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MSBI

Data warehousing & Business Intelligence

Introduction to Data warehousing & Business Intelligence SQL Server 2008R2 & SQL Server 2012 Business Intelligence

Course Agenda:

1. SQL Server 2008R2 Integration Services (SSIS)
2. SQL Server 2008R2 Analysis Services (SSAS)
3. SQL Server 2008R2 Reporting Services (SSRS)
4. SQL Server 2008R2 Integration Services

A) Introduction to SQL Server Integration Services:

1. SSIS Package Architecture Overview
2. Development and Management Tools
3. The Import and Export Wizard
4. Guided tour of Business Intelligence Development Studio

Introduction to Data Flow

- 1) Data Flow Overview
- 2) Data Sources
- 3) Data Destinations
- 4) Data Flow Transformations
- 5) Data Viewers

Data Sources:

- 1) Excel Source
- 2) Flat File Source
- 3) OLE DB Source
- 4) XML Source

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Data Flow Transformations:

- 1)Aggregate Transformation
- 2)Audit Transformation
- 3)Character Map Transformation
- 4)Conditional Split Transformation
- 5)Copy Column Transformation
- 6)Derived Column Transformation
- 7)Data Conversion Transformation
- 8)Multicast Transformation
- 9)OLE DB Command Transformation
- 10)Percentage Sampling Transformation
- 11)Row Count Transformation
- 12)Sort Transformation
- 13)Union All Transformation

Advanced Data Flow

- 1)Lookup Transformation
- 2)Merge Transformation
- 3)Merge Join Transformation
- 4)Slowly Changing Dimension Transformation
- 5)Pivot Transformation
- 6)Export Transformation
- 7)Import Transformation
- 8)Unpivot Transformation

Data Flow Destinations

- 1)Data Reader Destination
- 2)Excel Destination
- 3)Flat File Destination
- 4)OLE DB Destination

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Introduction to Control Flow

- 1)Control Flow Overview
- 2)Precedence Constraints
- 3)The Execute SQL Task
- 4)The Bulk Insert Task
- 5)The File System Task
- 6)The FTP Task
- 7)The Send Mail Task
- 8)Bulk Insert Task
- 9)Data Flow Task
- 10)Execute DTS 2000 Package Task
- 11)Execute Package Task
- 12)Execute Process Task
- 13)Web Service Task
- 14)XML Task

Advanced Control Flow

- 1)For Loop Container
- 2)For Each Loop Container
- 3)Sequence Container

Variables and Configurations

- 1)Variables Overview
- 2)Variable scope
- 3)SSIS system variables
- 4)Using variables in control flow
Using variables in data flow
- 5)Using variables to pass information between packages
- 6)Property expressions
- 7)Configuration Overview

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- 8) Configuration options
- 9) Configuration discipline

Debugging, Error Handling and Logging

- 1) SSIS debugging overview
- 2) Breakpoints in SSIS
- 3) Control Flow: The On Error event handler
- 4) Data Flow: Error data flow
- 5) Configuring Package Logging
- 6) Built-in log providers
- 7) Extending SSIS through Custom Code – Scripting

Introduction to SSIS scripting

- 1) The SSIS script editor
- 2) The SSIS object model
- 3) Script in Control flow: The Script Task
- 4) Script in Data flow: The Script Component
- 5) Introduction to SSIS component development

SSIS Package Deployment

- 1) Configurations and deployment
- 2) The deployment utility
- 3) Deployment options
- 4) Deployment security
- 5) Executing packages – DTEXEC and DTEXECUI

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SSIS Package Management

- 1)The SSIS Service
- 2)Managing packages with DTUtil
- 3)Managing packages with SQL Server Management Studio
- 4)Scheduling packages with SQL Server Agent

B)SQL Server 2008R2 Analysis Services

What Is Microsoft Business Intelligence?

- 1)Defining Microsoft Business Intelligence
- 2)Understanding the UDM
- 3)Building and Viewing a Sample Cube
- 4)Viewing a Cube Using Excel
- 5)Cubes in Reporting Services
- 6)Using SSAS in BIDS
- 7)Understanding BIDS
- 8)Creating Data Sources
- 9)Creating Data Source Views
- 10)Creating a Cube Using the Wizard
- 11)Refining Dimensions and Measures

Intermediate SSAS

- 1)Creating KPIs

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- 2)Creating Perspectives
- 3)Creating Translations
- 4)Creating Actions

Advanced SSAS

- 1)Working with Multiple Fact Tables
- 2)Using Advanced Dimension Types
- 3)Working with Changing Dimensions
- 4)Using the Business Intelligence Wizard

Cube Storage and Aggregation

- 1)Basic Storage: MOLAP
- 2)Customized Aggregations
- 3)Advanced Storage: MOLAP, HOLAP, or ROLAP
- 4)Implementing Proactive Caching
- 5)Using Partitions: Relational or SSAS

Cube and Dimensions Processing Options

- 1)Beginning MDX
- 2)Understanding MDX
- 3>About Members, Tuples, and Sets
- 4)Common MDX Functions Explained
- 5)New or Updated MDX Functions or Keywords

Intermediate MDX

- 1)Understanding the Calculations Sub tab
- 2)Adding Calculated Members

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- 3) Adding MDX Scripts
- 4) Adding Named Sets

SSAS Administration

- 1) Implementing SSAS Security
- 2) Implementing XMLA Scripts
- 3) Understanding SSAS Backup and Restore
- 4) Understanding Performance Optimization

Introduction to SSAS Clients

- 1) Using Excel 2007 Pivot Tables
- 2) Using SQL Server Reporting Services
- 3) SQL Server 2008R2 Reporting Services

C) SQL Server Reporting Services (SSRS) Architecture

- 1) Report types and formats
- 2) SSRS Web Services
- 3) Report Server
- 4) Report Builder
- 5) Model Designer

Data sources: SQL Server, Oracle, OLE DB

Authoring Reports

- 1) Creating basic reports
- 2) Tabular
- 3) List
- 4) Matrix
- 5) Chart

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- 6)Constructing data sources and Datasets
- 7)Inserting a data region, fields and images
- 8)Leveraging expressions
- 9)Calculating fields
- 10)Integrating expressions in properties
- 11)Applying conditional formatting
- 12)Adding images
- 13)Grouping and sorting data
- 14)Grouping to multiple levels
- 15)Sorting the results
- 16)Employing aggregate functions

Implementing Parameters and Filters

- 1)Building parameters into reports
- 2)Returning subsets of data with query parameters
- 3)Mapping report parameters to query parameters
- 4)Building cascading report parameters
- 5)Passing parameters to stored procedures
- 6)Exploiting multivalve parameters
- 7)Restricting report data with filters
- 8)Enhancing performance with filters
- 9)Filters vs. query parameters
- 10)Localizing tables and queries
- 11)Leveraging Advanced Reporting Features
- 12)Combining data regions in one report
- 13)Utilizing sequential and nested regions
- 14)Producing master/detail reports
- 15)Linking sub reports
- 16)Presenting data with appropriate detail
- 17)Revealing report detail with drill down
- 18)Displaying related data with drill through
- 19)Navigating with document maps

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Deploying and Delivering Reports

- 1)Deploying reports to the server
- 2)Preparing reports for publishing
- 3)Configuring project properties
- 4)Units of deployment: Individual reports, projects, solutions, data sources
- 5)Checking results with Report Manager

Securing Reporting Services

- 1)Securing the RS environment
- 2)Assigning users to roles
- 3)Setting permissions on report items
- 4)Granting and revoking system-level permissions

Creating reports with Report Builder

- 1)Deploying Report Builder to users
- 2)Dragging and dropping entities onto charts and tabular reports
- 3)Navigating data with infinite drill through

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