Microsoft SQL Server 2012 Administration

Duration: 5 Days

Price: $2795 *California residents and government employees call for pricing.*

Discounts: We offer multiple discount options. Click here for more info.

Delivery Options: Attend face-to-face in the classroom, remote-live or on-demand streaming.

Students Will Learn

- Architecture and core features of SQL Server 2012

- Installing and configuring SQL Server 2012

- Using the SQL Server client tools to manage and configure SQL Server

- Using Policy-Based Management to configure SQL Server

- Designing databases and managing and file storage

- Configuring security in SQL Server

- Backing up and restoring databases

- Transfering data into and out of SQL Server

- Ensuring data integrity and quality

- Replicating data using SQL Server replication

- Automating common administrative tasks

- Creating full text indexes and queries

- Monitoring events and data changes on a SQL Server

- Monitoring and optimizing performance of a SQL Server

- Implementing high availability technologies

- Managing multiple SQL Server instances using central management

Course Description

This class consists of five days of hands-on training that focus on the fundamentals of administering the SQL Server 2012 database engine. Participants in this course will come away with the knowledge and experience required to administer SQL Server 2012. The course focuses on performing common administrative tasks, understanding how SQL Server works under the covers, and optimizing SQL Server performance as well as assuring high data availability. You will learn how to install, configure, manage, secure, automate, monitor, and optimize SQL Server 2012. You will also learn how to create, manage, back up, and restore individual databases, transfer and replicate data, configure for high availability, and plan disaster recovery.

Emphasis is placed on how SQL Server 2012 is architected, so that you will be able to make the proper decisions in configuring and managing your SQL Server instances. Comprehensive hands on exercises are integrated throughout to reinforce learning and

develop real competency.

Course Prerequisites

Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's SQL Programming course or Microsoft Transact-SQL Programming course is highly recommended although not required.

Course Overview

An Overview of SQL Server 2012

- SQL Server 2012 Architecture
- Available Features and Tools
- New Capabilities
- SQL Services
- Product Licensing
- Product Editions

Installing SQL Server 2012

- Preparing for Installation
    - Creating Users for Service Accounts
    - Choosing Appropriate File Locations
    - Choosing Instance Names
- Installing SQL Server 2012
    - Choosing Appropriate Features
    - Specifying Service User Accounts
    - Choosing Licensing Mode
    - Choosing Appropriate Collation
    - Installing Multiple Instances
- Upgrading to SQL Server 2012

Using SQL Server 2012 Management Tools

- SQL Server Management Studio
- SQL Server Configuration Manager
- SQL Server Books Online
- SQLCMD

Creating and Configuring a Database

- Creating Databases
- Creating a Contained Database
- Creating Tables
- Specifying Data Types
- Creating Indexes
- Describing Data File Structure

Configuring SQL Server 2012

- Registering Servers
- Using Metadata Views to Obtain Object Properties
- Using Object Explorer
    - Configuring a SQL Server Instance
    - Configuring Object Properties
- Using the Query Window
- Creating Transact SQL Projects
- Managing Services
- Configuring Server Network Connections
- Configuring Client Connections and Aliases
- Configuring the Surface Area of SQL Server
- Configuring Policy-Based Management
- Creating a Central Management Server
- Using the Dedicated Administrator Connection
- Configuring Data Replication
- Creation and Maintenance of Full-Text Catalogs
- Describing Full-Text Search

Monitoring Data Structures

- Creating DDL Triggers
- Creating Event Notifications
- Configuring SQL Server Audit

Monitoring SQL Server Performance

- Using the Windows Performance Tool to Detect the Cause of a Bottleneck
- Using SQL Server Profiler
- Configuring Extended Events
- Using Dynamic Management Functions
- Interpreting Management Studio

- Describing Log File Structure and Function
- Creating Filegroups
- Configuring Filestream Storage
- Configuring FileTables
- Creating and Using Database Snapshots
- Moving a Database to Another SQL Server

- Reports
- Using Activity Monitor

Optimizing SQL Server Performance

- Describing Index Structures
  - Clustered Indexes
  - Nonclustered (NC) Indexes
  - Columnstore Indexes
- Choosing Appropriate Clustered Index
- Choosing Appropriate NC Indexes
- Detecting Index Fragmentation
- Rebuilding and Reorganizing Indexes
- Using the Database Engine Tuning Advisor
- Generating and Interpreting Query Plans
- Configuring the Resource Governor

Securing SQL Server

- SQL Server Security Architecture
- Defining Principals and Securables
- Using the Security Hierarchy
- Creating Logins and Users
- Applying Password Policies to SQL Logins
- Creating Server and Database Roles
- Granting Permissions
- Using SQLCMD to Test Permissions
- Creating and Using Certificates
- Setting Execution Context
- Encrypting Data
- Encrypting Databases

Automating Tasks

- Creating Maintenance Plans
- Job Creation and Execution
- Creating Schedules for Jobs
- Creating and Using Proxies
- Configuring Alerts
- Creating and Using Operators
- Configuring and Using Database Mail

Importing and Exporting Data

- Using bcp and BULK INSERT
- Using the Import/Export Wizard
- Using Integration Services to Import Data

Maintaining High Availability of Data

- Windows Clustering
- AlwaysOn Availability Groups
- Implementing Database Mirroring
- Implementing Log Shipping

Maintaining Data Reliability

- Maintaining Data Integrity
  - Creating Constraints
  - Describing and Using DML Triggers
  - Using Data Quality Services
- Configure Data Compression
- Setting Transaction Isolation Levels
- Capturing Changed Data

Backing Up and Restoring Databases

- Choosing Appropriate Database Recovery Model Option
- Describing Automatic Recovery
- Choosing an Appropriate Backup Strategy
- Determining Backup File Contents
- Designing a Database Recovery Plan

- Using Backup Compression
- Use of Filegroups in a Backup Strategy
- Restoring the Master Database
- Rebuilding System Databases