

## SQL Server 2008 Database Development

### USQLT Querying SQL Server with Transact-SQL

2 days

You learn the uses of and ways to execute the Transact-SQL language. Topics: Introduction to Transact-SQL. Using Transact-SQL Querying Tools. Retrieving Data. grouping and Summarizing Data. Joining Multiple Tables. Working with Subqueries. Modifying Data. T-SQL extensions. Introduction to Programming Objects.

### USQL5D Developing and optimizing Databases using SQL Server 2008

5 days

This five day course focuses on using the SQL Server database to develop applications. It discusses basic as well as some of the advanced features of SQL Server: creating tables, views, functions and stored procedures, asynchronous communication between servers with service broker, the integration of the .Net framework ... We also focus on solving the common questions that developers have when working with SQL Server: how do I design indexes, when should I denormalize data, how about dealing with transactions and locking... We also discuss the new data types and development techniques which are added to SQL Server 2008. Topics: Creating Databases and Database Files. Creating Data Types and Tables. Using XML. Creating and Tuning Indexes. Implementing Data Integrity. Implementing Views. Implementing Stored Procedures and Functions. Implementing Managed Code in the Database. Using Service Broker. Measuring database performance. Optimising queries for performance. Optimizing an Index Strategy. Managing concurrency. Working with spatial data. Streaming data access. See page 24.



## SQL Server 2008 Database Administration

### USQL5A Administering Databases and Servers using SQL Server 2008

5 days

This five day course focuses on installing, configuring and maintaining a SQL server 2005/2008 database. It starts with the typical administrative topics: installation, backup and restore, setting up security, monitoring, automating tasks, data transfer and high availability. We also focus on topics which are borderline between administration and development, such as index design and maintenance and setting up statistics. We also discuss new 2008 features, such as the resource governor, the new auditing, and the policy based management. Topics: Installing and Configuring SQL Server 2005/2008. Managing Databases and Files. Disaster Recovery. Managing Security. Monitoring SQL Server. Transferring Data. Automating Administrative Tasks. Maintaining High Availability. Introduction to Replication. Managing and Automating Databases and Servers. Managing SQL Server Supporting Services. Building a Monitoring Solution for SQL Server Performance Issues. Troubleshooting Database and Database Server Performance Issues. Policy based management (2008). Advanced administrative features (2008)... See page 25.



## Upgrade to SQL Server 2008

### UPSQL8 Upgrade To Microsoft SQL Server 2008

5 days

The new SQL Server 2008 builds on top of the SQL Server 2005 version, and extends this in many areas: Development, management as well as Business intelligence. The first three days of the course, we take developers and IT pros with a working knowledge of SQL Server 2005 into the new development and administration features of SQL Server 2008. Topics: Introducing the pillars of Sql Server 2008. Declarative Management Framework. Maintaining SQL Server 2008. Beyond relational: new and enhanced data types. Enhancements to Transact-SQL. The last two course days, targeted at people who are already familiar with the business intelligence products on SQL Server 2008, we present the new and improved aspects of SQL Server 2008 in Integration Services, Analysis Services and Reporting Services, with demos as well as hands-on exercises. This five-day course combines two consecutive courses: the 3-day course UPSQL8-1 and the 2-day course UPSQL8-2. See page 25.

### UPSQL8-1 Upgrade to Microsoft SQL Server 2008 - Part 1: Relational Database Technology

3 days

In this three day course, we take developers and IT pros with a working knowledge of SQL Server 2005 into the new development and administration features of SQL Server 2008. Topics: Introducing the pillars of Sql Server 2008. Declarative Management Framework. Maintaining SQL Server 2008. Beyond relational: new and enhanced data types. Enhancements to Transact-SQL.

### UPSQL8-2 Upgrade to Microsoft SQL Server 2008 - Part 2: Business Intelligence

2 days

In this two day course, targeted at people who are already familiar with the business intelligence products on SQL Server 2008, we present the new and improved aspects of SQL Server 2008 in Integration Services, Analysis Services and Reporting Services, with demos as well as hands-on exercises.

## SQL Server 2008 Business Intelligence

### **USQ5BI** Overview of Microsoft SQL Server 2008 Business Intelligence **5 days**

Overview of the features of the server side Business Intelligence tools that Microsoft ships with SQL Server: Extracting, transforming and loading data with Integration Services. Creating, managing and browsing Analysis Services cubes and data mining models. Building reports on Reporting Services using the Report Builder as well as the Report Designer against relational data as well as OLAP cubes. The client side possibilities for browsing these Business Intelligence Servers using Microsoft Office, Sharepoint, and the Scorecard Manager. See page 26.

### **USQ5AS** Microsoft SQL Server 2008 Analysis Services **5 days**

Creating and managing Analysis Services cubes, using features such as translations, Key Performance Indicators and calculated members. Processing cubes, designing aggregations, deciding upon which type of storage is optimal. Setting up data mining models, processing and analysing these models, and creating PREDICTION JOIN queries for client side querying of these models. See page 27.

### **USQ5AS1** Microsoft SQL Server 2008 Analysis Services - Part 1: Introduction **2 days**

Reporting and analysis applications are become more and more important in today's business applications. Queries that aggregate over a large portion of the data in a relational database slow down this database. Therefore, OLAP (OnLine Analytical Processing) cubes have been invented to provide performant aggregation querying over large amounts of data. In this course, you learn how to build and query OLAP cubes with Microsoft Analysis Services, as well as build and query Analysis Services data mining models, which are aimed at discovering complex, unknown and useful patterns in large amounts of historical data. From the above mentioned topics, this two day course discusses the basic techniques. Advanced cube and data mining features as well as administration is discussed in the follow-up course USQ5AS2. See page 27.

### **USQ5AS2** Microsoft SQL Server 2008 Analysis Services - Part 2: Advanced **3 days**

Reporting and analysis applications are becoming more important in today's business applications. Queries that aggregate over a large portion of the data in a relational database slow down this database. Therefore, OLAP (OnLine Analytical Processing) cubes have been invented to provide performant aggregation querying over large amounts of data. In this course, you learn how to build, maintain and query OLAP cubes with Microsoft Analysis Services, as well as build, maintain and query Analysis Services data mining models, which are aimed at discovering complex, unknown and useful patterns in large amounts of historical data. This course builds on top of course USQ5AS1 or USQ5BI. See page 27.

### **USQ5MDX** Microsoft SQL Server 2008 - Implementing Business Solutions with MDX **3 days**

Using multidimensional terminology. Adding calculated members to a cube. Using MDX member functions to navigate within a hierarchy. Using MDX time functions to compare values over time. Using MDX set functions in a query statement. Using functions to manipulate sets of members. Using functions to aggregate values from a set of members. Applying MDX to make a cube change dynamically. Calculating formulas for specific blocks of cells. Controlling the order of calculations within a cube. Applying MDX in common customer and sales applications. Applying MDX in common financial applications.

### **USDWH** Design, Build and Administer Data Warehouses with SQL Server Integration Services **5 days**

This five-day course combines two consecutive courses: the 2-day course USDWH-1 and the 3-day course USQ5IS. The goal of this two day course is to study the design of Data Warehouses and to focus on the implementation, maintenance and administration of the ETL packages needed to build actual Data Warehouses. Topics: The need for Data Warehousing. Dimensional Modeling. Designing the Time Dimension. Working with Slowly Changing Dimensions. Advanced dimensional design. Physical database design. Introduction to SQL Server 2008 Integration Services. Designing Control flows. Designing Data Flow. Debugging packages. Advanced package settings. Ad hoc tasks and transformations. Administration.

### **USDWH-1** Designing Data Warehouses using Dimensional Modeling **2 days**

The goal of this two day course is to study the design of data warehouses. The focus is on dimensional modeling, mainly following the Kimball approach. Participants should be familiar with relational database design. The concepts in this course are independent of the software used to build, store and maintain the data warehouse, although demonstrations will be based on the SQL Server stack. Topics: The need for Data Warehousing. Dimensional Modeling. Designing the Time Dimension. Working with Slowly Changing Dimensions. Advanced dimensional design. Physical database design. See page 27.

### **USQ5IS** Microsoft SQL Server 2008 Integration Services **3 days**

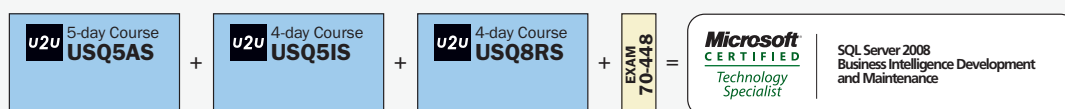
Creating and managing Microsoft SQL Server Integration Services packages. Creating Control flows and Data Flows. Debugging these packages. Setup logging and event handling for packages. Configuring package values with configuration files. Working with variables. Program ad hoc control and data flow task. See page 27.

### **USQ8RS** Microsoft SQL Server Reporting Services 2008 **4 days**

This course provides students with the knowledge and skills to author, deploy, and manage reports using Microsoft Reporting Services 2008. Topics: The architecture of Microsoft Reporting Services and Office integration. Authoring reports using the Report Designer. Deploying and publishing reports. Managing the life-cycle of a report including report scheduling and backup and restore. Applying Reporting Services to a business problem. Working with Tablix. Development improvements. Different processing architecture. Administrative changes. See page 26.

### **USQ8RU** Upgrade to Microsoft SQL Server Reporting Services 2008 **1 day**

This one day course focusses on the 2008 extensions for reporting services. Topics discussed include development related material (such as placeholders, the new grouping approach, the tablix component, gauges and new rendering extensions) as well as more administration related topics (such as the new security extensions and the changes in report management). Topics: Working with Tablix. Development improvements. Different processing architecture. Administrative changes.



## Developing and optimizing SQL Server 2008 Databases

### 5 DAYS

#### Learning Goals

This five day course focuses on using the SQL Server database to develop applications. It discusses basic as well as some of the advanced features of SQL Server 2008: creating tables, views, functions and stored procedures, asynchronous communication between servers with service broker, the integration of the .Net framework ... We also focus on solving the common questions that developers have when working with SQL Server 2008: how do I design indexes, when should I denormalize data, how about dealing with transactions and locking... We also discuss the new data types and development techniques which are added to SQL Server 2008.

#### Target audience

This course is intended for IT Professionals wanting to become skilled on SQL Server 2008 product features and technologies for implementing a database. Parts of this course are using .Net programming languages (C# and VB.Net) as well as XML. This course assumes the participants already have a basic knowledge of these technologies, as well as a basic understanding of relational databases in general. Prior knowledge of SQL Server 2008 is not required.

#### Prerequisites

Basic understanding of relational databases.

#### Course Outline

##### Creating Databases and Database Files

Introduction to the development environment, creating log files and data files, working with multiple files and filegroups, database properties.

##### Creating Data Types and Tables

Discussion of the different data types, creating alias types, creating tables, creating partition functions and partition schemas, partitioning tables, new Date and Time data types.

##### Using XML

Columns, variables and parameters of type XML, querying XML with XPath and XQuery, XML related functions query, value, exist, nodes and modify.

##### Creating and Tuning Indexes

Clustered versus nonclustered indexes, creating, inspecting and altering indexes, primary xml indexes, path, property and value xml indexes, working with filtered indexes.

##### Implementing Data Integrity

Primary constraints, unique constraints, check constraints, foreign key constraints, triggers, creating and enforcing xml schema collections.

##### Implementing Views

Creating views, indexed views, partitioned views, constraints on views, schema-binding.

##### Implementing Stored Procedures and Functions

Creating stored procedures, parameters and stored procedures, creating scalar functions, creating multi-statement table valued functions, creating in-line table valued functions, constraints on functions.

##### Implementing Managed Code in the Database

Creating stored procedures, functions, triggers, aggregation functions and types in .Net, guidelines on choosing .Net versus T-SQL, new managed code functionality in SQL Server 2008.

##### Using Service Broker

Asynchronous communication between databases, creating message types, contracts, queues, and services, sending and receiving messages, working with priorities and sdbiagnose.

##### Measuring database performance

SQL Profiler, performance counters and performance monitoring tool, linking both tools.

##### Optimising queries for performance

What Is Query Logical Flow, How the Query Optimizer Processes Queries, Considerations to Take When Using Subqueries, guidelines for Building Efficient Queries.

##### Optimizing an Index Strategy

How SQL Server Stores and Accesses Data, Considerations for Using Indexes, Nonclustered Index Design, Best Use of Clustered Indexes, How to Document an Indexing Strategy.

##### Managing concurrency

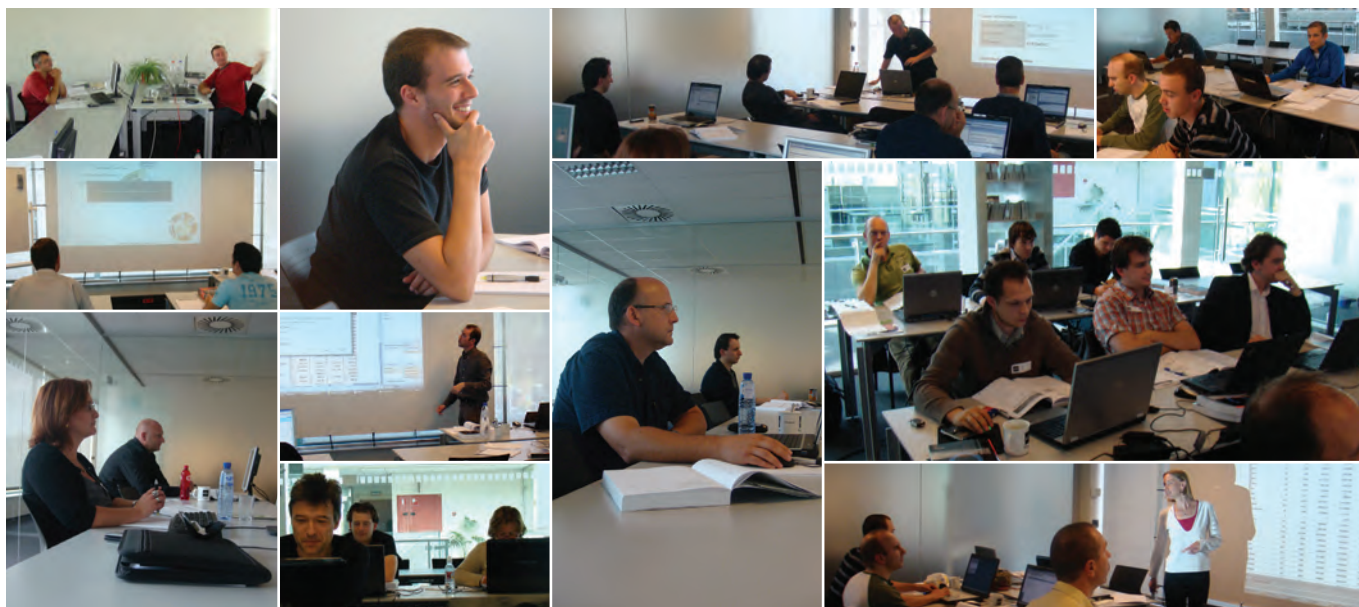
Transaction Isolation Levels, Transaction Isolation Levels, guidelines to Reduce Locking and Blocking.

##### Working with spatial data

Introduction spatial data, geometry and geography data type, working with spatial methods, spatial indexing.

##### Streaming data access

Working with large objects (LOB), configuring databases for FileStream usage, streaming data access.



## Administering MS SQL Server 2008

### 5 DAYS

#### Learning Goals

This five day course focuses on installing, configuring and maintaining a SQL server database. It starts with the typical administrative topics: installation, backup and restore, setting up security, monitoring, automating tasks, data transfer and high availability. We also focus on topics which are borderline between administration and development, such as index design and maintenance and setting up statistics. We also discuss new 2008 features, such as the resource governor, the new auditing, and the policy based management.

#### Target audience

This course is intended for IT Professionals wanting to become skilled on SQL Server product features and technologies for maintaining a database.

#### Prerequisites

Basic knowledge about the windows operating system and relational databases in general.

#### Course Outline

##### Installing and Configuring SQL Server 2008

Preparing to Install SQL Server, Installing SQL Server, Managing a SQL Server Installation.

##### Managing Databases and Files

Planning Databases, Creating Databases, Managing Databases.

##### Disaster Recovery

Planning a Backup Strategy, Backing Up User Databases, Restoring User Databases, Recovering Data from Database Snapshots, System Databases and Disaster Recovery.

##### Managing Security

Overview of SQL Server Security, Securing the Server Scope, Securing the Database Scope, Managing Keys and Certificates in SQL Server.

##### Monitoring SQL Server 2008

Viewing Current Activity, Using System Monitor, Using SQL Server Profiler, Using DDL Triggers, Using Event Notifications.

##### Transferring Data

Overview of Data Transfer, Introduction to SQL Server Integration Services, Using SQL Server Integration Services.

##### Automating Administrative Tasks

Automating Administrative Tasks in SQL Server, Configuring SQL Server Agent, Creating Jobs and Operators, Creating Alerts, Managing Multiple Servers, Managing SQL Server Agent Security.

##### Maintaining High Availability

Introduction to High Availability, Implementing Server Clustering, Implementing Database Mirroring, Implementing Log Shipping.

##### Introduction to Replication

What Is Replication, Types of Replication, Server Roles in Replication, What Are Articles, Publications, and Subscriptions, Server to Server Replication Scenarios, Server to Client Replication Scenarios.

##### Managing and Automating Databases and Servers

Planning an Automated System for Database Maintenance, Planning an Automated System for Server Maintenance, Documenting Administration and Automation Information.

##### Managing SQL Server Supporting Services

Managing SSIS packages, Replication and Reporting Services.

##### Building a Monitoring Solution for SQL Server Performance Issues

Narrowing Down a Performance Issue to an Environment Area, guidelines for Using SQL Server Profiler and System Monitor, guidelines for Auditing and Comparing Test Results.

##### Troubleshooting Database and Database Server Performance Issues

Narrowing Down a Performance Issue to a Database Object, How SQL Server Profiler Can Help Narrow a Search to a Specific Issue.

##### Policy based management

Defining Policies, Conditions and Facets, Monitoring policy based management, Behind the scene: jobs, event notifications and DDL triggers.

##### Advanced administrative features

Finetuned auditing, the Data Collector, Resource governor, Transparent Database Encryption.

## Upgrade to Microsoft SQL Server 2008

### 5 DAYS

#### Learning Goals

The new SQL Server 2008 builds on top of the SQL Server 2005 version, and extends this in many areas: Development, management as well as Business intelligence. The first three days of the course, we take developers and IT pros with a working knowledge of SQL Server 2005 into the new development and administration features of SQL Server 2008. Topics: Introducing the pillars of SQL Server 2008. Declarative Management Framework. Maintaining SQL Server 2008. Beyond relational: new and enhanced data types. Enhancements to Transact-SQL. The last two course days, targeted at people who are already familiar with the business intelligence products on SQL Server 2008, we present the new and

improved aspects of SQL Server 2008 in Integration Services, Analysis Services and Reporting Services, with demos as well as hands-on exercises.

This five-day course combines two consecutive two-day and three-day courses.

##### UPSQL8-1 - Day 1 to 3 - Relational Database Technology

The new SQL Server 2008 builds on top of the SQL Server 2005 version, and extends this in many areas: Development, management as well as Business intelligence. In this three day course, we take developers and IT pros with a working knowledge of SQL Server 2005 into the new development and administration features of SQL Server 2008. Topics: Introducing the pillars of Microsoft SQL Server 2008. Declarative Management Framework. Maintaining SQL Server 2008. Beyond

relational: new and enhanced data types. Enhancements to Transact-SQL.

##### UPSQL8-2 - Day 4 & 5 - Business Intelligence

The new SQL Server 2008 builds on top of the SQL Server 2005 version, and extends this in many areas: Development, management as well as Business intelligence. In this two day course, we present the new and improved aspects of SQL Server 2008 in Integration Services, Analysis Services and Reporting Services, with demos as well as hands-on exercises. Topics: What's new in Integration Services, in Analysis Services, in Reporting Services. Migration and breaking changes.

## Overview of MS SQL Server 2008 Business Intelligence

### 5 DAYS

#### Learning Goals

Reporting and analysis applications are becoming more important in today's business applications. Queries that aggregate over a large portion of the data in a relational database slow down this database. Therefore, OLAP (OnLine Analytical Processing) cubes have been invented to provide performant aggregation querying over large amounts of data. Usually, not all the data needed for analysis or reporting is in the right format on the right location, Therefore, it is common to have an integration phase before the actual analysis or reporting phase to prepare the data. In this course, you get an overview of the features of the server side Business Intelligence tools that Microsoft ships with SQL Server 2008: Integration Services, Analysis Services and Reporting Services. Besides these, we briefly discuss how to build your own client applications on top of these services. This course focuses mainly on how to get started with the three BI server-side Microsoft products. It doesn't discuss administration nor maintenance. For an in-depth course on Integration Services, we refer to course USQ5IS, for Analysis Services we refer to course USQ5AS and for Reporting Services we refer to USQ5RS

#### At Course Completion

Student will be able to extract, transform and load data with Integration Services, create and browse Analysis Services cubes and data mining models, build reports on Reporting Services using the Report Builder as well as the Report Designer against relational data as well as OLAP cubes.

They will have an understanding of how clients can be built to access this data.

#### Prerequisites

Basic knowledge of the SQL query language and a passive understanding of the VB.NET or C# programming language is required.

#### Course Outline

##### Introduction

The need for Business Intelligence. Business Intelligence in SQL Server. Business Intelligence Development Studio.

##### Designing IS Control flows

Overview of tasks. Precedence constraints. Containers and loops.

##### Designing IS Data Flow

Data Sources. Data Transformations. Data Destinations.

##### Loading the relational data in AS

Data Sources and Impersonation. Data Source Views. Exploring the data.

##### Building and deploying basic cubes

The auto build wizard. Inspecting the meta-data. Deploying cubes. Processing cubes.

##### Browsing the data

Browsing from within Visual Studio. Browsing from within Management Studio.

##### Processing Cubes and Dimensions

Different types of processing. Processing dimensions. Processing cubes.

#### Advanced Cube Features

Translations. Key Performance Indicators. Actions. Perspectives.

#### Data Mining Introduction

Why haystacks are hard to find. Data mining skills. Different types of data mining.

#### Creating data mining models

Create Mining Structure. Create multiple mining models. Deploy and process a model. Browsing and interpreting mining models. Testing the quality of mining models.

#### Introduction to SQL Server Reporting Services

Overview of Microsoft SQL Server Reporting Services. Tour of Reporting Services. Overview of Reporting Services Architecture.

#### Authoring Basic Reports

Creating a Basic Table Report. Formatting Report Pages. Calculating Values.

#### Advanced Reporting options

Multi-select parameters. Interactive column sorting. Floating headers. Using the OLAP query builder.

#### Ad hoc queries with Report Builder

Introducing Report Builder. Create Report Builder reports.

#### Optional: Client side Business Intelligence

Rendering reports from URLs and web services. Accessing Cubes and Data Mining models with ADOMD.NET. Running Integration Services packages from within C# or VB.NET.

## Microsoft SQL Server 2008 Reporting Services

### 4 DAYS

#### Course Outline

##### Introduction to Microsoft SQL Server Reporting Services

Overview of Microsoft SQL Server Reporting Services. Tour of Reporting Services. Overview of Reporting Services Architecture.

##### Authoring Basic Reports

Creating a Basic Table Report. Formatting Report Pages. Calculating Values.

##### Enhancing Basic Reports

Interactive Navigation. Displaying Data.

##### Manipulating Data Sets

Defining Report Data. Using Parameters and Filters. Using Parameter Lists.

#### Managing Content

Publishing Content. Executing Reports. Creating Cached Instances. Creating Snapshots and Report History. Creating Report Subscriptions.

#### Administering Reporting Services

Server Administration. Performance and Reliability Monitoring. Database Administration. Security Administration.

#### Programming Reporting Services

Querying Server Information. Automating Report Management. Rendering Reports. Creating Custom Code.

#### Report enhancements

Multi-select parameters. Interactive column sorting. Floating headers.

#### Report on OLAP data

Brief introduction into OLAP and MDX. Running Analysis Services. Using the OLAP query builder.

#### Ad hoc queries with Report Builder

Introducing Report Builder. Create Report Builder reports. Creating and maintaining Report Models.

#### Working with Tablix

Unifying Table, List and Matrix. Changes in grouping. Inner, outer and adjacent groups. Changing visibility with Tablix.

#### Development improvements

Placeholders. Word rendering extension. gauge component. Chart improvements.

#### Different processing architecture

Why on-demand processing. Consequences for expression evaluation. Working with report variables.

#### Administrative changes

New memory management. Native HTTP support. Configuration files. New Authentication options.

## Microsoft SQL Server 2008 Analysis Services

### 5 DAYS

#### Learning Goals

Reporting and analysis applications are becoming more and more important in today's business applications. Queries that aggregate over a large portion of the data in a relational database slow down this database. Therefore, OLAP (OnLine Analytical Processing) cubes have been invented to provide performant aggregation querying over large amounts of data.

#### Course Outline

##### Introduction

The need for Analysis Services. Business Intelligence in SQL Server. Business Intelligence Development Studio.

##### Loading the relational data

Data Sources and Impersonation. Data Source Views. Exploring the data.

##### Building and deploying basic cubes

The auto build wizard. Inspecting the meta-data. Deploying cubes. Processing cubes.

##### Browsing the data

Browsing from within Visual Studio. Browsing from within Management Studio. Browsing from Excel. Browsing from Internet Explorer.

##### Aggregation design

MOLAP, ROLAP and HOLAP. Creating aggregations. Usage based aggregation design. Pro-active caching. Partitioning the cube.

##### Processing Cubes and Dimensions

Different types of processing. Processing dimensions. Processing cubes.

##### Multi-Dimensional Expressions (MDX)

MDX expressions and queries. Calculated members. Adding Business Intelligence.

##### Key Performance Indicators (KPI)

What are KPIs. Designing KPIs. The KPI browser.

##### Translations

Dimension translations. Cube translations. Testing translated cubes.

##### Actions

Types of actions. Creating Actions. Using Actions.

##### Perspectives

The need for perspectives. Creating perspectives. Browsing perspectives.

##### Special dimensions

Different types of dimensions. Many-to-many dimensions. Other types of dimensions.

##### Data Mining Introduction

Why haystacks are hard to find. Data mining skills. Different types of data mining.

##### Creating data mining models

Create Mining Structure. Create multiple mining models. Deploy and process a model. Browsing and interpreting mining models. Testing the quality of mining models.

##### Data Mining Extension

DMX as a query language. DMX Query builder. Introducing ADOMD.NET.

##### Administration

Installing Analysis Services. Migrating AS2000 cubes. Backup and Restore. Securing Analysis Services.

## Designing Data Warehouses using Dimensional Modeling

### 2 DAYS

#### Course Outline

##### The need for Data Warehousing

Data Warehouse definitions and terminology. Issues with live database reporting. Data Warehouse advantages. User interviews. Prioritizing the requirements. Documenting the requirements.

##### Dimensional Modeling

Advantages and disadvantages of normalizing

data. Fact tables. Dimension tables. Star versus snowflake dimensions.

##### Designing the Time Dimension

Why do we need a time dimension. Designing the time dimension. Useful tools and scripts.

##### Working with Slowly Changing Dimensions

Type I, II and III slowly changing dimensions. Designing for SCD. Advanced SCD types.

##### Advanced dimensional design

Early arriving facts. Late arriving facts. Dealing with currency conversion. Dealing with hierarchies. Modeling many to many relations.

##### Physical database design

Staging tables. Table design. Indexing.

##### Tools

Overview of tools. Brief introduction into the Microsoft Data Warehousing tools.

## Microsoft SQL Server 2008 Integration Services

### 3 DAYS

#### Learning Goals

In many daily database tasks, as well as in preparing data for reporting or analysis tasks, moving data between different sources, combining, and cleaning data are important tasks. In this course, we learn to use the Extract, Transform and Load tool of SQL Server, Integration Services. This product is the replacement for the former Data Transformation Services. It allows to load, transform and write data from any OleDb or ODBC data source, and includes support for XML, Web Services, WMI et cetera. Besides this, it has an excellent integration with the .NET framework.

#### Course Outline

##### Introduction

The need for Integration Services. Business Intelligence in SQL Server. Business Intelligence Development Studio.

##### Designing Control flows

Overview of tasks. Precedence constraints. Containers and loops.

##### Designing Data Flow

Data Sources. Data Transformations. Data Destinations.

##### Debugging packages

Setting breakpoints in Control Flow Tasks. Adding

data viewers to data streams. Setup package logging.

##### Advanced package settings

Events. Setting up Event Handlers. Package configuration.

##### Ad hoc tasks and transformations

Creating .NET tasks. Creating .NET data sources. Creating .NET transformations. Creating .NET data destinations. Introducing custom components.

##### Administration

Executing Packages. Migrating DTS2000 packages. Package deployment. Integrating packages in .NET applications.