

Microsoft Business Intelligence

SQL Server Analysis Services

What Is Microsoft BI?

- Core concept – BI is the cube or UDM
- Example cube as seen using Excel pivot table
- MS BI is comprehensive – more than Analysis Services on SQL Server
- Demonstration of SQL Reporting Services with cube as data source

OLAP Modeling

- Modeling source schemas—stars and snowflakes
- Understanding dimensional modeling—Dimensions (Type 1, 2, or 3) or rapidly changing
- Understanding fact (measures) and cube modeling

Using SSAS in BIDS

- Understanding the development environment
- Creating Data Sources and Data Source Views
- Creating cubes – using the UDM and the Cube Build Wizard
- Refining Dimensions and Measures in BIDS

Intermediate SSAS

- KPIs
- Perspectives
- Translations – cube metadata and currency localization
- Actions – regular, drill-through and reporting

Advanced SSAS

- Using multiple fact tables
- Modeling intermediate fact tables
- Modeling M:M dimensions, Fact (degenerate) dimensions, Role-playing dimensions, writeback dimensions

- Modeling changing dimensions – Dimension Intelligence w/ Wizard
- Using the Add Business Intelligence Wizards – write-back, semi-additive measures, time intelligence, account intelligence

Cube Storage and Aggregation

- Storage topics – basic aggregations, MOLAP
- Advanced Storage Design – MOLAP, ROLAP, HOLAP
- Partitions – relational and Analysis Services partitions
- Customizing Aggregation Design - Processing Design
- Rapidly changing dimensions / ROLAP dimensions
- Welcome to the Real Time – Proactive Caching
- Cube processing options

Beginning MDX

- Basic syntax
- Using the MDX query editor in SQL Server Management Studio
- Most-used Functions & Common tasks
- New MDX functions

Intermediate MDX

- Adding calculated members
- Adding scripts
- Adding named sets

SSAS Administration

- Best practices – health monitoring
- XMLA scripting (SQL Mgmt Studio)
- Other Documentation methods
- Security – roles and permissions
- Disaster Recovery – backup / restore
- Clustering – high availability

Introduction to Data Mining

- What and why?
- Examples of using each of the 9 algorithms (MS Clustering, MS Decision Trees, Naïve Bayes, MS Sequence

Clustering, MS Time Series, MS Association Rules, MS Neural Network)

- Data Mining dimensions
- Data Mining clients
- Processing mining models

Introduction to Reporting Clients

- Excel 2003 Pivot Tables
- SQL RS & Report Builder
- SPS RS web parts & .NET 2.0 report viewer controls

Future Directions – Integration with Office 12

- SharePoint 12 and AS
- Report Center (type of dashboard) uses KPIs, Reports, Excel Web, Filter
- Excel Services 12 and AS (Web Services)

SQL Server Integration Services

Introduction to SQL Server Integration Services

- Product History
- SSIS Package Architecture Overview
- Development and Management Tools
- Deploying and Managing SSIS Packages
- Source Control for SSIS Packages

SSIS for DBAs: Using SQL Server Management Studio

- The Import and Export Wizard
- Importing and Exporting Data
- Working with Packages
- Database Maintenance Plans
- Creating Database Maintenance Plans using SSMS
- Scheduling and Executing Plans
- Examining Database Maintenance Plan Packages
- Changes in SQL Server 2005 Service Pack 2

Business Intelligence Development Studio

- Launching BIDS
- Project templates
- The package designer
- The Toolbox
- Solution Explorer
- The Properties window
- The Variables window
- The SSIS menu

Introduction to Control Flow

- Control Flow Overview
- Precedence Constraints
- The Execute SQL Task
- The Bulk Insert Task
- The File System Task
- The FTP Task
- The Send Mail Task

Advanced Control Flow

- Containers – grouping and looping
- The Web Service Task
- The WMI tasks
- The Analysis Services tasks
- The Execute Process Task
- The Execute Package Task

Introduction to Data Flow

- Data Flow Overview
- Data Sources
- Data Destinations
- Data Transformations
- The Copy Column Transformation
- The Derived Column Transformation
- The Data Conversion Transformation
- The Conditional Split Transformation
- The Aggregate Transformation
- The Sort Transformation
- Data Viewers

Variables and Configurations

- Variables Overview
- Variable scope
- SSIS system variables
- Using variables in control flow
- Using variables in data flow
- Using variables to pass information between packages
- Property expressions
- Configuration Overview

- Configuration options

Debugging , Error Handling and Logging

- SSIS debugging overview
- Breakpoints in SSIS
- SSIS debugging windows
- Control Flow: The OnError event handler
- Data Flow: Error data flow
- Configuring Package Logging
- Built-in log providers

Advanced Data Flow

- Revisiting data sources and destinations
- The Lookup Transformation
- Getting Fuzzy: The Fuzzy Lookup and Fuzzy Grouping Transformations
- The Multicast Transformation
- The Merge and Merge Join Transformations
- The Data Mining Query Transformation
- The Data Mining Model Training Destination
- The Slowly Changing Dimension Transformation

Extending SSIS through Custom Code

- Introduction to SSIS scripting
- The SSIS script editor
- The SSIS object model
- Script in Control flow: The Script Task
- Script in Data flow: The Script Component
- Introduction to SSIS component development

SSIS Package Deployment

- Configurations and deployment
- The deployment utility
- Deployment options
- Deployment security
- Executing packages – DTEXEC and DTEXECUI

SSIS Package Management

- The SSIS Service
- Managing packages with DTUtil
- Managing packages with SQL Server Management Studio
- Scheduling packages with SQL Server Agent

SQL Server Reporting Services

Introducing SQL Server Reporting Services

- Tour of Features
- Reporting Services Architecture
- Reporting Services Terminology
- Reporting Services Editions
- Taking Reporting Services for a Spin

Creating Reports

- Deconstructing Reporting Services
- Shared Data Sources
- Creating Reports from Scratch

Calculations and Formatting

- Creating Expressions
- Using the Global Collections
- Formatting Items
- Conditional Formatting

Grouping and Sorting

- Creating Groups
- Calculating Totals and Percentages
- Interactive Sorting
- Creating Drill-Down Reports

Report Parameters

- Creating Report Parameters
- Creating Drop-Down Parameters
- Multi-Valued Parameters
- Debugging Parameter Issues

Creating Matrix Reports and Charts

- Creating a Basic Matrix Report
- Matrix Subtotals
- Creating a Basic Chart
- Exploring the Charting Possibilities

Managing Reporting Services

- Deploying Reports and Data Sources
- Exporting Reports and Printing
- Using the Web-Based Report Manager
- Using SQL Server Management Studio-based Reporting Services Manager

Reporting Services Security

- Two Parts to Reporting Services Security
- Securing Access to Reports
- Data Source Security

Programming Reporting Services

- The Many Reporting Services APIs
- Integrating Reporting Services into Applications using URL Access
- Using the Report Viewer Controls

Advanced Reporting Services Programming

- Using the Reporting Services Web Service
- Working with Custom Assemblies

Snapshots and Subscriptions

- Caching and Snapshots
- Creating Standard Subscriptions
- Creating Data-Driven Subscriptions
- Managing Subscriptions

Ad-Hoc Reporting with Report Builder

- The Report Builder Architecture
- Creating Report Model Projects
- Running Report Builder