

**70-533 - Implementing Microsoft Azure Infrastructure Solutions Syllabus****Cloud Computing Introduction**

- What is Cloud Computing
- Cloud Characteristics
- Cloud Computing Service Models
- Deployment Models in Cloud Computing
- Advantages and Disadvantages of Cloud Computing
- Cloud Computing Job Roles.
- Cloud Computing Platforms and Certifications.

**Getting Starting with Azure**

- Introduction to Azure
- Why, What and Benefits of Azure
- Azure Hosting Models
- Azure Services
- Subscribing to Microsoft Azure
- Azure Portals
- Azure Key Concepts
- Azure Resource Group
- Installing Microsoft Azure SDK

**Azure Virtual Networks**

- Overview of Azure Networking
- Virtual Network Benefits
- Understanding Network Resources
- Create a VNet using Azure Portal
- Create a Subnet
- Setup Network Security Group
- Create a Public IP Address
- Create Network Interface Card with public, and private IP addresses
- Create a Virtual Machine
- Configure external and internal load balancing
- Understanding and Creating Availability Sets
- Azure Application Gateway
- Azure Traffic Manager

- User Defined Routes (UDRs),
- Understanding Azure DNS
- Design and implement a multi-site or hybrid network
  - Point-to-Site Network
  - Site-to-Site Network
  - ExpressRoute Solution

### **ARM Virtual Machines**

- Introduction
- About Virtual Machine Workloads
- Comparing VM with Web Apps and Cloud Services
- Create a Windows Virtual Machine using Portal / PowerShell / ARM Templates
- Deploy popular application frameworks by using Azure Resource Manager templates
- Understand and Capture VM Images
- Upload an on-premise VHD to Storage Account
- Deploy a New VM from the Captured Image
- Virtual Machine Scale Sets
- Virtual Machine Disk Types and VM Storage
- Virtual Machine Sizes in Azure
- Importing and Exporting Disks
- Configuring VM Security
- Perform configuration management
  - VM Extensions & VM Agents
  - Custom Script Extensions
  - Desired State Configuration (DSC)
  - Puppet or Chef
- Configure VM monitoring, configure alerts, diagnostic and monitoring storage location.
- Azure VM Backup and Restore Services

### **Azure App Services - Web Apps**

- Introduction
- App Service - Application Types
- Deploy Web Apps
  - Deploying Web App directly from Visual Studio

- Automate deployment from Dropbox and One Drive
  - Create, configure and deploy packages
  - Implement pre- and post-deployment actions;
- App Service plans;
  - Create App Service Plan
  - Migrate Web Apps between App Service plans;
  - Create a Web App within an App Service plan
- Configuring Web Apps
  - Application Settings Configuration,
  - Database Connection Strings,
  - Configuring Handlers and Virtual Directories,
- Configure a custom domain name
- Enable SSL for your custom domain
- Understanding Deployment Slots and Roll back deployments;
- Configure Web Apps for scale and resilience
  - Horizontal and Vertical Scaling of a Web App
  - Configure auto-scale
  - Change the size of an instance
- Azure Traffic Manager to Scale out Globally
- Monitoring, Debugging and Diagnosis
  - Retrieve Diagnostics data
  - View Streaming Logs
  - Configure endpoint monitoring
  - Configuring Alerts
  - Configure diagnostics
  - Use remote debugging
  - Monitor Web App resources
  - Azure Application Insights

### **Managing Data in Azure SQL Database**

- Introduction/Overview of SQL Database.
- Comparing SQL Azure Database to IAAS / On-Premise SQL Server.
- Creating and Using SQL Server and SQL Database Services.
- Azure SQL Database Tools.
- Migrating on premise database to SQL Azure.

- Planning the Deployment of an Azure SQL Database
- Elastic Pools.
- Monitoring Azure SQL Database
- Configure SQL Database Auditing
- Manage Business Continuity
- Export and Import of Database
- Backup and Recovery options in SQL Database
- Active GEO-Replication
- Long Term Backup Retention
- Pricing Tier Comparisons.

### **Azure Storage**

- Importance of Azure Storage Service
- Creating Storage Account
- Storage Replication Models
  - Locally Redundant Storage
  - Zone Redundant Storage
  - Geo Redundant Storage
  - Read Access Geo Redundant Storage
- Implement Azure storage blobs
  - Read data, change data, set metadata on a container, store data using block and page blobs, stream data using blobs, access blobs securely, implement async blob copy, configure a Content Delivery Network (CDN), design blob hierarchies, configure custom domains, scale blob storage
- Azure Table Storage
- Azure Queue Storage
- Azure Files Storage
- Manage Access
  - Create and manage shared access signatures, use stored access policies, regenerate keys.
  - Configure and use Cross-Origin Resource Sharing (CORS)
- Configure diagnostics, monitoring and analytics
  - Set retention policies and logging levels, analyze logs
- Implementing Content Delivery Network

### **Azure Cloud Service (Only Video Access)**

- What is Cloud Service

- Cloud Service vs App Service
- Understand Cloud Service Roles
- Developing Cloud Service Application with Web Role
- Deploying Cloud Service Application
- Production and Staging Slots
- Using Azure Database in Cloud Service
- Adding Worker Role to the Solution.
- Delete deployments and a cloud service
- Configure application for SSL
- Configure Roles for Remote Desktop Login
- Running Multiple Websites
- Scaling a Cloud Service

#### **Azure Active Directory**

- Azure AD Introduction
- Relationship between AD DS and Azure AD
- Managing Active Directories
- Adding a custom domain name to Azure AD
- Managing Users, Groups and Devices
- Configuring Role Based Access Control
- Synchronizing On-Premise AD Identities with Azure AD
- Using Single Sign-On with Azure AD
- Integrating Gallery Applications with Azure AD
- Integrating On-Premise Applications with Azure AD
- Implementing Azure AD B2B Collaboration
- Implementing Azure AD B2C Collaboration

#### **Managing Azure with Windows PowerShell**

- Installing the required modules
- Managing Azure Accounts and Subscriptions
- Managing Resource Group
- Managing App Service Plans and App Service Web Apps
- Create and Configure a Storage Account
- Managing Storage Accounts using PowerShell
- Understanding Azure Resource Manager (ARM)

- Exporting and Importing ARM templates.

**Design and Deploy ARM templates**

- Implement ARM templates
  - Author ARM templates; create ARM templates to deploy ARM Resource Providers resources; deploy templates with PowerShell, CLI, and REST API
- Control access
  - Leverage service principles with ARM authentication, use Azure Active Directory Authentication with ARM, set management policies, lock resources
- Design role-based access control (RBAC)
  - Secure resource scopes, such as the ability to create VMs and Azure Web Apps; implement Azure role-based access control (RBAC) standard roles; design Azure RBAC custom role