

Implementing and Maintaining Microsoft SQL Server 2005 Analysis Services

Introduction

Elements of this syllabus are subject to change.

This three-day instructor-led course teaches students how to implement an Analysis Services solution in an organization. The course discusses how to use the Analysis Services development tools to create an Analysis Services database and an OLAP cube, and how to use the Analysis Services management and administrative tools to manage an Analysis Services solution.

Audience

This course is intended for information technology (IT) professionals and developers who need to implement analysis solutions by using Microsoft SQL Server 2005 Analysis Services.

At Course Completion

After completing this course, students will be able to:

- Describe how SQL Server Analysis Services can be used to implement analytical solutions.
- Create multidimensional analysis solutions with SQL Server Analysis Services.
- Implement dimensions in an Analysis Services solution.
- Implement measures and measure groups in an Analysis Services solution.
- Query a multidimensional Analysis Services solution.
- Customize an Analysis Services cube.
- Deploy and Secure an Analysis Services database.
- Maintain a multidimensional Analysis Services solution.
- Implement a Data Mining solution.

Prerequisites

Before attending this course, students must have:

- Conceptual understanding of OLAP solutions.
- Experience navigating the Microsoft Windows Server environment.
- Experience with Windows services (starting and stopping).
- Experience creating service accounts and permissions.
- Experience with Microsoft SQL Server, including:
 - SQL Server Agent.
 - SQL Server query language (SELECT, UPDATE, INSERT, and DELETE).
 - SQL Server System tables.

- SQL Server accounts (users and permissions).

Course Outline

Module 1: Introduction to Microsoft SQL Server 2005 Analysis Services

This module introduces common analysis scenarios and describes how Analysis Services provides a powerful platform for multidimensional OLAP solutions and data mining solutions. The module then describes the main considerations for installing Analysis Services.

Lessons

- Overview of Data Analysis Solutions
- Overview of SQL Server 2005 Analysis Services
- Installing SQL Server 2005 Analysis Services

After completing this module, students will be able to:

- Describe data analysis solutions.
- Describe the key features of SQL Server 2005 Analysis Services.
- Install SQL Server 2005 Analysis Services.

Module 2: Creating Multidimensional Analysis Solutions

This module introduces the development tools you can use to create an Analysis Services multidimensional analysis solution, and describes how to create data sources, data source views, and cubes.

Lessons

- Developing Analysis Services Solutions
- Data Sources and Data Source Views
- Creating a Cube

Lab 2: Creating a Multidimensional Analysis Solution

- Exercise 1: Creating a Data Source
- Exercise 2: Creating and Modifying a Data Source View
- Exercise 3: Creating and Modifying a Cube

After completing this module, students will be able to:

- Develop Analysis Services solutions.
- Create a data source and a data source view.
- Create a cube.

Module 3: Working with Dimensions

This module describes how to edit dimensions and to configure dimensions, attributes, and hierarchies.

Lessons

- Configuring Dimensions
- Defining Hierarchies
- Sorting and Grouping Attributes

Lab 3: Defining Dimensions

- Exercise 1: Configuring Dimensions
- Exercise 2: Defining Relationships and Hierarchies
- Exercise 3: Sorting and Grouping Dimension Attributes

After completing this module, students will be able to:

- Configure dimensions.
- Define hierarchies.
- Sort and group attributes.

Module 4: Working with Measures and Measure Groups

This module explains how to edit and configure measures and measure groups.

Lessons

- Working with Measures
- Working with Measure Groups

Lab 4: Configuring Measures and Measure Groups

- Exercise 1: Configuring Measures
- Exercise 2: Defining Dimension Usage and Relationships
- Exercise 3: Configuring Measure Group Storage

After completing this module, students will be able to:

- Work with measures.
- Work with measure groups.

Module 5: Querying Multidimensional Analysis Solutions

This module introduces multidimensional expressions (MDX) and describes how to implement calculated members and named sets in an Analysis Services cube.

Lessons

- MDX Fundamentals
- Adding Calculations to a Cube

Lab 5: Querying a Cube

- Exercise 1: Querying a Cube by Using MDX
- Exercise 2: Creating a Calculated Member
- Exercise 3: Defining a Named Set

After completing this module, students will be able to:

- Describe Multidimensional Expression (MDX) fundamentals.
- Add calculations to a cube.

Module 6: Customizing Cube Functionality

This module explains how to customize a cube by implementing key performance indicators (KPIs), actions, perspectives, and translations.

Lessons

- Implementing Key Performance Indicators
- Implementing Actions
- Implementing Perspectives
- Implementing Translations

Lab 6: Customizing a Cube

- Exercise 1: Implementing a KPI
- Exercise 2: Implementing an Action
- Exercise 3: Implementing a Perspective
- Exercise 4: Implementing a Translation

After completing this module, students will be able to:

- Implement Key Performance Indicators (KPIs).
- Implement actions.
- Implement perspectives.
- Implement translations.

Module 7: Deploying and Securing an Analysis Services Database

This module describes how to deploy an Analysis Services database to a production server, and how to implement security in an Analysis Services multidimensional solution.

Lessons

- Deploying an Analysis Services Database
- Securing an Analysis Services Database

Lab 7: Deploying and Securing an Analysis Services Database

- Exercise 1: Deploying an Analysis Services Database
- Exercise 2: Securing an Analysis Services Database

After completing this module, students will be able to:

- Deploy an Analysis Services database.
- Secure an Analysis Services database.

Module 8: Maintaining a Multidimensional Solution

This module discusses the maintenance tasks associated with an Analysis Services solution, and describes how administrators can use the Analysis Services management tools to perform them.

Lessons

- Configuring Processing Settings
- Logging, Monitoring, and Optimizing an Analysis Services Solution
- Backing Up and Restoring an Analysis Services Database

Lab 8: Maintaining an Analysis Services Database

- Exercise 1: Configuring Processing
- Exercise 2: Implementing Logging and Monitoring
- Exercise 3: Backing Up and Restoring an Analysis Services Database

After completing this module, students will be able to:

- Configure processing settings.
- Log, monitor, and optimize an Analysis Services solution.
- Back up and restore an Analysis Services database.

Module 9: Introduction to Data Mining

This module introduces data mining, and describes how to implement data mining structures and models. It then explains how to validate data model accuracy.

Lessons

- Overview of Data Mining
- Creating a Data Mining Solution
- Validating Data Mining Models

Lab 9: Implementing Data Mining

- Exercise 1: Creating a Data Mining Structure
- Exercise 2: Adding a Data Mining Model
- Exercise 3: Exploring Data Mining Models
- Exercise 4: Validating Data Mining Models

After completing this module, students will be able to:

- Describe data mining.
- Create a data mining solution.
- Validate data mining models.