

Virtualization is crucial to providing computing services economically on a wide scale, and the training is essential learning for IT professionals. You'll discover how today's virtual machines work, explore hypervisors, learn virtual networking concepts, see how to plan for high availability, and much more. It's the perfect virtualization primer, whether you're an aspiring IT professional or just brushing up on your skills.

Upon successful completion of this course, students will be able to:

- *The importance of virtualization in today's data center environments*
- *Hypervisors-Type 1, Type 2, their roles, and what's on the market*
- *How to build a virtual machine from scratch*
- *Managing CPU, memory, disk storage, and networking*
- *Ways to map virtual networking to a physical machine*
- *What you need to do to ensure high availability*
- *Working with applications in a virtual environment*
- *Change virtual machine CPU quantity*
- *Virtual network configurations*

Course Contents:

Module 1. Understanding Virtualization

- Describing Virtualization*
- Understanding the Importance of Virtualization*
- Examining Today's Trends*
- Virtualization and Cloud Computing*
- Understanding Virtualization Software Operation*
- Virtualizing Servers*
- Virtualizing Desktops*
- Virtualizing Applications*

Module 2. Understanding Hypervisors

- Describing a Hypervisor*
- Exploring the History of Hypervisors*
- Understanding Type 1 Hypervisors*
- Understanding Type 2 Hypervisors*
- Understanding the Role of a Hypervisor*
- Comparing Today's Hypervisors*
- VMware ESX*
- Citrix Xen*
- Microsoft Hyper-V*
- Other Solutions*

Module 3. Understanding Virtual Machines

- Describing a Virtual Machine*
- Examining CPU in a Virtual Machine*
- Examining Memory in a Virtual Machine*
- Examining Network Resources in a Virtual Machine*
- Examining Storage in a Virtual Machine*
- Understanding How a Virtual Machine Works*
- Working with Virtual Machines*

- Understanding Virtual Machine Clones
- Understanding Templates
- Understanding Snapshots
- Understanding OVF

Module 4. Creating a Virtual Machine

- Performing P2V Conversions
- Investigating the Physical-to-Virtual Process
- Hot and Cold Cloning
- Building a New Virtual Machine
- Thinking About VM Configuration
- Creating a First VM

Module 5. Installing Windows on a Virtual Machine

- Loading Windows into a Virtual Machine
- Installing Windows 7
- Installing VMware Tools
- Understanding Configuration Options
- Optimizing a New Virtual Machine

Module 6. Installing Linux on a Virtual Machine

- Loading Linux into a Virtual Machine
- Installing Linux into a Virtual Machine
- Installing VMware Tools
- Understanding Configuration Options
- Optimizing a New Linux Virtual Machine

Module 7. Managing CPUs for a VM

- Understanding CPU Virtualization
- Configuring VM CPU Options
- Tuning Practices for VM CPUs
- Choosing Multiple vCPUs vs. a Single vCPU
- Hyper-Threading
- Working with Intel and AMD Servers

Module 8. Managing Memory for a Virtual Machine

- Understanding Memory Virtualization
- Configuring VM Memory Options
- Tuning Practices for VM Memory
- Calculating Memory Overhead
- Memory Optimizations

Module 9. Managing Storage for a Virtual Machine

- Understanding Storage Virtualization
- Configuring VM Storage Options
- Tuning Practices for VM Storage

Module 10. Managing Networking for a Virtual Machine

- Understanding Network Virtualization*
- Configuring VM Network Options*
- Tuning Practices for Virtual Networks*

Module 11. Copying a Virtual Machine

- Cloning a Virtual Machine*
- Working with Templates*
- Saving a Virtual Machine State*
- Creating a Snapshot*
- Merging Snapshots*

12. Understanding Availability

- Increasing Availability*
- Protecting a Virtual Machine*
- Protecting Multiple Virtual Machines*
- Protecting Datacenters*