ONTAP Performance Administration

Prerequisites: ONTAP Cluster Administration

Duration: 4 Day (8 Hrs/Day)

Course Objective: Learn how 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.

Lab Requirement: Koenig DC

Module 1 – NetApp Storage System Architecture

FAS/AFF system architecture

Read and write paths

Module 2 – Performance Analysis Fundamentals

Performance concepts

Workloads

Module 3 - Performance Analysis Tools

Performance analysis tools

Using Active IQ Unified Manager

Module 4 - Network Layer

Identifying network performance issues

Resolving network I/O performance issues

Module 5 - NAS Protocols

Network Attached Storage

Identifying NAS performance issues

Resolving NAS performance issues

Network I/O bottlenecks

Module 6 - SAN Protocols

SAN overview

SAN multipathing

SAN load balancing

SAN I/O misalignment

Queue depth

Module 7 - WAFL Layer

WAFL functions

WAFL readahead

Resolving WAFL performance issues

Module 8 – Storage Layer

Storage subsystem hardware

Identifying storage performance issues

Identifying storage performance issues

Module 9 - Cache Subsystem

Cache subsystems

Flash Cache

Flash Pool

Cache policies

Cache sizing

Module 10 - Storage Quality of Service

Managing System Performance with QoS

Monitoring storage QoS

Performance service levels

Module 11 - CPU and Memory

CPU subsystem

Memory subsystem

Resolving WAFL performance issues