



DevInfo 5.0 Web Deployment Technical Document

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Introduction

DevInfo 5.0 is a hybrid application that can be installed as a desktop version and can also be deployed over the internet/intranet. Some of the key outcomes from Web deployment of DevInfo are:

- Access DevInfo application and query databases over the internet/intranet. (Web setup)
- Access data from a remote server (e.g. SQL Server) location through local DevInfo user application.
- Enable online data entry from multiple locations into a common DevInfo database.

There are several phases of Web deployment involving key processes such as:

1. Converting DevInfo databases from MS Access to a SQL server database
2. Installation and configuration of key components such as the IIS Web server, the ASP.net framework and the DevInfo Web application.
3. Configuring for on-line data entry.

This document provides a step-by-step guide to the different phases of the Web deployment process.

Technical and Administrative Requirements

The key technical and Administrative requirements for the Web deployment are as outlined below:

Technical Requirements

Operating System for Web Server

Microsoft Windows Server 2003/IIS Closed source system (license required)

Database Technology

Microsoft SQL Server 2000 / 2005 Closed source system (license required)

Microsoft Access Closed source system (no license required – not recommended)

Administrative Requirements

Web Hosting

There are three options for setting up a Web server:

- Local Host Hardware/Software setup - \$20,000 setup + \$200/mo*
- External Host (Shared) Entry level - \$200 setup + \$35/mo*
- External Host (Dedicated) High performance - \$5000 setup + \$400/mo*

**Note: Rough estimates for information purposes only.*

Webmaster

The web database needs to be supported by a Webmaster, a Database Administrator with the technical skills required to manage the deployment and maintenance of the Web process. The typical job responsibilities would include:

- Registration of the Web site, hosting
- Creation of a database on-line
- Upload/modify the database on the Web and to manage user profiles for data entry on the Web
- Web database administration and online data entry

Migrating DevInfo Databases into a Web-ready format

Migrating DevInfo databases is the cornerstone of the DevInfo Web deployment process. The desktop version of DevInfo employs MS Access to store data which provides the advantages of a relational database system coupled with robust data handling. However there are limitations in using MS Access as the database medium, especially in a server environment that requires concurrent and multi-user access. For the Web deployment, DevInfo employs the SQL server—a server based database engine capable of processing voluminous data in a multi-user environment. It also provides features such as enhanced security, automated/user controlled data transfer methods and robust data processing platform.

Migration of a DevInfo database from MS Access to SQL server involves the following phases:

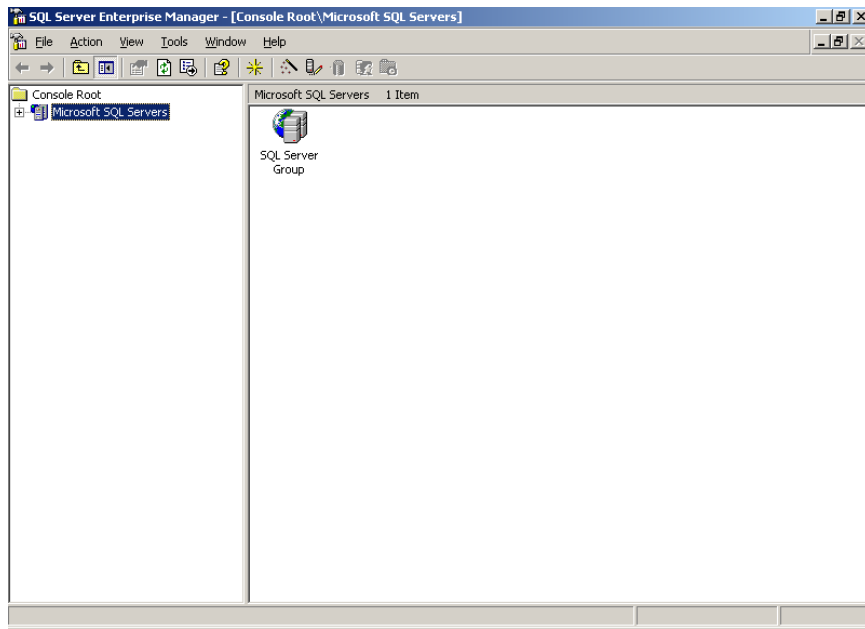
- Create a SQL Server database
- Transfer data from MS Access to MS SQL
- Run queries on imported data tables
- Configure the SQL Server database
- Import missing data and finalize database settings

Creating a SQL Server database

The first phase of migrating DevInfo involves creating a new SQL database and using the data transfer service to upload data. To create a SQL database, you need to have SQL Server 2000 and SQL Client installed on Microsoft Windows Server 2003.

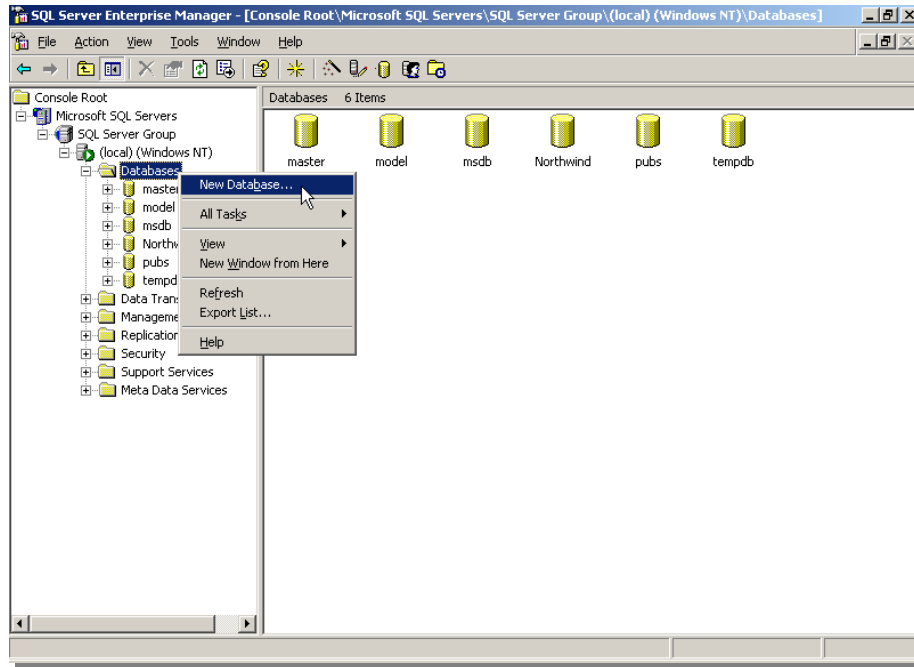
STEP 1

From the Start menu, point to **All Programs | Microsoft SQL Server** and click the **Enterprise manager** option. The SQL Server Enterprise Manager Console opens. The left panel displays the available SQL servers.



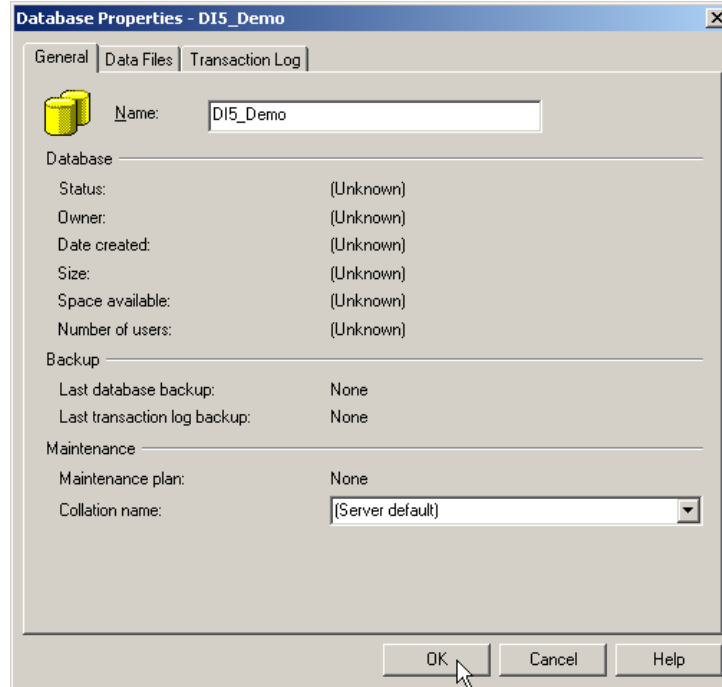
STEP 2

Click **Microsoft SQL Server** to expand and locate the databases available on the server group. To create a new database, right-click **Databases** and click **New Database** from the context menu.

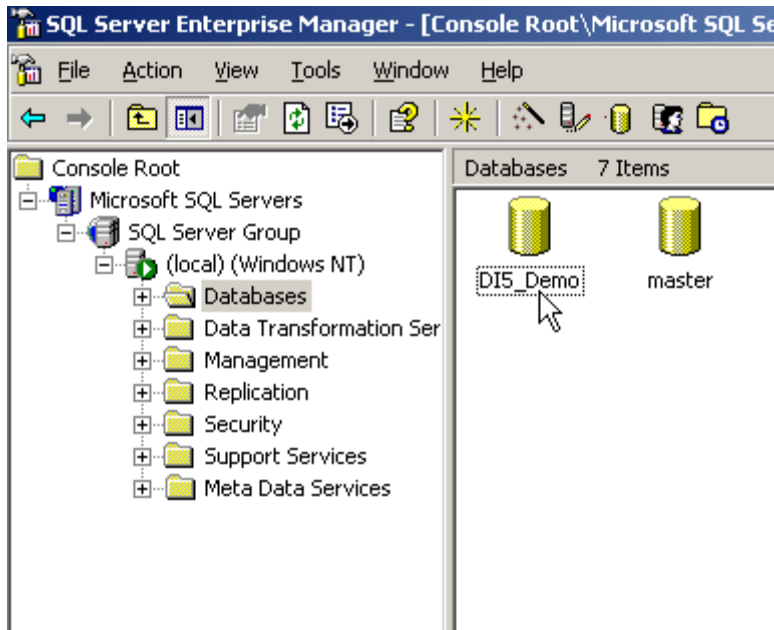


STEP 3

The **Database Properties** dialogue box opens. Specify a name for the new database in the **Name** box. Click **OK**.



The new database will now be displayed in the **Databases** folder.



Converting an MS Access database to MS SQL

The *DX Access SQL.exe* data exchange enables you to perform the following database transformations:


- ▶ Upload a dataset from a Microsoft Access database to a remote Microsoft SQL database
- ▶ Download a dataset from a remote Microsoft SQL database to a Microsoft Access database.

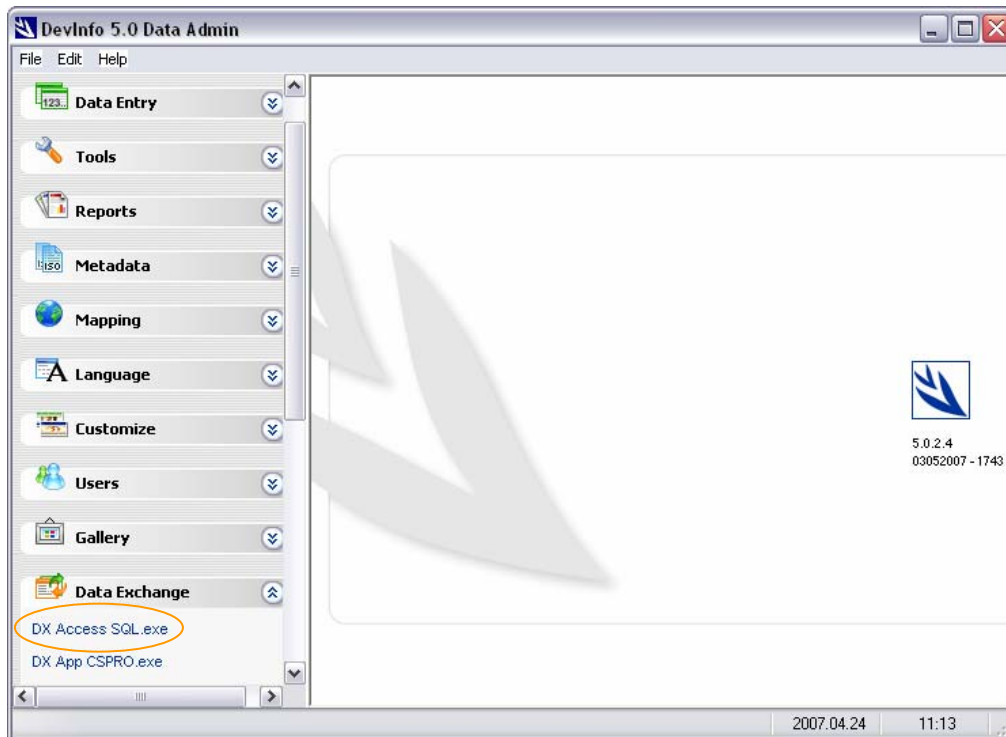
Additionally, this utility also allows you to upload more than one datasets within a single database so that the webmaster of the DevInfo v5.0 Web application only requires creating a single database. In other words, additional costs required to host multiple databases can be cut by including multiple datasets within a single database.

The next sub-section describes steps that enable you to launch the *DX Access SQL.exe* data exchange.

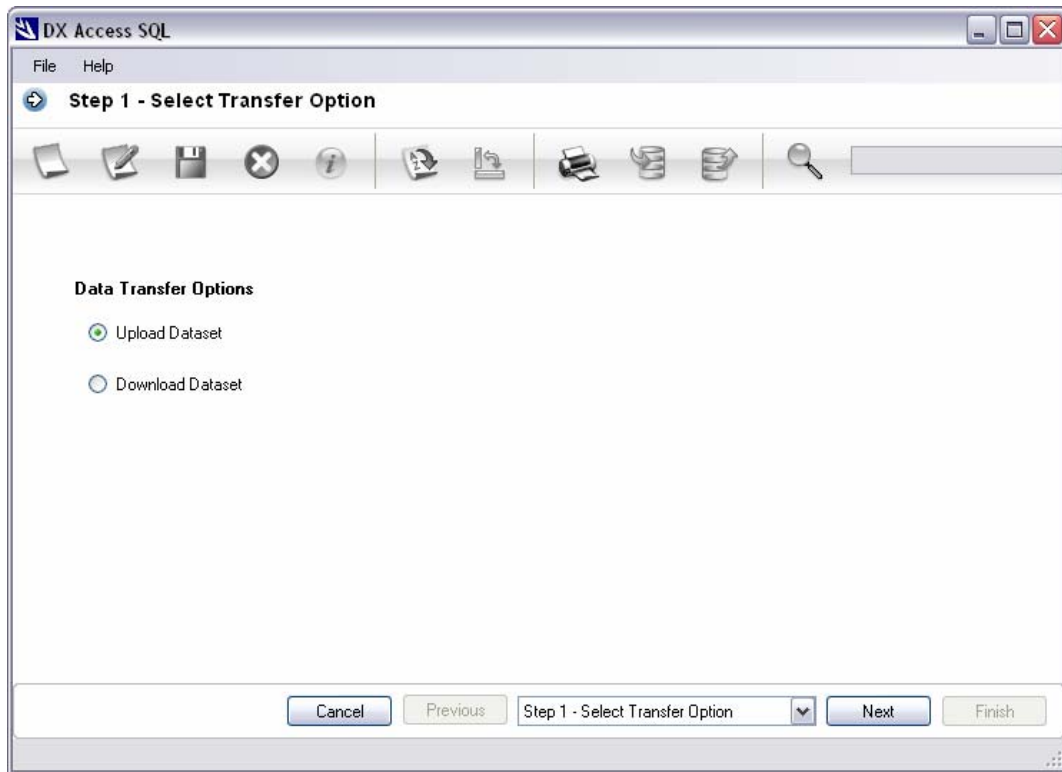
Launching the DX Access SQL.exe Data Exchange

The following steps enable you to launch the DX Access SQL.exe data exchange.

1. Launch the DevInfo v5.0 Database Administration application by clicking  from the desktop. The Database Administration application main window is displayed as depicted in the following figure.



2. Click **DX Access SQL.exe** available in the Data Exchange module as depicted in the figure in previous step. The DX Access SQL window is displayed as depicted in the following figure.



The next section describes steps that enable you to upload a dataset to a remote MS SQL database.

Reference: Refer to the [Downloading a Dataset](#) section to download a dataset from a remote MS SQL database.

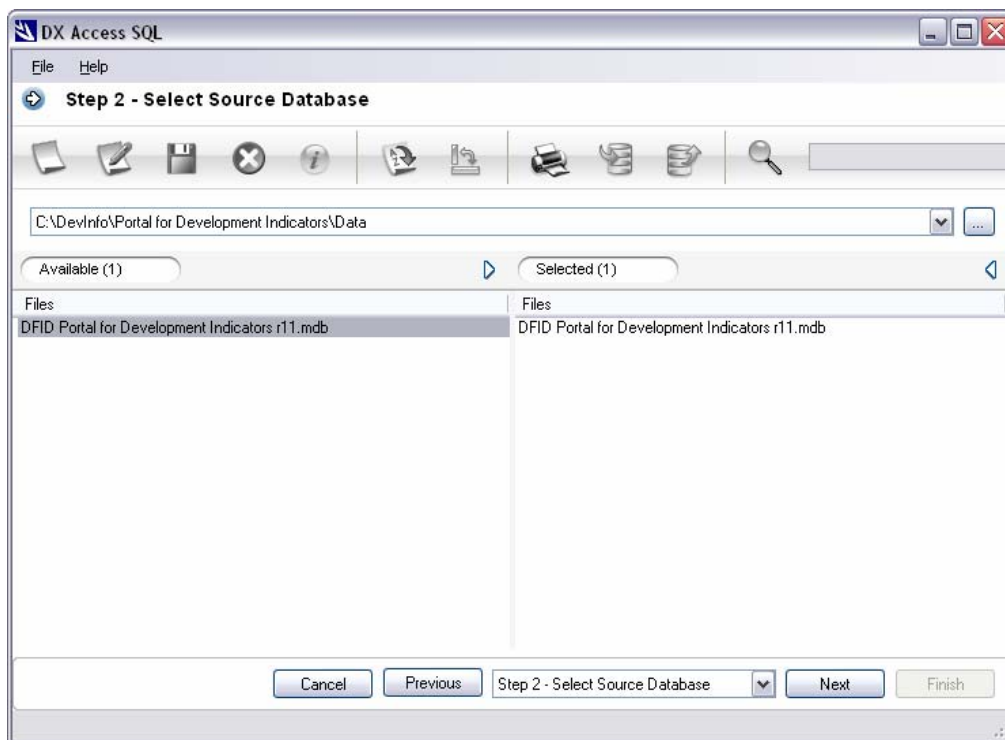
Uploading a Dataset


The following steps enable you to upload a dataset from a Microsoft Access database to a Microsoft SQL database using the *DX Access SQL.exe* data exchange.

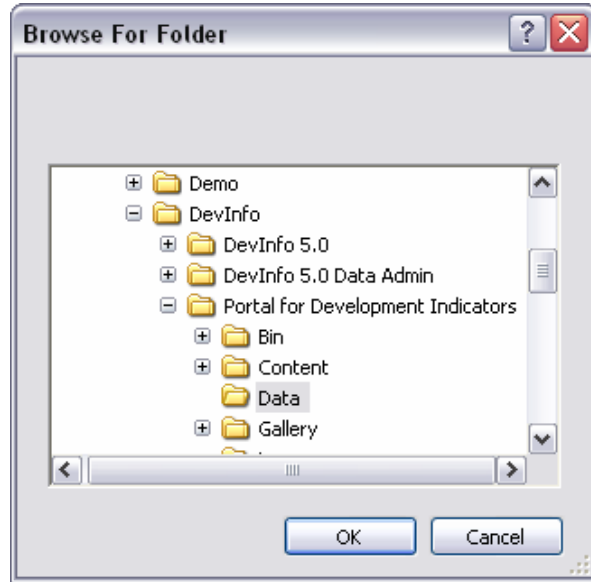
1. Launch the *DX Access SQL.exe* data exchange.

Reference: Refer to [Launching the DX Access SQL.exe Data Exchange](#) section for more information on launching the *DX Access SQL.exe* data exchange.

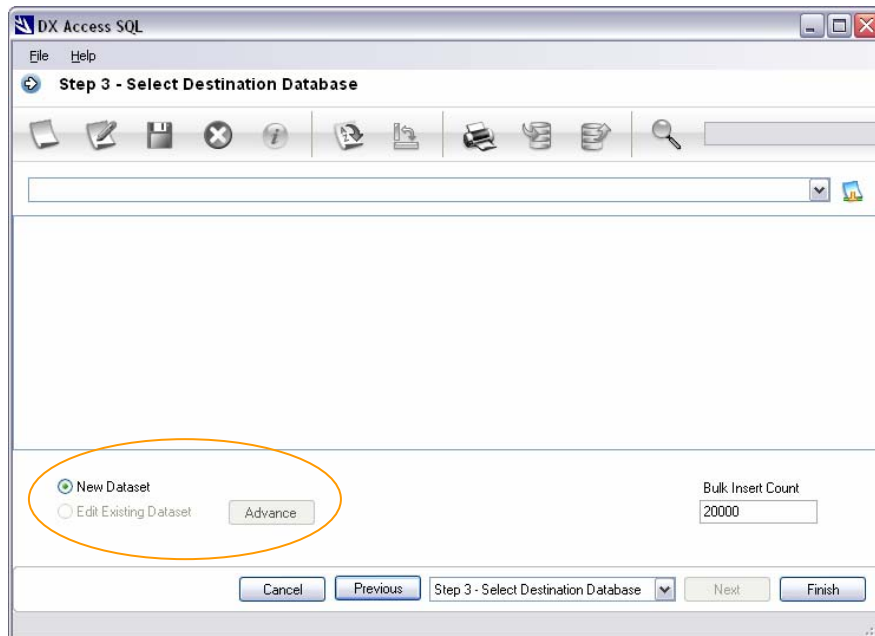
2. Select the **Upload Dataset** data transfer option at Step 1 and click **Next**. The **Select Source Database** window is displayed as depicted in the following figure.



3. Click  to browse to a desired location using the **Browse For Folder** window to select a folder containing an MS Access Database as depicted in the following figure.



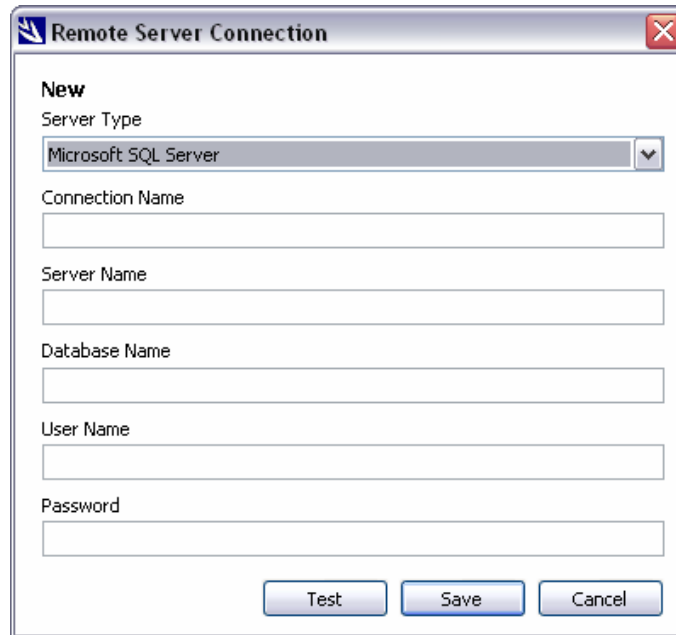
4. Click **OK** to continue. The **Browse For Folder** window disappears and a listing of all databases available in the specified folder are displayed in the Available pane.
5. Select the required database by either double clicking on the database in the **Available** pane or by dragging and dropping the same onto the **Selected** pane. The system checks whether the specified source database is a valid DevInfo v5.0 database. If not, the system notifies the user appropriately. Once a valid DevInfo v5.0 database is selected you can proceed by clicking **Next**. The **Select Destination Database** window is displayed as depicted in the following figure.



The next sub-section describes steps that enable you to create a remote MS SQL server connection.

Creating a Remote MS SQL Server Connection

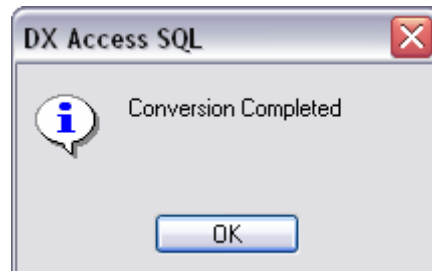
1. Click  **Remote Server Connection** button to create a new online MS SQL database connection. The Remote Server Connection window is displayed as depicted in the following figure.



2. Supply appropriate information in all fields on the Remote Server Connection required information and before saving it is advisable to test the connection.

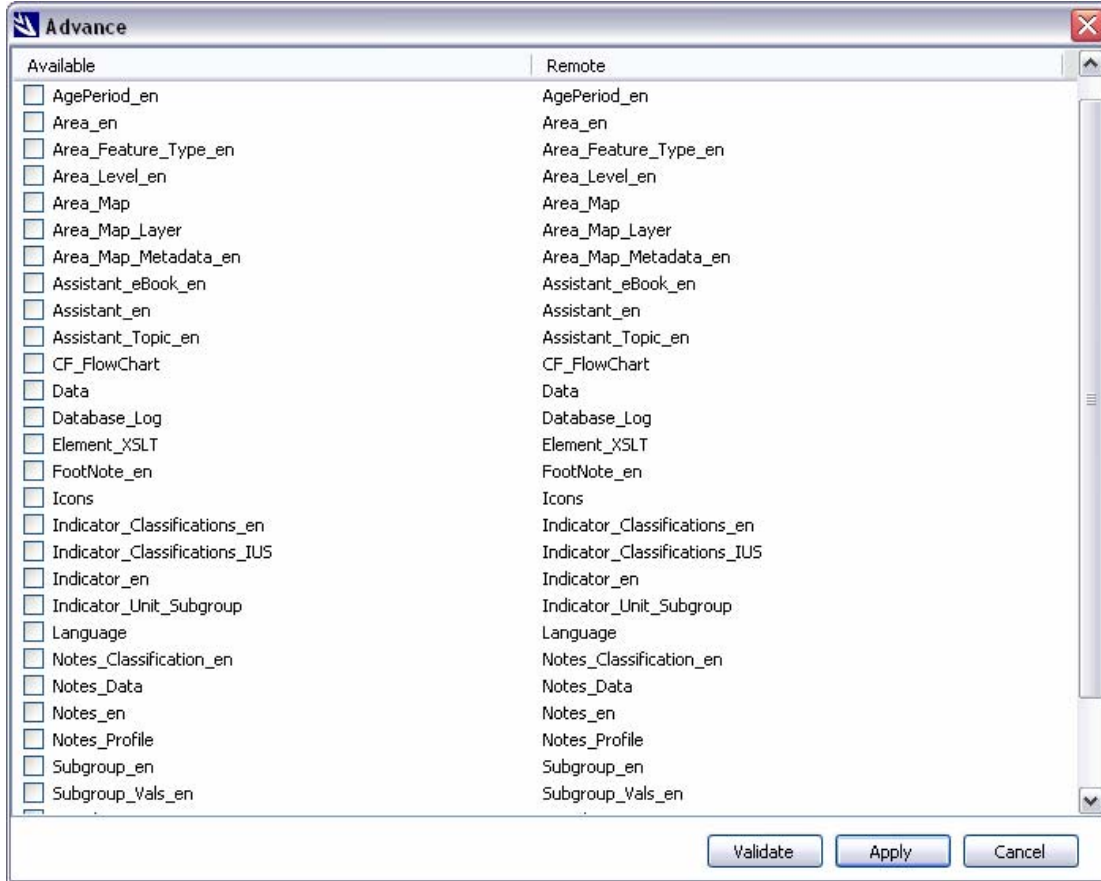
Uploading the Source MS Access Database Completely

To upload the source MS Access Database completely, select **New Dataset** and click **Finish**. The source MS Access database is uploaded to the remotely hosted MS SQL database and a confirmation that the conversion is complete is displayed as depicted in the following figure.



Uploading the Source MS Access Database Selectively

To upload the source MS Access Database selectively, select **Edit Existing Dataset** and click **Advanced**. The Advanced window is displayed as depicted in the following figure.



You can either validate the changed MS Access database with the existing MS SQL database on the remote server or you can manually select the tables to be uploaded.

Click **Apply** to upload the selected tables to the MS SQL database hosted remotely. The selected tables are uploaded to the destination database.

Click **Finish** to close the *DX Access SQL.exe* data exchange.

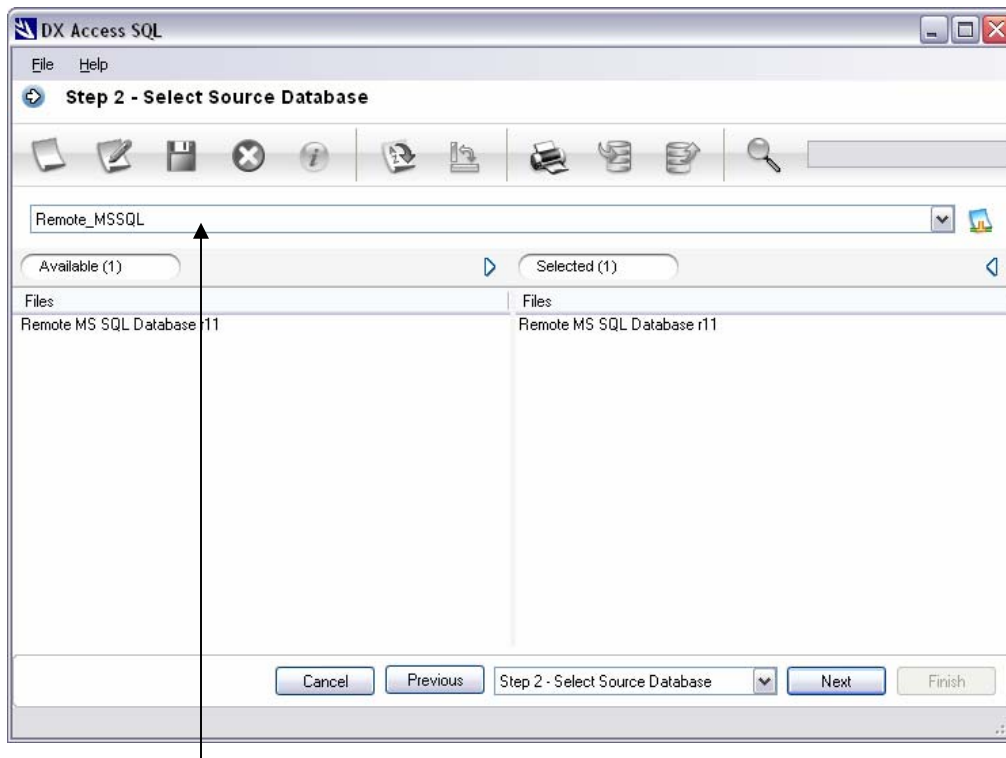
Downloading a Dataset

The following steps enable you to download a dataset from a Microsoft SQL database to a Microsoft Access database using the *DX Access SQL.exe* data exchange.

1. Launch the *DX Access SQL.exe* data exchange.

Reference: Refer to [Launching the DX Access SQL.exe Data Exchange](#) section for more information on launching the *DX Access SQL.exe* data exchange.

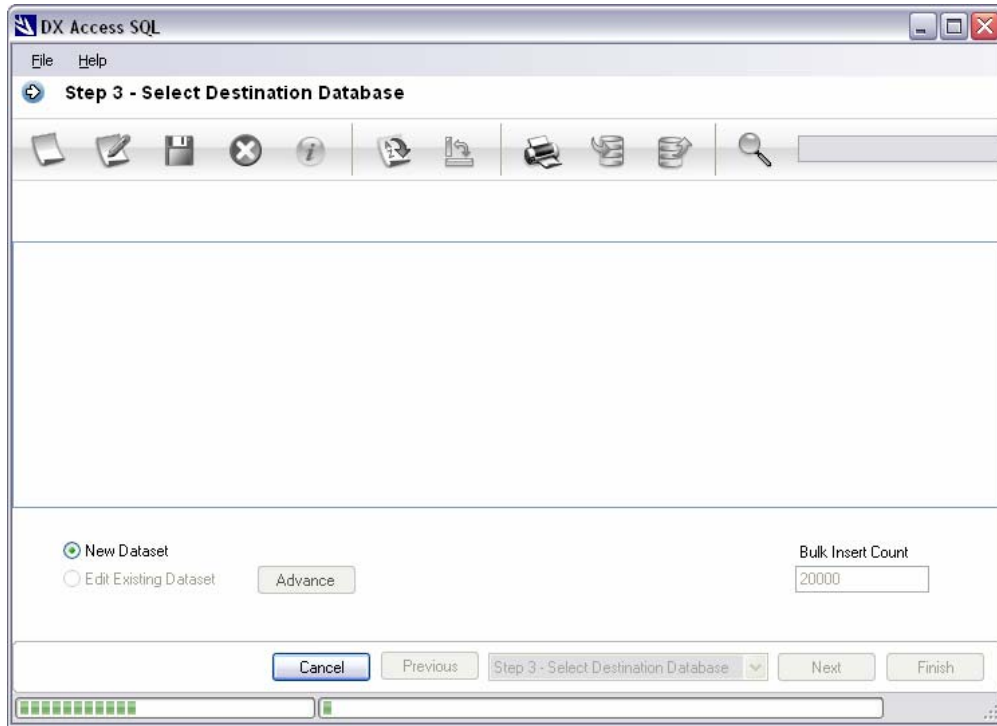
2. Select the **Download Dataset** data transfer option at Step 1 and click **Next**. The **Select Source Database** window is displayed as depicted in the following figure.



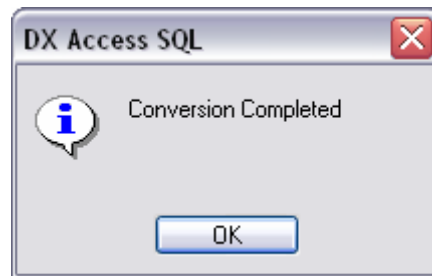
You can utilize an existing remote database connection or create a new MS SQL database connection.

Reference: Refer to [Creating a Remote MS SQL Server Connection](#) section for more information on creating a remote MS SQL server connection.

3. Select the required database by either double clicking on the database in the **Available** pane or by dragging and dropping the same onto the **Selected** pane and click **Next**. The **Select Destination Database** window is displayed as depicted in the following figure.



The source MS SQL database is downloaded to the remotely hosted MS SQL database and a confirmation that the conversion is complete is displayed as depicted in the following figure.



4. Click **OK**. The **Conversion Complete** dialog box disappears and the **Save As** dialog box is displayed. This dialog box can be used to specify the name and location of the MS Access database to be saved which was downloaded in the previous step. The *DX Access SQL.exe* data exchange utility is automatically closed after the downloaded database is saved to the specified location.

Installing DevInfo 5.0 Web Application

Installing DevInfo 5.0 on the Web enables multiple users to concurrently access a DevInfo SQL Server database from a single server installation. The Web installation of DevInfo 5.0 involves the following steps:

- Installing Server components— IIS and Asp.Net
- Installing DevInfo 5.0 Web application
- Managing folder permissions

Installing Windows 2003 Server Components – IIS and ASP.NET

To install a Web set-up for DevInfo 5.0, you need to have Internet Information Services (IIS), the .NET framework and ASP.Net installed on your Web server. IIS is a web application server program that handles HTTP requests. It is a suite of tools and services available as a component of Microsoft Windows Server 2003.

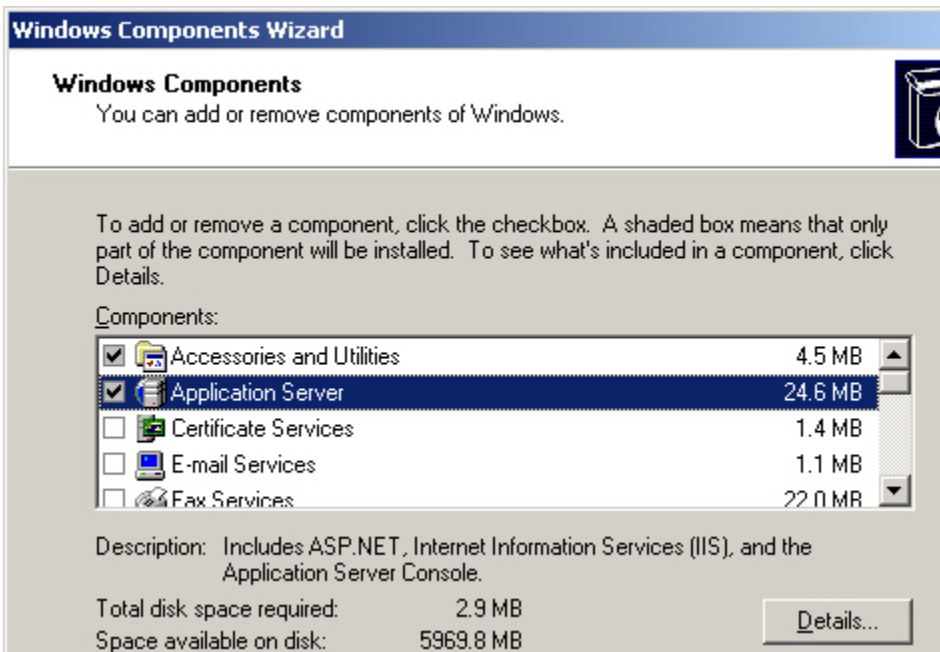
STEP 1

IIS 6.0 is available as a windows component but is not installed on Windows Server 2003 by default. Microsoft strongly recommends installing IIS on an NTFS-formatted drive. NTFS is a more powerful and secure file system than FAT and FAT32. You must have Administrators access on the local computer to perform the following procedure.

From the **Start** menu, point to **Control Panel** and then click **Add or Remove Programs**. Click **Add/Remove Windows Components**.

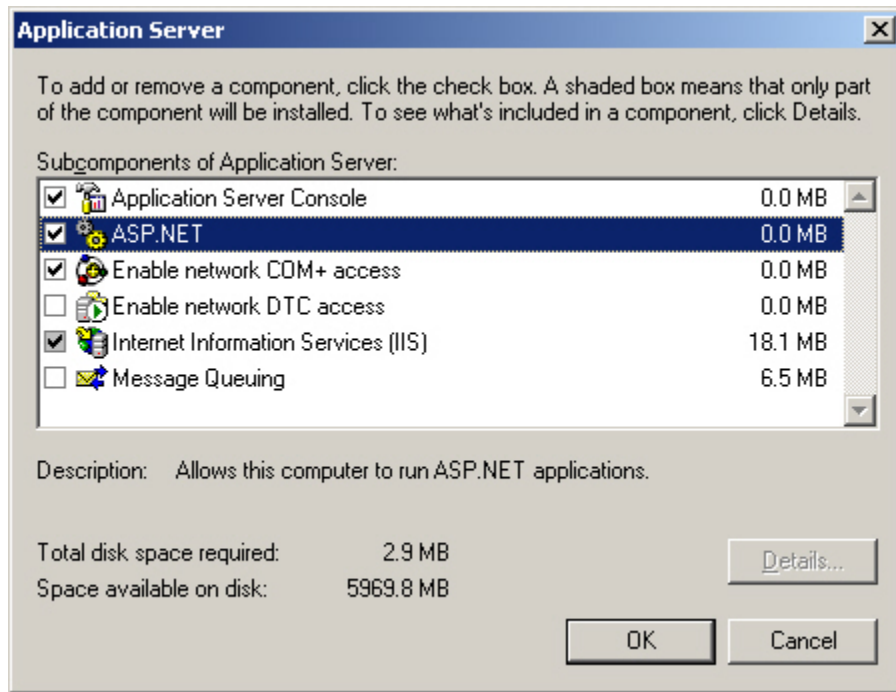
STEP 2

In the **Components** list, click the **Application Server** check box. Click **Details**.



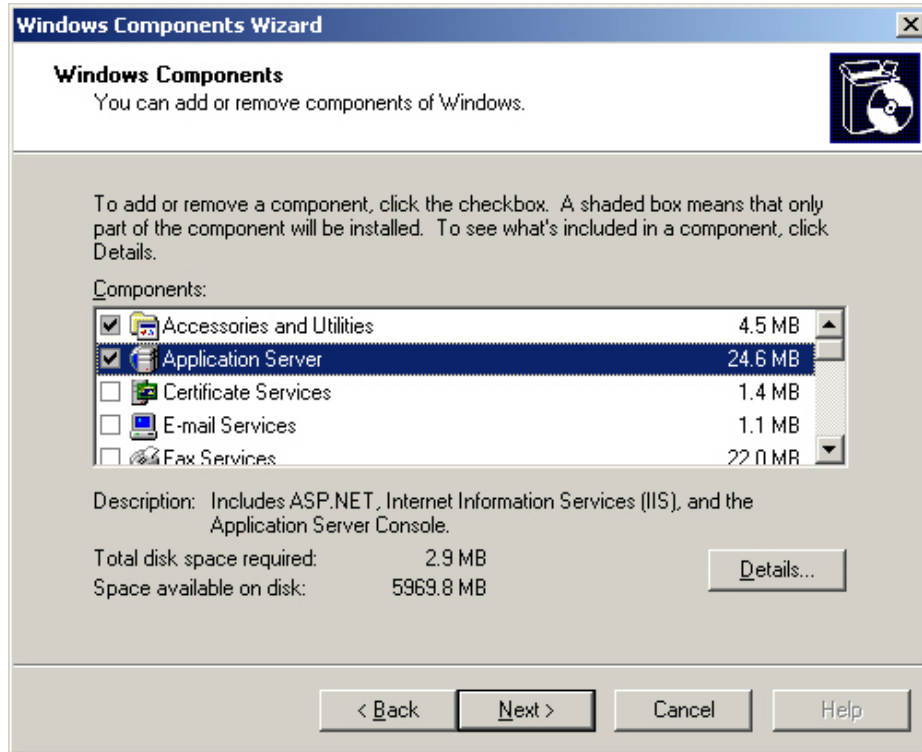
STEP 3

In the **Subcomponents of Application Server** list, click the **ASP.NET** and **Internet Information Services** check boxes. Click **OK** to return to the main menu.



STEP 4

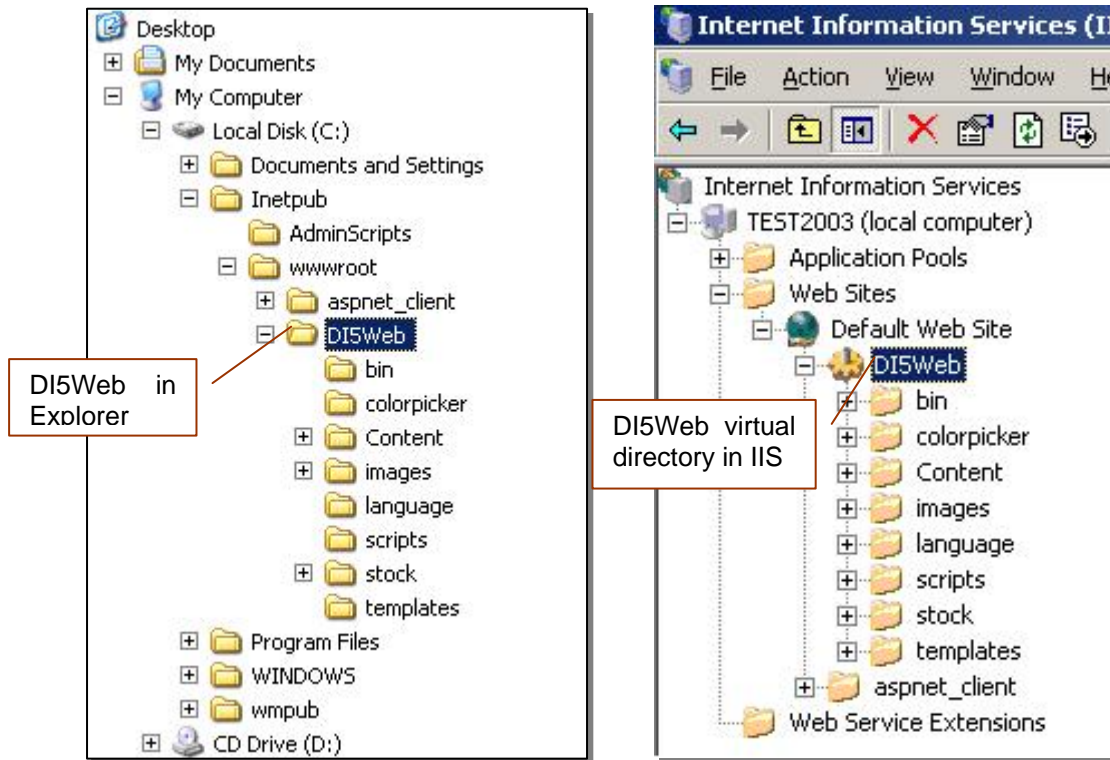
Click **Next** to start the installation process. The set-up process may ask for the Microsoft Windows Server 2003 installation CD.



DevInfo 5.0 Web Set-up

1. Insert DevInfo v5.0 Web application CD into the CD-ROM drive. In case you do not have the Web application CD, you can download it from http://www.devinfo.org/downloads/di5.0.1.2_r15_web_setup.zip
2. Wait for **Auto-run** to open the **setup** screen
3. The installation wizard will guide you through the installation process. Follow the instructions on the screen to complete the setup. Select **Complete** option for installation.
4. Click **Finish** to complete the installation.

DevInfo v5.0 Web installation creates the **DI5Web** folder with all files in Web root folder. It also automatically creates a virtual directory named DI5Web. It sets **Home.aspx** page as the default page for the site

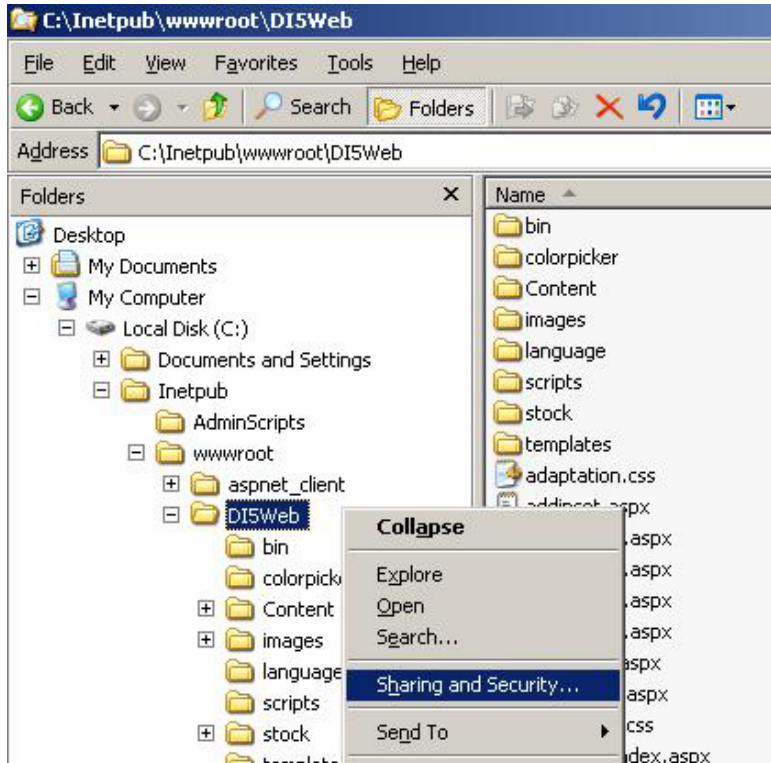


Setting Folder Permissions

You need to set Full permission for Asp.Net process on DevInfo 5.0 web folder for running the site.

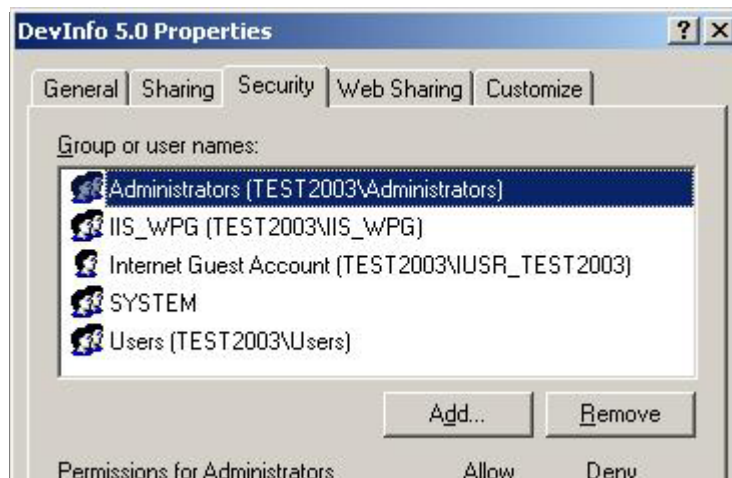
STEP 1

In **Windows Explorer**, navigate to **C:\inetpub\wwwroot\DI5Web**. Right-click on **DI5Web** folder and click **Sharing and Security** option from the context menu.



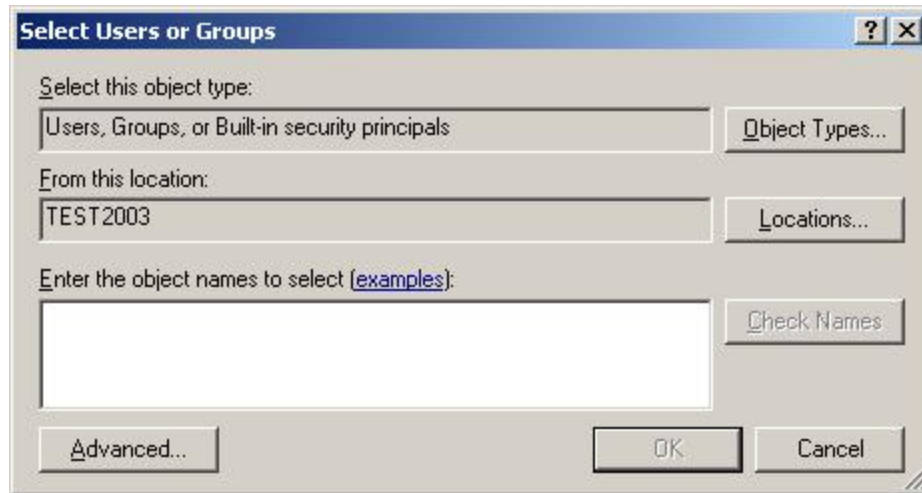
STEP 2

The DevInfo 5.0 Properties window opens. Click the **Security** tab and then click **Add**.



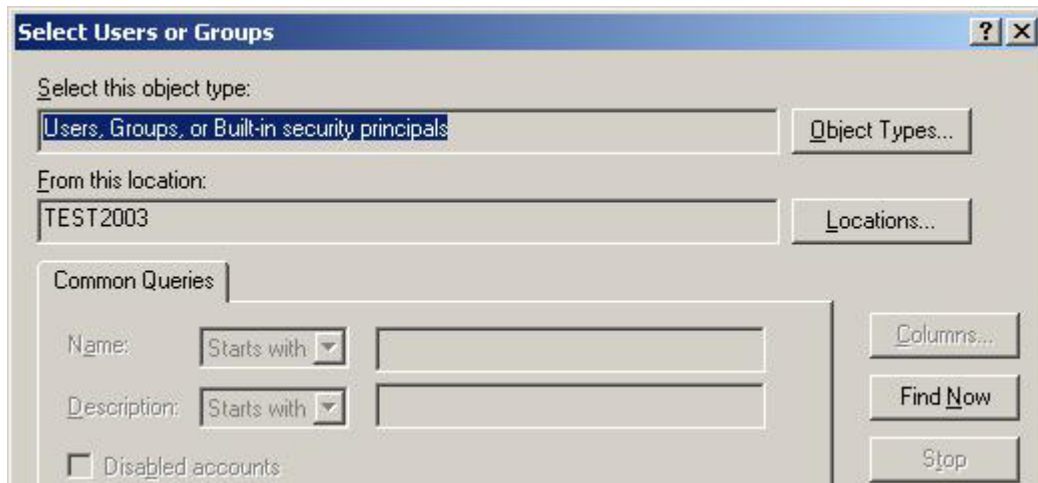
STEP 3

The **Select Users or Groups** dialog box opens. Click **Advanced**.



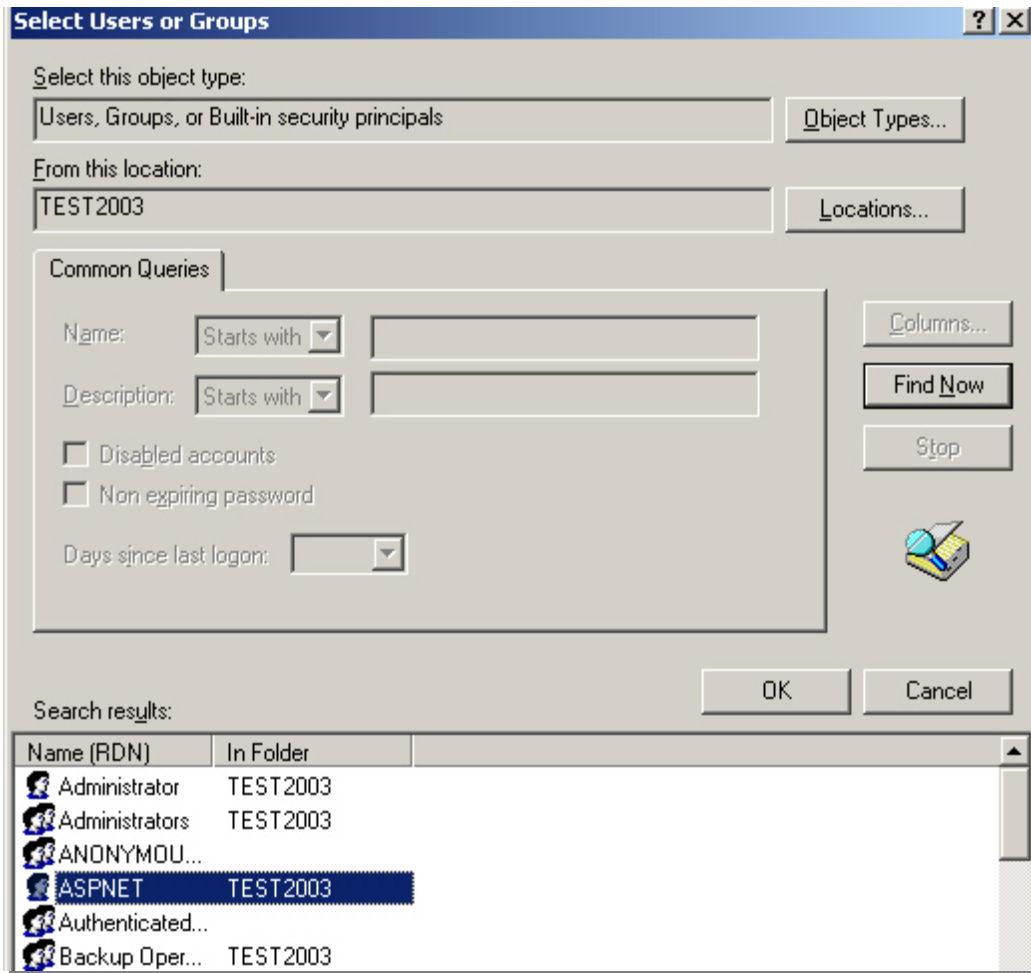
STEP 4

Click **Find Now** to search for Users and Groups.



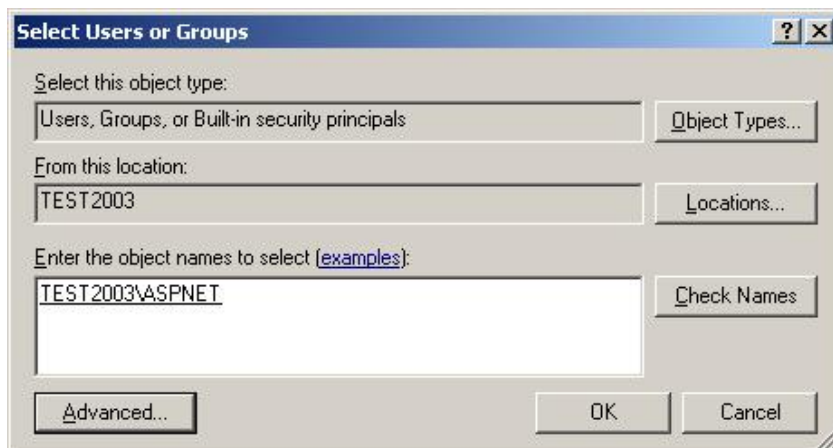
STEP 5

The search results are displayed in the list. Click **ASPNET** from the list and click **OK**.



STEP 6

The User and location is now displayed in the Select Users or Groups dialogue box. Click **OK** to return to the DevInfo 5.0 Properties window.

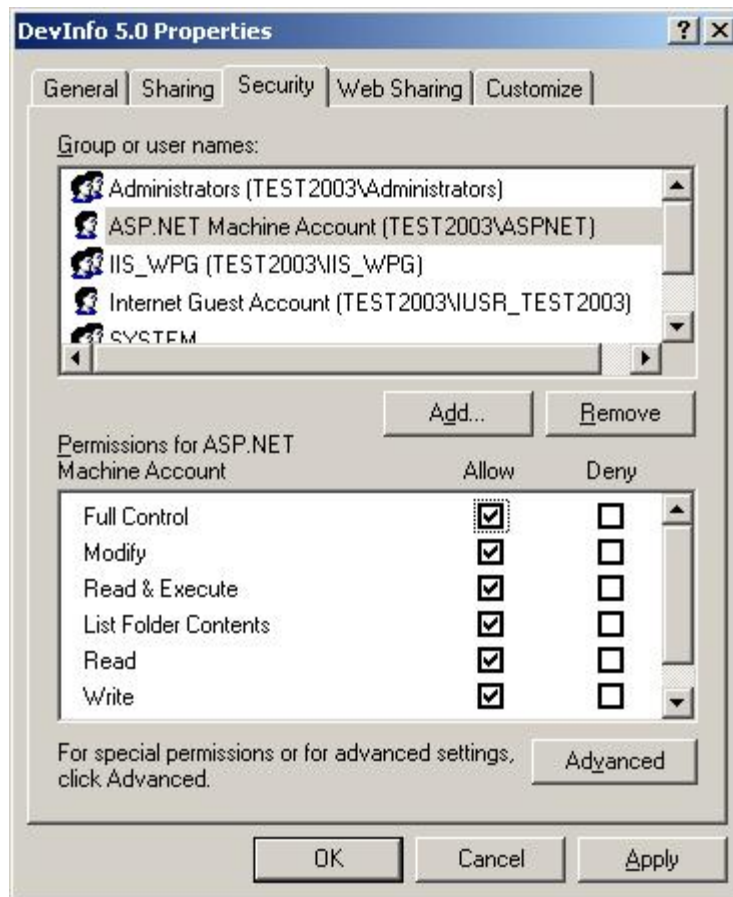


STEP 7

In the **Permissions for ASP.NET Machine Account**, click the **Full Control** check box.

In the **Group or user names** list, click **IIS_WPG (TEST2003\IIS_WPG)**. In the **Permissions for ASP.NET Machine Account**, click the **Full Control** check box.

Click **OK** to complete the process.



Accessing DevInfo Web Application

The DevInfo 5.0 Web application can now be accessed for the server or from any client location. Multiple users can now log on and access data from the SQL server database.

Access DevInfo 5.0 from Server

To access DevInfo from the server:

- Launch Internet Explorer (6.0 or higher)
- In the Address bar, type `http://localhost/DI5Web/`

Access DevInfo 5.0 from Client Machine

To access DevInfo from client machine:

- Launch Internet Explorer (6.0 or higher)
- In the Address bar, type `http://<windows 2003 server name or system IP address>/DI5Web/`

Modifying Default Database List

When you install the DevInfo Web set-up and log-in for the first time, you will be able to browse the default MDGInfo database hosted on a SQL Server. You can modify the default database to add the following types of databases:

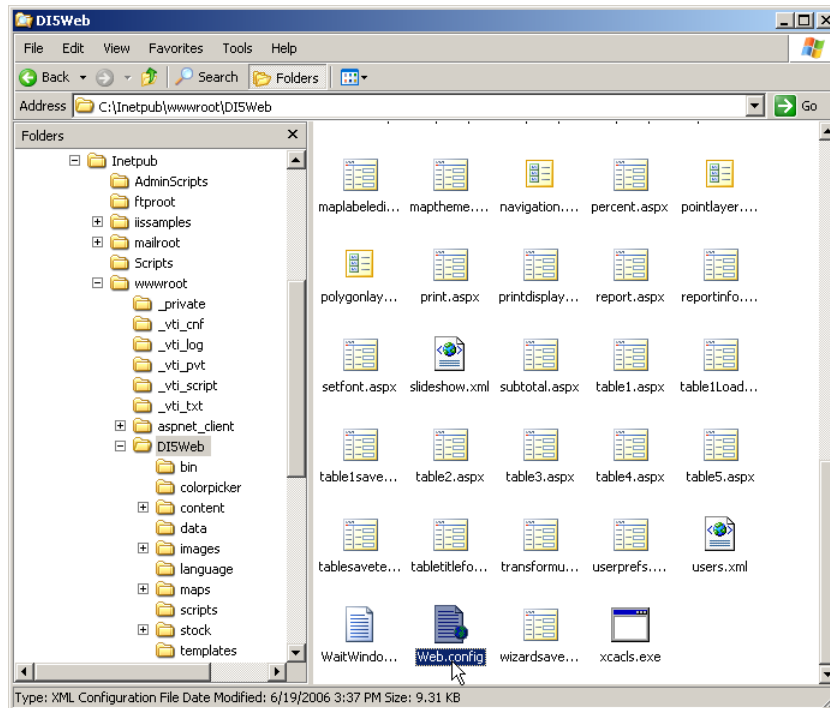
SQL Server Database
Microsoft Access Database

Add SQL Server Databases to Default Database list

STEP 1

On the Server hosting the DevInfo Web application, open the file **Web.config** in **Notepad** from the following location:

`C:\Inetpub\wwwroot\DI5Web`



STEP 2

In the **Web.Config** file, locate the section `<!--Database section-->`. This section contains the default settings for the databases that are accessed by the user. Under this section, there will be a set of six keys that define the parameters required by DevInfo Web application to identify and access a database. Copy the set of six keys and paste it right below the original entries.

```

<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <appSettings>
    <!--Users file-->
    <add key="user_file" value="users.xml"/>
    <!--Database section-->
    <add key="databases" value="1"/>

    <!-- Entry for default database.-->

    <add key="database0.display" value="DevInfo 5.0 Databases"/>
    <add key="database0.data_type" value="0"/>
    <add key="database0.data_source" value="64.224.17.228"/>
    <add key="database0.data_name" value="devinfobetainfo"/>
    <add key="database0.UID" value="user1163953"/>
    <add key="database0.PWD" value="cd3uhn65cc"/>

    <add key="database1.display" value="DevInfo 5.0 Databases"/>
    <add key="database1.data_type" value="0"/>
    <add key="database1.data_source" value="64.224.17.228"/>
    <add key="database1.data_name" value="devinfobetainfo"/>
    <add key="database1.UID" value="user1163953"/>
    <add key="database1.PWD" value="cd3uhn65cc"/>
  
```

STEP 3

Make the following modifications to the key entries:

Modify the key **“database1.display”** as **“database2.display”**. Make this change for all the key entries. Increment the number by 1 for every new type of database connection that you append to the list of default databases.

For each key make the following changes

```

<add key="database2.display" value="heading name in open database dialogue box"/>
<add key="database2.data_type" value="0"/>
<add key="database2.data_source" value="IP address of the SQL Server"/>
<add key="database2.data_name" value="name of the SQL Server Database"/>
<add key="database2.UID" value="user name of the SQL Server Database"/>
<add key="database2.PWD" value="password of the SQL Server Database "/>

```

STEP 4

Increment the **value** for the key "databases" by 1. Increment the value by 1 for every new database connection that you append to the list of default databases. The key entry will be modified to

```
<add key="databases" value="2"/>
```

Save and close the **Web.config** file. Log in into the DevInfo Web application and click the open database button in the toolbar. The new SQL Server database will now be displayed along with the default databases.

Add Microsoft Access Databases to Default Database list

STEP 1

Copy the Microsoft Access database to the following location in the Web Server hosting the DevInfo Web application:

```
C:\inetpub\wwwroot\DI5Web\data
```

STEP 2

Open the file **Web.config** in **Notepad** as mentioned earlier in Step 1 (page 33).

STEP 3

Follow Step 2 as mentioned in (page 34).

STEP 4

Modify the key **database1.display** as **database3.display**. Make this change for all the key entries.

For each key make the following changes:

```
<add key="database3.display" value="heading name in open database dialogue box"/>
<add key="database3.data_type" value="1"/>
<add key="database3.data_source" value=""/>
<add key="database3.data_name" value="data/name of database.mdb"/>
<add key="database3.UID" value="admin"/>
<add key="database3.PWD" value="unitednations2000"/>
```


The Microsoft Access database will now be displayed in the list of available databases.

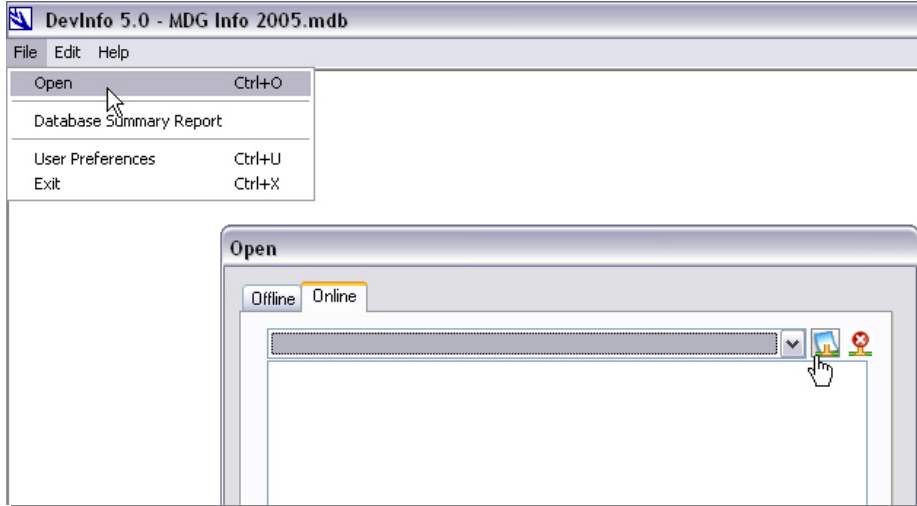
After modifying the default database list, delete the **database.xml** file from the following location:

```
C:\inetpub\wwwroot\DI5Web
```

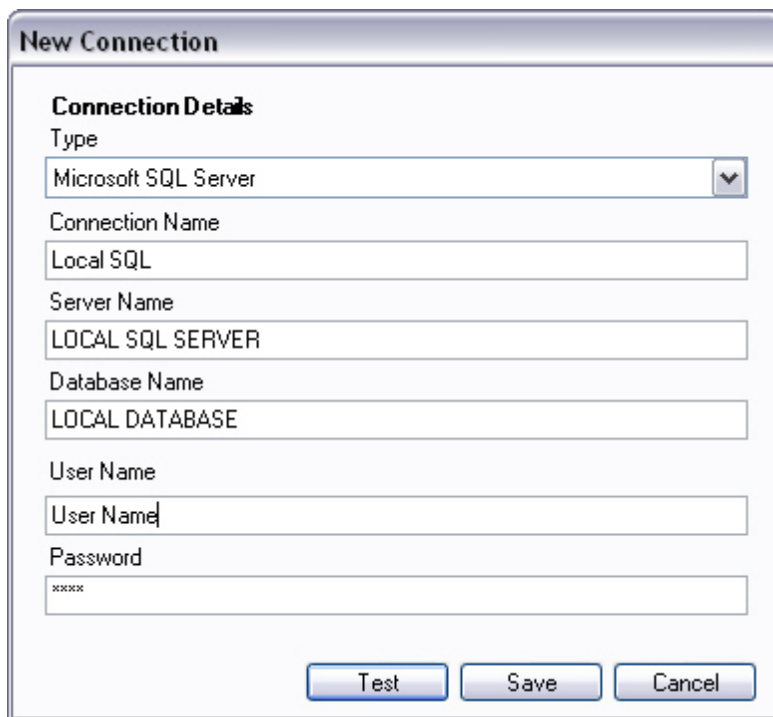
The **database.xml** file will be automatically generated when you click the open button in DevInfo 5.0 Web application. It will refresh the database list and reflect the additions done in the previous steps.

Access SQL Server Databases in DevInfo 5.0 Desktop Application

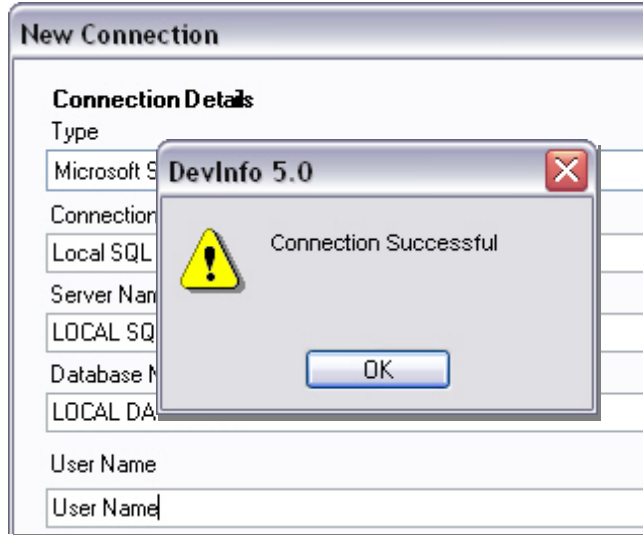
Double-click the **DevInfo 5.0** icon on the desktop. In the homepage, select **Open** from the **File** menu. In the **Open** window, click the **Online** tab. Click  to create a new connection.



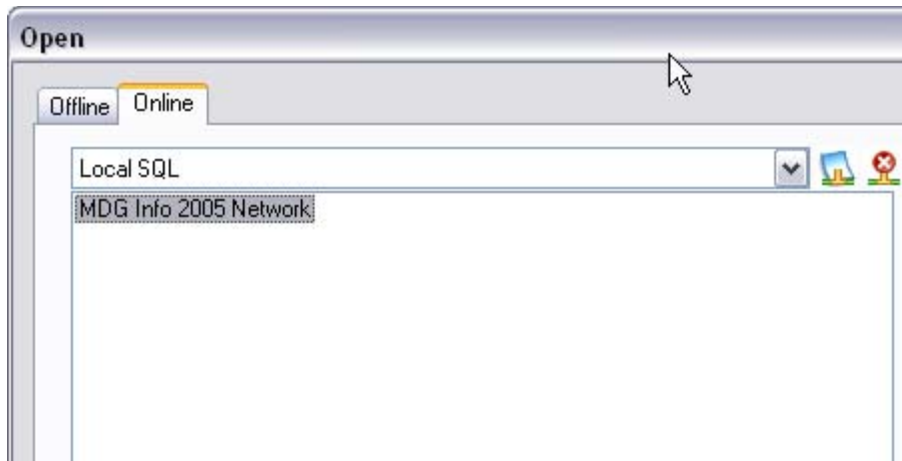
The **New Connection** dialogue box opens. Here, you can specify the connection details for the database located in the local/intranet SQL server.



Click **Test** to validate the connection. A connection successful message is received on successful validation.




Click **Save** to save the connection. Select the saved connection from the drop-down list. The database is now displayed in the list box.

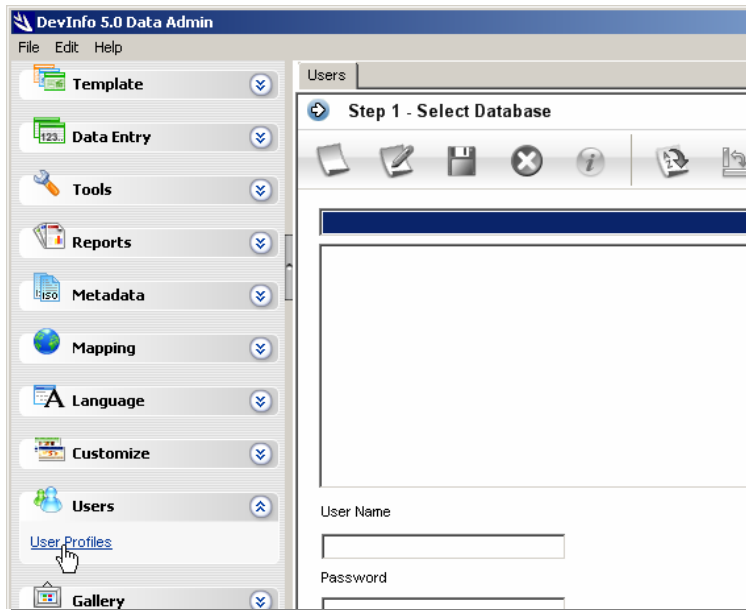


The database located on your local/intranet SQL server can now be accessed in the DevInfo 5.0 user interface. Double-click on the database to open it. You can now query the database and generate table, graphs, and maps.


Configuring DevInfo 5.0 Web for Online Data Entry

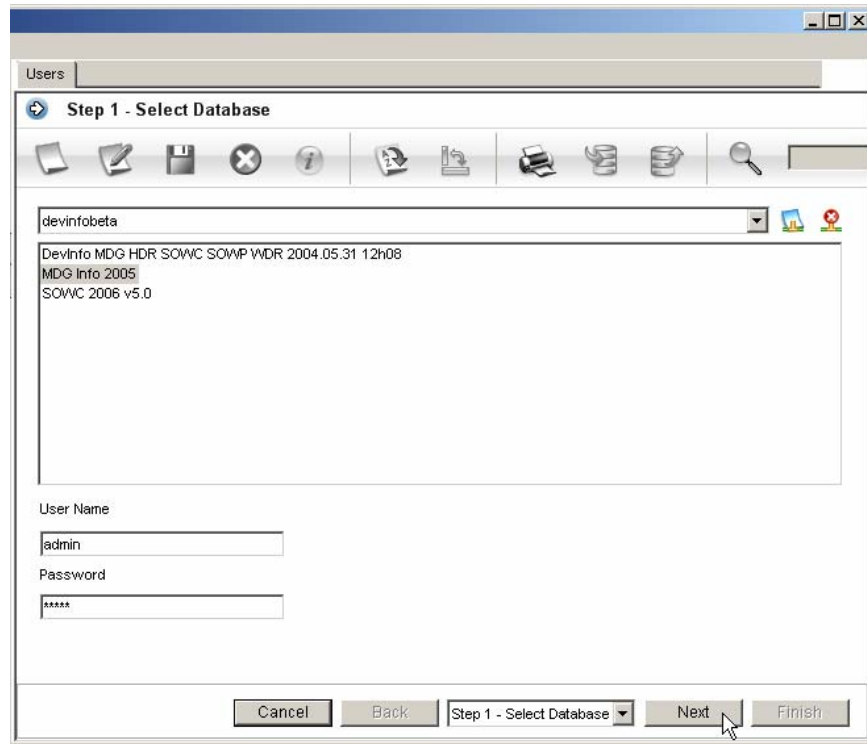
STEP 1

Double-click the **DevInfo 5.0 database administration application** icon  from the desktop. Click the **User Profiles** option under **Users** module from the left panel.




STEP 2

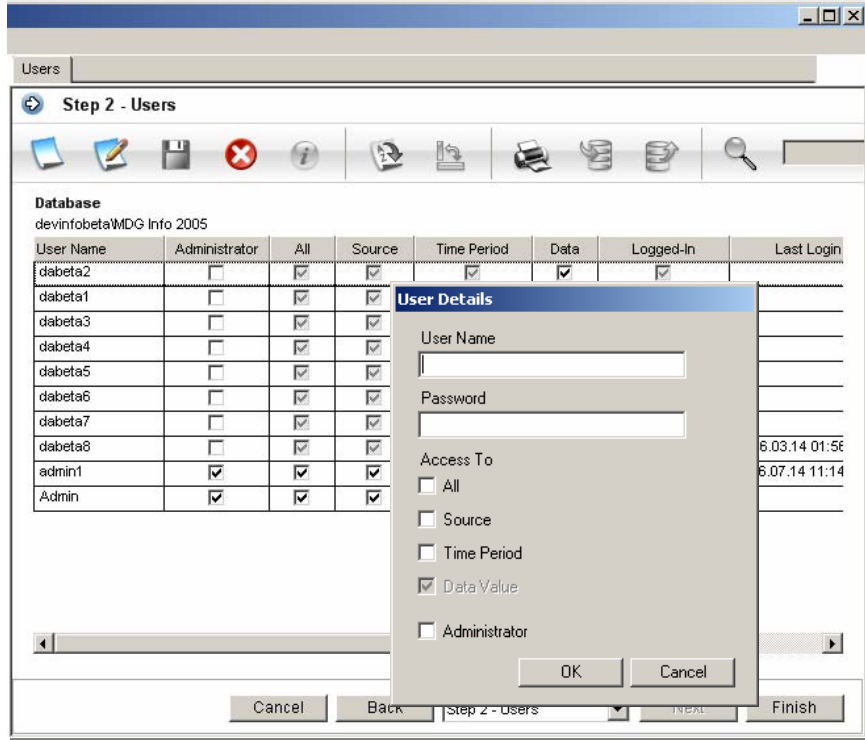
Click the down arrow to select any available connection from the list or click the **new connection** button  to create a new connection.



Enter the user name and password that you specified in step 3. Click **Next** to proceed.

STEP 3

The window displays the list of existing users. Click the **New** button  to create new users. In the **User Details** dialogue box, specify the user name, password and the access rights for the user.



Click **Finish** to complete the process of creating users. Now, the authorized users can access the database by clicking **Open** in the **Data Entry** module and using the **Online** tab.

Now, the user of the DevInfo v5.0 Web application can open an online DevInfo v5.0 database and start the data entry process.