

SSIS Syllabus

Overview: SQL Server Integration Services (SSIS) is a component of Microsoft SQL Server database software which can be used to perform a broad range of data migration, data integration and Data Consolidation tasks. It features fast and flexible data warehousing tool used for data extraction, transformation and loading (ETL). The tool may also be used to automate maintenance of SQL Server databases and updates multidimensional cube data. SSIS is the new data transformation standard for SQL Server 2005 onwards and has replaced the old SQL Server Data Transformation Services.

Course Objectives:

- ❖ Understand MSBI application development Life Cycle.
- ❖ Understand basic Data Warehousing Concepts.
- ❖ Understand the Concept of OLTP and OLAP.
- ❖ Use SSDT (SQL Server Data Tools) in detail for development of SSIS packages.
- ❖ Learn SSIS Architecture, components of SSIS.
- ❖ Gain complete understanding of different control flow tasks, containers and precedence constraints.
- ❖ Gain complete understanding of wide variety of data flow Sources, transformations and destinations.
- ❖ Learn to work with variables, data types, functions, expressions and parameters and providing Dynamism in SSIS.
- ❖ Develop packages using different tasks and different Transformations based on real time requirements.
- ❖ Learn working with event handler, logging and configuration files.
- ❖ Learn Error Handling and Debugging in SSIS.
- ❖ Learn package deployment and project deployment.
- ❖ Gain understanding of Security and Package management.

Pre-requisite / Target Audience: Participants are need to be familiar with basic RDBMS concepts with skills to write queries. Working experience on any RDBMS would be an added advantage.

Module 1:- Introduction to MSBI

In this module, you will learn about what is Business Intelligence. Introduction to Business Intelligence development studio / Sql Server Data tools. Basic idea on SSIS, SSAS and SSRS. Advantages of MSBI that

- ❖ Understanding OLAP AND OLTP
- ❖ What is Data Warehouse
- ❖ What is BI

- ❖ Why BI
- ❖ What is MSBI
- ❖ Advantages of MSBI
- ❖ Advantages of MSBI over other BI systems
- ❖ What are the different Components of MSBI
- ❖ What is SQL Server Data Tools(SSDT)
- ❖ Tools and utilities for MSBI

Module 2:- Introduction to SSIS

In this chapter, you will learn SSIS Introduction and how to use SSIS, how to create SSIS Project and Advantages of SSIS. SSIS Architecture and advantages of package designer. What is connection manager and how to import and export wizards that

- ❖ What is SSIS
- ❖ Why SSIS
- ❖ Advantages of SSIS
- ❖ How to Use SSIS
- ❖ What is SSIS Architecture
- ❖ Introduction to SSDT
- ❖ How to Create SSIS Project
- ❖ What is package designer
- ❖ How to use Package designer
- ❖ What is Toolbox in SSIS
- ❖ What is Properties Window
- ❖ What is Variable Window
- ❖ What is Connection Manager
- ❖ How to use Connection Manager
- ❖ Components of Integrated Service
- ❖ What is Import and Export Wizard
- ❖ How to use Import and Export Wizard

Module 3:-Data Flow Task

In this module, you will learn clearly about Data Flow Task, what is Pipeline Architecture and how to connect to the particular data source, how to load the data from one file to another files. How to transfer data from one source to another source that

- ❖ Introduction to Data Flow task

- ❖ What is Pipeline architecture
- ❖ What is Data Source and Destination
- ❖ How to Create Package using Data Flow Task
- ❖ Loading data from OLEDB Source to Flat File Destination
- ❖ What is Flat File
- ❖ Loading data from Flat File To Flat File
- ❖ Loading data from Flat File To excel Destination
- ❖ Loading data from Excel To OLEDB
- ❖ Loading data from Xml To SQL server
- ❖ What are the different Data types in SSIS
- ❖ What is variable in SSIS
- ❖ What are the Different Types of variables
- ❖ SSIS Functions
- ❖ What is Expression in SSIS
- ❖ How to use Expressions in SSIS

Module 4:-Transformations

In this module, you will learn about what is transformation, where we will use transformation and different types of transformations. Advantages of transformations, how to create transformations and why transformations that

- ❖ Introduction to Transformation
- ❖ What is Derived Column Transformation
- ❖ What is Data Conversion Transformation
- ❖ What is Sort Transformation
- ❖ How to use Union All Transformation
- ❖ What is Merge Transformation
- ❖ Why Conditional Split Transformation
- ❖ What is Aggregate Transformation
- ❖ What is Multicast and Merge Join Transformation
- ❖ What is Lookup Transformation
- ❖ Advantages of Cache Transformation
- ❖ What is Fuzzy Lookup and Fuzzy Grouping Transformations
- ❖ What is Term extraction and Term Lookup Transformation
- ❖ What is Percentage Sampling and Row Sampling Transformation
- ❖ What is Slowly Changing Dimensions Transformation
- ❖ What is Row Count Transformation Audit Transformation

Module 5:-Control Flow

In this chapter, you will learn about how to Create Control Flow, add, delete and Configure Tasks and Containers. How to set the properties of a task or container. How to Create and Configure Precedence Constraints and How to Use an Expression in a Precedence Constraint that

- ❖ What is Control Flow
- ❖ Why Control Flow
- ❖ What is Precedence Constraints
- ❖ What are the different Types of Containers
- ❖ What is For Loop Container
- ❖ What is For each loop Container
- ❖ What is Sequence Container
- ❖ What is Task
- ❖ What are the Different types of Tasks
- ❖ What is File System task
- ❖ What is Script task
- ❖ What is Execute SQL task
- ❖ What is Execute Package Task
- ❖ What is Bulk Insert task
- ❖ What is Execute Process task
- ❖ What is Web Service task
- ❖ What is Data profiling Task and Backup database Task
- ❖ How to Copy or move the Database
- ❖ How to Create Dynamic Connections

Module 6:- Debugging

In this module, you will learn clearly about the how to debug the project or package, how many ways we can do debugging and how to execute package or project. How to Debug the Control Flow with Breakpoints and how to view execution information about the package when you execute a package in the designer that

- ❖ What is Debugging
- ❖ Why Debugging
- ❖ How many ways we can Debug the Package
- ❖ How to Execute Package Partially
- ❖ How to Debug the Control Flow Tasks
- ❖ What is Break Point

- ❖ How to use Break Point
- ❖ What is Data Viewer

Module 7:- Logging and Event Handling

In this module, you will learn about Log Provider, what is event, how to handle the event and what are the different types of event. How to create custom event handlers. Why we need logging in SSIS that

- ❖ What is Logging
- ❖ Advantages of Logging
- ❖ What is Log Provider
- ❖ What are the different types of approaches for dealing with logging are possible
- ❖ What is Event Handling
- ❖ Why Event Handling
- ❖ Advantages of Event Handlers
- ❖ How to Handle Events
- ❖ What are the different types of Events

Module 8:-Robustness and Restartability

In this module, you will learn about configurations, what are the different types of configuration are present in SSIS and how to use configuration. How can we take advantage of the configuration capabilities that SSIS provides, particularly the SQL Server package configuration, to accomplish our goal that

- ❖ What is Configuration
- ❖ Why Configuration
- ❖ Advantages of Configuration
- ❖ What is Package Configuration
- ❖ How to use XML Package Configuration
- ❖ How to use SQL Server Configuration
- ❖ What is Parameters and how to use
- ❖ What is Transaction
- ❖ What is Check Point

Module 9:- Deployment and Execution

In this chapter, you will learn about Deployment, how to deploy package, how to execute package in different types and advantages of deployment. Difference between package and project deployment. Advantages of creating deployment utility that

- ❖ What is Deployment

- ❖ Why Deployment
- ❖ Advantages of Deployment
- ❖ What are the different ways to Deploy package
- ❖ What are the Different types of Deployment Models available in 2012
- ❖ What is Project Deployment
- ❖ How to Create Deployment utility
- ❖ How to deploy Package in Package Deployment Model using SSDT ,SSMS
- ❖ What is Protection Level Property
- ❖ What is Package Execution
- ❖ What are the different ways to Execute the Package
- ❖ How to Execute Package using SSMS

At the end of the course participants will be able to:

1. Perform basic ETL(Extract Transform Load) tasks at your work
2. Gateway to obtain Microsoft Business Intelligence Certifications
3. Analyze data and do marketing more effectively for a particular application
4. Simplifying Deployments
5. Perform Database Operations
6. Organize Package Workflow
7. Design Robust Packages