

iwrite technical manual

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Chapter 1

Files

This section describes the files iwrite utilizes.

1.1 report files

An iwrite report consists of two *BSON* data files: (1) *report* (2) *SQL*, and a configuration file *cfg*.

The report file has the extension *bson*. The *SQL* file has the extension *sql*. And, the *cfg* file has the extension *cfg*. For the report to run, these files need to be available in the same directory.

1.1.1 report.bson

The *report.bson* file contains all of the drawing elements.

1.1.2 report.cfg

The *report.cfg* file contains report configuration items such as page setup.

1.1.3 report.sql

The *report.sql* file contains information on the database and SQL queries.

1.2 Preferences

Under BSD type and GNU Linux operating systems, preferences are stored in *INI* file format. This format contains sections that contain key value pairs. A semicolon denotes a comment line, which is ignored. It is not recommended to use comments as the section will get updated/overwritten.

1.2.1 database

The *database.ini* file contains a history of database connections. The password to the database server is never saved.

The directory this file is stored in is specified by the *XD_CONFIG_HOME* environment variable. If the variable is not set, it uses the following default path: *\$HOME/.config/iwrite*

1.3 Configuration file

1.3.1 Drivers

iwrite SQL database drivers are configured in *iwrite_driver.cfg*. The configuration file uses the *INI* file format. This format contains sections that contain key value pairs. A semicolon denotes a comment line, which is ignored.

The section describes the name of the driver. Two keys are recognized: (1) *driver32* and (2) *driver64*. The value of *driver32* is the path to a 32-bit module, while *driver64* is the path to a 64-bit module. Following, is an example of a configuration file for BSD type and GNU Linux operating systems.

```
; PostgreSQL driver
[PostgreSQL]
driver32=/usr/lib/libiwsq1_pq32.so
driver64=/usr/lib/libiwsq1_pq.so

; SQLite driver
[SQLite]
driver32=/usr/lib/libiwsq1_sqlite32.so
driver64=/usr/lib/libiwsq1_sqlite3.so

; MariaDB and MySQL driver
[MariaDB]
driver32=/usr/lib/libiwsq1_mariadb32.so
driver64=/usr/lib/libiwsq1_mariadb.so

; Oracle driver
[Oracle]
driver64=/usr/lib/libiwsq1_oracle.so
```

It is important to set permissions correctly and to use standard driver names. This way, iwrite reports deployed across various platforms will be able to read, recognize, and load the module.

Under BSD type and GNU Linux operating systems, iwrite looks for the configuration file in the directory specified by the *XD_CONFIG_DIRS* envi-

ronment variable. If the variable is not set, it uses the following default path:
`\etc\xdg`.

1.4 Glade

Glade files define user interface elements. They are XML files produced by Glade, a user interface designer for GTK+ and GNOME.

Under GNU Linux operatings systems, iwrite looks for Glade files in `/usr/share/iwrite/ui/`.

Under BSD operating systems, TBD.

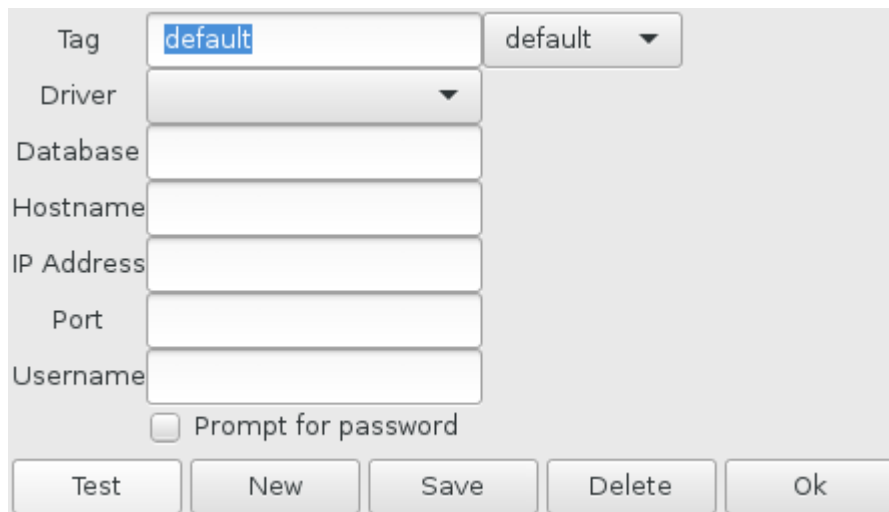
Under Windows operatings systems, iwrite looks for Glade files in the program directory.

Chapter 2

Menu

2.1 SQL

2.1.1 Database



The image shows a configuration window for a database module. It contains several input fields and a checkbox. The 'Tag' field is highlighted with a blue selection box and contains the text 'default'. To its right is a small dropdown menu also showing 'default'. Below these are fields for 'Driver', 'Database', 'Hostname', 'IP Address', 'Port', and 'Username'. At the bottom left is a checkbox labeled 'Prompt for password'. At the bottom are five buttons: 'Test', 'New', 'Save', 'Delete', and 'Ok'.

Tag

Descriptor for the database module. This also acts as the key in the database preferences ?? file.

Driver

The name of the driver module. These are configured in the Drivers configuration ?? file. Depending on the driver chosen, some of the parameters that

| Driver | Database | Hostname | IP Address | Port | Username | Password |
|------------|----------|----------|------------|------|----------|----------|
| PostgreSQL | X | O | O | O | O | O |
| SQLite | X | - | - | - | - | - |
| MariaDB | X | O | O | O | O | O |
| Oracle | O | - | - | - | X | X |

follow may be optional. That is, the driver does not require them or has predefined default values.

The administrator at your organization can supply the required data.

The table above describes values that are required ('X'), optional ('O'), or not available ('-') for each driver.

The MariaDB database driver is compatible with MySQL.

Database

The name of the database to query.

255 *maximum number of characters*

Oracle The Oracle database driver uses database for the connection string. The connection string is the instance to connect too. The format can be in URL form or an Oracle Net Keyword-value pair.

- URL form
//host:[port][/]service name]
for example,
//127.0.0.1:1521/orcl
- Keyword-value pair
(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=127.0.0.1)(PORT=1521))
(CONNECT_DATA=(SERVICE_NAME=orcl)))

Hostname

The hostname of the database server.

63 *maximum number of characters*

IP Address

The numeric IP address of the database server.

47 *maximum number of characters*

Port

The port number of the database server.

6 *maximum number of characters*

Username

The user name used to connect to the database server.

31 maximum number of characters

Prompt for password

Passwords are not stored. If a password is required, this box should be checked. Checking this box will prompt for the password when the query is executed.

31 maximum number of characters

2.1.2 Query



The query dialog provides a method to enter SQL statements that will comprise data to be used in the report.

SQL should only contain select statements. They should not contain statements such as *INSERT* or *UPDATE* that modify database tables. SQL is sent to the database server unfiltered. In otherwords, there is no security check or validation.

Reference

Queries can contain a reference to a column or prompt for value. The format for a reference is as follows

`':'[table'.']column`

Consider the following primary query:

```
SELECT * FROM payment ORDER BY customer_id
```

A secondary query can be constructed that joins another query (primary). The example below will join the primary table to the customer table by using column *customer_id*.

```
SELECT first_name, last_name
FROM customer
WHERE customer_id=:customer_id
```

The example above can also be done faster by using an inner join in the SQL statement.

```
SELECT payment.*, customer.first_name, customer.lastname
FROM payment, customer
WHERE payment.customer_id=customer.customer_id
```

Prompt

Following, is the format for prompt.

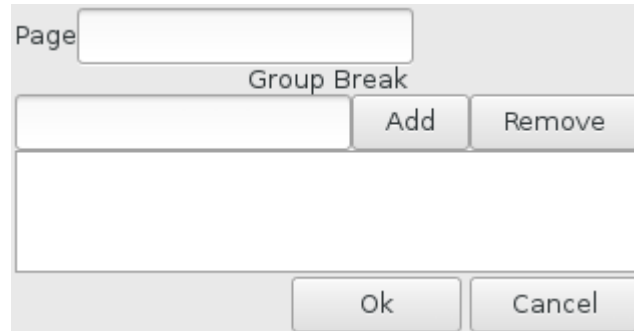
```
':''?'column
```

The name of column can be any valid characters that are bound by the Database SQL implementation. When the report is run, the prompt/label will be displayed as the label.

The following query will prompt the user for a customer id.

```
SELECT *
FROM payment
WHERE customer_id=:?customer_id
```

2.1.3 Break



Page break

A page break will generate a new page every time the column value changes. It does not behave like a group break, which is typically used for running totals.

Group break

A level break will generate a new section every time the value of a column changes. It works by starting at the last break (highest) and working towards the first (lowest).

Chapter 3

Command Line

Following are the command line options iwrite supports.

help list options

output output file name

password database password

prompt values for query

report path of report to run

3.1 help

Output the list of options shown above

3.2 output

The name of the file to write too.

This option is only valid in combination with the *report* option.

3.3 password

The password to the database.

3.4 prompt

The values to query prompts. If a query contains a prompt **??**, the value can be specified on the command line using the following format:

--prompt=field:value

3.5 report

The name of the report to open or run. If *output* is given, the report is run. Otherwise, it is opened for editing. The report will run non-interactively. When it is completed, it will exit back to the shell prompt. On success zero is returned. Otherwise, a non-zero value is returned.

Following is an example to run a report named foo.

```
iwrite --report=./Reports/foo --output=./tmp/foo.pdf --password=mypwd
```

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3.6 iwrite

3.6.1 software

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3.7 The decNumber Library

decNumber library license

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3.8 libzint

libzint library license

libzint - the open source barcode library
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3.8.1 Reed-Solomon encoder

Reed-Solomon encoder license

This is a simple Reed-Solomon encoder
(C) Cliff Hones 2004

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3.9 BSON parser

BSON parser license

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