



6 Months Training Module in MS SQL SERVER 2012

Module 1

Installing and Configuring Windows Server 2012

Installing and Managing Windows Server 2012

- Windows Server 2012 Overview
- Installing Windows Server 2012
- Post-Installation Configuration of Windows Server 2012

Understanding and Configuring IP

- Understanding and Configuring Network
- Understanding IP Version 4 (IPv4) Addressing
- Subnetting and Supernetting
- Configuring and Troubleshooting IPv4
- Understanding IP Version 4 (IPv4) Addressing

Configuring Name Resolution

- Installing a DNS Server
- Configuring DNS Client Settings

Configuring a DNS Zone Infrastructure

- Creating and Configuring Zones
- Creating Resource Records
- Configuring Zone Replication and Transfers
- Implementing Stub Zones

Creating a DHCP Infrastructure

- Installing a DHCP Server
- Configuring a DHCP Server
- Creating Address Exclusions
- Creating Reservations
- Adjusting Lease Durations
- Configuring Additional DHCP Options
- Implementing User Classes

Implementing Local Storage

- Managing Disks, Volumes, and Partitions
- Understanding Basic and Dynamic Disks
- Simple or basic volumes
- Spanned volumes



- Striped volumes
- Mirrored volumes
- Raid-5 volumes

Configuring IP Routing

- Routing Overview
- Routing Protocols
- Static Routing

Protecting Network Traffic with IPsec

- Configuring IPsec
- IPsec Policies
- Authentication Methods for IPsec
- Assigning a Predefined IPsec Policy

Configuring Network Address Translation

- NAT Concepts
- Configuring Internet Connection Sharing
- Configuring Network Address Translation Using Routing And Remote Access

Configuring Wireless Networks

- Wireless Networking Concepts
- Wireless Networking Standards
- Wireless Security Standards
- Infrastructure and Ad Hoc Wireless Networks

Connecting to Remote Networks

- Remote Access Overview
- Dial-up Connections
- Virtual Private Networks
- Point-to-Point Tunneling Protocol (PPTP)
- Layer Two Tunneling Protocol (L2TP)

Configuring Windows Firewall

- Firewall Profiles
- Filtering Inbound Traffic
- Filtering Outbound Traffic

Monitoring Computers

- Monitoring Event Logs
- Monitoring Performance and Reliability
- Performance Monitor
- Reliability Monitor



Managing Files

- Managing File Security
- Encrypting File System
- Sharing Folders
- Manage disk quotas.
- Configure backup and restore.
- Configure shadow copy services.

Managing Printers

- Installing Printers
- Sharing Printers
- Configuring Printer Permissions
- Configuring Printer Pooling and permissions
- Managing Internet Printing

Module 2

Configuring Windows Server 2012 Active Directory

Installation

- Components of an Active Directory Infrastructure
- Creating a Domain Controller
- Creating a Windows Server 2012 Forest

Administration

- Active Directory Administration Tools
- Creating a Custom Console with Active Directory Snap-ins
- Creating Objects in Active Directory
- Finding Objects in Active Directory

Users

- Automating the Creation of User Accounts
- Importing Users with CSVDE
- Importing Users with LDIFDE

Groups

- Understanding Group Types
- Understanding Group Scope
- Managing Group Membership
- Importing Groups with CSVDE
- Modifying Group Membership with LDIFDE



- Default Groups

Computers

- Understanding Workgroups, Domains, and Trusts
- Computers Container
- Creating OUs for Computers
- Joining a Computer to the Domain
- Moving a Computer

Group Policy Infrastructure

- Group Policy Objects
- Local GPOs
- Domain-Based GPOs
- Policy Settings
- GPO Links
- GPO Inheritance and Precedence
- Using Security Filtering to Modify GPO Scope
- Group Policy Processing
- Resultant Set of Policy
- Managing Software with Group Policy Software Installation

Authentication

- Understanding Password Policies
- Understanding Account Lockout Policies
- Auditing Authentication
- Read-Only Domain Controllers
- Password Replication Policy

Domain Controllers

- Installing Domain Controllers and Additional Domain Controllers
- Installing Child Domain
- Installing a New Domain Tree
- Removing a Domain Controller

Configuring Operations Masters

- Understanding Single Master Operations
- Forest-Wide Operations Master Roles
- Domain-Wide Operations Master Roles
- Transferring Operations Master Roles
- Seizing Operations Master Roles

Sites and Replication

- Understanding Sites
- Configuring Sites and Subnets



- Understanding the Global Catalog.
- Configuring Replication
- Understanding Active Directory Replication
- Connection Objects

Domains and Forests

- Understanding Domain and Forest Functional
- Raising the Forest Functional Level
- Understanding Trust Relationships
- Administering Trusts

Active Directory Optimization and Reliability

- Using Windows Server 2012 Performance Tools
- Backing Up Active Directory
- Restoring Active Directory

Module 3

MICROSOFT SQL SERVER 2012

Installing Microsoft SQL Server 2012

Understanding SQL Server 2012 Editions
Installing a Default, Named, or Multiple Instances of SQL Server 2012
Determining When to Use Multiple
Determining Service Accounts
Choosing an Authentication Mode
Troubleshooting the Installation

Creating and Configuring Databases

Data Files
Log Files
Configuring Filegroups
How to Configure Data Files and Log Files
Introducing RAID-0 , RAID-1, RAID-5
Configuring Database Files with RAID Systems
Introducing Extents and Pages
Creating and Configuring Databases
Recovery Models Overview
How to Configure Recovery Models

Implementing Security in SQL Server 2012

Using Windows Authentication Mode
Using Mixed Mode
Setting the Authentication Mode
Understanding SQL Server Logins
Understanding Fixed Server Roles



Understanding Permissions
Understanding Database Roles
Managing Schemas
Understanding Permission States
Introducing Ownership Chains
Introducing Linked Server Security

Working with Tables

Introducing Built-in Data Types
Introducing Computed Columns
Nullability
Identity
Creating Tables
Creating Temporary Tables
Table Variables
Assigning Permissions
Implementing Rules
Implementing Constraints
Check Constraints
Default Constraints
Unique Constraints
Primary Key Constraints
Foreign Key Constraints
Creating User-Defined Types

Performing Indexing and Full-Text Searching

Understanding Clustered Indexes
Understanding Nonclustered Indexes

Working with Transact-SQL

Construct SQL queries to return data
Querying multiple tables using Join
Determining the Columns to Return
Modifying Data
Creating Local and Global Temporary Tables
Using the SELECT INTO Command
Working with Transactions
Beginning and Committing or Rolling Back Transactions

Creating Partitions

Implement partitions
Creating a Partition Function
Creating a Partition Scheme
Partitioning Tables and Indexes
Querying Partitions
Managing Partitions

Implementing Views

How to Create a View
Understanding ENCRYPTION, SCHEMABINDING,
Understanding Ownership Chains



Creating Functions, Stored Procedures, and Triggers

- Creating Stored Procedures
- Recompiling Stored Procedures
- Assign Permissions to a Role for a Stored Procedure
- Understanding Triggers
- Introducing Functions
- Table-Valued Functions

Working with Flat Files

- Importing Data Using Bulk Insert
- Importing Data Using the bcp Utility
- Copying Data Using SSIS

Backing Up, Restoring, and Moving a Database

- Backing Up a Database
- Performing Full Backups
- Performing Differential Backups
- Transaction Log Backups
- Performing Filegroup Backups
- Restoring a Database
- Restoring a Full Backup
- Restoring a Differential Backup
- Restoring a Transaction Log Backup
- Moving a Database
- Moving a Database by Using Detach/Attach

Using Transact-SQL to Manage Databases

- Managing Index Fragmentation
- Understanding Index Fragmentation
- Identifying Index Fragmentation
- Managing Index Fragmentation
- Using DBCC CHECKDB
- DBCC CHECKDB

Working with HTTP Endpoints

- Understanding HTTP Endpoint Security
- Creating an HTTP Endpoint

Working with SQL Server Agent Jobs

- How to Create a SQL Server Agent Job
- How to Create Job Steps
- How to Create Job Schedules
- How to Configure an Operator
- Creating Alerts

Monitoring and Troubleshooting SQL Server Performance

- Working with SQL Server Profiler
- Defining a Trace
- Starting, Pausing, and Stopping a Trace
- Saving a Trace Log



- Creating a Replay Trace
- Using the Database Engine Tuning Advisor
- Building a Workload File
- Understanding Locking
- Terminating Processes
- Understanding Deadlocking

Managing Database Snapshots

- Creating a Database Snapshot
- Database Snapshot Structure
- Copy-On-Write Technology
- Retrieving Data from a Database Snapshot

Implementing Database Mirroring

- Understanding Database Mirroring Roles
 - Principal Role
 - Mirror Role
 - Witness Server
- Database Mirroring Endpoints
- Understanding Operating Modes
 - High Availability Operating Mode
 - High Performance Operating Mode
 - High Protection Operating Mode
- Failing Over a Database Mirror
- Removing Database Mirroring

Implementing Log Shipping

- Configuring Log Shipping Options
- How to Enable the Primary Database
- Defining Log Shipping Backup Options
- How to Configure Secondary Databases
- Configuring the Copy Files Task
- Configuring Log Shipping Restore Options
- How to Configure No Recovery Mode
- How to Configure Standby Mode

Managing Replication

- Understanding Replication Types
- Understanding Replication Terminology
- Replication Types
- Replication Agents
- Setting Up Replication
- How to Set Up the Distributor
- How to Create a Publication
- How to Subscribe to the Publication

Module 4: Project Work