

#### INTRODUCTION

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

#### AUDIENCE

This course is intended for IT professional technical specialists responsible for implementing and maintaining high availability solutions utilizing clustering technologies.

#### 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 provides an overview of 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

##### MODULE 2: INTRODUCTION TO MICROSOFT 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

##### MODULE 3: PREPARING TO INSTALL A FAILOVER CLUSTER

This module explains the prerequisite requirements and planning required to install a Windows failover cluster.

Three days, Instructor-Led

#### Lessons

- Overview of Requirements for Installing a Failover Cluster
- Planning the Failover Cluster Implementation
- Installing the Failover Cluster 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 cluster feature
- Exercise 2: Validating the failover cluster

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#### MODULE 4: OVERVIEW OF FAILOVER CLUSTER STORAGE REQUIREMENTS

This module explains 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: Identifying iSCSI SAN components
- Exercise 3: Configuring iSCSI storage connections

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#### MODULE 5: CONFIGURING A FAILOVER CLUSTER

This module explains 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

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#### MODULE 6: CONFIGURING CLUSTER RESOURCES AND SERVER ROLES

This module explains how to configure cluster resources and how to cluster common Window 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**

Three days, Instructor-Led

- Exercise 1: Configuring cluster resources
- Exercise 2: Clustering the print server role using failover cluster management
- Exercise 3: Clustering the file server role on Windows Server core
- Exercise 4: Testing cluster availability

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#### MODULE 7: MAINTAINING MICROSOFT FAILOVER CLUSTERS

This module explains 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: Backing up a failover cluster
- Exercise 3: Restoring a failover cluster

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#### MODULE 8: IMPLEMENTING GEOGRAPHICALLY DISPERSED CLUSTERS

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

##### Lessons

- Overview of Geographically Dispersed Clusters
- Implementing Geographically Dispersed Clusters Using Windows Server 2008

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#### MODULE 9: IMPLEMENTING NETWORK LOAD BALANCED CLUSTERS

This module explains how to install and maintain network load balanced (NLB) clusters.

##### Lessons

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

##### Lab: Implementing an NLB cluster

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