



Arrow ECS Finland Oy - Education Services

TRAINING OFFERING

You can reach us at:

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CODE:	LENGTH:	PRICE:
NEP_OT-HW-TS	24 Hours (3 days)	€3,060.00

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
05 May 2026	Virtual Classroom (GMT / UTC)		English	Instructor Led Online		€3,060.00
01 Sep 2026	Virtual Classroom (GMT / UTC)		English	Instructor Led Online		€3,060.00
04 Nov 2026	Virtual Classroom (GMT / UTC)		English	Instructor Led Online		€3,060.00

Additional Information

[This training is also available as onsite training. Please contact us to find out more.](#)