

CITTÀ METROPOLITANA DI FIRENZE

Corso su Microsoft Windows Server 2016 e SQLServer 2016 – (L463)

CIG ZF62A9B33A

Introduzione

Il presente documento specifica nel dettaglio i contenuti richiesti per il corso oggetto dell'affidamento.

I contenuti del corso sono suddivisi nelle due parti:

- Parte 1 - Microsoft Windows Server 2016;
- Parte 2 - Microsoft SQL Server 2016;

e organizzati secondo una suddivisione in moduli elaborata a partire dal programma in lingua inglese dei corsi Microsoft seguenti:

- Corso 20740C - “Installation, Storage, and Compute with Windows Server 2016”;
- Corso 20742B - “Identity with Windows Server 2016”;
- Corso 20764C - “Administering a SQL Database Infrastructure”;

A partire dal programma dei corsi elencati, è stata effettuata una selezione dei soli moduli di specifico interesse per l'Amministrazione, che può essere sintetizzata come segue

Parte 1

- Moduli 1-4 ripresi dai Moduli 1-4 del Corso 20740C
- Moduli 5-6 ripresi dai Moduli 11-12 del Corso 20740C
- Moduli 7-15 ripresi dai Moduli 1-9 del Corso 20740C

Parte 2

- Moduli 16-25 ripresi dai Moduli 1-10 del Corso 20764C
- Moduli 26-29 ripresi dai Moduli 12-15 del Corso 20764C

e meglio dettagliata nel seguito.

Contenuti del Corso su Microsoft Windows Server 2016 e SQL Server 2016

Parte 1 - Microsoft Windows Server 2016

Module 1 (20740C-Mod1): Installing, upgrading, and migrating servers and workloads

This module describes the new features of Windows Server 2016, and explains how to prepare for and install Nano Server and Server Core. This module also describes how to plan a server upgrade and migration strategy, and explains how to perform a migration of server roles and workloads within and across domains. Finally, this module explains how to choose an activation model based on your environment characteristics.

Lessons:

- Introducing Windows Server 2016
- Preparing and installing Server Core
- Preparing for upgrades and migrations
- Migrating server roles and workloads
- Windows Server activation models

Lab : Installing and configuring Server Core

- Installing Server Core
- Completing post-installation tasks on Windows Server 2016 Core
- Performing remote management

After completing this module, students will be able to:

- Describe the new features of Windows Server 2016.
- Prepare for and install Server Core.
- Plan a server upgrade and migration strategy.
- Perform a migration of server roles and workloads within a domain and across domains.
- Choose an appropriate activation model.

Module 2 (20740C-Mod2): Configuring local storage

This module explains how to manage disks and volumes in Windows Server 2016.

Lessons:

- Managing disks in Windows Server
- Managing volumes in Windows Server

Lab : Configuring local storage

- Creating and managing volumes
- Resizing volumes
- Managing virtual hard disks

After completing this module, students will be able to:

- Manage disks in Windows Server.
- Manage volumes in Windows Server.

Module 3 (20740C-Mod3): Implementing enterprise storage solutions

This module discusses direct-attached storage (DAS), network-attached storage (NAS), and storage area networks (SANs). It also explains the purpose of Microsoft Internet Storage Name Service (iSNS) Server, data center bridging (DCB), and Multipath I/O (MPIO). Additionally, this module compares Fibre Channel, Internet Small Computer System Interface (iSCSI), and Fibre Channel over Ethernet (FCoE), and describes how to configure sharing in Windows Server 2016.

Lessons:

- Overview of DAS, NAS, and SANs
- Comparing Fibre Channel, iSCSI, and Fibre Channel over Ethernet
- Understanding iSNS, DCB, and MPIO
- Configuring sharing in Windows Server 2016

Lab : Planning and configuring storage technologies and components

- Planning storage requirements
- Configuring iSCSI storage
- Configuring and managing the share infrastructure

After completing this module, students will be able to:

- Describe DAS, NAS, and SANs.
- Compare Fibre Channel, iSCSI, and FCoE.
- Explain the use of iSNS, DCB, and MPIO.
- Configure sharing in Windows Server.

Module 4 (20740C-Mod4): Implementing Storage Spaces and Data Deduplication

This module explains how to implement and manage Storage Spaces. This module also explains how to implement Data Deduplication.

Lessons:

- Implementing Storage Spaces
- Managing Storage Spaces
- Implementing Data Deduplication

Lab : Implementing Storage Spaces

- Creating a Storage Space

Lab : Implementing Data Deduplication

- Installing Data Deduplication
- Configuring Data Deduplication

After completing this module, students will be able to:

- Describe and implement the Storage Spaces feature in the context of enterprise storage needs.

- Manage and maintain Storage Spaces.
- Describe and implement Data Deduplication.

Module 5 (20740C-Mod11): Creating and managing deployment images

This module provides an overview of the Windows Server 2016 image deployment process. It also explains how to create and manage deployment images by using the Microsoft Deployment Toolkit (MDT). Additionally, it describes different workloads in the virtual machine environment.

Lessons

- Introduction to deployment images
- Creating and managing deployment images by using MDT
- Virtual machine environments for different workloads

Lab : Using MDT to deploy Windows Server 2016

- Configuring MDT
- Creating and deploying an image

After completing this module, students will be able to:

- Describe the Windows Server 2016 image deployment process.
- Create and manage deployment images by using MDT.
- Describe the different workloads in the virtual machine environment.

Module 6 (20740C-Mod12): Managing, monitoring, and maintaining virtual machine installations

This module provides an overview on Windows Server Update Services (WSUS) and the requirements to implement WSUS. It explains how to manage the update process with WSUS. Additionally, this module provides an overview of Windows PowerShell Desired State Configuration (DSC) and Windows Server 2016 monitoring tools. Finally, this module describes how to use Performance Monitor, and how to manage event logs.

Lessons

- WSUS overview and deployment options
- Update management process with WSUS
- Overview of Windows PowerShell DSC
- Overview of Windows Server 2016 monitoring tools
- Using Performance Monitor
- Monitoring event logs

Lab : Implementing WSUS and deploying updates

- Implementing WSUS
- Configuring update settings
- Approving and deploying an update by using WSUS

Lab : Monitoring and troubleshooting Windows Server 2016

- Establishing a performance baseline

- Identifying the source of a performance problem
- Viewing and configuring centralized event logs

After completing this module, students will be able to:

- Describe the purpose of WSUS and the requirements to implement WSUS.
- Manage the update process with WSUS.
- Describe the purpose and benefits of Windows PowerShell DSC.
- Describe the monitoring tools available in Windows Server 2016.
- Use Performance Monitor.
- Manage event logs.

Module 7 (20742B-Mod1): Installing and configuring domain controllers

This module describes the features of AD DS and how to install domain controllers (DCs). It also covers the considerations for deploying DCs.

Lessons

- Overview of AD DS
- Overview of AD DS domain controllers
- Deploying a domain controller

Lab : Deploying and administering AD DS

- Deploying AD DS
- Deploying domain controllers by performing domain controller cloning
- Administering AD DS

After completing this module, students will be able to:

- Describe AD DS and its main components.
- Describe the purpose and roles of domain controllers.
- Describe the considerations for deploying domain controllers.

Module 8 (20742B-Mod2): Managing objects in AD DS

This module describes how to use various techniques to manage objects in AD DS. This includes creating and configuring user, group, and computer objects.

Lessons

- Managing user accounts
- Managing groups in AD DS
- Managing computer objects in AD DS
- Using Windows PowerShell for AD DS administration
- Implementing and managing OUs

Lab : Managing AD DS objects

- Creating and managing groups in AD DS

- Creating and configuring user accounts in AD DS
- Managing computer objects in AD DS

Lab : Administering AD DS

- Delegate administration for OUs
- Creating and modifying AD DS objects with Windows PowerShell

After completing this module, students will be able to:

- Manage user accounts in AD DS.
- Manage groups in AD DS.
- Manage computer objects in AD DS.
- Use Windows PowerShell for AD DS administration.
- Implement and manage OUs.
- Administer AD DS.

Module 9 (20742B-Mod3): Advanced AD DS infrastructure management

This module describes how to plan and implement an AD DS deployment that includes multiple domains and forests. The module provides an overview of the components in an advanced AD DS deployment, the process of implementing a distributed AD DS environment, and the procedure for configuring AD DS trusts.

Lessons

- Overview of advanced AD DS deployments
- Deploying a distributed AD DS environment
- Configuring AD DS trusts

Lab : Domain and trust management in AD DS

- Implementing forest trusts
- Implementing child domains in AD DS

After completing this module, students will be able to:

- Describe the components of an advanced AD DS deployment.
- Deploy a distributed AD DS environment..
- Configure AD DS trusts.

Module 10 (20742B-Mod4): Implementing and administering AD DS sites and replication

This module describes how to plan and implement an AD DS deployment that includes multiple locations. The module explains how replication works in a Windows Server 2016 AD DS environment.

Lessons

- Overview of AD DS replication
- Configuring AD DS sites
- Configuring and monitoring AD DS replication

Lab : Implementing AD DS sites and replication

- Modifying the default site
- Creating additional sites and subnets
- Configuring AD DS replication
- Monitoring and troubleshooting AD DS replication

After completing this module, students will be able to:

- Describe how AD DS replication works.
- Configure AD DS sites to help optimize authentication and replication traffic.
- Configure and monitor AD DS replication.

Module 11 (20742B-Mod5): Implementing Group Policy

This module describes how to implement a GPO infrastructure. The module provides an overview of the components and technologies that compose the Group Policy framework.

Lessons

- Introducing Group Policy
- Implementing and administering GPOs
- Group Policy scope and Group Policy processing
- Troubleshooting the application of GPOs

Lab : Implementing a Group Policy infrastructure

- Creating and configuring GPOs
- Managing GPO scope

Lab : Troubleshooting Group Policy infrastructure

- Verify GPO application
- Troubleshooting GPOs

After completing this module, students will be able to:

- Explain what Group Policy is.
- Implement and administer GPOs.
- Describe Group Policy scope and Group Policy processing.
- Troubleshoot GPO application.

Module 12 (20742B-Mod6): Managing user settings with Group Policy

This module describes how to configure Group Policy settings and Group Policy preferences. This includes implementing administrative templates, configuring folder redirection and scripts, and configuring Group Policy preferences.

Lessons

- Implementing administrative templates
- Configuring Folder Redirection, software installation, and scripts
- Configuring Group Policy preferences

Lab : Managing user settings with GPOs

- Using administrative templates to manage user settings
- Implement settings by using Group Policy preferences
- Configuring Folder Redirection
- Planning Group Policy (optional)

After completing this module, students will be able to:

- Implement administrative templates.
- Configure Folder Redirection, software installation, and scripts.
- Configure Group Policy preferences.

Module 13 (20742B-Mod7): Securing Active Directory Domain Services

This module describes how to configure domain controller security, account security, password security, and Group Managed Service Accounts (gMSA).

Lessons

- Securing domain controllers
- Implementing account security
- Implementing audit authentication
- Configuring managed service accounts

Lab : Securing AD DS

- Implementing security policies for accounts, passwords, and administrative groups
- Deploying and configuring an RODC
- Creating and associating a group MSA

After completing this module, students will be able to:

- Secure domain controllers.
- Implement account security.
- Implement audit authentication.
- Configure managed service accounts (MSAs).

Module 14 (20742B-Mod8): Deploying and managing AD CS

This module describes how to implement an AD CS deployment. This includes deploying, administering, and troubleshooting CAs.

Lessons

- Deploying CAs
- Administering CAs
- Troubleshooting and maintaining CAs

Lab : Deploying and configuring a two-tier CA hierarchy

- Deploying an offline root CA
- Deploying an enterprise subordinate CA

After completing this module, students will be able to:

- Deploy CAs.
- Administer CAs.
- Troubleshoot and maintain CAs.

Module 15 (20742B-Mod9): Deploying and managing certificates

This module describes how to deploy and manage certificates in an AD DS environment. This involves deploying and managing certificate templates, managing certificate revocation and recovery, using certificates in a business environment, and implementing smart cards.

Lessons

- Deploying and managing certificate templates
- Managing certificate deployment, revocation, and recovery
- Using certificates in a business environment
- Implementing and managing smart cards

Lab : Deploying and using certificates

- Configuring certificate templates
- Enrolling and using certificates
- Configuring and implementing key recovery

After completing this module, students will be able to:

- Deploy and manage certificate templates.
- Manage certificates deployment, revocation, and recovery.
- Use certificates in a business environment.
- Implement and manage smart cards

Parte 2 - Microsoft SQL Server 2016

Module 16 (20764C-Mod1): SQL Server Security (Revise and upgrade to SQLServer2016)

Protection of data within your Microsoft SQL Server databases is essential and requires a working knowledge of the issues and SQL Server security features. This module describes SQL Server security models, logins, users, partially contained databases, and cross-server authorization.

Lessons

- Authenticating Connections to SQL Server
- Authorizing Logins to Connect to databases
- Authorization Across Servers
- Partially Contained Databases

Lab : Authenticating Users

- Create Logins
- Create Database Users
- Correct Application Login Issues
- Configure Security for Restored Databases

After completing this module, you will be able to:

- SQL Server basic concepts.
- SQL Server connection authentication.
- User login authorization to databases.
- Partially contained databases.
- Authorization across servers.

Module 17 (20764C-Mod2): Assigning Server and Database Roles (Revise and upgrade to SQLServer2016)

Using roles simplifies the management of user permissions. With roles, you can control authenticated users' access to system resources based on each user's job function—rather than assigning permissions user-by-user, you can grant permissions to a role, then make users members of roles. Microsoft SQL Server includes support for security roles defined at server level and at database level.

Lessons

- Working with server roles
- Working with Fixed Database Roles
- Assigning User-Defined Database Roles

Lab : Assigning server and database roles

- Assigning Server Roles
- Assigning Fixed Database Roles
- Assigning User-Defined Database Roles
- Verifying Security

After completing this module, you will be able to:

- Describe and use server roles to manage server-level security.
- Describe and use fixed database roles.
- Use custom database roles and application roles to manage database-level security.

Module 18 (20764C-Mod3): Authorizing Users to Access Resources (Revise and upgrade to SQLServer2016)

In the previous modules, you have seen how Microsoft SQL Server security is organized and how sets of permissions can be assigned at the server and database level by using fixed server roles, user-defined server roles, fixed database roles, and application roles. The final step in authorizing users to access SQL Server resources is the authorization of users and roles to access server and database objects. In this module, you will see how these object permissions are managed. In addition to access permissions on database objects, SQL Server provides the ability to determine which users are allowed to execute code, such as stored procedures and functions. In many cases, these permissions and the permissions on the database objects are best configured at the schema level rather than at the level of the individual object. Schema-based permission grants can simplify your security architecture. You will explore the granting of permissions at the schema level in the final lesson of this module.

Lessons

- Authorizing User Access to Objects
- Authorizing Users to Execute Code

- Configuring Permissions at the Schema Level

Lab : Authorizing users to access resources

- Granting, Denying, and Revoking Permissions on Objects
- Granting EXECUTE Permissions on Code

- Granting Permissions at the Schema Level

After completing this module, you will be able to:

- Authorize user access to objects.
- Authorize users to execute code.
- Configure permissions at the schema level.

Module 19 (20764C-Mod4): Protecting Data with Encryption and Auditing (Revise and upgrade to SQLServer2016)

When configuring security for your Microsoft SQL Server systems, you should ensure that you meet any of your organization's compliance requirements for data protection. Organizations often need to adhere to industry-specific compliance policies, which mandate auditing of all data access. To address this requirement, SQL Server provides a range of options for implementing auditing. Another common compliance requirement is the encryption of data to protect against unauthorized access in the event that access to the database files is compromised. SQL Server supports this requirement by providing transparent data encryption (TDE). To reduce the risk of information leakage by users with administrative access to a database, columns containing sensitive data—such as credit card numbers or national identity numbers—can be encrypted using the Always Encrypted feature. This module describes the available options for auditing in SQL Server, how to use and manage the SQL Server Audit feature, and how to implement encryption.

Lessons

- Options for auditing data access in SQL Server
- Implementing SQL Server Audit

- Managing SQL Server Audit

- Protecting Data with Encryption

Lab : Using Auditing and Encryption

- Working with SQL Server Audit

- Encrypt a Column as Always Encrypted
- Encrypt a Database using TDE

After completing this module, you will be able to:

- Describe the options for auditing data access.
- Implement SQL Server Audit.
- Manage SQL Server Audit.
- Describe and implement methods of encrypting data in SQL Server.
- Implement encryption

Module 20 (20764C-Mod5): Recovery Models and Backup Strategies (Revise and upgrade to SQLServer2016)

One of the most important aspects of a database administrator's role is ensuring that organizational data is reliably backed up so that, if a failure occurs, you can recover the data. Even though the computing industry has known about the need for reliable backup strategies for decades—and discussed this at great length—unfortunate stories regarding data loss are still commonplace. A further problem is that, even when the strategies in place work as they were designed, the outcomes still regularly fail to meet an organization's operational requirements. In this module, you will consider how to create a strategy that is aligned with organizational needs, based on the available backup models, and the role of the transaction logs in maintaining database consistency.

Lessons

- Understanding Backup Strategies
- SQL Server Transaction Logs

- Planning Backup Strategies

Lab : Understanding SQL Server recovery models

- Plan a Backup Strategy
- Configure Database Recovery Models

After completing this module, you will be able to:

- Describe various backup strategies.
- Describe how database transaction logs function.
- Plan SQL Server backup strategies.

Module 21 (20764C-Mod6): Backing Up SQL Server Databases (Revise and upgrade to SQLServer2016)

In the previous module, you learned how to plan a backup strategy for a SQL Server system. You can now learn how to perform SQL Server backups, including full and differential database backups, transaction log backups, and partial backups. In this module, you will learn how to apply various backup strategies.

Lessons

- Backing Up Databases and Transaction Logs
- Managing Database Backups

- Advanced Database Options

Lab : Backing Up Databases

- Backing Up Databases

- Performing Database, Differential, and Transaction Log Backups
- Performing a Partial Backup

After completing this module, you will be able to:

- Perform backups of SQL Server databases and transaction logs.
- Manage database backups.
- Describe advanced backup options.

Module 22 (20764C-Mod7): Restoring SQL Server 2016 Databases (Revise and upgrade to SQLServer2016)

In the previous module, you learned how to create backups of Microsoft SQL Server 2016 databases. A backup strategy might involve many different types of backup, so it is essential that you can effectively restore them. You will often be restoring a database in an urgent situation. You must, however, ensure that you have a clear plan of how to proceed and successfully recover the database to the required state. A good plan and understanding of the restore process can help avoid making the situation worse. Some database restores are related to system failure. In these cases, you will want to return the system as close as possible to the state it was in before the failure. Some failures, though, are related to human error and you might wish to recover the system to a point before that error. The point-in-time recovery features of SQL Server 2016 can help you to achieve this. Because they are typically much larger, user databases are more likely to be affected by system failures than system databases. However, system databases can be affected by failures, and special care should be taken when recovering them. In particular, you need to understand how to recover each system database because you cannot use the same process for all system databases. In this module, you will see how to restore user and system databases and how to implement point-in-time recovery.

Lessons

- Understanding the Restore Process
- Restoring Databases
- Advanced Restore Scenarios
- Point-in-Time Recovery

Lab : Restoring SQL Server Databases

- Restoring a Database Backup
- Restring Database, Differential, and Transaction Log Backups
- Performing a Piecemeal Restore

After completing this module, you will be able to:

- Explain the restore process.
- Restore databases.
- Perform advanced restore operations.
- Perform a point-in-time recovery.

Module 23 (20764C-Mod8): Automating SQL Server Management (Revise and upgrade to SQLServer2016)

The tools provided by Microsoft SQL Server make administration easy when compared to some other database engines. However, even when tasks are easy to perform, it is common to have to repeat a task many times. Efficient database administrators learn to automate repetitive tasks. This can help to avoid situations where an administrator

forgets to execute a task at the required time. Perhaps more importantly, the automation of tasks helps to ensure that they are performed consistently, each time they are executed. This module describes how to use SQL Server Agent to automate jobs, how to configure security contexts for jobs, and how to implement multiserver jobs.

Lessons

- Automating SQL Server management
- Working with SQL Server Agent
- Managing SQL Server Agent Jobs
- Multi-server Management

Lab : Automating SQL Server Management

- Create a SQL Server Agent Job
- Test a Job
- Schedule a Job
- Configure Master and Target Servers

After completing this module, you will be able to:

- Describe methods for automating SQL Server Management.
- Configure jobs, job step types, and schedules.
- Manage SQL Server Agent jobs.
- Configure master and target servers.

Module 24 (20764C-Mod9): Configuring Security for SQL Server Agent (Revise and upgrade to SQLServer2016)

Other modules in this course have demonstrated the need to minimize the permissions that are granted to users, following the principle of “least privilege.” This means that users have only the permissions that they need to perform their tasks. The same logic applies to the granting of permissions to SQL Server Agent. Although it is easy to execute all jobs in the context of the SQL Server Agent service account, and to configure that account as an administrative account, a poor security environment would result from doing this. It is important to understand how to create a minimal privilege security environment for jobs that run in SQL Server Agent.

Lessons

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

Lab : Configuring Security for SQL Server Agent

- Analyzing Problems in SQL Server Agent
- Configuring a Credential
- Configuring a Proxy Account
- Configuring and testing the Security Context of a Job

After completing this module, you will be able to:

- Explain SQL Server Agent security.
- Configure credentials.

- Configure proxy accounts.

Module 25 (20764C-Mod10): Monitoring SQL Server with Alerts and Notifications (Revise and upgrade to SQLServer2016)

One key aspect of managing Microsoft SQL Server in a proactive manner is to make sure you are aware of problems and events that occur in the server, as they happen. SQL Server logs a wealth of information about issues. You can configure it to advise you automatically when these issues occur, by using alerts and notifications. The most common way that SQL Server database administrators receive details of events of interest is by email message. This module covers the configuration of Database Mail, alerts, and notifications for a SQL Server instance, and the configuration of alerts for Microsoft Azure SQL Database.

Lessons

- Monitoring SQL Server Errors
- Configuring Database Mail
- Operators, Alerts, and Notifications
- Alerts in Azure SQL Database

Lab : Monitoring SQL Server with Alerts and Notifications

- Configuring Database Mail
- Configuring Operators
- Configuring Alerts and Notifications
- Testing Alerts and Notifications

After completing this module, you will be able to:

- Monitor SQL Server errors.
- Configure database mail.
- Configure operators, alerts, and notifications.
- Work with alerts in Azure SQL Database.

Module 26 (20764C-Mod12): Tracing Access to SQL Server with Extended events

Monitoring performance metrics provides a great way to assess the overall performance of a database solution. However, there are occasions when you need to perform more detailed analysis of the activity occurring within a Microsoft SQL Server instance—to troubleshoot problems and identify ways to optimize workload performance. SQL Server Extended Events is a flexible, lightweight event-handling system built into the Microsoft SQL Server Database Engine. This module focuses on the architectural concepts, troubleshooting strategies and usage scenarios of Extended Events.

Lessons

- Extended Events Core Concepts
- Working with Extended Events

Lab : Extended Events

- Using the System_Health Extended Events Session
- Tracking Page Splits Using Extended Events

After completing this module, you will be able to:

- Describe Extended Events core concepts.

- Create and query Extended Events sessions.

Module 27 (20764C-Mod13): Monitoring SQL Server

The Microsoft SQL Server Database Engine can run for long periods without the need for administrative attention. However, if you regularly monitor the activity that occurs on the database server, you can deal with potential issues before they arise. SQL Server provides a number of tools that you can use to monitor current activity and record details of previous activity. You need to become familiar with what each of the tools does and how to use them. It is easy to become overwhelmed by the volume of output that monitoring tools can provide, so you also need to learn techniques for analyzing their output.

Lessons

- Monitoring activity
- Capturing and Managing Performance Data
- Analyzing Collected Performance Data
- SQL Server Utility

Lab : Monitoring SQL Server

After completing this module, you will be able to:

- Monitor current activity.
- Capture and manage performance data.
- Analyze collected performance data.
- Configure SQL Server Utility.

Module 28 (20764C-Mod14): Troubleshooting SQL Server

Database administrators working with Microsoft SQL Server need to adopt the important role of troubleshooter when issues arise—particularly if users of business-critical applications that rely on SQL Server databases are being prevented from working. It is important to have a solid methodology for resolving issues in general, and to be familiar with the most common issues that can arise when working with SQL Server systems.

Lessons

- A Trouble Shooting Methodology for SQL Server
- Resolving Service Related Issues
- Resolving Connectivity and Log-in issues

Lab : Troubleshooting Common Issues

- Troubleshoot and Resolve a SQL Login Issue
- Troubleshoot and Resolve a Service Issue
- Troubleshoot and Resolve a Windows Login Issue
- Troubleshoot and Resolve a Job Execution Issue
- Troubleshoot and Resolve a Performance Issue

After completing this module, you will be able to:

- Describe a troubleshooting methodology for SQL Server.
- Resolve service-related issues.
- Resolve login and connectivity issues.

Module 29 (20764C-Mod15): Importing and Exporting Data

While a great deal of data residing in a Microsoft SQL Server system is entered directly by users who are running application programs, there is often a need to move data in other locations, to and from SQL Server. SQL Server provides a set of tools you can use to transfer data in and out. Some of these tools, such as the bcp (Bulk Copy Program) utility and SQL Server Integration Services, are external to the database engine. Other tools, such as the BULK INSERT statement and the OPENROWSET function, are implemented in the database engine. With SQL Server, you can also create data-tier applications that package all the tables, views, and instance objects associated with a user database into a single unit of deployment. In this module, you will explore these tools and techniques so that you can import and export data to and from SQL Server.

Lessons

- Transferring Data to and from SQL Server
- Importing and Exporting Table Data
- Using bcp and BULK INSERT to Import Data
- Deploying and Upgrading Data-Tier Application

Lab : Importing and Exporting Data

- Import and Excel Data Using the Import Wizard
- Import a Delimited Text File Using bcp
- Import a Delimited Text File using BULK INSERT
- Create and Test an SSIS Package to Extract Data
- Deploy a Data-Tier Application

After completing this module, you will be able to:

- Describe tools and techniques for transferring data.
- Import and export table data.
- Use bcp and BULK INSERT to import data.
- Use data-tier applications to import and export database applications.