

# Integrating Hybrid Clouds with Microsoft Azure (NA- IHCAZ)

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## Course Description

Learn to implement a hybrid cloud solution with Microsoft Azure by using NetApp® Cloud Volumes ONTAP®. Connect an Azure Virtual Network (VNet) and an on-premises data center to unify your infrastructure.

Use NetApp Cloud Manager to move data and manage storage in the hybrid cloud. Learn about how NetApp cloud services are integrated into Cloud Manager to provide persistent storage for Kubernetes containers and enhance data protection, security, and compliance. Learn to optimize capacity and performance of Cloud Volumes ONTAP.

## Course Duration

1 day.

## Prerequisites

For a successful learning experience, NetApp recommends that you know the following concepts before you attend the course.

- Cloud computing concepts: Cloud characteristics, service delivery methods, and cloud deployment models
- Networking concepts and definitions: Classless Inter-Domain Routing (CIDR) and network address translation (NAT)
- Azure concepts: Subscriptions, VNet, virtual machines (VMs), Azure storage accounts, and Azure Blob storage

## Objectives

This course focuses on enabling you to do the following:

- Describe how NetApp technologies can be used to build your data fabric
- Configure a VNet and connect it to an on-premises data center with VPN Internet Protocol security (IPsec)
- Describe Cloud Volumes ONTAP architecture
- Install a Connector and deploy Cloud Volumes ONTAP
- Explain basic system administration tasks with Cloud Manager
- Copy data between an ONTAP based system and Cloud Volumes ONTAP for Azure for disaster recovery
- Use data tiering to Azure Blob storage for Cloud Volumes ONTAP
- Use Cloud Volumes ONTAP as persistent storage for Kubernetes containers
- Identify performance and sizing options for Cloud Volumes ONTAP

## Course Outline

### Module 1: Data Fabric Overview

- Lesson 1: Data Fabric
- Lesson 2: Solutions for the Hybrid Cloud
- Lesson 3: NetApp Public Cloud Products
- Lesson 4: Cloud Storage
- Lesson 5: Cloud Services and Analytics
- Lesson 6: Cloud Controls

### Module 2: Public Cloud Essential Concepts

- Lesson 1: Azure Networking and Other Concepts
- Lesson 2: Terraform Introduction

### Module 3: Connectivity from the Public Cloud to Other Networks

- Lesson 1: Microsoft Azure VNet Connectivity to an On-Premises Network

### Module 4: NetApp Cloud Manager

- Lesson 1: NetApp Cloud Manager Overview

### Module 5: NetApp Cloud Volumes ONTAP: Single-Node Architecture

- Lesson 1: Cloud Volumes ONTAP
- Lesson 2: Cloud Volumes ONTAP Use Cases
- Lesson 3: Cloud Volumes ONTAP Architecture
- Lesson 4: Deploying Cloud Volumes ONTAP
- Lesson 5: Cloud Volumes ONTAP Supported Features

### Module 6: NetApp Cloud Volumes ONTAP: High-Availability Architecture

- Lesson 1: Highly Available Cloud Volumes ONTAP in Azure

### Module 7: Administration of NetApp Cloud Volumes ONTAP and NetApp Cloud Manager

- Lesson 1: Administering Cloud Volumes ONTAP
- Lesson 2: Administering Cloud Manager

### Module 8: Implementing Disaster Recovery with NetApp Cloud Volumes ONTAP

- Lesson 1: Disaster Recovery with NetApp Cloud Volumes ONTAP Overview

### Module 9: Data Tiering for NetApp Cloud Volumes ONTAP

- Lesson 1: Data Tiering for NetApp Cloud Volumes ONTAP Overview

### Module 10: Using NetApp Cloud Manager to Provision Persistent Storage for Kubernetes Clusters

- Lesson 1: Using NetApp Cloud Manager to Provision Persistent Storage for Kubernetes Clusters Overview

### Module 11: Using Integrated Services from NetApp Cloud Manager

- Lesson 1: Using Cloud Backup Service from Cloud Manager
- Lesson 2: Using Cloud Sync from Cloud Manager
- Lesson 3: Using Cloud Compliance from Cloud Manager
- Lesson 4: Using Cloud Tiering Service from Cloud Manager

## Module 12: Sizing NetApp Cloud Volumes ONTAP

- Lesson 1: An Introduction to Sizing
- Lesson 2: Capacity Sizing
- Lesson 3: Performance Sizing
- Lesson 4: Single Node versus High Availability
- Lesson 5: Key Differences between Cloud Volumes ONTAP and OnPremises ONTAP Software
- Lesson 6: Performance Tuning
- Lesson 7: Frequently Seen Sizing Mistakes

### **Who Should Attend**

Administrators, operators, architects, and implementation engineers