Announcing pg_statviz

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Announcing pg_statviz

- A minimalist extension and utility pair
- Time series analysis and visualization of PostgreSQL internal statistics
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• Created for:
  − Snapshotting **cumulative and dynamic** statistics
  − Performing **time series analysis** on them

• Utility can produce visualizations for selected time ranges on the stored stats snapshots
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• Why?
  – Track PostgreSQL performance over time and potentially perform tuning or troubleshooting
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- **K.I.S.S.** and **UNIX** philosophies

- Tool aims to be:
  - Modular
  - Minimal
  - Unobtrusive

- Does only what it's meant for: create snapshots of PostgreSQL statistics for visualization and analysis.
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• Components
  – PostgreSQL extension
  – Python utility for retrieving stored snapshots & creating simple visualizations using Matplotlib

• Nothing to put in shared_preload_libraries

• No need to restart Postgres
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• Extension installation:

  CREATE EXTENSION pg_statviz;

• Utility installation:

  $ pip install pg_statviz
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- Extension can be used by superusers, or any user that has `pg_monitor` role privileges
- To take a snapshot, e.g. from `psql`:

```
SELECT pgstatviz.snapshot();
```
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[-D FROM TO] [-O OUTPUTDIR]
 {analyze,buf,cache,checkp,conn,tuple,wait,wal} ...

run all analysis modules

Positional arguments:
 {analyze,buf,cache,checkp,conn,tuple,wait,wal}
 analyze run all analysis modules
 buf run buffers written analysis module
 cache run cache hit ratio analysis module
 checkp run checkpoint analysis module
 conn run connection count analysis module
 tuple run tuple count analysis module
 wait run wait events analysis module
 wal run WAL generation analysis module

Options:
 -h, --help show program’s version number and exit
 -v, --version show program’s version number and exit
 -d, --dbname DBNAME database name to analyze (default: 'vyruss')
 -h, --host HOSTNAME database server host or socket directory (default: '/var/run/postgresql')
 -p, --port PORT database server port (default: '5432')
 -U, --username USERNAME database user name (default: 'vyruss')
 -W, --password force password prompt (should happen automatically) (default: False)
 -D, --daterange FROM TO date range to be analyzed in ISO 8601 format e.g. 2023-01-01T00:00
  2023-01-01T00:00 (default: [])
 -O, --outputdir OUTPUTDIR output directory (default: -)
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```
vyruss@rancor:~$ pg_statviz -d faf -U postgres -D 2023-01-17T23:00 2024-01-01
INFO:pg_statviz.modules.buf:Running buffers written analysis
INFO:pg_statviz.modules.buf:Saving pg_statviz_rancor_5432_buf.png
INFO:pg_statviz.modules.buf:Saving pg_statviz_rancor_5432_buf_rate.png
INFO:pg_statviz.modules.checkp:Running checkpoint analysis
INFO:pg_statviz.modules.checkp:Saving pg_statviz_rancor_5432_checkp.png
INFO:pg_statviz.modules.checkp:Saving pg_statviz_rancor_5432_checkp_rate.png
INFO:pg_statviz.modules.cache:Running cache hit ratio analysis
INFO:pg_statviz.modules.cache:Saving pg_statviz_rancor_5432_cache.png
INFO:pg_statviz.modules.conn:Running connection count analysis
INFO:pg_statviz.modules.conn:Saving pg_statviz_rancor_5432_conn_status.png
INFO:pg_statviz.modules.conn:Saving pg_statviz_rancor_5432_conn_user.png
INFO:pg_statviz.modules.tuple:Running tuple count analysis
INFO:pg_statviz.modules.tuple:Saving pg_statviz_rancor_5432_tuple.png
INFO:pg_statviz.modules.wait:Running wait events analysis
INFO:pg_statviz.modules.wait:Saving pg_statviz_rancor_5432_wait.png
INFO:pg_statviz.modules.wal:Running WAL generation analysis
INFO:pg_statviz.modules.wal:Saving pg_statviz_rancor_5432_wal.png
INFO:pg_statviz.modules.wal:Saving pg_statviz_rancor_5432_wal_rate.png
vyruss@rancor:~$ ```
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• And yes, it has a logo :)
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Buffers written

 TIMESTAMP
11:51:00 11:51:30 11:52:00 11:52:30 11:53:00 11:53:30 11:54:00 11:54:30 11:55:00 11:55:30

GB written since stats reset
0 4 8 12 16

GB written:
- total
- checkpoints
- bgwriter
- backends
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• Thank you!
• Project:  
  https://github.com/vyruss/pg_statviz
• You can find me on Mastodon:  
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