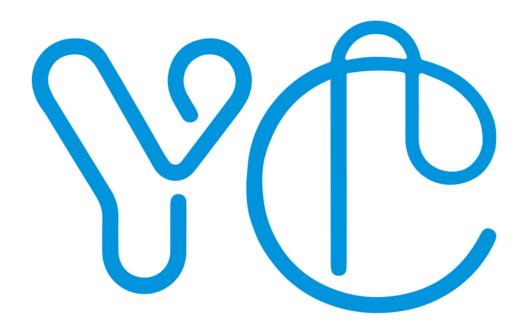
Prepare AZ-400

DevOps Engineer Expert





WELCOME TO MY WORLD



yatharthchauhan.me

CONNECT WITH ME











What do you need to learn in AZ-400: DevOps Engineer Expert?

- 1. Introduction to Azure DevOps and Basic Concepts
- 2. Azure Boards and Agile Project Management
- 3. Mastering Git and Source Control in Azure DevOps
- 4. Build Pipeline
- 5. Continuous Delivery with Azure DevOps Release Pipeline
- 6. Azure Test Plans and Testing
- 7. Basic Project Artifacts with Azure Artifacts
- 8. Infrastructure as Code (IaC) with Terraform and Azure DevOps
- 9. Self Hosted agents on Azure Virtual machine scale sets
- 10. Managing Containers with Azure DevOps
- 11. Implementing end-to-end CICD using Azure DevOps on Kubernetes
- 12. Security and Permissions in Azure DevOps
- 13. Serverless app CICD
- 14. Azure DevOps wiki
- 15. Creating Architectural diagrams
- 16. Advanced CI/CD Pipelines and Deployment Strategies

Pre- requisite: Azure Administrator certification (AZ-104) or Azure Developer (AZ-204)

1. INTRODUCTION TO AZURE DEVOPS AND BASIC CONCEPTS

- What is Cloud Computing?
- laaS VS PaaS VS SaaS
- What is a Shared Responsibility Model?
- What is a Traditional Build and Deployment workflow?
- What is a Waterfall model in SDLC?
- Problems with the traditional software development life cycle (SDLC)
- What is Agile, and how it solves the above challenges?
- What is DevOps and Why Does It Matter?
- What is CI/CD?
- What is Azure DevOps and a quick walkthrough?
- Creating an Azure DevOps Organization
- Creating an Azure DevOps Project
- Azure DevOps Pricing
- Azure DevOps hosting options : Azure DevOps Services VS Azure DevOps Server



2. AZURE BOARDS AND AGILE PROJECT MANAGEMENT

- What are Azure DevOps Boards?
- What are Azure board processes, agile, scrum, basic, and CMMI?
- Managing work items in Azure boards
- Azure board implementation using basic process
- Working with teams, areas, and iterations
- Filters in backlogs and boards
- · Azure board implementation using the scrum process
- Sprint planning and capacity planning
- Product backlog and taskboard
- Customizing Kanban boards
- Customizing dashboards
- Work item query
- Customizing team process

3. MASTERING GIT AND SOURCE CONTROL IN AZURE DEVOPS

- Introduction to Source Control and Azure Repos
- Git vs TFVC
- Configure Visual Code
- · Cloning the repo
- Commit changes
- Reviewing history
- Working with branches
- Tagging a release
- Managing repository
- Managing Pull requests
- Sample application code

4. BUILD PIPELINE

- Provision Azure App Service to host the website.
- Creating Build Pipelines using the classic editor
- Creating build pipeline using YAML
- YAML pipeline structure, the difference between jobs, stages, steps, and tasks
- Creating a multi-stage CICD pipeline
- variables, triggers, Build properties, agents
- Publishing and Download Build Artifacts



5. CONTINUOUS DELIVERY WITH AZURE DEVOPS RELEASE PIPELINE

- Automating Deployment with a multi-stage Release Pipelines
- Continuous Deployment Triggers
- Continuous delivery using deployment slots to enable Blue-Green deployment
- Deployment gates such as Query Work Items and Approvals before the prod deployment
- Update the code to test the entire CICD process with the Build and Release pipeline

6. AZURE TEST PLANS AND TESTING

- Azure Test Plan Overview
- Features of Azure test plan
- Managing Test Plans, Suites and Cases
- Subscribe to the test plan free trial
- Authoring, Running, and Analysing Manual Tests
- Azure Test and Feedback extension

7. BASIC PROJECT ARTIFACTS WITH AZURE ARTIFACTS

- Overview of Azure Artifacts
- Create the Azure DevOps project and check out the application code
- Set up the infra using Azure Web App
- Create Azure Artifacts feed to host the packages
- Create the CI pipeline that builds the package and pushes it to the feed
- Create the CD pipeline that consumes the package
- Promote the package to trigger the release pipeline
- Upstream packages in Azure Artifacts



8. INFRASTRUCTURE AS CODE (IAC) WITH TERRAFORM AND AZURE DEVOPS

- Introduction to IaC and Tools
- Various Terraform commands and workflow
- Creating Terraform configuration files
- Setting up terraform backend with Azure storage
- Executing Terraform commands using CLI
- Azure DevOps CI Pipeline to init, plan, and archive the plan file
- Azure DevOps CD pipeline to apply the changes

9. SELF HOSTED AGENTS ON AZURE VIRTUAL MACHINE SCALE SETS

- Microsoft-hosted vs. self-hosted agents
- Use case of self-hosted agents
- Ways to setup self-hosted agents: VM, VMSS, container
- What is a Virtual machine scale set?
- Set up a self-hosted agent using VMSS
- Register the agent on an agent pool
- Install custom utilities on the agent
- Use the self-hosted agent on a pipeline
- Comparison between self-hosted and Microsoft-hosted agents
- work folder walkthrough on agent

10. MANAGING CONTAINERS WITH AZURE DEVOPS

- What is a container?
- Understanding Virtual machine V/s Containers.
- Challenges with the non-containerized applications
- Docker Architecture
- Containerize a sample To-Do list web app written in React JS.
- Benefits of a multi-stage docker file
- What are Azure container instances(ACI)?
- Azure DevOps CICD Pipeline to deploy to ACI



11. IMPLEMENTING END-TO-END CICD USING AZURE DEVOPS ON KUBERNETES

- Basic Introduction of Kubernetes and its benefits
- Kubernetes Architecture
- What is the control plane and its components?
- What are Nodes and types of Nodes?
- What is a Pod/Deployment/Service?
- Azure DevOps CICD Pipeline for a web app running on Kubernetes

12. SECURITY AND PERMISSIONS IN AZURE DEVOPS

- Enabling advanced security in Azure DevOps
- Dependency Scanning
- Secret scanning and managing alerts
- How to use secrets in your pipeline?
- Code scanning for vulnerabilities

13. SERVERLESS APP CICD

- Introduction to Azure functions
- Build and release pipeline for building and deploying the code to Azure Functions

14. AZURE DEVOPS WIKI

- Overview of wiki
- Introduction to MarkDown
- How we can use Azure DevOps wiki to collaborate on a project?



15. CREATING ARCHITECTURAL DIAGRAMS

- Importance of documentation
- How to create effective architectural diagrams using multiple tools?
- How to create animated architectural diagrams for blogs/social media?

16. ADVANCED CI/CD PIPELINES AND DEPLOYMENT STRATEGIES

- Building Multi-Stage CI/CD Pipelines
- Implementing Canary deployment using Azure DevOps
- Managing Pipeline Variables and Environment

Microsoft AZ-400 Certified: DevOps Engineer Expert - Yatharth Chauhan

• Click here to see verified credential

Follow me on LinkedIn: Click Here

