

CLOUD COMPUTING AND M4D

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Deployment Model Based Cloud Variants

- Following are common
 - Public
 - Private
 - Community
 - Hybrid
- A variant from above list can offer any service model variant (e.g. IaaS, PaaS or SaaS)

Public Cloud

- The cloud services are offered to general public for a subscription
 - Services are easy and fast to obtain
- Leverages economies of scale
 - Lowers the costs for consumers
 - Optimization of services due to dedicated focus

Public Cloud

- Why would you use public cloud services:
 - Mainly because it lets you focus on delivering differentiating business value
 - Hardware and other infrastructure managed by cloud provider → **Reduces cost and effort**
 - On-demand processing power, storage, etc. → **Easy scalability**
 - Self service eliminates procurement overheads → **Improved time-to-market for customers**
 - Pay as you go → **No wasted resources because you pay for what you use**

Public Cloud Vendors

- Amazon Web Services
 - Core infrastructural services
 - EC2 for compute, S3 and EBS for storage, Route 53 for networking etc.
 - Specialized services
 - Databases (RDS, SimpleDB etc.), CloudWatch for monitoring, SQS for queuing etc.
- Rackspace
 - Core infrastructural services
 - Service for compute, storage and networking
 - Specialized services
 - Monitoring, load balancers etc.

Public Cloud Vendors

- Google
 - App Engine (PaaS offering)
 - Apps (SaaS offering)
 - Storage and compute
- MS Azure
 - Virtual Machine (IaaS offering)
 - Cloud services (PaaS offering)
 - Online services (SaaS offering)

Private Cloud

- Operated solely for one organization
- Full ownership, control and custody of applications, data and computing assets
- Allows custom configurations of cloud infrastructure
- Often has a homogeneous virtualization environment

Toolkits/Frameworks for Private Clouds

- IaaS cloud
 - OpenNebula
 - Eucalyptus
 - Apache CloudStack
 - OpenStack
 - Nimbus
- PaaS cloud
 - AppScale
 - CloudFoundry Micro

Hybrid Cloud

- A composition of two or more clouds
 - E.g. private and public
- Member clouds are bound together but remain unique entities
 - Allow benefits of multiple deployment models
- Both in-house resources and off-site server-based cloud infrastructure are needed
- Lack flexibility, security and certainty of in-house applications
- Offers flexibility of on-premise applications with fault tolerance and scalability of a public cloud

Motivation and Use Case

- Mainly used to augment the in-house computing
 - For instance, when handling spikes in application load
- Offloading special purpose computing tasks to a cloud based service provider
 - For instance, a cloud based video compression cluster

THANK YOU



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