Monitoring PostgreSQL

Kaarel Moppel

www.postgresql-support.de

Different levels of Database monitoring

Service availability

Try to periodically connect from an outside system

- A simple Cron script
- Lots of service providers
- Automatic HA would be the next step

Who will guard the guards themselves?

- You'll probably want two services for more critical stuff

System monitoring

CYBERTEC
The PostgreSQL Database Company

Operating System / Process monitoring

- DIY involving typically a TSDB and some graphing/alerting engine
  - Graphite, RRDtool, OpenTSDB
- Nagios / Icinga / ...
  - *check_postgres* script
- Provided out-of-the-box by cloud providers usually
- Included in VM software like VMware vSphere etc

Make sure to understand what you're measuring (VIRT vs RES vs SHR for example)

PostgreSQL land

Log analysis

- Just storing logs for possible ad hoc needs
  - Cron + rsync
  - (r)syslog(-ng), redislog
- Active parsing
  - DIY with pgBadger for example
  - Cloud service like loggly.com

Log analysis

Settings to note

- log_destination
- log_statement
- log_min_duration_statement
- log_min_messages / log_min_error_statement

```
krl@postgres=# SELECT count(*) FROM pg_settings
WHERE category LIKE 'Reporting and Logging%';
 count

    33
(1 row)
```

Stats Collector

- Not all track_* parameters enabled by default
- Dynamic views
  - pg_stat_activity, pg_stat_replication/pg_stat_wal_receiver, pg_stat_ssl
- Accumulative views
  - pg_stat(io)_*
  - long uptimes cause “lag” for problem detection
- Selective stats reset possible

Stats Collector

- pg_stat_database
- pg_stat(io)_user_tables
- pg_stat(io)_user_indexes
- pg_stat_user_functions
- ...

Extensions

- Most notably pg_stat_statments
- pgstattuple
- pg_buffercache
- auto_explain

Locks

Separate from Stats Collector

- pg_locks
- pg_stat_activity.wait_event_type/wait_event
- log_lock_waits (uses deadlock_timeout)

Autovacuum

- For busy databases monitor also Autovacuum
- If Autovacuum is lagging behind you'll end up with unecessary bloat

Real life

Mixed approach for bigger setups

- DYI
  - Log collection / parsing
  - Continuous storing of pg_stat* snapshots via some tool
  - Alerting and trends predictions is hard!
- APM
  - A more high level concept, requires some trust / lock-in
  - AppDynamics, New Relic etc

PostgreSQL Monitoring Tools

Kaarel Moppel
www.postgresql-support.de

No shortage of tools

https://wiki.postgresql.org/wiki/Monitoring

Ad hoc monitoring / troubleshooting

- pg_activity
- pgcenter
- pg_view
- pghero
- pgBadger

Continuous monitoring frameworks

Commercial

- Vividcortex (black-box type)
- pganalyze

Open Source

- PoWa (server side)
- PgObserver (client side + ad hoc)
- PgWatch2 (client side)

DEMO & Discussion

- pgBadger
- pg_loggrep
- pg_stat_statements
- pgwatch2

Contact us

Cybertec Schönig & Schönig GmbH
Kaarel Moppel
Gröhrmühlgasse 26
A-2700 Wiener Neustadt

www.postgresql-support.de

Follow us on Twitter: @PostgresSupport