

## **Troubleshooting VMware Virtual Infrastructure (4 or 5 Day)**

This class will focus on troubleshooting processes and developing troubleshooting skills. The resources used in class will provide students with a toolbox that can be used in their production environment. The student should have a working knowledge of VMware (vSphere or VI3). The class will be approximately 25% lecture and 75% demo and labs. The class can be 4 days or 5 days. The 5<sup>th</sup> day will focus on Security Configuration and Troubleshooting.

- I. Introduction
- II. Virtualization Overview
  - a. ESX
  - b. ESXi
  - c. vSphere Client
  - d. vCenter
- III. CLI
  - a. ESXi
    - i. vMA
  - b. ESX
- IV. Configure Logging and Log Files
  - a. ESXi
  - b. ESX
  - c. vCenter
  - d. Centralized Logging Host
  - e. Troubleshooting with Log Files
- V. Configure and Troubleshoot vCenter Services
  - a. VMware Mount Service for VirtualCenter
    - i. Guest OS customization
  - b. VMware Tools Service
    - i. Not installed as part of vCenter – but rather installed into a guest O/S
  - c. VMware vCenter Orchestrator Configuration
    - i. Service for Orchestrator , a workflow engine that can help administrators automate existing manual tasks
  - d. VMware VirtualCenter Management Webservices
    - i. Allows configuration of vCenter management services
  - e. VMware VirtualCenter Server

- i. Core of vCenter Server
- f. VMware VCMSDS
  - i. vCenter Server LDAP directory services

#### VI. Networking Configuration and Troubleshooting

- a. Standard vSwitch
- b. Distributed vSwitch
- c. Port Group configuration
  - i. Security
  - ii. Bandwidth Shaping
  - iii. VLANs
- d. Connection Types
  - i. VMkernel
  - ii. Service Console
  - iii. Virtual Machine
- e. Traffic Monitoring
  - i. Network Sniffer
  - ii. Network Utilization

#### VII. Troubleshooting vSphere Management Utilities

- a. SSH
- b. vSphere Client
- c. Web Services

#### VIII. Storage Configuration and Troubleshooting

- a. Configure Shared Storage
  - i. NFS
    - 1. Linux
    - 2. Microsoft
  - ii. iSCSI
    - 1. Authentication
    - 2. Digests
- b. Troubleshoot iSCSI
  - i. CLI tools
  - ii. vSphere Client

#### IX. vMotion Configuration and Troubleshooting

- a. vMotion
- b. Storage vMotion

- X. Clusters and Data Protection Configuration and Troubleshooting
  - a. DRS
    - i. Requirements
    - ii. Configuration
    - iii. VM Management and Troubleshooting
  - b. HA
    - i. Requirements
    - ii. Configuration
    - iii. VM Monitoring
- XI. Troubleshooting Lab
  - a. troubleshooting a broken environment

### **Optional 5<sup>th</sup> Day**

- XII. Security Configuration and Troubleshooting
  - a. Secure access to console and vSphere Client
  - b. Configure ESX firewall
  - c. Create a firewall VM and produce a private secure network
  - d. Networking
    - i. VLANS
    - ii. Port Group Security Settings
  - e. Hacking a Virtual Infrastructure (and protection mechanisms)
  - f. Security Best Practices