

Microsoft®

SQL Server® 2008 Tutorial 1: Introduction

IT 4153
Advanced Database

J.G. Zheng
Spring 2012



Overview

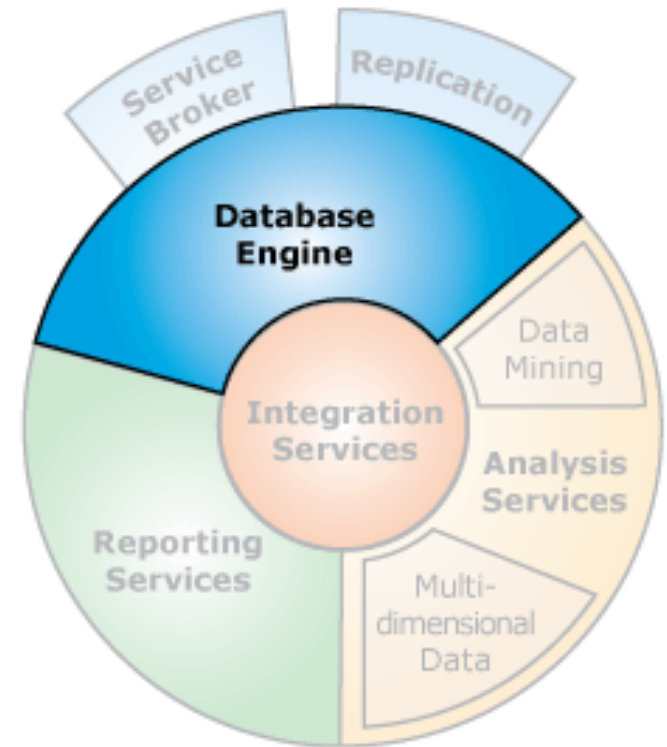
- ◆ SQL Server introduction
- ◆ SQL Server installation notes
- ◆ First feel of SQL Server
 - Configuration Manager
 - Folders and files
 - Attach a sample database
 - Using management Studio

SQL Server Overview

- ◆ SQL Server is a relational database management and analysis system by Microsoft
 - Targeting the enterprise-level database market
- ◆ Major versions
 - SQL Server 7.0 (Windows NT)
 - SQL Server 2000 (Windows Server 2000)
 - SQL Server 2005 (Windows Server 2003)
 - SQL Server 2008 (Windows Server 2008)
 - SQL Server 2008 R2 (Windows Server 2008)
 - SQL Server 2012 (coming soon)

SQL Server Services

- ◆ Database Engine is the core service for storing, processing and securing data.
- ◆ Analysis Services (SSAS)
 - Multidimensional Data supports OLAP by allowing you to design, create, and manage multidimensional structures.
 - Data Mining enables you to design, create, and visualize data mining models.
- ◆ Reporting Services (SSRS) delivers enterprise, Web-enabled reporting functionality to create reports, publish reports in various formats, and centrally manage security and subscriptions.
- ◆ Integration Services (SSIS) is a platform for building high performance data integration solutions, including ETL processing for data warehousing.



SQL Server Editions

- ◆ Data center
- ◆ Standard/Enterprise
- ◆ Developer
 - Full features with only development license
- ◆ Express
 - Offers database engine service and management tools for free

SQL Server 2008 Download

- ◆ Full editions (developer, enterprise, standard)
 - Download it from SPSU CSE MSDNAA
 - <http://cse.spsu.edu/cslab/SoftwareForStudents/MSDNaa/default.html>

- ◆ Express Edition
 - <http://www.microsoft.com/sqlserver/en/us/editions/express.aspx>
 - Choose 32-bit or 64-bit based on your Windows operating system
 - Make sure to select the option "with tools" (Management Studio), or download the management studio separately
 - ◆ <http://www.microsoft.com/download/en/details.aspx?id=7593>

Full Edition Installation

- ◆ SQL Server 2008 is a complex program, so please follow an installation guide to install SQL Server 2008
 - http://www.sqlcoffee.com/SQLServer2008_0013.htm
 - <http://msdn.microsoft.com/en-us/library/ms143219.aspx>

Express Edition Installation

- ◆ Overview of SQL Server 2008 R2 Express Edition: provides a overview of SQL Server 2008 R2 Express and step-by-step installation guide with screenshots:
 - <http://www.sql-server-performance.com/2010/sql-server-2008-r2/>
 - Note: there are 3 parts of the article

- ◆ Make sure you have these features/components installed
 - Database Engine Services
 - Management Tools

Post-Installation Check

- ◆ Use the SQL Server Configuration Manager to view service status
- ◆ Login through the Management Studio
- ◆ Attach sample database files
- ◆ Navigate the database and other objects in the Management Studio

First Feel of SQL Server 2008

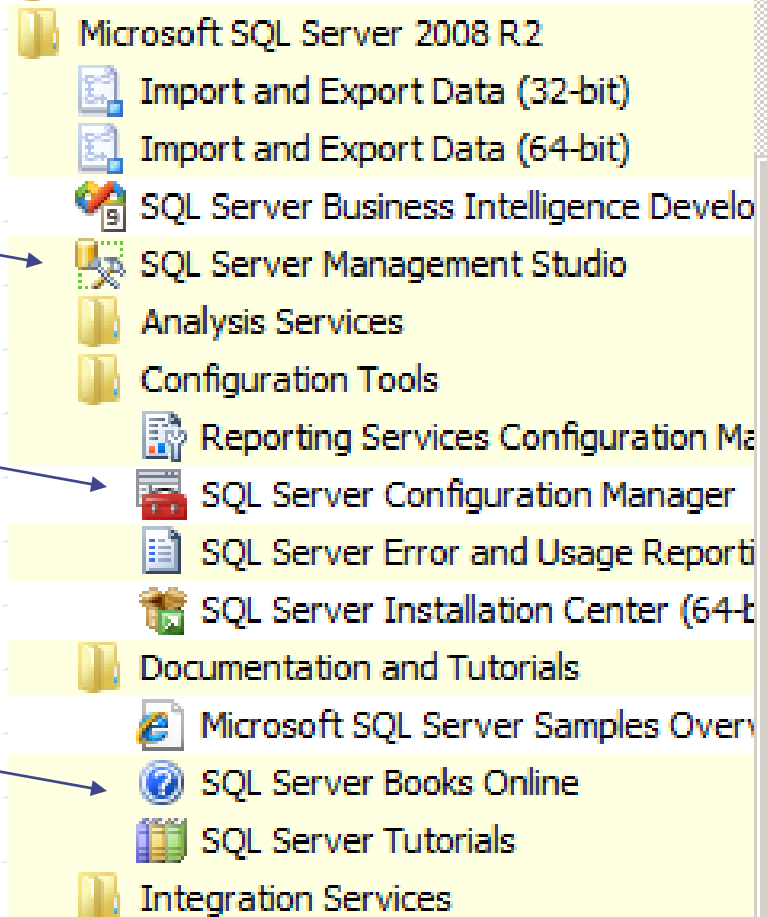
- ◆ Configuration manager
- ◆ SQL Server Management Studio
 - Login
 - Basic interface: object explorer and tool bar
- ◆ Database engine
 - Databases, tables, and other objects
 - Retrieving table data
 - Designing tables and columns
 - Editing tables and records
 - Relationship diagram
- ◆ Queries and views
 - Query editor
 - Running queries

Major Tools

Management Studio

Configuration Manager

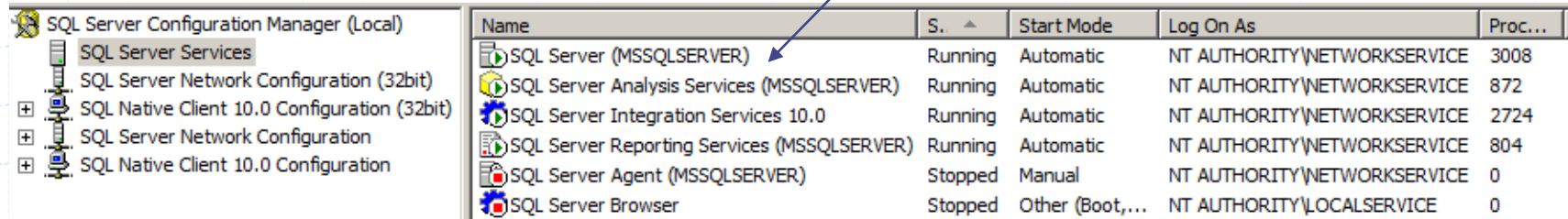
Books Online and Tutorials



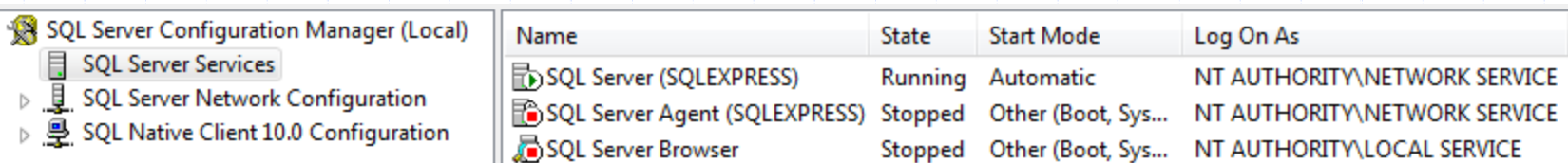
Configuration Manager

- ◆ Configuration manager is a tool to view SQL Server service status, start or stop services
 - <http://technet.microsoft.com/en-us/library/ms174212.aspx>

Make sure the database server is running



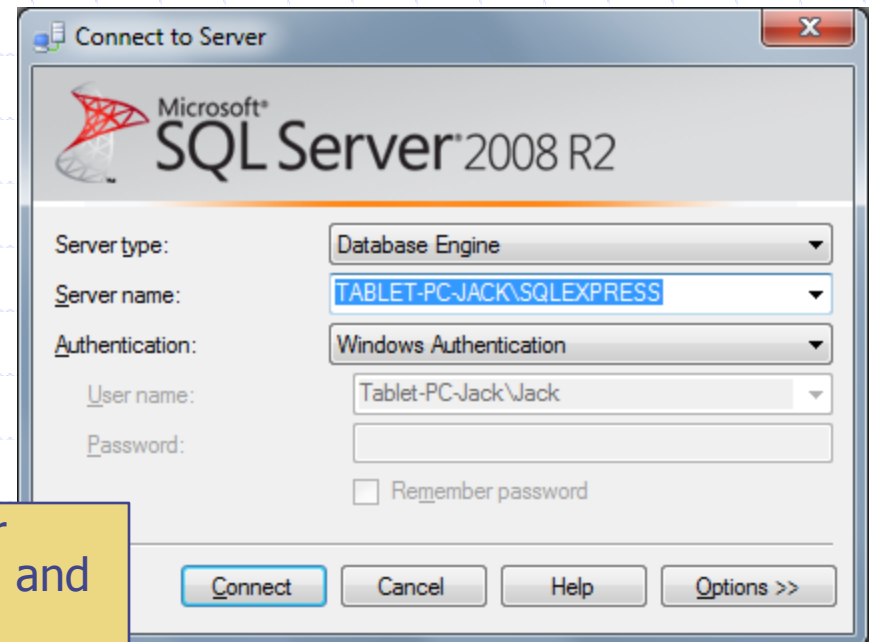
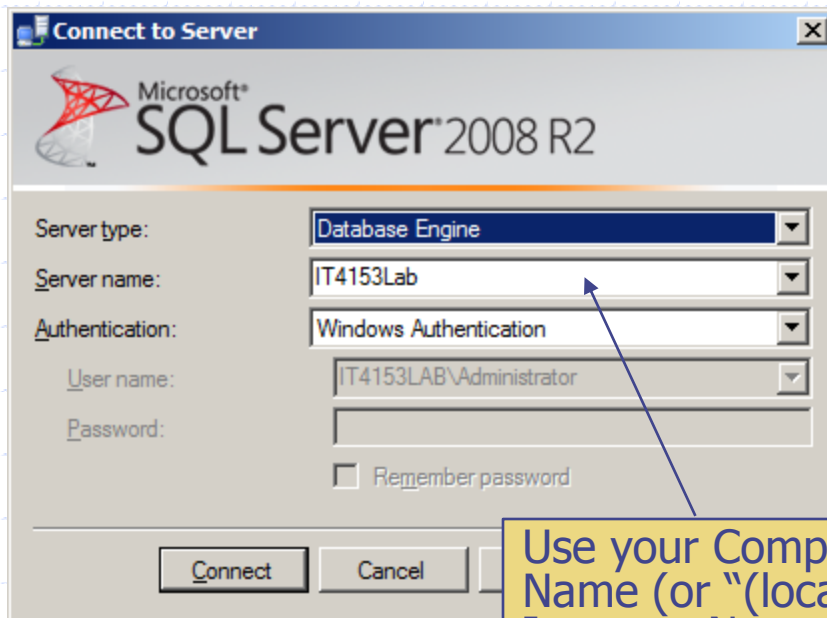
Name	S.	Start Mode	Log On As	Proc...
SQL Server (MSSQLSERVER)	Running	Automatic	NT AUTHORITY\NETWORKSERVICE	3008
SQL Server Analysis Services (MSSQLSERVER)	Running	Automatic	NT AUTHORITY\NETWORKSERVICE	872
SQL Server Integration Services 10.0	Running	Automatic	NT AUTHORITY\NETWORKSERVICE	2724
SQL Server Reporting Services (MSSQLSERVER)	Running	Automatic	NT AUTHORITY\NETWORKSERVICE	804
SQL Server Agent (MSSQLSERVER)	Stopped	Manual	NT AUTHORITY\NETWORKSERVICE	0
SQL Server Browser	Stopped	Other (Boot,...	NT AUTHORITY\LOCALSERVICE	0



Name	State	Start Mode	Log On As
SQL Server (SQLEXPRESS)	Running	Automatic	NT AUTHORITY\NETWORK SERVICE
SQL Server Agent (SQLEXPRESS)	Stopped	Other (Boot, Sys...	NT AUTHORITY\NETWORK SERVICE
SQL Server Browser	Stopped	Other (Boot, Sys...	NT AUTHORITY\LOCAL SERVICE

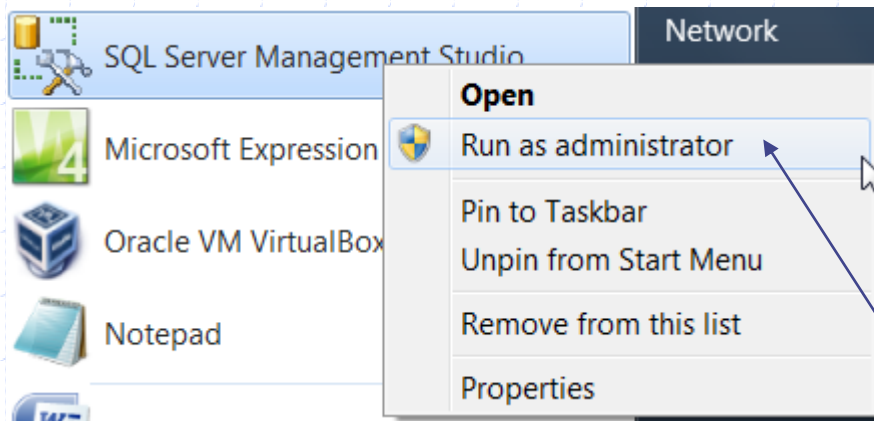
SQL Server Management Studio

- ◆ SQL Server Management Studio is a major tool to control the DBMS
- ◆ Start Management Studio (in the SQL Server 2008 program menu) and login using the Windows Authentication



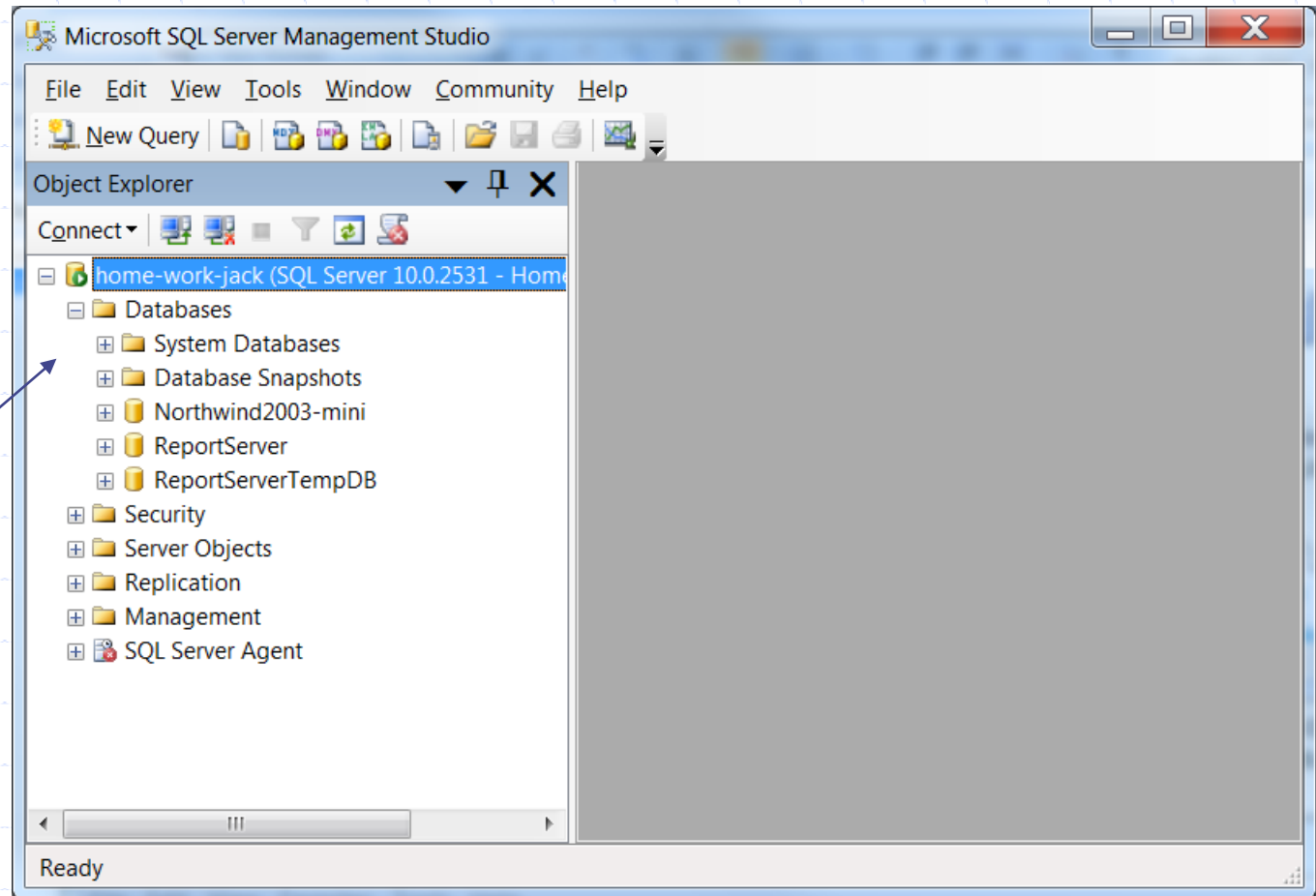
Use your Computer Name (or "(local)") and Instance Name (connected by "\") as the server name.

Run as Administrator



on Windows 7 or Vista, you may need to **right click** the program command and select "Run as Administrator"; otherwise later you will get "Access Denied" when attaching database files.

Object Explorer



Object Explorer: all databases and other objects are here.

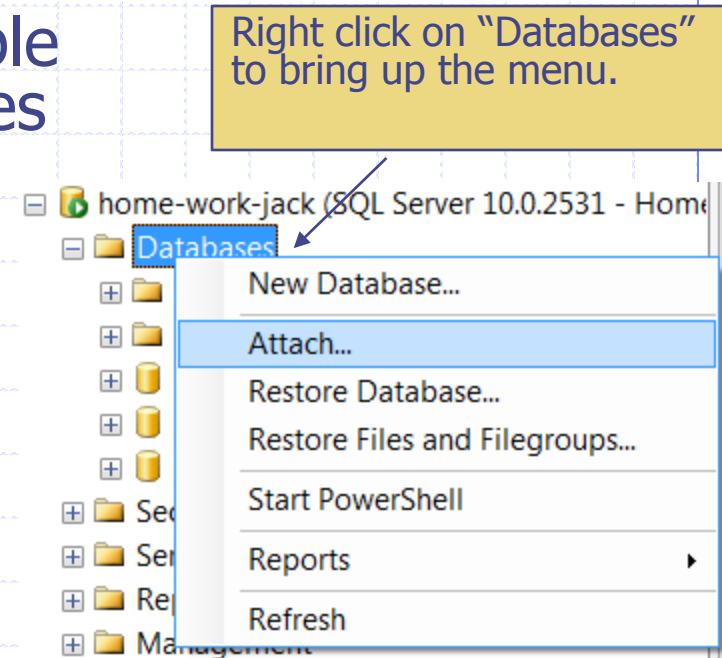
Attach Sample Databases (1)

◆ Download the “Northwind” sample database and extract the two files to a folder

- Northwind2003-mini.mdf
- Northwind2003-mini_log.ldf
- The 2 files must be in the same folder

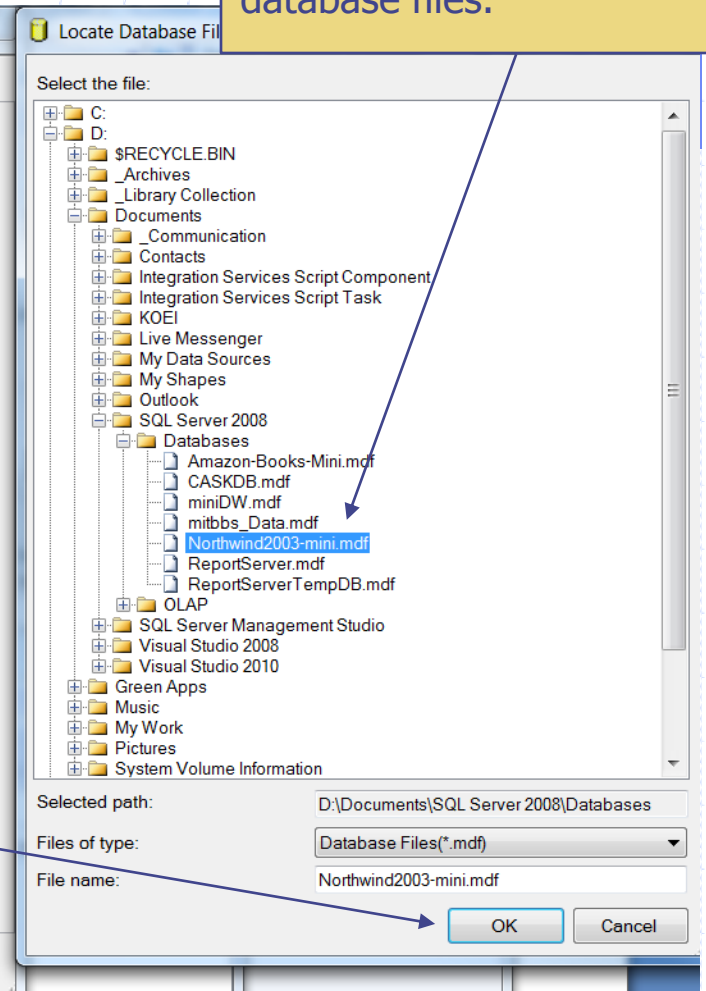
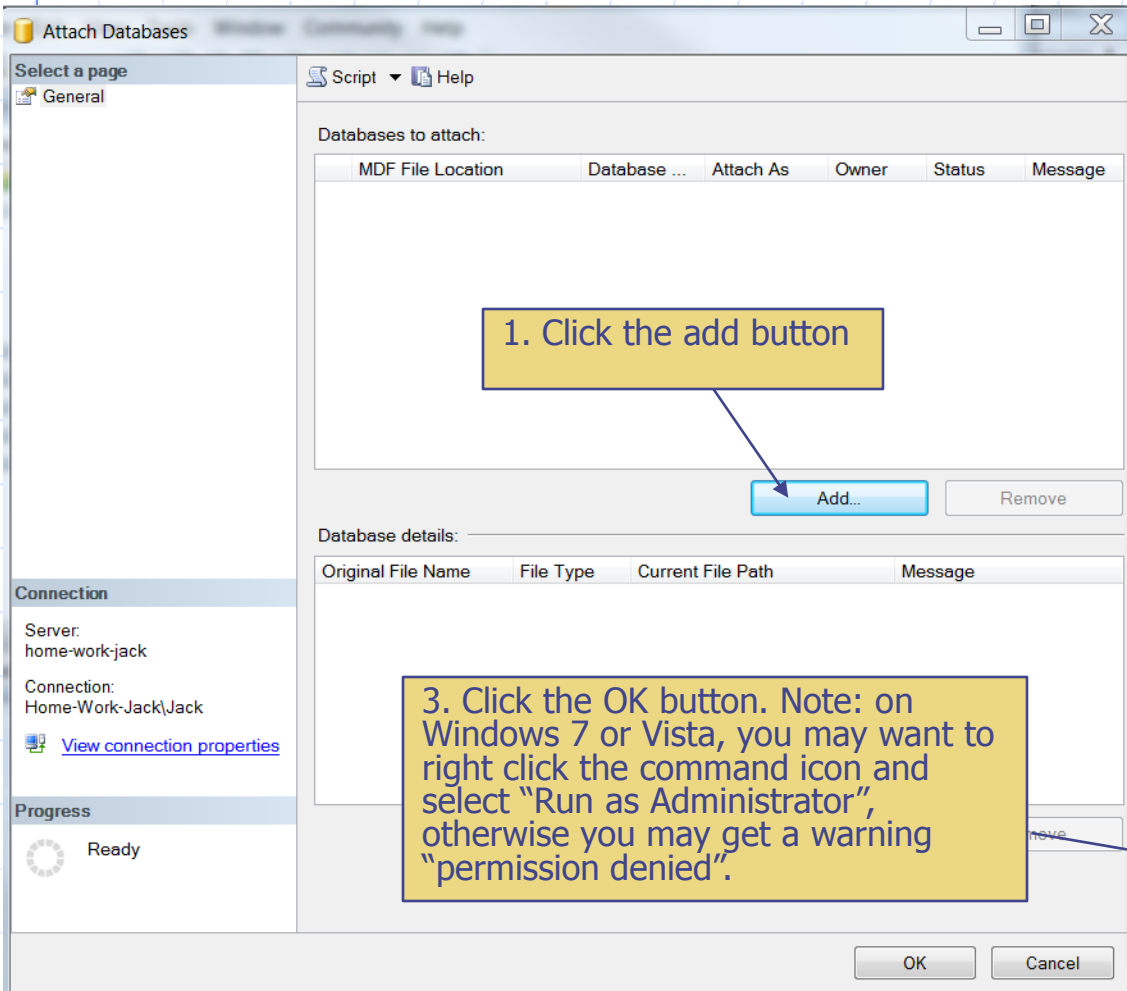
◆ Note

- It's recommended that database files should be put into a designated folder where you know it's directory path, otherwise you will have a difficult time to find them later.

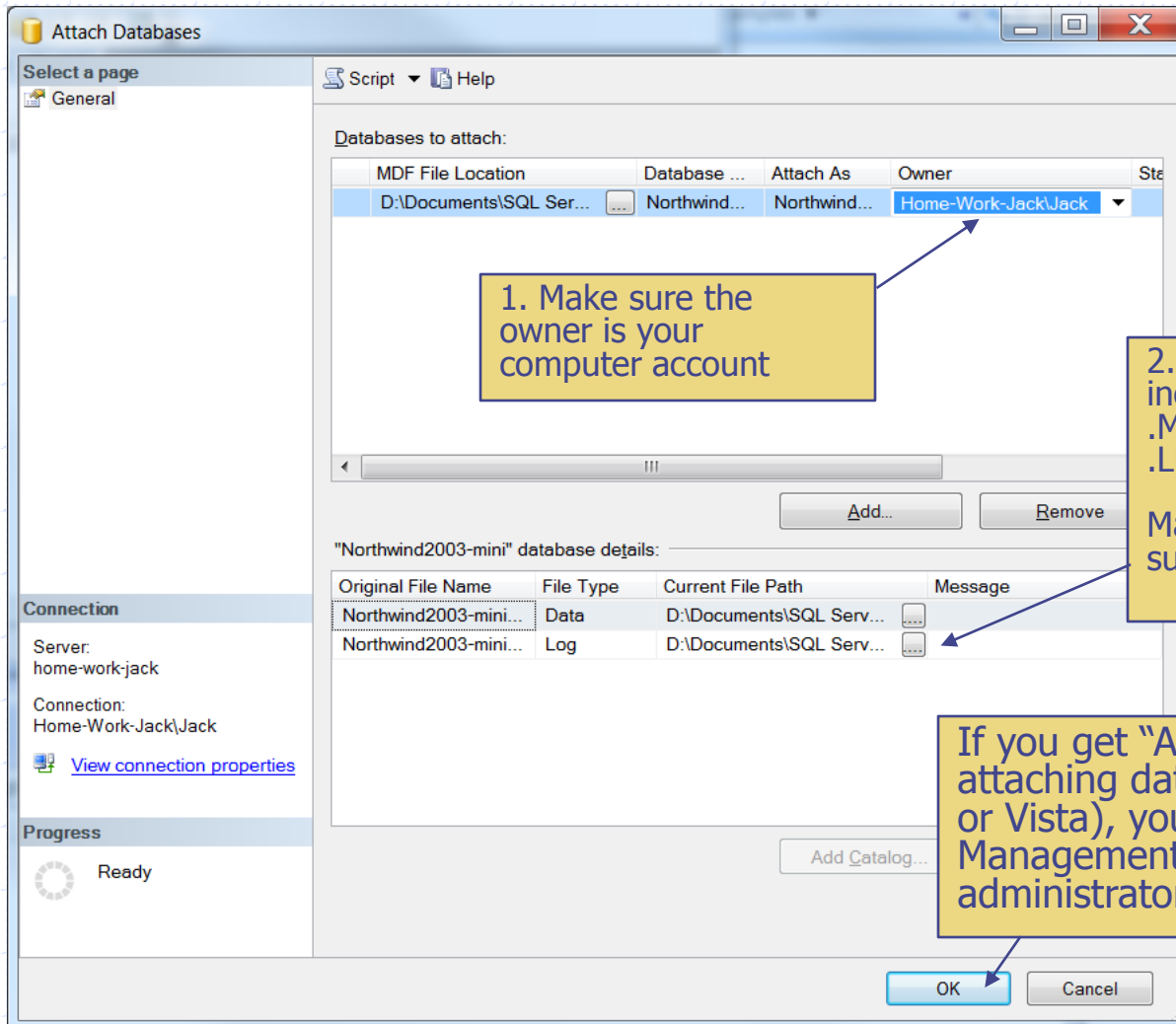


Attach Database (2)

2. Select the "Northwind2003-mini.mdf" file and click OK. You need to remember in which folder you put the two database files.



Attach Database (3)



1. Make sure the owner is your computer account

2. All SQL Server databases include two files:
.MDF – the main database file
.LDF – the log file
Make sure the log file is loaded successfully.

If you get "Access Denied" error when attaching database files (on Windows 7 or Vista), you may need to run the Management Studio as an administrator; See slide #14.

Table Data

Object Explorer

Connect

home-work-jack (SQL Server 10.0.2531 - Home-W

- Databases
 - System Databases
 - Database Snapshots
 - ReportServer
 - ReportServerTempDB
 - Northwind2003-mini
 - Database Diagrams
 - Tables
 - System Tables
 - dbo.Categories
 - dbo.Customers
 - dbo.Employee
 - dbo.Order Det
 - dbo.Orders
 - dbo.Products
 - dbo.Shippers
 - dbo.Suppliers
 - Views
 - Synonyms
 - Programmability

SQLQuery1.sql - ho...rk-Jack\Jack (53)

```
/****** Script for SelectTopNRows command from SSMS *****/  
SELECT TOP 1000 [CustomerID]  
    , [CompanyName]  
    , [ContactName]  
    , [ContactTitle]  
    , [Address]  
    , [City]  
    , [Region]  
    , [PostalCode]
```

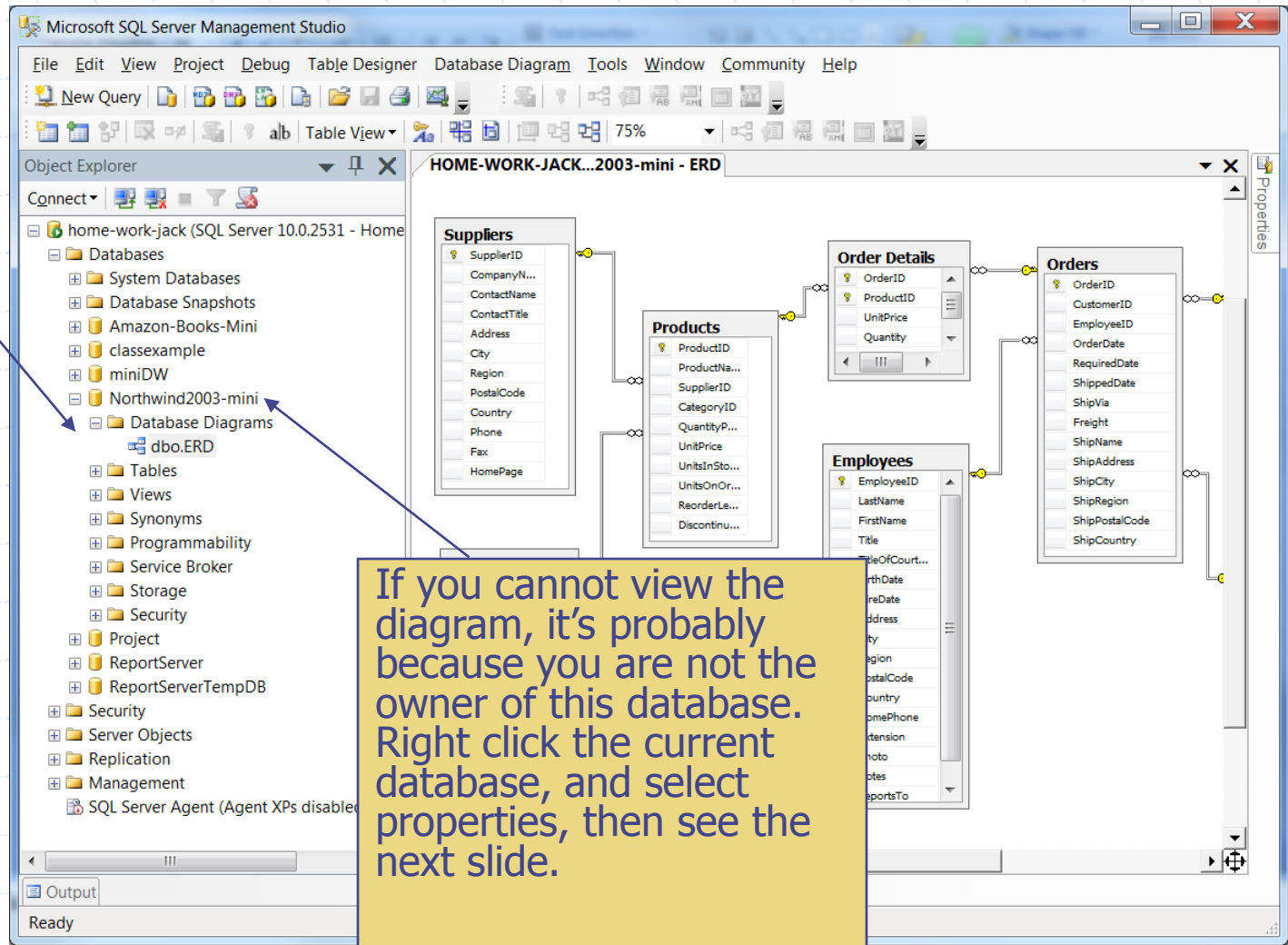
Results Messages

CustomerID	CompanyName	ContactName	ContactTitle	
1	ALFKI	Alfreds Futterkiste	Maria Anders	Sales Repr
	ANATR	Ana Trujillo Emparedados y helados	Ana Trujillo	Owner
	ANTON	Antonio Moreno Taquería	Antonio Moreno	Owner
	AROUT	Around the Horn	Thomas Hardy	Sales Repr
	BERGS	Berglunds snabbköp	Christina Berglund	Order Admi
	BLAUS	Blauer See Delikatessen	Hanna Moos	Sales Repr
	BLONP	Blondel père et fils	Frédérique Citeaux	Marketing M
	BOLID	Bólido Comidas preparadas	Martín Sommer	Owner
	BONAP	Bon app'	Laurence Lebihan	Owner
	BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln	Accounting

home-work-jack (10.0 SP1) | Home-Work-Jack\Jack (53) | master | 00:00:00 | 91 rows

Database Diagram

View a diagram of tables, columns and relationships.



Database Properties

Go to the "Files" Tab.

Make sure the owner is your Windows login account. If not, click this button to change the owner.

Database Properties - Northwind2003-mini

Select a page: General, Files, Filegroups, Options, Change Tracking, Permissions, Extended Properties, Mirroring, Transaction Log Shipping

Database name: Northwind2003-mini

Owner: Home-Work-Jack\Jack

Use full-text indexing

Database files:

Logical Name	File Type	Filegroup	Initial Size (...)	Autogrowth
Northwind2003-mini	Rows ...	PRIMARY	11	By 1 MB, unrestricted gro
Northwind2003-mini_log	Log			

Connection: Server: home-work-jack, Connection: Home-Work-Jack\Jack

Progress: Ready

Select Database Owner

Select these object types: Logins

Enter the object names to select (examples): [Home-Work-Jack\Jack]

Buttons: Object Types..., Check Names, Browse..., OK, Cancel, Help

Click the "Browse" button to look for your Windows login account. The account name is preceded by the computer name.

Table Design Metadata

Microsoft SQL Server Management Studio

File Edit View Project Debug Table Designer Tools Window Community Help

Object Explorer

Connect

home-work-jack (SQL Server 10.0.2531 - Ho

- Databases
 - System Databases
 - Database Snapshots
 - Amazon-Books-Mini
 - classexample
 - miniDW
 - Northwind2003-mini
 - Database Diagrams
 - Tables
 - System Tables
 - dbo.Categories
 - dbo.Customers
 - dbo.Employees
 - dbo.Order Details
 - dbo.Orders
 - dbo.Products
 - dbo.Shippers
 - dbo.Suppliers
 - Views
 - Synonyms
 - Programmability
 - Service Broker
 - Storage
 - Security
 - Project
 - ReportServer
 - ReportServerTempDB

HOME-WORK-JACK... - dbo.Employees

Column Name	Data Type	Allow Nulls
EmployeeID	int	<input type="checkbox"/>
LastName	nvarchar(20)	<input type="checkbox"/>
FirstName	nvarchar(10)	<input type="checkbox"/>
Title	nvarchar(30)	<input checked="" type="checkbox"/>
TitleOfCourtesy	nvarchar(25)	<input checked="" type="checkbox"/>
BirthDate	datetime	<input checked="" type="checkbox"/>
HireDate	datetime	<input checked="" type="checkbox"/>
Address	nvarchar(60)	<input checked="" type="checkbox"/>
City	nvarchar(15)	<input checked="" type="checkbox"/>
Region	nvarchar(15)	<input checked="" type="checkbox"/>
PostalCode	nvarchar(10)	<input checked="" type="checkbox"/>
Country	nvarchar(15)	<input checked="" type="checkbox"/>

Column Properties

(General)

(Name) EmployeeID

Allow Nulls No

Data Type int

Default Value or Binding

Table Designer

Collation <database default>

Computed Column Specification

Condensed Data Type int

Description

Deterministic Yes

DTS published No

(General)

Right click on a table and select "Design"

Output

Ready

Using Management Studio

◆ SQL Server Management Studio

- <http://technet.microsoft.com/en-us/library/ms174173.aspx>

◆ Attaching and Detaching Databases

- <http://msdn.microsoft.com/en-us/library/ms190794.aspx>
- <http://msdn.microsoft.com/en-us/library/ms190209.aspx>
- <http://msdn.microsoft.com/en-us/library/ms191491.aspx>

Readings and Resources

- ◆ SQL Server introduction on Wikipedia
 - http://en.wikipedia.org/wiki/Microsoft_SQL_Server
- ◆ SQL Server 2008 tutorials
 - [http://msdn.microsoft.com/en-us/library/ms167593\(v=SQL.100\).aspx](http://msdn.microsoft.com/en-us/library/ms167593(v=SQL.100).aspx)
- ◆ Features and Tools Overview
 - <http://technet.microsoft.com/en-us/library/bb500397.aspx>
- ◆ SQL Server editions and components
 - [http://msdn.microsoft.com/en-us/library/ms144275\(v=SQL.100\).aspx](http://msdn.microsoft.com/en-us/library/ms144275(v=SQL.100).aspx)
- ◆ SQL Server 2008 Books Online
 - [http://msdn.microsoft.com/en-us/library/ms130214\(v=SQL.100\).aspx](http://msdn.microsoft.com/en-us/library/ms130214(v=SQL.100).aspx)
- ◆ SQL Server official website
 - <http://www.microsoft.com/sqlserver>
- ◆ SQL Server samples from the community
 - <http://sqlserversamples.codeplex.com/>