Master in Azure DevOps - Including 3 Major Certifications

About
DevOpsSchool

DevOpsSchool is a unit of "Cotocus PVT ltd" and a leading platform which helps IT organizations and professionals to learn all the emerging technologies and trend which helps them to learn and embrace all the skills, intelligence, innovation and transformation which requires to achieve the end result, quickly and efficiently. We provide over 40 specialized programs on DevOps, Cloud, Containers, Security, AI, ML and on Big data that are focused on industry requirement and each curriculum is developed and delivered by leading experts in each domain and aligned with the industry standards.

ABOUT COURSE

Microsoft Azure Certification is one of top role-based certifications in every aspect of IT industry. In today's era, cloud plays an important role in most of the organizations, and have some dependency on a cloud platform and they rapidly adopt using Microsoft Azure as a part of their cloud infrastructure for data storage and to host their services efficient, highly-scalable architecture. The "Mater in Azure DevOps" is an expert-level Certification, Candidates with this certification officially hold the status of Microsoft Certified Azure DevOps Engineer Expert. The course is designed for an individuals who would like to improve their expertise in the design and implementation of the DevOps processes. Azure DevOps Engineer Certification course is designed to learn Azure from scratch to an advanced level. It will give you the practical knowledge, skills, and confidence to start your career as an Azure DevOps Engineer. DevOpsSchool is one of the Top institute for Master in Azure DevOps training and certification program in top cities of India like Bangalore, Hyderabad and globally, both in online and offline classroom mode. We will cover top 3 certifications like-Azure Fundamental (AZ - 900), Azure Administrator (AZ - 104), and Azure DevOps (AZ - 400). Both in online and offline classroom mode are provide by top experts/trainers, covering all the important topics required and related to course, Alarms and many more. Our support team and experts are always there and ready to clarify all your doubts and questions throughout the training.

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Co-coordinator – Akanksha Kumari

Call/WhatsApp: - +91 1800 889 7977

Mail Address: -

contact@DevOpsSchool.com

Secondary contact – Patrick

Call/WhatsApp: - +91 7004 215 841

Mail Address: -contact@DevOpsSchool.com

Duration	60 Hours
Mode	Online (Instructor-led, live & Interactive)
Projects (Real time scenario based)	1

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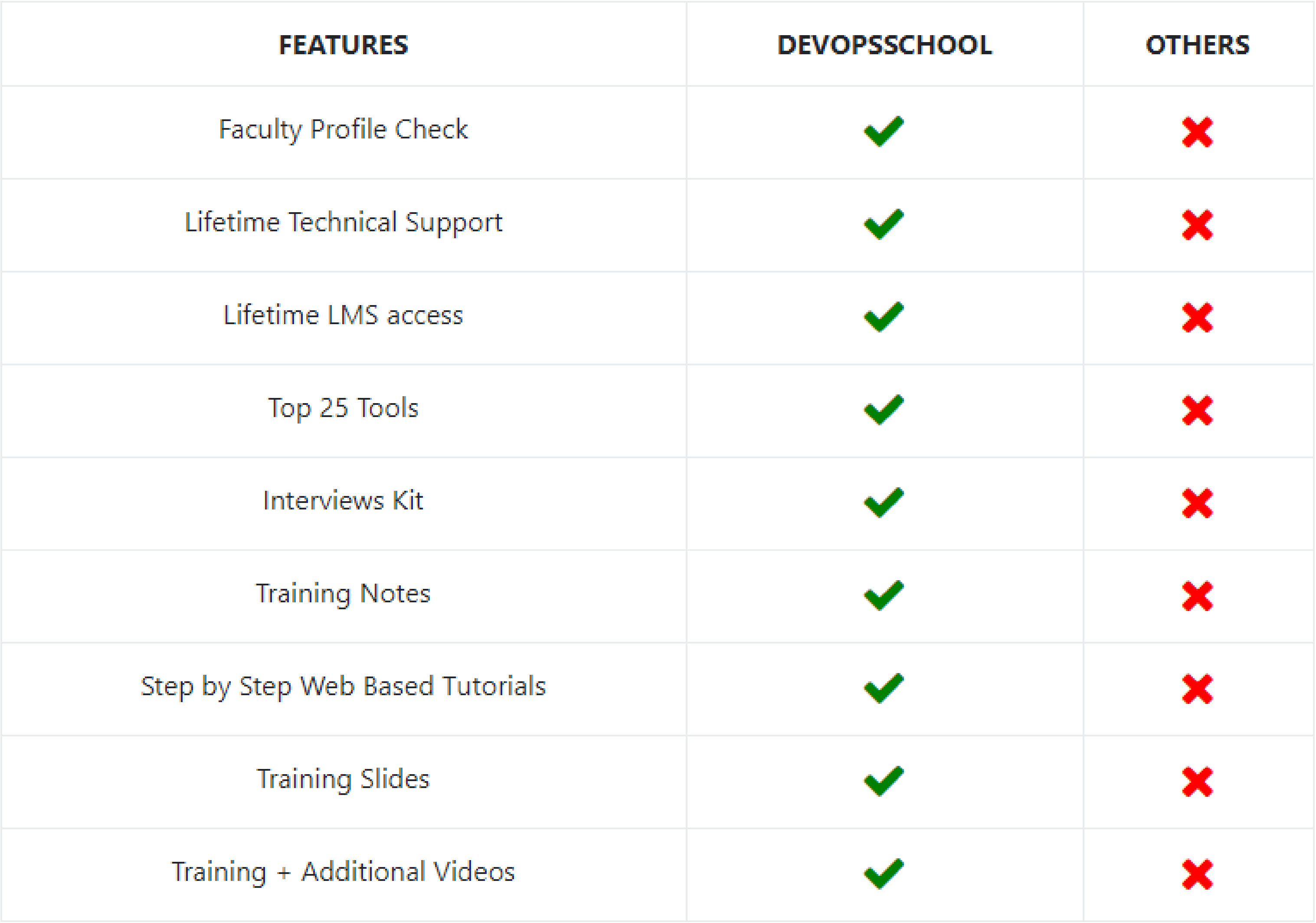

FEATURES	DEVOPSSCHOOL	OTHERS
Faculty Profile Check	✓	✗
Lifetime Technical Support	✓	✗
Lifetime LMS access	✓	✗
Top 25 Tools	✓	✗
Interviews Kit	✓	✗
Training Notes	✓	✗
Step by Step Web Based Tutorials	✓	✗
Training Slides	✓	✗
Training + Additional Videos	✓	✗

AGENDA OF THE MASTER IN AZURE DEVOPS - INCLUDING 3 MAJOR CERTIFICATIONS

Azure Fundamental (AZ - 900)

Describe Cloud Concepts

Identify the benefits and considerations of using cloud services

- identify the benefits of cloud computing, such as High Availability, Scalability, Elasticity, Agility, and Disaster Recovery
- identify the differences between Capital Expenditure (CapEx) and Operational Expenditure (OpEx)
- describe the consumption-based model

Describe the differences between categories of cloud services

- describe the shared responsibility model.
- describe Infrastructure-as-a-Service (IaaS)
- describe Platform-as-a-Service (PaaS)
- describe serverless computing.
- describe Software-as-a-Service (SaaS)
- identify a service type based on a use case.

Describe the differences between types of cloud computing.

- define cloud computing.
- describe Public cloud.
- describe Private cloud.
- describe Hybrid cloud.
- compare and contrast the three types of cloud computing.

Describe Core Azure Services

Describe the core Azure architectural components.

- describe the benefits and usage of Regions and Region Pairs
- describe the benefits and usage of Availability Zones.
- describe the benefits and usage of Resource Groups.
- describe the benefits and usage of Subscriptions.
- describe the benefits and usage of Management Groups.
- describe the benefits and usage of Azure Resource Manager
- explain Azure resources.

Describe core resources available in Azure

- describe the benefits and usage of Virtual Machines, Azure App Services, Azure Container Instances (ACI), Azure Kubernetes Service (AKS), and Windows Virtual Desktop
- describe the benefits and usage of Virtual Networks, VPN Gateway, Virtual Network peering, and ExpressRoute
- describe the benefits and usage of Container (Blob) Storage, Disk Storage, File Storage, and storage tiers
- describe the benefits and usage of Cosmos DB, Azure SQL Database, Azure Database for MySQL, Azure Database for PostgreSQL, and SQL Managed Instance
- describe the benefits and usage of Azure Marketplace

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Describe core solutions and management tools on Azure

Describe core solutions available in Azure

- describe the benefits and usage of Internet of Things (IoT) Hub, IoT Central, and Azure Sphere
- describe the benefits and usage of Azure Synapse Analytics, HDInsight, and Azure Databricks
- describe the benefits and usage of Azure Machine Learning, Cognitive Services and Azure Bot Service
- describe the benefits and usage of serverless computing solutions that include Azure Functions and Logic Apps
- describe the benefits and usage of Azure DevOps, GitHub, GitHub Actions, and Azure DevTest Labs

Describe Azure management tools

- describe the functionality and usage of the Azure Portal, Azure PowerShell, Azure CLI, Cloud Shell, and Azure Mobile App
- describe the functionality and usage of Azure Advisor
- describe the functionality and usage of Azure Resource Manager (ARM) templates
- describe the functionality and usage of Azure Monitor
- describe the functionality and usage of Azure Service Health

Describe general security and network security features

Describe Azure security features

- describe basic features of Azure Security Center, including policy compliance, security alerts, secure score, and resource hygiene
- describe the functionality and usage of Key Vault
- describe the functionality and usage of Azure Sentinel
- describe the functionality and usage of Azure Dedicated Hosts

Describe Azure network security

- describe the concept of defense in depth
- describe the functionality and usage of Network Security Groups (NSG)
- describe the functionality and usage of Azure Firewall
- describe the functionality and usage of Azure DDoS protection

Describe identity, governance, privacy, and compliance features

Describe core Azure identity services

- explain the difference between authentication and authorization
- define Azure Active Directory
- describe the functionality and usage of Azure Active Directory
- describe the functionality and usage of Conditional Access, Multi-Factor Authentication (MFA), and Single Sign-On (SSO)

Describe Azure governance features

- describe the functionality and usage of Role-Based Access Control (RBAC)
- describe the functionality and usage of resource
- describe the functionality and usage of tags
- describe the functionality and usage of Azure Policy
- describe the functionality and usage of Azure Blueprints
- describe the Cloud Adoption Framework for Azure

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Describe privacy and compliance resources

- describe the Microsoft core tenets of Security, Privacy, and Compliance
- describe the purpose of the Microsoft Privacy Statement, Product Terms site, and Data Protection Addendum (DPA)
- describe the purpose of the Trust Center
- describe the purpose of the Azure compliance documentation
- describe the purpose of Azure Sovereign Regions (Azure Government cloud services and Azure China cloud services)

Describe Azure cost management and Service Level Agreements

Describe methods for planning and managing costs

- identify factors that can affect costs (resource types, services, locations, ingress and egress traffic)
- identify factors that can reduce costs (reserved instances, reserved capacity, hybrid use benefit, spot pricing)
- describe the functionality and usage of the Pricing calculator and the Total Cost of Ownership (TCO) calculator
- describe the functionality and usage of Azure Cost Management

Describe Azure Service Level Agreements (SLAs) and service lifecycles

- describe the purpose of an Azure Service Level Agreement (SLA)
- identify actions that can impact an SLA (i.e. Availability Zones)
- describe the service lifecycle in Azure (Public Preview and General Availability)

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Azure Administrator (AZ - 104)

Manage Azure identities and governance

Manage Azure Active Directory (Azure AD) objects

- create users and groups
- manage user and group properties
- manage device settings
- perform bulk user updates
- manage guest accounts
- configure Azure AD join
- configure self-service password reset

Manage role-based access control (RBAC)

- create a custom role
- provide access to Azure resources by assigning roles at different scopes
- interpret access assignments

Manage subscriptions and governance

- configure Azure policies
- configure resource locks
- apply and manage tags on resources
- manage resource groups
- manage subscriptions
- manage costs
- configure management groups

Implement and manage storage

Secure storage

- configure network access to storage accounts
- create and configure storage accounts
- generate shared access signature (SAS) tokens
- manage access keys
- configure Azure AD authentication for a storage account
- configure access to Azure Files

Manage storage

- export from Azure job
- import into Azure job
- install and use Azure Storage Explorer
- copy data by using AZCopy
- implement Azure Storage replication
- configure blob object replication

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Configure Azure files and Azure Blob Storage

- create an Azure file share
- create and configure Azure File Sync service
- configure Azure Blob Storage
- configure storage tiers for Azure Blob Storage
- configure blob lifecycle management

Deploy and manage Azure compute resources

Automate deployment of virtual machines (VMs) by using Azure Resource Manager templates

- modify an Azure Resource Manager template
- configure a virtual hard disk (VHD) template
- deploy from a template
- save a deployment as an Azure Resource Manager template
- deploy virtual machine extensions

Configure VMs

- configure Azure Disk Encryption
- move VMs from one resource group to another
- manage VM sizes
- add data disks
- configure networking
- redeploy VMs
- configure high availability
- deploy and configure scale sets

Create and configure containers

- configure sizing and scaling for Azure Container Instances
- configure container groups for Azure Container Instances
- configure storage for Azure Kubernetes Service (AKS)
- configure scaling for AKS
- configure network connections for AKS
- upgrade an AKS cluster

Create and configure Azure App Service

- create an App Service plan
- configure scaling settings in an App Service plan
- create an App Service
- secure an App Service
- configure custom domain names
- configure backup for an App Service
- configure networking settings
- configure deployment settings

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Configure and manage virtual networking

Implement and manage virtual networking

- create and configure virtual networks, including peering
- configure private and public IP addresses
- configure user-defined network routes
- implement subnets
- configure endpoints on subnets
- configure private endpoints
- configure Azure DNS, including custom DNS settings and private or public DNS zones

Secure access to virtual networks

- create security rules
- associate a network security group (NSG) to a subnet or network interface
- evaluate effective security rules
- implement Azure Firewall
- implement Azure Bastion

Configure load balancing

- configure Azure Application Gateway
- configure an internal or public load balancer
- troubleshoot load balancing

Monitor and troubleshoot virtual networking

- monitor on-premises connectivity
- configure and use Network Performance Monitor
- use Azure Network Watcher
- troubleshoot external networking
- troubleshoot virtual network connectivity

Integrate an on-premises network with an Azure virtual network

- create and configure Azure VPN Gateway
- create and configure Azure ExpressRoute
- configure Azure Virtual WAN

Monitor and back up Azure resources

Monitor resources by using Azure Monitor

- configure and interpret metrics
- configure Azure Monitor logs
- query and analyze logs
- set up alerts and actions
- configure Application Insights

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Implement backup and recovery

- create a Recovery Services vault
- create and configure backup policy
- perform backup and restore operations by using Azure Backup
- perform site-to-site recovery by using Azure Site Recovery
- configure and review backup reports

Azure DevOps (AZ - 400)

Develop an Instrumentation Strategy

Design and implement logging

- assess and configure a log framework
- design a log aggregation and storage strategy (e.g., Azure storage)
- design a log aggregation and query strategy (e.g., Azure Monitor, Splunk)
- manage access control to logs (workspace-centric/resource-centric)
- integrate crash analytics (App Center Crashes, Crashlytics)

Design and implement telemetry

- design and implement distributed tracing
- inspect application performance indicators
- inspect infrastructure performance indicators
- define and measure key metrics (CPU, memory, disk, network)
- implement alerts on key metrics (email, SMS, webhooks, Teams/Slack)
- • integrate user analytics (e.g., Application Insights funnels, Visual Studio App Center, TestFlight, Google Analytics)

Integrate logging and monitoring solutions

- configure and integrate container monitoring (Azure Monitor, Prometheus, etc.)
- configure and integrate with monitoring tools (Azure Monitor Application Insights, Dynatrace, New Relic, Naggios, Zabbix)
- create feedback loop from platform monitoring tools (e.g., Azure Diagnostics extension, Log Analytics agent, Azure Platform Logs, Event Grid)
- manage Access control to the monitoring platform

Develop a Site Reliability Engineering (SRE) strategy

Develop an actionable alerting strategy

- identify and recommend metrics on which to base alerts
- implement alerts using appropriate metrics
- implement alerts based on appropriate log messages
- implement alerts based on application health checks
- analyze combinations of metrics
- develop communication mechanism to notify users of degraded systems
- implement alerts for self-healing activities (e.g., scaling, failovers)

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Design a failure prediction strategy

- analyze behavior of system with regards to load and failure conditions
- calculate when a system will fail under various conditions
- measure baseline metrics for system
- leverage Application Insights Smart Detection and Dynamic thresholds in Azure Monitor

Design and implement a health check

- analyze system dependencies to determine which dependency should be included in health check
- calculate healthy response timeouts based on SLO for the service
- design approach for partial health situations
- design approach for piecemeal recovery (e.g., to improve recovery time objective strategies)
- integrate health check with compute environment
- implement different types of health checks (container liveness, startup, shutdown)

Develop a security and compliance plan

Design an authentication and authorization strategy

- design an access solution (Azure AD Privileged Identity Management (PIM), Azure AD Conditional Access, MFA, Azure AD B2B, etc.)
- implement Service Principals and Managed Identity
- design an application access solution using Azure AD B2C
- configure service connections

Design a sensitive information management strategy

- evaluate and configure vault solution (Azure Key Vault, Hashicorp Vault)
- manage security certificates
- design a secrets storage and retrieval strategy (KeyVault secrets, GitHub secrets, Azure Pipelines secrets)
- formulate a plan for deploying secret files as part of a release

Develop security and compliance

- automate dependencies scanning for security (container scanning, OWASP)
- automate dependencies scanning for compliance (licenses: MIT, GPL)
- assess and report risks
- design a source code compliance solution (e.g., GitHub Code scanning, GitHub Secret scanning, pipeline-based scans, Git hooks, SonarQube, Dependabot, etc.)

Design governance enforcement mechanisms

- implement Azure policies to enforce organizational requirements
- implement container scanning (e.g., static scanning, malware, crypto mining)
- design and implement Azure Container Registry Tasks
- design break-the-glass strategy for responding to security incidents

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Manage source control

Develop a modern source control strategy

- integrate/migrate disparate source control systems (e.g., GitHub, Azure Repos)
- design authentication strategies
- design approach for managing large binary files (e.g., Git LFS)
- design approach for cross repository sharing (e.g., Git sub-modules, packages)
- implement workflow hooks
- design approach for efficient code reviews (e.g., GitHub code review assignments, schedule reminders, Pull Analytics)

Plan and implement branching strategies for the source code

- define Pull Requests (PR) guidelines to enforce work item correlation
- implement branch merging restrictions (e.g., branch policies, branch protections, manual, etc.)
- define branch strategy (e.g., trunk based, feature branch, release branch, GitHub flow)
- design and implement a PR workflow (code reviews, approvals)
- enforce static code analysis for code-quality consistency on PR

Configure repositories

- configure permissions in the source control repository
- organize the repository with git-tags
- plan for handling oversized repositories
- plan for content recovery in all repository states
- purge data from source control

Integrate source control with tools

- integrate GitHub with DevOps pipelines
- integrate GitHub with identity management solutions (Azure AD)
- design for GitOps
- design for ChatOps
- integrate source control artifacts for human consumption (e.g., Git changelog)
- integrate GitHub Codespaces

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Facilitate communication and collaboration

Communicate deployment and release information with business stakeholders

- create dashboards combining boards, pipelines (custom dashboards on Azure DevOps)
- design a cost management communication strategy
- integrate release pipeline with work item tracking (e.g., AZ DevOps, Jira, ServiceNow)
- integrate GitHub as repository with Azure Boards
- communicate user analytics

Generate DevOps process documentation

- design onboarding process for new employees
- assess and document external dependencies (e.g., integrations, packages)
- assess and document artifacts (version, release notes)

Automate communication with team members

- integrate monitoring tools with communication platforms (e.g., Teams, Slack, dashboards)
- notify stakeholders about key metrics, alerts, severity using communication and project management platforms (e.g., Email, SMS, Slack, Teams, ServiceNow, etc.)
- integrate build and release with communication platforms (e.g., build fails, release fails)
- integrate GitHub pull request approvals via mobile a

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Define and implement continuous integration

Design build automation

- integrate the build pipeline with external tools (e.g., Dependency and security scanning, Code coverage)
- implement quality gates (e.g., code coverage, internationalization, peer review)
- design a testing strategy (e.g., integration, load, fuzz, API, chaos)
- integrate multiple tools (e.g., GitHub Actions, Azure Pipeline, Jenkins)

Design a package management strategy

- recommend package management tools (e.g., GitHub Packages, Azure Artifacts, Azure Automation Runbooks Gallery, Nuget, Jfrog, Artifactory)
- design an Azure Artifacts implementation including linked feeds
- design versioning strategy for code assets (e.g., SemVer, date based)
- plan for assessing and updating and reporting package dependencies (GitHub Automated Security Updates, NuKeeper, GreenKeeper)
- design a versioning strategy for packages (e.g., SemVer, date based)
- design a versioning strategy for deployment artifacts

Design an application infrastructure management strategy

- assess a configuration management mechanism for application infrastructure
- define and enforce desired state configuration for environments

Implement a build strategy

- design and implement build agent infrastructure (include cost, tool selection, licenses, maintainability)
- develop and implement build trigger rules
- develop build pipelines
- design build orchestration (products that are composed of multiple builds)
- integrate configuration into build process
- develop complex build scenarios (e.g., containerized agents, hybrid, GPU)

Maintain build strategy

- monitor pipeline health (failure rate, duration, flaky tests)
- optimize build (cost, time, performance, reliability)
- analyze CI load to determine build agent configuration and capacity

Design a process for standardizing builds across organization

- manage self-hosted build agents (VM templates, containerization, etc.)
- create reuseable build subsystems (YAML templates, Task Groups, Variable Groups, etc.)

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Define and implement a continuous delivery and release management strategy

Develop deployment scripts and templates

- recommend a deployment solution (e.g., GitHub Actions, Azure Pipelines, Jenkins, CircleCI, etc.)
- design and implement Infrastructure as code (ARM, Terraform, PowerShell, CLI)
- develop application deployment process (container, binary, scripts)
- develop database deployment process (migrations, data movement, ETL)
- integrate configuration management as part of the release process
- develop complex deployments (IoT, Azure IoT Edge, mobile, App Center, DR, multi- region, CDN, sovereign cloud, Azure Stack, etc.)

Implement an orchestration automation solution

- combine release targets depending on release deliverable (e.g., Infrastructure, code, assets, etc.)
- design the release pipeline to ensure reliable order of dependency deployments
- organize shared release configurations and process (YAML templates, variable groups, Azure App Configuration)
- design and implement release gates and approval processes

Plan the deployment environment strategy

- design a release strategy (blue/green, canary, ring)
- implement the release strategy (using deployment slots, load balancer configurations, Azure Traffic Manager, feature toggle, etc.)
- select the appropriate desired state solution for a deployment environment (PowerShell DSC, Chef, Puppet, etc.)
- plan for minimizing downtime during deployments (VIP Swap, Load balancer, rolling deployments, etc.)
- design a hotfix path plan for responding to high priority code fixes

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How to Integrate Open-Source tools with Azure

- Installation of GitHub with Azure DevOps
- Integration of GitHub with Azure DevOps
- Installation of Terraform with Azure DevOps
- Integration of Terraform with Azure DevOps
- Installation of Jenkins with Azure DevOps
- Integration of Jenkins with Azure DevOps
- Deploying a multi-container application to Azure Kubernetes Services
- Deploying a Docker based web application to Azure App Service

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Thank you!

Connect with us for more info

Call/WhatsApp: - +91 968 682 9970

Mail: - contact@DevOpsSchool.com

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