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Microsoft SQL Server level 1 beginner course outline (3-day)

Part 1: Getting Started with Microsoft SQL Server 2008

Overview of Microsoft SQL Server

Installing and Configuring SQL Server 2008

Using the Tools in SQL Server 2008

Part 2: Designing Databases

Creating Databases

Designing Tables

Indexes

Partitioning

Part 3: Retrieving and Manipulating Data

Data Retrieval

Advanced Data Retrieval

Data Manipulation

Part 4: Designing Advanced Database Objects

Views

Stored Procedures

Functions

Triggers

Database Snapshots

Service Broker

Full-Text Indexing

Part 5: Database Management

Security

Policy-Based Management

Data Recovery

SQL Server Agent

Dynamic Management Views

Part 6: High Availability Overview

High Availability

Microsoft SQL Server level 2 advanced course outline (3-day)

1. Introducing to SQL Server 2012 and its Toolset

This module introduces the entire SQL Server platform and its major tools. It covers editions, versions, basics of network listeners, and concepts of services and service accounts.

Lessons:

- Introduction to the SQL Server Platform
- Working with SQL Server Tools
- Configuring SQL Server Services

2. Preparing Systems for SQL Server 2012

This module covers planning for an installation related to SQL Server I/O requirements, 32 bit vs 64 bit, memory configuration options and I/O subsystem pre-installation checks using SQLIOSim and SQLIO.

Lessons:

- Overview of SQL Server Architecture
- Planning Server Resource Requirements
- Pre-installation Testing for SQL Server

3. Installing and Configuring SQL Server 2012

This module details installing and configuring SQL Server.

Lessons:

- Preparing to Install SQL Server
- Installing SQL Server
- Upgrading and Automating Installation

4. Working with Databases

This module describes how data is stored in databases, how to create databases, and how to move databases either within a server or between servers.

Lessons:

- Overview of SQL Server Databases
- Working with Files and Filegroups
- Moving Database Files

5. Understanding SQL Server 2012 Recovery Models

This module describes the concept of the transaction log and SQL Server recovery models. It introduces the different backup strategies available with SQL Server.

Lessons :

- Backup Strategies
- Understanding SQL Server Transaction Logging
- Planning a SQL Server Backup Strategy

6. Backup of SQL Server 2012 Databases

This module describes SQL Server Backup and the backup types.

Lessons:

- Backing up Databases and Transaction Logs
- Managing Database Backups
- Working with Backup Options

7. Restoring SQL Server 2012 Databases

This module describes the restoration of databases.

Lessons:

- Understanding the Restore Process
- Restoring Databases
- Working with Point-in-time recovery
- Restoring System Databases and Individual Files

8. Importing and Exporting Data

This module covers the use of the import/export wizards and explains how they relate to SSIS. Also introduces BCP.

Lessons

- Transferring Data To/From SQL Server
- Importing & Exporting Table Data
- Inserting Data in Bulk

9. Authenticating and Authorizing Users

This module covers SQL Server security models, logins and users.

Lessons:

- Authenticating Connections to SQL Server
- Authorizing Logins to Access Databases
- Authorization Across Servers

10. Assigning Server and Database Roles

This module covers fixed server roles, user-defined server roles, fixed database roles and user-defined database roles.

Lessons:

- Working with Server Roles
- Working with Fixed Database Roles
- Creating User-defined Database Roles

11. Authorizing Users to Access Resources

This module covers permissions and the assignment of permissions.

Lessons:

- Authorizing User Access to Objects
- Authorizing Users to Execute Code
- Configuring Permissions at the Schema Level

12. Auditing SQL Server Environments

This module covers SQL Server Audit.

Lessons:

- Options for Auditing Data Access in SQL
- Implementing SQL Server Audit
- Managing SQL Server Audit

13. Automating SQL Server 2012 Management

This module covers SQL Server Agent, jobs and job history.

Lessons:

- Automating SQL Server Management
- Working with SQL Server Agent
- Managing SQL Server Agent Jobs

14. Configuring Security for SQL Server Agent

This module covers SQL Server agent security, proxy accounts and credentials.

Lessons:

- Understanding SQL Server Agent Security
- Configuring Credentials
- Configuring Proxy Accounts

15. Monitoring SQL Server 2012 with Alerts and Notifications

This module covers the configuration of database mail, alerts and notifications.

Lessons:

- Configuration of Database Mail
- Monitoring SQL Server Errors
- Configuring Operators, Alerts and Notifications

16. Performing Ongoing Database Maintenance

This module covers database maintenance plans.

Lessons:

- Ensuring Database Integrity
- Maintaining Indexes
- Automating Routine Database Maintenance

17. Tracing Access to SQL Server 2012

This module covers SQL Profiler and SQL Trace stored procedures.

Lessons:

- Capturing Activity using SQL Server Profiler
- Improving Performance with the Database Engine Tuning Advisor
- Working with Tracing Options

18. Monitoring SQL Server 2012

This module introduces DMVs and the configuration of data collection.

Lessons:

- Monitoring Activity
- Capturing and Managing Performance Data
- Analyzing Collected Performance Data

19. Managing Multiple Servers

This module covers Central Management Servers and Multi-Server queries, Virtualization of SQL Server and Data-Tier Applications.

Lessons:

- Working with Multiple Servers
- Virtualizing SQL Server
- Deploying and Upgrading Data-Tier Applications

20. Troubleshooting Common SQL Server 2012 Administrative Issues

This module covers common issues that require troubleshooting and gives guidance on where to start looking for solutions.

Lessons:

- SQL Server Troubleshooting Methodology
- Resolving Service-related Issues
- Resolving Concurrency Issues
- Resolving Login and Connectivity Issues

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