

Course 6423A: Implementing and Managing Windows Server 2008 Clustering

About this Course

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.

Audience Profile

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

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 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

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.

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.
- 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

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.

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.