Lesson 2
Cloud Computing Platform as a Service and Virtualisation

Cloud

- Internet Cloud + Clients = User applications and services with ‘no boundaries and no walls’ … 6.1

Cloud computing

- A collection of services available over Internet
- Delivers the computational functionality
- Deploys infrastructure of a cloud service provider
- Deploys computing infrastructure on a utility or grid computing or web-services
- A computing environment that includes network, system, grid of computers or servers or data centres.

Cloud Platform Services

- Infrastructure for large data storage of devices, RFIDs, industrial plant machines, automobiles and device networks
- Computing capabilities, such as analytics, IDE (Integrated Development Environment)
- Collaborative computing and
- Data Store sharing

Cloud Platform Usages

- For connecting devices, connecting data, connecting APIs,
- Connecting applications and services, connecting persons, connecting enterprises,
- Connecting businesses and
- Connecting XAAS.

Virtualised Environment,

- Cloud storage and computing environment
- Offers a running environment made to appear as one to all applications and services, but in fact physically two or many running environments and platforms may be present

Characteristic of virtualised environment

- Enables applications and services to execute in an independent execution environment (heterogeneous computing environment)
- Each one of them stores and executes in isolation on the same platform, though in fact, it may actually execute or access to a set of data centres or servers or distributed services and computing systems.

Virtualisation of storage

- Means user application or service accesses physical storage using abstract database interface or file system or logical drive or disk drive, though in fact storage may be accessible using multiple interfaces or servers

Network Function Virtualisation (NFV)

- Means a user application or service accesses the resources appearing as just one network, though the network access to the resources maybe through multiple resources and networks.

Virtualisation

- Means user application accesses a server but in fact accessing the multiple servers.

Virtualised desktop

- Means the user application can change and deploy multiple desktops, though the access by the user is through their own computer platform (OS) that in fact may be through multiple OSs and platforms or remote computers.

Cloud Computing Features and Advantages

- On demand self-service to users for the provision of storage, computing servers, Software delivery and server time
- Resource pooling in multi-tenant model
- Network broad accessibility in virtualised environment to the heterogeneous users, clients, systems and devices
- Elasticity

Cloud Computing Features and Advantages

- Massive scale availability
- Scalability
- Maintainability
- Homogeneity
- Virtualisation

Cloud Computing Features and Advantages

- Interconnectivity platform with virtualised environment for the enterprises and
- provisioning of in-between Service Level Agreements (SLAs)
- Resilient computing
- Advanced security
- Low cost

Concerns

- Requirement of a constant high speed Internet connection
- Limitations of the services available
- Possible data loss

Concerns

- Non delivery as per defined SLA specified performance
- Different APIs and protocols used at different clouds
- Security in multi-tenant environment needs high trust and low risks, and Loss of users' control

Summary

We learnt

- Internet Cloud + Clients = User applications and services with ‘no boundaries and no walls
- Cloud computing paradigm
- KPIs
- XaaS
- Cloud platform services and usages

Summary

We learnt

- Virtualisation of storage
- Virtualisation of server
- Virtualisation of desktop
- Virtualisation of Network functions
- Cloud services features
- Cloud services concerns

End of Lesson 2 on

Cloud Computing Platform as a Service and Virtualisation