ONTAP Performance Analysis (PERFCDOT)

Modality: Virtual Classroom

Duration: 3 Days

SATV Value:

CLC:

NATU: 36 Units

SUBSCRIPTION: No

About the Course:

The ONTAP Performance Analysis course is designed to provide you skills and expertise that are required for analyzing and collecting system performance data from NetApp Storage Systems operating aggregated Data ONTAP. Candidates who appeared in this training will study regarding the method of interpreting data and determine the modifications from it, hence ultimately implement them to enhance system performance. Additionally, candidates will learn the best methods to use the system commands and features for enhancing as well as monitoring the storage system efficiency through technical discussions, hands-on labs (Expertise of implementing all concepts study in the course), and combination of case studies.

The average salary of a NetApp Storage Administrator is **$127,000/-** per annum.

Course Objective:

After passing of this course, the student has an ability to:

· Monitoring and collecting system performance data by identifying the command utilized and tools.

· Enhancing the efficiency and performance of the storage system by using the system commands and features.

· Gain detailed understanding and knowledge of the working of a storage system that runs on ONTAP-9 functions

· Explain and identify the performance data and any obstacle to the performance of storage systems

Targeted Audience:

This course is designed for those individuals who have a role to manage the storage system in NetApp and have a desire to enhance their knowledge and skills of Clustered Data ONTAP System Performance.

Pre-requisites:

The candidate is required to have:

· Three to Six months of working experience with Data ONTAP

· Understanding of clustered Data ONTAP basics

Course Outline:

Module 1: How a NetApp Storage System Works

- NetApp FAS system architecture
- ONTAP architecture layers
- Data access
- NVRAM

Module 2: Performance Analysis Tools

- Performance terminology
- Performance guidelines and methodologies
- Analysis tools and commands
- Output commands
- Tools for performance measurement
- AutoSupport tools
- Perfstat
- OnCommand Insight

Module 3: OnCommand Performance Manager

- Features
- Dashboard
- Performance troubleshooting
- Events
- User defined thresholds

Module 4: CPU and Memory Performance

- CPU performance bottlenecks
- Resolving bottlenecks
- Memory performance bottlenecks
- Resolving bottlenecks

Module 5: WAFL Performance

- WAFL functions
- Inodes
- WAFL readahead

- Resolving WAFL issues
- Best practices

Module 6: Disk I/O Performance

- Disk subsystem hardware and software
- Subsystem bottlenecks
- Analyzing bottlenecks with Statit
- Resolving bottlenecks
- RAID-DP technology

Module 7: Flash Cache and Flash Pool Performance

- Virtual Storage tier
- Flash pool
- Flash cache
- Automatic workload analyzer
- Cache performance issues

Module 8: Cluster Interconnect Performance

- Cluster interconnect uses
- Switchless and switched configurations
- Cluster interconnect bottlenecks
- Bottleneck resolutions

Module 9: Storage QoS

- Managing system performance with QoS
- QoS policies
- Reactive storage QoS
- Proactive storage QoS
- Monitoring commands

Module 10: NAS Performance

- NAS functions
- Bottlenecks
- NAS protocol traffic
- Monitoring NFS usage commands
- Monitoring SMB usage commands
- Bottleneck resolutions

Module 11: SAN Performance

- SAN overview
- Protocols
- FCoE

- iSCSI
- SAN LIFs
- SAN performance issues
- SAN multipathing
- SAN load balancing
- I/O misalignment
- Queue depth

Module 12: Using What You Learned

- Performance overview
- Performance tools
- Windows monitoring and analysis
- Linux monitoring and analysis
- VMware monitoring and analysis
- Slow application performance
- Using performance manager
- Best practices

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