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## **6423 –Implementing & Managing Windows Server 2008 Clustering**      **3 Day**

Elements of this syllabus are subject to change.

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.

### **WHO SHOULD ATTEND**

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

### **AT COURSE COMPLETION**

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

### **LESSON TOPICS**

#### **Module 1: Introduction to Clusters**

This module provides an overview of cluster concepts and functionality.

#### **Lessons**

- Overview of Clusters



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- 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.
- Describe the Windows Server 2008 clustering options.

**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

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.
- Describe the Windows Server 2008 failover cluster scenarios.
- Understand failover cluster components.

**Module 3: Preparing to Install a Failover Cluster**

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



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### **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

After completing this module, students will be able to:

- Describe failover cluster requirements.
- Describe the planning required to deploy a Windows failover cluster.
- Install the failover cluster feature and verify requirements.
- Install the failover cluster feature on Windows Server 2008 server core.

### **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

After completing this module, students will be able to:

- Describe storage technologies.
- Explain storage area networks.
- Plan a storage solution for failover clusters.



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- Describe the process to configure an iSCSI storage connection.

## **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

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**

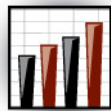
This module explains how to configure cluster resources and how to cluster common Window Server roles and applications.

### **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**

- 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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After completing this module, students will be able to:

- Configure cluster resources.
- Describe how to cluster common server roles using the Graphical User Interface.
- Describe how to cluster common server roles using the command line interface.

### **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

After completing this module, students will be able to:

- Monitor failover clusters.
- Backup and restore failover clusters.
- Troubleshoot failover clusters.

### **Module 8: Implementing Geographically Dispersed Clusters**

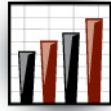
This module explains geographically dispersed clusters and the challenges that they present. In addition, this module describes how to implement a multi-subnet cluster using Windows Server 2008.

#### **Lessons**

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

After completing this module, students will be able to:

- Define the use and challenges of geographically dispersed clusters.
- Describe how to implement 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

After completing this module, students will be able to:

- Describe how NLB clustering works.
- Install an NLB cluster.
- Maintain an NLB cluster.