Supporting Non-Standard Development Configurations

The samples in Data Binding with Windows Forms 2.0 assume you have a default instance of SQL Server 2000 or 2005 installed on your machine, and that the Northwind database is installed on that default instance. If you have that configuration, the downloadable samples on this site should run without modification. If you only have SQL Server 2005 Express, you will need to perform some extra steps to get SQL Express database instances set up for the samples. If you have a non-default instance of SQL Server 2000 or 2005, or need to run against a database on a different machine, you will need to perform some extra steps as well.

The samples also assume you have a full version of Visual Studio 2005 installed (Standard, Professional, or Team System versions). If you are working with Visual C# Express 2005 or Visual Basic 2005 Express, you will need to take additional steps to create SQL Server 2005 Express databases for the samples and to connect to those databases.

This document covers how to get things working for those different environments and contains the following sections:
- Working with Connection Strings and Non-Default Instances of SQL Server
- Installing Northwind and Sample Databases on SQL Server 2005
- Installing Northwind and Sample Databases on SQL Server 2005 Express
- Modifying samples to work in Visual C# 2005 Express or Visual Basic 2005 Express

Working with Connection Strings and Non-Default Instances of SQL Server

The database connections that are used by the book samples are driven by connection strings, as are all data connections in .NET. The samples were created on a machine with a default instance of SQL Server with Northwind and the sample databases installed on it. As a result, the connection strings in the samples will only work without modification if you have a similar configuration.

If you need to run the samples using the databases on a different machine, or on the same machine but in a named instance of SQL Server, you will need to modify the connection strings that are used to establish database connections by the samples. All of the samples other than some of those in Appendix D use typed data sets for data access. The exceptions in Appendix D have connection strings inline in the code that can be edited directly.

When you generate a typed data set in Visual Studio 2005, connection strings are placed in several locations within your project.

An application configuration file (app.config) is added to your project, and a
`<connectionStrings>` element is added to that file with the connection
string in a child `<add>` element. The connection string is determined by the
data connection from Server Explorer that you used when creating the data
set. Using . or localhost as the server name is the most portable solution for
a development environment with a default instance of SQL Server 2000 or
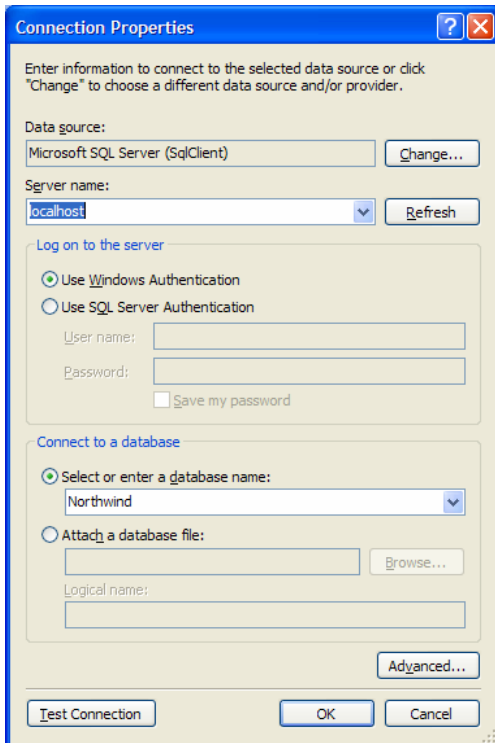2005 when creating data connections in Server Explorer.
A `Settings` class is also added under your project Properties node, and a
connection string property is added to that class to let you access the
connection string programmatically. For example, if the connection you set
up was to the Northwind database, a property is added to the `Settings` class
named `NorthwindConnectionString`. The default connection string value is
also hard coded as an attribute on that property and will be used if the
configuration file connection string value cannot be found at runtime.
The table adapters in the typed data set access the connection string by
using the connection string property added to the `Settings` class within their
project.

If you need to change the connection string that is used by the application to
point to a different database, named instance, or server, the best way to
correct the connection string is to modify it through the project properties for
the project that contains the typed data set.

To do so, bring up the project properties pages (*Project > Properties* from
the menu) and select the *Settings* tab. You should see a connection string
setting there that is being used by the table adapters in the data set. Like in
the following figure:
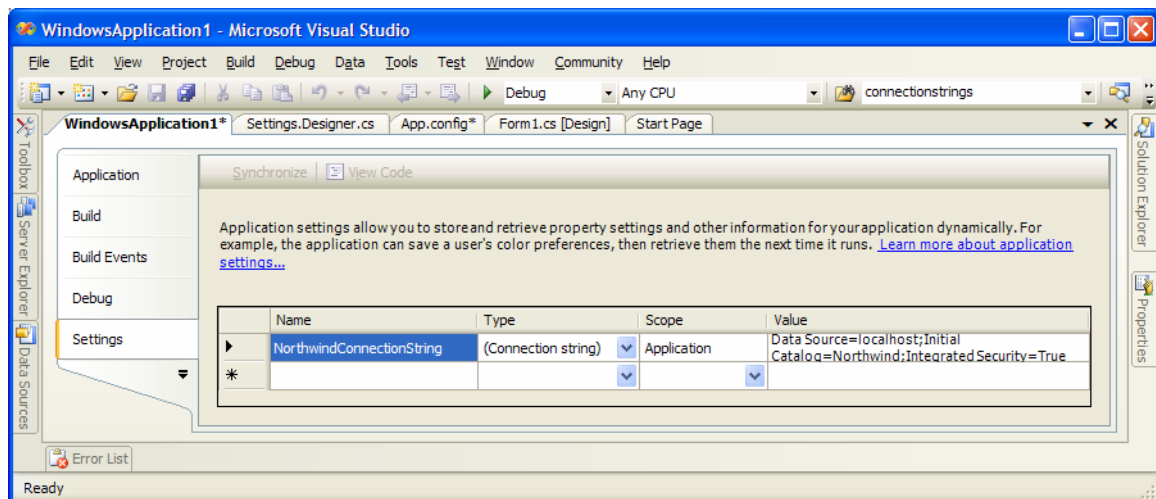
If you click in the *Value* column, a button will appear on the right edge of
that cell with ellipses (…) on it. Press that button and you will get the
following Connection Settings dialog:

Connection Properties

Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.

Data source:

Microsoft SQL Server (SqlClient)   Change...

Server name:

localhost   Refresh

Log on to the server

⦿ Use Windows Authentication

◯ Use SQL Server Authentication

User name:

Password:

☐ Save my password

Connect to a database

⦿ Select or enter a database name:

Northwind

◯ Attach a database file:

Browse...

Logical name:

Advanced...

Test Connection   OK   Cancel

This dialog lets you edit the settings that determine the connection string. You can type in the server name that you want, change the log on information, or change the database name. For a named instance, you add the name after the server name with a backslash in between like the following: MyServerName\MyNamedInstanceName. Once you have made any desired changes to the connection string setting, press the *Save* button on the toolbar of Visual Studio, or select *File > Save Selected Items* from the menu bar. This will cause the hard coded default attribute in the Settings class and the app.config file to both be updated with the new settings.

The configuration file entry looks like the following (assuming a default instance installation with Northwind on it):

<connectionStrings>
    <add
name="WindowsApplication1.Properties.Settings.NorthwindConnectionString"
      connectionString="Data Source=localhost;Initial
Catalog=Northwind;Integrated Security=True"
      providerName="System.Data.SqlClient" />
</connectionStrings>

The Data Source property within the connection string will be set to whatever server name you used when you created the Data Connection within Server Explorer or through the Add Data Source wizard. If you need to work with a different server, such as a named instance of SQL Server 2005, that value will need to reflect the correct server name. You can edit it directly in the

configuration file, but that will leave the hard coded default in the `Settings` class unchanged. Again that default is only used if the entry in the .config file cannot be found.

You can consult the MSDN documentation for the `SqlConnection` class to see what all the legal combinations of properties are on a connection string for a SQL Server instance, which includes SQL Server 2000, SQL Server 2005, and SQL Server 2005 Express.

If your typed data set is located in a class library that the Windows Forms application references, then the app.config file was added to the class library where the data set was defined. The `<connectionStrings>` configuration setting will have to be placed in the hosting Windows Forms application's config file.

If the Windows Forms project already has its own app.config file, then just copy the `<connectionStrings>` section from the class library into the app.config file for the Windows Forms project, under the `<configuration>` root element. Make sure to remove the `<connectionStrings />` placeholder element if there is one.

If the Windows Forms project does not have a .config file, you will need to add one. You can do this by selecting *Add New Item…* from the *Project* menu and selecting the Application Configuration File template.

If you have no app.config file in your Windows Forms project, then at runtime the table adapter in the typed data set in the referenced assembly will try to use the hard coded default connection string, which was added as an attribute on the `Settings` class property when the table adapter was generated.

Installing Northwind and Sample Databases on SQL Server 2005

To get the Northwind and MoneyDB sample databases for the book installed on SQL Server 2005, you will first need to download the install scripts from the book's Web site at http://www.softinsight.com/databindingbook/SQL2005DBScripts.zip.

To run the scripts, open SQL Server Management Studio and connect to the SQL Server 2005 instance you want to place the database onto. Open the script files by selecting *File > Open > File* and navigating to the scripts wherever you unzipped them to. When you open each file, you will be prompted to connect to the database again; make sure you are connecting to the SQL Server 2005 instance where you want to install the database. Then execute the script using the *Execute!* button in the toolbar. This will create the database with the appropriate schema and populate it with sample data.

Installing Northwind and Sample Databases on SQL Server 2005 Express

This section assumes that you do not have a full instance of SQL Server 2005 installed on your machine and therefore do not have access to SQL Server Management Studio. If you do and want to run the samples on a SQL Express database instead of SQL Server 2005 for some reason, you can use the same process described in the preceding section and just connect to your SQL Express database instance (named SQLEXPRESS by default) instead of connecting to the SQL Server 2005 instance. If you want to run the samples on a machine that just has a default SQL Server 2005 Express installation (such as the one that gets installed with Visual Studio 2005 by default), then follow the procedures in this section.

To get the Northwind and MoneyDB sample databases for the book installed into individual SQL Server 2005 Express databases, you will first need to create SQL Server 2005 Express database files for the Northwind and MoneyDB databases. The easiest way to do this is to download the databases from the book's Web site:
http://www.softinsight.com/databindingbook/ExpressDatabases.zip.

If you want to create the databases from scratch, you can download the scripts at:
http://www.softinsight.com/databindingbook/SQL2005ExpressDBScripts.zip.
You will also need to be an administrator on the machine to run the scripts.

If you go with the scripts, you will need to create a SQL Express database file for each of those databases. One of the easiest ways to do so is to use Visual Studio 2005. Open up a project of any type (such as a Windows Application project) and select *Add New Item* from the *Project* menu. Select SQL Database as the item template type, and give it an appropriate name (i.e. Northwind.mdf or MoneyDB.mdf). Press the Add button and the MDF file will be added to the project. A *Data Source Configuration Wizard* window will pop up, just press the *Cancel* button when it does. Repeat this step to create the other database file as well.

Once you have created those database files as part of the project, you can close Visual Studio. Go and locate the files in the project folder through Windows explorer and copy both the MDF and LDF files for Northwind and MoneyDB to some folder where you want them to reside for running the demos (for example, create a folder C:\Express Databases and copy them there).

Now you need to run scripts that will create all the database objects and populate them with sample data in those databases. Included in the SQL2005ExpressDBScripts.zip file is a utility I wrote for doing just that called SQLExpressScripter. This tool lets you run an arbitrary SQL script against a SQL Express database that you have as just an MDF file.

To populate the Northwind Express database, run SQLExpressScripter.exe and enter the path for the Northwind.mdf file created in the steps above. Then enter the path to the instnwnd_no_db_create.sql script path. Then press the Execute button and the script will run and populate the database. Repeat for the MoneyDB.mdf and MoneyDB_no_db_create.sql files. You will now have SQL Express databases that you can use with any of your projects.

Modifying samples to work in Visual C# 2005 Express or Visual Basic 2005 Express

To run the samples from this book on the Express versions of the products, you will need to make a few changes to the code and do some extra setup steps.

The following steps summarize what needs to be done.
1. Open the solution and add the express database to the project.
2. Modify the project settings connection string to point to the express database instead of a default SQL Server instance.

The details to accomplish the above are as follows:
1. Open the solution (.sln) file in Visual Studio.
2. Right click on the project in Solution Explorer and select Add > Existing Item.
3. Navigate to the location of the Northwind.mdf or MoneyDB.mdf file, depending on which database the sample is using and click Open. This will add the database to the project as a project file.
4. Open the Project Properties from the Project > Properties menu.
5. Select the Settings tab along the left hand side.
6. Select the Value column for the NorthwindConnectionString or MoneyDBConnectionString setting.
7. Click on the ellipses (…) button to bring up the Connection Properties dialog.
8. Click the Browse button to locate the database file (.mdf file) within your project folder. Select it and click the Open button.
9. Click OK in the Connection properties dialog.
10. Run the sample.