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# **AnyBlok / Postgres Documentation**

***Release 0.2.2***

**jssuzanne**

**Oct 31, 2019**



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Information about the AnyBlok / Postgres project.

## 1.1 Project Homepage

AnyBlok is hosted on [github](#) - the main project page is at [https://github.com/AnyBlok/anyblok\\_postgres](https://github.com/AnyBlok/anyblok_postgres). Source code is tracked here using [GIT](#).

Releases and project status are available on Pypi at [http://pypi.python.org/pypi/anyblok\\_postgres](http://pypi.python.org/pypi/anyblok_postgres).

The most recent published version of this documentation should be at <http://doc.anyblok-postgres.anyblok.org>.

## 1.2 Project Status

AnyBlok with postgres is currently in beta status and is expected to be fairly stable. Users should take care to report bugs and missing features on an as-needed basis. It should be expected that the development version may be required for proper implementation of recently repaired issues in between releases;

## 1.3 Installation

Install released versions of AnyBlok from the Python package index with [pip](#) or a similar tool:

```
pip install anyblok_postgres
```

Installation via source distribution is via the `setup.py` script:

```
python setup.py install
```

Installation will add the `anyblok` commands to the environment.

## 1.4 Unit Test

Run the test with `nose`:

```
pip install nose
nosetests anyblok_postgres/tests
```

## 1.5 Dependencies

AnyBlok / Postgres works with **Python 3.5** and later. The install process will ensure that [AnyBlok](#) is installed, in addition to other dependencies. The latest version of them is strongly recommended.

## 1.6 Author

Jean-Sébastien Suzanne

## 1.7 Contributors

[Anybox](#) team:

- Jean-Sébastien Suzanne
- Georges Racinet

[Sensee](#) team:

- Franck Bret
- Jean-Sébastien Suzanne

[Octobus](#) team:

- Georges Racinet

## 1.8 Bugs

Bugs and feature enhancements to AnyBlok should be reported on the [Issue tracker](#).

### Contents

- *Fields*
  - *Columns*
    - \* *Jsonb*
    - \* *LargeObject*
    - \* *Ranges*

This package adds some fields that are specific to PostgreSQL.

## 2.1 Columns

### 2.1.1 Jsonb

```
class anyblok_postgres.column.Jsonb(*args, **kwargs)
    Bases: anyblok.column.Column
    PostgreSQL JSONB column
```

```
from anyblok.declarations import Declarations
from anyblok_postgres.column import Jsonb

@Declarations.register(Declarations.Model)
class Test:

    x = Jsonb()
```

### 2.1.2 LargeObject

```
class anyblok_postgres.column.LargeObject(*args, **kwargs)
    Bases: anyblok.column.Column
    PostgreSQL JSONB column
```

```
from anyblok.declarations import Declarations
from anyblok_postgres.column import LargeObject
```

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```
@Declarations.register(Declarations.Model)
class Test:

    x = LargeObject()

-----

test = Test.insert()
test.x = hugefile
test.x # get the huge file
```

**sqlalchemy\_type**

alias of sqlalchemy.dialects.postgresql.base.OID

**wrap\_getter\_column** (*fieldname*)

Return a default getter for the field

**Parameters** **fieldname** – name of the field

## 2.1.3 Ranges

Since version 9.2, PostgreSQL supports a flexible range types system, with a few predefined ones, that can be used within AnyBlok.

**See also:**Range Types in [PostgreSQL documentation](#)**class** anyblok\_postgres.column.Int4Range (\*args, \*\*kwargs)

Bases: anyblok.column.Column

PostgreSQL int4range column.

Example usage, with this declaration:

```
from anyblok.declarations import Declarations
from anyblok_postgres.column import Jsonb

@Declarations.register(Declarations.Model)
class Test:

    col = Int4Range()
```

one can perform these:

```
Test.insert(col="[1, 3)")
Test.insert(col="(4, 8)")
Test.query().filter(Test.col.contains(2))
Test.query().filter(Test.col.contains([5, 6]))
```

**class** anyblok\_postgres.column.Int8Range (\*args, \*\*kwargs)

Bases: anyblok.column.Column

PostgreSQL int8range column.

Usage is similar to see Int4Range. See also <https://www.postgresql.org/docs/current/rangetypes.html>



Caveat (at least with psycopg2):

In containment queries, passing integers that are within PostgreSQL’s regular ‘integer’ type doesn’t work because it lacks the `::bigint` cast. One workaround is to pass it as an inclusive 0 length range in string form such as:

```
Test.query(Test.col.contains('[1, 1]'))
```

**class** `anyblok_postgres.column.NumRange(*args, **kwargs)`

Bases: `anyblok.column.Column`

PostgreSQL numrange column.

Usage is similar to see `Int4Range`, with `decimal.Decimal` instances instead of integers.

Caveat (at least with psycopg2):

In containment queries, passing values that are integers or `Decimal` instances equal to integers, such as `Decimal('1')` doesn’t work because they end up as literal SQL integers, without the `::numeric` cast.

One workaround is to pass them as inclusive 0 length ranges in string representation, such as:

```
Test.query(Test.col.contains('[1, 1]'))
```

**class** `anyblok_postgres.column.DateRange(*args, **kwargs)`

Bases: `anyblok.column.Column`

PostgreSQL daterange column.

This range column can be used with Python date instances.

Example usage, with this declaration:

```
from anyblok.declarations import Declarations
from anyblok_postgres.column import Jsonb

@Declarations.register(Declarations.Model)
class Test:

    col = DateRange()
```

one can perform these:

```
Test.insert(col="['2001-03-12', '2002-01-01']")
Test.insert(col="['2018-01-01', '2019-01-01']")
Test.query().filter(Test.col.contains(date(2001, 4, 7)))
Test.query().filter(Test.col.contains("['2018-02-01', '2018-03-01']"))
```

**class** `anyblok_postgres.column.TsRange(*args, **kwargs)`

Bases: `anyblok.column.Column`

PostgreSQL tsrange column (timestamps without time zones).

This range column can be used with “naive” Python `datetime` instances. Apart from that, usage is similar to `DateRange`

**class** `anyblok_postgres.column.TsTzRange(*args, **kwargs)`

Bases: `anyblok.column.Column`

PostgreSQL tstzrange column (timestamps with time zones).

See also <https://www.postgresql.org/docs/current/rangetypes.html>

This range column can be used with “non-naive” (i.e., with explicit `tzinfo`) Python `datetime` instances. Apart from that, usage is similar to `:class:`DateRange`

**Contents**

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  - *0.2.2 (2019-10-31)*
  - *0.2.1 (2019-09-16)*
  - *0.2.0 (2019-06-25)*
  - *0.1.0 (2018-01-26)*

### 3.1 0.2.2 (2019-10-31)

- Fixed, the dependencies of pyscopg is removed

### 3.2 0.2.1 (2019-09-16)

- Removed **python 3.4** capability
- Removed extra dependencies, let at the user, the choice of the driver to use

### 3.3 0.2.0 (2019-06-25)

- Added columns for built-in range types: PR #2 by @gracinet
- Added **Materialized view** factory: PR #1
- Fixed when the model have more than one primary key, the query to get the old value was wrong

### 3.4 0.1.0 (2018-01-26)

- Added **Jsonb** column
- Added **LargeObject** column

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## CHAPTER 5

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**a**

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## A

`anyblok_postgres.column` (*module*), [3](#)