VMware vSphere on NetApp (VVNA)

COURSE OVERVIEW:

Managing a vSphere storage virtualization environment requires knowledge of the features that exist between VMware and NetApp to handle large data workloads. The VMware vSphere on NetApp training provides in-depth use of best practices to improve storage resource utilization, simplify operating system maintenance irrespective of the storage topology, data center operations simplification, and optimal use of your NetApp storage. The course covers the management of any cloud infrastructure using Clustered Data ONTAP 8.3 and the VMware vSphere 6.0 virtualization and management suite.

This hands-on 5-day class with hands on labs immerses you into the virtual machine management and storage operations spanning NetApp Data ONTAP, VMware ESXi with vCenter management. You will get a hands-on experience using the vCenter NetApp plug-in, the Virtual Storage Console (VSC), configuring and monitoring the VMware host settings, performing backups, restoration, and virtual machine cloning operations.

WHO WILL BENEFIT FROM THIS COURSE?
- Data Center Operations Professionals
- Cloud Infrastructure Architects
- Cloud Administrators
- Cloud Engineers
- Storage Administrators

PREREQUISITES:
- System administration experience managing either the Linux or Microsoft Windows operating system
- Completion of the VMware vSphere: Install, Configure, Manage [V6.7] (VSICM67) or equivalent experience
- Completion of the ONTAP 9.3 Cluster Administration (ONTAP9ADM) or equivalent experience

COURSE OBJECTIVES:

Upon completion of this course you will be able to:
- Deploy a virtualized infrastructure using NetApp storage based on the feature integration that exists with VMware vSphere and NetApp ONTAP
- Show a firm and practical knowledge of VMware services, protocols and connectivity options
- Utilize NetApp vCenter plug-ins to ensure proper functionality and performance for virtual machines
- Utilize NetApp Virtual Storage Console (VSC) to automate the backup, provisioning, machine cloning and host optimization configuration
- Perform host monitoring on ESXi hosts and NetApp storage through a single-pane-of-glass. Optimize virtual machine performance and correct virtual disk misalignment.
- Optimize NetApp Storage system connectivity, performance and reliability using Fibre Channel Protocol (FCP), FCoE, iSCSI, and NFS protocols.
- Implement multi-tenancy through the use of vFilers or Vservers

- Configure storage from the vSphere CLI or GUI in either NetApp clustered ONTAP or 7-mode
- Install and configure NetApp vSphere plug-ins and utilize the features
- Perform data storage networking for both iSCSI and NFS datastores
- Manage virtual machine snapshots at both the virtualization and storage layers
- Implement high availability and disaster recovery features

COURSE OUTLINE:

NetApp Introduction
- Networked Storage
- Unified Storage and NetApp Cloud ONTAP
- Clustered Data ONTAP

VMware vSphere Overview
- ESXi 6.0
- vCenter 6.0
- What's New in vSphere 6.0 Platform
- ESXi 5.x/vCenter 5.x/vSphere 5.x

NetApp VMware Integration
- Software Defined Datacenter
- Virtual Storage Console
- VAAI
- VASA

NetApp Datastore Networking with IP Storage Protocols
- Storage Protocol Selection
- IP SAN Architecture
- VMFS Datastores
- iSCSI
- FC/FCoE

VM Datastore Networking FC/FCoE
- Ethernet Best Practices
- Common Best Practices
- iSCSI Best Practices
- 5.4 NFS4.1 datatores

VM Data
- VMFS Alignment
- VSC Non-Disruptive VM Alignment
- VMware Converter
- User/Application Data
- RDMs vs VMFS Disks
- Storage Efficiency with Deduplication & Cloning
- FT new features

Multitenancy

- Principles of Multitenancy and Cloud Computing
- Availability
- Security
- Performance
- Management Separation

High Availability

- Planned Events
- 8.2 vMotion
- Storage vMotion
- Non-disruptive Volume and LIF Migrations
- Unplanned Events
- VMware HA
- VMware FT
- NetApp HA
- MetroCluster

Disaster Recovery and Backup

- Planning Service Levels
- VMware Snapshots
- NetApp Snapshots
- SnapManager for Virtual Infrastructure
- Site Recovery Manager
- SnapCreator Framework

Monitoring, Performance and Troubleshooting

- Performance Factors
- Networking Performance
- ESXi Host Performance
- VM and Guest OS Considerations
- VM to virtualized storage performance

Labs

- Initial Tour of Your Lab Environment
- NetApp Clustered Storage Environment
- VMware vSphere Environment
- NetApp-VMware Integration
- NFS Datastores
- Storage Capability (SCP)
- iSCSI Storage Configuration
- VMware iSCSI Configuration
- Rapid Cloning
- Disk Alignment
- Multitenant Admin Access

- Quality of Service
- Proactive Movement of Volume
- High Availability
- Proactive Movement of a LIF
- SnapMirror
- Backup with VSC
- Restore with VSC
- Alerts and Monitoring

SUNSET LEARNING INSTITUTE (SLI) DIFFERENTIATORS:

Sunset Learning Institute (SLI) has been an innovative leader in developing and delivering authorized technical training since 1996. Our goal is to help our customers optimize their cloud technology investments by providing convenient, high quality technical training that our customers can rely on. We empower students to master their desired technologies for their unique environments.

What sets SLI apart is not only our immense selection of trainings options, but our convenient and consistent delivery system. No matter how complex your environment is or where you are located, SLI is sure to have a training solution that you can count on!

Premiere World Class Instruction Team
- All SLI instructors have a four-year technical degree, instructor level certifications and field consulting work experience.
- Sunset Learning has won numerous Instructor Excellence and Instructor Quality Distinction awards since 2012

Enhanced Learning Experience
- The goal of our instructors during class is ensure students understand the material, guide them through our labs and encourage questions and interactive discussions.

Convenient and Reliable Training Experience
- You have the option to attend classes at any of our established training facilities or from the convenience of your home or office with the use of our HD-ILT network (High Definition Instructor Led Training)
- All Sunset Learning Institute classes are guaranteed to run – you can count on us to deliver the training you need when you need it!

Outstanding Customer Service
- Dedicated account manager to suggest the optimal learning path for you and your team
- Enthusiastic Student Services team available to answer any questions and ensure a quality training experience