



Enterprise Computing Solutions - Education Services

## TRAINING OFFERING

---

**You can reach us at:**

Arrow ECS B.V., Kromme Schaft 5, 3991 AR Houten, The Netherlands

Email: [education.ecs.nl@arrow.com](mailto:education.ecs.nl@arrow.com)

Phone: +31 20 582 6109



# ONTAP Performance Analysis (ONTAP 9.6)

**CODE:**

NEP\_OT-CLU-PA9.6

**LENGTH:**

24 Hours (3 days)

**PRICE:**

€2,850.00

**Description**

This course enables you to collect and analyze system performance data from NetApp® storage systems that run NetApp ONTAP® 9 software. You learn how to interpret data and how to identify and implement changes that improve system efficiency. You also learn how to use system commands and features to monitor and enhance storage system performance. You learn from hands-on exercises, case studies, and technical discussions.

**Objectives**

- Describe how to use NetApp tools for performance measurement
- Describe the layers within the ONTAP architecture
- Diagram the flow of read and write requests through the network and data layers of ONTAP software
- Discuss how storage quality of service (QoS) operates in an ONTAP cluster
- Explain how to monitor and manage workload performance
- Use the performance analysis tools to identify NAS and SAN performance obstacles

**Audience**

Professionals who manage NetApp storage systems and would like a deeper understanding of Clustered Data ONTAP system performance

**Prerequisites**

Hands-on experience with ONTAP software (6 months to 12 months) is required in addition to the OT-CLU-DPA instructor led class..  
**OT-CLU-DPA - ONTAP Cluster Administration and Data Protection**

**Programme**

Basic Concepts of Performance

**Module 1: Performance Analysis Fundamentals** Performance Monitoring Methodology **Module 2: Performance Analysis Tools**

Performance terminology FAS and AFF Architecture  
Using Active IQ Unified Manager Data Flow

**Module 3: Storage System Architecture and Data Flow** NVRAM Functionality

Identifying CPU Performance Bottlenecks

Resolving CPU Performance Bottlenecks

Identifying Memory Performance Bottlenecks

**Module 4: WAFL** Resolving WAFL issues **Module 5: CPU and Memory** Resolving Memory Performance Bottlenecks

Disk Subsystem Hardware

Analyzing and Isolating Disk Subsystem Bottlenecks

Analyzing Disk Subsystem Bottlenecks with Statit

**Module 6: Disk Subsystem** Resolving Disk Subsystem Bottlenecks

**Module 7: Cache Subsystem**

Cache Subsystem Overview

Flash Cache Feature

Flash Pool Feature

Flash Cache Policies and Flash Pool Policies

Storage Pool

Cache Sizing

**Module 8: Storage Quality of Service** Managing System Performance with QoS

NAS functions  
Identifying NAS Bottlenecks

SAN Overview  
SAN Multipathing  
SAN load balancing  
SAN I/O Misalignment  
Queue depth

**Module 9: NAS Subsystem** Resolving NAS Bottlenecks **Module 10: SAN Subsystem** **Labs:**

Identifying cluster components  
Analyzing performance statistics  
OnCommand performance manager thresholds, events and alerts  
Identifying and resolving storage controller performance issues  
WAFL performance monitoring and analysis  
Identifying and resolving disk I/O bottlenecks  
Exploring cache performance  
Cluster interconnect performance  
Workload management with storage QoS  
NAS performance  
SAN protocol performance

### Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
09 Dec 2024	Virtual Classroom (GMT / UTC)	GMT	English	Instructor Led Online		€2,850.00

### Additional Information

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