

iwrite technical manual

iwrite authors and contributors
Revision: 0.00 (Draft/WIP)

June 11, 2015

Chapter 1

Files

This section describes the files iwrite utilizes.

1.1 report files

An iwrite report consists of a single XML file. The report file has the extension *irpt*.

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.

Under BSD type and GNU Linux operating systems, iwrite uses the path specified by the *XDG_CONFIG_HOME* environment variable. If the variable is not set, it uses the following default path: *\$HOME/.config/iwrite*

Under Windows, iwrite uses *SIDL_LOCAL_APPDATA**SIDL_LOCAL_APPDATA*. The path is typically *emph'C:\Documents and Settings\username\Local Settings\Application Data.'*

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_sqlite332.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 *XDGL_CONFIG_DIRS* environment 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 operating systems, iwrite looks for Glade files in */usr/share/iwrite/ui/*.

Under BSD operating systems, TBD.

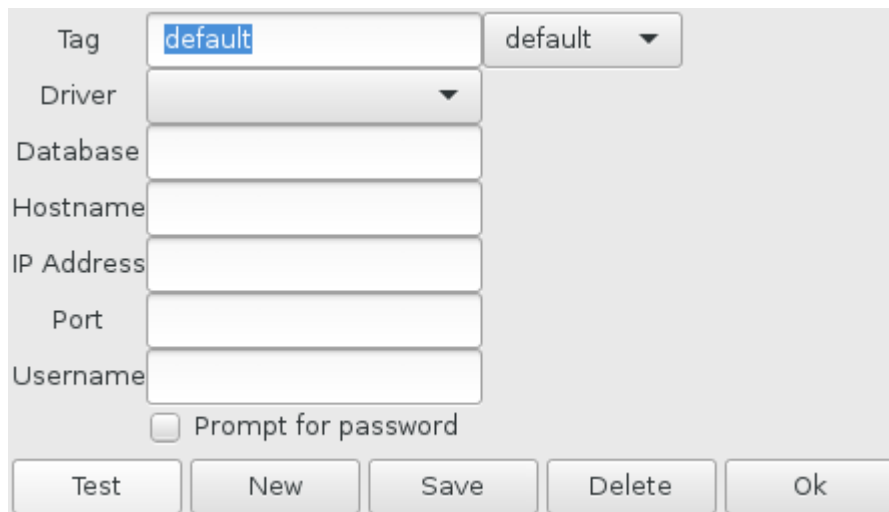
Under Windows operatings systems, iwrite looks for Glade files in the program directory.

Chapter 2

Menu

2.1 SQL

2.1.1 Database



The screenshot shows a configuration window for a database. It contains the following fields and controls:

- Tag:** A text field containing the word "default".
- Driver:** A dropdown menu with a downward arrow.
- Database:** A text field.
- Hostname:** A text field.
- IP Address:** A text field.
- Port:** A text field.
- Username:** A text field.
- Prompt for password:** A checkbox that is currently unchecked.
- Buttons:** Five buttons at the bottom: "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.

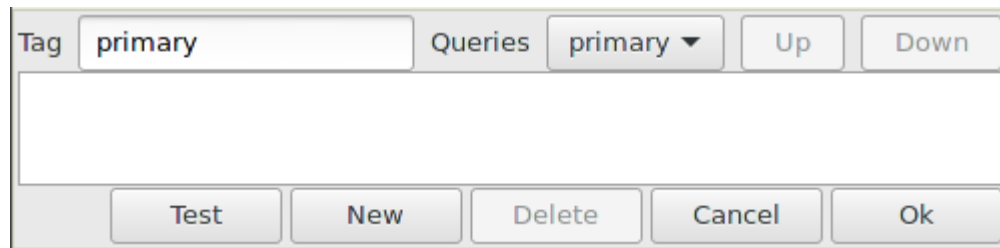
31 maximum number of characters

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
```

This feature was supposed to give the ability to query another database. However, it is incomplete.

Prompt

Following, is the format for prompt.

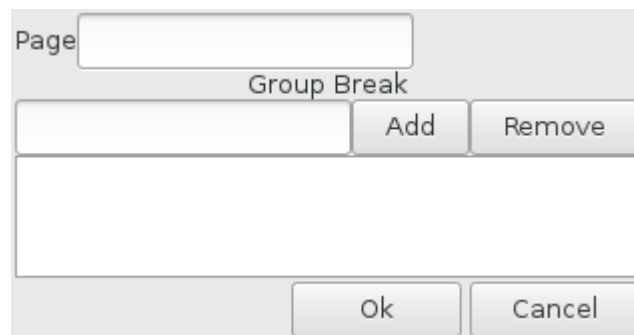
```
':''?'column
```

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
```

License

3.6 iwrite

3.6.1 software

iwrite license

Copyright (c) 2015, iwrite authors
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

3.6.2 iwrite documentation

iwrite documentation license

Copyright (c) 2015 iwrite authors

Redistribution and use in source (TeX/LaTeX) and 'compiled' forms (HTML, PDF, PostScript, RTF and so forth) with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code (TeX/LaTeX) must retain the above copyright notice, this list of conditions and the following disclaimer as the first lines of this file unmodified.
2. Redistributions in compiled form (converted to PDF, PostScript, RTF and other formats) must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS DOCUMENTATION IS PROVIDED BY iwrite AUTHORS 'AS IS' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL iwrite AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)

3.7 The decNumber Library

decNumber library license

ICU License - ICU 1.8.1 and later

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1995-2005 International Business Machines Corporation and others
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including

without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

All trademarks and registered trademarks mentioned herein are the property of their respective owners.

3.8 libzint

libzint library license

libzint - the open source barcode library
Copyright (C) 2009 Robin Stuart <robin@zint.org.uk>

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software

without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

3.8.1 Reed-Solomon encoder

Reed-Solomon encoder license

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

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

SUCH DAMAGE.

3.9 BSON parser

BSON parser license

Copyright (c) 2007, 2010-2011 Dante University Foundation and Contributors

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY Dante University Foundation ‘AS IS’ AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL Dante University Foundation OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The views and conclusions contained in the software and documentation are those of the authors and should not be interpreted as representing official policies, either expressed or implied, of Dante University Foundation.