CISCO, YAHOO!, DreamHost, intel, DELL, MIRANTIS, MORPHLABS, vmware, NEC, Piston, cloudscaling



OpenStack Design Guidelines …

„… delivering essential infrastructure on an available, scalable, elastic control panel“

1. Scalability and elasticity are our main goals
2. Any feature that limits our main goals must be optional
3. Everything should be asynchronous
   - If you can't do something asynchronously, see #2
4. All required components must be horizontally scalable
5. Always use shared nothing (SN) architecture or *sharding*
   - If you can't share nothing/*shard*, see #2
6. Distribute everything
   - Especially logic. Move logic to where state naturally exists.
7. Accept eventual consistency and use it where it is appropriate.
8. Test everything.
   - We require tests with submitted code. (We will help you if you need it)

Source: http://wiki.OpenStack.org/BasicDesignTenets

Moving towards interoperable workloads

OASIS TOSCA

The Topology & Orchestration Specification for Cloud Applications (TOSCA) will enable compose once & play anywhere management of cloud infrastructure topologies.

TOSCA provides:

- A structural model for cloud services, components & relationships
- A process model for build & management plans
- A packaging specification for cloud services & related artifacts

http://oasis-open.org/committees/tosca

Organizations have a choice to make…

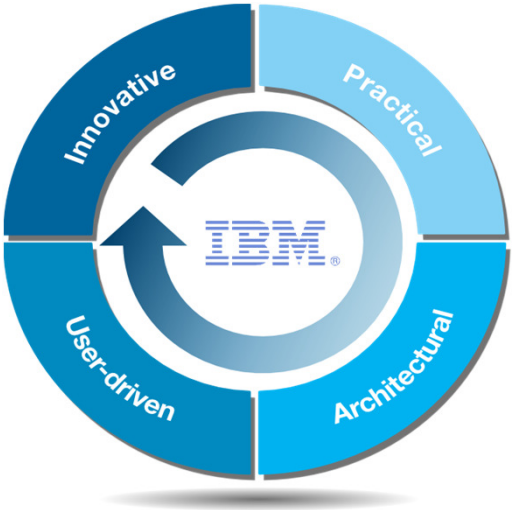
Open Source Only

'Some Assembly Required'

Proprietary

Vendor Lock-in Assured

Open "Plus"



Enterprise-ready out of the box

PayPal Uses OpenStack

PayPal™

- Processed more than $26,000 in mobile payments every minute in 2012
- OpenStack runs thousands of VMs to support their self-service developer model
- Internal team manages deployment and operations, using OpenStack Compute, Storage & Shared Services

"We needed agility without sacrificing availability. By leveraging the collective innovation of the OpenStack community, we can develop and grow our private cloud much quicker without having to reinvent anything."

Saran Mandair, senior director of PayPal infrastructure engineering

The Register®
Biting the hand that feeds IT

Original URL: http://www.theregister.co.uk/2013/03/28/paypal_openstack/

Paypal struggles free of VMware lock-in, goes with OpenStack

Deed heeds its need for speed

By Gavin Clarke

Posted in Cloud, 28th March 2013 10:59 GMT

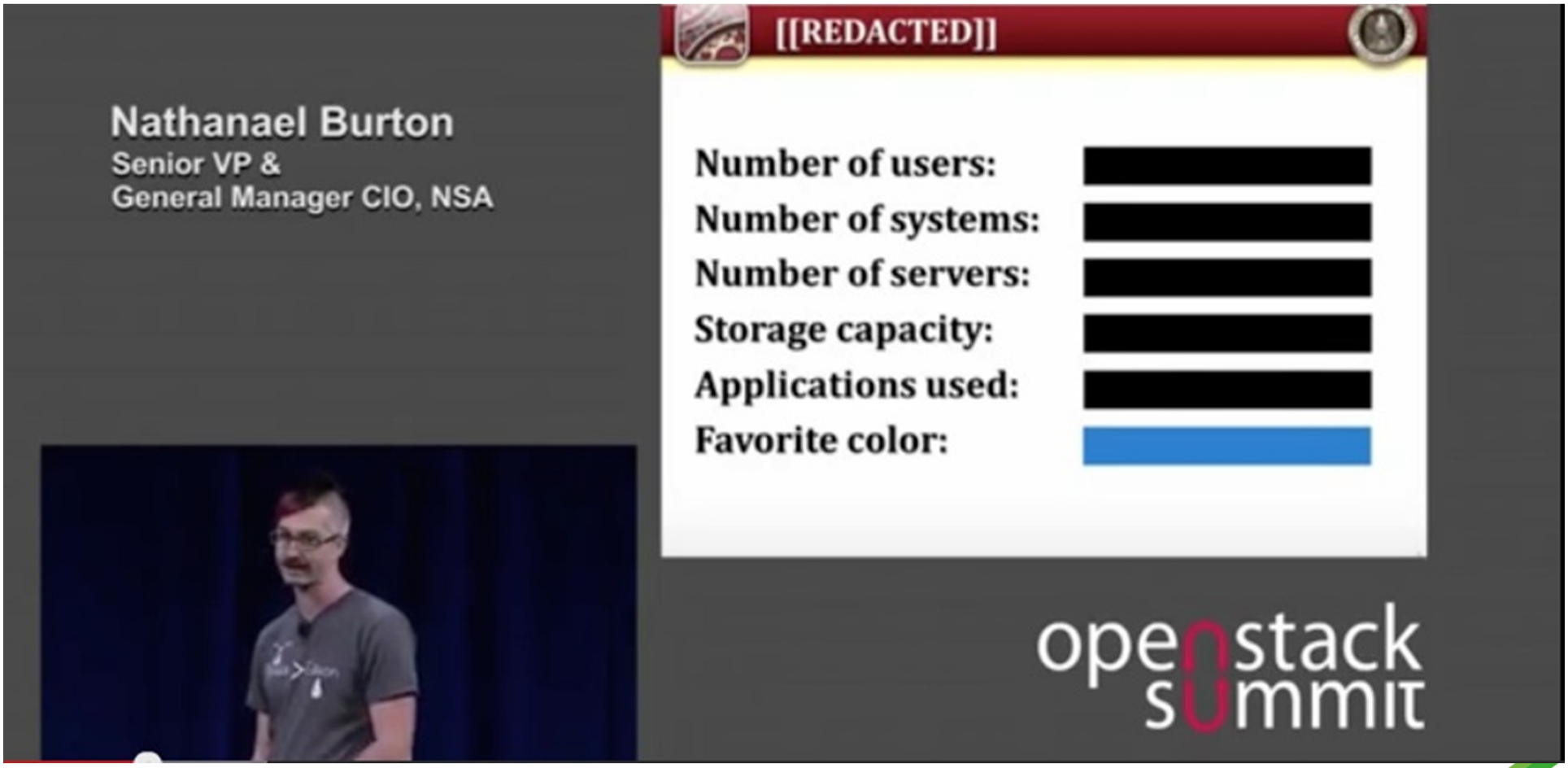
Forbes · New Posts · Most Popular · Lists

Reuven Cohen, Contributor

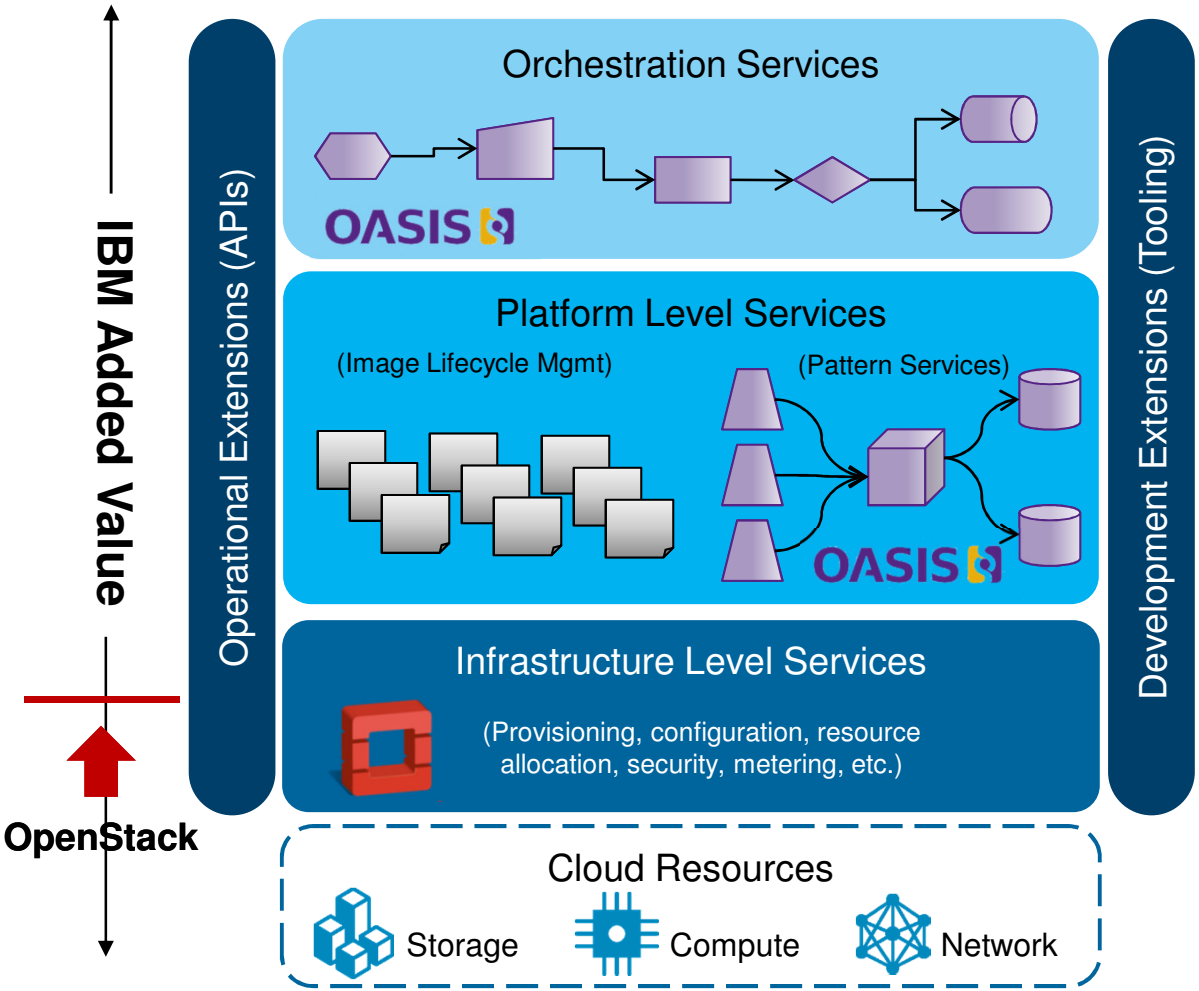
Paypal To Drop VMware From 80,000 Servers and Replace It With OpenStack (Updated)

NSA also Uses OpenStack

NSA Secrets Revealed….



OpenStack is not enough: Add Value from IBM's common cloud management services



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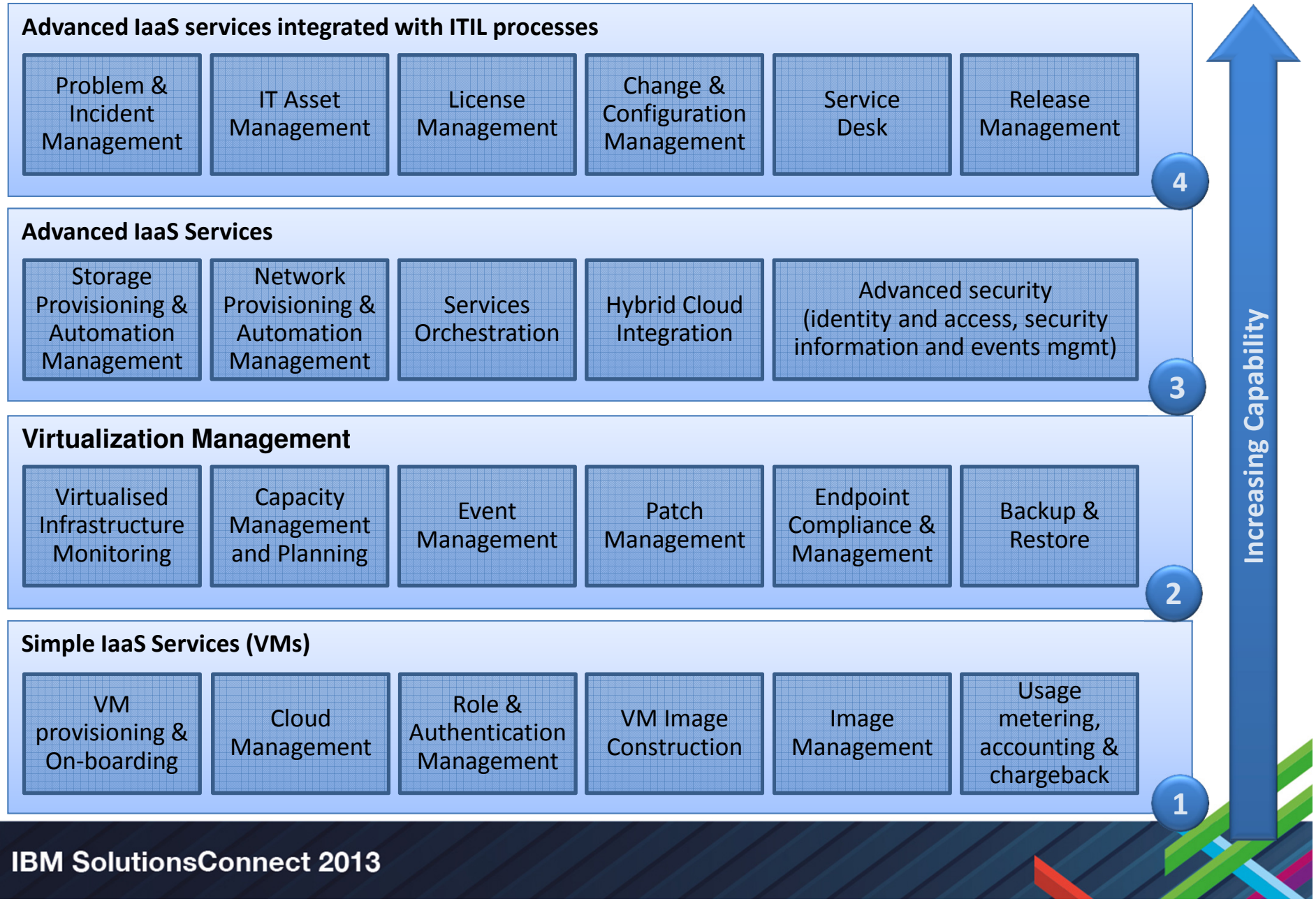
Cloud Enabled DataCenter Capabilities (aka micro patterns)



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Cloud Computing: Beyond resource virtualization, enabling orchestration of complex services across heterogenous environments…

OpenCORE

openstack

Open Service Lifecycle Collaboration

OASIS

ISO JTC 1 IEC INFORMATION TECHNOLOGY STANDARDS

… by leveraging an Evolutionary Approach

Simple 3 tier structure
… above and beyond
OpenStack

Legend

- SmartCloud Foundation Offering
- Factory Integrated & Optimized by IBM

SmartCloud Orchestrator

Orchestrate Services across multiple environments and domains

SmartCloud Provisioning
Automate Optimized Workloads

SmartCloud Provisioning
Automate Optimized Workloads

Automate Optimized Workloads

Customer *integrated* hardware

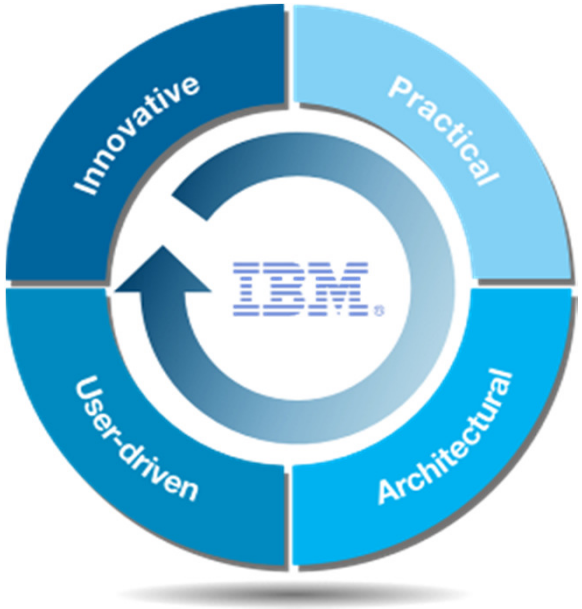
PureFlex System

PureApplication System

DMTF CIMI & OVF | OASIS STANDARD TOSCA | openstack | ISO International Organization for Standardization | CCRA THE Open GROUP | OSLC | Cloud Standards Customer Council

Key take-aways

1. IBM contributes and invests in **Open Standards**, including Open Stack
2. Open Stack, TOSCA, OSLC are few of the Open Standards **supporting the Foundation** of IBM SmartCloud Solutions
3. YOU have the choice for *"Open Plus"*!



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Service Management Solution Architect
IBM Belgium
+32 474 99 19 66
kristof.stroobants@be.ibm.com
http://be.linkedin.com/in/kristofstroobants/