**Azure 300-301 Training Course Content**

**Introduction to Cloud & Microsoft Azure**

Introduction to Cloud Computing, Cloud Computing Models, What is Microsoft Azure, Microsoft Azure Services, Microsoft Azure Architecture, Creating an Account in Microsoft Azure, Different ways of accessing Microsoft Azure – Portal, Powershell and CLI, Azure Resources and Subscriptions, Understanding Azure Resource Manager, managing resource groups, configuring resource locks and policies, moving resources across resource groups.

**Hands-on Exercise:**Move and organised resources in the resource groups Create a resource Groups and deploy resources in it.

**Implement and Manage Storage**

Azure Storage, Azure Storage Account & its types, Azure Blob Storage, Azure Files Storage, Azure Table Storage, Azure Queue Storage, Azure Storage Explorer, Attach & Detach an External Storage Account, Azure Shared Access Signature (SAS), Azure Storage Replication, Why Azure Storage Replication?, Data Replication Options, Azure Import/Export Service, How Import/Export Service Works, Azure File Sync, Azure Backup Service, Azure Content Delivery Network (CDN).

**Hands-on Exercise:**Create Storage Account, Create and manage Azure Blob, Create and manage Azure File Storage, Create and manage Azure Queue Storage, Create and manage Azure Table Storage, Download and Set Up Storage Explorer, Attach and detach external storage account in storage Explorer, Access Storage Services using Storage Explorer.

**Create & Configure Azure Virtual Machines**

Introduction to Azure Virtual Machines, Virtual Machine Configurations, Creating and Configuring An Azure VM, Data Disks in Azure, Creating VM from an existing OS disk, Azure VMs & Interfaces, Introduction to ARM templates, Introduction to VHD templates, Creating Virtual Machines using templates, Introduction to Custom Images of Azure VM, Virtual Machine Scale Sets, Why Use Virtual Machine Scale Sets, Virtual Machine Availability Sets, Backing Up Azure Virtual Machines, VM Back Up Policies, Restoring Azure Virtual machines, Azure Site Recovery.

**Hands-on Exercise:**Create and configure a Virtual Machine, Create a Scale Set, Creating a VM from VHD Template, Deploying a VM from a Custom Image, Take a back up of an Azure VM, Restore the VM, Create a Scale Set.

**Azure Virtual Networks**

Introduction to Azure Virtual Networks, Azure Vnet Components, IP Addresess – Public & Private IPs, Azure Vnet Subnets, Azure Network Interface Cards (NIC), Network Security Group (NSG), NSG Rules, Creating Route Tables, Service Tags, Introduction to Azure DNS, Introduction to Private DNS.

**Hands-on Exercise:** Assigning Static IP, Creating Azure Vnet from Scratch, Creating and Attaching NIC to VM, Creating and using NSG, Create and configure DNS.

**Managing Traffic & Connectivity**

Introduction to Azure Load Balancers, Troubleshooting Azure Load Balancers, Azure Network Watcher, Virtual Network Gateway, Vnet Peering, Vnet to Vnet Connection Gateway, Vnet Site to Site Connection, Azure Express Route, Express Route Circuits, Express Route Peering.

**Hands-on Exercise:** Create and Configure Vnet to Vnet Peering, Create and Configure Vnet to Vnet Gateway Connection, Create Internal Load Balancer, Create Public Load Balancer, Establish site to site VPN gateway Connection.

**Implementing Identity & Access management**

What is Access Management in Azure?, Role Based Access Management (RBAC), Role Assignment in Azure Resources, Azure Users & Groups, RBAC Policies, What is Active Directory, Azure Active Directory (Azure AD), Why Azure Active Directory?, What is Azure AD Connect?, Features of Azure AD Connect, Azure Active Directory Authentication Options, AD Connect Password hash Synchronization, AD Connect Pass-through Authentication, AD Connect Federation Integration, Azure AD Connect Health Monitoring, Self Service password Reset (SSPR), Implementing Multi Factor Authentication (MFA).

**Hands-on Exercise:** Creating a Custom Role, Attach policies to the role, Assigning role to Azure resources, Create an Azure Active Directory, Create Azure AD Users and assign roles, Create a Custom Domain in Azure Active Directory, Configure Azure AD Connect, Enable and implement Self service password reset for a certain user, Enable and implement Multi factor Authentication for users.

**Create and Deploy Apps8**

What is Azure App Service?, Azure Web Apps Features, What Is Azure Mobile App?, What Is Azure Logic Apps?, Function App in the Azure Portal, Azure Web Apps, WebJobs, Azure Event Grids, Diagnostics Logging, Designing Apps that run on Containers, Docker Basics, Creating Docker Images with Docker files, Azure Kubernetes Service, Deploying an AKS Cluster Using the Azure CLI, Azure Container Registry, Azure Container Instances, Web App for Containers.

**Hands-on Exercise:** Create and Deploy Docker Image from DockerFile, Deploy an Application in ACI, Deploy an Application in AKS, Create a Web App Instance, Use shell commands to create an App Service Web App, Create a Continuous WebJob

**Managing traffic, implementing workloads and monitoring**

What is Azure Site Recovery, Azure Migrate, Azure Traffic Manager, Managing Role-Based Access Control, Azure Monitoring, Azure Monitoring: Metrics, Azure Monitoring: Characteristics of Metrics, Azure Monitoring: Alerts, Azure Monitoring: Activity Log, Azure Monitoring: Diagnostic Logs, Azure Monitoring: Action Groups, Azure Monitoring: Service Health Notification, Azure Monitoring: SMS Alert.

**Hands-on Exercise:** Analyze the data in your metric database, Create and Configure Azure Log Analytics.

**Develop for Cloud and Azure Storage**

NoSQL & NoSQL Database, Cosmos DB, Multiple APIs and Data Models, Request Units, Exceeding Reserved Throughput Limits, Whiteboarding the Cost, Document Database  
Cosmos DB Resource Model, Resource Properties, Self-Links, and URIs, Rich Query with SQL, SQL Operators and Functions, Introducing the .NET SDK for the SQL API, Creating User-Defined Functions (UDFs), Table API, Cosmos DB Graph Database, Bi-Directional Relationships, Writing Gremlin Queries, Azure Table Storage.

**Hands-on Exercise:** Create and Deploy Azure Cosmos DB, Busy World Traveler, Multi-Model Comic Book Catalog.

**What projects I will be working on this Microsoft Azure 300-301 training?**

building a Python and PostgreSQL application in Azure App service, then configure your application into the customized docker container. Steps to be performed:

* Create a Python Application in Azure App.
* Create a PostgreSQL Database in Azure.
* Deploy the app to Azure.
* Manage the app in Azure Portal.
* Configure your application into the Custom Containers.