Open Data Center Standards
Key Opportunities and Challenges

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Open Data Center Standards

Cloud 2015 Vision & Open Data Center Alliance - Opportunities

Open Data Center Standards

Key Challenges

By 2015…

More Users

>1 Billion More

Netizen's

More Devices

>15 Billion

Connected Devices

More Data

>1 Zetabyte

Internet Traffic

1. IDC "Server Workloads Forecast" 2009. 2.IDC "The Internet Reaches Late Adolescence" Dec 2009, extrapolation by Intel for 2015 2.ECG "Worldwide Device Estimates Year 2020 - Intel One Smart Network Work" forecast 3. Source: http://www.cisco.com/assets/cdc_content_elements/networking_solutions/service_provider/visual_networking_ip_traffic_chart.html extrapolated to 2015

Introducing: Cloud 2015 Vision

FEDERATED
Share data securely across public and private clouds

AUTOMATED
IT can focus more on innovation and less on management

CLIENT AWARE
Optimizing services based on device capability

Desktops | Laptops | Netbooks | Personal Devices | Smartphones | Smart TVs | Embedded

Catalyst for Change

OPEN DATA CENTER ALLIANCE

Open & Interoperable Solutions Essential
Open Data Center Opportunities

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Intel® Cloud Builders: Proven Solutions

20 Reference Architectures Available Today: Intel.com/cloudbuilders

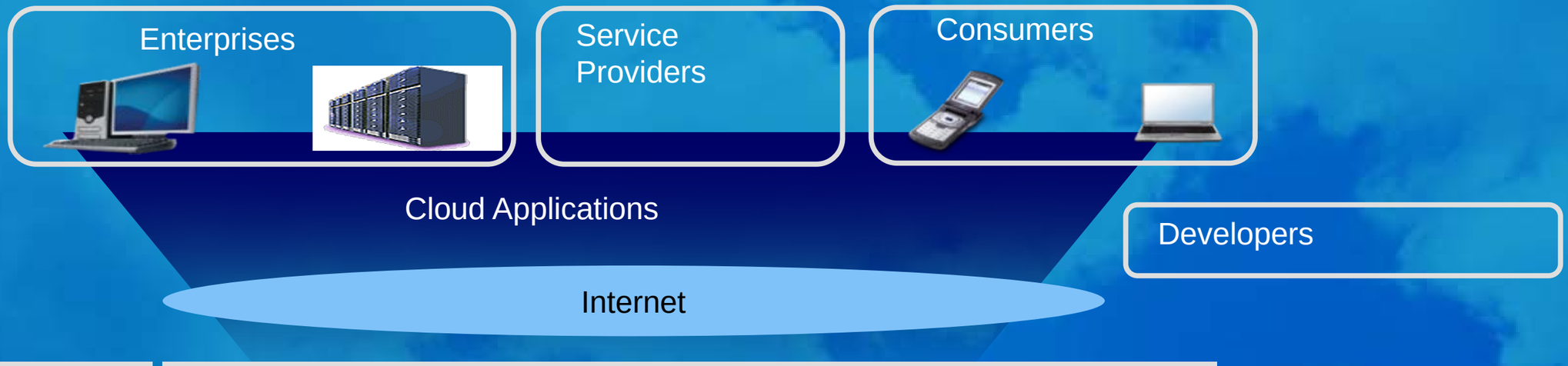
- Joyent SmartDataCenter*
- Microsoft System Center VM Manager Self-Service Portal 2.0*
- Novell* Cloud Manager
- Parallels* Elastic IT Solution Developer Cloud
- Red Hat Cloud Foundations*
- Ubuntu Enterprise Cloud*
- Univa UD*
- VMware VCloud* Director

Coming Soon:

FUJITSU HCL HUAWEI HyTrust Virtualization Under Control inspur 浪潮 kraftway lenovo nimbula 宝德 PowerLeader TARAX

* Other names and brands may be claimed as the property of others.

Cloud Delivery Models



Mgmt

Software as a Service (SaaS)

Platform as a Service (PaaS)

Infrastructure as a Service (IaaS)

Compute | Storage | Networking

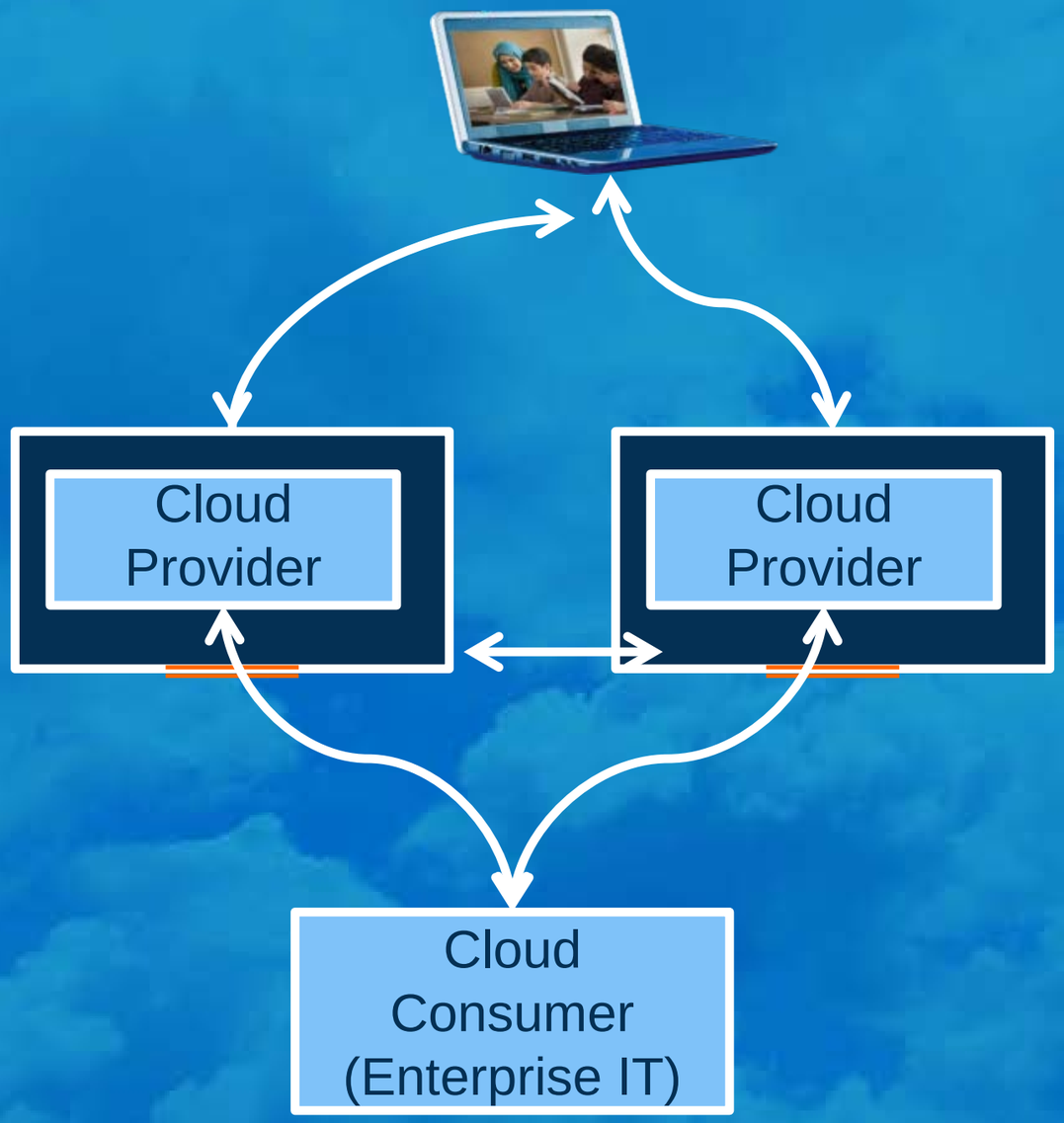
Software Kernel (OS, VMM)

Firmware, HW

Focus

Focus on the standards requirements for IaaS.

High level standards framework



Standards need to exist on the following

- Device mgmt
- Data Centers (mgmt, audit, compliance)
- Federation
- Service management
- Client aware
- Extending trust relationships

Why

- Client aware
- Consistent management
- Workload portability
- Open API’s
- Avoid vendor lock-in
- Support for consistent audit/compliance

Challenges & Requirements of a Cloud Architecture

Simplified

Simplify data center operations to reduce cables, complexity and cost

Efficient

Optimizing technologies to decrease energy, human and physical asset consumption

Secure

Reduce the risk, increase the compliance and manage hybrid usage models

Manageability

Optimizing energy consumption, simplifying and securing your Data Center infrastructure necessary to evolve to next generation datacenters

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Summary

Cloud 2015 Vision & Open Data Center Alliance

Great Opportunities

Open Data Center Standards

Framework focus on IaaS level

Challenges: Manageability for Efficient, Simplified, and Secure


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Backup

Cloud Standards: Additional Information

- DMTF : Distributed Management Task Force
  - Client and server management standards
  - www.dmtf.org/cloud
- SNIA : Storage Networking Industry Association
  - Cloud Storage Initiative - CDMI (Cloud Data Management Interface)
  - http://www.snia.org/forums/csi/
- CSA: Cloud Security Alliance
  - Best practices for cloud security
  - http://www.cloudsecurityalliance.org/
- OGF: Open Grid Forum
  - Open cloud interface
  - http://www.ogf.org/
- TM Forum
  - Enterprise Cloud Leadership Council
  - http://www.tmforum.org/
- OASIS
  - http://www.oasis-open.org/