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**AiNS**™  
COMPUTER INSTITUTE

# AZURE CLOUD

## SYLLABUS

### **PART 1 – AZURE BASICS**

#### **1.Cloud Computing – Overview**

- Architecture of Cloud Computing
- Types of Cloud
- Benefits of Cloud
- SPI

#### **2.Windows Azure**

- Azure as PaaS (Platform as a Service)
- Azure as IaaS (Infrastructure as a Service)
- Azure Management Portal

#### **3.Azure – Components**

- Compute / Execution Models
- Data Management
- Networking
- Big Data and Big Compute
- Messaging
- Caching
- Identity and Access.
- Mobile Service
- Backup
- Media
- Commerce
- Software Development Kit (SDK)



## **8. Queues**

- Managing Queues using PowerShell**
- Managing Queues using Azure Storage Explorer**

## **9. Tables**

- How to Manage Tables Using PowerShell?**
- How to Manage Table using Azure Storage Explorer?**

## **10. CDN**

- Create a CDN**
- Create CDN for Custom Origin Links**
- Manage CDN**
- Map a Custom Domain Name**

## **11. Applications**

## **12. Security**

- Creating an Active Directory**
- Mapping a Custom Domain**
- Creating Users**
- Integrating with Azure Active Directory**
- Integrating On-Premise Active Directory**
- Reports**

## **13.Datacenters**

- How to Choose the Right Data Center for Your Application?

## **14.Scenarios**

- Software Development
- Enterprise Process Offloading
- Enterprise Application Integration

## **PART 2: AZURE ADVANCED**

### **15.Management Portal**

- Create a New Application
- Check Credit and Subscriptions
- Add a New Subscription
- Azure Preview Portal

### **16.Create Virtual Network**

- Creating a Virtual Network in Clouds Only
- Creating a Virtual Network in Cloud Only (Advanced Settings)

### **17.Deploying Virtual Machines**

- Quick Create
- Create Virtual Machine with Advanced Settings
- Connecting with a Virtual Network
- Accessing the Virtual Machine

## **18.Endpoint Configuration**

- Access Control of Endpoint

## **19.Point-to-Site Connectivity**

- Enabling Point-to-Site Connectivity on Existing Virtual Network
- Create a New Virtual Network with Point-to-site Connectivity
- Generate Certificates.

## **20.Site-to-Site Connectivity**

- Creating a Site-to-Site Connectivity Network.

## **21.Traffic Manager**

- Create Traffic Manager
- Create Endpoints to be Monitored via Traffic Manager
- Configure the Policy

## **22.PowerShell**

- Installing Azure PowerShell
- Connecting to Your Subscription
- Connect to Your Azure Account
- Remove Azure Account
- Get Help

## **22. Monitoring Virtual Machines**

- Monitor VM in Azure Management Portal**
- Enable Diagnostics**

## **23. Setting Up Alert Rules**

## **24. Application Deployment**

- Application Deployment**
- Deploying a Web App from PowerShell**
- Create a Deployment Package**
- Create a Website in Azure using PowerShell**
- Deploy Website using Deployment Package**

## **25. Backup & Recovery**

- Create Backup Vault**
- Schedule a Backup**

## **26. Self-Service Capabilities**

- Group Management**
- Password Management**

## **27. Multi-Factor Authentication**

- Create a Multi-Factor Authentication Provider**
- Enable the Multi-Factor Authentication for Existing Directory**
- Enable Multi-Factor Authentication for On-premises Applications**

## **28.Forefront Identity Manager**

## **29.Data Import and Export Job**

- Data Export Job**
- Create an Export Job**
- Create Import job**

## **30.Websites**

- Create a Website in Azure Management Portal**
- Deploying Azure Website from Visual Studio**
- Monitoring the Website**
- Staged Publishing**

## **31.Scalability**

## **32.Disk Configuration**

- Virtual Machine and Disks**
- Create/Attach a Disk in Virtual Machine**
- Configure the Disk in Virtual Machine**
- Delete the Disk**
- Image Disks**

## **33.Disk Caching**

## **34.Personalize Azure Access**

## **35.Personalize Company Branding**

- Active Free Trial of Azure Active Directory (ADD) Premium Edition**
- Customize Branding**
- Login with Customized Sign-in Page.**

## **36. Self-Service Group Management**

- Policy Setup for Self-service Group Management.

## **37. Create a Group**

## **38. Security Reports and Alerts**

- Anomalies Reports
- Activity Reports
- Integrated Application
- Search Activity of a Particular User

## **39. Orchestrated Recovery**

- Create a Site Recovery Vault
- Between On-premises VMM Site and Azure
- Between On-premises Hyper-V Site and Azure
- Between On-premises Site with VMWare / Physical Server and Azure
- Between Two On-premises VMWare Sites
- Between Two On-premises VMM Sites and SAN Array Application
- Create a Recovery Plan

## **40. Health Monitoring**

## **41. Upgrades**

- Update a Cloud Service
- VIP (Virtual IP) Swap.

## **Others:**

- Labs and Theory special notes

# +DEVOPS

## **Introduction to DevOps**

- DevOps Principles in detail**
- DevOps Engineer Skills in the market**
- Knowing DevOps Delivery Pipeline**
- Market trend of DevOps**
- DevOps Technical Challenges**
- Tools we use in DevOps**

## **DevOps on Cloud**

- Essentials of Cloud computing?**
- Cloud and virtualization architecture**
- Cloud deployment architecture**
- Cloud providers – An overview**
- Why we need DevOps on Cloud?**
- Introducing to Amazon web services**



## **GIT – A Version controlling tool**

- Knowing about Version control**
- Git – A CLI**
- Essentials of GIT in industry**
- How to setup GIT**
  - o Installing Git**
  - o First-Time Git Setup**
  - o Getting a Git Repository**
- Working with various commands in GIT**
- Recording Changes to the Repository**
  - o How to check the Status of Your Files**
  - o How to track New Files**
  - o Staging our modified files**
  - o Ignoring Files from GIT**
  - o Viewing Your Unstaged and Staged Changes**
  - o How to commit Your Changes**
  - o Skipping the Staging Area and commit**

## **Viewing the Commit History**

- o Limiting Log Output**
- o Using a GUI to Visualize History**
- Undoing Things**
- o Changing Your Last Commit**
- o Unstaging a Staged File**
- o Unmodifying a Modified File**
- Working with Remotes**
- o Showing Your Remotes**
- o Adding Remote Repositories**
- o Fetching and Pulling from Your Remotes**
- o Pushing to Your Remotes**
- o Inspecting a Remote**
- o Removing and Renaming Remotes**
- Branching and Merging in Git**
- o What a Branch Is**
- o Basic in Branching and Merging**
- o Branch Management in GIT**
- o Branching Workflows and its usage**
- o Remote Branches – create and delete**
- o Rebasing**
- Git workflows**
- Git cheat sheet**

## Jenkins

- Essentials of Continuous Integration
- An example scenario where CI is used
- Know about Jenkins and its architecture in detail
- Jenkins tool Management in detail
- Know about User management in Jenkins
- Authentication
  - o Jenkins own database user creation
- Authorization
  - o Matrix based authorization
  - o Project based authorization
- Overview of Maven
  - o Maven project structure
  - o Maven plugins
  - o Project Object Model (POM) – fundamental unit of work in Maven project
  - o Maven build lifecycle
  - o Adding external dependencies to maven pom.xml
  - o Maven build and test project

## **Creating jobs and automatic build settings**

- o What is Jenkins Pipeline?**
- o Why Pipeline?**
- o Integration with GIT**
- o How to enable project based authorization for a job**
- o Source code management while creating jobs**
- o Triggering automated build**
- o Maven job setup**
- o Know about post build options for jobs like notifications, trigger another build, publishing reports, etc.**
- Adding a slave node to Jenkins**
- Building Delivery Pipeline**
- Notification settings in Jenkins**
- Plugin management in Jenkins**

# **Kubernetes**

- Introduction to Kubernetes**
- Kubernetes Cluster Architecture – An overview**
- Understanding concepts of Pods, Replica sets, deployments and namespaces**
- Understanding the concepts of services and networking**
- Persistent volumes and persistent volume claims –an overview**
- Design of Pods**
- Understanding labels, selectors, jobs, and schedulers**

# Docker

## □ Introduction

- o Real-world Shipping Transportation Challenges

- o Introducing Docker and its technology

- o Understanding of Docker images and containers

## □ Working with container

- o How to Share and copy a container

- o Container Life Cycle

- o How to use Base Image and customize

- o Creation of Docker File

- o How to Publish Image on Docker Hub

## □ Introduction to Docker Networking

- o Network Types in docker technology

- o Docker Container Networking

- o Docker Compose – An introduction

## □ Docker Swarm – An introduction

- o Use Docker Compose to create php, wordpress, mysql

- o How to Start Containers on a Cluster with Docker Swarm

- o Creating and Scaling an application in Docker swarm