Quick Start Using a BBj ODBC Driver to Access PRO/5 Data

This document outlines the process for configuring the BASIS BBj® ODBC Driver® to access PRO/5® data. You can choose to either access the PRO/5 data files directly or to obtain access to the data through the PRO/5 Data Server®.

This document does not contain the specifics of installing the TCP/IP stack, Java, or creating the data dictionary. It assumes the following:
- The TCP/IP network protocol is configured and working properly for reverse name lookup.
- The correct Java JRE or JDK is installed.
- The data dictionary is defined. More information on creating a data dictionary is located in the **BASIS online help**.

BBj ODBC is one component of BBj and can be installed as a thin client. However, a complete BBj must be installed on at least one machine; it may be on a local Windows PC or on a Unix Server.

Note: Not all Unix operating systems have the appropriate Java Development Kit (JDK) available. Check our **Platform Availability** list and BBj product information to determine whether your particular Unix platform is capable of running BBj.

Let's get started.
1. Determine where BBj and BBj ODBC are to be installed.
2. Install the appropriate JDK for your operating system. Information regarding OS requirements to run BBj may be found in the **README file**.
3. Install the complete BBj product on the designated machine. Specific installation instructions are documented in the **online help**.
4. Install the BBj ODBC client on all required workstations. To install a specific BBj component (like the ODBC client), select the Custom Installation button at the time of installation and choose the required component.

BBj and PRO/5 use different file locking methods. If your BBj ODBC Driver needs to access the same data as PRO/5, you have two options; use shared file access or connect directly to a PRO/5 Data Server.

Configuring the Database in Enterprise Manager

Enterprise Manager (EM) is another component of BBj. One of its functions is to manage ODBC databases.
The EM can configure ODBC databases on a local or remote server running BBj.
Note: The default username is `admin`, and the default password is `admin123`.
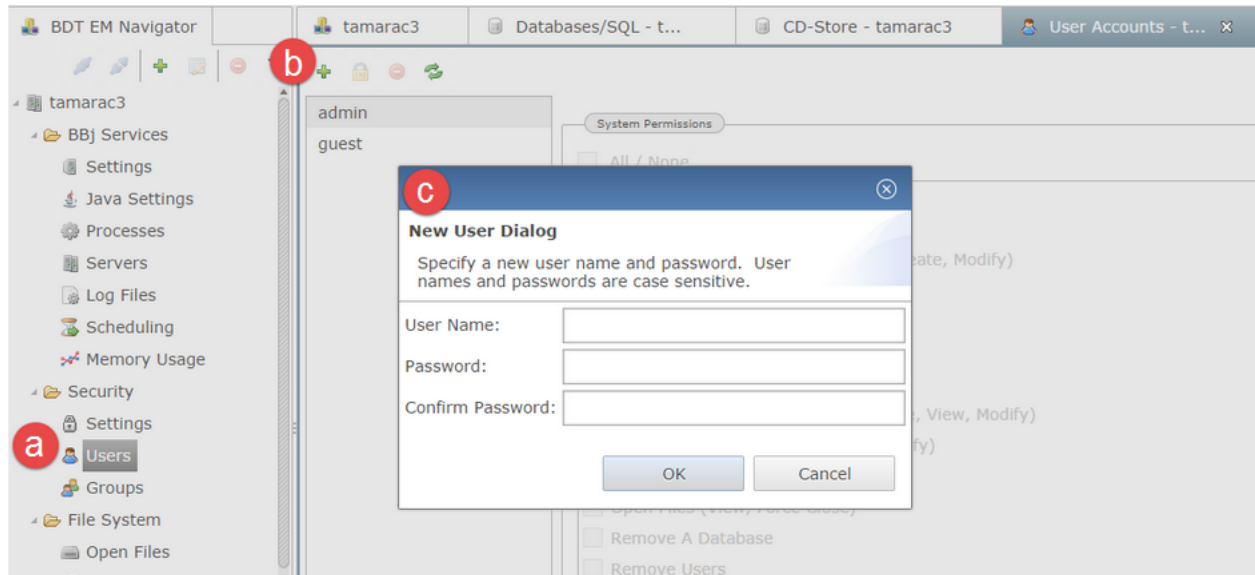
To configure the database,
1. Connect to the Enterprise Manager via the URL http://*hostname*:8888/bbjem/em. Replace "hostname" with the host name of the computer where BBj is installed.
2. Connect to the server by double clicking on the server name and entering a valid user name and password. Once you are connected, the server name node will expand; if it does not, expand the server by clicking the expansion symbol on its left.
3. Double click on 'Databases' (under 'Databases/SQL') and select '**+**' (with tooltip text 'Attach to an existing data dictionary or...').

4. Enter a name for the database. This name will be case sensitive and must be referenced correctly later when creating the DSN in the ODBC Administrator.
5. Enter the path for the Data Files and Dictionary Locations containing your PRO/5 data, such as the following if your project is named `project`:

    ```
    /usr/bbx/project/data/
    /usr/bbx/project/BBDICT/
    ```

    Since the admin user for the Enterprise Manager is typically not a valid Unix login, you will not be able to attach to the database logged into Enterprise Manager as this user.
6. Create the user you want to connect to your database.
    a. Double click on 'Users'.
    b. Click on the '**+**' to 'Add a new system user'.
    c. Fill in the New User Dialog and click [OK].

7. If installing on
    ○ Windows - skip to step 8.
    ○ Unix - create an `.rhosts` file in the home directory and set its permissions to `644`.

       Connecting to data running under Unix requires a ".rhosts" file in this user's home directory and permissions on this file to be 644. This file may be created with any text editor and lists the remote hosts that may access the server. It is the name of the machine running BBj, not the machine running the BBj ODBC client. If BBj is running on the Unix server, this is the name of the Unix server from step 2. If BBj is running on a Windows machine, it is the name of the Windows machine from step 2.

       Sample .rhosts:
       ```
       fs1
       fs1.domain.com
       localpc
       localpc.domain.com
       ```
       Note: Some Unix operating systems use a `hosts.equiv` instead of `.rhosts`.

8. Test connectivity

- Disconnect and connect to the remote server as the defined user.
- Highlight the registered server, right click and select 'Disconnect'.
- Right click again and select 'Connect,' entering the user name and password that was entered in step 5.
9. Double click 'Databases' and then the newly created database. To see the list of table names, click on the 'Tables' tab. Select any table and then right click and select 'View Table Data'.

Shared File Access

You can configure BBj to use shared file access. This will allow BBj to use the older style locking method that is used by PRO/5 and will allow both access methods concurrently.

Shared file access is configured in Enterprise Manager in the BBjServices > Settings > Environment display, by unmarking the "Exclusive File Access" checkbox as shown in **Figure 1**.

Figure 1. Enable shared file access by unmarking the checkbox

Stand-alone PRO/5 Data Server

The last option is to have your BBj Database configured to use a standalone PRO/5 Data Server. To do this, install the PRO/5 Data Server.

Install and Start a PRO/5 Data Server

Follow the installation instructions for your PRO/5 Data Server OS platform documented in its Installation Guide. The data server product is installed on the server where the data files are located. Once the PRO/ 5 Data Server is installed, configure it to run as an operating system service.

Unix PRO/5 Data Server

1. Add an entry in the `/etc/services` file to include the PRO/5 service name, with the following default entry as an example:

```
pro5srv  1100/tcp  # PRO/5 Data Server
```

2. Start the Data Server with logging enabled, as shown in the following example (which assumes you are in the directory where you installed the Data Server):

```
./pro5.server -r -l./ds.log –p1100
```

This example invokes the Data Server, forces it to use port 1100, and logs all activity to the `ds.log` file in the data server's directory. Running the data server with logging turned on often helps when attempting to discover the cause of connection problems with the TCP/IP client or ODBC Driver.

Windows PRO/5 Data Server

1. In Windows XP, Vista, 7, or 8, use Control Panel > Administrative Tools > Services.
2. Scroll to locate the 'PRO/5 Data Server' service
3. Right click the service and choose 'Start'.

The PRO/5 Data Server for Windows is designed as a Windows Service. To accommodate this, set up and start the data server with logging enabled following these steps:

1. From the Windows Start menu, open the Control Panel.
2. Execute the PRO/5 Data Server applet (this applet sets the parameters contained on the command line in previous releases).
3. Mark the checkbox next to 'Enable Event Logging'.
4. Click the [Apply] button to accept changes.
5. Close the window and return to the Control Panel.
6. Open the Services window, highlight the PRO/5 Data Server in the list, and click [Start]. Note that the Startup Parameters line in the Services window does not have any effect on the PRO/5 Data Server.

Configuring the Stand-alone PRO/5 Data Server

When using the PRO/5 Data Server, you need to configure BBj Enterprise Manager differently.

1. When attaching to the Database, enter the path using the PRO/5 Data Server syntax for the DATA and DICTIONARY location:

    `/<server_name,port=1100>/usr/bbx/project/data/`
    `/<server_name,port=1100>/usr/bbx/project/BBDICT/`

    The port for PRO/5 Data Server by default is `1100` and is not related to the ports that BBj uses for its various components. The server's hostname must be used instead of its IP address; there are no spaces allowed on each line and the leading / and < are required. Under Windows, this would be the local C: drive of the Windows machine where the data server is loaded, not the mapped drive to which workstations may have access.

2. When using a Unix PRO/5 Data Server
    a. Add this property to `<bbjhome>/cfg/BBj.properties` file:
       `com.basis.sql.database.systemConnectionUser=myuser` (where myuser is the valid Unix username you added to EM)
    b. Restart BBjServices.

Troubleshooting

Information for further troubleshooting is available in the **BASIS Knowledge Base Article #00905** or in the Tech Tips section on **Troubleshooting PRO/5 Data Server TCP/IP Connections**.

Client ODBC Driver Configuration

Once the BBj ODBC Driver is installed, and a database is defined in Enterprise Manager, you must also set up a data source in each client's Windows ODBC administrative tool (32- or 64-bit as desired) located through the Control Panel. This is true regardless of whether you chose the Shared File Access or Stand-alone PRO/5 Data Server option. See **Figure 2** for an example in Windows 8.1.
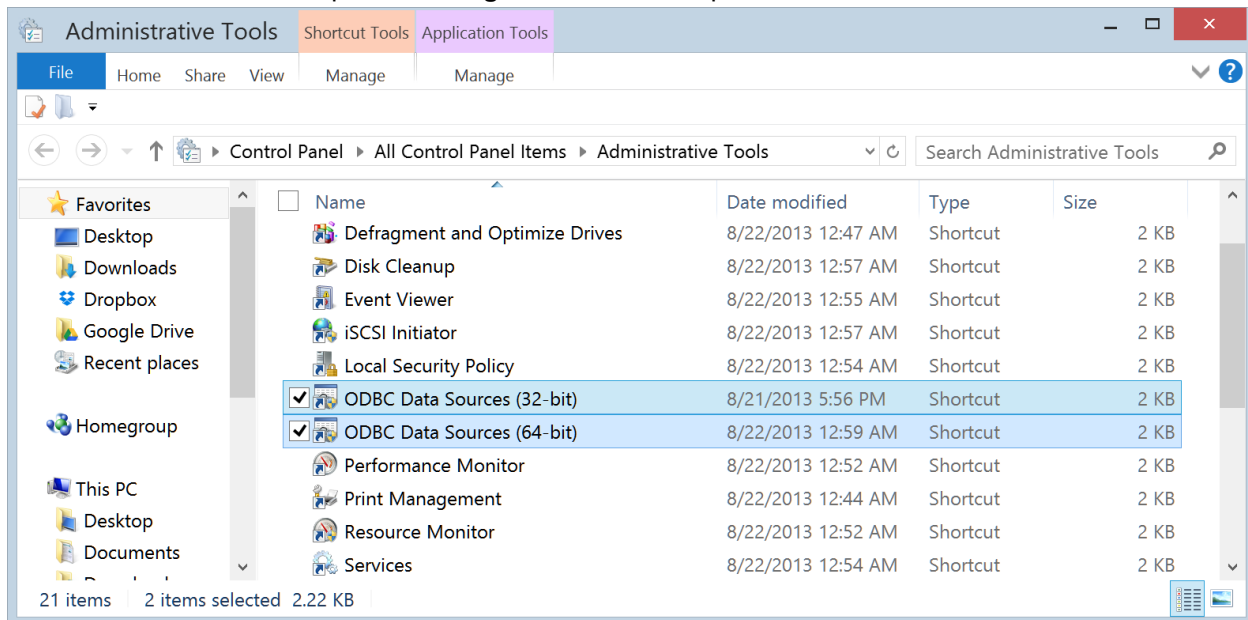

Figure 2. ODBC administrative tools in Windows 8.1

To set up a data source,

1. Select the 'Data Source Name' (DSN) tab that is appropriate for your ODBC application: User DSN, System DSN, or File DSN.
2. Click [Add].
3. Select the 'BBj ODBC Driver'.
4. Enter a 'Name' for your data source. The Name is an alias that you will use to refer to your data source. The name should be short and descriptive. An optional 'Description' field is available for extended comments.
5. Configure the connection as follows; this is the most important aspect of the configuration process

a. Enter the BBj server from the Enterprise Manager URL for the 'Server' field (Step 1 under Using BBj Enterprise Manager, above).
b. Leave the default port of 2001 for the 'Port' field.
c. Enter the name of the User defined in the Enterprise Manager for the 'User Name' field, and enter the correct password in the 'Password' field.
d. Enter the database name defined in Enterprise Manager for the 'Database' field. This field is case sensitive and the name must match exactly the way it was defined in Enterprise Manager.
e. Click [OK] to save your ODBC Driver configuration.

It is Finished

You are now ready to use the BASIS BBj ODBC Driver with your third party application to access your PRO/5 data. Refer to your application's documentation for specific information on connecting to an ODBC or SQL data source.