**CLOUD COMPUTING AND AZURE ADMINISTRATION**

**Time Duration-60 Hrs Prerequisites-No prerequisites**

The course is divided into two units. In the first unit, basics of cloud computing will be covered in second unit azure administration will be covered in great details.

**Certification- Microsoft Certified Azure Fundamentals**

**Unit -1 Time Duration-16 Hrs**

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| **Cloud Computing** | | |
| **Sr. No.** | **Session** | **Topics to be covered** |
| 1 | Session 1 | What is Cloud |
| History of Cloud Computing |
| How Cloud Computing Works |
| Advantages & Disadvantages |
| Applications for Businesses |
| Cloud Service Providers |
| Cloud Computing Architecture |
| Cloud Computing Terminology |
| 2 | Session 2 | Basics of Linux |
| 1. Basics Commands |
| 2. Apache Server |
| 3. FTP Server |
| Windows Server Basics |
| 1. IIS |
| 2. FTP Server |
| 3. Taking backups using command line tools |
| 3 | Session 3 | Public Cloud Services – using Amazon Cloud |
| Types, Priced and open source products in the market |
| Overview of Public Cloud vendors |
| Overview of Private cloud products |
| Introduction to Amazon AWS cloud – Pricing, Regions Availability Zones, Types of instances |
| Overview of different services of AWS |
| Consuming EC2 Instance Service from AWS |
| (Creating Linux and Windows Instances from the available AMIs connecting and remote control from the laptop) |
| Consuming EBS block storage service from AWS – Adding volumes to Instances Taking snapshots, creating volumes from snapshots, attaching volumes to running instances |
| Using Elastic IP service –Assigning Public IP addresses and connecting from the internet |
| 4 | Session 4 | Installing additional software components on the instances |
| Automating installations and tasks at the booting time of a instance |
| Using the Load Balancers for load distribution |
| Installing command line tools |
| Using cloud watch service |
| Using Route 53 Service |
| Creating own AMIs |
| 5 |  | Virtual Private Cloud - Public and Private Network Scenarios |
|  | Session 5 | Using AWS S3 service |
| Using Glacier Services |
| 6 | Session 6 | Creating databases using RDS service |
| IAM –Identity Access Management |
| MFA |
| Elastic Beanstalk |
| Cloud Watch |

**Azure Administration**

**Unit -2 Time Duration-50 Hrs**

# Module 0: Basic Networking

* Introduction to Networking
* IP Addressing
* CIDR
* Protocols

# Module 1: Introduction to Cloud Computing

* Why Cloud Computing?
* What is Cloud Computing?
* History of Cloud Computing
* Service Models
* Deployment Models
* Cloud Providers

# Module 2: Introduction Microsoft Azure

* Why Azure?
* Introduction to Microsoft Azure
* Regions and Availability Zones
* Azure portal and cloud shell
* Azure PowerShell and CLI
* Resource Manager
* ARM Templates

# Module 3: Working with Virtual Machines

* Virtual Machines Planning
* Creating Virtual Machines
* Virtual Machines Availability
* Virtual Machines Extensions

# Module 4: Azure Storage

* Storage Account
* Blob Storage
* Azure Files
* Snapshots

# Module 5: Virtual Networks

* Virtual Networks (Vnet)
* IP Address
* Azure DNS
* Network Security Groups (NSG)

# Module 6: Inter-site Connectivity

* VNet Peering
* Storage Account
* Blob Storage
* Azure Files
* Snapshots

# Module 5: Virtual Networks

* Virtual Networks (Vnet)
* IP Address
* Azure DNS
* Network Security Groups (NSG)

# Module 6: Inter-site Connectivity

* VNet Peering
* VNet to VNet Connections
* Express Route
* Custom Routes
* Azure Load Balancer
* Azure Autoscaling (Sets)
* Azure Traffic Manager

# Module 7: Application Services

* App Service Plans
* App Service (Web App, Mobile App, Push App)
* Azure SQL Server
* Web Jobs
* Cross Platform Application
* Containers
* Docker
* Kubernetes

# Module 8: Azure Monitoring

* Azure Monitoring
* Azure Alerts
* Network Watcher

# Module 9: Data Protection

* Data Replication Types
* Azure Data Backup
* Azure Virtual Machine Backup

# Module 10: Azure Active Directory

* What is Azure Active Directory
* Azure AD Connect
* Azure AD Join
* Multi Factor Authentication
* Azure Identity Protection

# Module 11: Governance and Compliance

* Subscription and Account
* Azure Users and Groups
* Role Based Access Control (RBAC)
* Azure Policy
* Azure Management Group

# Module 12: Data Services

* CDN (Streaming)
* Azure File Sync
* Data Box Type