ONTAP Hardware Troubleshooting (ONTAPHWTS) (CV1)

Course 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%.

Course Duration:

3 days.

Prerequisites:

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

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

Course Outline:

Module 1: Storage controller

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

- HA interconnect

Module 2: Storage

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

Module 3: Disks

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

Module 4: RAID

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

Module 5:   High availability

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

Module 6: Cluster high availability
- Quorum and replicated databases
- Cluster high availability
- Epsilon
- Cluster switches and network connectivity
- Switch vendor support

Module 7: Firmware

- 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

Module 8: AutoSupport

- AutoSupport
- Automatically created cases

Module 9: Tools

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

Who Should Attend:

Support engineer, implementation engineer, and professional services engineer