Terraform with Azure Training

BILGINC IT Academy
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Duration: **2 Day**

Exclusive - Automate and manage Azure infrastructure with Terraform's powerful IaC capabilities.

Terraform with Azure offers a thorough framework for utilizing Terraform to efficiently provision, manage, and maintain Azure infrastructure. Participants will gain hands-on experience with Terraform's Infrastructure as Code (IaC) capabilities, enabling them to automate Azure resource deployments, ensure scalability, and maintain version control. The course covers essential topics such as setting up Terraform, writing configurations, managing state, and integrating with CI/CD pipelines.

By taking this course, learners will enhance their skills in automating Azure resources using Terraform. They will be able to create fully automated Azure infrastructure deployments, diagnose and resolve configuration issues, apply security configurations, and implement cost management strategies. This course ensures that participants are well-equipped to handle real-world scenarios and optimize their Azure environments.

Throughout the course, participants will learn to create reusable Terraform modules, set up automated CI/CD pipelines, and design complex Azure networking architectures. The course also emphasizes proper security configurations, compliance strategies, and effective state management using Azure Blob Storage. With a mix of theoretical knowledge and practical labs, learners will be able to confidently apply Terraform best practices in their Azure projects.

Who Should Attend?

- Cloud engineers, DevOps practitioners, and IT professionals aiming to learn IaC with Terraform.
- Developers and administrators automating Azure resources.
- Professionals implementing DevOps best practices with Terraform in Azure.

Prerequisites

- Basic understanding of Azure services (e.g., Virtual Machines, Storage, Networking).
- Familiarity with CLI tools and scripting.
- Knowledge of foundational DevOps principles.

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What You Will Learn

- Create fully automated Azure infrastructure deployments using Terraform's Infrastructure as Code capabilities
- Diagnose and resolve Terraform configuration issues and deployment failures in Azure environments
- Apply proper security configurations and access controls for Azure resources using Terraform
- Build reusable Terraform modules for standardized infrastructure deployment patterns
- Set up automated CI/CD pipelines for Terraform deployments using Azure DevOps and GitHub Actions
- Implement cost management and compliance strategies through Terraform configurations
- Configure and manage Terraform state files in Azure Blob Storage for team collaboration
- "Design complex Azure networking architectures using Terraform configurations

Training Outline

- **Introduction to Terraform and Azure:**
  - Overview of Terraform and Infrastructure as Code (IaC) principles.
  - Understanding Azure’s role in Infrastructure Automation.
- **Setting Up Terraform for Azure:**
  - Installing Terraform CLI and creating a workspace.
  - Integrating Terraform with Azure (Service Principals, Authentication).
- **Writing Terraform Configurations for Azure:**
  - Basic Syntax: Resources, Providers, Variables, and Outputs.
  - Managing core Azure resources (Virtual Machines, Storage Accounts, Virtual Networks).
- **State Management in Terraform:**
  - Understanding Terraform State.
  - Using Azure Blob Storage for Remote State Management.
- **Managing Terraform Workflows and Debugging**
  - Organizing Terraform Configurations
  - Debugging Terraform commands
- **Advanced Terraform Features:**
  - Modules, Data Sources, and Outputs.
  - Reusing Configurations with DRY Principles."
- **Terraform Networking and Security in Azure:**
  - Creating Virtual Networks, Subnets, and Network Security Groups (NSGs).
  - Configuring Azure Active Directory (AAD) for Role-Based Access Control (RBAC).
- **Debugging and Troubleshooting Terraform:**
  - Using Azure DevOps Pipelines with Terraform.
  - Automating Workflows with GitHub Actions.
- **Automation of Terraform with CI/CD Pipelines**
  - What are CI/CD Pipelines
  - Benefits of automating Terraform workflows
  - Using Azure DevOps or GitHub Actions for Terraform Automation
  - Terraform integration with DevOps Pipelines
- **Terraform Compliance and Cost Management:**
  - Implementing Azure Policies with Terraform.
  - Using Cost Management and Tagging.

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