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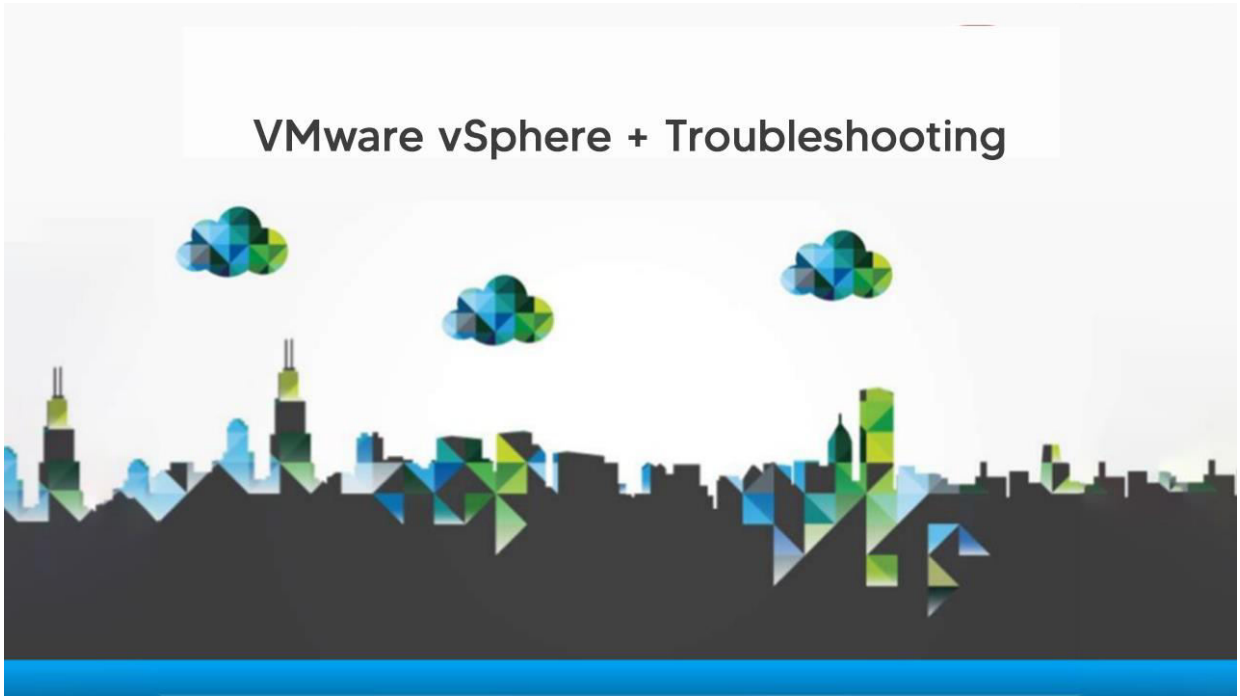

VMware vSphere + Troubleshooting

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VMware vSphere + Troubleshooting Combo Course

Course Overview:

This course features intensive hands-on training that focuses on installing, configuring, and managing VMware vSphere 6.7, which includes VMware ESX 6.7 and VMware vCenter Server 6.7. This course prepares you to administer a vSphere infrastructure for an organization of any size. It is the foundation for most other VMware technologies in the software-defined data centre.

VMware Troubleshooting hands-on training provides you with the advanced knowledge, skills, and abilities to achieve competence in troubleshooting the VMware vSphere 6.x environment. This workshop increases your skill and competence in using the command-line interface, VMware vSphere Client, VMware vRealize Log Insight and other tools to analyze and solve problems.

Course Outline:

VMware vSphere

1. **Course Introduction**
    - Introductions and course logistics
    - Course objectives
    - Describe the content of this course
    - Gain a complete picture of the VMware certification system
    - Familiarize yourself with the benefits of the VMware Education Learning Zone
    - Identify additional resources
2. **Introduction to vSphere and the Software-Defined Data Centre**
    - Describe the topology of a physical data centre
    - Explain the vSphere virtual infrastructure
    - Define the files and components of virtual machines
    - Describe the benefits of using virtual machines
    - Explain the similarities and differences between physical architectures and virtual architectures

- Define the purpose of ESXi
- Define the purpose of vCentre Server
- Explain the software-defined data centre
- Describe private, public, and hybrid clouds

3. **Creating Virtual Machines**

- Introduce virtual machines, virtual machine hardware, and virtual machine files
- Identify the files that make up a virtual machine
- Discuss the latest virtual machine hardware and its features
- Describe virtual machine CPU, memory, disk, and network resource usage
- Explain the importance of VMware Tools™
- Discuss PCI pass-through, Direct I/O, remote direct memory access, and NVMe
- Deploy and configure virtual machines and templates
- Identify the virtual machine disk format

4. **vCentre Server**

- Introduce the vCentre Server architecture
- Deploy and configure vCentre Server Appliance
- Use vSphere Web Client
- Backup and restore vCentre Server
- Examine vCentre Server permissions and roles
- Explain the vSphere HA architectures and features
- Examine the new vSphere authentication proxy
- Manage vCentre Server inventory objects and licenses
- Access and navigate the new vSphere clients

5. **Configuring and Managing Virtual Networks**

- Describe, create, and manage standard switches
- Configure virtual switch security and load-balancing policies
- Contrast and compare vSphere distributed switches and standard switches
- Describe the virtual switch connection types
- Describe the new TCP/IP stack architecture
- Use VLANs with standard switches

6. **Configuring and Managing Virtual Storage**

- Introduce storage protocols and storage device types
- Discuss ESXi hosts using iSCSI, NFS, and Fibre Channel storage

- Create and manage VMFS and NFS data stores
- Describe the new features of VMFS 6.5
- Introduce vSAN
- Describe guest file encryption

7. Virtual Machine Management

- Use templates and cloning to deploy new virtual machines
- Modify and manage virtual machines
- Clone a virtual machine
- Upgrade virtual machine hardware to version 12
- Remove virtual machines from the vCentre Server inventory and datastore
- Customize a new virtual machine using customization specification files
- Perform vSphere vMotion and vSphere Storage vMotion migrations
- Create and manage virtual machine snapshots
- Create, clone, and export vApps
- Introduce the types of content libraries and how to deploy and use them

8. Resource Management and Monitoring

- Introduce virtual CPU and memory concepts
- Explain virtual memory reclamation techniques
- Describe virtual machine over commitment and resource competition
- Configure and manage resource pools
- Describe methods for optimizing CPU and memory usage
- Use various tools to monitor resource usage
- Create and use alarms to report certain conditions or events
- Describe and deploy resource pools
- Set reservations, limits, and shares
- Describe expandable reservations
- Schedule changes to resource settings
- Create, clone, and export vApps
- Use vCentre Server performance charts and esxtop to analyze vSphere performance

9. vSphere HA, vSphere Fault Tolerance, and Protecting Data

- Explain the vSphere HA architecture
- Configure and manage a vSphere HA cluster
- Use vSphere HA advanced parameters
- Define clusterwide restart ordering capabilities
- Enforce infrastructural or intra-app dependencies during failover
- Describe vSphere HA heartbeat networks and datastore heartbeats

- Introduce vSphere Fault Tolerance
- Enable vSphere Fault Tolerance on virtual machines
- Support vSphere Fault Tolerance interoperability with vSAN
- Examine enhanced consolidation of vSphere Fault Tolerance virtual machines
- Introduce vSphere Replication
- Use vSphere Data Protection to back up and restore data

10. vSphere DRS

- Describe the functions and benefits of a vSphere DRS cluster
- Configure and manage a vSphere DRS cluster
- Work with affinity and anti-affinity rules
- Describe the new capabilities for what-if analysis and proactive vSphere DRS
- Highlight the evolution of vSphere DRS using predictive data from VMware vRealize Operations Manager
- Perform preemptive actions to prepare for CPU or memory changes
- Describe the vCentre Server embedded vSphere Update Manager, VMware vSphere ESXi Image Builder CLI, and VMware vSphere Auto Deploy capabilities
- Use vSphere HA and vSphere DRS together for business continuity

11. vSphere Update Manager

- Describe the new vSphere Update Manager architecture, components, and capabilities
- Use vSphere Update Manager to manage ESXi, virtual machine, and vApp patching
- Install vSphere Update Manager and the vSphere Update Manager plug-in
- Create patch baselines
- Use host profiles to manage host configuration compliance
- Scan and remediate hosts

VMware vSphere: Troubleshooting [V6.7]

Course Outline:

1. **Course Introduction**

- Introductions and course logistics
- Course objectives

2. **Introduction to Troubleshooting**
   - Identify the effects of a system problem
   - Define the scope of troubleshooting
   - Use a structured approach
   - Discuss the principles of troubleshooting
   - Follow a logical troubleshooting procedure
   - Examine examples of troubleshooting

3. **Troubleshooting Tools**
   - Use command-line tools to identify and troubleshoot problems
   - Use vSphere CLI
   - Find and interpret important log files
   - Use vRealize Log Insight for log aggregation, efficient log search, and problem analysis

4. **Networking**
   - Identify the symptoms of network-related problems
   - Analyze and resolve standard switch and distributed switch problems
   - Analyze virtual machine connectivity problems and fix them
   - Examine common management network connectivity problems and restore configurations
   - Identify and prevent potential problems

5. **Storage**
   - Troubleshoot storage (iSCSI, NFS, VMware vSphere VMFS, VMware vSAN, and VMware vSphere Virtual Volumes) connectivity problems
   - Analyze storage-related logs
   - Analyze hardware malfunction and software misconfiguration scenarios
   - Identify multipathing-related problems, including permanent device loss (PDL) and all paths down (APD)
   - Analyze possible causes, recover from faulty conditions, and restore storage visibility

6. **vSphere Clusters**
   - Identify and recover from problems related to vSphere HA

- Analyze and troubleshoot various types of vSphere vMotion problems related to virtual machine migrations
- Discuss and recover from vSphere DRS problems to achieve proper function and balanced resource use
- Examine vSphere cluster failure scenarios and possible solutions

7. **Virtual Machines**
   - Analyze and resolve common virtual machine snapshot problems
   - Identify possible causes and resolve virtual machine power-on problems
   - Troubleshoot virtual machine connection state problems
   - Resolve problems seen during VMware Tools™ installations
   - Examine failure scenarios and provide solutions

8. **vCenter Server and ESXi**
   - Describe the vCenter Server and VMware Platform Services Controller™ architecture in vSphere 6.x
   - Identify and resolve authentication problems
   - Troubleshoot VMware Certificate Authority and certificate problems
   - Analyze and fix problems with vCenter Server services
   - Analyze and fix vCenter Server database problems
   - Identify VMware vCenter Server® High Availability problems
   - Examine ESXi host and vCenter Server failure scenarios and resolve the problems

Prerequisites:

- System administration experience on Microsoft Windows or Linux operating systems
- Basic Knowledge on Networking and Storage

Number of Hours: 60hrs

Who Should Attend:

- Systems Administrators & System Engineers
- People who are looking forward to move their career in the Data centre Technologies.

Certification: VCA & VCP 6.7

Key Features:

- One to One Training

- Online Training
- Fastrack & Normal Track
- Resume Modification
- Mock Interviews
- Video Tutorials
- Materials
- Real Time Projects
- Virtual Live Experience
- Preparing for Certification