

Microsoft Azure Cloud Training course objectives:

- Plan and develop Azure Virtual Machines.
- Configure, manage, and monitor Azure VM (Virtual Machines) to optimize availability and reliability.
- Implement Azure App Service.
- Plan and implement storage and backup, and recovery services.
- Implement container-based workloads in Azure.
- Deploy, configure, monitor, and diagnose cloud services.
- Implement Azure AD.
- Manage an AD(Active Directory) infrastructure in a hybrid environment.
- Automate operations by using Azure Automation runbooks.

Course Duration: 40 Hours

• **Module 1 - Deploy and configure infrastructure**

1 : Analyze resource utilization and consumption

- configure diagnostic settings on resources
- create baseline for resources
- create and test alerts
- analyze alerts across subscription
- analyze metrics across subscription
- create action groups
- monitor for unused resources
- monitor spend
- report on spend
- utilize Log Search query functions
- view alerts in Azure Monitor logs
- visualize diagnostics data using Azure Monitor Workbooks
- LAB
- configure diagnostic settings on resources

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- create action groups
- monitor for unused resources
- monitor spend
- report on spend
- view alerts in Azure Monitor logs

2: Create and configure storage accounts

- configure network access to the storage account
- create and configure storage account
- generate shared access signature
- implement Azure AD authentication for storage
- install and use Azure Storage Explorer
- manage access keys
- monitor activity log by using Azure Monitor logs
- implement Azure storage replication
- implement Azure storage account failover
- LAB
- configure network access to the storage account
- create and configure storage account
- generate shared access signature
- install and use Azure Storage Explorer
- manage access keys
- monitor activity log by using Azure Monitor logs

3: Create and configure a Virtual Machine (VM) for Windows and Linux

configure high availability

- configure monitoring, networking, storage, and virtual machine size
- implement dedicated hosts
- deploy and configure scale sets
- LAB
- configure high availability
- configure monitoring, networking, storage, and virtual machine size
- deploy and configure scale sets

4: Automate deployment of Virtual Machines (VMs)

- Modify Azure Resource Manager template
- configure location of new VMs
- configure VHD template
- deploy from template
- save a deployment as an Azure Resource Manager template
- deploy Windows and Linux VMs
- LAB
- Modify Azure Resource Manager template
- configure location of new VMs
- deploy from template
- save a deployment as an Azure Resource Manager template
- deploy Windows VMs

5: Create connectivity between virtual networks

- create and configure VNET peering
- create and configure VNET to VNET connections
- verify virtual network connectivity
- create virtual network gateway
- LAB
- create and configure VNET peering
- create and configure VNET to VNET connections
- verify virtual network connectivity
- create virtual network gateway

6: Implement and manage virtual networking

- configure private and public IP addresses, network routes, network interface, subnets, and virtual network
- create and configure Network Security Groups and Application Security Groups
- LAB
- configure private and public IP addresses, network routes, network interface, subnets, and virtual network

7: create and configure Network Security Groups Manage Azure Active Directory (AD) add custom domains

- configure Azure AD Identity Protection, Azure AD Join, and Enterprise State Roaming
- configure self-service password reset
- implement conditional access policies
- manage multiple directories
- perform an access review
- LAB
- add custom domains
- configure self-service password reset
- implement conditional access policies

8: Implement and manage hybrid identities

- install and configure Azure AD Connect
- configure federation and single sign-on
- manage and troubleshoot Azure AD Connect
- troubleshoot password sync and writeback
- LAB
- install and configure Azure AD Connect
- configure single sign-on
- Configure password sync and writeback

9: Implement solutions that use virtual machines (VM)

- provision VMs
- create Azure Resource Manager templates
- configure Azure Disk Encryption for VMs
- implement Azure Backup for VMs
- LAB
- provision VMs
- create Azure Resource Manager templates
- implement Azure Backup for VMs

Module 2- Implement workloads and security

- configure storage
- create a recovery services vault
- prepare source
- backup and restore data
- deploy Azure Site Recovery agent

- prepare virtual network
- LAB
- migrate servers using Azure Migrate
- create a recovery services vault
- prepare source
- backup and restore data
- deploy Azure Site Recovery agent
- prepare virtual network

11: Configure server less computing

- create and manage objects
- manage a Logic App resource
- manage Azure Function app settings
- manage Event Grid
- manage Service Bus
- LAB
- create and manage objects
- manage Azure Function app settings

12: Implement application load balancing

- configure application gateway
- configure application gateway load balancing rules
- implement application gateway front end IP configurations
- troubleshoot application gateway load balancing
- configure Azure Front Door service
- configure Azure Traffic Manager
- LAB
- configure application gateway
- configure application gateway load balancing rules
- implement application gateway front end IP configurations
- configure Azure Traffic Manager

13: Integrate on-premises network with Azure virtual network

- create and configure Azure VPN Gateway
- create and configure site to site VPN
- configure Express Route

- configure Virtual WAN
- verify on-premises connectivity
- manage on-premises connectivity with Azure
- LAB
- create and configure Azure VPN Gateway
- create and configure site to site VPN
- verify on-premises connectivity
- manage on-premises connectivity with Azure

14: Implement Multi-Factor Authentication (MFA)

- configure user accounts for MFA
- configure fraud alerts
- configure bypass options
- configure trusted IPs
- configure verification methods
- LAB
- configure user accounts for MFA
- configure fraud alerts
- configure trusted IPs

15: Manage role-based access control (RBAC)

- create a custom role
- configure access to Azure resources by assigning roles
- configure management access to Azure
- troubleshoot RBAC
- implement Azure policies
- assign RBAC roles
- LAB
- configure access to Azure resources by assigning roles
- configure management access to Azure
- troubleshoot RBAC
- implement Azure policies
- assign RBAC roles
- Module 3 - Create and deploy apps

16: Create web apps by using PaaS

- create an Azure App Service Web App
- create documentation for the API
- create an App Service Web App for containers
- create an App Service background task by using WebJobs
- enable diagnostics logging
- LAB
- create an Azure App Service Web App
- create an App Service Web App for containers
- enable diagnostics logging

17 : Design and develop apps that run in containers

- configure diagnostic settings on resources
- create a container image by using a Docker file
- create an Azure Kubernetes Service
- publish an image to the Azure Container Registry
- implement an application that runs on an Azure Container Instance
- manage container settings by using code
- LAB
- create a container image by using a Docker file
- create an Azure Kubernetes Service
- publish an image to the Azure Container Registry

Module 4 - Implement authentication and secure data 18 : Implement authentication

- implement authentication by using certificates, forms-based authentication, tokens, or Windows-integrated authentication
- implement multi-factor authentication by using Azure AD
- implement OAuth2 authentication
- implement Managed identities for Azure resources Service Principal authentication
- LAB
- implement multi-factor authentication by using Azure AD
- implement Managed identities for Azure resources Service Principal authentication

19 : Implement secure data solutions

- encrypt and decrypt data at rest and in transit

- encrypt data with Always Encrypted
- implement Azure Confidential Compute and SSL/TLS communications
- create, read, update, and delete keys, secrets, and certificates by using the KeyVault API
- LAB
- implement Azure Confidential Compute and SSL/TLS communications
- create, read, update, and delete keys, secrets, and certificates by using the KeyVault API

- **Module 5 - Develop for the cloud and for Azure storage**

- **20 :Develop solutions that use Cosmos DB storage**

- create, read, update, and delete data by using appropriate APIs - Lesson
- implement partitioning schemes - Lesson
- set the appropriate consistency level for operations
- LAB
- create, read, update, and delete data by using SAS Key
- set the appropriate consistency level for operations

- **21 : Develop solutions that use a relational database**

- provision and configure relational databases
- configure elastic pools for Azure SQL Database
- implement Azure SQL Database managed instances
- create, read, update, and delete data tables by using code
- LAB
- provision and configure relational databases
- configure elastic pools for Azure SQL Database
- implement Azure SQL Database managed instances

- **22 : Configure a message-based integration architecture/Develop for auto scaling**

- configure an app or service to send emails, Event Grid, and the Azure Relay service
- create and configure Notification Hub, Event Hub, and Service Bus
- configure queries across multiple products
- implement auto scaling rules and patterns (schedule,

operational/system metrics, code that addresses singleton application instances)

- implement code that addresses transient state
- LAB
- implement auto scaling rules and patterns (schedule, operational/system metrics).