

BWDB

(Advantech WebAccess to Database)

Device Driver Guide

Table of Contents

BWDB (Advantech to Database) Device Driver Guide	1
1. Database through a Device Driver	2
1.1 Introduction to BwDB driver to databases	2
1.2 ODBC DSN on SCADA Node	3
1.2.1 Example Access Database and Table	4
1.3 API Comport and BWDB device.....	6
1.3.1 Configure an API Comport and a BWDB Device	6
1.3.2 API Comport Properties.....	9
1.3.2.1 Comport Number	9
1.3.2.2 Description	10
1.3.2.3 Scan Time.....	10
1.3.2.4 Timeout.....	10
1.3.2.5 Retry Count.....	10
1.3.2.6 Auto Recover Time	10
1.3.3 BWDB Device Properties	11
1.3.3.1 Unit Number.....	11
1.3.3.2 DSN	11
1.3.3.3 Table Name	11
1.3.3.4 User and Password	11
1.3.3.5 SQL SELECT condition	12
1.4 Configure Parameters	13
1.4.1 Create an Analog Parameter.....	15
1.4.2 Create Discrete Parameter.....	17
1.4.3 Create Text Parameter.....	19
1.5 Configure a TAG.....	21
1.5.1 Analog Tag	23
1.5.2 Discrete Tag	23
1.5.3 Addresses.....	24
1.5.4 Conversion Code.....	24
1.5.5 Start Bit.....	24
1.5.6 Length.....	24
1.5.7 State 0, State 1, State 2, etc.	24
1.6 Blocks	25
1.7 Troubleshooting	25
1.7.1 * [8000]	25
1.8 Open the Engineering Manual.....	错误! 未定义书签。

Rev 1 – June 2, 2004

1. Database through a Device Driver

1.1 Introduction to BwDB driver to databases

The BWDB Device Driver allows data to be read from a database as if it were a PLC, controller or other device. This may be required if a device driver is not available for direct connection to the device, if the data is manually entered or other reasons.

This is a READ ONLY driver. Use a Script or Pushbutton keymacro to write data to a database. See the [Engineering Manual](#), sections [11.1.96 <SQLDIRECT>](#), [12.4.37 SQLDIRECT](#), and [12.4.39 SQLPREPARE](#) for more information on writing data to a database.

Normally, Advantech WebAccess logs real-time data to databases using the Log to ODBC feature in SCADA Node properties. Please refer to the Engineering Manual, section [3.2.22 Data Log to ODBC](#) for more information. To read data from databases, Advantech WebAccess has [Scheduled Reports](#), [Analog Tag Log](#), [Discrete Tag Log](#) and [Text Tag Log](#) to allow users to view data from standard database logging (see Engineering Manual, Sections 21.1 and 21.2).

The Advantech WebAccess SCADA Node uses an ODBC connection to a Database to mimic a device driver. (ODBC is a Microsoft acronym for Open Data Base Connection).

An ODBC DSN (Database Source Name) must be configured on the SCADA node.

The Database can be on the SCADA node or installed on a Database Server that the ODBC DSN has access to over the network

The Advantech WebAccess BWDB driver to a database uses an API type comport. This is a virtual communications port. It does not need to match an actual COM port number. It is recommended to use a comport number above 4 to avoid conflicts with a real comport on the SCADA node (for example a serial comport).

The Advantech WebAccess Tags are configured using the Field Names (or Column Names) in the Database as the Address. The Database can be a Microsoft Access, Microsoft SQL Server, Oracle 9i, or MYSQL. Other relational databases supported by a Microsoft ODBC DSN may also work.

Unlike other Advantech WebAccess drivers, there are no pre-configured Parameters or Blocks in the BWDB device driver. You must configure Parameters before configuring Tags. You must configure parameters and block types before configuring Blocks.

You need to know the Table Name inside the Database. You will need a copy of the Database Software Program to open the Database to determine the Table Name.

You should also note the Field Names (Column Names) so that you can sort the data in the way you want using the SQL SELECT condition.

You need to know the Field Names (Column Names) in your database in order to arrange the data using WHERE or ORDER BY or other conditions to the SQL SELECT command. Most users will want the most recent data, so your database will need one or more date and time fields sorted in descending order.

1.2 ODBC DSN on SCADA Node

The ODBC DSN must be configured on the SCADA node. It is recommended to use a 'System DSN' to make the connection available regardless of the user that is logged on to the SCADA node.

The DSN and Table Name are used in the BWDB Device Configuration.

To View an ODBC DSN:

1. Start -> Control Panel -> Administrative Tools -> Data Sources (ODBC)
2. Select System DSN tab.

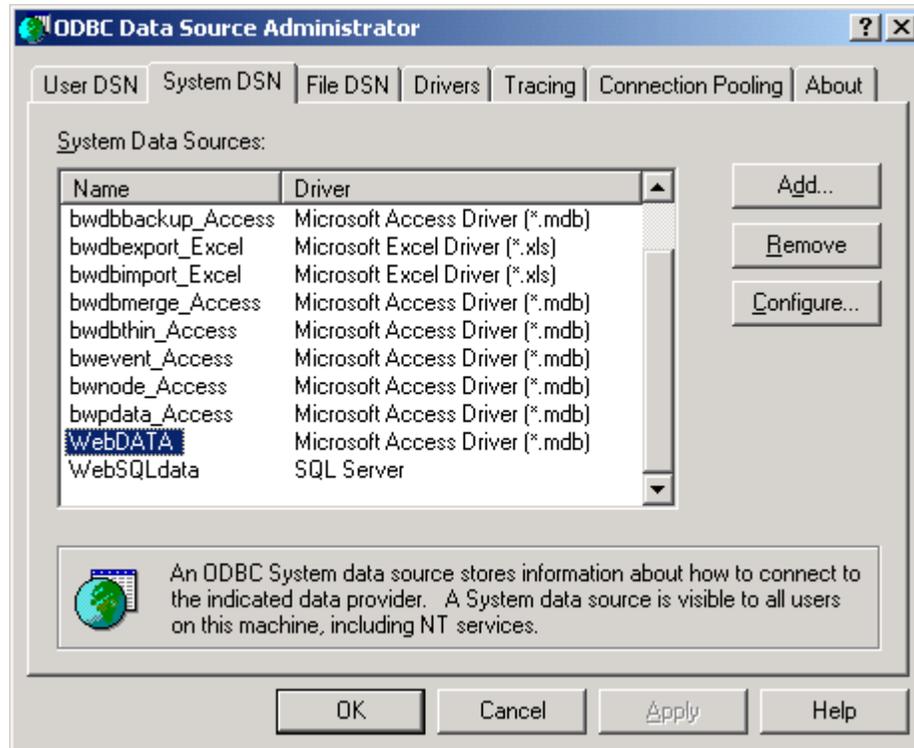


Figure – Example of System DSN on SCADA node

The DSN is used in the BWDB Device Configuration.

3. Click OK or CANCEL to close.
4. Select Configure to Modify the DSN, confirm it details (e.g. what database it is connected to).

Node- the Database can be on the SCADA node or installed on a Database Server that the SCADA node has access to over the network.

5. Select ADD to create a new DSN.

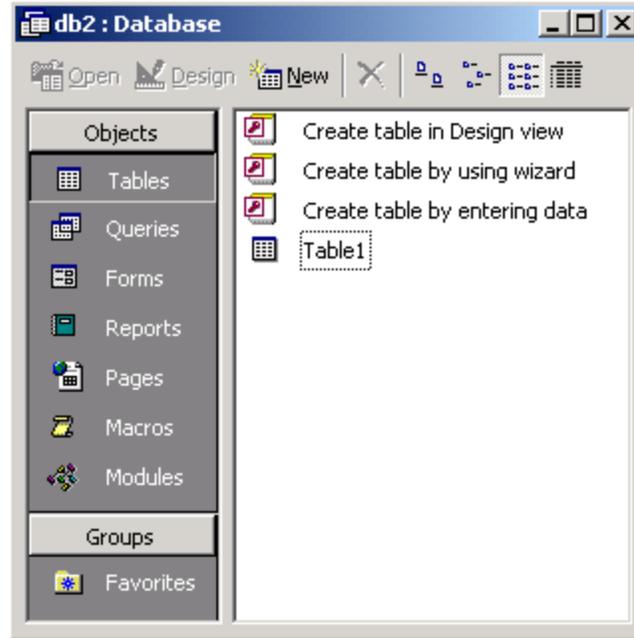
The Name of the DSN is required by the Advantech WebAccess API Comport configuration.

1.2.1 Example Access Database and Table

You need to know the Table Name inside the Database. You will need a copy of the Database Software Program to open the Database to determine the Table Name.

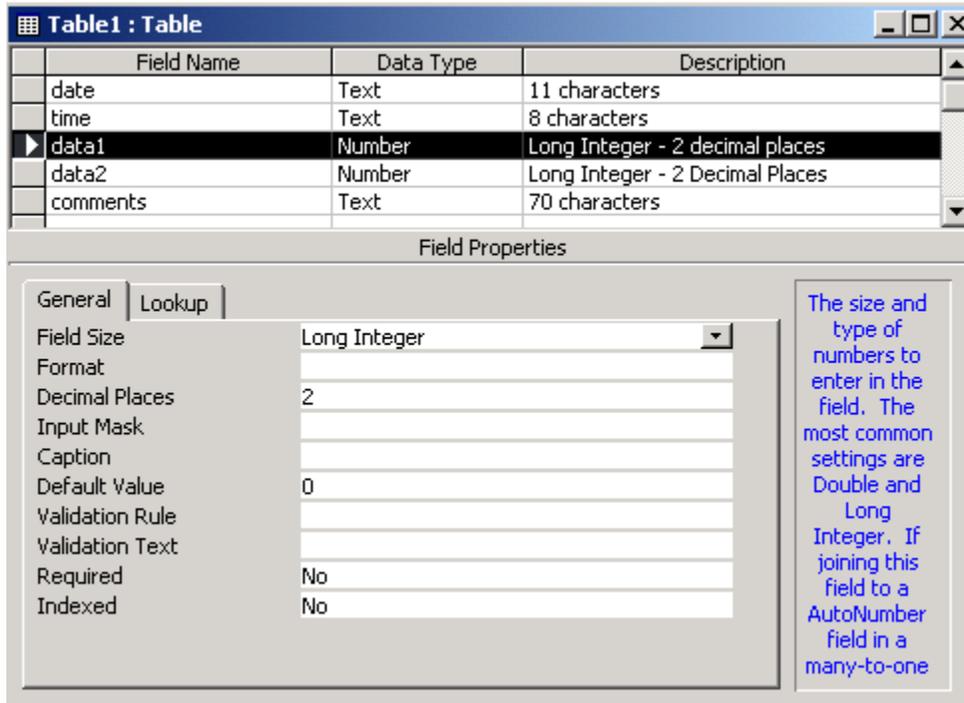
You should also note the Field Names (Column Names) so that you can sort the data in the way you want using the SQL SELECT condition.

The following uses this Access database (named DB2.mdb) and Table1 in that DB2 Database:



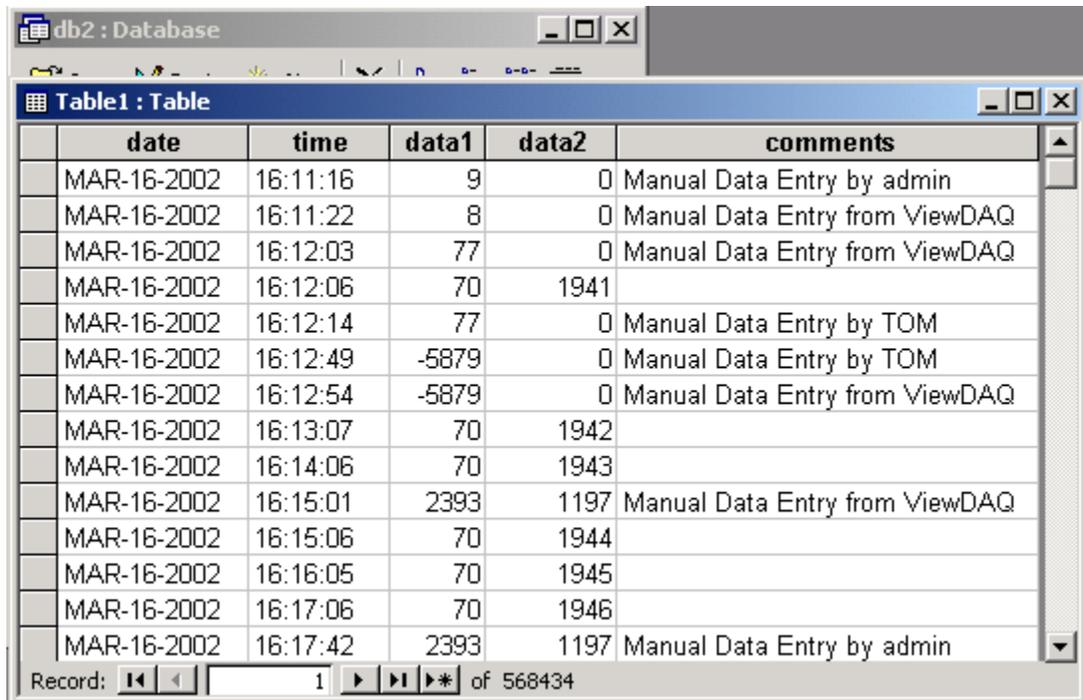
Example Access Database – Table named Table1

The Table name will be used in Device Configuration



Example Access Database – Table1 Field Names (e.g. Column Names)

The Field Names will be used as the Address for Tag configuration.



	date	time	data1	data2	comments
	MAR-16-2002	16:11:16	9	0	Manual Data Entry by admin
	MAR-16-2002	16:11:22	8	0	Manual Data Entry from ViewDAQ
	MAR-16-2002	16:12:03	77	0	Manual Data Entry from ViewDAQ
	MAR-16-2002	16:12:06	70	1941	
	MAR-16-2002	16:12:14	77	0	Manual Data Entry by TOM
	MAR-16-2002	16:12:49	-5879	0	Manual Data Entry by TOM
	MAR-16-2002	16:12:54	-5879	0	Manual Data Entry from ViewDAQ
	MAR-16-2002	16:13:07	70	1942	
	MAR-16-2002	16:14:06	70	1943	
	MAR-16-2002	16:15:01	2393	1197	Manual Data Entry from ViewDAQ
	MAR-16-2002	16:15:06	70	1944	
	MAR-16-2002	16:16:05	70	1945	
	MAR-16-2002	16:17:06	70	1946	
	MAR-16-2002	16:17:42	2393	1197	Manual Data Entry by admin

Example Access Database – contents of Table1

1.3 API Comport and BWDB device

1.3.1 Configure an API Comport and a BWDB Device

The steps, in summary, are:

1. Start Internet Explorer **Web Browser**.
2. Enter IP address of the **Project Node**.
3. Use **Advantech WebAccess Configuration**.
4. Open or Create a **Project**.
5. Configure a **SCADA node** (the PC that will connect to the automation hardware).
6. Configure a **Comport** for the SCADA Node that is an API type Comport by selecting ADD Comport from SCADA Node Properties.
7. For the **Interface Name**, select **API**. Wait for the page to update.

Update Comport		[Cancel]	Submit
Interface Name	API		
Comport Number	6		
Description	Example of BWDB Database Driver		
Scan time	1	<input type="radio"/> MilliSecond	<input type="radio"/> Second <input checked="" type="radio"/> Minute <input type="radio"/> Hour
TimeOut	200	MilliSecond	
Retry count	3		
Auto Recover Time	60	Second	
		[Cancel]	Submit

Figure – API type comport used with BWDB driver

8. Enter a **Comport Number**. This is a virtual communications port. It does not need to match an actual COM port number. It is recommended to use a comport number above 4 to avoid conflicts with a real comport on the SCADA node (for example a serial comport).
9. Configure **Scan Time, Timeout, Retry** and **Auto Recover**.

See 1.3.2 [API Comport Properties](#) in the following section for more information.
10. Press **Submit** to save the API Comport properties.
11. Select the API Comport (Port 6 in the Example) from the left menu list.

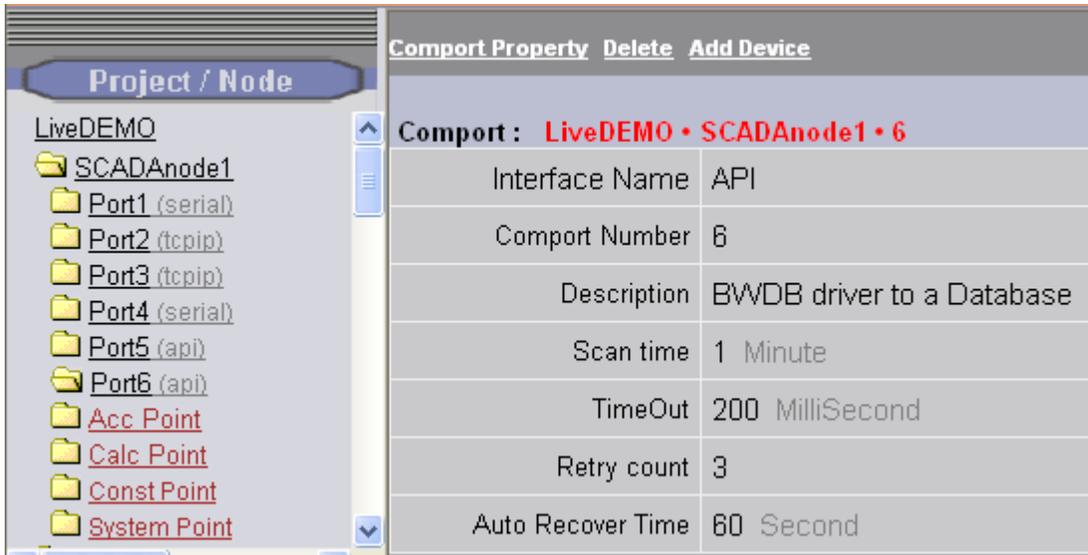


Figure – Example BWDB driver on Port 6

12. Configure a BWDB Device (determines the communications Protocol or Device Driver) using **Add Device**.

Create New Device		[Cancel]	Submit
Device Name	Access_DB		
Description	Example of DB driver		
Unit Number	1		
Device Type	BWDB		
DSN;TableName;User;Password :	WebDATA;TABLE1		
SQL select condition	ORDER BY Date DESC, Time DESC		
Not Used		Not Used	
Not Used		Not Used	
		[Cancel]	Submit

Figure – Example Access Database – DSN named WebData. Table named Table1

13. Select the **Device Type** is **BWDB**. Wait for the Page to update.
14. Enter a **Unit Number**. This is a virtual number. Use whatever makes sense to your end user.
15. Enter **DSN** (Data Source Name) and **Table Name** separated by semi-colon (;). For example WebDATA;TABLE1.

See section 1.2 [ODBC DSN on SCADA Node](#) for determining the DSN. This is a DSN on the SCADA node.

16. If you need a **User** Name and **Password**, append these to the DSN name and Table name separated by semi-colons (;). The password is usually case sensitive.

Microsoft Access Databases usually do not need a User and Password.

However, SQL Server usually requires a User and Password. If you are using SQL sever, enter DSN;TableName;User;Password.

17. Enter the **SQL SELECT condition**. This is part of an SQL SELECT command, usually a WHERE or ORDER BY condition.

Most commonly this is an 'ORDER BY fieldname DESC' statement used to arrange the data to be the most recent. Note that the default of most databases is the oldest record is first (so called Ascending order).

If you have a single timestamp, to get the most recent record, an example might be:

```
ORDER BY timestamp DESC
```

In the above example database DB2.MDB, Table1 has two columns Date and Time. To get the most recent record the Select condition would be:

ORDER BY Date DESC, Time DESC

Note that Date and Time are field names (column names) in the DB2.MDB Table1. DESC is the SQL syntax for Descending (i.e. last record first).

You have to use the actual Field Names (column names) in your database.

18. Press **Submit** to save the BWDB device properties.
19. You must [create Parameters](#) before you can Add Tags or Add Blocks.

If you or someone has already created parameters you can jump to [Configure a TAG](#).

Otherwise go to Step 20 [Configure Parameters](#).

Note – You have to create parameters and blocks before you can use Add Tag or Add Block.

1.3.2 API Comport Properties

1.3.2.1 Comport Number

This is a virtual communications port. It does not need to match an actual COM port number. It is recommended to use a comport number above 4 to avoid conflicts with a real comport on the SCADA node (for example a serial comport).

1.3.2.2 Description

This is an optional field used for user reference.

1.3.2.3 Scan Time

This is the time in milliseconds, seconds, minutes or hours to scan the DSN and the Database. This must match the ability of the network and Database to respond. Very large databases, with many records may take a long time to respond.

If the network, DSN and database cannot respond as fast as the SCAN Time entered, Advantech WebAccess will scan at a slower rate.

1.3.2.4 Timeout

Timeout is the time waited before re-sending a communications packet that did not have a reply. Timeout is in milliseconds.

TimeOut specifies how long the software waits for a response to a data request, specifically to wait for a reply from one packet. A recommended value is 3 seconds, longer if the communication device is slow. This is protocol dependent: some protocols do not allow changes in time out.

Combined with Retry count, TimeOut also determines time to consider a device or port as BAD. Timeout is the time to wait since last communication packet sent without a reply. Time is in milliseconds. The slow or poor quality communications require longer timeout. The faster the communications network or device, the shorter the timeout required. Shorter timeouts notify operators of communications failure more quickly.

1.3.2.5 Retry Count

Number of times to retry communications if no reply is received from a device. Combined with Timeout, also determines time to consider a device or port as BAD.

In addition, Indicates the number of times after the first attempt has failed that communication should be attempted before indicating a failure. Specifically, how many times to send a single packet after the DSN or Database fails to respond to the first packet. After the retry count is exceeded, all the tags in the packet are marked with asterisks and the next packet of requests is sent. A reasonable value is 3 to 5 times. After this number of tries, the tags in this packet are marked as "fail to respond" (i.e. asterisks) and are disabled. In reality, increasing the number of retries hides failures on the part of the DSN or Database to respond to a request. Essentially, increasing the retries gives the DSN or Database more chances to reply.

1.3.2.6 Auto Recover Time

Auto Recover Time is the time to wait before attempting to re-establish communications with a BAD device or port.

If communications to the Database is unusually slow due to hardware, communications or network issues, you might consider increasing this value. If communications to the Database fails frequently, you may want to decrease this number in order to have Advantech WebAccess try to re-establish communications sooner.

If communications to the DSN Fails (i.e. exceeds Timeout), Advantech WebAccess will wait the 'Auto Recover Time' before trying to re-establish communications.

1.3.3 BWDB Device Properties

1.3.3.1 Unit Number

This is a virtual number. Use whatever makes sense to your end user. This will appear in Detail Displays and Communication Status Display.

1.3.3.2 DSN

DSN is the Data Source Name. See section 1.2 [ODBC DSN on SCADA Node](#) for determining the DSN. This is a DSN on the SCADA node.

1.3.3.3 Table Name

You need to know the Table Name inside the Database. You will need a copy of the Database Software Program to open the Database to determine the Table Name.

Append the Table name to the DSN using a semicolon (;). For example:
WebDATA;Table1

1.3.3.4 User and Password

Some Databases require a user and password (SQL SERVER using SQL SERVER security, for example). If you need a **User** Name and **Password**, append these to the DSN name and Table name separated by semi-colons (;).

For Example:

WebData;Table1;User;Password

The password is usually case sensitive.

Microsoft Access Databases usually do not need a User and Password.

SQL Server usually requires a User and Password.

1.3.3.5 SQL SELECT condition

This is usually required to arrange the data to read the most recent DATA.

The **SQL SELECT condition** is part of an SQL SELECT command, usually an ORDER BY condition. This is the part of the SELECT statement that follows **SELECT * from Tablename.**

The SELECT Condition is up to 63 characters long, on a single line and is in the format:

```
[WHERE condition] [ and|or condition...]
```

```
[GROUP BY column-list]
```

```
[HAVING conditions]
```

```
[ORDER BY column-list [ASC | DESC] ]
```

Most commonly this is an '**ORDER BY fieldname DESC**' statement used to arrange the data to be the most recent. Note that the default of most databases is the oldest record is first (so called Ascending order).

If you have a single timestamp, to get the most recent record, an example might be:

ORDER BY timestamp DESC

In the above example database DB2.MDB, Table1 has two columns Date and Time. To get the most recent record the Select condition would be:

ORDER BY Date DESC, Time DESC

Note that Date and Time are field names (column names) in the DB2.MDB Table1. DESC is the SQL syntax for Descending (i.e. last record first).

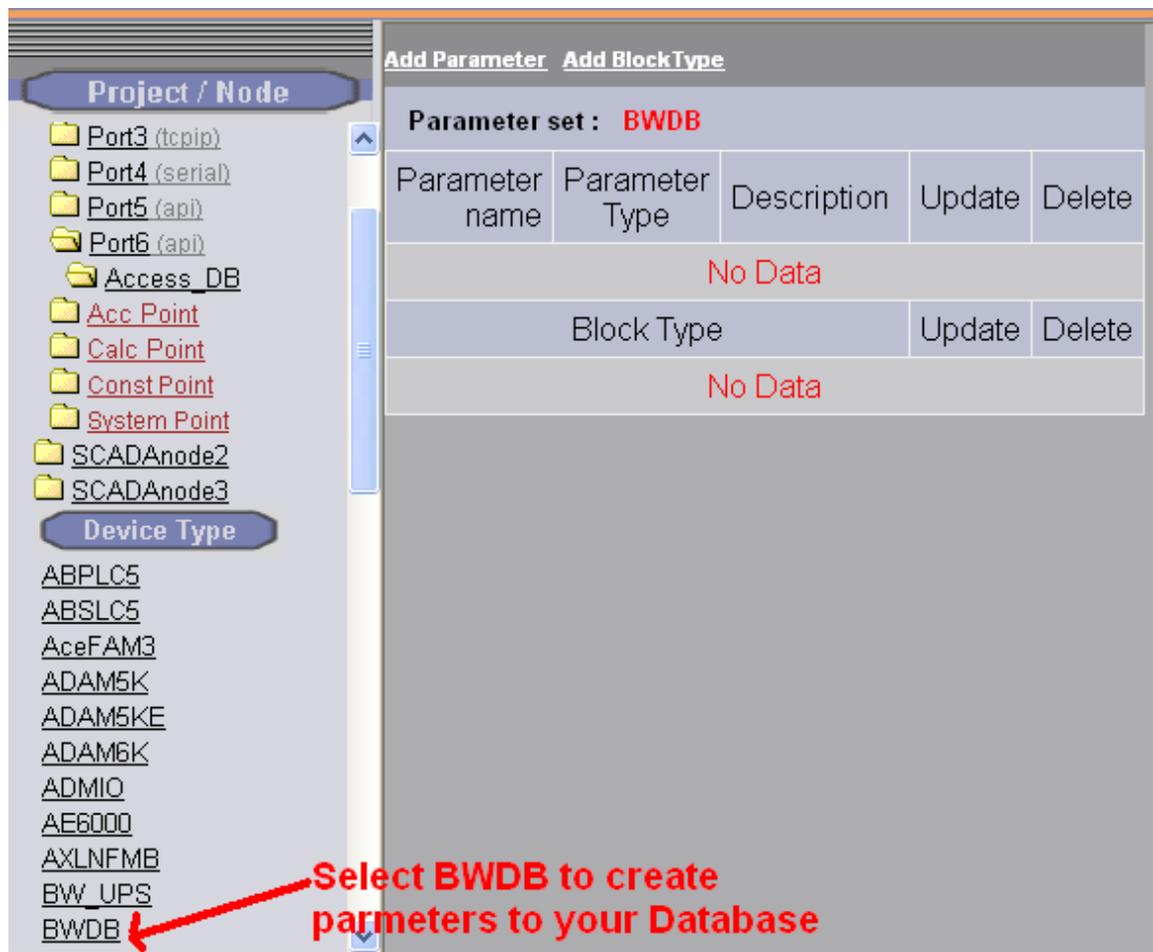
You have to use the actual Field Names (column names) in your database. You will need a copy of the Database Software program to open the Database to see the Field Names (Column Names). For an Access Database example, see section 1.2.1 [Example Access Database and Table](#).

1.4 Configure Parameters

Unlike other Advantech WebAccess drivers, there are no pre-configured Parameters or Blocks in the BWDB device driver. You must configure Parameters before configuring Tags. You must configure parameters and block types before configuring Blocks. Parameters act as a template for building tags.

20. Under **Device Type**, in the left frame, select **BWDB**.

21. The Parameter Set for the BWDB device opens



22. Select Add Parameter.

Parameter and Block Type List

Parameter set : **BWDB**

Create Parameter [Cancel] Submit

Parameter Type	Analog parameter
Parameter name	Analog parameter
	Discrete parameter
	Text parameter

23. Select a **Parameter Type** (Analog, Discrete or Text). This is how Advantech WebAccess will treat the value read from the Database.

24. Enter a **Parameter Name**. This is how others will reference this parameter as a Template for building Tags or Block Types.

This is the minimum to create a Parameter. You press **Submit** now, if you are in a hurry.

You need at least one Parameter of each Data Type (Analog, Discrete and Text) if you are creating Analog, Discrete and Text type tags. You can modify everything except the Data Type later when creating a tag.

You can save effort later by creating multiple Parameters with the other fields customized to match the most common entries. Also, to create Block Types, you need multiple Parameters for each Block Type.

1.4.1 Create an Analog Parameter

Parameter set : BWDB	
Create Parameter [Cancel] [Submit]	
Parameter Type	Analog parameter ▾
Parameter name	Analog1
Description	Column Data 1 of example Access database DB2 Table1
Address Template	ColumnName ▾
Address	DATA1
Scan Type	Constant Scan ▾
Conversion Code	Number ▾
Start bit	0
Length	16
Scaling Type	No Scale ▾
Scaling factor 1	0
Scaling factor 2	0
Signal Reverse	<input type="radio"/> Yes <input checked="" type="radio"/> No
Read Only	<input type="radio"/> Yes <input checked="" type="radio"/> No
Initial Value	0
Span high	99999
Span low	-99999

25. Optionally enter a **Description**.

26. Optionally enter an **Address**. This will act as a Template and can be modified when the Tag or Block is created

The Address is the Field Name or Column name in the Database Table.

You have to use the actual Field Names (column names) in your database. You will need a copy of the Database Software program to open the

Database to see the Field Names (Column Names). For an Access Database example, see section 1.2.1 [Example Access Database and Table](#).

27. Optionally enter a **Scan Type**.

Constant Scan will scan at the configured Scan Rate of the Com Port.

Display Scan will read the Tag only if it appears in a Graphic Display, Real-Time Trend, Detail Display or Dialog Box (e.g. Point Info Dialog Box).

28. Enter a **Conversion Code**. For a number use **Number**.

In theory, the Microsoft DSN converts all data to **Text Type**, but this does not always return the correct value. You may have to experiment.

29. Optionally enter a **Scaling Type**.

No Scale uses the value as it is entered in the database.

For more information see the [Engineering Manual, section 4.2.13](#) (Click on Help in the Project Manager [to open the Engineering Manual](#)).

30. Refer to the [Engineering Manual, section 5.2.4](#) for more information on other Analog Parameter Properties.

31. Press **Submit** to save this Analog Parameter.

Note – the BwDB device driver ignores Start Bit and Length.

1.4.2 Create Discrete Parameter

Parameter set : BWDB	
Create Parameter [Cancel] [Submit]	
Parameter Type	Discrete parameter ▾
Parameter name	Discrete
Description	Digital parameter from Database
Address Template	ColumnName ▾
Address	
Scan Type	Constant Scan ▾
Conversion Code	Number ▾
Start bit	0
Length	1
Read Only	<input type="radio"/> Yes <input checked="" type="radio"/> No
Initial Value	0
Signal Reverse	<input type="radio"/> Yes <input checked="" type="radio"/> No
State 0	CLOSED
State 1	CLOSING
State 2	OPENING
State 3	OPEN
State 4	NotUsed

1. Select **Add Parameter** from the [BWDB Device Type](#).
2. For the **Parameter Type**, select **Discrete parameter**.
3. Enter a **parameter name**. This is how others will reference this parameter as a Template for building Tags or Block Types.

This is the minimum to create a Parameter. You press **Submit** now, if you are in a hurry. (Although, it is recommended to enter 'Text Type' as the Conversion Code).

4. Optionally enter a **Description**.
5. Optionally enter an **Address**. The Address is the Field Name or Column name in the Database Table.

This will act as a Template and can be modified when the Tag or Block is created

6. Optionally enter a **Scan Type**.

Constant Scan will scan at the configured Scan Rate of the Com Port.

Display Scan will read the Tag only if it appears in a Graphic Display. Real-Time Trend, Detail Display or Dialog Box (e.g. Point Info Dialog Box).

7. For the **Conversion Code**, select **Number** from the drop-down menu.
8. Optionally enter a State Descriptors for State 0, State 1, State 2, etc.

The 'NotUsed' entry disables that state. States must be continuous.

If STATE 0 and STATE1 are used, then this is a Digital Tag (e.g. 2-State, one bit).

If STATE 0, STATE 1 and STATE 2 are used, then this is a 3-State Tag, (behaves as if two bits are read).

Note – the BwDB device driver ignores Start Bit and Length.

9. Press **Submit** to save the Discrete Parameter.

Refer to the [Engineering Manual](#) section [5.2.5 Discrete Parameter Properties](#) for additional information on other fields.

1.4.3 Create Text Parameter

Parameter and Block Type List	
Parameter set : BWDB	
Create Parameter [Cancel] [Submit]	
Parameter Type	Text parameter ▾
Parameter name	Date
Description	Date of Latest Values
Address Template	ColumnName ▾
Address	date
Scan Type	Constant Scan ▾
Conversion Code	Text ▾
TextLen	11
Read Only	<input type="radio"/> Yes <input checked="" type="radio"/> No
Initial Value	
Array Size	0
OverView	<input type="radio"/> Yes <input checked="" type="radio"/> No

1. Select **Add Parameter** from the [BWDB Device Type](#).
2. For the **Parameter Type**, select **Text parameter**.
3. Enter a **parameter name**. This is how others will reference this parameter as a Template for building Tags or Block Types.

This is the minimum to create a Parameter. You press **Submit** now, if you are in a hurry. (Although, it is recommended to enter 'Text Type' as the Conversion Code).

4. Optionally enter a **Description**.
5. Optionally enter an **Address**. The Address is the Field Name or Column name in the Database Table.

This will act as a Template and can be modified when the Tag or Block is created

6. Optionally enter a **Scan Type**.

Constant Scan will scan at the configured Scan Rate of the Com Port.

Display Scan will read the Tag only if it appears in a Graphic Display, Real-Time Trend, Detail Display or Dialog Box (e.g. Point Info Dialog Box).

7. For the **Conversion Code**, select **Text** from the drop-down menu.

Refer to the [Engineering Manual section 5.2.6 Text Parameter Properties](#) for additional information on other fields. (Click [Help](#) at the top right in the Project Manager, [to open the Engineering Manual](#)).

8. Optionally enter a Text Length (**TextLen**). This is the number of characters the Tag will hold as its value. 70 characters maximum.
9. Press **Submit** to save the Text Parameter.

1.5 Configure a TAG

1. Use **Add Tag** to create tags from Device Properties page.

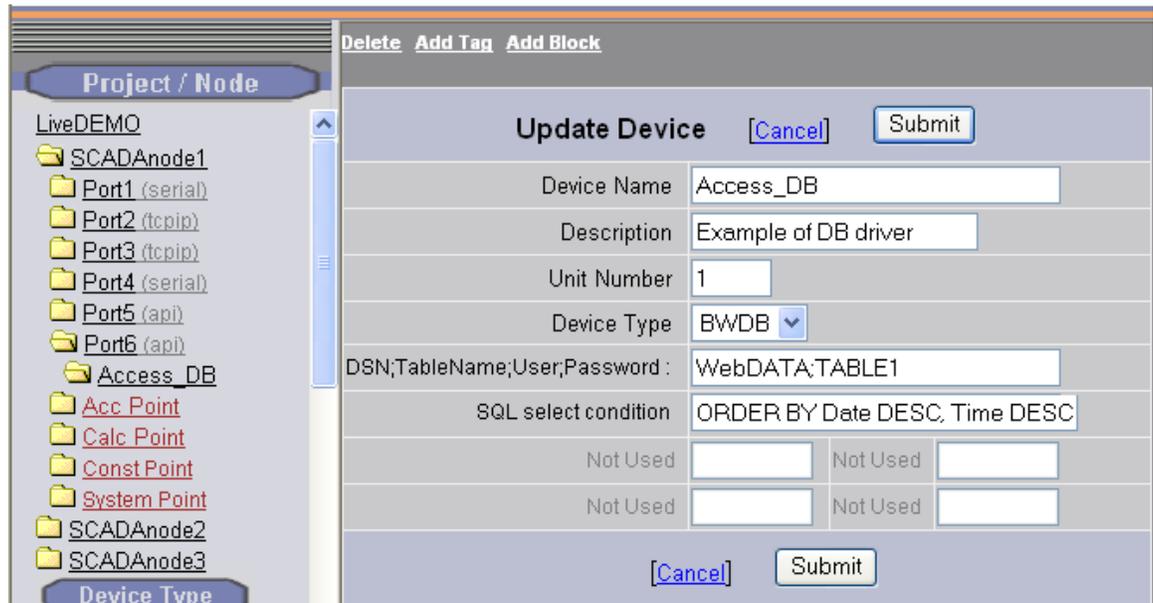


Figure – Use Add Tag or Add Block to create Tags in BWDB device

Note – You have to create parameters and blocks before you can use Add Block.

If you have not built any parameters you will get an error message. Please refer to the previous section on building parameters,

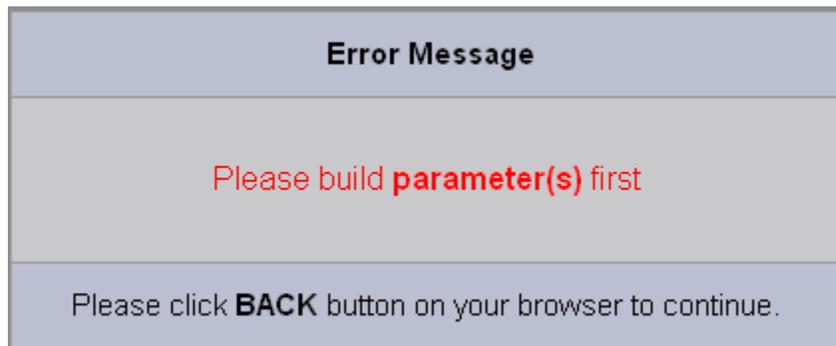


Figure – configure Parameters before you can build Tags in BWDB device

2. The **Create New Tag** page opens.

Create New Tag		[Cancel]	Submit
Parameter	Analog1	Point (analog)	
Alarm	No Alarm		
Tag Name			
Description	Column Data 1 of example Access database DB2 Table1		
Scan Type	Constant Scan		
Address	DATA1		
Conversion Code	Number		
Start bit	0		
Length	16		
Signal Reverse	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Scaling Type	No Scale		
Scaling factor 1	0		
Scaling factor 2	0		
Log Data	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Data Log Dead Band	3	%	
Write Action Log	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Read Only	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Keep Previous Value	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

3. Select a **Parameter** to match the type of data to be read or written (from the example above, select Analog1 or Date).
4. Select ALARM to enable alarming for Analog or Discrete Tags. The page will refresh if ALARM is selected, so it is best select alarm first before entering any other data. You can always enable alarming after saving the Tag.
5. Enter a **Tag Name**. This is how users, graphic displays, scripts and dialog boxes will refer to the information.
6. Optionally enter or modify the **Description**.
7. Modify the **Address**. The **Address** is the Field Name or Column in the Database Table.

You have to use the actual Field Names (column names) in your database. You will need a copy of the Database Software program to open the Database to see the Field Names (Column Names). For an Access Database example, see section 1.2.1 [Example Access Database and Table](#).

8. Optionally modify the **Scan Type**.

Constant Scan will scan at the configured Scan Rate of the Com Port.

Display Scan will read the Tag only if it appears in a Graphic Display. Real-Time Trend, Detail Display or Dialog Box (e.g. Point Info Dialog Box).

9. Optionally modify the **Conversion Code**.

For a number (e.g. Analog tag), use the **Number**.

For a Discrete or Digital Tag, use the **Number**.

For a Text or character data, use **Text**.

1.5.1 Analog Tag

10. For an Analog Tag, optionally modify the Scaling Type.

No Scale uses the value as it is entered in the database.

For more information see the [Engineering Manual, section 4.2.13](#) (Click on Help in the Project Manager [to open the Engineering Manual](#)).

Note – the BwDB device driver ignores Start Bit and Length.

11. For an Analog Tag, assign **Alarms, Scaling, Engineering Units, Description** and other features

Refer to the [Engineering Manual](#), section [4.2 Analog Tag Properties](#), for more information on configuring Analog Tags.

12. Press **Submit** to save this Tag.

13. **Download** to the SCADA node.

1.5.2 Discrete Tag

1. Optionally enter a **Scan Type**.

Constant Scan will scan at the configured Scan Rate of the Com Port.

Display Scan will read the Tag only if it appears in a Graphic Display. Real-Time Trend, Detail Display or Dialog Box (e.g. Point Info Dialog Box).

2. For the **Conversion Code**, select **Number** from the drop-down menu.

3. Optionally enter a **State Descriptors** for State 0, State 1, State 2, etc.

The 'NotUsed' entry disables that state. States must be continuous.

If STATE 0 and STATE1 are used, then this is a Digital Tag (e.g. 2-State, one bit).

If STATE 0, STATE 1 and STATE 2 are used, then this is a 3-State Tag, (behaves as if two bits are read).

Note – the BwDB device driver ignores Start Bit and Length.

4. Press **Submit** to save the Discrete Parameter.

1.5.3 Addresses

The **Address** is the Field Name or Column in the Database Table.

You have to use the actual Field Names (column names) in your database. You will need a copy of the Database Software program to open the Database to see the Field Names (Column Names). For an Access Database example, see section 1.2.1 [Example Access Database and Table](#).

1.5.4 Conversion Code

The conversion code is used to interpret the data as number, discrete state, or text.

For a number (e.g. Analog tag), use **Number**.

For a Discrete or Digital Tag, use **Number**.

For a Text or character data, use **Text**.

1.5.5 Start Bit

The BWDB driver ignores the Start Bit field.

1.5.6 Length

The BWDB driver ignores the Length field. The Analog and Discrete Tags always read the full number in the Database. The Discrete Tags use the number of State Descriptors that are used to determine the number of States.

1.5.7 State 0, State 1, State 2, etc.

State Descriptors for State 0, State 1, State 2, through State 7 are used to determine the number of states for a discrete tag

The 'NotUsed' entry disables that state. States must be continuous.

If STATE 0 and STATE1 are used, then this is a Digital Tag (e.g. 2-State, one bit).

If STATE 0, STATE 1 and STATE 2 are used, then this is a 3-State Tag, (behaves as if two bits are read).

If STATE 0 through STATE 7 are used, then this is a 7-State Tag, (behaves as if three bits are read).

Note – the BwDB device driver ignores Start Bit and Length.

1.6 Blocks

Currently, there are no pre-configured block types in the BWDB driver. You must configure parameters and blocks

1.7 Troubleshooting

1.7.1 * [8000]

Possible causes are:

- An illegal Column Name (Field Name). This usually is the case if the error occurs after adding another tag when previously there was no error. This often results in *[8000] for all tags.
- ODBC DSN miss-configured.
- Database not accessible by DSN
- DSN not on SCADA Node.
- Wrong User or Password for Database.