

Cloud Computing

Cloud computing has recently emerged as one of the buzzwords in the IT industry. Numerous IT vendors are promising to offer computation, storage, and application hosting services and to provide coverage in several continents, offering service level agreements (SLA) backed performance and uptime promises for their services. While these “clouds” are the natural evolution of traditional data centers, they are distinguished by exposing resources (computation, data, and applications) as standards-based Web services and following a “utility” pricing model where customers are charged based on their utilization of computational resources, storage, and transfer of data. They offer subscription-based access to infrastructure, platforms, and applications that are popularly referred to as IaaS (Infrastructure as a Service), PaaS (Platform as a Service), and SaaS (Software as a Service).

The workshop is intended to provide an opportunity to the participants to upgrade their knowledge in recent advances in Information Technology with special focus on research issues in cloud computing.

The workshop will cover:

- Technologies for creating Cloud Computing Environment on a Network of Computers
- Tools for building Cloud applications
- Guidelines for introducing cloud computing courses and initiating innovative R&D projects.

Topics to be covered in CLOUD COMPUTING Workshop

1. Introduction to the cloud

What is a cloud?

Where did the cloud come from? History, evolution, etc.

What a cloud is not: Grid, parallel computing, VM, etc.

Characteristics of cloud computing

2. What makes a cloud?

Storage Virtualization

Application virtualization

Server virtualization

Network virtualization



3. Hands-on demonstration of cloud computing

Creating an account on the cloud

Starting a server instance

Allocating storage and other resources

Deploying an application

4. Cloud Computing Service Models

Infrastructure as a Service (IAAS)

Platform as a Service (PAAS)

Software as a Service (SAAS)

5. Cloud Computing deployment models

Public Cloud

Private Cloud

Community Cloud

Hybrid Cloud

6. Advantages of cloud computing

Cost model change (Capex to Opex only)

Reduction in cost of ownership (TCO)

On-demand scalability

Reliability

Shorter Time to Market

Ease of Use

Reduction in operation overheads

7.Challenges of cloud computing

Security

Data privacy

Performance

Availability

8. Cloud providers and their offerings

Amazon

Microsoft



Google

Salesforce.com

8. Amazon Web Services

Services offered by Amazon

Hands-on Amazon

EC2 - Configuring a server, Launching an instance

S3- Allocating storage buckets,

Creating groups, objects and bucket policies

9. Microsoft Windows Azure

Microsoft Windows Azure architecture

Services offered by Microsoft Azure

Hands-on on Azure

Creating and deploying an application on Azure

Migrating an existing application to Azure

Migrating the application's data to SQL Azure

10.Introduction to Force.com from Sales force

Infrastructure as a service

Database as a service

Integration as a service

Logic as a service

UI as a service

Development as a service

Administering the Cloud

1. Server Provisioning

Capacity planning

How to provision servers in cloud

What type of server do I need?

Best practices

2.Providing Security



VPC (Virtual Private Cloud)

How to ensure security within cloud

Firewall and security groups

3. Backup/Recovery of data

Backups

Backup strategy

Where to save backup

Restore operations

4. High Availability - HA

How to ensure availability

Provisioning across zones (Physical data-centers for availability)

Elastic IPs for high availability

5. Server monitoring and Performance monitoring

Monitoring needed in the cloud

Monitoring tools availability

Performance monitoring

Tweaks to improve performance and availability

Duration: The duration of this workshop will be two consecutive days, with eight hour session each day in a total of sixteen hours properly divided into theory and hands on sessions.

Fees: Rs. 1200/- per head inclusive of all taxes.

