



ONTAP Troubleshooting (CATSP)

ID CATSP Price 3,600.— €(excl. tax) Duration 4 days

Course Overview

In this course, you increase your proficiency as a NetApp® ONTAP® software engineer by learning how to troubleshoot ONTAP environments. Specifically, you learn how to troubleshoot the management component, scale-out networking, NAS protocols (NFS), and SAN protocols. From lectures, demonstrations, and active exercises, you learn how to isolate issues, verify configurations, view logs, view trace messages, and use event management system (EMS) messages for troubleshooting.

Who should attend

NetApp Technical Support engineers, Support Services Certified partner engineers, and Professional Services engineers

This course is part of the following Certifications

NetApp Certified Support Engineer – ONTAP Specialist (NCSE-OS)

Prerequisites

- A working knowledge of ONTAP software and NAS and SAN protocols
- [ONTAP Cluster Administration \(ONTAP9ADM\)](#)

Course Objectives

This course focuses on enabling you to do the following:

- Identify the different software components in the ONTAP architecture.
- Analyze the methodologies for troubleshooting management component applications, networks, and protocols.
- Use troubleshooting workflows to identify failure symptoms, determine potential causes, and resolve issues.
- Use debugging commands, logs, and tools to identify, isolate, and fix complex technical issues that involve different core components.
- Analyze the health of a cluster and summarize the results.

- Identify issues with the management component.
- Use administrative commands to verify the configuration of NFS and SAN environments.
- Use the troubleshooting methodology for NAS and SAN protocols to define and isolate issues.
- Locate logs for the management component, network, NFS, SMB, and iSCSI protocols.
- Collect data for support cases.

Detailed Course Outline

Module 1: Troubleshooting the Management Component

- The management component
- RDB Concepts: RDB units, RDB quorum, RDB master, epoch and epsilon
- Configuration databases and replication databases
- Root volume recovery
- Job manager
- RDB backup and recovery
- Non-RDB user-space applications
- Event management system, logs, traces and user-space core files

Module 2: Troubleshooting Scale-out Networking

- NetApp ONTAP networking overview
- Networking-related management component application and databases
- Networking evolution
- Cluster Session Manager (CSM)
- Tools to triage networking issues

Module 3: Troubleshooting Network Component and Security Services

- Network component
- SecD
- Troubleshooting with vserver services
- Network component troubleshooting

Module 4: Troubleshooting NFS

- How NFS works in ONTAP software



- NetApp ONTAP NFS authorization using export policies and UNIX permissions
- Export-related caches
- NFS troubleshooting

Module 5: Troubleshooting Scalable SAN

- SAN architecture
- Scalable SAN configuration
- Scalable SAN functional components (SCSI)
- Cluster Liveliness Activity Monitor (CLAM) quorum
- LUN space accounting
- Scalable SAN functional components (NVMe)
- Scalable SAN troubleshooting

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