

How to Contribute to the PostgreSQL Documentation

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👋 **Hello!**

I'm David Wheeler

Principle Engineer, ClickHouse

PostgreSQL user since 2000

PostgreSQL contributor since 2008

pgTAP: Unit testing for PostgreSQL

PGXN: PostgreSQL Extension network

pg_clickhouse: A foreign data wrapper

jsonpath & ABI stability documentation





Contributing to Postgres

Ways to Contribute

 **Code**

 **Reviews**

 **Testing**

 **Packaging**

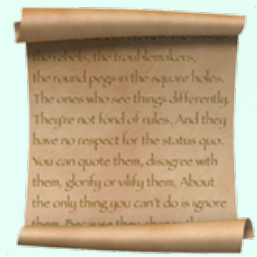
 **Extensions**

 **Community**

 **Documentation**



Documentation History



Documented History



DocBook

<> Originally OpenSP SGML



Used DSSSL, Jake, JadeTex



Converted to XML in 2017



Now on DocBook 4.5



Story Time

My Path

 **Confused by jsonpath functions**

 **Consulted the docs**

 **Found them wanting**

 **Experimented**

 **Blogged findings**

Compare

SQL Standard Predicate Expression

```
> SELECT jsonb_path_query(  
    '{"a": [1, 2, 3, 4, 5]}',  
    '$ ?(@.a[*] > 2)'  
)  
    jsonb_path_query  
-----  
{"a": [1, 2, 3, 4, 5]}  
(1 row)
```

PostgreSQL Predicate Check Expression

```
> SELECT jsonb_path_query(  
    '{"a": [1, 2, 3, 4, 5]}',  
    '$.a[*] > 2'  
)  
    jsonb_path_query  
-----  
true  
(1 row)
```

WTF?



The Documentation

<para>

A path expression can be a Boolean predicate, although the SQL/JSON standard allows predicates only in filters. This is necessary for implementation of the <literal>@@</literal> operator. For example, the following <type>jsonpath</type> expression is valid in

<productname>PostgreSQL</productname>:

```
<programlisting>
```

```
$.track.segments[*].HR < 70
```

```
</programlisting>
```

</para>

Improvement

 **I set out to improve the docs**

 **Show difference throughout**

 **Use executable examples**

 **Submit to Hackers and the Commitfest**

Commit 7014c9a



 **tglsfdc** committed on Jan 25, 2024

Doc: improve documentation for jsonpath behavior.

Clarify the behavior of jsonpath operators and functions by describing their two different modes of operation explicitly. In addition to the SQL-spec behavior, where a path returns a list of matching items, we have a "predicate check" form that always returns a single boolean result. That was mentioned in only one place, but it seems better to annotate each operator and function as to which form(s) it takes. Also improve the examples by converting them into actual executable SQL with results, and do a bunch of incidental wordsmithing.

David Wheeler, reviewed by Erik Wienhold, Jian He, and myself

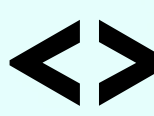
Discussion: <https://postgr.es/m/7262A188-59CA-4A8A-AAD7-83D4FF0B9758@justatheory.com>

 **You can do it, too!**

What You Need

 **Comfort with plain text**

 **Comfort with Git and CLI**

 **Experience with markup like HTML**

 **Helpful text editor**

 **Configure and tools**

Git Clone

```
> git clone https://git.postgresql.org/git/postgresql.git
```

```
Cloning into 'postgres'...
```

```
remote: Enumerating objects: 1160468, done.
```

```
remote: Counting objects: 100% (55/55), done.
```

```
remote: Compressing objects: 100% (34/34), done.
```

```
remote: Total 1160468 (delta 35), reused 21 (delta 21), pack-reused 116041
```

```
Receiving objects: 100% (1160468/1160468), 777.84 MiB | 3.72 MiB/s, done.
```

```
Resolving deltas: 100% (967310/967310), done.
```

```
Updating files: 100% (7716/7716), done.
```

```
>
```

Or <https://github.com/postgres/postgres.git>

Emacs + nXML

Classic text editor

Available on all platforms

Excellent XML support with nXML

Load `src/tools/editors/emacs.samples`

Install Emacs

 **macOS: brew install emacs**

 **Debian: apt-get install -y emacs**

 **Fedora: yum -y install emacs**

 **FreeBSD: pkg install emacs**

Or
emacs
-nox

Visual Studio Code (VSCode)

Microsoft OSS

Extensions

XML Tools

Rewrap

Install & Configure VSCode

<https://code.visualstudio.com/download>

Settings:

```
{  
  "editor.wordWrapColumn": 78,  
  "rewrap.autoWrap.enabled": true,  
  "rewrap.wholeComment": false,  
  "files.associations": { "*.sgml": "xml" }  
}
```

F.10. cube — a multi-dimensional cube data type

F.10.1. Syntax

F.10.2. Precision

F.10.3. Usage

F.10.4. Defaults

F.10.5. Notes

F.10.6. Credits

**“the cube
data type”**

This module implements a data type `cube` for representing multidimensional cubes.

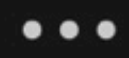
This module is considered “trusted”, that is, it can be installed by non-superusers who have `CREATE` privilege on the current database.

Search



> implements a data type cube

Aa ab 



files to include

*.sgml



files to exclude



No results found in '*.sgml' - [Search again in all files](#)



> implements a data type

Aa ab 

files to include

*.sgml



files to exclude



3 results in 3 files - [Open in editor](#)

- ✓  cube.sgml doc/src/sgml 1
This module implements a data type `<type>cube</type>` for
- ✓  ltree.sgml doc/src/sgml 1
This module implements a data type `<type>ltree</type>` for representing
- ✓  seg.sgml doc/src/sgml 1



cube.sgm1

<para>

This module implements a data type <type>cube</type> for representing multidimensional cubes.

</para>

cube.sgm1

<para>

This module implements the <type>cube</type> data type for representing multidimensional cubes.

</para>





A Brief DocBook Tour

DocBook XML

Chapters

<chapter>

<title>

<para>

<productname>

```
<chapter id="backup">
```

```
<title>Backup and Restore</title>
```

```
<para>
```

As with everything that contains valuable data, **<productname>PostgreSQL</productname>** databases should be backed up regularly. While the procedure is essentially simple, it is important to have a clear understanding of the underlying techniques and assumptions.

```
</para>
```

...

DocBook XML

Sections

<sect1>...<sect5>

<indexterm>

<primary>

<secondary>

<firstterm>

```
<sect1 id="tutorial-views">  
  <title>Views</title>
```

```
<indexterm zone="tutorial-views">  
  <primary>view</primary>  
</indexterm>
```

```
<para>
```

Suppose the combined listing of weather records and city location is of particular interest to your application, but you do not want to type the query each time you need it. You can create a

<firstterm>view</firstterm> over the query, which gives a name to the query that you can refer to like an ordinary table:

DocBook XML

Code

<programlisting>

<replaceable>

<screen>

<prompt>

<userinput>

<literal>

```
<programlisting>
psql -X <replaceable>dbname</replaceable>
</programlisting>
```

```
<para>
  To retrieve the available track segments, you need to
  use the
  <literal>.<replaceable>key</replaceable></literal>
  accessor operator to descend through surrounding JSON
  objects, for example:
```

```
<screen>
<prompt>=> </prompt>
<userinput>SELECT jsonb_path_query(
    : json', '$.track.segments'
);</userinput>
  jsonb_path_query
  -----
  [...]
</screen>
</para>
```

DocBook XML

Commands

<command>

<function>

<application>

<option>

<envvar>

Some client libraries issue `<command>BEGIN</command>` and `<command>COMMIT</command>` commands automatically.

The current dimensions of any array value can be retrieved with the `<function>array_dims</function>` function:

To specify which database server `<application>pg_dump</application>` should contact, use the command line options

`<option>-h <replaceable>host</replaceable></option>`

and

`<option>-p <replaceable>port</replaceable></option>`

The default host is the local host or whatever your `<envvar>PGHOST</envvar>` environment variable specifies

DocBook XML

Lists

<itemizedlist>

<listitem>

<orderedlist>

<variablelist>

<varlistentry>

```
<itemizedlist>  
  <listitem><para>SQL dump</para></listitem>  
  <listitem><para>File system</para></listitem>  
  <listitem><para>Continuous</para></listitem>  
</itemizedlist>
```

```
<orderedlist>  
  <listitem>  
    <para>  
      <literal>create bootstrap</literal>  
    </para>  
  </listitem>
```

```
<variablelist>  
  <varlistentry>  
    <term><literal>PG-Backup</literal></term>  
    <listitem>  
      <para>  
        The associated value is an integer.  
      </para>  
    </listitem>  
  </varlistentry>
```

DocBook XML

Links

id="..."

<xref>

<link>

<ulink>

```
<chapter id="backup">  
  <title>Backup and Restore</title>
```

The backup and recovery mechanisms are
discussed at length in

```
<xref linkend="backup"/>
```

See

```
<link linkend="backup">the backup docs</link>  
for further discussion.
```

Please visit the PostgreSQL

```
<ulink url="https://www.postgresql.org">web  
site</ulink> for links to more resources.
```

DocBook XML

Structures

<structname>

<structfield>

<type>

<para>

The above command will create a table named

`<structname>sal_emp</structname>`

with the column

`<structfield>name</structfield>`

of type `<type>text</type>`.

</para>

DocBook XML

Figures

<figure>

<mediaobject>

<imageobject>

<imagedata>

```
<figure id="gin-internals-figure">
```

```
  <title>GIN Internals</title>
```

```
  <mediaobject>
```

```
    <imageobject>
```

```
      <imagedata
```

```
        fileref="images/gin.svg"
```

```
        format="SVG"
```

```
        width="100%" />
```

```
    </imageobject>
```

```
  </mediaobject>
```

```
</figure>
```

DocBook XML

Tables

<table>

<tgroup>

<colspec>

<thead>

<row>

<entry>

<tbody>

```
<table id="brin-extensibility-minmax-table">
```

```
<title>Minmax Operator Classes</title>
```

```
<tgroup cols="2">
```

```
<colspec colname="col1" colwidth="1*"/>
```

```
<colspec colname="col2" colwidth="2*"/>
```

```
<thead>
```

```
<row>
```

```
<entry>Operator class member</entry>
```

```
<entry>Object</entry>
```

```
</row>
```

```
</thead>
```

```
<tbody>
```

```
<row>
```

```
<entry>Support Function 1</entry>
```

```
<entry>internal function
```

```
<function>brin_minmax_opcinfo()</function>
```

```
</entry>
```

```
</row>
```

```
</tbody>
```

```
</tgroup>
```

```
</table>
```

DocBook XML

Notes/Admonitions

<note>

<caution>

<important>

<tip>

<warning>

```
<note>
```

```
<para>
```

```
Although inheritance is frequently useful,  
it has not been integrated with unique  
constraints or foreign keys, which limits  
its usefulness. See <xref  
linkend="ddl-inherit"/> for more detail.
```

```
</para>
```

```
</note>
```

Note

Although inheritance is frequently useful, it has not been integrated with unique constraints or foreign keys, which limits its usefulness. See **Section 5.11** for more detail.



docbook.org



Validation

Dependencies

DocBook DTD

DocBook XSL Stylesheets

xmllint (libxml2)

xsltproc (libxslt)

fop

Compiler Tooling



macOS Homebrew

```
xcode-select --install
```

```
brew install docbook docbook-xsl libxslt
```

```
export XML_CATALOG_FILES=/opt/homebrew/etc/xml/catalog
```



```
apt-get install -y build-essential flex bison \  
libreadline-dev zlib1g-dev
```

```
apt-get install -y docbook-xml docbook-xsl \  
libxml2-utils xsltproc fop
```



```
yum group install development-tools
```

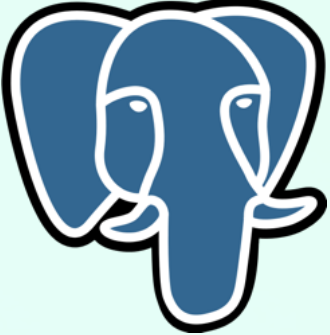
```
yum install -y bison bison-devel flex \  
readline-devel zlib-devel
```

```
yum install -y docbook-dtds docbook-style-xsl \  
libxslt fop
```



```
pkg install gmake bison flex readline zstd
```

```
pkg install docbook-xml docbook-xsl libxslt fop
```



Compile & Test

```
./configure --without-icu
```

```
cd doc/src/sgml
```

```
make html STYLE=website
```

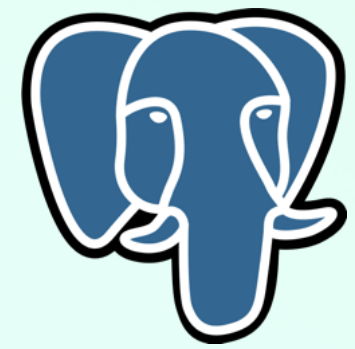
```
make postgres-A4.pdf
```

```
make man
```

```
make check
```

Or

postgres-US.pdf



Test Failure

```
> make check
```

```
/usr/bin/xmllint --nonet --path . --path . --noout --valid postgres.sgml
```

```
cube.sgml:11: parser error : Opening and ending tag mismatch: type line 11 and typ
```

```
This module implements the <type>cube</typ> data type for
```

^

```
cube.sgml:640: parser error : chunk is not well balanced
```

^

```
contrib.sgml:139: parser error : Entity 'cube' failed to parse  
&cube;
```

^

```
make: *** [check] Error 1
```

```
>
```



Test Success

```
> make -C doc/src/sgml check  
/usr/bin/xmllint --nonet --path . --path . --noout --valid postgres.sgml
```

>





Submitting Your Patch

git diff

```
> git diff
diff --git a/doc/src/sgml/cube.sgml b/doc/src/sgml/cube.sgml
index a11c0cbd767..ad5dec62202 100644
--- a/doc/src/sgml/cube.sgml
+++ b/doc/src/sgml/cube.sgml
@@ -8,7 +8,7 @@
     </indexterm>

     <para>
-    This module implements a data type <type>cube</type> for
+    This module implements the <type>cube</type> data type for
     representing multidimensional cubes.
     </para>
```

git commit & format-patch

```
> git commit -a -m 'Doc: improve wording of cube summary'  
[master 54626920d75] Doc: improve wording of cube summary  
1 file changed, 1 insertion(+), 1 deletion(-)
```

```
> git format-patch -v 1 HEAD~1  
v1-0001-Doc-improve-wording-of-cube-summary.patch
```

```
>
```

Commit 7014c9a



 **tglsfdc** committed on Jan 25, 2024

Doc: improve documentation for jsonpath behavior.

Clarify the behavior of jsonpath operators and functions by describing their two different modes of operation explicitly. In addition to the SQL-spec behavior, where a path returns a list of matching items, we have a "predicate check" form that always returns a single boolean result. That was mentioned in only one place, but it seems better to annotate each operator and function as to which form(s) it takes. Also improve the examples by converting them into actual executable SQL with results, and do a bunch of incidental wordsmithing.

David Wheeler, reviewed by Erik Wienhold, Jian He, and myself

Discussion: <https://postgr.es/m/7262A188-59CA-4A8A-AAD7-83D4FF0B9758@justatheory.com>



Aa



To: ! PostgreSQL Hackers

Subject: Cube Documentation Tweak



From: David E. Wheeler – david@justatheory.com

Message Size: 9 KB

No Style



Helvetica



Regular



27



B

I

U

~~S~~



Hackers,

Please find attached a smol patch that changes the wording of the `cube.sgml` documentation to be slightly less clunky. I'm happy to make similar adjustments to other docs if you deem it worthwhile.

Best,

David



v1-0001-Doc-improv...y.patch

684 bytes

Subscribe:

lists.postgresql.org



New patch

Specify thread msgid:

7262A188-59CA-4A8A-AAD7-83D4FF0B9758@justatheory.com

Find thread

Description:

Patch: improve wording of cube summary

Tags

Shortcuts:

 Bugfix

 Performance

 Security

 Docs Only



☐ No tags apply

Check this if none of the tags above apply to this patch

Wikilink:

Gitlink:

Target version:

20

Authors:

David Wheeler (theory)



Enter part of name to see list

Create patch

commitfest.postgresql.org



Congratulations!



👋 **Happy to Help**

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david@justatheory.com

@theory@xoxo.zone

pgtreats.info/slack-invite

discord.gg/n46GyVt8a

linkedin.com/in/theory



Thank You

How to Contribute to the PostgreSQL Documentation

David E. Wheeler
Principal Engineer
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