



Cloud Computing Track Results

February 18, 2009

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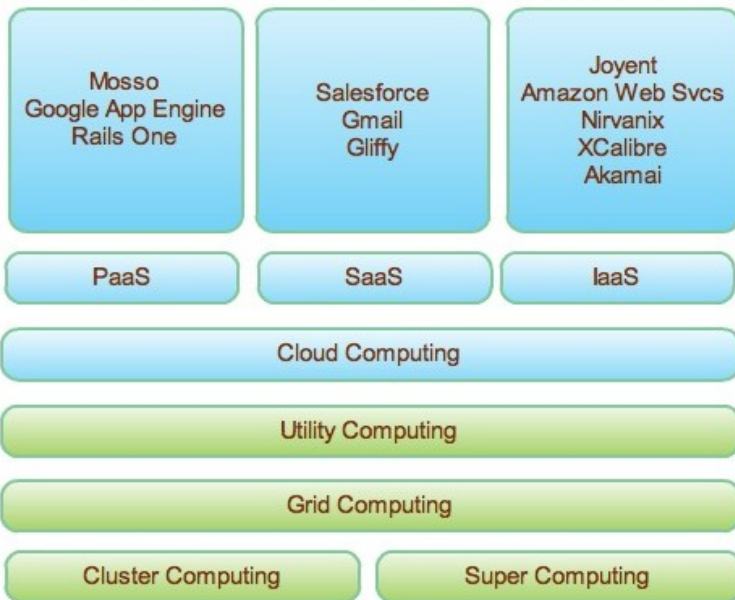
Cloud Intro



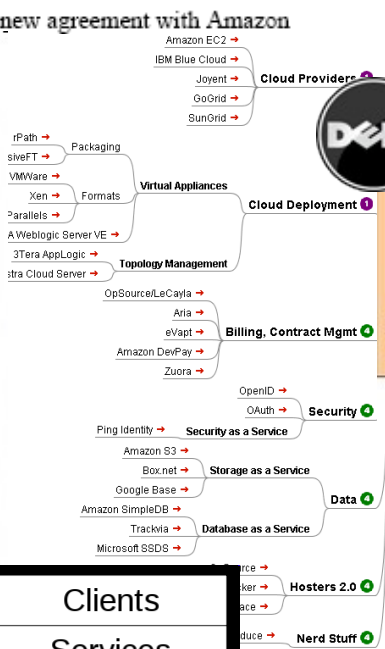
IBM to Deliver Software via Cloud Computing With Amazon Web Services

ARMONK, NY - 11 Feb 2009: IBM (NYSE: IBM) today announced a new agreement with Amazon

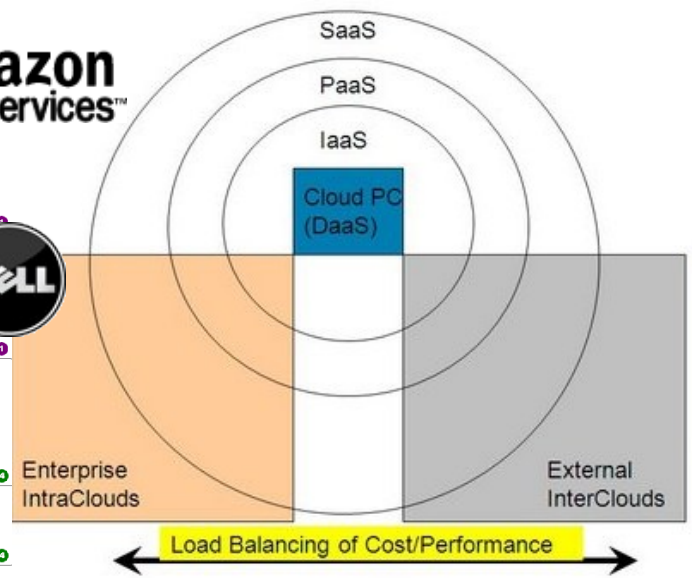
Cloud Computing



1.0 In blue you have what is lately called Cloud Computing. In green, some of the underlying work done that led to Cloud Computing. At the top are examples of each XaaS type.

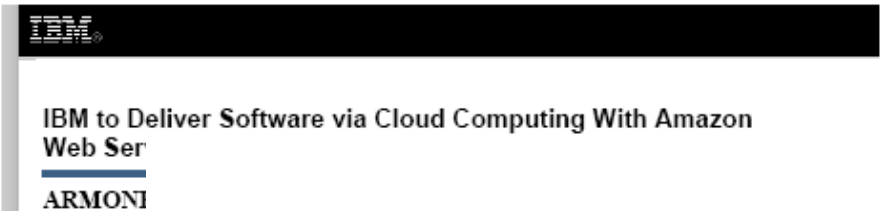


The Clouds Space



Cloud Intro

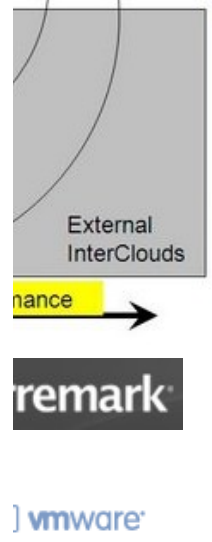
Using our 'cloud' mail service to put this deck together!



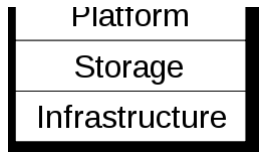
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- Moss
- Google App
- Rails C
- PaaS
- Cluste



1.0 In blue you have what is lately called Cloud Computing. In green, some of the underlying work done that led to Cloud Computing. At the top are examples of each XaaS type.



Track Discussion

- This group is responsible for determining the major areas that will help a data center owner / operator prepare for offering or consuming cloud technologies/services.
- How can cloud vendors assist the data center owner / operator in managing / evaluating / adopting cloud offerings?

What do we want from the cloud?

- Incremental capacity – ‘burst’, ‘sudden expansion’, ‘variable’, ‘performance based – meeting the SLA’
- Reduce capacity just as easily
- Lower cost IT – and pay just for what you use
- Technical Skills gap
- New startup can reduce time to market
- Address in-house inefficiencies & Sustainability objectives
- Arbitrage different service providers

..... and it doesn't have to mean going outside to do it!

Different Perspectives on Cloud

- Data Center/Facilities Manager
- Cloud Service Provider
 - > (External or Internal Cloud Provider)
- Cloud User
- Security/Information Risk Manager

...and other roles yet to be determined

Key Areas of Concern

- Service Description & Mobility of Workload
- Can Cloud technologies solve a problem that you can't measure?

- Security
- Confidentiality/privacy

- Availability tiering for the whole 'stack'
- Capacity Management
- Cloud Services Costs

- Provisioning
- Configuration Management
- Reporting Abilities

- Governance of 'invest' decisions in services
- Technology architecture governance

- Chargeback / allocation of costs

Top Take-Aways

What are the initial cloud-related areas you should focus on, irrespective of which role you play?

- **Service Description**

- > How do I compare services I might want to pilot? How do I migrate between offerings?

- **Technology Governance**

- > Can anyone with a company credit card buy cloud services?

- **Costs**

- > Do I understand my internal costs well enough to bake them off against cloud services?

- **Security / Data Governance**

- > How do I prevent confidential data from entering the cloud by mistake?

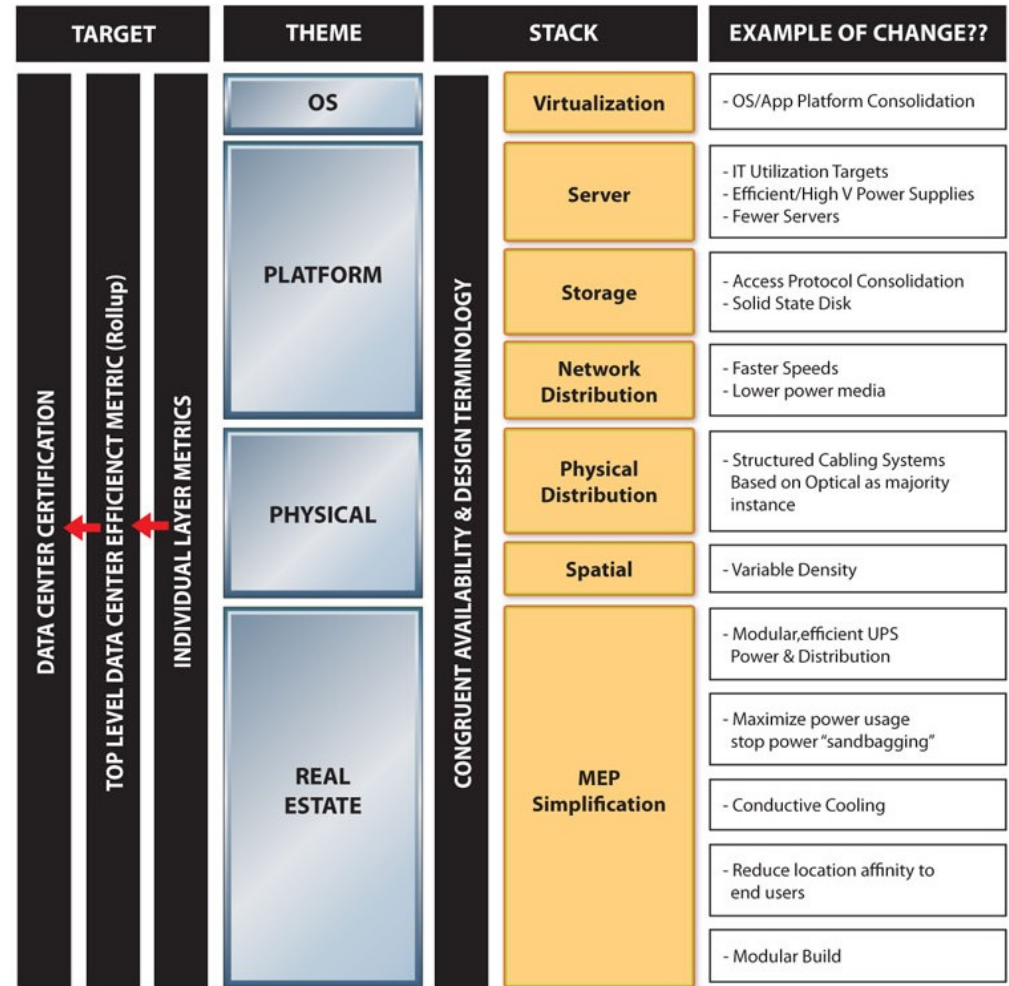
- **'Full data center stack' view of architecture**

- > Cloud offerings cannot be constructed in traditional technology & facilities stovepipes.

Standardized Data Center Stack

- Cloud drives need for change in data center architecture.
- Flexibility
- Modularity
- Support of diverging technologies
- Rapid provisioning
- Data Center Pulse needs to be the datacenter advocate up and down the stack

Standardized Data Center Stack Proposal
Draft 1 - February 18, 2009





Appendix

Datacenter Facilities Manager

- **Security**
 - > Changing responsibilities for external customer processes and data – not just your own data.
- **Security**
 - > Inherent consolidation from cloud (multi-tenant, consolidated workloads) shrinks the fault domain – requires additional physical controls?
- **Tiering**
 - > Data center cannot be ‘workload agnostic’ – you need to understand IT architecture assumptions on your resilient dc architecture.
- **Capacity Management**
 - > Cloud will consume from many, increasingly divergent technologies and provisioning cycle will decrease – your DC architecture must be flexible, reconfigurable!

Datacenter Facilities Manager

- **Chargeback**
 - > More sophisticated, detailed billing data required from the data center?
- **Cost**
 - > Must be willing to give up 'bulletproofing' the data center in all cases to get to lower cost
- **Technology governance**
 - > 'trust' others in the stack to make up for less resilience in the 'cloud' data center
- **Config management**
 - > Must be able to 'devirtualize the virtualized'

Cloud Services Manager (internal/external)

- **Service Description**
 - > To include performance, vendor-independent declarative specification/framework for service capabilities, extensible by the vendor for unique extensions
- **Security/Privacy**
 - > Need to be able to publish and adhere to pre-advertised secure configurations for a given industry-standard security level.
- **Tiering**
 - > Advocate for industry-standard availability tiers for 'whole stack' Capacity Management – Making it Look Elastic When It Isn't
- **Chargeback**

Cloud Services Manager (internal/external)

- Cost
 - > Must be a compelling pricepoint and structure (pay as you go etc) against the service description
- Config mgt
 - > Provide services that offer Cloud users incentives for significant payback (e.g. adherence to rigid standardization, location independence, performance reduction)

Cloud User

- **Service Description**
 - > Need to 'qualify' my application (based on a well-defined description) against cloud services to ascertain ability to migrate/adopt.
- **Security**
 - > Have to map your data to industry-standard security classes and check requests for new services for compliance before binding
- **Capacity Management**
 - > How is your provider making the inelastic look elastic?
- **Chargeback**
 - > If don't allocate, you now have to (shared bandwidth, more exact billing); if you do, can you do apples/apples?

Cloud User

- **Cost**
 - > Must be willing to accept standardization against a well-defined service structure in return for costs benefits.
- **Config Management**
 - > Knowing where to find your workload...
- **Reporting**
 - > Am I getting out of the cloud what I thought I was getting (quantities, services, security, sustainability etc etc)
- **Technology governance**
 - > Need to have established process for vetting and approving invest/divest decisions in services.

Security/Information Risk Manager

- **Security**
 - > How do you easily check compliance with my security model/policies?
- **Confidentiality**
 - > How do I prevent the mismatch of confidentiality level and data sensitivity when sourcing from the cloud? How do I get industry standards in describing data sensitivity (vs what I have in my own risk policy)?
- **Privileged user access**
 - > Who has 'root' to our data?
- **Data location**
 - > Can you constrain where your data is placed (in country requirements)
- **Encryption**
 - > Strong encryption available with universally-agreed key management
- **Forensics support for investigations key**

What Now?

- Next 2 weeks
 - > Publish track findings on datacenterpulse.org
 - > Poll for constituents
 - > Establish who DCP is representing
 - > Look to improve findings by online discussion
- Share with ??????????????