VMware vSphere 5.1 Advanced Administration

This popular 4-day class is an intensive introduction to the advanced features of VMware vSphere™ 5.1. Candidates are assuming to have working knowledge of VMware vSphere 4.x or vSphere 5. We build on that knowledge through a rapid review of common features followed by in-depth presentations of advanced topics including vSphere 5 performance, availability, scalability and security. 40+% of class time is devoted to labs so concepts, skills and best practices are developed and reinforced. Labs start with installation and configuration of ESXi server, vCenter, vCenter Linux Appliance and Virtual Machines. From there, we look at host and storage performance and scalability topics including Hotplug Virtual Hardware, Profile Driven Storage and DRS and Storage DRS clusters and DRS Power Management. Availability is covered in HA Clusters, VM Fault Tolerance, vSphere Replication and vSphere Data Protection. VM network and operating system security topics include vShield App/Edge (network security), vShield EndPoint (VM antivirus).

This class is unique in its approach; which is to identify and eliminate common IT pain points and then to use virtualization to deliver clear, tangible benefits.

Course Objectives:

- Install ESXi 5 and perform post-install configurations.
- Define, connect to, and browse NFS file shares.
- Create a Virtual Machine and install Guest OS, VMware Tools into the VM.
- Import, install, review and configure vCenter Virtual Appliance.
- Create new VMs using Templates and Clones.
- Work with virtual disks. Hot add a secondary virtual disk. Grow a non-system volume.
- VMware VMFS – create, tune and grow VMFS volumes.
- Configure Storage I/O Control Create Storage Policies.
- Use HA clusters to minimize VM down time due to server failures.
- Enable and test VM Fault Tolerance for 100% VM uptime.
- Create VMware Distributed Switches.
- Install, configure vShield Manager Install, vShield App and vShield EndPoint for batch VM antivirus scans.

Audience: Suitable for anyone who wants to learn how to extract the maximum benefit from their investment in Virtual Infrastructure.

Prerequisites: Attendees should have good familiarity with VMware vSphere 4.x or 5.0. Experience installing, configuring and managing operating systems, storage systems and or networks is useful but not required.

Number of Days: 4 days

1 Virtualization Overview

Virtualization explained
How VMware virtualization compares to traditional PC deployments
How virtualization effectively addresses common IT issues
VMware vSphere software products

2 Install, Configure ESXi 5.1
- Selecting, validating and preparing your server
- Software installation and best practices
- Joining ESXi to an Active Directory Domain

3 Virtual Hardware and Virtual Machines
- VM virtual hardware, options and limits
- Creating and sizing VMs
- Assigning, modifying and removing Virtual Hardware
- Working with a VM's BIOS
- Installing and customizing an OS for best performance

4 vCenter on Windows
- vCenter feature overview and components
- Importing ESX hosts into vCenter management
- vSphere Web Client Installation and Use

5 vCenter Linux Virtual Appliance
- vCenter Virtual Appliance feature overview and components
- Installing and post-install configuration
- Sizing vCenter Appliance
- Database options and limitations

6 Advanced VM Deployment, Virtual Hardware
- Creating, modifying, updating and working with Templates
- Best practices for cloning and templating
- Adding, resizing virtual disks and partitions
- Enabling and using VM Hotplug virtual hardware
- CPU / Memory hot plug
- Virtual NIC hot plug

7 Using Fibre and iSCSI Shared Storage
- Fibre SAN, iSCSI SAN overview
- Connecting to, scanning, rescanning iSCSI SANS
- Working with Raw Device Maps
- Designing Networks for Optimum iSCSI performance, reliability

8 VMFS 5 File Systems
- Unique file system properties of VMFS 5 filesystems
- Creating, managing new VMFS partitions
- Managing VMFS capacity with LUN spanning and LUN expansion
- Native and 3rd party Multipathing with Fibre and iSCSI SANs
- Chapter Section

9 Storage I/O Control and Profile Driven Storage
- Create storage profile policies
- Perform compliance checks on VM storage placements
- Identify and fix VM storage compliance issues

10 Datastore Clusters and Storage DRS
- How to manage storage capacity, load using Storage DRS
- Create, update Storage DRS datastore clusters
- Identify and eliminate storage performance issues

11 DRS Load Balanced Clusters, Power Management
- Cold Migrations, Hot VMotion migrations
- Storage VMotion for hot VM disk migrations
- Create and manage host CPU, memory resources with VMware DRS
- VM cluster policy settings including Admission Control
- Configuring and enabling Power Management on DRS clusters
- Using SSDs to improve VM paging performance

12 VMware HA and Fault Tolerance
- VMware High Availability clusters options
- Fault Tolerance overview, features and limitations
- Configuration, monitoring and recovery
- FT ESXi hosts and network compatibility requirements

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Creating and administering FT VMs

13 Advanced Virtual Networking

Distributed virtual switches, distributed Port Groups

NIC teaming strategies/options for redundancy and performance

Connecting to vLANs

Enhanced Network Security

Uplinking Virtual and Physical Network segments using NICs

14 VMware Data Protection/Replication

Configuring and using VMware Data Protection to backup, recovery VMs

Hot VM replication with VMware Replication

15 vShield Manager, vShield App, Edge, EndPoint

Installing, configuring vShield Manager

Configuring vShield App for enhanced vSwitch security

Enabling and configuring gateway security with vShield Edge

Using vShield Edge to implement hypervisor based antivirus protection