SETC Training Corporate Logo

VMware Training: Optimize and Troubleshoot (VMOPTR, 5 jours)

Description

The course Optimize and Troubleshoot (VMware Training) teaches your how to deploy and troubleshoot a production vSphere environment. The course includes optimization strategies for virtual machines, ESXi hosts, the vCenter Server Appliance, networking and shared SAN storage with the aim of achieving performance and scalability. The training course also explores the details of performing an upgrade and includes coverage of common troubleshooting techniques that allow you to diagnose, isolate and fix common problems. You learn to use the entire VMware toolset to identify and resolve common performance bottlenecks and to support a top-tier virtualization infrastructure.

Tarifs

- Tarification: $3,500/person
- Rabais de 10% lorsque vous inscrivez 3 personnes.

Plan de cours

Install, Configure and Secure ESXi 6.5

- Install and configure ESXi 6.5 using Best Practices
- Enable and secure command line access including the console and Secure Shell
- Using Lockdown mode to restrict management access
- Lockdown modes introduced in vSphere 6.5

Virtual and Physical Networking

- Create / update standard Virtual Switches
- vSwitch security policies
- Network failure detection and beaconing
- Enabling Discovery Protocol settings

Advanced Networking

- Configuring vSwitch Security policies, Promiscuous Mode, Forged Transmits and MAC address changes
- Understanding and using Traffic Shaping
- The Five physical NIC teaming policies including their pros / cons and use cases
- Enabling and using Jumbo Frames for improved performance and reduced protocol overhead
- Troubleshoot networking configuration and performance issues

Connecting to and Using NAS Shared Storage

- Connecting to NFS v3 storage
- Network design for high service availability
- Best practices for performance and reliability

Virtual Hardware and Virtual Machines

- VM virtual hardware, options and limits
- Creating and right-sizing Virtual Machines for CPU, memory
- Installing VMware Tools
- Virtual Machine best practices
- Import and export VMs in Open Virtual Machine Format

vCenter Server Appliance and Web Client

- Deploy vCenter Server Appliance 6.0 via the command line and configuration files
- Upgrade vCenter Appliance 6.0 to vCenter Appliance 6.5
- vCenter deployment and redundancy options
- Connecting Single Sign On (SSO) to Active Directory and other identity sources

ESXi Command Line Access

- Import and configure vSphere Management Assistant (vMA)
- Using command line access tools including esxcli, vicfg, vmware-cmd
- Introduction to ESXtop
- Working with ESXi log files
- Using command line tools to review and update configurations
- Using command line tools to backup and restore an ESXi host's configuration

VM Rapid Deployment using Templates, Clones

- How to create a Template VM
- Using Guest OS Customization for Windows and non-Windows OS
- Enabling, using Hotplug Virtual CPU and memory
- Enabling, using Hotplug disks, networking, USB devices and more
- Predictive and adaptive sizing strategies for VMs
- Troubleshooting Virtual Machine issues

Use VMware Update Manager to Upgrade ESXi hosts

- Configure VMware Update Managers
- Create ESXi host Patch Baselines
- Importing a new ESXi install media image
- Attaching a Host Upgrade patch baseline
- Performing host compliance scans
- Upgrading an ESXi host from ESXi 6.0 to ESXi 6.5

Connecting to Fibre and iSCSI Shared Storage

- General SAN features and capabilities
- Overview of Fibre Storage Networks
- VMware APIs for Array Integration (VAAI)
- Storage network design for performance and redundancy
- Connecting to Fibre and iSCSI shared storage
- iSCSI Hardware and Software Initiators
- iSCSI Static and Send Targets LUN discovery
- Troubleshooting storage issues

Direct VM to SAN Access with Raw Device Maps

- Explain Physical and Virtual Raw Device Maps (RDMs)
- Use cases for Raw Device Maps
- How Raw Device Maps work with VM cold, VMotion and Storage VMotion migrations
- Using RDMs to implement Virtual and Virtual/Physical Microsoft Fail Over Clusters

VMware File System (VMFS)

- Unique file system properties of VMFS
- Creating and managing shared Volumes
- Managing VMFS capacity with LUN spanning and LUN expansion
- Understand VMware multipath options
- Benefits of using vendor multipath solutions
- Understanding multipathing policies
- VMFS performance, scalability and reliability considerations
- Review storage queuing, I/O aborts and other storage issues
- Diagnose and troubleshoot storage performance
- VMware vSphere Flash Read Cache description and use cases
- Troubleshooting VMFS issues

Storage Profiles

- SAN and user defined storage profiles
- Using storage speed, replication to define storage capabilities
- VMware APIs for Storage Awareness (VASA)

- Creating VM storage profiles
- VM/Storage compliance checks
- Remediating incorrectly placed VM
- Understanding Storage I/O Control

Storage Load Balancing with SDRS Clusters

- Creating and using Storage Distributed Resource Scheduling clusters (SDRS)
- Cluster properties for capacity and I/O load balancing
- Best practices for building storage clusters

VMotion Migration, Cold Migration, Storage VMotion

- Cold Migrations to new ESXi hosts, datastores
- Hot Migrations with VMotion
- VMotion requirements and dependencies
- How VMotion works – detailed explanation
- Troubleshooting VMotion
- Storage VMotion for hot VM disk migrations

DRS Load Balancing Clusters

- Resource assignments including reservations, shares and limits
- Resource balanced clusters with VMware Distributed Resource Scheduling (DRS) clusters
- Per-VM cluster policy overrides
- Features and benefits of DRS Power Management
- Troubleshooting DRS cluster issues
- Predictive DRS

VMware High Availability Clusters

- Minimize unplanned VM down time VMware High Availability clusters
- VM requirements for HA Clusters
- Storage fault recovery in High Availability clusters (All Paths Down, Permanent Device Loss)
- Monitoring VM health in HA clusters
- Admission Control policy settings for predictable pCPU/pRAM resource availability
- Identifying and troubleshooting issues in VMware HA clusters

VMware Fault Tolerance

- Eliminate VM unplanned down time with VMware Fault Tolerance
- Role of the Primary and Secondary VM in a Fault Tolerance configuration
- Explain how Fast Checkpointing keeps the Secondary VM vCPU, vRAM, vDisk up to date
- Enabling VM Fault Tolerance
- Initial VM synchronization
- Testing Fault Tolerance

Distributed vSwitch Features and Scalability

- Features and benefits of Distributed vSwitches
- Role of the DVUplink port group
- Adding ESXi hosts to dvSwitches
- Creating dvSwitch port groups
- Migrating physical NICs and VMkernel ports to dvSwitches
- dvSwitch configuration backup and restore
- Configuring custom VM MAC address generation policies
- Testing dvSwitch network health

Managing Scalability and Performance

- VMkernel CPU and memory resource management mechanisms
- Tuning VM storage I/O performance
- Identifying and resolving resource contention
- Monitoring VM and ESXi host performance