Azure Devops

Microsoft Azure Project Training Overview Created by industry experts, this comprehensive course is curated to help learners develop proficient skills in Azure DevOps and subsequently leverage their skills to implement solutions in Azure. The training will make you an expert in various on-demand aspects of both Azure DevOps [AZ400] and Azure admin [AZ104] . Also, several case studies and hands-on projects are included in the training to ensure that you can learn all that is required to master the precepts of both DevOps and Azure

Cloud Computing & Microsoft Azure Fundamentals

- Introduction to Azure
- Different segments SaaS, PaaS, and IaaS
- Azure Regions and Data Centers
- Introduction to Vnet & subnets
- Logical calculation of Subnets

Azure Networking

- Azure Virtual Networks
- Azure Subnets
- Launching the VM in the subnet
- Launching DB in the Subnet
- Connecting to the Public DB
- Importance of Jump host
- Connecting the Private DB using Jump host
- IP Address Public & Private IPs
- Azure Vnet Subnets
- Azure Network Interface Cards (NIC)
- Network Security Group (NSG)
- Service Tags
- Azure DNS
- Private DNS

Azure Virtual Machines

- Virtual Machine instances
- Azure VM types and Pricing
- Disks & Images
- Setting up VM in Availability set using Load Balanced Endpoint
- VM Availability using Availability Sets
- Provisioning the Linux & windows VM
- Importance of Jumphost
- Connecting to the DB using the Jumphost
- Understanding the Firewall Rules
- Connect to DB using Firewall Rules
- Importance of security Group
- Inbound & outbound Rules setup

- Private End points
- Service End points
- Difference between the Private endpoint and Service endpoint

Microsoft Azure Storage

- Storage Account Replication Techniques
- Protocols and Consistency Model
- Type of Azure Storage Account
- Storage Services Blob, Table, queue, File

Manage App Services

- Deployment to App Serivce
- App Service plan
- AD Authentication
- Custom Domain setup for the web app
- App Settings
- Deployment Slots

Source Code Versioning [Azure Repos]

- What is Git
- Lab - Azure Repos
- Understanding the branches in Git
- Check-in code from Local to Remote Repo
- Understanding on the Git commands
- Pushing branches onto Azure Repos
- Pulling changes from a git repository
- Using the .gitignore file
- GitHub and Azure Boards Integration
- Raising PR to the Main/Master/RC Branches
- Importance of the Hotfix, Release Candidate Branches
- Branching strategy on the Azure Repos
- Branching policies on the Azure Repos
- Branch locking
- Setting up the Global Branching Policies on the Release Folder
- Maintain the security on the Repos
- *Azure Pipelines - Java application [Mini Project 1]*

Docker

- Virtualization and Containerization
- Introduction to Docker
- Installing Docker on the VM
- Lab session for the Docker Commands
- Running container in the interactive and Detached modes

- Creating a customized image
- Docker hub login
- Pushing an image to Docker hub
- Understanding on the Azure Container Registry [ACR]
- ACR Login
- Pushing an image to Azure Container Registry
- Understanding on the Azure Container Instance
- Executing the image using Container instance
- Understanding the security on the Azure Container Registry
- *Real time project - Java application as a container with Database [Mini Project 2]*
- *Real time project - React application as a container [Mini Project 3]*

Kubernetes

- Monolithic vs Microservices
- Kubernetes Features
- Kubernetes Architecture
- Understanding on the Pods and pod lifecycle
- Writing yaml from the scratch including syntaxes
- Types of Kubernetes Exposed Services
- Differences among Cluster IP vs Node Port vs Load Balancer
- BoM Preparation for AKS components
- Architecture for Cluster IP , Node Port and Load Balancer
- Creating a Deployment in Kubernetes using YAML
- Installing the Kubectl in the VM
- Connecting the AKS cluster using the VM
- Understanding on the Kubernetes Commands
- Security on the AKS setup process
- Difference between the AKS public and private cluster
- Deploying to Multiple clusters using same VM
- How to connect to the VM to Private DNS zone of AKS API Server
- Importance VNet Link and Vnet peering in the AKS multi cluster connection
- Creating a Service in Kubernetes using YAML
- Creating a Secrets in Kubernetes using YAML
- Accessing the secrets in the Kubernetes Deployment yaml
- Setting up the Resources limits on the pods in the AKS
- Understanding on the Replica set
- External Load Balancer vs Internal Load balancer
- Importance and Drawbacks of the Kubernetes services
- Introduction to Ingress
- Provisioning the Application Gateway [Ingress Controller]
- Path/Host Mapping Techniques
- Security on the Application Gateway
- *Setting up the Realtime project using AKS along with APGW Ingress Controller*

Flat No: 506,5th Floor, Nilgiri Block, Aditya Enclave, Ameerpet, Hyd -5000038.
Contact: +91 9032734343   Mail: info@vritsol.com   www.vritsol.com

- *Setting up the Realtime project using AKS along with NGINX Ingress Controller*

Selenium

- Selenium Webdriver Introduction
- Understanding on the WebDriver vs Remote WebDriver
- Selenium Target locators
- Techniques in Writing XPath
- Understanding on the Web-elements in the webpage
- Selenium commands to handle the Web-elements in the webpage
- Selenium commands to handle alerts , windows & Frames
- *Understanding the Selenium Real time Framework*
- Understanding the POM Framework
- Importance of Wrapper Methods
- Writing the Business understandable scenarios in. BDD format using Cucumber Plugin
- Exporting the Reports using Extent Reports with screen shots

Terraform

- Installing Terraform
- Initializing Azure Terraform Provider
- Understanding the Terraform Commands
- Creating a Resource Group using Terraform
- Creating Network components in Azure using Terraform
- Deploying VM inside a custom Virtual Network in Azure using Terraform
- Deploying DB inside a custom Virtual Network in Azure using Terraform

Terragrunt

- Introduction to the Terragrunt
- Installing Terraform & Terragrunt in the VM
- Setting up the Terragrunt Agent in the Azure Devops
- Terragrunt wrapper importance
- Accessing Variables from the Terragrunt.hcl
- Importance of Locals
- Dependency block understanding in the terragrunt
- *Setting up the Real time framework using Terragrunt*

Ansible

- Ansible Introduction
- Ansible inventory
- Introduction to Yaml
- Ansible playbook
- Run Ansible playbook
- Introduction to Ansible Roles

- Demo on Ansible Roles
- Ansible Examples
- Tips & tricks in writing Shell scripts
- Loops in shell scripts
- Csv operations using shell scripts
- Invoking shell scripts in Ansible playbook yaml

Helmchats

- What is Helm Chart?
- What is Helm?
- Why to use Helm?
- How does Helm work?
- Some examples of Helm commands
- Helm Create
- Helm Install
- Helm Repo add
- Develop on Azure Kubernetes Service (AKS) with Helm
- Generate Helm Chart and update the Chart (template)
- Send Helm Chart to Azure Kubernetes Service (AKS) to deploy the Java application

E2E Real Time Project covers all the below Azure components [Main project]

- Planning for Vnet & subnets
- Front Door
- API Management
- Azure Application Gateway [Ingress controller]
- Postgres DB & Backup
- Azure Key Vault
- AKS
- Security Groups
- WAF
- AKS Deployment from Azure Devops
- Azure Load Balancer
- Active Directory
- Log analytic workspace
- Container Registry
- Velero backup for AKS cluster
- Logging , Monitoring & Alerts

AWS Course Syllabus

AWS Training Overview

This Instructor-led comprehensive AWS Training (AWS Solutions Architect – Associate and Sysops Administrator) designed to show how to setup and run Cloud Services in Amazon

Web Services (AWS) all the way through to IaaS with hands-on experience on AWS Public cloud.

This course provides a strong foundation for implementing and designing cloud services.

Aws Basics

- Creating AWS account
- Free tier Eligible services
- Understanding AWS Regions and availability zones

EC2 (Elastic Cloud Compute)

- About EC2 and types , Pricing
- EIP (Elastic IP address), Allocating, associating , releasing
- Launch windows and Linux Instances in AWS
- Connecting windows and Linux instances from windows desktop and Linux machines

About AWS Storage services, EBS and S3

- Creating S3 Buckets and putting objects in bucket
- Discussion about Bucket Properties
- S3 Pricing
- About S3 glacier
- EBS (Elastic Block Storage)
- Types of EBS Volumes
- Creation, attaching and Detaching volumes
- ELB (Elastic Load Balancer)

Understanding the load balancing

- Configuring ELB and adding the webservers under ELB
- Auto Scaling
- Types of Scaling (Horizontal and Vertical)
- Configuring Launch Configuration
- Creating and defining the auto scaling group policy

IAM (Identity Access Management)

- Understanding of AWS Security using IAM
- Definition of Roles, policies and Groups
- Creating IAM Users and managing password policies
- RDS (Relational Database server)
- About RDS and available RDS Engines in AWS
- Configuring MYSQL Postrgres RDS service
- Connecting EC2 Instance to RDS Instance

Azure Devops

AWS E2E Project

- Virtual Private Cloud Discussion
- Provisioning VPC & Subnets
- Types of Subnets
- Introduction to Ec2 Instances
- Discussion on the security Group
- Congnito User pool Authentication Process
- API Gateway
- Postgres DB provisioning
- Route 53
- Deploying the service from Azure Devops
- Understanding on the Service Account
- Network Load Balancer
- Application Load Balancer
- Classic Load Balancer
- VPC End points
- EKS Cluster
- Secret Manager
- Cloud Watch
- Elastic File S

Bonus lectures

- JMeter [Peformance Testing Tool]
- SonarQube
- Jenkins
- PowerShell
- ARM Templates