

SQL Server 2019 DBA: Backups, Security & Performance

Learn to install, secure, back up and troubleshoot SQL Server 2019 databases while tuning performance.

5 Days

40 HOURS

15

MODULES

50

TOPICS

15

HANDS-ON LABS

COURSE OVERVIEW

The Microsoft SQL Server 2019 Database Administration course is designed for individuals seeking to enhance their skills in managing and maintaining SQL Server databases. This comprehensive course covers a wide range of topics essential for database administrators, from the Core components and architecture of SQL Server to advanced features such as Encryption, Auditing, and Performance tuning. Participants will gain hands-on experience through practical labs, where they will learn to Install and configure SQL Server 2019, Manage database storage, perform database maintenance, and Implement a backup strategy. The course also delves into Authentication, Authorization, User access control, Data transfer methods, and Troubleshooting common issues. By completing the Microsoft SQL Server Database Administration course, learners will be equipped with the knowledge to effectively administer SQL Server databases, ensuring data integrity, security, and performance. This training is invaluable for aspiring Microsoft SQL DBAs aiming to excel in their careers.

Who Should Attend

Learn to administer SQL Server 2019 databases, perfect for IT professionals seeking to enhance their database management skills.

Database Administrators

Systems Administrators managing SQL Server environments

IT Professionals looking to upgrade their database skills to SQL Server 2019

Data Analysts requiring knowledge of SQL Server infrastructure

Technical Consultants implementing database solutions for clients

SQL Server Developers seeking deeper understanding of the platform's administration

IT Managers overseeing database operations teams

Business Intelligence Professionals

Data Architects designing and maintaining enterprise database systems

Database Engineers looking to learn about new features in SQL Server 2019

Professionals preparing for Microsoft certification exams in SQL Server

LEARNING OBJECTIVES

- Install and configure SQL Server 2019 instances
- Manage storage for system and user databases
- Perform ongoing database maintenance and index upkeep
- Configure authentication, authorization and server or database roles
- Control user access to objects, schemas and code
- Implement auditing and Always Encrypted with secure enclaves
- Plan and execute backup and restore strategies
- Monitor performance and troubleshoot blocking and connectivity issues

COURSE SYLLABUS

15 Modules, 50 Topics

01

Lab

SQL Server Components and Architecture

TOPICS

- Overview of SQL Server Architecture
- Introduction to the SQL Server Platform
- Installing and Configuring SQL Server 2019
- Installation changes/ Feature Selection /New Tab

02**Lab**

Working with Databases

TOPICS

- Introduction to Data Storage with SQL Server
- Managing Storage for System and user Databases
- Configuring the Buffer Pool Extension and Hybrid buffer pool

03**Lab**

Performing Database Maintenance

TOPICS

- Ensuring Database Integrity
- Tempdb Configuration and Memory-optimized TempDB Metadata
- Maintaining Indexes

04**Lab**

SQL Server Authentication and Authorization

TOPICS

- Connections to SQL Server
- Privileges and permissions to Logins with Database
- Authorization Across Servers

05**Lab**

Working with Server and Database Roles

TOPICS

Working with Server Roles · Working with Fixed Database Roles · User-Defined Database and Server Roles

06**Lab**

Controlling User Access

TOPICS

- Creating and Granting User Access to Objects
- Authorizing Users to Execute Code
- Configuring Permissions at the Schema and Database level

07**Lab**

Database Encryption and Auditing

TOPICS

- Auditing Data Access in SQL Server
- Implementing SQL Server Audit
- Managing SQL Server Audit
- Always Encrypted with Secure Enclaves, Database classification function on 2019

08**Lab**

Planning and Implementing a Backup Strategy

TOPICS

Understanding Backup Strategies · SQL Server Transaction Logs · Planning Backup Strategies

09**Lab**

Backing Up SQL Server Databases

TOPICS

Backing Up Databases and Transaction Logs · Managing Database Backups · Advanced Database Options

10**Lab**

Restoring SQL Server 2019 Databases

TOPICS

- Understanding the Restore Process
- Restoring SQL Databases
- Point-in-time Recovery with Advance Restore Scenario
- Accelerated Database Recovery

11**Lab**

Automating SQL Server Management

TOPICS

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

12

Lab

SQL Server with Extended Events

TOPICS

Extended Events Core Concepts · Working with Extended Events

13

Lab

Performance Improvement and Monitoring SQL Server 2019

TOPICS

Monitoring Activity · Capturing and Managing Performance Data · Query Execution and Query Plan Analysis · Statistics Internal · Query Store

14

Lab

Troubleshooting SQL Server

TOPICS

Monitoring SQL Server Errors · A Troubleshooting Methodology for SQL Server · Resolving Blocking and Locking in SQL Server · Resolving Connectivity and Login Issues

15

Lab

Different Method of Transferring Data

TOPICS

- Transferring Data to and from SQL Server
- Importing and Exporting Table Data
- bulk copy program and BULK INSERT to Import Data

HANDS-ON LABS

Practise What You Learn

#	MODULE	ACTIVITY
01	SQL Server Components and Architecture	Identify the Edition and Version of a Running SQL Server Instance, Installing SQL Server 2019
02	Working with Databases	Managing Database Storage
03	Performing Database Maintenance	Performing Ongoing Database Maintenance
04	SQL Server Authentication and Authorization	Authenticating Users
05	Working with Server and Database Roles	Assigning Server and Database Roles
06	Controlling User Access	Authorizing Users to Access Resources

#	MODULE	ACTIVITY
07	Database Encryption and Auditing	Using Auditing and Encryption
08	Planning and Implementing a Backup Strategy	Understanding SQL Server Recovery Models
09	Backing Up SQL Server Databases	Backing Up Databases
10	Restoring SQL Server 2019 Databases	Restoring SQL Server Databases
11	Automating SQL Server Management	Automating SQL Server Management
12	SQL Server with Extended Events	Extended Events
13	Performance Improvement and Monitoring SQL Server 2019	Monitoring SQL Server
14	Troubleshooting SQL Server	Troubleshooting Common Issues
15	Different Method of Transferring Data	Importing and Exporting Data

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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