Useful PostgreSQL Extensions

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About me

- Who is this guy?

  - Using Red Hat (and then Fedora) since 1996.

  - Using PostgreSQL since 1998.

  - Responsible for PostgreSQL YUM and ZYPP repositories.

  - Working at EnterpriseDB since 2011.

  - Living in London, UK.

  - The Guy With The PostgreSQL Tattoo!

Social media

Please tweet:

#PGConfUK2018

Please follow:

@PGConfUK

Social media

Also, please don't forget to #BlameMagnus

Social media

(Did you tweet? Thanks!)

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-11/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!)

- auto_explain (Yay!)

- unaccent (Yay!)

- pg_prewarm (YAY!)

- 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 extensions?

Jonathan S. Katz
@jkatz05

Following

Replying to @DevrimGunduz

Definitely not an exhaustive list and I'm probably leaving ones off, but:

- @postgis
- pgcrypto
- wal2json
- btree_gist / btree_gin
- postgres_fdw
- pg_partman
- pgprewarm
- tablefunc

4:48 PM - 2 Jul 2018

What people say about the extensions?

Lætitia
@l_avrot

Following

Replying to @DevrimGunduz

- pg_stat_statements
- pg_repack
- autoexplain
- pg_carbonara 😉

Translate Tweet

5:03 PM - 2 Jul 2018

What people say about in-core extensions?

Don Seiler 🏒🐘
@dtseiler

Follow

Replying to @DevrimGunduz

My list is a subset of @jkatz05's list. PostGIS, pg_repack, postgres_fdw, probably pg_partman when I get into it.

5:44 PM - 2 Jul 2018 from Manitowoc, WI

What people say about in-core extensions?

David Barbion
@davidb2111_

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Replying to @DevrimGunduz

pg_stat_statements

10:49 PM - 2 Jul 2018

What people say about in-core extensions?

Adrien Nayrat
@Adrien_nayrat

Replying to @DevrimGunduz

PoWA and HypoPG :)

8:20 PM - 2 Jul 2018

What people say about in-core extensions?

Zejn
@hruske

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Replying to @DevrimGunduz

pg_trgm (indexed regexp searches!), btree_gin/gist, pg_stat_statements, fuzzystrmatch, postgis, multicorn is also amazingly useful, also others. citus is intersting, but my dataset is usually not that big.

Where are the remaining extensions?

- Pgxn.org

- Github.org (...)

- ...

PostGIS!

- Really an extension? ;)

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

- Every new version comes with great new features.

- 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.**

- 2.6 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 (…)

- https://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.

- https://plproxy.github.io/

pg_repack (YAY!)

- "Reorganize tables in PostgreSQL databases without any locks."

- The module is developed to be a better alternative of CLUSTER and VACUUM FULL.

- https://pgxn.org/dist/pg_repack/

- RPMs and Debs are already available.

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."

- https://github.com/RhodiumToad/ip4r/

- V2.3 is the latest verion

- ip6, ip6r, ipaddress, iprange are included.

- RPMs and Debs are already available.

Citus (YAY!)

- PostgreSQL-based distributed RDBMS

- Horizontally scales PostgreSQL across commodity servers using sharding and replication.

- Its query engine parallelizes incoming SQL queries across these servers to enable real-time responses on large datasets.

- https://github.com/citusdata/citus

- RPMs are available

pg_jobmon

- "Job logging and monitoring extension for PostgreSQL"

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

- Requires dblink extension

- RPMs are available.

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.

Rum

- RUM access method

  - Russians!

- Based on GIN access method code

  - Faster ranking

  - Faster phrase search

  - Faster ordering by timestamp

- https://github.com/postgrespro/rum

- RPMs available

pgAgent

- Job Scheduler for PostgreSQL

- A separate extension, not a part of pgAdmin4

- https://www.pgadmin.org/

pgAudit

- Auditing extension for PostgreSQL

- Provides detailed session and/or object audit logging via the standard PostgreSQL logging facility.

  - Focuses on the details of what happened while the database was satisfying a query from users.

- Warning: May cause enormous amount of logging.

- https://www.pgaudit.org/

- RPMs are available.

pgMail

- Send email from inside a PostgreSQL Database

- Written in TCL

  - CREATE LANGUAGE pltclu;

- Takes 4 arguments

  - From, to, subject, and body

- http://www.brandolabs.com/pgmail

- RPMs are available.

repmgr

- A tool suite to manage replication and failover in a cluster of PostgreSQL servers.

- https://repmgr.org/

- RPMs are available

tds_fdw

- TDS FDW for PostgreSQL

    - SQL Server, Sybase

- Tested on FreeTDS

- Limitations exist

    - The current version does not yet support JOIN push-down, or write operations.

    - It does support WHERE and column pushdowns when match_column_names is enabled.

- https://github.com/tds-fdw/tds_fdw

mysql_fdw

- MySQL FDW for PostgreSQL

- Write-able FDW

- Built-in connection pooler

- Where clause push-down

- Column push-down

- https://github.com/EnterpriseDB/mysql_fdw

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

There is always more...

- mongo_fdw

- hdfs_fdw

- mailchimp_fdw

- git_fdw

- pg_qualstats

- PoWa

- pg_pathman

- PL/R

- table_version

There is always more...

- ogr_fdw

- informix_fdw

- blackhole_fdw (Turns PostgreSQL into MongoDB)

- PL/sh

- pg_track_settings

- PL/V8

- ...

Questions, comments?

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