

# Provisioning SQL Databases

**Course Duration: 40 Hours**

**Course code: 20765**

## 1. Course Overview

This course introduces end users to the fundamentals of cloud computing and equips them with the skills to use cloud-based services effectively in daily business operations. Participants will learn how to access, collaborate, and secure data in the cloud using common platforms. The course covers cloud basics, storage, productivity tools, security awareness, and best practices for maximizing efficiency in a cloud-enabled environment.

## 2. What you'll learn?

- Understand SQL Server deployment options (on-premises, Azure SQL, hybrid).
- Provision and configure SQL databases for different workloads.
- Manage storage, compute, and networking requirements.
- Implement authentication, authorization, and security best practices.
- Configure high availability (HA) and disaster recovery (DR).
- Monitor, troubleshoot, and optimize SQL database performance.

## 3. Target Audience

- Database Administrators (DBAs)
- Cloud Administrators managing SQL workloads
- IT Professionals responsible for deploying SQL Server
- Developers needing knowledge of SQL database provisioning

## 4. Pre-Requisites

- Basic understanding of relational databases
- Familiarity with Windows Server or Linux administration

- Knowledge of fundamental networking and security concepts

## 5. Course content

### Module 1: Introduction to SQL Database Provisioning

- Overview of SQL Server editions and features
- Deployment models: on-premises, cloud (Azure SQL), hybrid
- Planning capacity and scalability requirements
- Licensing considerations

### Module 2: Installing and Configuring SQL Server

- Preparing the environment (hardware, OS, prerequisites)
- SQL Server installation and instance configuration
- Configuring server roles and services
- Tools for managing SQL Server (SSMS, Azure Portal, CLI)

### Module 3: Provisioning Databases

- Creating and configuring SQL databases
- System vs. user databases
- Managing filegroups, storage, and tempdb configuration
- Collation and compatibility settings

### Module 4: Azure SQL Database and Managed Instances

- Overview of Azure SQL offerings (Database, Managed Instance, VM-based)
- Creating and configuring Azure SQL databases
- Scaling compute and storage
- Connectivity and firewall rules

### Module 5: Security and Access Control

- Authentication modes (Windows, SQL, Azure AD)
- Configuring logins, users, and roles

- Implementing encryption (TDE, Always Encrypted)
- Auditing and compliance configurations

### **Module 6: High Availability and Disaster Recovery**

- Backup and restore strategies
- Configuring log shipping and replication
- Implementing Always On Availability Groups
- HA/DR in Azure SQL Database

### **Module 7: Monitoring and Maintenance**

- Monitoring SQL instances and databases
- Performance tuning basics (indexes, statistics, queries)
- Automating maintenance tasks
- Alerts and notifications for administrators

### **Module 8: Troubleshooting and Best Practices**

- Common installation and configuration issues
- Database connectivity and login failures
- Storage and performance bottlenecks
- Best practices for provisioning secure, scalable SQL databases