# VMware vSphere 4.x to 5.0 Upgrade

## Course Summary

### Description

In this upgrade course we cover everything the student needs to know to upgrade from VMware vSphere 4.x to VMware's new vSphere 5.0 product. Students will perform the actual upgrade using hands-on-labs in our state of the art data center, then once that objective is achieved they will be exposed to all the new features of the product, to include third party solutions and lessons learn in the field.

### Objectives
**At the end of this course, students will be able to:**

- Create Custom builds of ESXi including adding custom drivers
- Upgrade to ESXi 5 using the vihostupdate.pl and VMware Update Manager
- Use Network I/O controls on vNetwork Distributed switches to throttle virtual to physical network traffic
- Use the new features of VMware Storage VMotion with snapshots
- Understand the benefits and usage of Profile Driven Storage using vPods
- Design and use Storage DRS infrastructure using storage clusters
- Use GUI based multipathing in VMware's Pluggable Storage Architecture (PSA)
- Understand Virtual Machine sustained availability using VMware Fault Tolerance
- Manage multiple vCenter Servers using vCenter Server Linked Mode
- Understand new and improved features and benefits of ESXi host configuration using Host Profiles
- Reduce time and effort of host provisioning using VMware Auto Deploy
- Learn about the benefits included with the new VAAI primitives in vSphere 5.0
- Use the new vCenter Web Interface

### Topics

- Overview of vSphere 5.0
- Upgrade or migrate to vSphere 5.0
- Managing the vSphere Administration
- Networking
- Storage

### Prerequisites

Students should have 1-3 year experience as a VMware administrator using VMware vSphere 4.x, be familiar with virtual technologies and have sat a VMware Authorized training program or have taken course VMware vSphere 4.1 Ultimate Boot Camp or equivalent within the last year. Students MUST know the vSphere 4.x product line or they will need to have taken one of the other full vSphere 4.x classes instead.

### Duration

Two days

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

# VMware vSphere 4.x to 5.0 Upgrade

## Course Outline

**I. Overview of vSphere 5.0**
Covers vSphere 4 new features and enhanced functionality

**II.** Upgrade or migrate to vSphere 5.0
Covers all of the ways to migrate, or upgrade your complete Virtual Environment to vSphere 5.0

A. HOL – Upgrade vCenter from 4.1 U1 to 5.0
B. HOL – Upgrade VMware Update Manager
C. HOL – Upgrade ESXi 4.1 U1 to ESXi 5
D. HOL – Upgrade Virtual Machines (VMware Tools, Hardware Version 7 to 8)

**III. Managing the vSphere Administration**
Covers new Administration features (vCenter Appliance, vSphere 5 Web management, esxcli, localcli) for better monitoring and management of ESX/ESXi hosts and VMs; Host deployment enhancements (Image Builder, Auto Deploy Server); new Update Manager features

A. HOL – vSphere 5 Web Management Interface

**IV. Networking**
Covers new networking features of vSphere 5 to including Network Monitoring and Troubleshooting (NetFlow, Port Mirror), Management and Configuration (LLDP), Network I/O Control Enhancements or NIOC (User defined Resource Pools, vSphere Replication Traffic, IEEE 802.1P tagging)

A. HOL – vNetwork Distributed Switch User Defined Resource Pools

**V. Storage**
Covers new storage features for better performance, reduced storage costs, and lower management overhead (VMFS-5, Datastore Clusters, Storage Awareness and Profile Driven Storage, VAAI Acceleration for NFS, Software FCoE, Storage DRS, VMware Storage Appliance (VSA), SSD handling, new Storage I//O Control)

A. HOL – Implementing VMFS-5
B. HOL – Storage Cluster and Storage DRS

**VI. Availability**
Covers VMware High Availability (HA) enhancements with new DPM features and Master/Slave nodes, VMware's new Fault Tolerance features, new vCenter Server heartbeat

A. HOL – HA Cluster and setup Heartbeat Datastores

**VII. Security Enhancements**
Covers the new Security Enhancements of vSphere 4 to include ESXi 5 Firewall and AD Integration, intro to vShield 5

A. HOL – Implementing ESXi 5 Firewall
B. HOL – ESXi 5 AD Integration

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically