



Technical Guftgu

(Established under Ministry of Micro, Small and Medium Enterprises, Govt. of India)

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- ✓ Certificate provided
- ✓ Practical & Demos
- ✓ In Hindi/Urdu
- ✓ Expert Trainers

AZURE DEVOPS (AZ-400)

Introduction - Azure DevOps is a set of development tools and services provided by Microsoft for managing the complete software development lifecycle. It offers a range of features such as continuous integration, continuous delivery (CI/CD), source control, and project management. With Azure DevOps, teams can collaborate effectively, automate workflows, and streamline development processes. It integrates with various programming languages, frameworks, and third-party tools, making it a versatile choice for modern DevOps practices.

Pre- requisite — Basic knowledge of Azure.

Note: This Course is Specially Designed for Non-technical Candidates and Delivered by Bhupinder Rajput Sir.

Course Content:

1. DEVOPS Introduction

- I. Traditional Software Development Life Cycle.
- II. Waterfall Model.
- III. About Agile Methodology.
- IV. What is DevOps?
- V. DevOps Practices?
- VI. The Challenge.
- VII. Benefits of DevOps over Traditional IT.
- VIII. DevOps Tools.
- IX. What is CI and CD.
- X. DevOps as a profession – DevOps Engineer.

2. Azure DevOps

- I. What is Azure DevOps.
- II. Version History.
- III. Azure DevOps features.
- IV. Azure DevOps Tools and Projects life cycle.
- V. Create DevOps Accounts.
- VI. Create Organization.
- VII. Create Project and get started.
- VIII. Create Users and invite teams members.

3. Azure Boards.

- I. Introduction
- II. Working with works items.
- III. Epic, Feature, User, Story, Task, Bug and test cases.
- IV. Linking Items,
- V. Collaborate with Team members.
- VI. Follow a Work item.

- VII. Dashboards.
- VIII. Capacity Planning with Sprints.
- IX. Link work items using Queries.

4. Azure REPOS, GITHUB and GIT.

- I. Version control using git.
- II. What is Git, Azure Repos and GitHub
- III. Install Git Locally.
- IV. Getting Started with Git Commands.
- V. Updating to DevOps Repository.
- VI. Working with Branches.
- VII. Merging Branches.
- VIII. Creating and Committing a Pull Request.
- IX. Add a rule to Require a Review.
- X. Squash Merging During Pull Request.
- XI. Working with Merge Conflicts.
- XII. Cherry-Picking and rebase.
- XIII. Undo Changes using Reset and Revert.
- XIV. Ignoring files using gitignore.
- XV. Managing Git Branches in Azure Repos.
- XVI. Branch Policies and branch Permissions.
- XVII. Branches in folders.
- XVIII. Working the GitHub Repositories.
- XIX. Branching Workflow Types
 - Feature Branching.
 - Gitflow Branching
 - Forking Workflow.
- XX. Summary of Git Commands.

5. Azure Repos TFVC.

- I. About TFVC.
- II. Using TFVC in VS.NET.
- III. Moving From TFVC to GIT>

6. Continuous Integration Using Azure Build Pipelines.

- I. About Azure DevOps Pipeline.
- II. Understanding the Build Process.
- III. Create a Pipeline using Classic Editor.
- IV. Enable Continuous Triggers for Build Pipeline.
- V. Add a status badge to repository.
- VI. Working with the Task Groups.
- VII. Validate pull Request based on Build Pipeline Result.
- VIII. Add a Widget to dashboard.

7. Continuous Integration using YAML Pipelines.

- I. Understanding YAML file format.
- II. Building Azure DevOps Pipeline using YAML.
- III. Publishing results to Artifacts.
- IV. Triggering Continuous Integrations in YAML.
- V. Filtering Task based on branch Being built.
- VI. Using Templates to Build Multiple Configurations.
- VII. Build on Multi-platform pipeline.

8. Integrating Quality Tests in Azure Pipeline.

- I. Overview of Testing.
- II. Add Unit Test to your Application.
- III. Integrating unit test with CI Pipeline.
- IV. Add the Test Widget to Dashboard.
- V. Perform Code Coverage Testing using Cobertura

9. Scan Code for Vulnerabilities and License Ratings in CI Pipeline.

- I. Sources and impacts of Technical Debt.
- II. Managing Technical Debt with Devops and Sonar Cloud.
- III. Scan open-source components using WhiteSource Bolt.

10. Continuous Deployment using Azure Pipelines.

- I. What is Continuous Delivery.
- II. Connecting to Azure Subscription.
- III. Deploying App to App Service using Designer.
- IV. Multi-State Pipeline.
- V. Approvals and Gates.
- VI. Working with Task Groups.
- VII. Deploying App to Virtual Machine.
- VIII. Deploying App to App Service using YAML.
- IX. Add the deployment State to the pipeline.
- X. Deploy Apps to Specific Environment.
- XI. Deploy Azure Functions.

11. Deep Dive into CI and CD Pipeline.

- I. Introduction.
- II. Retention policies.
- III. About Build Agents.
- IV. About Agent Pools.
- V. Create Self Hosted Windows Agents.
- VI. About Libraries.
- VII. Variables.
- VIII. Secure Files.
- IX. Pipeline Conditions.
- X. Pipeline Demands.
- XI. Integrating Pipeline with Microsoft Teams.

12. UI Test Using Selenium.

- I. Overview about Functional Test.
- II. Kind of Functional Test.
- III. UI Test with Selenium on Local System.
- IV. UI Tests in Build and Release Pipeline.
- V. Capture Video.

13. Azure Key Vault.

- I. Introduction to Key Vault.
- II. Secrets vs Keys

- III. How it Works.
- IV. Creating a Key Vault Service and Add Keys and Secrets.
- V. System Assigned and User Assigned Managed Identity. s
- VI. Reference Key Vault in ARM Template
- VII. Reference secrets with Dynamic ID.

14. Working with SQL Database.

- I. Creating a Database Project.
- II. Database Deployment using DACPAC.
- III. Deploying Database using SQL Scripts in Pipeline.
- IV. Using Multiple Stages and Approvals.

15. IaC Using ARM Templates.

- I. About Infrastructure as Code (IAC).
- II. About RAM Templates.
- III. Sample to Create Storage Account Using RAM Template.
- IV. Deploy Templates using PowerShell.
- V. Deploy Templates using Azure Portal.
- VI. Deploy Templates using Azure Pipeline.
- VII. Incremental and Complete Deployment.
- VIII. Creating VM using ARM Template.
- IX. Create linked ARM Templates.
- X. Creating Resource Group and Resources at Subscription level.

16. IaC using Terraform Templates

- I. Overview of Terraform.
- II. Terraform Files Structure.
- III. Terraform Commands.
- IV. Run a Terraform plan from Azure Cloud Shell.
- V. Provision Terraform Task in Azure Pipeline- Classic Editor.
- VI. Provision Terraform Task in Azure Pipeline -YAML File.

17. IaC using Ansible.

- I. Overview of Ansible.
- II. Ansible Workflow.
- III. Ansible Components.
- IV. Installing Ansible.
- V. Playbook Structure.
- VI. Executing a Playbook.

18. Azure Artifacts

- I. What are Artifacts.
- II. Public and download Build Artifacts.
- III. Publish and Download Pipeline Artifacts.
- IV. Working with Feed and NuGet Packages.
- V. Share Packages publicly.
- VI. Public NuGet Package from Pipeline to NuGet Feeds.
- VII. Upstream sources and view.

19. Continuous Integration Using Jenkins

- I. Jenkins Management.
- II. Adding a slave node to Jenkins.
- III. Building Delivery Pipeline
- IV. Pipeline as a Code.

20. Working with Containerization using Docker.

- I. Understanding VM and Containers.
- II. What is Docker and its Benefits.
- III. Docker Architecture.
- IV. Steps to create Docker Image.
- V. Build and Publish Docker Image to Azure Container Registry Using Azure Pipeline.
- VI. Deploying to web App.
- VII. Deploying a Docker Container in VM or Local Machine Using Docker Compose.

21. Working with Kubernetes.

- I. Deploying Applications to Kubernetes Cluster.
- II. What is Kubernetes.
- III. Kubernetes Server and Client Components.
- IV. Creating an AKS Cluster.
- V. Writing Deployment and service YAML files.
- VI. Deploying the Application using Kubectl
- VII. Building a CI and CD Pipeline for Deploying to Kubernetes Cluster.

KEY HIGHLIGHTS OF THIS TRAINING PROGRAM:

- ✓ Entire training programme is in Hindi Language for Better understanding.
- ✓ Special focus on Non technical and Fresher candidates.
- ✓ Resume Preparation for Fresher's and Experienced Both.
- ✓ Provides Recording of each live session which you can access from anywhere anytime for One year.
- ✓ Interview Cracking tips during live sessions.
- ✓ Provide complete notes and e-books for preparation.
