



# Application Note 0004 Using ReportBuilder™ with FIX32/iFIX Classic Historian via ODBC

## Introduction

ReportBuilder™ can access GE Fanuc (formerly Intellution) FIX32/iFIX Classic Historian data (.h4, .h8, or .h24 files) via the OpenRDA FIX32/iFIX ODBC driver. This document describes the steps for installing/configuring the ODBC driver and ReportBuilder™.

## Components

A ReportBuilder™ FIX32/iFIX ODBC project configuration consists of the following components:

### ReportBuilder™ Server

Used for editing your ReportBuilder™ configuration file. Enter your database locations, table names and tagnames here. This application can reside anywhere on the network.

### ReportBuilder™ Client

This Microsoft Excel add-in allows you to build and run reports in Excel. When you open a report in Excel, the ReportBuilder™ configuration file is read. The list of available tags is then presented by the Client add-in. Install a ReportBuilder™ Client on each machine that you want to build and run reports.

### OpenRDA Server

This application makes FIX32/iFIX Classic Historian data (.h4, .h8, or .h24 files) available to ReportBuilder™ via ODBC.

### OpenRDA Client (ODBC Driver)

This driver allows you to configure an ODBC Data Source Name (DSN) that references a connection to the OpenRDA Server. You must install an OpenRDA Client on each machine that has a ReportBuilder™ Client.

## Installation Notes

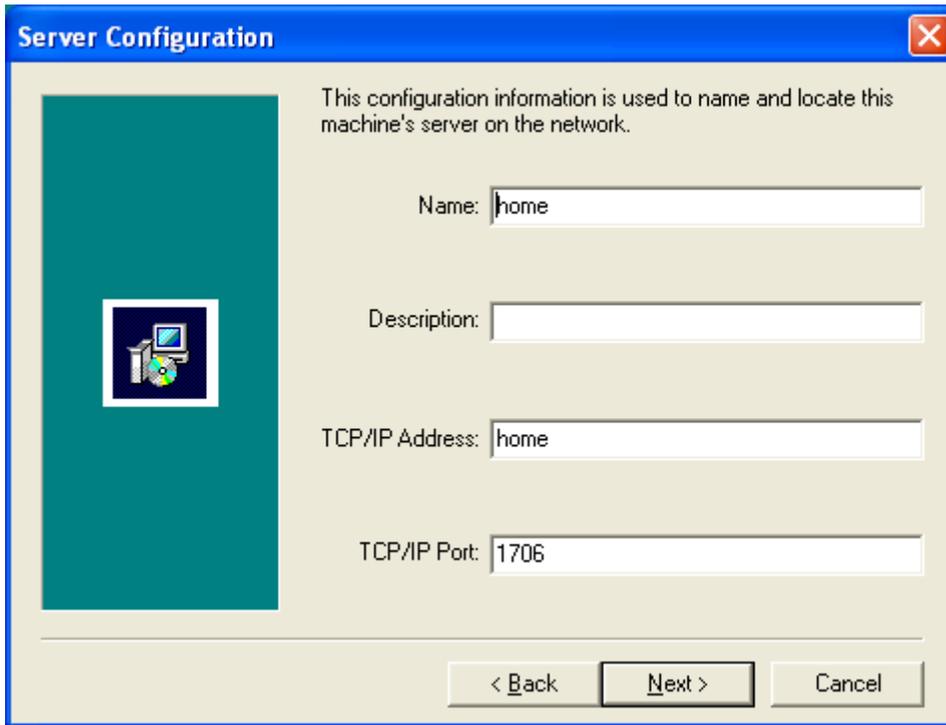
### OpenRDA Server Installation Location

The OpenRDA Server application must be installed on the FIX32/iFIX SCADA Node. You need one OpenRDA Server for each polling SCADA node from which you wish to retrieve data.

## OpenRDA Server Installation

Note: The OpenRDA Server Installation program will attempt to detect the presence of the FIX32 or iFIX SCADA application on the local node. If available, start the actual FIX32 or iFIX SCADA application before starting the OpenRDA Server Installation program.

Run the OpenRDA Server Installation program.



The screenshot shows a Windows-style dialog box titled "Server Configuration". The dialog has a blue title bar with a close button (X) in the top right corner. The main area has a light beige background. On the left side, there is a vertical teal bar containing a small icon of a computer monitor and a CD-ROM. To the right of this bar, the text reads: "This configuration information is used to name and locate this machine's server on the network." Below this text are four text input fields: "Name:" with the value "home", "Description:" which is empty, "TCP/IP Address:" with the value "home", and "TCP/IP Port:" with the value "1706". At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

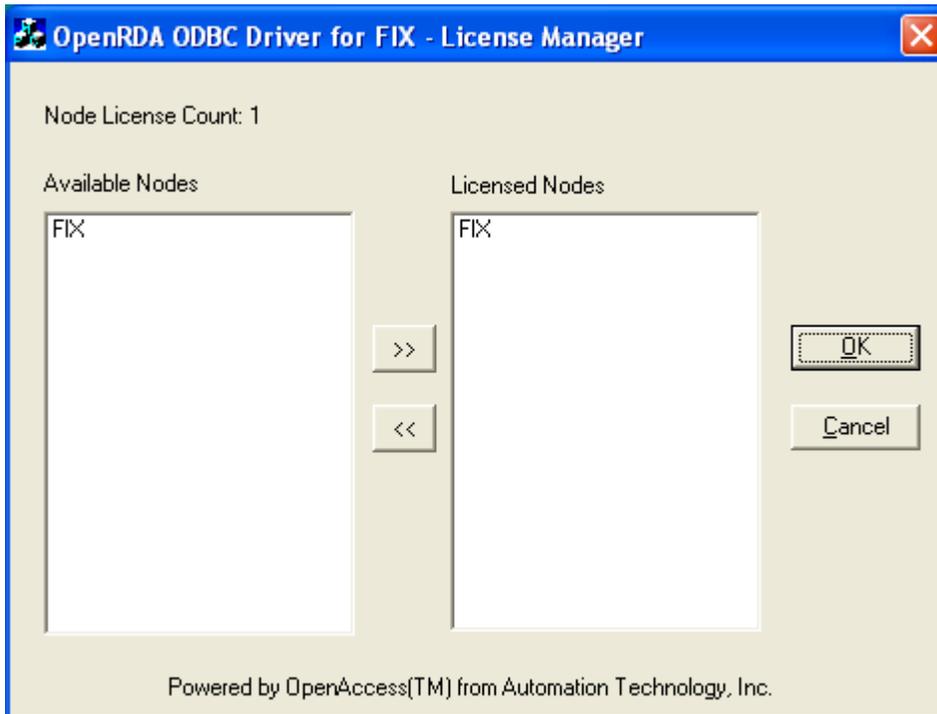
**Name:** The default value is the Windows Computer Name for this machine ("home" in this example)

**Description:** Enter a Description for this machine, if desired

**TCP/IP Address:** The default value is the Windows Computer Name for this machine ("home" in this example)

**TCP/IP Port:** Leave at the default value (1706)

Enter the License Key Information when prompted. Continue the server installation by accepting all default values until the FIX – License Manager window appears. If the FIX32 or iFIX SCADA application is running, the License Manager should find it (in the example below, a node named **FIX** has been detected by the OpenRDA ODBC Driver and Licensed successfully).

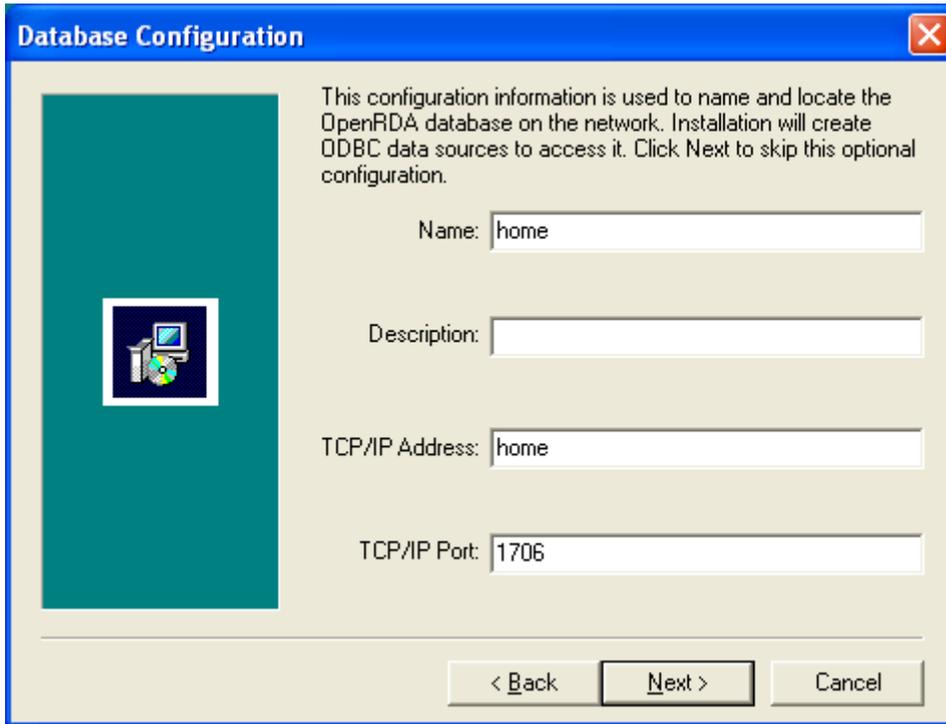


Note: If the FIX32 or iFIX SCADA application is not running during the OpenRDA Server Installation, the licensing step will fail. You must license the ODBC Driver before you can use it with ReportBuilder™. (You can, however continue with configuring your ReportBuilder™ project configuration described below).

You can license the OpenRDA Server at a later date by manually running the License Manager Utility (with the FIX32 or iFIX SCADA application running). This utility can be found at **<drive letter>\oafix\bin\iwinnt\FixLicMgr.exe**

## OpenRDA Client Installation

Run the OpenRDA Client Installation program.



**Database Configuration**

This configuration information is used to name and locate the OpenRDA database on the network. Installation will create ODBC data sources to access it. Click Next to skip this optional configuration.

Name:

Description:

TCP/IP Address:

TCP/IP Port:

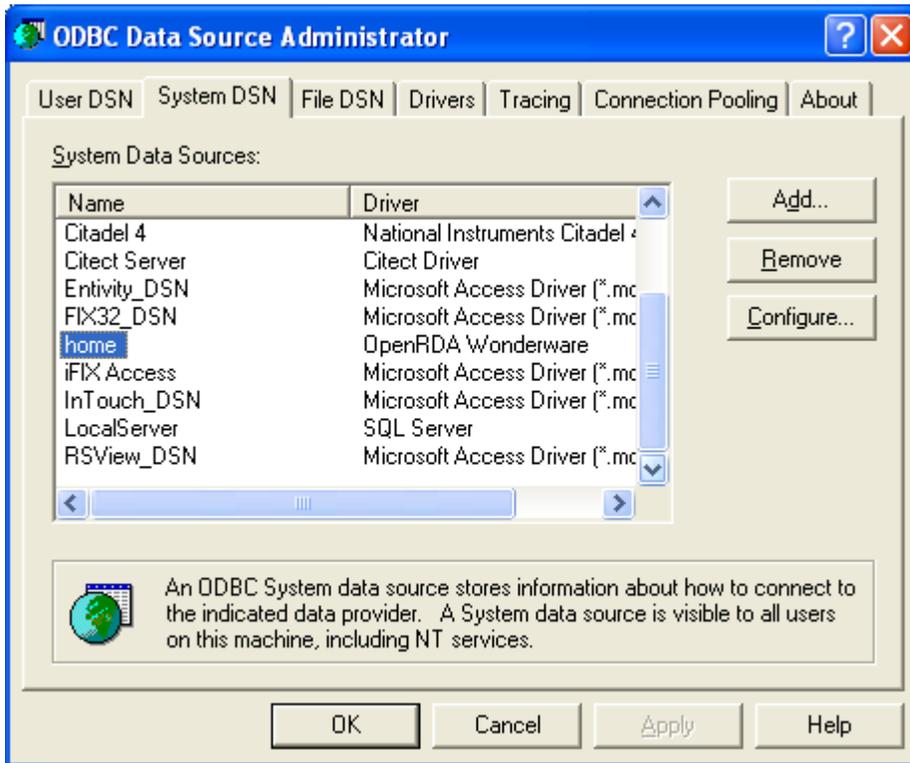
< Back    Next >    Cancel

Use the same values entered during the Server Installation. The **Name** field will be the name of the DSN (data source name) that is automatically created during this installation.

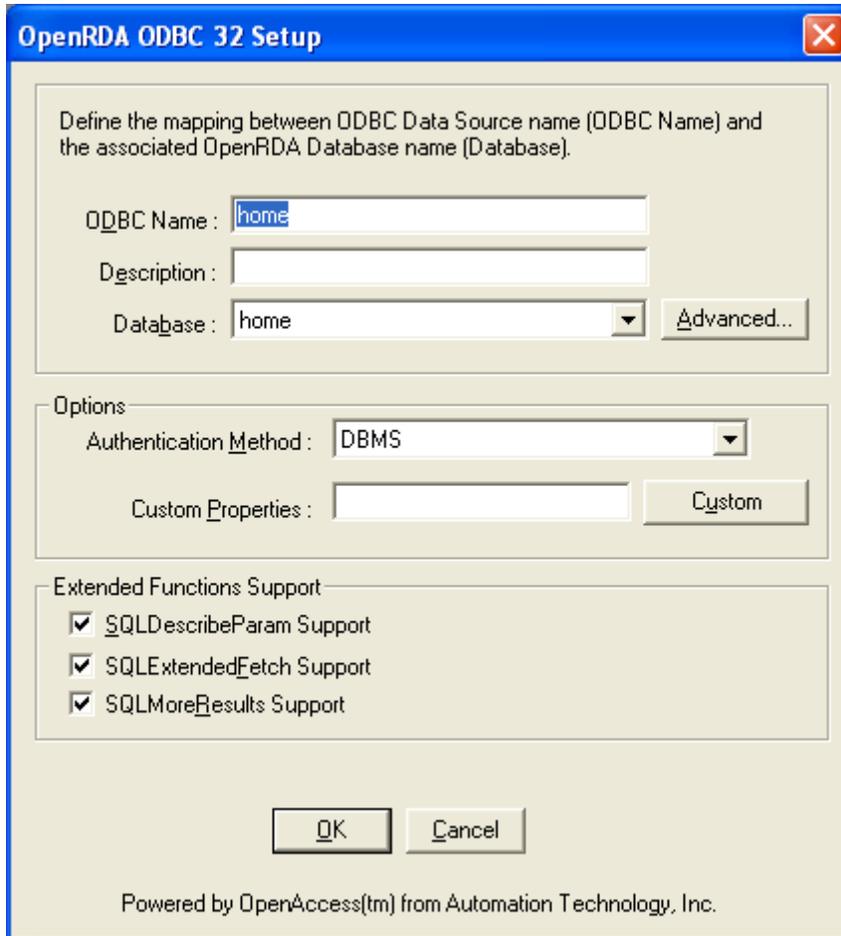
Enter the License Key Information when prompted. Continue the client installation by accepting all default values.

## DSN Configuration

A Windows Data Source (DSN) is automatically created upon installation of the ODBC Client (refer to section titled **OpenRDA Client Installation**):

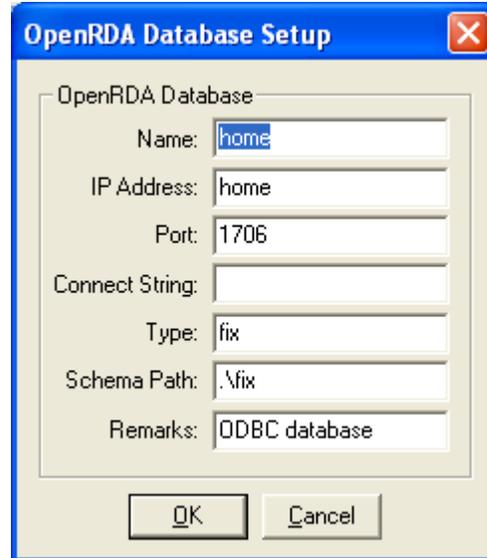
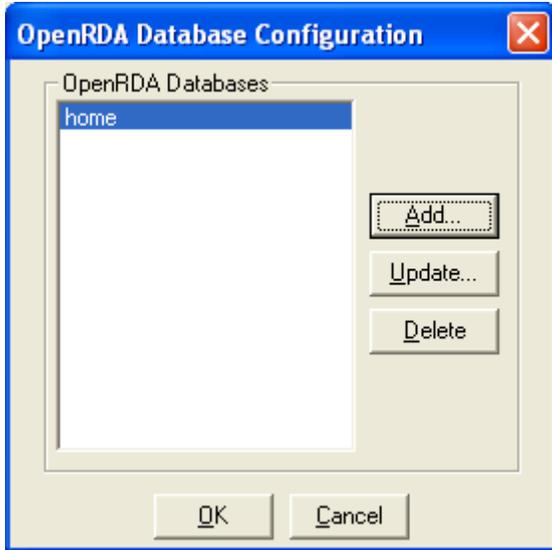


If desired, you may click **Configure** and verify the DSN configuration



Note that the **ODBC Name** and **Database** fields match the values entered earlier. Click **Advanced**.

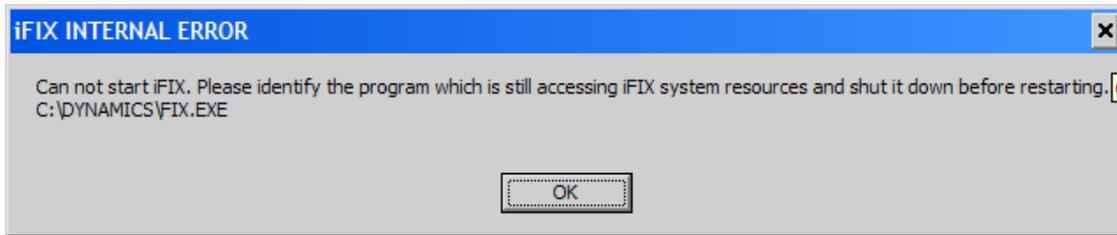
Select the desired database and click **Update**.



Click **OK** when finished.

## Configuring the ODBC Server to Start Automatically when iFIX starts

In order for the ODBC Server to connect properly with the iFIX historical data, it must be started AFTER the SCADA application is started. If the ODBC Server is already running when the iFIX SCADA application is started, you may see the following error message:



The solution is to ensure that the ODBC Server is stopped before starting your iFIX application, THEN starting the ODBC Server. To automate these steps:

1. Configure the ODBC Server as a service (one time only)
  - a. Verify the Windows account the service will use is able to login, run the server, and connect using Interactive SQL.
  - b. Login with the administration account.
  - c. Start the Service Configuration from the OpenRDA ODBC for FIX program group.
  - d. Enter the user ID (The user ID needs to be qualified with the local domain (computer) name. For example if the computer name is ATI9801, the user ID should be entered as ATI9801\<User ID>) and password the service will use to execute.
  - e. Press **Install**.
  - f. Press **OK** to exit.
  - g. Logout. This is required since NT service manager reads the service configuration at login time.

2. Using a plain text editor (such as Notepad), create a .bat file (e.g., c:\Dynamics\StartiFIX.bat) with the following statements:

```
net stop oaservice  
C:\Dynamics\launch.exe
```

3. Create a second .bat file (e.g., c:\Dynamics\startodbc.bat) with the following statement:

```
net start oaservice
```

4. Start the SCU (System Configuration Utility) for iFIX. From the SCU Menu Bar, select **Configure** then **Tasks**. Add the following entry to the Task list:

```
Filename: C:\WINDOWS\SYSTEM32\CMD.EXE  
Command Line: /c c:\Dynamics\startodbc.bat
```

Click **OK** when finished. Save and Exit the System Configuration Utility.

5. When starting your SCADA application, run the StartiFIX.bat file. This will stop the ODBC Server service (if running), then start iFIX. When iFIX starts, it will start the applications listed in its Tasks list. The startodbc.bat file will start the ODBC Server service.

## Configure ReportBuilder™

### Create a new ReportBuilder™ Project

To create a new ReportBuilder™ Project, perform these steps:

1. Start the ReportBuilder™ Server application.
2. From the File menu, Click **New**.
3. From the **Save As** Dialog, enter a valid path and filename for the project XML file and Click **Save**. A new ReportBuilder™ Server application XML file will be created. (This should be saved in a folder that is shared out over your network to allow other ReportBuilder™ Client installations to connect to it.)

### Configure a ReportBuilder™ Server Database Definition

1. In the left-hand pane, select Databases then right-click in the right-hand pane. Click **New**.

#### **STEP 1: Enter a Database Name:**

Enter a Name for this database, e.g. **FIXData** (*This is an arbitrary name chosen by you.*)

#### **STEP 2: Enter a Description (optional):**

Enter a description for this database, e.g. **FIX32 Data**

#### **STEP 3: Build a Connection String:**

Click **Build ...** The Microsoft Data Link Properties window appears.

- a. From the **Provider** tab, highlight **Microsoft OLE DB Provider for ODBC Drivers** then click **Next**. The Connection tab appears.
  - b. From the **Connection** tab, select the **Use data source name** radio button, then select the data source name from the drop down list box (**home** in the example above). This is the DSN that was created during installation of the OpenRDA Client.
  - c. Click **OK** when finished; you will return to the ReportBuilder™ Database Dictionary window.
2. Click **Save and Close** to save this Database definition.

## Configure a ReportBuilder™ Server Table Definition

To configure a ReportBuilder™ Table, perform these steps:

1. In the left-hand pane, select Tables then right-click in the right-hand pane. Click **New**.

### **STEP 1: Select the Database for this Table:**

Select the FIX32/iFIX Database Name from the drop down list (*FIXData in the example above*)

### **STEP 2: Select or Enter a Table Name:**

Select from the drop down list or enter the table name **ARCHIVE**

### **STEP 3: Select a FunctionPack for this Table:**

Select **Intellution FIX Historical Log Functions** from the drop down list.

### **STEP 4: Enter Columns required for this FunctionPack:**

From the Summary Column and List tab, select or enter the name of the column where the summary values are logged for this table. Enter or select the column name **MODE** for this field.

- a) Click ... to see a list of available columns.
- b) Select **MODE** for this field then click **OK**.

Click the **Summary Value Lists ...** button to see available lists. Select the **FIX32 / iFIX Historical Mode Summaries** and then click **Close**.

Note: If the FIX32 / iFIX Historical Mode Summaries Summary Value List is not configured on your system, build a new one with the following entries:

DISPLAY NAME	COLUMN NAME
Sample	SAMPLE
Maximum	HIGH
Minimum	LOW
Average	AVERAGE

**STEP 5: Assign a Column List to this Table (optional):**

Click the **Column Lists ...** button to see available lists. Select the **FIX32 / iFIX Column List** and then click **Close**.

Note: If the FIX32 / iFIX Column List is not configured on your system, build a new one with the following entries:

DISPLAY NAME	COLUMN NAME
Alarm	ALARM
Duration	DURATION
Mode	MODE
Node	NODE
Sample Interval	SAMPLE_INTERVAL
Status	STATUS
Tag	TAG
Time	TIME

2. Click **Save and Close** to save this Table definition.

Configure a ReportBuilder™ Server Tag Group Definition

To configure a ReportBuilder™ Tag Group, perform these steps:

1. In the left-hand pane, select Tag Groups then right-click in the right-hand pane. Click **New**.

**STEP 1: Enter a Group Name:**

Enter a name for the new Tag Group (*This is an arbitrary name chosen by you.*)

**STEP 2: Enter a Description (optional):**

Enter a description for the new Tag Group.

**STEP 3: Enter a Menu Order (0 = Top):**

Enter a numeric value for the Menu Sort Order (*0=Top of the List*)

2. Click **Save and Close** to save this Tag Group definition.

*You should skip this step if you have multiple tags in your FIX32/iFIX application and move ahead to the next section titled Importing Tags with Tag Import Wizard.*

To configure a ReportBuilder™ Tag, perform these steps:

1. In the left-hand pane, select Tags then right-click in the right-hand pane. Click **New**.

**STEP 1: Enter a Tag Name:**

Enter the name of the tag exactly as it appears in the FIX32/iFIX Database Builder.

Note: FIX32/iFIX tagnames usually appear in the following format: NODE:TAG.FIELD  
The "NODE" and "FIELD" are not necessary when entering the ReportBuilder™ Tag Name.

**STEP 2: Enter a Description (optional):**

Enter a description for the new tag.

**STEP 3: Enter the Eng Units (optional):**

Enter the engineering units for the new tag.

**STEP 4: Select a Group Name:**

Select the desired Tag Group from the drop down list.

**STEP 5: Select a Database:Table:**

Select the Database and Table to which the tag belongs from the drop down list, (e.g., FIXData:ARCHIVE)

**STEP 6: Select or Enter the Column:**

Select or enter the name of the column where the data values are logged in this table for this tag. Enter the text **Value** in this field.

- a) Click ... to see a list of available columns.
- b) Select **Value** for this field then click **OK**.

**STEP 7: Enter a Data Type (optional):**

For sorting purposes only. You may enter anything you wish here.

2. Click **Save and Close** to save this Tag definition.

Note: You must add a tag definition to the ReportBuilder™ Tagname Dictionary for each tag that you wish to report on.

## Importing Tags with Tag Import Wizard

To import tags from FIX32 / iFIX ODBC to a ReportBuilder™ Project, perform these steps:

1. Start your FIX32/iFIX SCADA software (SCADA must be running for Tag Import to work properly).
  2. From ReportBuilder™ Server, perform the following configuration as a minimum:
    - a. ReportBuilder™ Database definition.
    - b. ReportBuilder™ Table definition for **ARCHIVE**
    - c. ReportBuilder™ Tag Group definition.
  3. From the Tools menu, Click **Import / Export - Import Tags from SCADA Data Source...**  
The Tag Import Wizard appears.
  4. Follow the steps as requested by the Tag Import Wizard by clicking **Next** until finished:
    - a. For the ReportBuilder Database Connection step, select the name you called your FIX32 / iFIX Database Connection (*from Step 1 under the Database Configuration section of this document*)
    - b. For Data Source Table step, select or enter **TAG**. (*The Tag table contains information about each tag being logged to the Classic Historian.*)
    - c. For the Matching Fields step, select or enter the following in each field:
      - i. Tagname: **TAG**  
  
Note: The following fields require that you place a check mark in the checkbox next to the field. Un-checked fields are not imported.  
  
      - ii. Description: **DESCRIPTION**
      - iii. Eng Units: **EGU**
      - iv. Column: Enter '**Value**' (*Text inside of single quotes is imported implicitly, type the word **Value** surrounded by single quotes.*)
      - v. Data Type: **BLOCKTYPE**
5. For the ReportBuilder™ Database and Table step, select the name of the FIX32 / iFIX database followed by the name of the table e.g., FIXData:ARCHIVE
6. For the ReportBuilder™ Tag Group step, select the name of the group that you would like these tags to be imported to. (*This can be changed later using the ReportBuilder™ Import/Export via Excel feature.*)
7. For the Existing Tags step, choose whether to overwrite or skip existing tags in your ReportBuilder™ Project. Check the **Overwrite existing tags** checkbox to overwrite tags. Un-check to skip existing tags.
8. Click **Finish** to begin the import.