Cheatography

PostgreSQL Configuration Cheat Sheet

by aaronmyatt via cheatography.com/30256/cs/9021/

PostgreSQL Server Config

Merely a convenient reproduction of the advise given by Christophe Pettus during his excellent PyCon PostgreSQL workshop: Check out the video! .

Config Files

postgresql.conf pg_hba.conf

Aside from log files, these are the ONLY files you should edit in the main postgreSQL directory.

LOGGING (postgresql.conf)

```
log_destination = 'csvlog'
log_di rectory = 'pg_log'
loggin g_c oll ector = on
log_fi lename = 'postg res -
%Y -%m -%d _%H %M%S'
log_ro tat ion_age = 1d
log_ro tat ion _size = 1GB
log_mi n_d ura tio n_s tat ement
= 250ms
log_ch eck points = on
log_co nne ctions = on
log_di sco nne ctions = on
log_lo ck_ waits = on
log_te mp_ files = 0
```

Be generous with logging; it has very low impact on the system.
NOTE: “Standard format” or “stderr” is obsolete. There is no good reason to use it anymore.

Changing Settings

Most settings just require a server reload to take effect.

Some require a full server restart (such as `s hared _bu ffers`).

pg_hba.conf

```
local all postgres peer
local replic ation repl trust
local fugu fugu trust
host all all 127.0.0.1/32 md5
host all all ::1/128 md5
hostssl fugu fugu 178.79.19 -
1.8/32 md5
hostssl replic ation repl
178.79.19 1.8/32 md5
```

Example file

User Settings

By default, database traffic is not encrypted.

Turn on ssl if you are running in a cloud provider.

For pre-9.4, set ssl_renegotiation_limit = 0.

Memory Config

Consists of:

`shared _bu ffers`

`work_mem`

`mainte nan ce_ wor k_mem`

SHARED BUFFERS (postgresql.conf)

Below 2gb RAM?

> 20% Total System Memory

Below 64gm RAM?

> 25% Total System Memory

> 64gm RAM?

> `shared _bu ffers = 16gb`

WORK MEM (postgresql.conf)

Start low: 32-64MB.

Look for ‘temporary file’ lines in logs.

THEN - Set to 2-3x the largest temp file you see.

Can cause a huge speed-up if set properly. But be careful: It can use that amount of memory per planner node.

MAINTENANCE WORK MEM

10% of system memory, up to 1GB.

DO NOT TOUCH

The contents and special files in the main PostgreSQL directories should never, ever be modified directly. Ever.

Exceptions: pg_log (if you put the log files there), and the configuration files.

pg_xlog and pg_clog are off-limits!

Checkpoint Config

Essentially, don't let `checkp oi n t _s egments` get out of hand.

9.4 and earlier (postgresql.conf)

```
wal_buffers = 16MB
checkp oin t_c omp let ion -
_target = 0.9
checkp oin t_t imeout = 10m-30m
# Depends on restart time
checkp oin t_s egments = 32 # To
start.
```

checkpoint_segments happening more often than checkpoint_timeout?

Adjust checkpoint_segments so that checkpoints happen due to timeouts rather filling segments.

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9.5 and later (postgresql.conf)

```
wal_buffers = 16MB
checkp oin t_c omp let ion -
_target = 0.9
checkp oin t_t imeout = 10m-30m
# Depends on restart time
min_wa l_size = 512MB
max_wa l_size = 2GB
```

checkpoint_segments happening more often than checkpoint_timeout?

Step 1: Adjust min_wal_size so that checkpoints happen due to timeouts rather filling segments.
Step 2: Adjust max_wal_size to be about three times min_wal_size.

effective_cache_size

Set to the amount of file system cache available.
Otherwise:
If you don't know, set it to 75% of total system memory.

REFERENCE

http://thebuild.com/presentations/pycon-20-16-pppp.pdf

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