

使用 Microsoft .NET 客户端方式连接 IBM i5 DB2 数据库

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前言：

大家知道通过 ODBC, JDBC 可以连接 OS400 的 DB2 数据库，进行数据库方面的编程开发。如果能够通过 Microsoft .net Provider 直接连接数据库，这样就能够使用 Microsoft C# 开发的应用前台直接使用数据库，得到很好的数据库访问性能。

客户端配置步骤如下：

1. 安装 .NET Framework (由 Microsoft 提供，建议使用 .net 1.1)
2. 安装 CLIENT ACCESS 中的.net data provider (有 IBM 提供)
3. 配置 .Net 1.1 (重要步骤)

详细过程如下：

A. 安装.NET Framework

到 www.msdn.com 下载.NET Framework ,

下载地址:

<http://www.microsoft.com/downloads/details.aspx?familyid=9B3A2CA6-3647-4070-9F41-A333C6B9181D&displaylang=en>

下载.net Framework 后，进行安装。

如下图:

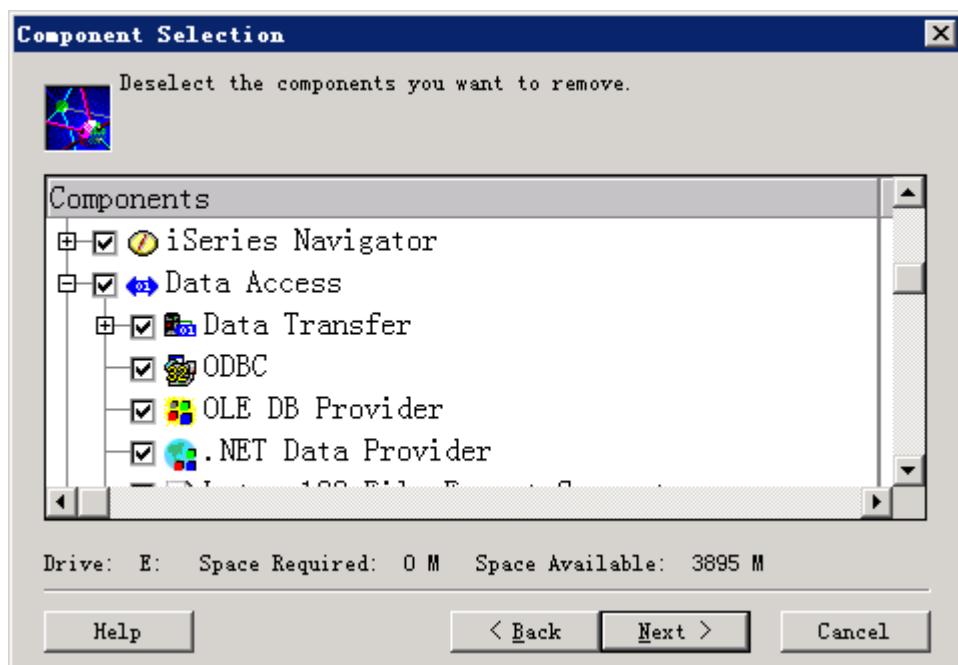
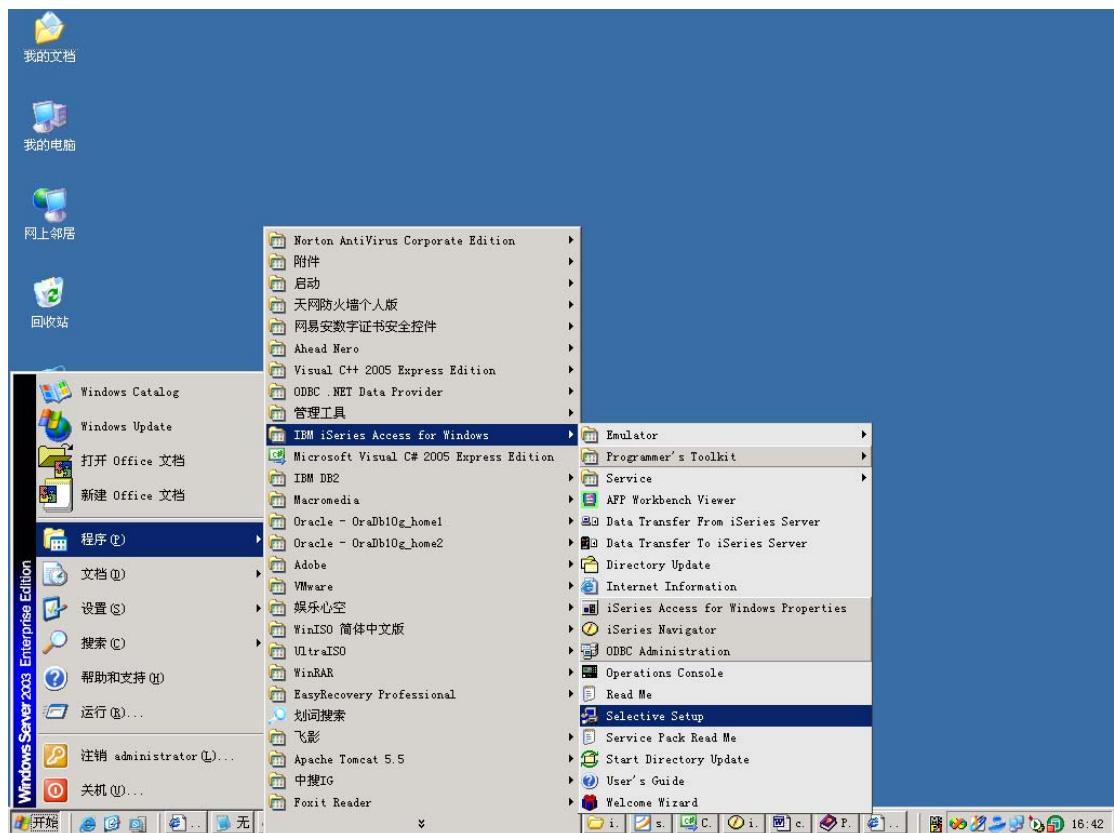
This screenshot shows the Microsoft .NET Framework Developer Center page in Microsoft Internet Explorer. The URL is <http://msdn.microsoft.com/netframework/>. The page features a blue header with the MSDN logo and navigation links like 'Developer Centers', 'Library', 'Downloads', 'How to Buy', 'Subscribers', and 'Worldwide'. On the left, there's a sidebar with links for '.NET Framework Home', 'Getting Started', 'All Headlines', 'Technology Information', 'Programming Information', 'Reference', 'Downloads', 'Community', 'Support', 'Partners', 'Previous Versions', '.NET Compact Framework', and 'Windows Forms'. A banner for 'WHEN EXPLANATION MEETS EXPERIMENTATION' is visible. The main content area has a 'C# Visual Studio 2005' section with an article about C# 2.0. Below it is a 'Visual Basic: Navigate The .NET Framework And Your Projects With The My Namespace' section with an article by Duncan Mackenzie. There's also a 'Order the New Microsoft Developer Security Resource Kit' section with an article by Juval Lowy. A 'Getting Started' sidebar on the right lists 'Focus On ...' topics like 'Get the Framework', '.NET Framework Programming', 'Documentation', and '.NET Framework Tools'. An 'Essential Information' sidebar on the right lists links such as 'Try SQL Server 2005 First-Hand', 'Pre-Order the .NET Framework on DVD', 'Breaking Changes in .NET Framework 2.0', 'Designing .NET Class Libraries', '.NET Framework 2.0 Obsolete APIs', and '.NET Framework Technology Overview'.

This screenshot shows the Microsoft Download Center page for the '.NET Framework SDK Version 1.1'. The URL is <http://www.microsoft.com/downloads/details.aspx?familyid=9B3A2CA5-3647-4070-9F41-A333C6B9181D&displaylang=en>. The page includes a search bar and a sidebar with categories like 'Product Families' (Windows, Office, Servers, Developer Tools, Business Solutions, Games & Xbox, MSN, Windows Mobile, All Downloads), 'Download Categories' (Games, DirectX, Internet, Windows Security & Updates, Windows Media, Drivers, Home & Office, Mobile Devices, Mac & Other Platforms, System Tools, Development Resources), and 'Download Resources' (Microsoft Update Services). The main content area displays the 'Brief Description' of the .NET Framework SDK Version 1.1, which includes documentation, samples, and command-line tools and compilers. It also shows the 'On This Page' section with links to 'Quick Details', 'System Requirements', 'Related Resources', and 'Related Downloads'. The 'Download' section provides 'Quick Details' for the setup.exe file, including File Name: setup.exe, Version: 1.1, Date Published: 3/3/2005, Language: English, Download Size: 106.2 MB, and Estimated Download Time: Dial-up (56K) 4 hr 19 min. A Microsoft Visual Studio logo is visible on the right.

B. 安装 CLIENT ACCESS 中的.net data provider (由 IBM 提供)

使用 Client access 中的选择性安装，选择 Data Access 部分，选择 .NET Data Provider 进行安装。

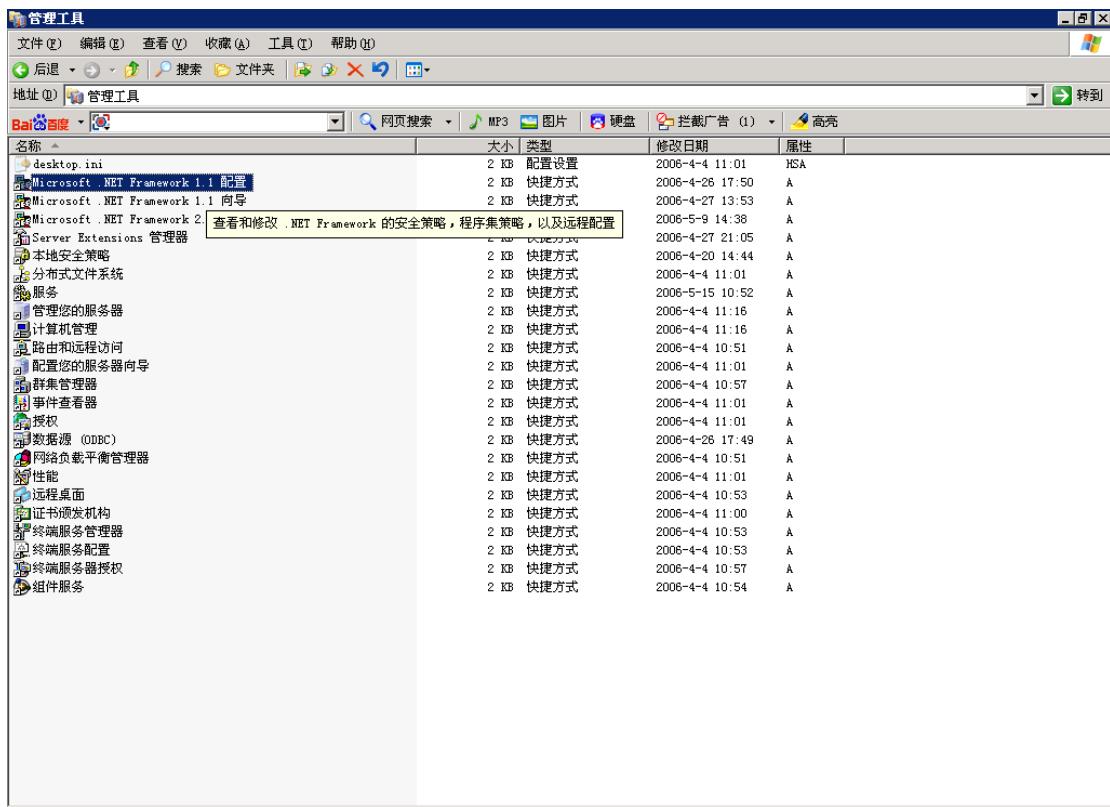
如下图：



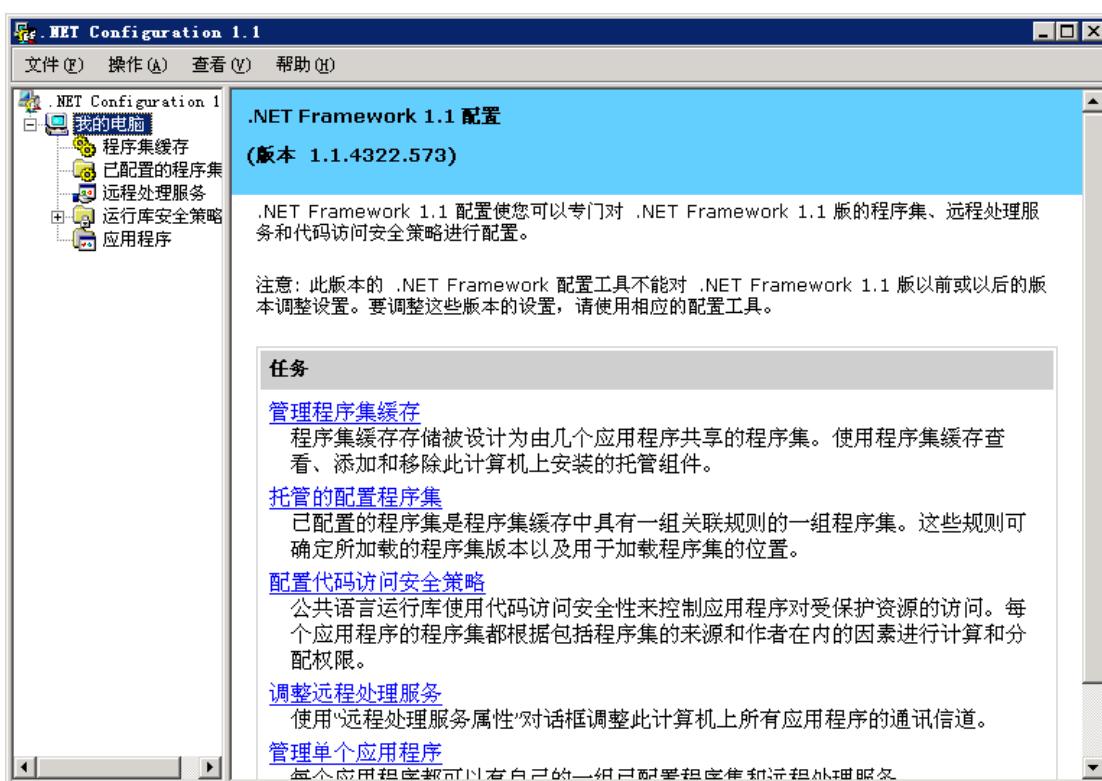
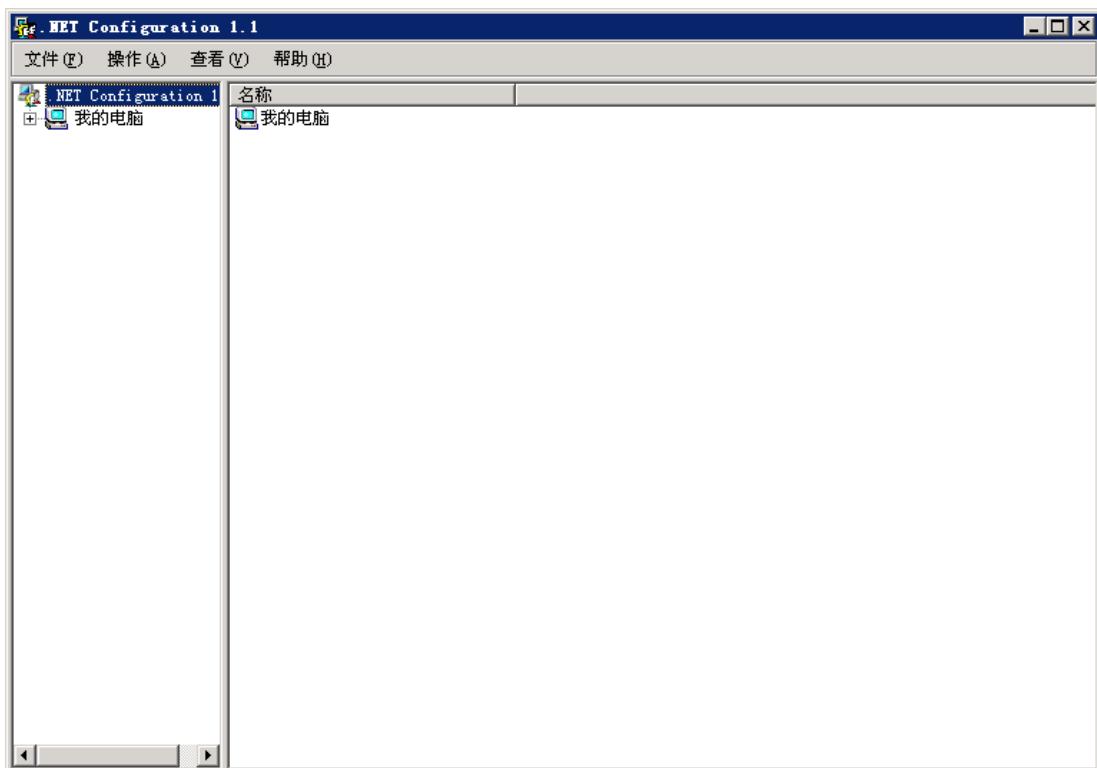
C. 配置 .Net 1.1 (重要)

由于 DB2 for i5 的驱动由 IBM 提供，所以要到 Microsoft .net 中配置该驱动。到 windows 客户端的控制面板中，点击管理工具，点击 Microsoft .NET Framework 1.1 配置，进行配置。

如下图：



打开 .NET Configuration 1.1 配置窗口。如下图：

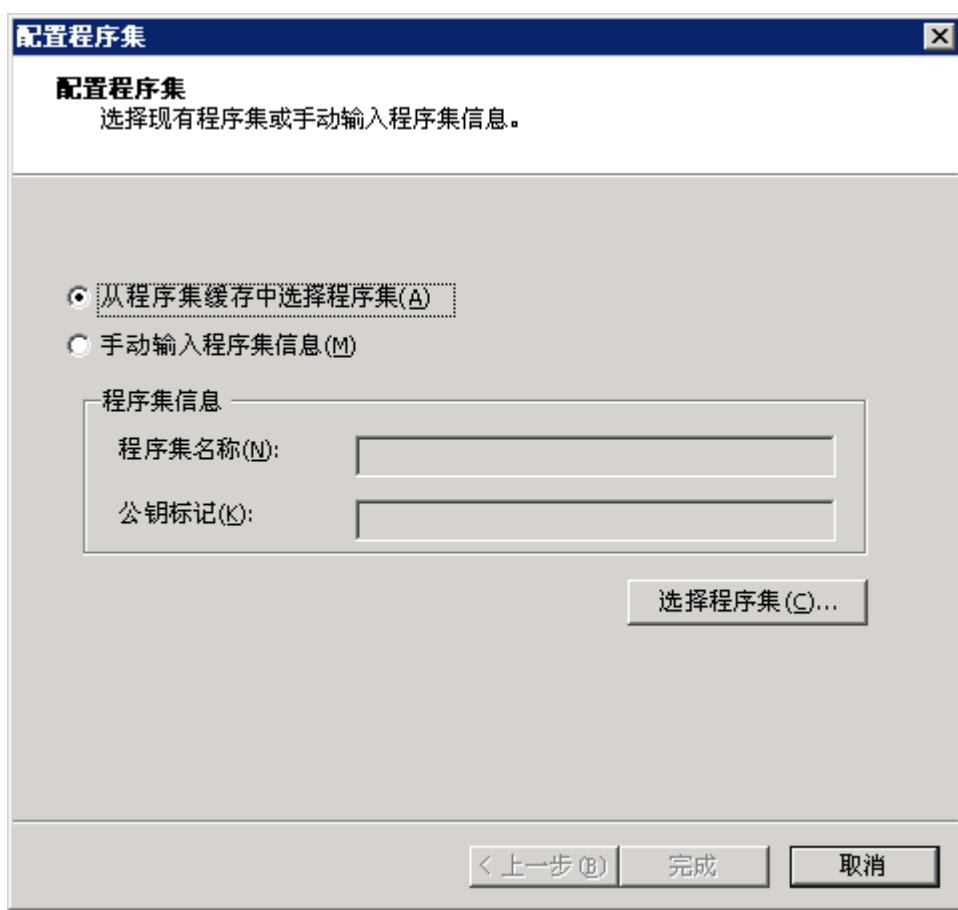
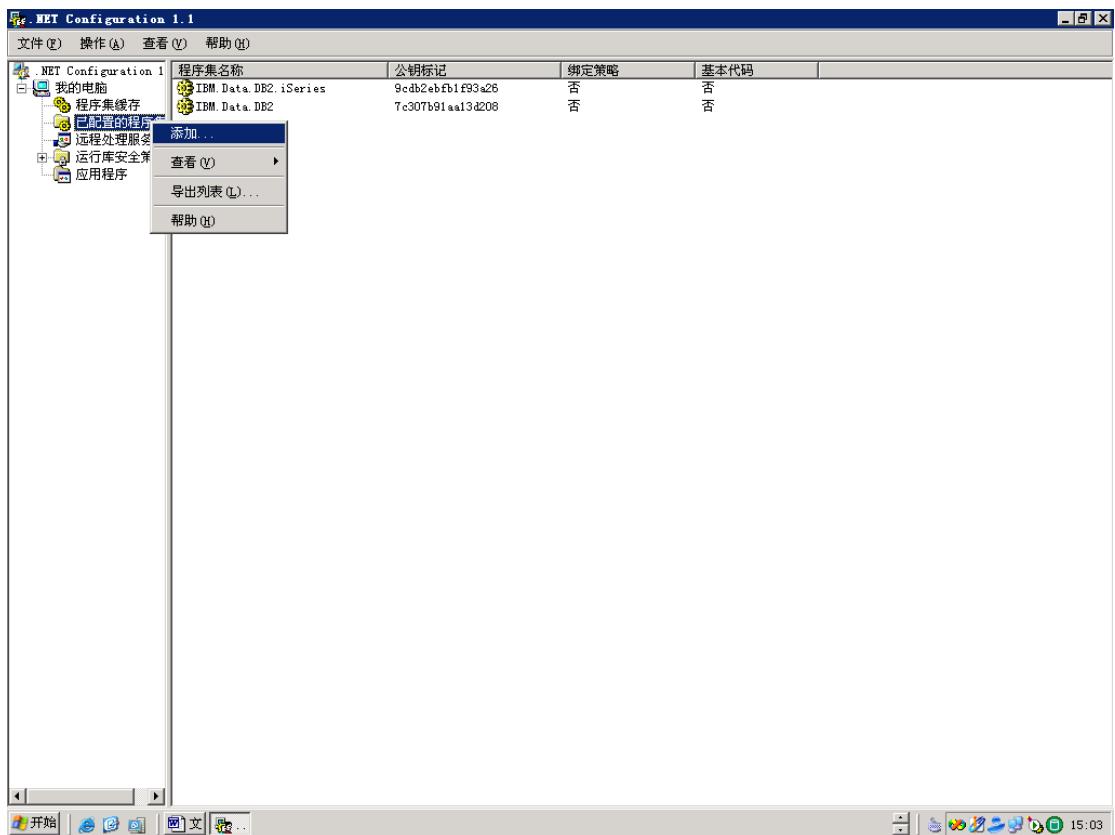


点击已配置的程序集。如下图：



程序集名称	公钥标记	绑定策略	基本代码
IBM.Data.DB2.iSeries	9cd82ebfb1f93a26	否	否
IBM.Data.DB2	7c307b91aa13d208	否	否

右键点击添加，如下图。



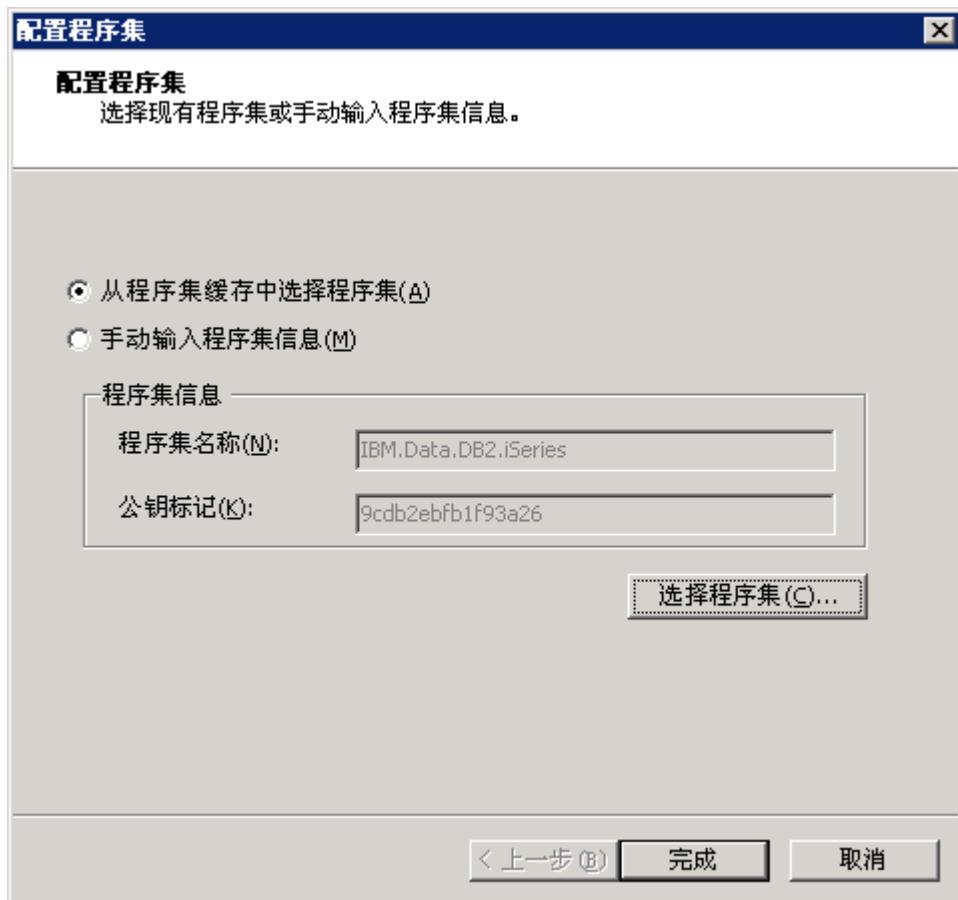
点击选择程序集



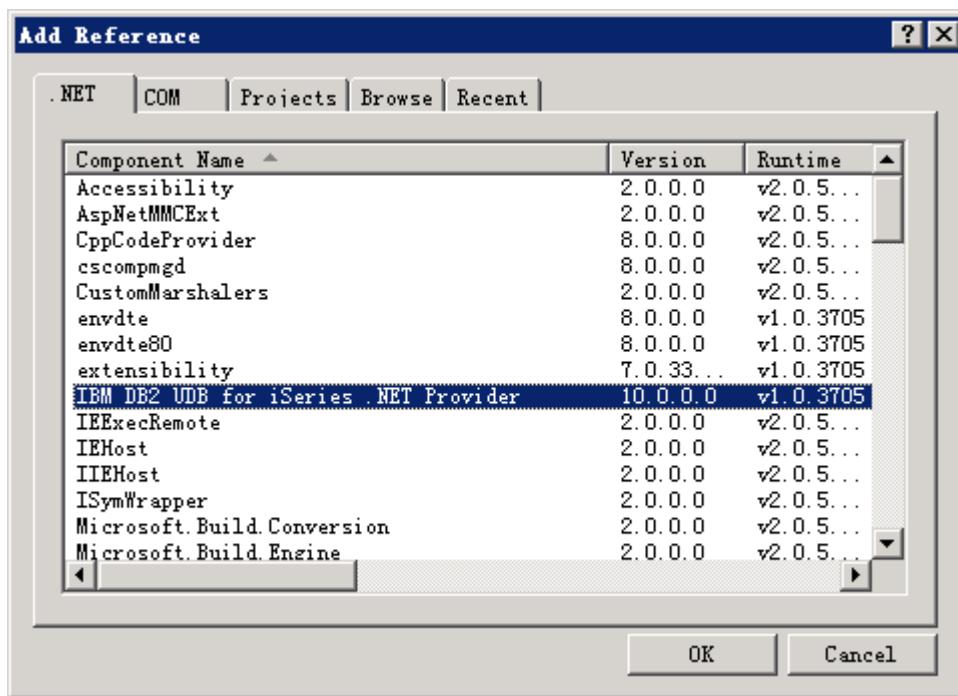
选择 IBM.Data.DB2.iSeries.



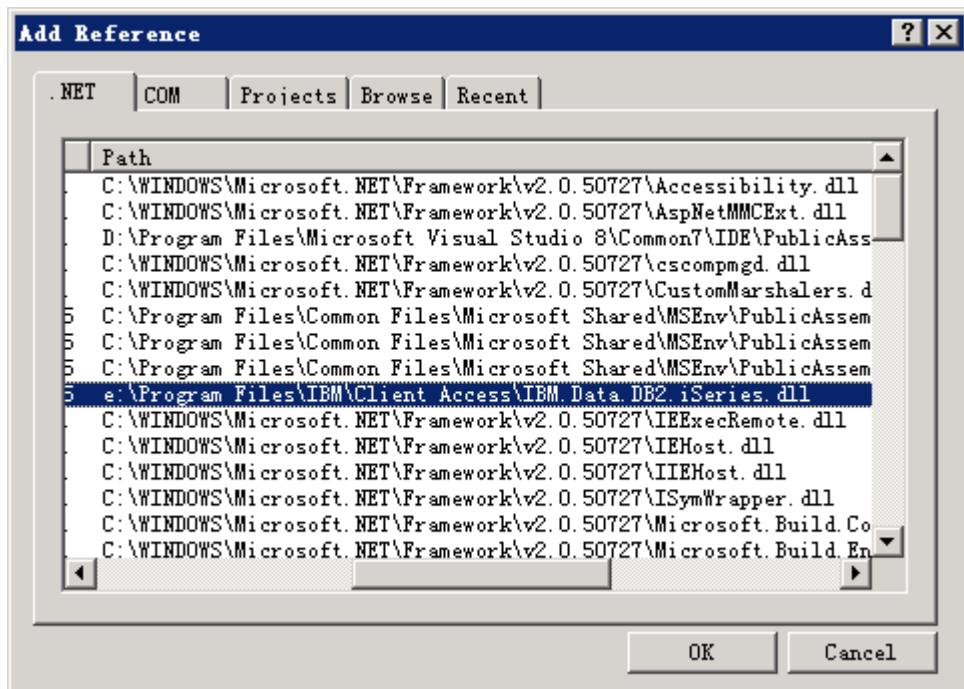
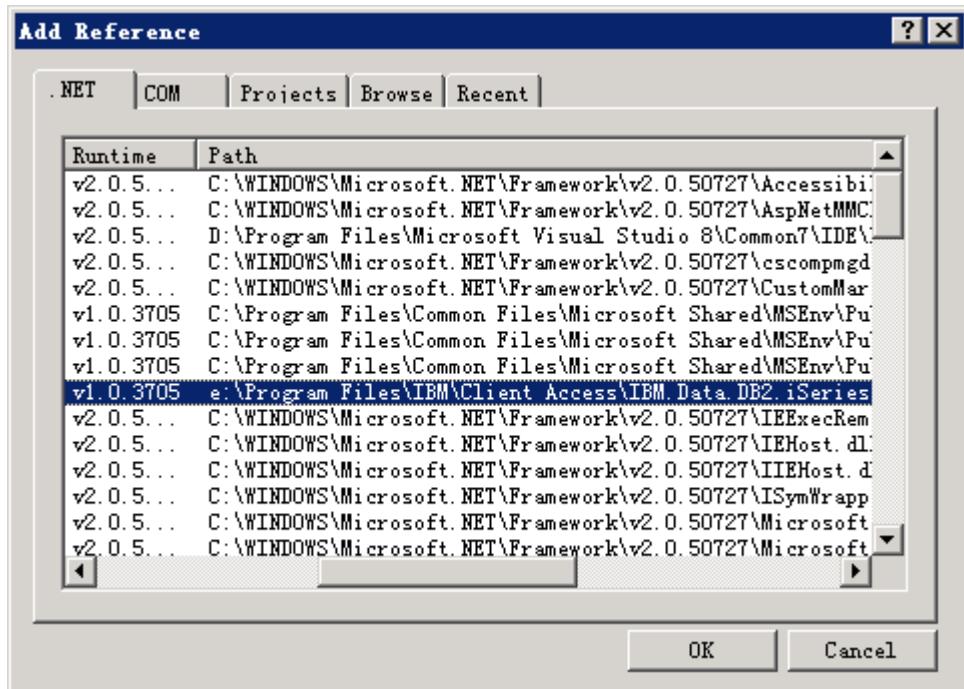
点击完成。



配置完成之后，在 microsoft studio 中可以看到如下 refence.



详细情况如下图示：



配置完成之后，在 microsoft studio 中就可以使用 IBM .net data for iSeries 进行编程了。下面举两个例子。一个是 C# 的，一个是 VB.net 的。

C#例子

点击创建控制台应用，

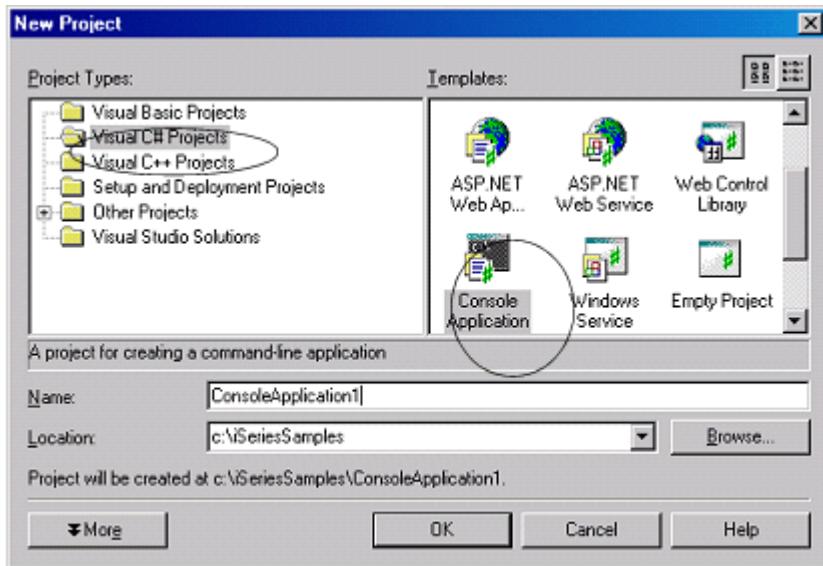


Figure 4-6 Create a C# Console Application

程序如下：

```
using System;
using System.Collections.Generic;
using System.Text;
using IBM.Data.DB2.iSeries;
namespace ConsoleApplication2
{
    class Program
    {
        static void Main(string[] args)
        {
            iDB2Connection cn = new iDB2Connection("DataSource=myiSeries;");
            cn.Open();
        }
    }
}
```

```

Console.WriteLine(cn.JobName);

cn.Close();

}

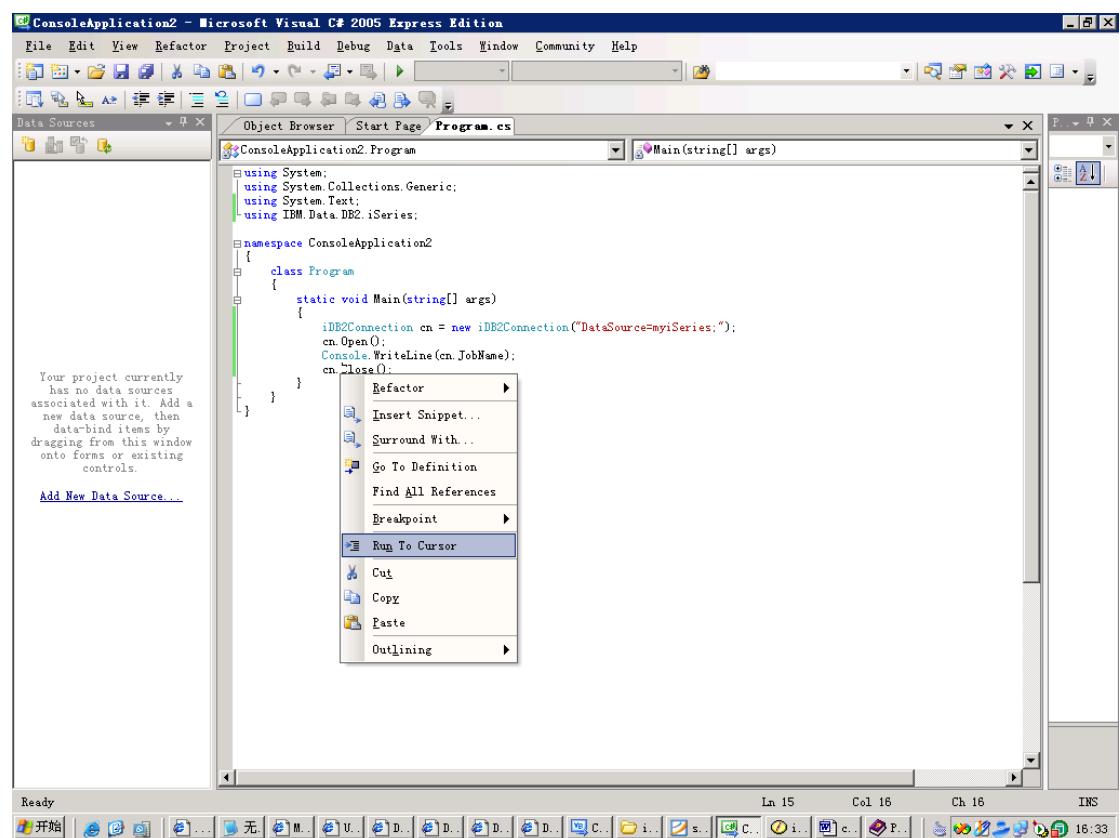
}

}

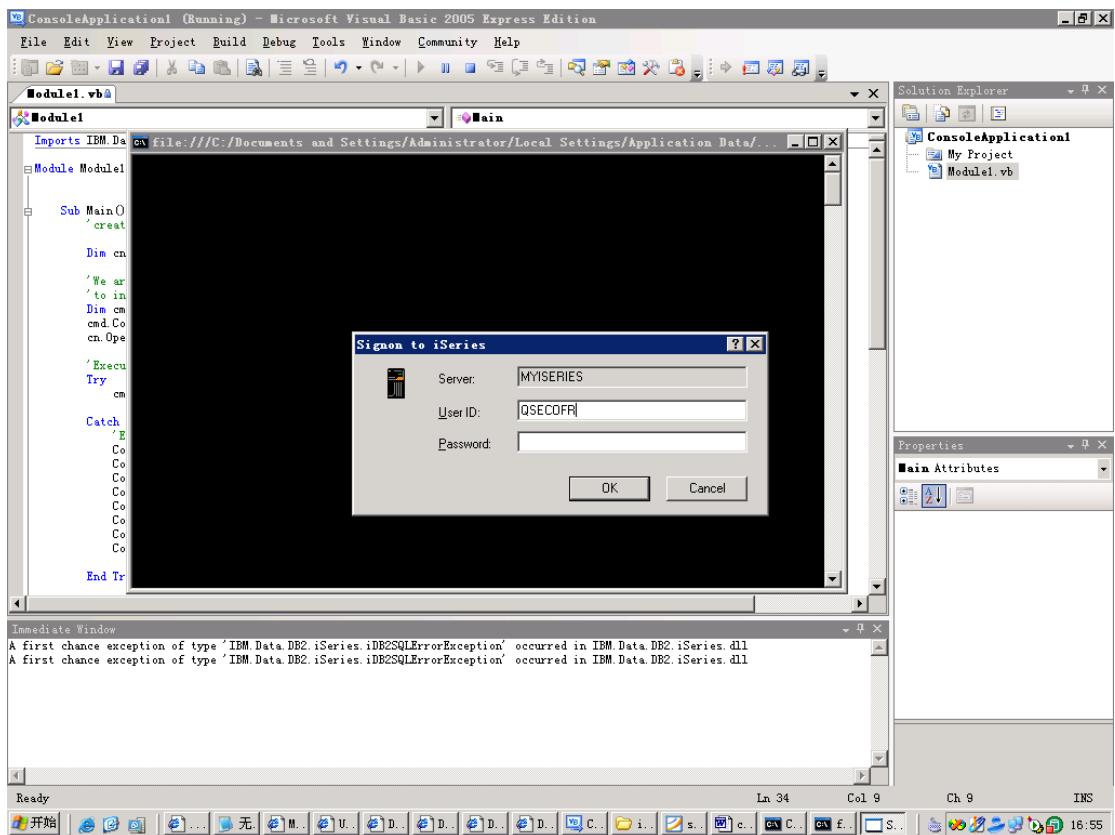
```

做以下操作

1. 在 Visual Studio .NET 中, 选择 save all
2. 选择 Build 菜单中的 → Rebuild solution.
3. 光标移动到 cn.Close() 行处, 选择 run to cursor 功能菜单。如下图:

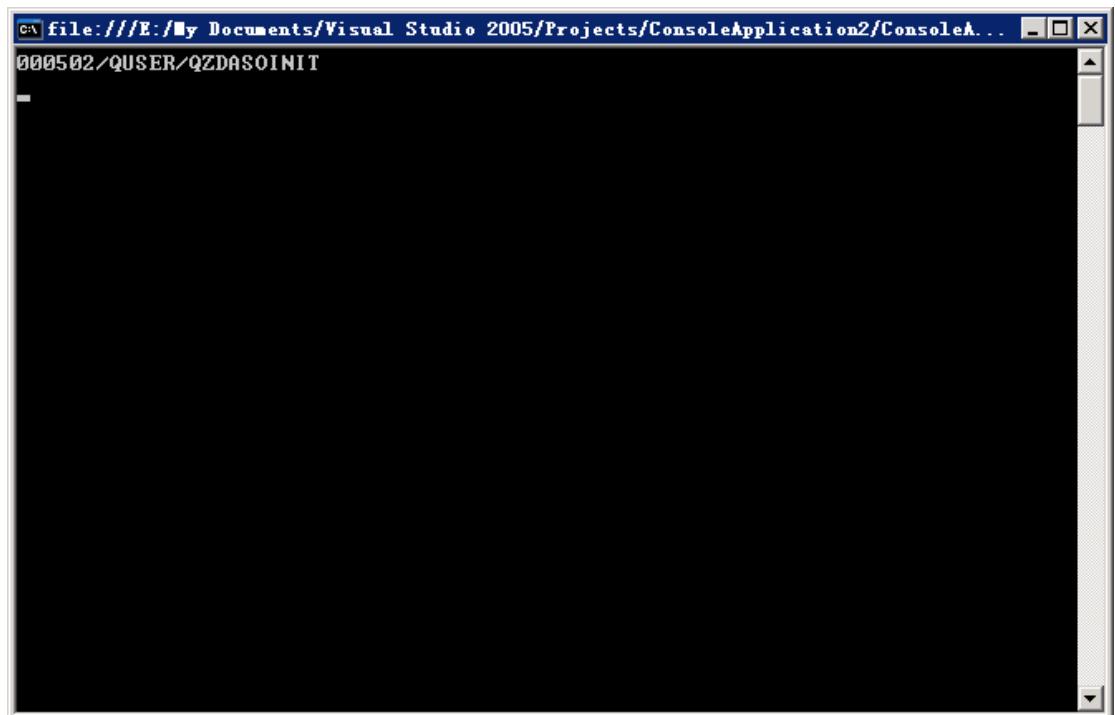


将打开一个 iSeries 的登陆界面, 如下图:



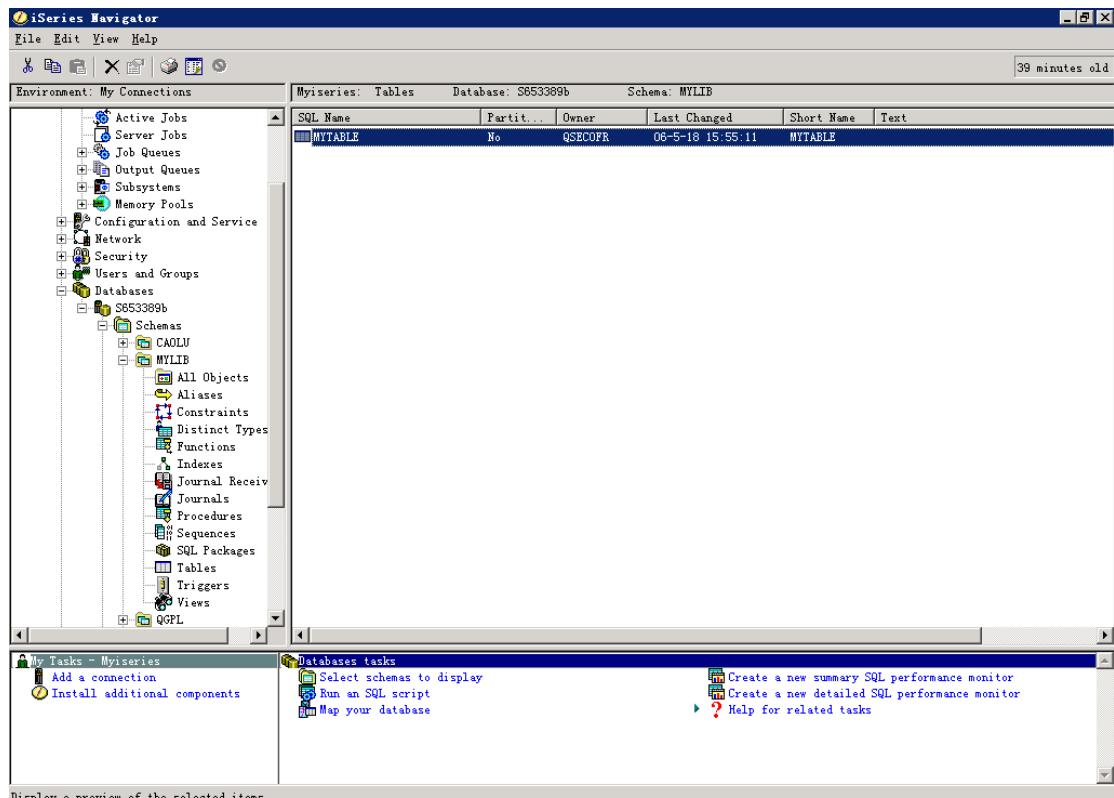
首先要在 windows host 表里添加 myiseries 的 ip 地址

就可以进行连接了。结果如下图：



. VB.net 例子

首先通过 i5 访问工具，创建一个数据库例子。如 mylib 数据库和 mytable 表。Mytable 有 name, id 字符型的列。如下图：



在 microsoft studio 中创建如下代码：

```
Imports IBM.Data.DB2.iSeries

Module Module1

Sub Main()

    ' create table mylib.mytable (col1 int, col2 char(20))

    Dim cn As New iDB2Connection("DataSource=myiSeries;")

    ' We are purposely creating a command that will fail because the values we're trying
    ' to insert don't match the column types of the table.

    Dim cmd As New iDB2Command("insert into mylib.mytable values('some string', 1)")

    cmd.Connection = cn

    cn.Open()
```

```

' Execute the command. This should fail and we will get into the Catch block

Try

cmd.ExecuteNonQuery()

Catch e As iDB2Exception

    ' Examine the exception and print out various properties

    Console.WriteLine("Exception: ")

    Console.WriteLine("Source: " & e.Source)

    Console.WriteLine("Message: " & e.Message)

    Console.WriteLine("MessageDetails: " & e.MessageDetails)

    Console.WriteLine("MessageCode: " & e.MessageCode)

    Console.WriteLine("SqlState: " & e.SqlState)

    Console.WriteLine("iDB2Exception type: " & e.GetType().ToString())

    Console.WriteLine("There are {0} errors in the error collection.", e.Errors.Count)

End Try

cn.Close()

End Sub

End Module

```

运行之后，查看结果如下图：

	NAME	ID
1	some string	1
2	some string	1

说明插入成功。