Implementing and Managing Windows Server 2008 Clustering

Course 6423A: Three days; Instructor-Led

Introduction

This three-day instructor-led course on Windows Server 2008 clustering provides students with the knowledge and skills to implement, maintain, and troubleshoot clusters.

Audience

This course is intended for IT professional technology specialists who are responsible for using clustering technologies to implement and maintain high-availability solutions.

At Course Completion

After completing this course, students will be able to implement, maintain, and troubleshoot clusters in their enterprise environment.

Prerequisites

Before attending this course, students must have:

- Experience with network load balancing
- Basic knowledge of clustering theory
- Experience in an enterprise environment managing applications and network topologies
- Basic troubleshooting skills

Course Outline

Module 1: Introduction to Clusters

This module describes cluster concepts and functionality.

Lessons

- Overview of Clusters
- Benefits of Using Clusters
- Overview of the Windows Server 2008 High-Availability Solutions

Lab : Identifying Windows Server 2008 High-Availability Solutions

- Exercise 1: Identifying solutions for Web servers
- Exercise 2: Identifying solutions for database servers
- Exercise 3: Identifying complex solutions

After completing this module, students will be able to:

- Describe clusters.
- Describe the benefits of deploying a clustered solution.
- Outline the Windows Server 2008 high-availability solutions.

Module 2: Introduction to Windows Server 2008 Failover Clusters

This module describes key features and functionality of the Windows Server 2008 failover clusters.

Lessons

- Overview of Windows Server 2008 Failover Clusters
- Key Windows Server 2008 Failover Cluster Features
- Overview of the Windows Server 2008 Quorum Models

Lab : Identifying Windows Server 2008 Clustering Solutions

- Exercise 1: Identifying clustered scenarios

After completing this module, students will be able to:

- Describe the Windows Server 2008 failover cluster terminology and concepts.
- Briefly describe key features in Windows Server 2008 failover clusters.
- Identify Windows Server 2008 failover cluster quorum modes.

Module 3: Preparing to Install a Failover Cluster

This module describes the prerequisites to install a Windows failover cluster.

Lessons

- Overview of Requirements for Installing a Failover Cluster
- Planning the Failover Cluster Implementation
- Installing the Failover Clustering Feature and Validating the Cluster Configuration
- Installing the Failover Cluster on Windows Server 2008 Server Core

Lab: Preparing for a Cluster Installation

- Exercise 1: Installing the Failover Clustering feature
- Exercise 2: Validating the failover cluster

After completing this module, students will be able to:

- Outline failover cluster requirements.
- Describe the planning required to deploy a Windows failover cluster.
- Install the Failover Clustering feature and verify requirements.
- Install the Failover Cluster on Windows Server 2008 Server Core.

Module 4: Overview of Failover Cluster Storage Requirements

This module describes storage fundamentals, and how to plan and implement storage solutions for failover clusters.

Lessons

- Overview of Storage Technologies
- Introduction to Storage Area Networks
- Planning a Storage Solution for Failover Clusters
- Configuring an iSCSI Storage Connection

Lab: Identifying SAN Components

- Exercise 1: Identifying Fibre Channel SAN components
- Exercise 2: Configuring iSCSI storage connections

After completing this module, students will be able to:

- Describe storage technologies.
- Define Storage Area Networks.
- Plan a storage solution for failover clusters.
- Describe the process to configure an Internet SCSI (iSCSI) storage connection.

Module 5: Configuring a Failover Cluster

This module describes how to install and manage a failover cluster.

Lessons

- Creating a New Failover Cluster
- Managing a Failover Cluster
- Verifying Failover Functionality

Lab: Creating and Administering a Cluster

- Exercise 1: Creating a cluster
- Exercise 2: Managing a failover cluster

After completing this module, students will be able to:

- Create a new failover cluster.
- Manage a failover cluster.
- Test failover functionality.

Module 6: Configuring Cluster Resources and Server Roles

This module describes how to configure cluster resources and cluster common Windows Server roles and applications.

Lessons

- Configuring Cluster Resources
- Implementing Failover Clusters for Server Roles Using Failover Cluster Management
- Clustering Server Roles Using Windows Server Core

Lab: Clustering Server Roles and Features

- Exercise 1: Clustering the print services role using Failover Cluster Management
- Exercise 2: Configuring cluster resources
- Exercise 3: Clustering the file services role on Windows Server Core

After completing this module, students will be able to:

- Configure cluster resources.
- Implement failover clusters for server roles using Failover Cluster Management.
- Describe how to cluster common server roles using Windows Server Core.

Module 7: Maintaining Microsoft Failover Clusters

This module describes how to maintain and troubleshoot failover clusters.

Lessons

- Monitoring Failover Clusters
- Backing Up and Restoring Failover Clusters
- Troubleshooting Failover Clusters

Lab: Maintaining Failover Clusters

- Exercise 1: Monitoring failover clusters
- Exercise 2: Performing backups on a failover cluster
- Exercise 3: Performing an authoritative restore on a failover cluster

After completing this module, students will be able to:

- Monitor failover clusters.
- Back up and restore failover clusters.
- Troubleshoot failover clusters.

Module 8: Implementing Multi-Site Clusters

This module describes multi-site clusters and the challenges that they present. In addition, this module describes how to implement a multi-site cluster using Windows Server 2008.

Lessons

- Overview of Multi-Site Clusters
- Implementing Multi-Site Clusters Using Windows Server 2008

After completing this module, students will be able to:

- Define the use and challenges of multi-site clusters.
- Describe how to implement multi-site clusters using Windows Server 2008.

Module 9: Implementing Network Load Balancing Clusters

This module describes how to install and maintain Network Load Balancing (NLB) clusters.

Lessons

- Overview of Network Load Balancing Clusters
- Configuring a Network Load Balancing Cluster
- Maintaining a Network Load Balancing Cluster

Lab: Implementing an NLB cluster

- Exercise 1: Preparing the NLB cluster nodes
- Exercise 2: Configuring an NLB failover cluster

After completing this module, students will be able to:

- Describe how NLB clusters works.
- Configure an NLB cluster.
- Maintain an NLB cluster.