SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
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Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECE308- WIRELESS TECHNOLOGIES FOR IOT

III ECE / VI SEMESTER

UNIT 3 DATA COLLECTION, STORAGE AND COMPUTINGUSINGACLOUD

PLATFORM

TOPIC 1 –Cloud computing paradigm for data collection, storage and computing

Cloud computing

- Internet Cloud + Clients = User applications and services with 'no boundaries and no walls'

- 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 gridcomputing 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.

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 virtualized 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
- 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