KOENIG solutions · COURSE OUTLINE

HashiCorp Certified: Consul Associate

Learn to deploy, secure and manage HashiCorp Consul for service discovery, service mesh and network automation across a datacenter.

3 Days	10	48	20
8 HOURS A DAY	MODULES	TOPICS	HANDS-ON LABS

COURSE OVERVIEW

This course is designed with two main objectives in mind, to teach the basics of HashiCorp Consul, as well as arm folks with the knowledge to pass the Consul Associate exam. Although the course was designed around the (9) Consul Associate exam objectives, the course goes over a wealth of Consul topics to get even the most novice person up to speed with Consul.

WHO THIS COURSE IS FOR

- **Systems Administrators**
- **Network Engineers**
- **DevOps Engineers**
- **Site Reliability Engineers**
- **Cloud Engineers**

PREREQUISITES

- Understanding of Containerization and Linux Knowledge

TOOLS AND REQUIREMENTS

Lab Requirement

- Koenig-DC + GitLab customer Account

LEARNING OBJECTIVES

- Explain Consul architecture and its consensus and gossip protocols
- Deploy a single datacenter and manage Consul agents
- Register services and configure service discovery and health checks
- Interact with the Consul key/value store using templates and watches
- Back up and restore Consul using snapshots
- Register a service proxy and manage service mesh intentions
- Secure agent communication with TLS and certificates
- Configure ACLs, gossip encryption and encryption key lifecycle

COURSE SYLLABUS

10 Modules, 48 Topics

01 Explain Consul Architecture

TOPICS

- Introduction to HashiCorp Consul
- Service Discovery
- Service Mesh
- Network Automation
- Service Configuration
- Basic Consul Architecture
- Consensus Protocol (Raft)
- Gossip Protocol (Serf)
- Network Traffic and Ports
- Consul High Availability
- Scaling for Performance
- Voting vs Non-Voting Servers
- Redundancy Zones
- Consul Autopilot

02 Deploy a Single Datacenter

3 Labs

TOPICS

Start with Consul Process · Manage the Consul Process · Consul Agent Configuration · Configure Networking and Ports · Adding/Removing Consul Agents to the Cluster

03 Register Services and Use Service Discovery

4 Labs

TOPICS

Registering a Consul Service · Creating a Service Definition · Configuring Service Health Checks · Check Service Status from the Catalog · Introduction to Prepared Queries

04 Access the Consul Key/Value (KV)

3 Labs

TOPICS

Introduction to Consul K/V Store · Interacting with Consul K/V · Using Consul Watch to Monitor Changes · Using envconsul · Using consul-template

05 Back up and Restore

Lab

TOPICS

Introduction to Consul Snapshots · Using Consul Snapshots

06 Register a Service Proxy

Lab

TOPICS

Introduction to Consul Service Mesh · Registering a Service Proxy · Intro to Consul Service Mesh Intentions · Managing Consul Service Mesh Intentions

07 Secure Agent Communication

TOPICS

Consul Security/Threat Model · Certificates Required in Consul · TLS Encryption Settings

08

6 Labs

Secure Services with Basic ACLs

TOPICS

Introduction to the Consul ACL System · Creating ACL Policies · Creating and Managing ACL Tokens · Perform a UI task using a Token · Perform a CLI request using a Token · Perform a API request using a Token

09

2 Labs

Use Gossip Encryption

TOPICS

Intro to Gossip Encryption · Configure Gossip Encryption · Manage the Lifecycle of Encryption Keys

10

HashiCorp Cloud Platform - Consul

TOPICS

HashiCorp Cloud Platform - Consul

HANDS-ON LABS

Practise What You Learn

#	MODULE	ACTIVITY
02	**Deploy a Single Datacenter**	■ Starting the Consul Process - using Dev Mode ■ Creating a Consul Agent Configuration ■ Adding/Removing Consul Agents to the Cluster
03	**Register Services and Use Service Discovery**	■ Service Definition and Registration ■ Working with Health Checks ■ Check Service Status from the Catalog ■ Prepared Queries
04	**Access the Consul Key/Value (KV)**	■ Working with the Consul K/V ■ Using Envconsul to monitor Changes to Consul K/V ■ Using Consul-Template to monitor Changes to Consul K/V
05	**Back up and Restore**	Consul Snapshots
06	**Register a Service Proxy**	Service Mesh
08	**Secure Services with Basic ACLs**	■ Enable and Configure the Consul ACL System ■ Creating ACL Policies ■ Creating ACL Tokens ■ Using Tokens with the Consul UI ■ Using Tokens with the Consul UI ■ Using Tokens with the Consul API

#	MODULE	ACTIVITY
09	**Use Gossip Encryption**	■ Configure Gossip Encryption ■ Managing the Lifecycle of Encryption Keys

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

Ready to Get Started?

Talk to a learning advisor about schedules, group training and customised delivery.

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