Useful PostgreSQL Extensions

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Who is this guy?

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    - I have been contributing to PostgreSQL over the last 10 years.
    - I'm not a hacker, I work on PostgreSQL Community RPMs and website (rarely).
    - I rarely break RPMs, but (used to) break website more often.
    - I work at EnterpriseDB right now.
    - I live in Istanbul, Turkiye.
    - I have a son. Love Burcu.

Extensions are... not something like this!

Extensions are... not something like this!

The reason is:

postgres=# CREATE EXTENSION beer;

ERROR: could not open extension control file "/usr/pgsql-9.3/share/extension/**beer.control**": No such file or directory

So, what are "extensions"?

- 9.1+ feature

- (They) "make it easier to add and remove plugins, data types, functions etc with minimum fuss and without needing to compile things yourself." (Simon Riggs)

- Formerly "contrib modules"

- Some of them are available in PostgreSQL core distribution

- There are many extensions available out!

Well-known, in-core extensions

There are some extensions that are already available in PostgreSQL core:

- hstore (Yay!)

- postgres_fdw (YAY!)

- unaccent, Intarray, tablefunc, pgcrypto...

- pg_buffercache (Yay!)

- pg_stat_statements (YAY!)

- pg_trgm (Love it)

- ...

More is available at:

http://www.postgresql.org/docs/devel/static/contrib.html

What people say about in-core extensions?

Hervé Piedvache @footcow   10 Oct

@DevrimGunduz unaccent because french is full of those stupid letters ;) #extension #PostgreSQL

💬 View conversation
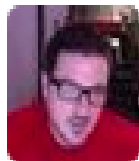
Magnus Hagander @magnushagander   10 Oct

@DevrimGunduz pg_stat_statements and hstore

💬 View conversation

What people say about in-core extensions?

Harold Giménez @hgmnz   10 Oct
@DevrimGunduz pg_stat_statements, brutally useful.
Postgres FDW, the possibilities…

💬 View conversation

DenishPatel @DenishPatel   10 Oct
@DevrimGunduz postgis & pg_stat_statements
💬 View conversation
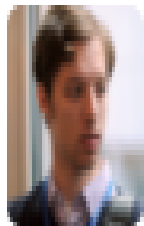
David Barbion @kingofsnakes211   10 Oct
@DevrimGunduz for me me it's pg_stat_statement
💬 View conversation

What people say about in-core extensions?

Jonathan S. Katz @jkatz05   9 Oct

@DevrimGunduz today, hstore. tomorrow, possibly one of the
FDWs. and a vote for #postgis because it just does everything.

View conversation

Where are the remaining extensions?

- Pgxn.org ! (YAY)
    - Remember to use pgxnclient!

- Pgfoundry.org (yay!)

- Github.org (...)

- ...

    Not a single place to download all extensions...

PostGIS!

- Really an extension? ;)

- **Spatial database "extender" for PostgreSQL**

- 2.1 came with great new features: Raster and topology

- Requires fuzzystrmatch extension for tiger_geocoder extension to work.

- postgis, postgis_topology, postgis_figer_geocoder,

PgRouting (WIN!)

- **Extends PostGIS, with routing and network analysis functionality.**

- 2.0 is a new-born baby, and comes with great additions.

- Comes with great number of routing algorithms.

- Available in many packaging formats, including RPMs.

- Depends on CGAL and Boost (...)

- http://www.pgrouting.org
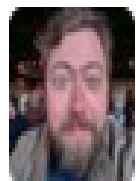
PL/proxy

- "PL/Proxy is database partitioning system implemented as PL language. Main idea is that proxy function will be created with same signature as remote function to be called, so only destination info needs to be specified inside proxy function body."

- http://pgfoundry.org/projects/plproxy/

- http://wiki.postgresql.org/wiki/PL/Proxy

mongres (yay!)

- "Mongres is a PostgreSQL extension that runs a custom background worker speaks mongo wire protocol. "

- https://github.com/umitanuki/mongres

- There is no stable release (yet). Feel free to pester @umitanuki (Hiroshi Harada)

What people say about mongres?
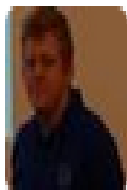
Peter van Hardenberg @pvh   9 Oct
@DevrimGunduz `hstore` is my most used one, but i hope it
becomes obsolete soon. `mongres` is my favorite because
@umitanuki is hilarious.

💬 View conversation

Peter Geoghegan @sternocera   10 Oct
@pvh @umitanuki @DevrimGunduz And it's less than 1500
lines of C!

💬 View conversation

ip4r (YAY!)

- "ip4 and ip4r are types that contain a single IPv4 address and a range of IPv4 addresses respectively. They can be used as a more flexible, indexable version of the cidr type."

- http://pgfoundry.org/projects/ip4r

- v2.0 comes with extension support.

- ip6, ip6r, ipaddress, iprange are included in 2.0 release.

- RPMs are already available.

pgfincore (YAY!)

- "A set of functions to handle low-level management of relations using mincore to explore cache memory."

- http://pgfoundry.org/projects/pgfincore

- Depends on no other extensions.

- RPMs are already available.

pgfincore (YAY!)

postgres=# select * from pgfincore('t1');

-[RECORD 1]-------+-----------------

relpath | base/12896/546326

segment | 0

os_page_size | 4096

rel_os_pages | 88496

pages_mem | 38371

group_mem | 5197

os_pages_free | 660133

databit |

pgfincore (YAY!)

postgres=# select * from pgfadvise_willneed('t1');

-[RECORD 1]----+-----------------

relpath | base/12896/546326

os_page_size | 4096

rel_os_pages | 88496

os_pages_free | 583956

pgfincore (YAY!)

postgres=# select * from pgfincore('t1');

-[RECORD 1]--------+-----------------

relpath | base/12896/546326

segment | 0

os_page_size | 4096

rel_os_pages | 88496

pages_mem | 88496

group_mem | 1

os_pages_free | 564335

databit

pg_jobmon

- "Job logging and monitoring extension for PostgreSQL"

- http://pgxn.org/dist/pg_jobmon

- Requires dblink extension

- RPMs will be available next week.

pg_partman

- " manage partitioned tables by time or ID (serial)"

- Creates triggers, child tables, and check constraints

- (Optional) retention policy

- RPMs are available

pg_partman

partman=# CREATE TABLE test.part_test (col1 serial, col2 text, col3 timestamptz DEFAULT now() **NOT NULL**);

CREATE TABLE

partman=# SELECT partman.create_parent('test.part_test', 'col3', 'time-static', 'daily');

 create_parent

(1 row)

- partman=# \d

- List of relations

- Schema | Name | Type | Owner

pg_partman

```
partman=# \d

            List of relations

 Schema |        Name         |  Type    | Owner

--------+---------------------+----------+----------

 test   | part_test           | table    | postgres

 test   | part_test_col1_seq  | sequence | postgres

 test   | part_test_p2013_10_31 | table  | postgres

 test   | part_test_p2013_11_01 | table  | postgres

 test   | part_test_p2013_11_02 | table  | postgres

 test   | part_test_p2013_11_03 | table  | postgres

 test   | part_test_p2013_11_04 | table  | postgres

 test   | part_test_p2013_11_05 | table  | postgres

 test   | part_test_p2013_11_06 | table  | postgres

 test   | part_test_p2013_11_07 | table  | postgres

 test   | part_test_p2013_11_08 | table  | postgres
```

E-Maj

- "E-Maj provides a set of functions to 1) log updates performed on groups of tables and 2) rollback these updates if needed"

- http://pgxn.org/dist/e-maj/

  E-maj is used to:

    - log updates performed on one or several sets of tables.

    - cancel these updates if needed, and reset a tables set to a predefined stable state.

oracle_fdw

- "oracle_fdw is a PostgreSQL extension that provides a Foreign Data Wrapper for easy and efficient read access to Oracle databases, including pushdown of WHERE conditions and required columns as well as comprehensive EXPLAIN support.

- http://pgxn.org/dist/oracle_fdw

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