

سرفصل دوره

Virtualization, Hyper-V

نام دوره : مجازی سازی

مدت : کارگاه یک روزه (۸ ساعت)

پیشنیاز : تسلط به ساختار شبکه و معماری ویندوز سرور،

حداقل ۲ سال کار حرفه ای در شبکه و محیط ویندوز سرور

توضیح : امروزی مجازی سازی مبحث بسیار مهمی در فناوری اطلاعات است، به خصوص در شرایط بحران اقتصاد جهانی و در سال اصلاح الگوی مصرف که شرکت ها در صدد صرفه جویی اقتصادی هستند، استفاده از تکنولوژی مجازی سازی برای میزبانی سرورهای متعدد مجازی روی یک سرور فیزیکی کاربرد زیادی پیدا می کند . با استفاده از این فناوری نقش های مختلف شبکه مانند وب سرورها، سرویس دهنده پست الکترونیک، سرور های امنیتی و ... را که هر یک نیاز به سرور جداگانه دارند می توان در قالب ماشین های مجازی در یک سرور فیزیکی نصب و راه اندازی نمود . این تکنولوژی علاوه بر صرفه جویی اقتصادی مزایای دیگری از جمله سهولت در مدیریت سرورها، عملیات پشتیبان گیری و نظارت بر کارایی و سلامت سرورها دارد . مجازی سازی همچنین کاربرد وسیعی در محیط های آزمایشی و تحقیقاتی دارد . شرکت مایکروسافت تکنولوژی Hyper-V را برای پاسخگویی به این نیاز در Windows Server 2008 قرار داده است. این کارگاه یک روزه به تشریح معماری این فناوری، چگونگی نصب و راه اندازی و استفاده از آن می پردازد.

Module1: Introducing the Hyper-V Technology

This session provides IT professionals with an overview of the Hyper-V technology and its features. This course also teaches you how to implement Hyper-V on a Windows Server 2008 server. This knowledge helps you plan and implement a Hyper-V virtualization server.

Overview of Hyper-V

- What is Hyper-V?
- Hyper-V Architecture
- Identifying the Role of Key Components of the Hyper-V Architecture
- Benefits of Hyper-V

Hyper-V Usage Scenarios

- Server Consolidation
- Hyper-V in a Test Environment
- Business Continuity with Hyper-V
- Dynamic Data Center
- Identifying Features of Hyper-V

Planning for Hyper-V Implementation

- Considerations for Allocating Resources for Hyper-V
- Guidelines for Planning Virtualization Sizing
- Guidelines for Planning Infrastructure Optimization
- Considerations for Running Other Roles on a Hyper-V Virtualization Server
- Planning for Implementing a Hyper-V Virtualization Server

Installing Hyper-V

- System Requirements for Implementing Hyper-V
- Installing Hyper-V
- Configuring Hyper-V Settings
- Guidelines for Implementing the Hyper-V Server Role
- Identifying Requirements for Configuring a Hyper-V Virtualization Server

Lab: Installing and Configuring Hyper-V

- Scenario
- Exercise Information
- Installing the Hyper-V Server Role
- Configuring Hyper-V Settings
- Lab Review

Module2: Configuring a Virtual Environment

This session provides IT professionals with knowledge about the tools used for configuring a virtual environment. These tools include virtual network, virtual hard disks, and virtual machines. This knowledge helps you gain skills necessary for setting up a virtual environment.

Configuring a Virtual Network

- Components of a Virtual Network
- How Virtual Network Configurations Work
- Creating a Virtual Network
- Configuration Options for a Virtual Network Adapter
- Guidelines for Configuring a Virtual Network

Configuring a Virtual Hard Disk

- How Virtual Hard Disks Work?
- Identifying Characteristics of Virtual Hard Disks
- Virtual Hard Disk Controller Options
- Creating a Virtual Hard Disk
- Options for Modifying Existing Virtual Hard Disks
- Best Practices for Creating Virtual Hard Disks

Configuring a Virtual Machine

- Creating a Virtual Machine
- Hardware Settings of a Virtual Machine
- Integration Services
- Identifying Settings for a Virtual Machine
- Best Practices for Creating a Virtual Machine
- Options for Starting a Virtual Machine

Securing the Virtual Environment

- Approaches for Securing a Virtual Environment
- Guidelines for Securing a Virtual Environment

Lab: Configuring a Virtual Environment

- Scenario
- Exercise Information
- Creating a Virtual Network
- Creating, Editing, and Inspecting a Virtual Hard Disk

- Creating and Configuring a Virtual Machine
- Lab Review

Module3: Deploying Systems in a Virtual Environment

This session provides IT professionals with knowledge about the processes used for deploying systems in a virtual environment. These processes include preparing the virtual machines for deploying various operating systems and configuring Windows Deployment Services. This knowledge helps you scale a virtual environment rapidly.

Deploying Virtual Machines by Using Differencing Disks

- ❓ [How Differencing Disks Work](#)
- ❓ [How to Deploy Multiple Virtual Machines](#)
- ❓ [Guidelines for Using Differencing Disks](#)

Cloning Virtual Machines

- ❓ [What Is Virtual Machine Cloning?](#)
- ❓ [What Are Unique Identifiers?](#)
- ❓ [Features of the WIM File Format](#)
- ❓ [Guidelines for Cloning Virtual Machines](#)
- ❓ [Planning for Cloning a Virtual Machine](#)
- ❓ [Cloning a Virtual Machine by Using Sysprep](#)

Deploying Virtual Machines by Using Windows Deployment Services

- ❓ [Virtual Machines and Windows Deployment Services](#)

- ❓ [Requirements for Deploying Windows Deployment Services](#)
- ❓ [How to Import Windows Vista Source Images into Windows Deployment Services](#)
- ❓ [Capturing Images by Using Windows Deployment Services](#)
- ❓ [Identifying Features of Windows Deployment Services](#)
- ❓ [Importing Sysprep Images into Windows Deployment Services](#)

Working with the Export and Import Tools in Hyper-V

- ❓ [Moving Virtual Machines Between Hosts](#)
- ❓ [Guidelines for Exporting and Importing Virtual Machines](#)
- ❓ [Identifying Features of the Export and Import Tools in Hyper-V](#)
- ❓ [Exporting and Importing a Virtual Machine](#)
- ❓ [How to Import Virtual Machines from Legacy Platforms](#)

Lab: Deploying Systems in a Virtual Environment

- ❓ [Scenario](#)
- ❓ [Exercise Information](#)
- ❓ [Cloning a Virtual Machine by Using Sysprep](#)
- ❓ [Importing a Sysprep Image into Windows Deployment Services](#)
- ❓ [Exporting and Importing a Virtual Machine](#)
- ❓ [Creating a Virtual Machine by Using a Differencing Disk](#)

Module 4: Optimizing a Virtual Environment

This session provides IT professionals with the knowledge of various methods used for optimizing a virtual environment. These methods include resource management, backup strategies, and cluster configuration. This knowledge helps you to implement methods that guarantee maximizing resource utilization and making a virtual machine highly available.

Optimizing Resource Management

- ☐ Guidelines for Optimizing a Virtual Environment
 - Guidelines for Optimizing Storage in a Virtual Environment
 - Guidelines for Optimizing Processor Performance
 - Guidelines for Allocating Memory in a Virtual Environment
 - Identifying Guidelines for Optimizing a Virtual Environment

Planning an Optimal Backup Strategy

- ☐ Considerations for Backing Up Virtual Machines
 - Types of Backups for Virtual Machines
 - Planning a Backup Strategy
 - How do Snapshots Work?
 - Options for Managing Snapshots
 - Identifying Features of Snapshots

Configuring a Cluster in a Virtual Environment

- ☐ How Clustering Works in a Virtual Environment
 - System Requirements for Configuring a Cluster
 - Quick Migration in a Clustered Environment
 - Configuring a Virtual Machine Cluster Environment
 - Configuring a Virtual Machine for High Availability
 - Identify Characteristics of a Clustered Virtual Environment

Monitoring a Clustered Virtual Environment

- Considerations for Monitoring Virtual Clusters
- Options for Troubleshooting Clusters

- [Identifying Options for Monitoring and Troubleshooting Clusters](#)

Lab: Backing Up and Clustering Virtual Machines

- ▢ [Scenario](#)
- [Exercise Information](#)
- [Configuring a Virtual Machine Cluster Environment](#)
- [Configuring a Virtual Machine for High Availability](#)

Module 5: Managing a Virtual Environment by using SCVMM

This session provides IT professionals with knowledge about the functionalities of SCVMM in managing the virtual environment from a central point. This knowledge will help you gain skills for administering a virtual machine infrastructure and rapid provisioning of new virtual machines.

Overview of SCVMM

- ▢ [What is SCVMM?](#)
- ▢ [Components of SCVMM](#)
- ▢ [Identifying Features of SCVMM](#)
- ▢ [What are Jobs in SCVMM?](#)
- ▢ [PRO in SCVMM](#)

Managing Hosts with SCVMM

- ▢ [How to Add Hosts to SCVMM](#)
- ▢ [How Host Groups Work](#)
- ▢ [What is Intelligent Placement?](#)
- ▢ [Intelligent Placement Settings](#)
- ▢ [Identifying Features of Intelligent Placement](#)
- ▢ [Migrating a Virtual Machine to a Host](#)

Performing P2V Conversion

- ❓ System Requirements for P2V Conversion
- ❓ Guidelines for Performing Online P2V Conversion
- ❓ Planning for P2V Conversion
- ❓ How to Convert a Physical Computer to a Virtual Machine
- ❓ Identifying Features of P2V Conversion

Provisioning Virtual Machines with SCVMM

- ❓ What are Profiles and Templates?
- ❓ Identifying Characteristics of Profiles
- ❓ How to Create a Hardware Profile
- ❓ How to Create an Operating System Profile
- ❓ How to Create a Virtual Machine Template
- ❓ How to Deploy a Virtual Machine from a Template

Lab: Managing a Virtual Environment by Using SCVMM

- ❓ Scenario
- ❓ Exercise Information
- ❓ Adding a Virtualization Host to a Host Group
- ❓ Configuring the Reserves Settings of a Host
- ❓ Converting a Physical Server to a Virtual Machine