MCSE: Data Platform Boot Camp

Varighet: 5 Days   Kurskode: GK6446

Beskrivelse:

M20464+M20465
This 5-day instructor-led course introduces SQL Server 2014 and describes logical table design, indexing and query plans. It also focusses on the creation of database objects including views, stored procedures, along with parameters, and functions. Other common aspects of procedure coding, such as indexes, concurrency, error handling, and triggers are also covered in this course. Also this course helps you prepare for the Exam 70-464.
Note: This course is designed for customers who are interested in learning SQL Server 2012 or SQL Server 2014. It covers the new features in SQL Server 2014, but also the important capabilities across the SQL Server data platform.
The focus of this five-day instructor-led course is on planning and implementing enterprise database infrastructure solutions by using SQL Server 2014 and other Microsoft technologies. It describes how to consolidate SQL Server workloads, work with both on-premises and Microsoft Azure cloud-based solutions, and how to plan and implement high availability and disaster recovery solutions.
Note: This course is designed for customers who are interested in learning SQL Server 2012 or SQL Server 2014. It covers the new features in SQL Server 2014, but also the important capabilities across the SQL Server data platform.

Målgruppe:

The primary audience for this course is IT Professionals who want to become skilled on SQL Server 2014 product features and technologies for implementing a database.Planning and implementing database infrastructure.Planning and implementing consolidation strategies.Implementing SQL Server in on-premises, cloud, and hybrid IT scenarios.Planning and implementing high availability solutions.lanning and implementing disaster recovery solutions.

Agenda:

- Introduce the entire SQL Server platform and its major tools. It will cover editions, versions, basics of network listeners, and concepts of services and service accounts.

- Determine appropriate data types to be used when designing tables, convert data between data types, and create alias data types.

- Be aware of good design practices regarding SQL Server tables and be able to create tables using T-SQL. (Note: partitioned tables are not covered).

- Implement PRIMARY KEY, FOREIGN KEY, DEFAULT, CHECK and UNIQUE constraints, and investigate cascading FOREIGN KEY constraints.

- Determine appropriate single column and composite indexes strategies.

- Create tables as heaps and tables with clustered indexes. Also consider the design of a table and suggest an appropriate structure.

- Read and interpret details of common elements from execution plans.

- Design effective non-clustered indexes.

- Design and implement views

- Design and implement stored procedures.

- Work with table types, table valued parameters and use the MERGE statement to create stored procedures that update data

- Store XML data and schemas in SQL Server.

- Perform basic queries on XML data in SQL Server.

- Work with the GEOGRAPHY and GEOMETRY data types

- Implement and query a full-text index.

- Assess an existing enterprise environment.

- Plan and implement Policy-Based Management.

- Describe the considerations for consolidating workloads with SQL Server 2014.

- Describe considerations for including SQL Server 2014 in a private cloud.

- Use Microsoft Azure storage with SQL Server 2014.

- Implement and configure databases in Microsoft Azure SQL Database.

- Implement and configure databases in Microsoft Azure virtual machines.

- Describe high availability technologies in SQL Server 2014 and implement log shipping.

- Describe Windows Server Failover Clustering and Implement an AlwaysOn Failover Cluster Instance.

- Implement an Always On Availability Group.

warehouses.

- Design and implement functions, both scalar and table-valued. (Also describe where they can lead to performance issues).

- Perform basic investigation of a deadlock situation and learn how transaction isolation levels affect application concurrency.

- Use both traditional T-SQL error handling code and structured exception handling.

- Design and implement DML triggers

- Learn appropriate uses for SQL CLR integration and implement an existing .NET assembly within SQL Server.

- Plan high availability and disaster recovery solutions.

- Plan and implement database replication.

Forkunnskaper:

- Knowledge of writing T-SQL queries.
- Knowledge of basic relational database concepts.
- At least 2 years' experience of working with relational databases, including:
- Planning and implementing databases
- Managing databases
- Querying with Transact-SQL
- Some basic knowledge of high availability and disaster recovery
- Some basic knowledge of Windows Azure technologies and concepts around cloud computing

Innhold:

Module 1: Introduction to Database Development

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

Lab : Introduction to Database Development

- Start SQL Server Management Studio

Module 2: Designing and Implementing Tables

- Designing Tables
- Working with Schemas
- Creating and Altering Tables

Lab : Designing and Implementing Tables

- Improving the Design of Tables
- Creating a Schema
- Creating the Tables

Module 3: Ensuring Data Integrity through Constraints

- Enforcing Data Integrity
- Implementing Domain Integrity
- Implementing Entity and Referential Integrity

Lab : Ensuring Data Integrity through Constraints

- Designing Constraints
- Testing the constraints

Module 4: Introduction to Indexing

- Core Indexing Concepts
- Single Column and Composite Indexes
- SQL Server Table Structures
- Working with Clustered Indexes

Lab : Creating Indexes

- Creating Tables with Clustered Indexes
- Improving Performance through Nonclustered Indexes

Module 5: Advanced Indexing

- Execution Plan Core Concepts
- Common Execution Plan Elements
- Working with Execution Plans
- Designing Effective Nonclustered Indexes
- Performance Monitoring

Lab : Planning for SQL Server 2014 Indexing

- Exploring Existing Index Statistics
- Creating Covering Indexes

Module 6: Columnstore Indexes

Module 10: Responding to Data Manipulation via Triggers

- Designing DML Triggers
- Implementing DML Triggers
- Advanced Trigger Concepts

Lab : Responding to Data Manipulation via Triggers

- Creating and Testing the Audit Trigger
- Improving the Audit Trigger

Module 11: Using In-Memory Tables

- Memory-Optimized Tables
- Native Stored Procedures

Lab : Using In-Memory Database Capabilities

- Creating Columnstore Indexes
- Working with Memory Optimized Tables
- Working with Natively Compiled Stored Procedures

Module 12: Implementing Managed Code in SQL Server

- Introduction to SQL CLR Integration
- Importing and Configuring Assemblies
- Implementing SQL CLR Integration

Lab : Implementing Managed Code in SQL Server

- Assessing Proposed CLR Code
- Implementing a CLR Assembly
- Implementing a CLR User-defined Aggregate and CLR User-defined Data Type

Module 13: Storing and Querying XML Data in SQL Server

- Introduction to XML and XML Schemas
- Storing XML Data and Schemas in SQL Server
- Implementing the XML Data Type
- Using the T-SQL FOR XML Statement
- Getting Started with XQuery
- Shredding XML

Lab : Storing and Querying XML Data in SQL Server

- Assessing appropriate Use of XML Data in SQL Server
- Testing XML Data Storage in Variables
- Retrieving Information about XML Schema Collections
- Querying SQL Server Data as XML
- Write a Stored Procedure Returning XML

Module 14: Working with SQL Server Spatial

Module 5: Introduction to Microsoft Azure

- Microsoft Azure Overview
- Microsoft Azure Storage

Lab : Using Microsoft Azure

- Creating a Microsoft Azure Storage Account
- Backing Up a Database to Microsoft Azure

Module 6: Microsoft Azure SQL Database

- Introduction to Microsoft Azure SQL Database
- Microsoft Azure SQL Database Security
- Implementing and Managing Databases

Lab : Using Microsoft Azure SQL Database

- Provisioning Microsoft Azure SQL Database
- Configuring Microsoft Azure SQL Database Security
- Migrating a Database to Microsoft Azure SQL Database

Module 7: SQL Server in Microsoft Azure Virtual Machines

- Introduction to Microsoft Azure Virtual Machines
- Microsoft Azure Virtual Machine Connectivity and Security
- Creating Databases in a Microsoft Azure Virtual Machine

Lab : Using Microsoft Azure Virtual Machines

- Creating a Microsoft Azure Virtual Machine
- Configuring Microsoft Azure Virtual Machines Security and Connectivity
- Creating Databases on a Virtual Machine

Module 8: Introduction to High Availability in SQL Server 2014

- High Availability Concepts and Options in SQL Server 2014
- Log Shipping

Lab : Using Log Shipping

- Configure Log Shipping
- Test the Log Shipping Configuration
- Test Failover

Module 9: Clustering with Windows Server and SQL Server 2014

- Introduction to Windows Server Failover Clustering
- SQL Server AlwaysOn Failover Cluster Instances

- Columnstore Indexes
- Best Practices for Columnstore Indexes

Lab : Using In-Memory Database Capabilities

- Creating Columnstore Indexes
- Working with Memory Optimized Tables
- Working with Natively Compiled Stored Procedures

Module 7: Designing and Implementing Views

- Introduction to Views
- Creating and Managing Views
- Performance Considerations for Views

Lab : Designing and Implementing Views

- Designing, Implementing and Testing the WebStock Views
- Designing and Implementing the Contacts View
- Modifying the AvailableModels View

Module 8: Designing and Implementing Stored Procedures

- Introduction to Stored Procedures
- Working With Stored Procedures
- Implementing Parameterized Stored Procedures
- Controlling Execution Context

Lab : Designing and Implementing Stored Procedures

- Creating stored procedures
- Creating a parameterized stored procedure
- Altering the execution context of stored procedures

Module 9: Designing and Implementing User-Defined Functions

- Overview of Functions
- Designing and Implementing Scalar Functions
- Designing and Implementing Table-Valued Functions
- Implementation Considerations for Functions
- Alternatives to Functions

Lab : Designing and Implementing User-Defined Functions

- Formatting Phone Numbers
- Modifying an Existing Function
- Resolving a Function-Related Performance Issue

Data

- Introduction to Spatial Data
- Working with SQL Server Spatial Data Types
- Using Spatial Data in Applications

Lab : Working with SQL Server Spatial Data

- Querying the Geometry Data Type
- Adding Spatial Data to an Existing Table

Course Outline Module 1: Introduction to Enterprise Data Architecture

- Considerations for Enterprise Data
- Assessing an Existing Infrastructure

Lab : Assessing an Existing Enterprise Data Infrastructure

- Using the MAP Toolkit
- Reviewing MAP Toolkit Reports

Module 2: Multi-Server Configuration Management

- Policy-Based Management
- Microsoft System Center

Lab : Planning and Implementing Policy-Based Management

- Planning a Policy-Based Management Strategy
- Implementing Policy-Based Management
- Testing Policy Compliance

Module 3: Consolidating Database Workloads with SQL Server 2014

- Considerations for Database Server Consolidation
- Managing Resources in a Consolidated Database Infrastructure

Lab : SQL Server Consolidation

- Preparing for Database Consolidation
- Managing Resources for an Instance of SQL Server
- Managing Resources for Multiple Instances on a Windows Server

Module 4: Introduction to Cloud Data Solutions

- Overview of Cloud Computing
- SQL Server in a Private Cloud

Lab : Preparing a SQL Server Installation in a Virtual Machine Template

- Creating a prepared Instance
- Completing a prepared Instance

Lab : Implementing an AlwaysOn Failover Cluster Instance

- Inspect the Windows Server Failover Cluster Configuration
- Install an AlwaysOn Failover Cluster Instance
- Configure tempdb to Use Local Storage
- Test Automatic Failover and Failback

Module 10: AlwaysOn Availability Groups

- Introduction to AlwaysOn Availability Groups
- Working with AlwaysOn Availability Groups
- Considerations for Using AlwaysOn Availability Groups

Lab : Implementing and Testing an AlwaysOn Availability Group

- Implementing an AlwaysOn Availability Group
- Connecting to an AlwaysOn Availability Group
- Testing Failover
- Configure Quorum Voting

Module 11: Planning High Availability and Disaster Recovery

- High Availability and Disaster Recovery with SQL Server 2014
- High Availability and Disaster Recovery for Databases in Microsoft Azure

Lab : Planning High Availability and Disaster Recovery

- Planning High Availability and Disaster Recovery Solutions with SQL Server 2014
- Planning High Availability and Disaster Recovery Solutions by Using Microsoft Azure

Module 12: Replicating Data

- SQL Server Replication
- Planning Replication

Lab : Planning and Implementing Replication

- Planning Replication
- Implementing Replication

Ytterligere informasjon:

For mer informasjon eller kursbooking, vennligst ring oss 22 95 66 00

info@globalknowledge.no

www.globalknowledge.no

Grenseveien 97, 0663 Oslo, PO Box 6256 Etterstad, 0606 Oslo, Norway