ONTAP Cluster Administration and Data Protection Class

Duration: 5 Days **Course Code: NEP_OT-CLU-DPA** **Delivery Method: Virtual Learning**

Overview:

This 5 day class is a combination of the 3 day Cluster Administration Class and the 2 day Data Protection Class.
Cluster Administration
In this course, you learn the basic administration tasks of a NetApp® ONTAP® 9.16 cluster. Use the clustershell and NetApp ONTAP System Manager to manage cluster storage and network resources. Discover how to configure basic data protection and data efficiency functions and common cluster maintenance tasks.
Data Protection
Explore key concepts and techniques for protecting data on NetApp® ONTAP® based storage systems. Learn about the data protection solutions that are integrated in ONTAP software and examine the tools to manage ONTAP data protection features. In the hands-on exercises, use NetApp ONTAP System Manager and the ONTAP CLI to perform key data protection tasks.
This course is updated for ONTAP 9.16.1 software.

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Target Audience:

AdministratorsArchitectsOperators

Objectives:

- This course focuses on enabling you to do the following:
- Define ONTAP cluster components
- Describe the role of a storage VM (storage virtual machine, also known as SVM) in the NetApp storage architecture
- Configure an ONTAP cluster
- Configure and manage both networking and storage resources
- Create and configure a storage VM
- Create, manage, and protect NetApp FlexVol® volumes
- Implement storage efficiency features
- Manage ONTAP administrator access and user accounts
- Manage NetApp storage systems
- Describe and distinguish the data protection features in ONTAP software
- Administer the appropriate ONTAP data protection feature to address your data protection concern
- Configure NetApp SnapMirror® relationships for disaster recovery and data backup
- Demonstrate storage VM disaster recovery (SVM DR)
- Illustrate NDMP-enabled operations to back up NAS data to tape
- Integrate the cloud-based data protection solutions that complement your ONTAP based storage systems
- Structure NetApp MetroCluster components and functionality
- Illustrate SnapMirror active sync components and functionality

Prerequisites:

· *ONTAP Cluster Fundamentals* (web-based training [WBT]) or *ONTAP Cluster Foundation* (ILT)

· *ONTAP NAS Fundamentals* (WBT)

- *ONTAP SAN Fundamentals* (WBT)
- *ONTAP Data Protection Fundamentals*

Content:

Module 0 - Welcome

Module 1: NetApp ONTAP 9 Clusters

- ONTAP deployment options
- The ONTAP cluster
- Storage VMs
- Software-defined storage

Module 2: Cluster Setup

- Supported ONTAP cluster configurations
- Setting up a cluster
- Administration interfaces
- ONTAP licences
- Policies and Schedules

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Deploying an ONTAP cluster

Exploring ONTAP management UIs

Module 3: Physical Storage Management

- Drives, RAID, and aggregates
- Advanced Disk Partitioning
- Flash Cache and Flash Pool features
- FabricPool aggregates

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Managing physical storage

Exploring RAID-TEC

Module 4:Logical Storage Management

- Flexible volumes
- Moving storage resources
- FlexGroup volumes
- FlexCache volumes

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Managing physical and logical network resources

Managing virtual network resources

Module 7: NAS Data Access

- Use NAS protocols to access data
- Use the NFS protocol to access data
- Use the SMB protocol to access data
- Use the S3 protocol to access data

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Monitoring with ONTAP File System Analytics

Configuring the NFS protocol in a storage VM

Configuring the SMB protocol in a storage VM

Configuring the S3 protocol in a storage VM

Module 8: SAN Data Access

- Use SAN protocols to access data
- Use the iSCSI protocol to access data
- Use the FC protocol to access data
- Use the NVMe protocol to access data

Exercises

Module 11: Cluster maintenance

- Data collection, monitoring, and automation tools
- Upgrading your cluster
- Technical support

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Installing and configuring Active IQ Config Advisor

Module 1: SnapMirror Fundamentals

- Introduction to SnapMirror
- Configuring SnapMirror relationships
- Guidelines for intercluster networking
- Cluster and storage VM peering

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Configuring cluster peering and storage VM peering

Module 2: SnapMirror for Disaster Recovery and Backup

- SnapMirror for FlexVol volumes
- SnapMirror configuration considerations
- SnapMirror for disaster recovery
- SnapMirror for backup
- Interaction between SnapMirror and other ONTAP features
- S3 SnapMirror
- FabricPool

Exercises

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Managing data volumes

Creating a FlexGroup volume

Module 5: Storage Efficiency

- Thin provisioning
- Deduplication and compression
- Flash efficiency
- Volume and file clones

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Managing storage efficiency

Managing FlexClone volumes

Module 6: Network Management

- ONTAP network review
- Network ports
- Network traffic segregation
- Logical network interfaces
- Nondisruptive LIF configuration
- Routing management

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Configuring iSCSI in a storage VM

Configuring NVMe in a storage VM

Module 9: Data Protection

- Manage Snapshot copies
- Restore data from a Snapshot copy
- Back up and replicate data
- Compliance

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Managing Snapshot copies

Module 10: ONTAP Security

- Access control
- Storage encryption
- Ransomware protection

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Managing ONTAP Administrators

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Module 3: SnapMirror Synchronous for Disaster Recovery

- SnapMirror Synchronous
- Configuring SnapMirror Synchronous for disaster recovery
- Additional SnapMirror Synchronous configuration

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Configuring a SnapMirror Synchronous relationship

Module 4: Storage VM Disaster Recovery (SVM DR)

- SVM DR introduction
- SVM DR requirements and configuration
- SVM data mobility

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship(optional)

Configuring storage VM data recovery

Module 5: ONTAP Backup and Archive

Solutions

- NDMP fundamentals
- NDMP topologies
- NDMP management

Module 6: Cloud-based Data Protection

- SnapMirror Cloud
- Cloud Volumes ONTAP
- Data protection with NetApp BlueXP

Module 7: ONTAP Business Continuity Solutions

- Consistency group management
- Introduction to SnapMirror active sync
- SnapMirror active sync configuration
- Failover operations and failure scenarios
- MetroCluster fundamentals

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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