libvirtualpg

2.0.0

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Chapter 1

Main Page

1.1 Introduction

VirtualPG is an open source library implementing a Virtual Table extension to SQLite allowing to establish a connection to an external PostgreSQL/PostGIS Table or View.

Such a Virtual Table can then be handled using the usual SQLite's onw SQL dialect (SELECT / INSERT / UPDATE / DELETE), more or less exactly as if it was a native Table.

Building and installing VirtualPG is straightforward:

```
./configure
make
make install
```

Linking VirtualPG to your own code is usually simple:

```
gcc my_program.c -o my_program -lvirtualpg -lsqlite3
```

On some systems you may have to provide a slightly more complex arrangement:

```
gcc -I/usr/local/include my_program.c -o my_program \
  -L/usr/local/lib -lvirtualpg -lsqlite3
```

Note

VirtualPG obviously depends on **libpq** (the PostgreSQL own client library), but directly linking libpq (**-lpq**) isn't strictly required because VirtualPG can be initialized in such a way so to rely upon late binding instead of hard linking.
Please read the Tutorial for more detailed informations about this specific topic.

VirtualPG also provides pkg-config support, so you can also do:

```
gcc -I/usr/local/include my_program.c -o my_program `pkg-config --libs virtualpg`-lsqlite3
```

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- the MPL 1.1
- the GPL v2.0 or any subsequent version
- the LGPL v2.1 or any subsequent version

Enjoy, and happy coding

Chapter 2

Data Structure Index

2.1 Data Structures

Here are the data structures with brief descriptions:

Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 4

Data Structure Documentation

4.1 virtualPQstruct Struct Reference

virtualized libPQ methods

`#include <virtualpg.h>`

Data Fields

- void(∗ PQclear)(PGresult ∗res)
  pointer to PQclear
- PGconn ∗(∗ PQconnectdb)(const char ∗conninfo)
  pointer to PQconnectdb
- char ∗(∗ PQerrorMessage)(const PGconn ∗conn)
  pointer to PQerrorMessage
- PGresult ∗(∗ PQexec)(PGconn ∗conn, const char ∗command)
  pointer to PQexec
- void(∗ PQfinish)(PGconn ∗conn)
  pointer to PQfinish
- int(∗ PQgetisnull)(const PGresult ∗res, int row_number, int column_number)
  pointer to PQgetisnull
- char ∗(∗ PQgetvalue)(const PGresult ∗res, int row_number, int column_number)
  pointer to PQgetvalue
- int(∗ PQlibVersion)(void)
  pointer to PQlibVersion
- int(∗ PQnfields)(const PGresult ∗res)
  pointer to PQnfields
- int(∗ PQntuples)(const PGresult ∗res)
  pointer to PQntuples
- ExecStatusType(∗ PQresultStatus)(const PGresult ∗res)
  pointer to PQresultStatus
- ConnStatusType(∗ PQstatus)(const PGconn ∗conn)
  pointer to PQstatus

4.1.1 Detailed Description

virtualized libPQ methods

See also

virtualPQptr

The documentation for this struct was generated from the following file:

- virtualpg.h

Chapter 5

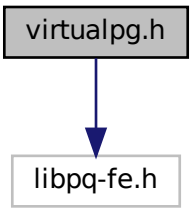
File Documentation

5.1 virtualpg.h File Reference

Function declarations and constants for VirtualPG library.

```
#include <libpq-fe.h>
```

Include dependency graph for virtualpg.h:



Data Structures

- struct virtualPQstruct

  virtualized libPQ methods

Typedefs

- typedef struct virtualPQstruct virtualPQ

  virtualized libPQ methods
- typedef virtualPQ * virtualPQptr

  Typedef for virtual libPQ structure.

Functions

- VIRTUALPG_DECLARE void vpgPQclear (PGresult ∗res)

  virtual implementation for LibPQ - PQclear
- VIRTUALPG_DECLARE PGconn ∗ vpgPQconnectdb (const char ∗conninfo)

  virtual implementation for LibPQ - PQconnectdb
- VIRTUALPG_DECLARE char ∗ vpgPQerrorMessage (const PGconn ∗conn)

  virtual implementation for LibPQ - PQerrorMessage
- VIRTUALPG_DECLARE PGresult ∗ vpgPQexec (PGconn ∗conn, const char ∗command)

  virtual implementation for LibPQ - PQexec
- VIRTUALPG_DECLARE void vpgPQfinish (PGconn ∗conn)

  virtual implementation for LibPQ - PQfinish
- VIRTUALPG_DECLARE int vpgPQgetisnull (const PGresult ∗res, int row_number, int column_number)

  virtual implementation for LibPQ - PQgetisnull
- VIRTUALPG_DECLARE char ∗ vpgPQgetvalue (const PGresult ∗res, int row_number, int column_number)

  virtual implementation for LibPQ - PQgetvalue
- VIRTUALPG_DECLARE int vpgPQlibVersion (void)

  virtual implementation for LibPQ - PQlibVersion
- VIRTUALPG_DECLARE int vpgPQnfields (const PGresult ∗res)

  virtual implementation for LibPQ - PQnfields
- VIRTUALPG_DECLARE int vpgPQntuples (const PGresult ∗res)

  virtual implementation for LibPQ - PQntuples
- VIRTUALPG_DECLARE ExecStatusType vpgPQresultStatus (const PGresult ∗res)

  virtual implementation for LibPQ - PQresultStatus
- VIRTUALPG_DECLARE ConnStatusType vpgPQstatus (const PGconn ∗conn)

  virtual implementation for LibPQ - PQstatus
- VIRTUALPG_DECLARE const char ∗ virtualpg_version (void)

  Return the current library version.
- VIRTUALPG_DECLARE int virtualpg_extension_init (sqlite3 ∗db_handle, virtualPQptr virtual_api)

  Initializes libvirtualpg as an extension to SQLite.

5.1.1 Detailed Description

Function declarations and constants for VirtualPG library.

5.1.2 Typedef Documentation

5.1.2.1 virtualPQ

```
typedef struct virtualPQstruct virtualPQ
```

virtualized libPQ methods

See also

virtualPQptr

5.1.2.2 virtualPQptr

```
typedef virtualPQ* virtualPQptr
```

Typedef for virtual libPQ structure.

See also

virtualPQ

5.1.3 Function Documentation

5.1.3.1 virtualpg_extension_init()

```
VIRTUALPG_DECLARE int virtualpg_extension_init (
            sqlite3 * db_handle,
            virtualPQptr virtual_api )
```

Initializes libvirtualpg as an extension to SQLite.

Parameters

db_handle	pointer to the current DB connection.
virtual_api	pointer to a virtualPQ struct.

Returns

SQLITE_OK will be returned on success, otherwise any appropriate error code on failure.

5.1.3.2 virtualpg_version()

```
VIRTUALPG_DECLARE const char* virtualpg_version (
            void  )
```

Return the current library version.

Returns

the version string.

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