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SQL Server Integration Services

Introduction to Integration Services, BI and Data Warehousing

- Overview of Business Intelligence
- Overview of Data Warehousing
- Data Warehouse Design Overview
- Designing Dimension Tables
- Designing Fact Tables
- Normalization vs Denormalization
- Physical Design for a Data Warehouse
- Defining SQL Server Integration Services
- Exploring the need for migrating diverse data

Creating an ETL Solution with SSIS

- Introduction to ETL with SSIS
- Exploring Source Data
- Control Flow Tasks
- Control Flow Precedence Constraints
- Control Flow Containers

Implementing Data Flow

- Data Flow Sources and Destinations
- Basic Data Flow Transformations
- Advanced Data Flow Transformations
- Data Flow Path

SSIS Tasks

- Configuring connection managers
- Adding data flow tasks to packages
- Reviewing progress with data viewers
- Handling multiple files with FOREACH container
- Grouping tasks using SEQUENCE Containers
- Copying, moving and deleting files
- Compressing Folder using Winrar/Winzip
- Sending messages through mail

All the training sessions will be conducted with Practical Examples.
Students' practice labs will be provided separately for hands on.



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Separating Data with the Conditional Split Transform
Altering Rows with the OLE DB Command Transform
Handling Bad Data with the Fuzzy Lookup
Importing Execution Plans/Exporting Execution Plans

Dataflow performance Features

Adjust the Sizing of Buffers
Configure the Package for Parallel Execution
Specify the locations for temporary storage of buffer data
Define the default size of the buffer that the task uses
Indicate whether the Data Flow task runs in optimized mode
How to create and use Temp tables in SSIS
Fast Load Options in OLE DB Connections
Commit Size, Rows Per Batch Calculations
Table Locks in ETL
Relevance of dropping Indexes in Fast Loads
Relevance of Simple recovery and Bulk Logged Recovery Mode in Fast Loads

Building expressions

Making properties dynamic with variables
Utilizing expressions in loop iterations

Transforming with the Data Flow Task

Converting and calculating columns
Transforming with Character Map
Merge, Union, Conditional Split
Multicasting and converting data
Aggregate, sort, audit and look up data
Importing and exporting BLOB data
Redirecting error rows
Pivot Tables

Performing database operations

Executing a SQL task
Bulk inserting data from text files

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Error Handling, Logging, Checkpoints and Transactions

- Implementing Logging
- Handling Events
- Defining success, failure, completion and expression precedence constraints
- Debugging a Package
- Breakpoints
- Watch Window
- Data Viewer
- Implementing Error Output
- Implementing Checkpoint to restart package from failure
- Implementing Transactions

Common ETL scenario

- Extracting Modified Data using Datetime column
- Extracting Modified Data using CDC
- Loading data using Slowly Changing Dimension
- Loading Using the CDC Components in SSIS
- Incremental Loading using Merge Statement

Enforcing Data Quality

- Introduction to Data Quality
- Using Data Quality Services to Cleanse Data
- Using Data Quality Services to Deduplicate Data

SSIS Project Deployments

- Working in the project deployment mode
- Deploying packages to the SSISDB
- Running packages from SQL Server
- Package parameters
- Scheduling the Package
- Level of package loggings

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