

## module 01 : Introduction to AZURE

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- 1.1 Introduction to cloud computing
- 1.2 What is Microsoft Azure?
- 1.3 Microsoft Azure Services
- 1.4 Creating a Microsoft Azure Account
- 1.5 Azure CLI, Azure PowerShell
- 1.6 Managing Azure Resources & Subscriptions
- 1.7 Azure Resource Manager
- 1.8 Microsoft Azure Architecture

## module 02 : Introduction to ARM & AZURE Storage

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- 2.1 Azure Resources & Subscriptions
- 2.2 Azure Resource Manager
- 2.3 Managing Azure Resources
- 2.4 Azure Tags
- 2.5 Azure Storage Account & its types
- 2.6 Azure Blob Storage
- 2.7 Azure Content Delivery Network (CDN)
- 2.8 Azure Files Storage
- 2.9 Azure File Sync

## Module 03 : Introduction to Azure storage

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- 3.1 Azure Table Storage
- 3.2 Azure Queue Storage
- 3.3 Azure Storage Explorer
- 3.4 Azure Shared Access Signature (SAS)
- 3.5 Azure Databox
- 3.6 Azure Storage Replication
- 3.7 Data Replication Options
- 3.8 Azure Import/Export Service

## Module 04 : Azure Virtual Machines

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- 4.1 Azure Virtual Machines
- 4.2 Data Disks in Azure
- 4.3 Azure VMs & Interfaces
- 4.4 ARM templates
- 4.5 VHD templates
- 4.6 Custom Images of Azure VM
- 4.7 Virtual Machine Scale Sets
- 4.8 Virtual Machine Availability Sets

## Module 05 : Azure App and Container Services

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- 5.1 App Service Web App for Containers
- 5.2 App Service plan
- 5.3 Networking for an App Service
- 5.4 Deployment slots

- 5.5 Container image
- 5.6 Azure Kubernetes Service
- 5.7 Azure Container Registry

## Module 06 : Azure Networking-|

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- 6.1 Azure Virtual Networks
- 6.2 Azure Vnet Components
- 6.3 IP Address – Public & Private IPs
- 6.4 Azure Vnet Subnets
- 6.5 Azure Network Interface Cards (NIC)
- 6.6 Network Security Group (NSG)
- 6.7 Route Tables
- 6.8 Service Tags
- 6.9 Azure DNS
- 6.10 Private DNS

## Module 07 : Azure Networking-||

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- 7.1 Application Gateway
- 7.2 Azure Front Door Service
- 7.3 Azure Traffic Manager
- 7.4 Application Security Groups
- 7.5 Azure Load Balancers
- 7.6 Azure Firewall
- 7.7 Azure Bastion
- 7.8 Network Watcher
- 7.9 Azure Express Route
- 7.10 Express Route Circuits
- 7.11 Express Route Peering

## Module 08 : Authentication and Authorization in Azure using RBAC

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- 8.1 Identity and Access Management in Azure
- 8.2 Role Based Access Management (RBAC)
- 8.3 Role Definitions
- 8.4 Role Assignment in Azure Resources
- 8.5 Azure Users & Groups
- 8.6 RBAC Policies

## Module 09: Microsoft Azure Active Directory

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- 9.1 Azure Active Directory (Azure AD)
- 9.2 Windows AD Vs Azure AD
- 9.3 Azure AD Users
- 9.4 Azure AD Groups
- 9.5 Azure AD Domains
- 9.6 Azure AD Tenants
- 9.7 Authentication Options
- 9.8 Azure AD Connect
- 9.9 Self Service password Reset (SSPR)

9.10 Multi Factor Authentication (MFA)

9.11 Resource Locks

## Module 10: Azure Monitoring

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10.1 Azure Monitor

10.2 Azure Metrics

10.3 Log Analytics

10.4 Alerts and actions

10.5 Application Insights

10.6 Backup reports

10.7 Recovery Services Vault

10.8 Backing Up Azure Virtual Machines

10.9 VM Backup Policies

10.10 Restoring Azure Virtual machines

## Module 11: Infrastructure setup

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11.1 EC2 Walkthrough

11.2 Installation of DevOps Tools on cloud

Git

Docker

Maven

Jenkins

Puppet

Ansible

Kubernetes

Nagios

## Module 12: Introduction to Devops

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12.1 What is Software Development

12.2 Software Development Life Cycle

12.3 Traditional Models for SDLC

12.4 Why DevOps?

12.5 What is DevOps?

12.6 DevOps Lifecycle

12.7 DevOps Tools

## Module 13: Continuous Testing

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13.1 What is Continuous Testing?

13.2 What is Maven?

13.3 Running Test Cases on Chromium Web Driver

13.4 What is Headless Mode?

## Module 14: Continuous Integration using jenkins

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- 14.1 Introduction to Continuous Integration
- 14.2 Jenkins Master Slave Architecture
- 14.3 Understanding CI/CD Pipelines
- 14.4 Creating an end to end automated CI/CD Pipeline

## Module 15: Software version control

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- 15.1 What is Version Control?
- 15.2 Types of Version Control System
- 15.3 Introduction to SVN
- 15.4 Introduction to Git
- 15.5 Git Lifecycle
- 15.6 Common Git Commands
- 15.7 Working with Branches in Git
- 15.8 Merging Branches
- 15.9 Resolving Merge Conflicts
- 15.10 Git Workflow

## Module 16: Continuous Deployment: Containerization with Docker

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- 16.1 Introduction to Docker
- 16.2 Understanding Docker Lifecycle
- 16.3 Components of Docker Ecosystem
- 16.4 Common Docker Operations
- 16.5 Creating a DockerHub Account
- 16.6 Committing changes in a Container
- 16.7 Pushing a Container Image to DockerHub
- 16.8 Creating Custom Docker Images using Dockerfile

## Module 17: Containerization with Docker: Ecosystem and Networking

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- 17.1 What are Docker Volumes
- 17.2 Deploying a Multi-Tier Application using Docker Network
- 17.3 Using Docker Compose to deploy containers
- 17.4 What is Container Orchestration
- 17.5 Container Orchestration Tools
- 17.6 Introduction to Docker Swarm
- 17.7 Deploying a 2-Node Cluster using Docker Swarm

## Module 18: Configuration Management using puppet

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- 18.1 Need of Configuration Management
- 18.2 Configuration Management Tools
- 18.3 What is Puppet
- 18.4 Puppet Architecture
- 18.5 Setting up Master Slave using Puppet
- 18.6 Puppet Manifests
- 18.7 Puppet Modules
- 18.8 Applying configuration using Puppet
- 18.9 Puppet File Server

## Module 19: Configuration Management using Ansible

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- 19.1 What is Ansible?
- 19.2 Ansible vs Puppet
- 19.3 Ansible Architecture
- 19.4 Setting up Master Slave using Ansible
- 19.5 Ansible Playbook
- 19.6 Ansible Roles
- 19.7 Applying configuration using Ansible

## Module 20: Continuous Orchestration using Kubernetes

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- 20.1 Introduction to Kubernetes
- 20.2 Docker Swarm vs Kubernetes
- 20.3 Kubernetes Architecture
- 20.4 Deploying Kubernetes using Kubeadms
- 20.5 Alternate ways of deploying Kubernetes
- 20.6 YAML Files
- 20.7 Creating a Deployment in Kubernetes using YAML
- 20.8 Services in Kubernetes
- 20.9 Ingress in Kubernetes
- 20.10 Case Study – Kubernetes Architecture

## Module 21: Continuous Monitoring using Nagios

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- 21.1 What is Continuous Monitoring?
- 21.2 Introduction to Nagios
- 21.3 Nagios Architecture
- 21.4 Monitoring Services in Nagios
- 21.5 What are NRPE Plugins?
- 21.6 Monitoring System Info using NRPE plugins

## Module 22: Terraform Modules&Workspaces

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- 22.1 What is Infrastructure as a code
- 22.2 IaC vs Configuration Management
- 22.3 Introduction to Terraform
- 22.4 Installing Terraform on AWS
- 22.5 Basic Operations in Terraform

-init

-plan

-apply

-destroy

22.6 Terraform Code Basics

22.7 Deploying and end-to-end architecture on AWS using Terraform

## Module 23: Azure Devops and Azure Repos

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- 23.1 Azure devops architecture
- 23.2 key features
- 23.3 azure devops tools
- 23.4 azure devops organizations and projects
- 23.5 Introduction to Azure Repos
- 23.6 Compare TFVC and Git
- 23.7 Key concepts in azure repos
- 23.8 Search your code in Repos
- 23.9 what is TFVC
- 23.10 Azure Repos Integrations

## Module 24: Azure Artifacts and Azure Test plans

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- 24.1 What are Azure artifacts
- 24.2 Key concepts in artifacts
- 24.3 working with packages
- 24.4 Feeds
- 24.5 views and upstream sources
- 24.6 Connecting to azure pipelines
- 24.7 What are Azure test plans
- 24.8 Exploratory and manual testing
- 24.9 Test from kanban board
- 24.10 Creating Test Plans
- 24.11 Testing web apps

## Module 25: Azure pipelines

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- 25.1 What is Azure Pipelines
- 25.2 Why use Azure Pipelines
- 25.3 Deploying to Azure
- 25.4 Key concepts in Pipelines
- 25.5 CI Triggers in pipelines
- 25.6 YAML Basics
- 25.7 Ecosystems and Integration
- 25.8 Setting up CI build
- 25.9 Adding Tests to the Pipeline
- 25.10 Agents and Tasks

## Module 26: Azure Boards

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- 26.1 What is Azure Boards
- 26.2 Why use azure boards
- 26.3 agile project management best practices
- 26.4 Basic concepts of Azure Boards
- 26.5 Connecting boards to github
- 26.6 Work items
- 26.7 Kanban boards
- 26.8 Sprints
- 26.9 Scrum and plans
- 26.10 Azure Boards integrations

## Module 27: Terraform with Azure

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27.1 What is Infrastructure as a code?

27.2 IaC vs Configuration Management

27.3 Introduction to Terraform

27.4 Installing Terraform on AWS

27.5 Basic Operations in Terraform

-init

-plan

-apply

-destroy

27.6 Terraform Code Basics

27.7 Deploying and end-to-end architecture on Azure using Terraform