

# Implementing and Managing Windows Server 2008 Clustering

Course 6423: Three days;Instructor-Led

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## 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.

## 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

In addition, students who attend this training should have technical knowledge equivalent to the following courses:

- 6420A: Fundamentals of Windows Server 2008 Network Infrastructure and Application Platform
- 6421A: Configuring and Troubleshooting a Windows Server 2008 Network Infrastructure

## At Course Completion

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

## 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.