

# AZURE DEVOPS

**REAL TIME TRAINING**



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# AZ - 400 Microsoft Azure DevOps Training Course Content

## Session 1: Design a DevOps strategy

### Migration and consolidation strategy - DevOps tools

- Analyze existing artifact - deployment packages, NuGet, Maven, npm
- Container repositories
- Test management tools
- Work management tools
- Recommend migration and integration strategies
  - Artifact repositories
  - Source control
  - Test management
  - Work management

## Session 2: Understanding Agile work management approach

- Identify and recommend project metrics, KPIs, and DevOps measurements
- Agile work management
- Mentor team members on Agile techniques and practices
- Scaling Agile practices
- Understanding in-team and cross-team collaboration mechanisms

## Session 3: Design a quality strategy

- Analyze existing quality environment
- Working quality metrics
- Feature flag lifecycle
- Measuring and managing technical debt
- Changes to team structure to optimize quality
- Recommend performance testing strategy

#### **Session 4: Design a secure development process**

- Inspect and validate code base for compliance
- Inspect and validate infrastructure for compliance
- Secure development strategy
- Integrate code security validation - static code analysis
- Integrate infrastructure security validation

#### **Session 5: Design a tool integration strategy**

- To design a license management strategy
  - VSTS users
  - concurrent pipelines
  - test environments,
  - open source software licensing
  - third-party DevOps tools and services
  - package management licensing
- Design a strategy for end-to-end traceability from work items to working software
- Integrating monitoring and feedback to development teams
- Authentication and access strategy
- Integrating on-premises and cloud resources

## **Session 6: Implement DevOps development processes Design a version control strategy**

- Working with Branching models
- Introduction to Version control systems
- Understanding Code flow strategy

## **Session 7: Implement and integrate source control**

- External source control
- Integrate source control into third-party continuous integration and continuous deployment (CI/CD) systems

## **Session 8: Implement and manage build infrastructure**

- Private and hosted agents
- Working with third party build systems
- Concurrent pipelines
- Manage Azure pipeline configuration
  - Agent queues
  - Service endpoints
  - Pools
  - Webhooks

## **Session 9: Implement code flow**

- Pull request strategies
- Branch and fork strategies
- configure branch policies

## **Session 10: Managing application configuration and secrets**

- Secure and compliant development process
- General (non-secret) configuration data
- secrets, tokens, and certificates
- applications configurations
  - Web App
  - Azure Kubernetes Service
  - containers
- Secrets management
  - Web App
  - Azure Kubernetes Service
  - containers
  - Azure Key Vault
- Managing security and compliance in the pipeline

## **Session 11: Implement continuous integration Manage code quality and security policies**

- Monitor code quality
- Configure build to report on code coverage
- Automated test quality
- Test suites and categories
- Monitor quality of tests
- Security analysis tools
  - SonarQube,
  - White Source Bolt
  - Open Web Application Security Project

## **Session 12: Implement a container build strategy**

- create deployable images
  - Docker
  - Hub
  - Azure Container Registry
  - Docker multi-stage builds

## **Session13: Implement a build strategy**

- Design build triggers, tools, integrations, and workflow
- Hybrid build process
- Multi-agent builds
- Build tools and configuration (e.g. Azure Pipelines, Jenkins)
- set up an automated build workflow

## **Session 14: Implement continuous delivery Design a release strategy**

- Release tools
- Identify and recommend release approvals and gates
- Measuring quality of release and release process
- Recommend strategy for release notes and documentation
- select appropriate deployment pattern

### **Session 15: Set up a release management workflow**

- Automate inspection of health signals for release approvals by using release gates
- Configure automated integration and functional test execution
- Create a release pipeline
  - Azure Kubernetes Service
  - WebApp
- Create multi-phase release pipelines
- Integrate secrets with release pipeline
- Provision and configure environments
- Manage and modularize tasks and templates - task and variable groups

### **Session16: Implement an appropriate deployment pattern**

- Implement blue-green deployments
- Implement canary deployments
- Implement progressive exposure deployments
- Scale a release pipeline to deploy to multiple endpoints
  - Deployment groups
  - Azure Kubernetes Service

## **Session 17: Implement dependency management Design a**

### **dependency management strategy**

- Artifact management tools and practices (Azure Artifacts, npm, Maven, Nuget)
- Abstract common packages to enable sharing and reuse
- Inspect codebase to identify code dependencies that can be converted to packages
- Standardized package types and versions across the solution
- Refactor existing build pipelines to implement version strategy that publishes packages

## **Session 18: Manage security and compliance**

- Inspect open source software packages for security and license compliance to align with corporate standards (e.g., GPLv3)
- Configure build pipeline to access package security and license rating (e.g., Black Duck, White Source)
- Configure secure access to package feeds

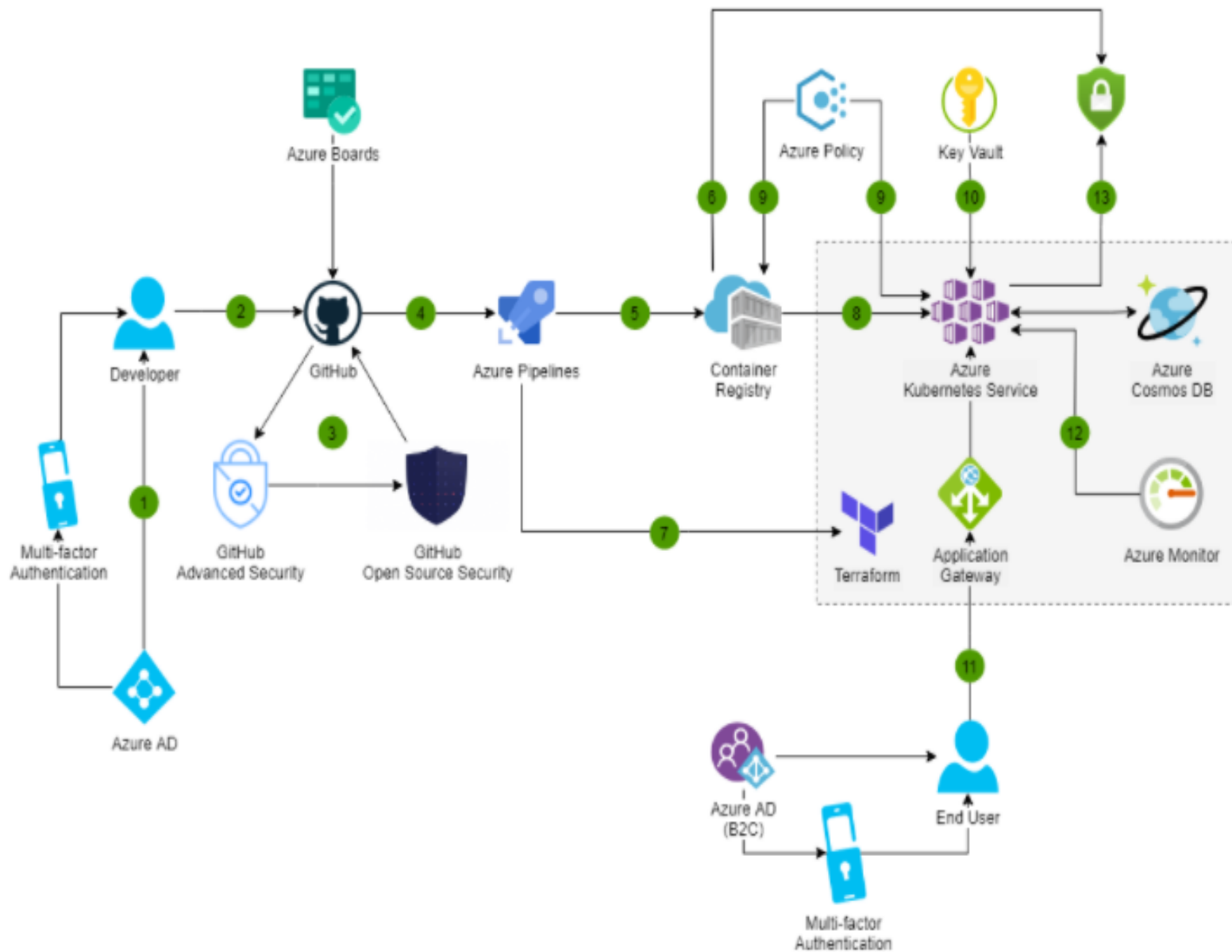


### **Session 19: Implement Infrastructure as Code (IaC)**

- Create nested resource templates
- Manage secrets in resource templates
- Provision Azure resources
- Recommend an Infrastructure as Code (IaC) strategy
- Recommend appropriate technologies for configuration management
  - ARM Templates
  - Terraform
  - Ansible

### **Session 20: Manage Azure Kubernetes Service infrastructure**

- Provision Azure Kubernetes Service – Terraform CLI
- Create deployment file for publishing to Azure Kubernetes Service - kubectl, Helm
- Develop a scaling plan



THANKYOU

