



Enterprise Computing Solutions - Education Services

## TRAINING OFFERING

---

**Du kan nå oss her**

Postboks 6562 ETTERSTAD, 0606 Oslo, Norge

Email: [kurs.ecs.no@arrow.com](mailto:kurs.ecs.no@arrow.com)

Phone: +47 22 02 81 00



# ONTAP Hardware Troubleshooting – Partners Only

CODE:	LENGTH:	PRICE:
NEP_OT-HW-TS	24 Hours (3 days)	kr28,950.00

## Description

Discover the tools and techniques of NetApp® ONTAP® hardware analysis and troubleshooting. Learn to triage and gather the right data for all hardware cases, to work 60% to completion with no help, and to properly frame and get assistance to resolve the remaining 40%.

## Objectives

This course focuses on enabling you to do the following:

- Troubleshoot system controllers, power supplies, fans, and add-in cards
- Troubleshoot storage shelf issues
- Troubleshoot disk failures
- Identify high availability issues
- Analyze RAID issues
- Identify troubleshooting tools

## Audience

- Support Engineer
- Implementation Engineer
- Professional Services Engineer

## Prerequisites

- Technical Support Engineer New Hire OnRamp Program
- Three months of experience taking support calls
- FAS, AFF, and ASA web-based training

## Programme

This course includes the following modules, lessons, and exercises:

### Module 1: Storage controller

#### Lessons

- System categories
- Storage controller components
- System memory
- Fans, PSUs, and LEDs
- SP and BMC
- Model-specific I/O expansion
- Add-on cards
- HA interconnect

#### Exercises

Discovering storage controller attributes

### Module 2: Storage

Lessons

- Storage shelves
- Shelf components
- Shelf cables
- Disk drives and IOMs
- Shelf cabling
- Shelf protocols
- Logs

Exercises

Documenting system cabling

### **Module 3: Disks**

Lessons

- Disk types
- Disk interfaces
- Encryption
- Disk ownership
- Common disk issues and error recovery
- Maintenance Center

Exercises

Managing a disk

### **Module 4: RAID**

Lessons

- ONTAP RAID types
- RAID reconstruction
- Drive spares
- ADP
- RAID labels
- RAID and media scrubbing
- ASA r2

Exercises

Recovering RAID

### **Module 5: High availability**

Lessons

- NVRAM mirroring
- Mailbox disks
- Failover and giveback
- Disk ownership
- Nonmaskable Interrupts and hardware panics

Exercises

Performing takeover and giveback

### **Module 6: Cluster high availability**

Lessons

- Quorum and replicated databases
- Cluster high availability
- Epsilon
- Cluster switches and network connectivity
- Switch vendor support

Exercises

Investigating cluster connectivity issues

### **Module 7: Firmware**

Lessons

- Automatic System Manager firmware updates
- Disk firmware upgrades
- IOM firmware upgrades
- SP and BMC firmware
- BIOS upgrades and issues
- Add-on PCIe card firmware upgrades

Exercises

Performing firmware validation

### Module 8: AutoSupport

Lessons

- AutoSupport
- Automatically created cases

Exercises

Uploading AutoSupport messages manually

### Module 9: Tools

Lessons

- Fix It
- Dexter
- Active IQ
- Hardware Universe and IMT
- Net2

Exercises

Using support tools

Using Net2

## Further Information

### Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
01 Sep 2026	Virtual Classroom (GMT / UTC)	BST	English	Instructor Led Online		kr28,950.00
04 Nov 2026	Virtual Classroom (GMT / UTC)	GMT	English	Instructor Led Online		kr28,950.00

### Tilleggsinformasjon

[Denne treningen er også tilgjengelig som trening på stedet. Kontakt oss for å finne ut mer.](#)