Introduction to Analysis Services

Learning about Analysis Services

Stacia Misner

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Overview

- Business Intelligence Queries
- Architecture Options
- Database Development
- Development, Management, and Client Tools

Business Intelligence Queries

- **Summarized data for specified period of time**
  - What were total sales for last 3 years?
  - What was profit margin last year?
- **Comparative data for multiple categories or time periods**
  - Did sales increase this year as compared to last year?
  - What was profit margin by product category last year?
- **Consolidated data from various source systems**
  - How do sales volumes for top 10 customers compare to call center volumes for the same customers?

Relational Queries versus OLAP Queries

- **Problems with relational queries**
  - Resource contention
  - Unreliable access to historical data
  - Inconsistent application of business rules
  - Data structure results in slower, more complex queries
- **Benefits of OLAP queries**
  - Separate data source reduces resource contention
  - Easy access to historical data
  - Consistent application of business rules
  - Data structure results in faster, simpler queries

Architecture Options

- **Prototype**
  - One-time extraction of data for proof of concept
  - No additional infrastructure needed to maintain solution

- **Personal or team use**
  - No formal data mart (simple data, low data volumes)
  - Maintain solution with periodic processing

- **Organizational use**
  - Data mart/data warehouse in place
  - Extract-transform-load processes to update DM/DW
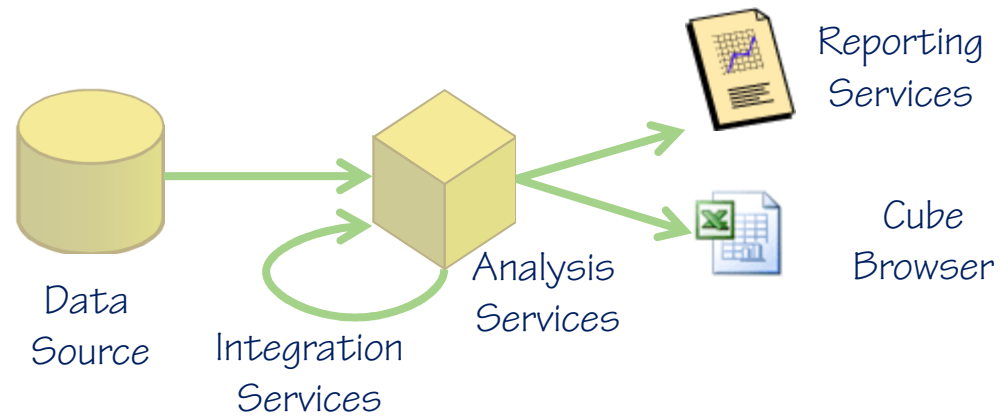 - Partition management

Prototype

- **Data Source**
- **Analysis Services**
- **Cube Browser (e.g. Excel 2007 or higher)**

Data Source → Analysis Services → Cube Browser
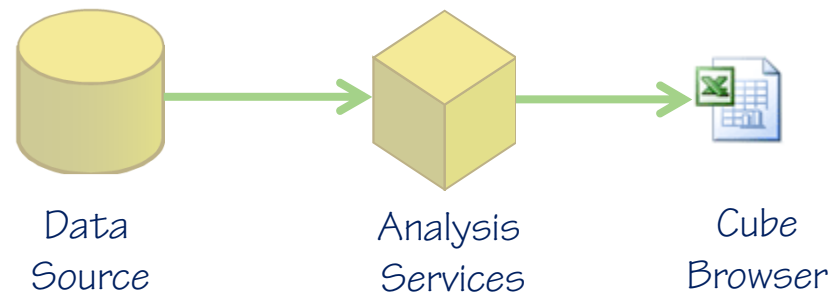
Personal or Team Use

- **Data Source**
- **Analysis Services**
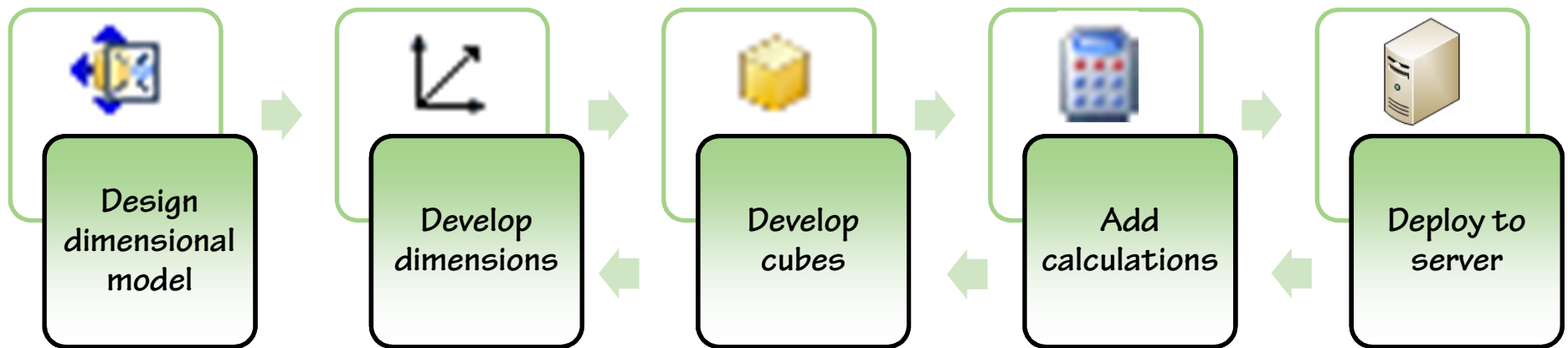- **Integration Services**
- **Cube Browser / Reporting Services**

Data Source → Integration Services → Analysis Services → Reporting Services / Cube Browser

Organizational Use

- **Data Source**
- **Analysis Services**
- **Integration Services**
- **Cube Browser / Reporting Services / SharePoint**

Database Development

Design dimensional model → Develop dimensions → Develop cubes → Add calculations → Deploy to server
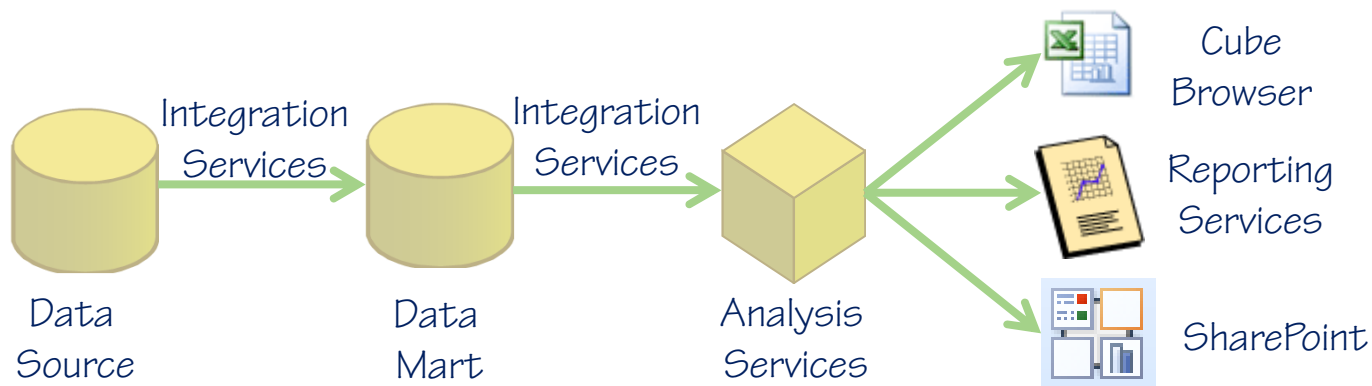
Business Intelligence Development Studio

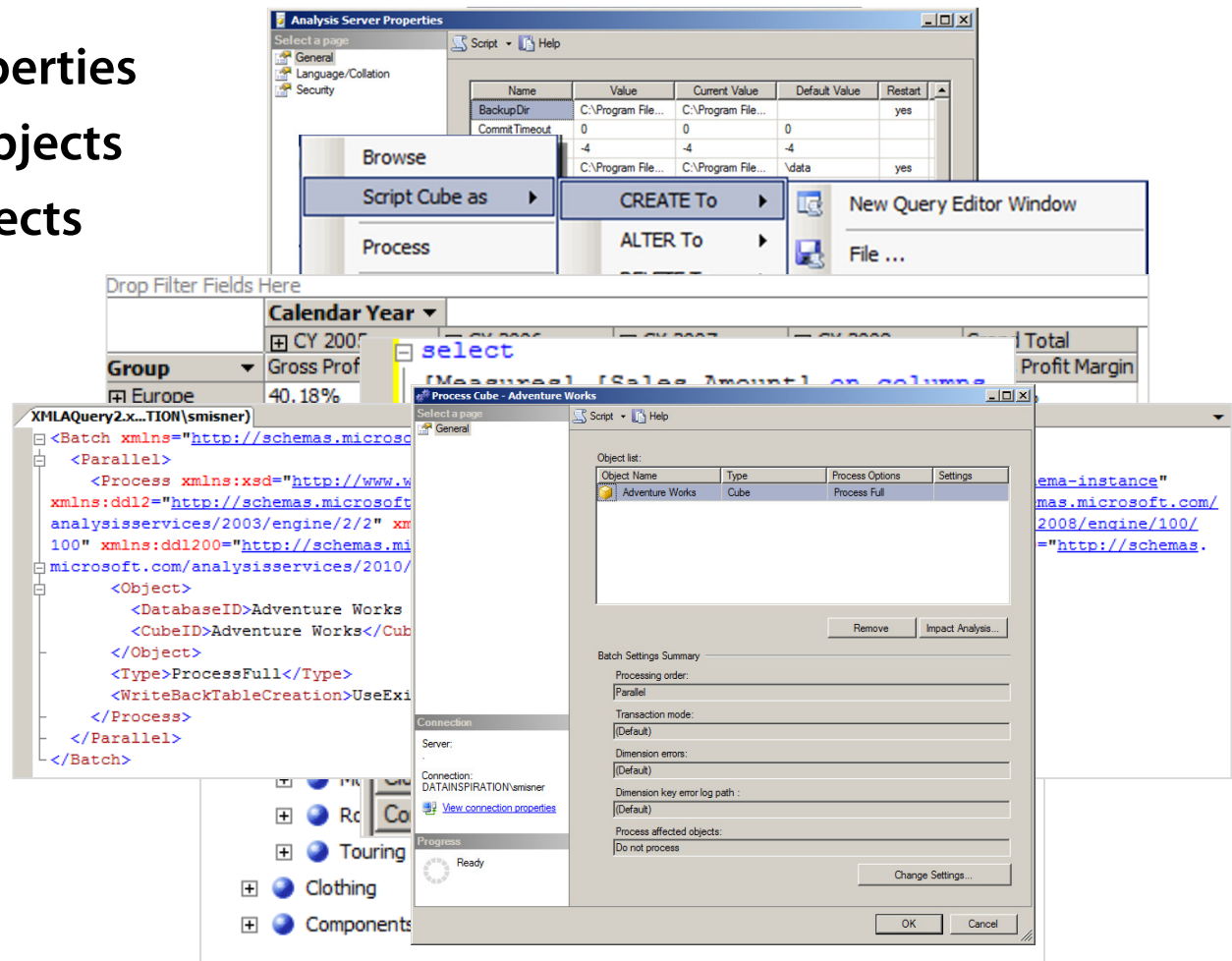- **Project types**

    - Analysis Services Project

    - Import Analysis Services Database

- **Analysis Services Project Items**

    - Data Source   *DS file*

    - Data Source View   *DSV file*

    - Cube   *CUB file*

    - Dimension   *DIM file*

    - Role   *ROLE file*

SQL Server Management Studio

- **Manage server properties**
- **Explore database objects**
- **Script database objects**
- **Browse data**
- **Query data**
- **Execute scripts**
- **Processing objects**

Client Tools

- **Excel**
- **Reporting Services**
- **SharePoint**
- **PerformancePoint Services**

Summary

- **Business Intelligence Queries**
  - Relational queries versus OLAP queries

- **Architecture Options**
  - Prototype, personal or team use, organizational use

- **Database Development**
  - Design dimensional model, develop dimensions and cubes, add calculations, deploy to server

- **Development, Management, and Client Tools**
  - Business Intelligence Development Studio
  - SQL Server Management Studio
  - Excel, Reporting Services, SharePoint, PerformancePoint

References

- **Analysis Services in Business Intelligence Development Studio**
  - http://msdn.microsoft.com/en-us/library/ms173709.aspx
- **Managing Analysis Services Using SQL Server Management Studio**
  - http://msdn.microsoft.com/en-us/library/ms174957.aspx

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