Приложение 2

Настройка сервера PostgreSQL

В PostgreSQL существует большое количество параметров, влияющих на работу СУБД. Параметры позволяют управлять потреблением ресурсов, настраивать работу серверных процессов и многое другое.Например, при помощи параметра max_connections можно ограничить количество одновременных подключений к серверу.Полный список и описание параметров конфигурации:https://postgrespro.ru/docs/postgresql/13/runtime-config.html)

Для установки параметров, в первую очередь, используются файлы конфигурации. Если не определено иное, значения, установленные в этих файлах, действуют для всего экземпляра СУБД. Ряд параметров можно установить для сеансов в отдельной базе данных или для сеансов отдельного пользователя. Такие установки будут иметь предпочтение перед файлами конфигурации. Мы подробнее коснемся этого варианта в следующих темах курса. Наконец, многими параметрами можно управлять на уровне отдельного сеанса, прямо во время работы.

Основной конфигурационный файл — postgresql.conf.Pacположение файла задается при сборке PostgreSQL. По умолчанию файл располагается в каталоге с данными (PGDATA), но пакетные дистрибутивы обычно размещают этот файл в другом месте, в соответствии с правилами, принятыми в конкретной ОС.

Ввод [26]: 1 !echo 314159 | sudo -S ls -l "/etc/postgresql/15/main/"

```
[sudo] password for evgeny: total 60
drwxr-xr-x 2 postgres postgres 4096 May 7 15:53 conf.d
-rw-r--r- 1 postgres postgres 315 May 7 15:53 environment
-rw-r--r- 1 postgres postgres 143 May 7 15:53 pg_ctl.conf
-rw-r---- 1 postgres postgres 5005 May 7 15:59 pg_hba.conf
-rw-r---- 1 postgres postgres 1636 May 7 15:53 pg_ident.conf
-rw-r--r- 1 postgres postgres 29725 May 7 15:53 postgresql.conf
-rw-r--r- 1 postgres postgres 317 May 7 15:53 start.conf
```

 # Вот содержимое стандартного файла конфигурации.
 # Большинство настроек в нем закоментированы,
 # так как являются настройками по-умолчанию. Ввод [29]:

4 # При необходимости их изменения можно внести 5 # изменения в данный файл или воспользоваться 6 # предоставленным АПИ

8 | echo 314159 | sudo -S cat "/etc/postgresql/15/main/postgresql.conf"

```
# PostgreSQL configuration file
 -----
 This file consists of lines of the form:
   name = value
# (The "=" is optional.) Whitespace may be used. Comments are introduced with
# "#" anywhere on a line. The complete list of parameter names and allowed
# values can be found in the PostgreSQL documentation.
# The commented-out settings shown in this file represent the default values.
# Re-commenting a setting is NOT sufficient to revert it to the default value;
# you need to reload the server.
# This file is read on server startup and when the server receives a SIGHUP
# signal. If you edit the file on a running system, you have to SIGHUP the
# server for the changes to take effect, run "pg_ctl reload", or execute
# "SELECT pg_reload_conf()". Some parameters, which are marked below,
# require a server shutdown and restart to take effect.
# Any parameter can also be given as a command-line option to the server, e.g.,
# "postgres -c log_connections=on". Some parameters can be changed at run time
# with the "SET" SQL command.
# Memory units: B = bytes
                                      Time units: us = microseconds
                kB = kilobytes
MB = megabytes
                                                  ms = milliseconds
                                                 s = seconds
                GB = gigabytes
                                                   min = minutes
                TB = terabytes
                                                   h = hours
                                                   d = davs
# FILE LOCATIONS
# The default values of these variables are driven from the -D command-line
# option or PGDATA environment variable, represented here as ConfigDir.
                                                     # use data in another directory
data_directory = '/var/lib/postgresq1/15/main'
                                       # (change requires restart)
hba_file = '/etc/postgresql/15/main/pg_hba.conf' # host-based authentication file
                                       # (change requires restart)
ident_file = '/etc/postgresql/15/main/pg_ident.conf'
                                                     # ident configuration file
                                       # (change requires restart)
# If external_pid_file is not explicitly set, no extra PID file is written.
external_pid_file = '/var/run/postgresql/15-main.pid'
                                                                       # write an extra PID file
                                       # (change requires restart)
# CONNECTIONS AND AUTHENTICATION
# - Connection Settings -
#listen_addresses = 'localhost'
                                       # what IP address(es) to listen on;
                                       # comma-separated list of addresses;
                                       # defaults to 'localhost'; use '*' for all
                                       # (change requires restart)
port = 5432
                                       # (change requires restart)
                                       # (change requires restart)
max\_connections = 100
#superuser_reserved_connections = 3
                                       # (change requires restart)
unix_socket_directories = '/var/run/postgresql' # comma-separated list of directories
                                       # (change requires restart)
#unix_socket_group = ''
                                       # (change requires restart)
                                       # begin with 0 to use octal notation
#unix_socket_permissions = 0777
                                       # (change requires restart)
#bonjour = off
                                       # advertise server via Bonjour
                                       # (change requires restart)
#bonjour_name = ''
                                       # defaults to the computer name
                                       # (change requires restart)
# - TCP settings -
# see "man tcp" for details
                                       # TCP_KEEPIDLE, in seconds;
#tcp_keepalives_idle = 0
                                       # 0 selects the system default
                                       # TCP_KEEPINTVL, in seconds;
#tcp_keepalives_interval = 0
                                       # 0 selects the system default
#tcp_keepalives_count = 0
                                       # TCP_KEEPCNT;
                                       # 0 selects the system default
                                       # TCP_USER_TIMEOUT, in milliseconds;
#tcp_user_timeout = 0
                                       # 0 selects the system default
```

[sudo] password for evgeny: # ------

```
#client_connection_check_interval = 0  # time between checks for client
                                         # disconnection while running queries;
                                         # 0 for never
# - Authentication -
#authentication_timeout = 1min
                                        # 1s-600s
#password_encryption = scram-sha-256  # scram-sha-256 or md5
#db_user_namespace = off
# GSSAPI using Kerberos
#krb_server_keyfile = 'FILE:${sysconfdir}/krb5.keytab'
#krb_caseins_users = off
# - SSL -
ssl = on
#ssl ca file = ''
ssl_cert_file = '/etc/ssl/certs/ssl-cert-snakeoil.pem'
#ssl_crl_file = ''
#ssl_crl_dir = ''
ssl_key_file = '/etc/ssl/private/ssl-cert-snakeoil.key'
#ssl_ciphers = 'HIGH:MEDIUM:+3DES:!aNULL' # allowed SSL ciphers
#ssl_prefer_server_ciphers = on
#ssl_ecdh_curve = 'prime256v1'
#ssl_min_protocol_version = 'TLSv1.2'
#ssl_max_protocol_version = ''
#ssl_dh_params_file = ''
#ssl_passphrase_command = ''
#ssl_passphrase_command_supports_reload = off
# RESOURCE USAGE (except WAL)
# - Memory -
shared_buffers = 128MB
                                        # min 128kB
                                         # (change requires restart)
                                        # on, off, or try
#huge_pages = try
                                        # (change requires restart)
                                        # zero for system default
#huge_page_size = 0
                                        # (change requires restart)
#temp_buffers = 8MB
                                        # min 800kB
#max_prepared_transactions = 0
                                        # zero disables the feature
                                        # (change requires restart)
# Caution: it is not advisable to set max_prepared_transactions nonzero unless
# you actively intend to use prepared transactions.
#work_mem = 4MB
                                        # min 64kB
#hash_mem_multiplier = 2.0
                                        # 1-1000.0 multiplier on hash table work_mem
#hash_mem_multiplier = 2.0
#maintenance_work_mem = 64MB
#autovacuum_work_mem = -1
#logical_decoding_work_mem = 64MB
                                        # min 1MB
                                        # min 1MB, or -1 to use maintenance_work_mem
                                        # min 64kB
\#\max_{s} = 2MB
                                         # min 100kB
#shared_memory_type = mmap
                                         # the default is the first option
                                         # supported by the operating system:
                                            mmap
                                         #
                                            sysv
                                            windows
                                         # (change requires restart)
dynamic_shared_memory_type = posix
                                         # the default is usually the first option
                                         # supported by the operating system:
                                            posix
                                         #
                                            sysv
                                            windows
                                            mmap
                                         # (change requires restart)
#min_dynamic_shared_memory = 0MB
                                         # (change requires restart)
# - Disk -
#temp_file_limit = -1
                                         # limits per-process temp file space
                                         # in kilobytes, or -1 for no limit
# - Kernel Resources -
#max files per process = 1000
                                         # min 64
                                         # (change requires restart)
# - Cost-Based Vacuum Delay -
#vacuum cost delay = 0
                                        # 0-100 milliseconds (0 disables)
#vacuum_cost_page_hit = 1
                                      # 0-10000 credits
                                      # 0-10000 credits
#vacuum_cost_page_miss = 2
#vacuum cost page dirty = 20
                                      # 0-10000 credits
#vacuum_cost_limit = 200
                                      # 1-10000 credits
```

```
# - Background Writer -
 #bgwriter_delay = 200ms
                                                                       # 10-10000ms between rounds
 #bgwriter_delay = 200ms  # 10-10000ms between rounds
#bgwriter_lru_maxpages = 100  # max buffers written/round, 0 disables
#bgwriter_lru_multiplier = 2.0  # 0-10.0 multiplier on buffers scanned/round
#bgwriter_flush_after = 512kB  # measured in pages, 0 disables
 # - Asynchronous Behavior -
 #backend_flush_after = 0
                                                                        # measured in pages, 0 disables
 #backend_flush_after = 0
#effective_io_concurrency = 1
#maintenance_io_concurrency = 10
#may worker processes = 8
                                                                        # 1-1000; 0 disables prefetching
                                                                        # 1-1000; 0 disables prefetching
 #max_worker_processes = 8
                                                                        # (change requires restart)
                                                                        # taken from max_parallel_workers
 #max_parallel_workers_per_gather = 2
 #max_parallel_maintenance_workers = 2  # taken from max_parallel_workers
                                                                        # maximum number of max_worker_processes that
 #max_parallel_workers = 8
                                                                        # can be used in parallel operations
 #parallel_leader_participation = on
 #old_snapshot_threshold = -1
                                                                        # 1min-60d; -1 disables; 0 is immediate
                                                                        # (change requires restart)
 # WRITE-AHEAD LOG
 # - Settings -
                                                                        # minimal, replica, or logical
 #wal_level = replica
                                                                        # (change requires restart)
 #fsync = on
                                                                        # flush data to disk for crash safety
                                                                        # (turning this off can cause
                                                                        # unrecoverable data corruption)
 #synchronous_commit = on
                                                                        # synchronization level;
                                                                        # off, local, remote_write, remote_apply, or on
                                                                        # the default is the first option
 #wal_sync_method = fsync
                                                                        # supported by the operating system:
                                                                        # open_datasync
                                                                        #
                                                                              fdatasync (default on Linux and FreeBSD)
                                                                        #
                                                                        # fsync_writethrough
                                                                               open_sync
                                                                        # recover from partial page writes
 #full_page_writes = on
 #wal_log_hints = off
                                                                        # also do full page writes of non-critical updates
                                                                        # (change requires restart)
 #wal_compression = off
                                                                        # enables compression of full-page writes;
                                                                        # off, pglz, lz4, zstd, or on
#wal_writer_delay = 200ms
#wal_writer_flush_after = 1MB
#wal_skip_threshold = 2MB

# zero-fill new WAL files
# recycle WAL files
# min 32kB, -1 sets based or
# (change requires restart)
# 1-10000 milliseconds
# measured in pages A directly measured in pages A directly measured
# measur
                                                                       # min 32kB, -1 sets based on shared_buffers
                                                                       # measured in pages, 0 disables
 \#commit\_delay = 0
                                                                        # range 0-100000, in microseconds
 #commit_siblings = 5
                                                                        # range 1-1000
 # - Checkpoints -
 #checkpoint_timeout = 5min
                                                                    # range 30s-1d
 #checkpoint_timeout = 500110 # range 303 10
#checkpoint_completion_target = 0.9 # checkpoint target duration, 0.0 - 1.0
#checkpoint_flush_after = 256kB # measured in pages, 0 disables
#checkpoint_warning = 30s # 0 disables
 max_wal_size = 1GB
 min_wal_size = 80MB
 # - Prefetching during recovery -
 #recovery_prefetch = try
                                                                        # prefetch pages referenced in the WAL?
                                                                        # lookahead window used for prefetching
 #wal_decode_buffer_size = 512kB
                                                                        # (change requires restart)
 # - Archiving -
 #archive_mode = off
                                                          # enables archiving; off, on, or always
                                                          # (change requires restart)
 #archive_library = ''
                                                          # library to use to archive a logfile segment
                                                          # (empty string indicates archive_command should
                                                          # be used)
 #archive_command = ''
                                                          # command to use to archive a logfile segment
                                                          # placeholders: %p = path of file to archive
                                                                                      %f = file name only
                                                          # e.g. 'test ! -f /mnt/server/archivedir/%f && cp %p /mnt/server/archivedi
 r/%f'
 #archive_timeout = 0
                                                          # force a logfile segment switch after this
                                                          # number of seconds; 0 disables
```

```
# - Archive Recovery -
# These are only used in recovery mode.
#restore_command = ''
                                # command to use to restore an archived logfile segment
                                # placeholders: %p = path of file to restore
                                               %f = file name only
                               # e.g. 'cp /mnt/server/archivedir/%f %p'
#archive_cleanup_command = ''
                               # command to execute at every restartpoint
#recovery_end_command = ''
                               # command to execute at completion of recovery
# - Recovery Target -
# Set these only when performing a targeted recovery.
#recovery_target = ''
                               # 'immediate' to end recovery as soon as a
                               # consistent state is reached
                               # (change requires restart)
#recovery_target_name = ''
                               # the named restore point to which recovery will proceed
                               # (change requires restart)
#recovery_target_time = ''
                               # the time stamp up to which recovery will proceed
                               # (change requires restart)
#recovery_target_xid = ''
                               # the transaction ID up to which recovery will proceed
                               # (change requires restart)
#recovery_target_lsn = ''
                               # the WAL LSN up to which recovery will proceed
                               # (change requires restart)
#recovery_target_inclusive = on # Specifies whether to stop:
                                # just after the specified recovery target (on)
                                # just before the recovery target (off)
                                # (change requires restart)
#recovery_target_timeline = 'latest'  # 'current', 'latest', or timeline ID
                                # (change requires restart)
#recovery_target_action = 'pause'
                                  # 'pause', 'promote', 'shutdown'
                                # (change requires restart)
# REPLICATION
# - Sending Servers -
# Set these on the primary and on any standby that will send replication data.
\#\max_{\text{wal\_senders}} = 10
                               # max number of walsender processes
                               # (change requires restart)
#max_replication_slots = 10
                               # max number of replication slots
                               # (change requires restart)
                               # in megabytes; 0 disables
#wal_keep_size = 0
#max_slot_wal_keep_size = -1  # in megabytes; -1 disables
#wal_sender_timeout = 60s
                               # in milliseconds; 0 disables
#track_commit_timestamp = off  # collect timestamp of transaction commit
                               # (change requires restart)
# - Primary Server -
# These settings are ignored on a standby server.
#synchronous_standby_names = '' # standby servers that provide sync rep
                                # method to choose sync standbys, number of sync standbys,
                               # and comma-separated list of application name
                               # from standby(s); '*' = all
#vacuum_defer_cleanup_age = 0 # number of xacts by which cleanup is delayed
# - Standby Servers -
# These settings are ignored on a primary server.
#primary_conninfo = ''
                                        # connection string to sending server
#primary_slot_name = ''
                                        # replication slot on sending server
#promote_trigger_file = ''
                                        # file name whose presence ends recovery
#hot standby = on
                                        # "off" disallows queries during recovery
                                        # (change requires restart)
#max_standby_archive_delay = 30s
                                        # max delay before canceling queries
                                        # when reading WAL from archive;
                                        # -1 allows indefinite delay
#max_standby_streaming_delay = 30s
                                        # max delay before canceling queries
                                        # when reading streaming WAL;
                                        # -1 allows indefinite delay
#wal_receiver_create_temp_slot = off
                                        # create temp slot if primary_slot_name
                                        # is not set
                                        # send replies at least this often
#wal_receiver_status_interval = 10s
                                        # 0 disables
                                        # send info from standby to prevent
#hot_standby_feedback = off
                                        # query conflicts
#wal receiver timeout = 60s
                                        # time that receiver waits for
                                        # communication from primary
                                        # in milliseconds; 0 disables
```

```
# time to wait before retrying to
#wal_retrieve_retry_interval = 5s
                                      # retrieve WAL after a failed attempt
#recovery_min_apply_delay = 0
                                      # minimum delay for applying changes during recovery
# - Subscribers -
# These settings are ignored on a publisher.
#max_logical_replication_workers = 4
                                      # taken from max_worker_processes
                                      # (change requires restart)
#max_sync_workers_per_subscription = 2 # taken from max_logical_replication_workers
# QUERY TUNING
#-----
# - Planner Method Configuration -
#enable_async_append = on
#enable_bitmapscan = on
#enable_gathermerge = on
#enable_hashagg = on
#enable_hashjoin = on
#enable_incremental_sort = on
#enable_indexscan = on
#enable_indexonlyscan = on
#enable_material = on
#enable_memoize = on
#enable_mergejoin = on
#enable_nestloop = on
#enable_parallel_append = on
#enable_parallel_hash = on
#enable_partition_pruning = on
#enable_partitionwise_join = off
#enable_partitionwise_aggregate = off
#enable_seqscan = on
#enable_sort = on
#enable_tidscan = on
# - Planner Cost Constants -
\#seq\_page\_cost = 1.0
                                      # measured on an arbitrary scale
                                      # same scale as above
#random_page_cost = 4.0
#cpu_tuple_cost = 0.01
                                    # same scale as above
                                   # same scale as above
#cpu_index_tuple_cost = 0.005
#cpu_operator_cost = 0.0025
                                     # same scale as above
#parallel_setup_cost = 1000.0  # same scale as above
#parallel_tuple_cost = 0.1
                                      # same scale as above
#min_parallel_table_scan_size = 8MB
#min_parallel_index_scan_size = 512kB
#effective_cache_size = 4GB
#jit_above_cost = 100000
                                      # perform JIT compilation if available
                                       # and query more expensive than this;
                                      # -1 disables
#jit_inline_above_cost = 500000
                                      # inline small functions if query is
                                      # more expensive than this; -1 disables
#jit_optimize_above_cost = 500000
                                      # use expensive JIT optimizations if
                                      # query is more expensive than this;
                                      # -1 disables
# - Genetic Query Optimizer -
#geqo = on
#gego_threshold = 12
#geqo_effort = 5
                                      # range 1-10
                                      # selects default based on effort
#geqo_pool_size = 0
#geqo_generations = 0
                                      # selects default based on effort
#geqo_selection_bias = 2.0
                                      # range 1.5-2.0
\#geqo\_seed = 0.0
                                      # range 0.0-1.0
# - Other Planner Options -
#default_statistics_target = 100
                                      # range 1-10000
                                      # on, off, or partition
#constraint_exclusion = partition
                                      # range 0.0-1.0
#cursor_tuple_fraction = 0.1
#from_collapse_limit = 8
                                      # allow JIT compilation
#jit = on
                                      # 1 disables collapsing of explicit
#join_collapse_limit = 8
                                      # JOIN clauses
                                      # auto, force generic plan or
#plan_cache_mode = auto
                                      # force_custom_plan
#recursive_worktable_factor = 10.0
                                      # range 0.001-1000000
#-----
# REPORTING AND LOGGING
```

```
# - Where to Log -
#log_destination = 'stderr'
                                        # Valid values are combinations of
                                        # stderr, csvlog, jsonlog, syslog, and
                                        # eventlog, depending on platform.
                                        # csvlog and jsonlog require
                                        # logging_collector to be on.
# This is used when logging to stderr:
#logging_collector = off
                                        # Enable capturing of stderr, jsonlog,
                                        # and csvlog into log files. Required
                                        # to be on for csvlogs and jsonlogs.
                                        # (change requires restart)
# These are only used if logging_collector is on:
#log_directory = 'log'
                                        # directory where log files are written,
                                        # can be absolute or relative to PGDATA
#log_filename = 'postgresql-%Y-%m-%d_%H%M%S.log'
                                                        # log file name pattern,
                                        # can include strftime() escapes
                                        # creation mode for log files,
#log_file_mode = 0600
                                        # begin with 0 to use octal notation
                                        # Automatic rotation of logfiles will
#log_rotation_age = 1d
                                        # happen after that time. 0 disables.
                                        # Automatic rotation of logfiles will
#log_rotation_size = 10MB
                                        # happen after that much log output.
                                        # 0 disables.
                                        # If on, an existing log file with the
#log_truncate_on_rotation = off
                                        # same name as the new log file will be
                                        # truncated rather than appended to.
                                        # But such truncation only occurs on
                                        # time-driven rotation, not on restarts
                                        # or size-driven rotation. Default is
                                        # off, meaning append to existing files
                                        # in all cases.
# These are relevant when logging to syslog:
#syslog_facility = 'LOCAL0'
#syslog_ident = 'postgres'
#syslog_sequence_numbers = on
#syslog_split_messages = on
# This is only relevant when logging to eventlog (Windows):
# (change requires restart)
#event_source = 'PostgreSQL'
# - When to Log -
#log_min_messages = warning
                                        # values in order of decreasing detail:
                                            debug5
                                            debug4
                                            debug3
                                            debug2
                                            debug1
                                        #
                                            info
                                            notice
                                        #
                                            warning
                                        #
                                            error
                                        #
                                            log
                                            fatal
                                            panic
#log_min_error_statement = error
                                        # values in order of decreasing detail:
                                            debug5
                                            debug4
                                            debug3
                                        #
                                            debug2
                                            debug1
                                            info
                                            notice
                                        # warning
                                        # error
                                            log
                                            fatal
                                            panic (effectively off)
                                        # -1 is disabled, 0 logs all statements
#log_min_duration_statement = -1
                                        # and their durations, > 0 logs only
                                        # statements running at least this number
                                        # of milliseconds
#log_min_duration_sample = -1
                                        # -1 is disabled, 0 logs a sample of statements
                                        # and their durations, > 0 logs only a sample of
                                        # statements running at least this number
                                        # of milliseconds;
                                        # sample fraction is determined by log_statement_sample_rate
```

```
# log_min_duration_sample to be logged;
                                    # 1.0 logs all such statements, 0.0 never logs
#log_transaction_sample_rate = 0.0
                                    # fraction of transactions whose statements
                                    # are logged regardless of their duration; 1.0 logs all
                                    # statements from all transactions, 0.0 never logs
#log_startup_progress_interval = 10s
                                    # Time between progress updates for
                                    # long-running startup operations.
                                    # 0 disables the feature, > 0 indicates
                                    # the interval in milliseconds.
# - What to Log -
#debug_print_parse = off
#debug_print_rewritten = off
#debug_print_plan = off
#debug_pretty_print = on
#log_autovacuum_min_duration = 10min
                                    # log autovacuum activity;
                                    # -1 disables, 0 logs all actions and
                                    # their durations, > 0 logs only
                                    # actions running at least this number
                                    # of milliseconds.
#log_checkpoints = on
#log_connections = off
#log_disconnections = off
#log_duration = off
#log_error_verbosity = default
                                    # terse, default, or verbose messages
#log_hostname = off
log_line_prefix = '%m [%p] %q%u@%d '
                                           # special values:
                                       %a = application name
                                       %u = user name
                                       %d = database name
                                    #
                                       %r = remote host and port
                                    #
                                       %h = remote host
                                       %b = backend type
                                       %p = process ID
                                    #
                                       %P = process ID of parallel group leader
                                    #
                                       %t = timestamp without milliseconds
                                       %m = timestamp with milliseconds
                                    #
                                       %n = timestamp with milliseconds (as a Unix epoch)
                                    #
                                       %Q = query ID (0 if none or not computed)
                                       %i = command tag
                                       %e = SQL state
                                       %c = session ID
                                    #
                                       %1 = session line number
                                    #
                                    #
                                       %s = session start timestamp
                                       %v = virtual transaction ID
                                    #
                                       %x = transaction ID (0 if none)
                                    #
                                       %q = stop here in non-session
                                            processes
                                       %% = '%'
                                    # e.g. '<%u%%%d> '
                                    # log lock waits >= deadlock_timeout
#log_lock_waits = off
                                    # log standby recovery conflict waits
#log_recovery_conflict_waits = off
                                    # >= deadlock_timeout
#log_parameter_max_length = -1
                                    # when logging statements, limit logged
                                    # bind-parameter values to N bytes;
                                    # -1 means print in full, 0 disables
                                   # when logging an error, limit logged
#log_parameter_max_length_on_error = 0
                                    # bind-parameter values to N bytes;
                                    # -1 means print in full, 0 disables
                                    # none, ddl, mod, all
#log_statement = 'none'
#log_replication_commands = off
\#log\_temp\_files = -1
                                    # log temporary files equal or larger
                                    # than the specified size in kilobytes;
                                     -1 disables, 0 logs all temp files
log_timezone = 'Asia/Singapore'
# PROCESS TITLE
cluster_name = '15/main'
                                           # added to process titles if nonempty
                                    # (change requires restart)
#update_process_title = on
# STATISTICS
#------
# - Cumulative Query and Index Statistics -
#track_activities = on
```

fraction of logged statements exceeding

#log_statement_sample_rate = 1.0

```
# (change requires restart)
#track_activity_query_size = 1024
#track_counts = on
#track_io_timing = off
#track_wal_io_timing = off
#track_functions = none
                                       # none, pl, all
#stats_fetch_consistency = cache
# - Monitoring -
#compute_query_id = auto
#log_statement_stats = off
#log_parser_stats = off
#log_planner_stats = off
#log_executor_stats = off
# AUTOVACUUM
#autovacuum = on
                                       # Enable autovacuum subprocess? 'on'
                                       # requires track_counts to also be on.
                                       # max number of autovacuum subprocesses
#autovacuum_max_workers = 3
                                       # (change requires restart)
#autovacuum_naptime = 1min
                                       # time between autovacuum runs
#autovacuum_vacuum_threshold = 50
                                       # min number of row updates before
                                       # vacuum
                                               # min number of row inserts
#autovacuum_vacuum_insert_threshold = 1000
                                       # before vacuum; -1 disables insert
                                       # vacuums
#autovacuum_analyze_threshold = 50
                                       # min number of row updates before
                                       # analyze
#autovacuum_vacuum_scale_factor = 0.2 # fraction of table size before vacuum
#autovacuum_vacuum_insert_scale_factor = 0.2
                                              # fraction of inserts over table
                                       # size before insert vacuum
#autovacuum_analyze_scale_factor = 0.1 # fraction of table size before analyze
#autovacuum_freeze_max_age = 200000000
                                       # maximum XID age before forced vacuum
                                       # (change requires restart)
#autovacuum_multixact_freeze_max_age = 400000000
                                                      # maximum multixact age
                                       # before forced vacuum
                                       # (change requires restart)
                                       # default vacuum cost delay for
#autovacuum_vacuum_cost_delay = 2ms
                                       # autovacuum, in milliseconds;
                                       # -1 means use vacuum_cost_delay
#autovacuum_vacuum_cost_limit = -1
                                       # default vacuum cost limit for
                                       # autovacuum, -1 means use
                                       # vacuum_cost_limit
# CLIENT CONNECTION DEFAULTS
#-----
# - Statement Behavior -
#client_min_messages = notice
                                       # values in order of decreasing detail:
                                          debug5
                                           debug4
                                       #
                                       #
                                          debug3
                                           debug2
                                           debug1
                                       #
                                           log
                                           notice
                                           warning
                                           error
#search_path = '"$user", public'
                                       # schema names
#row_security = on
#default_table_access_method = 'heap
#default_tablespace = ''
                                       # a tablespace name, '' uses the default
#default_toast_compression = 'pglz'
                                       # 'pglz' or 'lz4'
                                       # a list of tablespace names, '' uses
#temp_tablespaces = ''
                                       # only default tablespace
#check_function_bodies = on
#default_transaction_isolation = 'read committed'
#default_transaction_read_only = off
#default_transaction_deferrable = off
#session replication role = 'origin'
#statement_timeout = 0
                                       # in milliseconds, 0 is disabled
#lock_timeout = 0
                                       # in milliseconds, 0 is disabled
                                               # in milliseconds, 0 is disabled
#idle_in_transaction_session_timeout = 0
                                       # in milliseconds, 0 is disabled
#idle session timeout = 0
#vacuum freeze table age = 150000000
#vacuum_freeze_min_age = 50000000
#vacuum_failsafe_age = 1600000000
#vacuum multixact freeze table age = 150000000
#vacuum_multixact_freeze_min_age = 5000000
#vacuum_multixact_failsafe_age = 1600000000
```

```
#bytea_output = 'hex'
                                    # hex, escape
#xmlbinary = 'base64'
#xmloption = 'content'
#gin_pending_list_limit = 4MB
# - Locale and Formatting -
datestyle = 'iso, dmy'
#intervalstyle = 'postgres'
timezone = 'Asia/Singapore'
#timezone_abbreviations = 'Default'
                                    # Select the set of available time zone
                                    # abbreviations. Currently, there are
                                    # Default
                                    # Australia (historical usage)
                                    # India
                                    # You can create your own file in
                                    # share/timezonesets/.
#extra_float_digits = 1
                                    # min -15, max 3; any value >0 actually
                                    # selects precise output mode
#client_encoding = sql_ascii
                                    # actually, defaults to database
                                    # encoding
# These settings are initialized by initdb, but they can be changed.
lc_messages = 'en_SG.UTF-8'
                                           # locale for system error message
                                    # strings
lc_monetary = 'en_SG.UTF-8'
                                           # locale for monetary formatting
lc_numeric = 'en_SG.UTF-8'
                                           # locale for number formatting
lc_time = 'en_SG.UTF-8'
                                           # locale for time formatting
# default configuration for text search
default_text_search_config = 'pg_catalog.english'
# - Shared Library Preloading -
#local_preload_libraries = ''
#session_preload_libraries = ''
#shared_preload_libraries = '' # (change requires restart)
#jit_provider = 'llvmjit'
                                    # JIT library to use
# - Other Defaults -
#dynamic_library_path = '$libdir'
#extension_destdir = ''
                                    # prepend path when loading extensions
                                    # and shared objects (added by Debian)
#gin_fuzzy_search_limit = 0
# LOCK MANAGEMENT
#deadlock_timeout = 1s
#max_locks_per_transaction = 64
                                # min 10
                                    # (change requires restart)
#max_pred_locks_per_transaction = 64
                                    # min 10
                                    # (change requires restart)
#max_pred_locks_per_relation = -2
                                    # negative values mean
                                    # (max_pred_locks_per_transaction
                                    # / -max_pred_locks_per_relation) - 1
                                    # min 0
#max_pred_locks_per_page = 2
# VERSION AND PLATFORM COMPATIBILITY
# - Previous PostgreSQL Versions -
#array_nulls = on
#backslash_quote = safe_encoding
                                    # on, off, or safe_encoding
#escape_string_warning = on
#lo compat privileges = off
#quote_all_identifiers = off
#standard_conforming_strings = on
#synchronize_seqscans = on
# - Other Platforms and Clients -
#transform_null_equals = off
# ERROR HANDLING
#------
#exit_on_error = off
                                   # terminate session on any error?
                               # reinitialize after backend crash?
#restart_after_crash = on
#data_sync_retry = off
                                    # retry or panic on failure to fsync
```

```
# data?
                          # (change requires restart)
#recovery_init_sync_method = fsync
                          # fsync, syncfs (Linux 5.8+)
#-----
# CONFIG FILE INCLUDES
#-----
# These options allow settings to be loaded from files other than the
# default postgresql.conf. Note that these are directives, not variable
# assignments, so they can usefully be given more than once.
                          # include files ending in '.conf' from
include_dir = 'conf.d'
                          # a directory, e.g., 'conf.d'
#include_if_exists = '...'
                          # include file only if it exists
#include = '...'
                          # include file
#------
# CUSTOMIZED OPTIONS
# Add settings for extensions here
```

Ввод [34]:

```
# Чтобы увидеть все незакоментированные строки
# конфигурационного файла, можно обратиться к
# представлению pg_file_settings:
# lpsql -U postgres -c "SELECT sourceline, name, setting, applied FROM pg_file_settings"
```

| · · · | . 3 | 3, 11 | |
|------------|-----------------------------------|---|----------|
| sourceline | name | setting | applied |
| 42 | data_directory | //var/lib/postgresql/15/main | + t |
| 44 | hba_file | / /etc/postgresql/15/main/pg_hba.conf | |
| 46 | ident_file ident_file | / /etc/postgresql/15/main/pg_ident.conf | t t |
| 50 | ldent_rife external_pid_file | / /etc/postgresq1/15/main/pg_ident.com /var/run/postgresq1/15-main.pid | t |
| 64 | external_pro_Tire port | 7vai/iun/postgresqi/is-main.pid 5432 | l t |
| 65 | max_connections | 100 | l t |
| | _ | l e e e e e e e e e e e e e e e e e e e | |
| 67 | unix_socket_directories | /var/run/postgresql | t |
| 105 | ssl | on /ata/aa]/aanta/aa] aantaantaadil nam | t |
| 107 | ssl_cert_file | /etc/ssl/certs/ssl-cert-snakeoil.pem | t |
| 110 | ssl_key_file | /etc/ssl/private/ssl-cert-snakeoil.key | t |
| 127 | shared_buffers | 128MB | t |
| 150 | dynamic_shared_memory_type | posix | t |
| 241 | max_wal_size | 1GB | t |
| 242 | min_wal_size | 80MB | t |
| 559 | log_line_prefix | %m [%p] %q%u@%d | t |
| 597 | log_timezone | Asia/Singapore | t |
| 604 | cluster_name | 15/main | t |
| 711 | datestyle | iso, dmy | t |
| 713 | timezone | Asia/Singapore | t |
| 727 | lc_messages | en_SG.UTF-8 | į t |
| 729 | lc_monetary | en_SG.UTF-8 | į t |
| 730 | lc_numeric | en_SG.UTF-8 | į t |
| 731 | lc_time | en_SG.UTF-8 | į t |
| 734 | default_text_search_config | pg_catalog.english | į t |
| (24 rows) | | | • |
| | | | |

Ввод [44]:
1 #Действующие значения всех параметров
2 # доступны в представлении pg_settings.
3 # Вот что в нем содержится, например,
4 # для параметра work_mem:
5
6 !psql -U postgres -c "SELECT name, setting, unit FROM pg_settings"

| name | setting | unit |
|---|---|-------------|
| allow_in_place_tablespaces | + | + |
| allow_system_table_mods | off | |
| application_name | psql | |
| archive_cleanup_command archive_command | (disabled) | |
| archive_library | | |
| archive_mode | off | |
| archive_timeout array_nulls | 0 on | S |
| authentication_timeout | 60 | s |
| autovacuum | on | |
| <pre>autovacuum_analyze_scale_factor autovacuum_analyze_threshold</pre> | 0.1 50 |] |
| autovacuum_freeze_max_age | 20000000 | |
| autovacuum_max_workers | 3 | |
| <pre>autovacuum_multixact_freeze_max_age autovacuum_naptime</pre> | 400000000 60 | s |
| autovacuum_vacuum_cost_delay | 2 | ms |
| autovacuum_vacuum_cost_limit | -1 | |
| <pre>autovacuum_vacuum_insert_scale_factor autovacuum_vacuum_insert_threshold</pre> | 0.2 1000 | |
| autovacuum_vacuum_scale_factor | 0.2 | |
| autovacuum_vacuum_threshold | 50 | |
| autovacuum_work_mem backend_flush_after | -1 0 | kB 8kB |
| backslash_quote | safe_encoding | |
| backtrace_functions | | |
| bgwriter_delay bgwriter_flush_after | 200 64 | ms 8kB |
| bgwriter_lru_maxpages | 100 | |
| bgwriter_lru_multiplier | 2 | |
| block_size bonjour | 8192 off | |
| bonjour_name | | |
| <pre>bytea_output check_function_bodies</pre> | hex | |
| <pre>check_runction_bodies checkpoint_completion_target</pre> | on 0.9 | |
| checkpoint_flush_after | 32 | 8kB |
| <pre>checkpoint_timeout checkpoint_warning</pre> | 300 30 | s s |
| client_connection_check_interval | 0 | s ms |
| client_encoding | UTF8 | |
| client_min_messages cluster_name | notice 15/main | |
| commit_delay | 0 | |
| commit_siblings | 5 | |
| <pre>compute_query_id config_file</pre> | <pre> auto /etc/postgresql/15/main/postgresql.conf</pre> | |
| constraint_exclusion | partition | |
| <pre>cpu_index_tuple_cost cpu_operator_cost</pre> | 0.005 0.0025 | |
| cpu_tuple_cost | 0.01 | |
| cursor_tuple_fraction | 0.1 | |
| <pre>data_checksums data_directory</pre> | off /var/lib/postgresql/15/main | |
| data_directory_mode | 0700 | |
| data_sync_retry | off | |
| <pre>DateStyle db_user_namespace</pre> | ISO, DMY off | |
| deadlock_timeout | 1000 | ms |
| <pre>debug_assertions debug_discard_caches</pre> | off 0 | |
| debug_pretty_print | ן ש on | |
| debug_print_parse | off | |
| <pre>debug_print_plan debug_print_rewritten</pre> | off off | |
| default_statistics_target | 100 | |
| default_table_access_method | heap | |
| <pre>default_tablespace default_text_search_config</pre> | pg_catalog.english | |
| <pre>default_toast_compression</pre> | pglz | |
| <pre>default_transaction_deferrable default_transaction_isolation</pre> | off read committed | 1 |
| <pre>default_transaction_read_only</pre> | off | |
| dynamic_library_path | \$libdir | |
| <pre>dynamic_shared_memory_type effective_cache_size</pre> | posix 524288 | 8kB |
| effective_io_concurrency | 1 1 | |
| <pre>enable_async_append enable_bitmapscan</pre> | on Lon | |
| enable_bitmapscan enable_gathermerge | on on | |
| enable_hashagg | on | |
| <pre>enable_hashjoin enable_incremental_sort</pre> | on on | |
| enable_indexonlyscan | on | |
| enable_indexscan | on | l |
| | | |

| onable material | Lon | |
|--|---|----|
| <pre>enable_material enable_memoize</pre> | on on | |
| enable_mergejoin | on | |
| enable_nestloop | on | |
| enable_parallel_append | on | |
| enable_parallel_hash | on | |
| <pre>enable_partition_pruning enable_partitionwise_aggregate</pre> | on off | |
| enable_partitionwise_join | off | |
| enable_seqscan | on | |
| enable_sort | on | |
| enable_tidscan | on | |
| escape_string_warning | on | |
| event_source | PostgreSQL | |
| exit_on_error | off | |
| <pre>extension_destdir external_pid_file</pre> | /var/run/postgresql/15-main.pid | |
| external_pid_file extra_float_digits | /vai/iun/postgresqi/is-main.piu 1 | |
| force_parallel_mode | off | |
| from_collapse_limit | 8 | |
| fsync | on | |
| full_page_writes | on | |
| geqo | on | |
| geqo_effort | 5 | |
| geqo_generations geqo_pool_size | 0 | |
| geqo_seed | 0 | |
| geqo_selection_bias | 2 | |
| geqo_threshold | 12 | |
| gin_fuzzy_search_limit | j | |
| gin_pending_list_limit | 4096 | kB |
| hash_mem_multiplier | 2 | |
| hba_file | /etc/postgresql/15/main/pg_hba.conf | |
| hot_standby hot_standby_feedback | on off | |
| huge_page_size | 0 | kB |
| huge_pages | try | |
| ident_file | /etc/postgresql/15/main/pg_ident.conf | |
| idle_in_transaction_session_timeout | | ms |
| idle_session_timeout | | ms |
| <pre>ignore_checksum_failure ignore_invalid_pages</pre> | off off | |
| ignore_system_indexes | off | |
| in_hot_standby | off | |
| integer_datetimes | on | |
| IntervalStyle | postgres | |
| jit | on | |
| jit_above_cost | 100000 off | |
| jit_debugging_support jit_dump_bitcode | off | |
| jit_expressions | on | |
| jit_inline_above_cost | 500000 | |
| jit_optimize_above_cost | 500000 | |
| jit_profiling_support | off | |
| jit_provider | llvmjit | |
| <pre>jit_tuple_deforming ioin_collapse_limit</pre> | on | |
| join_collapse_limit krb_caseins_users | 8 off | |
| krb_caseins_useis krb_server_keyfile | FILE:/etc/postgresql-common/krb5.keytab | |
| lc_collate | en_SG.UTF-8 | |
| lc_ctype | en_SG.UTF-8 | |
| lc_messages | en_SG.UTF-8 | |
| lc_monetary | en_SG.UTF-8 | |
| lc_numeric | en_SG.UTF-8 | |
| <pre>lc_time listen_addresses</pre> | en_SG.UTF-8 localhost | |
| lo_compat_privileges | localiost off | |
| local_preload_libraries | | |
| lock_timeout | 0 | ms |
| <pre>log_autovacuum_min_duration</pre> | 600000 | ms |
| log_checkpoints | on | |
| log_connections | off | |
| <pre>log_destination log_directory</pre> | stderr log | |
| log_directory log_disconnections | 10g off | |
| log_duration | off | |
| log_error_verbosity | default | |
| log_executor_stats | off | |
| log_file_mode | 0600 | |
| log_filename | <pre>postgresql-%Y-%m-%d_%H%M%S.log l off</pre> | |
| <pre>log_hostname log_line_prefix</pre> | OTT %m [%p] %q%u@%d | |
| log_lock_waits | % [%p] %q%u@%u off | |
| <pre>log_min_duration_sample</pre> | -1 | ms |
| log_min_duration_statement | -1 | ms |
| log_min_error_statement | error | |
| <pre>log_min_messages log_parameter_max_length</pre> | warning -1 | В |
| TOG_Parameter_max_tength | ı - | ט |

| log_parameter_max_length_on_error | 0 | B |
|---|------------------------------|-------------|
| log_parser_stats | off | |
| log_planner_stats | off | ļ |
| log_recovery_conflict_waits | off | ļ |
| log_replication_commands | off | |
| log_rotation_age | 1440 | min |
| log_rotation_size | 10240 | kB |
| <pre>log_startup_progress_interval</pre> | 10000 | ms |
| log_statement | none | ļ |
| <pre>log_statement_sample_rate</pre> | 1 | ļ |
| log_statement_stats | off | |
| log_temp_files | -1 Asia/Singapore | kB |
| log_timezone | Asia/Singapore 0 | - |
| <pre>log_transaction_sample_rate log_truncate_on_rotation</pre> | V off | ļ i |
| logging_collector | off | ļ i |
| logical_decoding_work_mem | 65536 | kB |
| | 10 | KD |
| <pre>maintenance_io_concurrency maintenance_work_mem</pre> | 65536 | l l kB |
| max_connections | 100 | KD |
| max_connections max_files_per_process | 100 | ļ i |
| max_function_args | 100 | ł |
| max_identifier_length | 63 | ł |
| max_index_keys | 32 | - |
| max_index_keys max_locks_per_transaction | 64 | - |
| max_logical_replication_workers | 4 | - |
| max_parallel_maintenance_workers | 7 | |
| max_parallel_workers | 8 | - |
| max_parallel_workers_per_gather | 2 | i |
| max_pred_locks_per_page | 2 | |
| max_pred_locks_per_relation | 2 | |
| max_pred_locks_per_transaction | 64 | i |
| max_prepared_transactions | 0 | i |
| max_replication_slots | 10 | i |
| max_slot_wal_keep_size | -1 | MB |
| max_stack_depth | 2048 | KB |
| max_standby_archive_delay | 30000 | MS |
| max_standby_streaming_delay | 30000 | ms |
| max_sync_workers_per_subscription | 2 | |
| max_wal_senders | 1 10 | i |
| max_wal_size | 1024 | ¦ МВ |
| max_worker_processes | 8 | |
| min_dynamic_shared_memory | 0 | ¦ МВ |
| min_parallel_index_scan_size | 64 | l 8kB |
| min_parallel_table_scan_size | 1024 | 8kB |
| min_wal_size | 80 | i MB |
| old_snapshot_threshold | -1 | min |
| parallel_leader_participation | on | i |
| parallel_setup_cost | 1000 | i |
| parallel_tuple_cost | 0.1 | i |
| password_encryption | scram-sha-256 | İ |
| plan_cache_mode | auto | i |
| port | 5432 | i |
| post_auth_delay | j 0 | İs |
| pre_auth_delay | j Ø | İs |
| primary_conninfo | İ | İ |
| primary_slot_name | İ | İ |
| <pre>promote_trigger_file</pre> | Ì | ĺ |
| quote_all_identifiers | off | ĺ |
| random_page_cost | j 4 | |
| recovery_end_command | | |
| recovery_init_sync_method | fsync | |
| recovery_min_apply_delay | 0 | ms |
| recovery_prefetch | try | |
| recovery_target | | |
| recovery_target_action | pause | ļ |
| recovery_target_inclusive | on | ļ |
| recovery_target_lsn | ļ | ļ |
| recovery_target_name | ļ | ļ |
| recovery_target_time_ | <u> </u> | ļ |
| recovery_target_timeline | latest | ļ |
| recovery_target_xid | | ļ |
| recursive_worktable_factor | 10 | ļ |
| remove_temp_files_after_crash | on | ļ |
| restart_after_crash | on | ļ |
| restore_command | l on | ļ |
| row_security | ON | ļ |
| search_path | "\$user", public | |
| segment_size | 131072 | 8kB |
| seq_page_cost | 1 | ļ |
| server_encoding | UTF8 | ļ |
| server_version | 15.6 (Debian 15.6-0+deb12u1) | |
| server_version_num | 150006 | |
| session_preload_libraries | origin | ļ |
| session_replication_role | origin 16384 | olan |
| <pre>shared_buffers shared_memory_size</pre> | 16384 143 | 8kB MB |
| _ | 143 72 | I I MR |
| shared_memory_size_in_huge_pages | /2 | I |
| | | |

| shared_memory_type | mmap | I |
|---|--|--------------|
| shared_preload_libraries | | ! |
| ssl | on | |
| ssl_ca_file ssl_cert_file | /etc/ssl/certs/ssl-cert-snakeoil.pem | |
| ssl_ciphers | HIGH:MEDIUM:+3DES:!aNULL | |
| ssl_crl_dir | | |
| <pre>ssl_crl_file ssl_dh_params_file</pre> | | |
| ssl_ecdh_curve | prime256v1 | Ϊ |
| ssl_key_file | / /etc/ssl/private/ssl-cert-snakeoil.key | |
| <pre>ssl_library ssl_max_protocol_version</pre> | OpenSSL | |
| ssl_min_protocol_version | TLSv1.2 | |
| ssl_passphrase_command | | ļ |
| <pre>ssl_passphrase_command_supports_reload ssl_prefer_server_ciphers</pre> | off on | |
| standard_conforming_strings | on | ! |
| statement_timeout | 0 | ms |
| <pre>stats_fetch_consistency superuser_reserved_connections</pre> | cache 3 | |
| synchronize_seqscans | on | ! |
| synchronous_commit | on | į |
| <pre>synchronous_standby_names syslog_facility</pre> | local0 | |
| syslog_ident | localy postgres | ! |
| syslog_sequence_numbers | on | İ |
| syslog_split_messages | on | |
| <pre>tcp_keepalives_count tcp_keepalives_idle</pre> | 0 0 | s |
| tcp_keepalives_interval | 0 | S |
| tcp_user_timeout | 0 | ms |
| temp_buffers | 1024 | 8kB |
| <pre>temp_file_limit temp_tablespaces</pre> | -1 | kB |
| TimeZone | Asia/Singapore | |
| timezone_abbreviations | Default | |
| <pre>trace_notify trace_recovery_messages</pre> | off log | |
| trace_sort | off | |
| track_activities | on | İ |
| track_activity_query_size | 1024 | B |
| <pre>track_commit_timestamp track_counts</pre> | off on | |
| track_functions | none | |
| track_io_timing | off | |
| <pre>track_wal_io_timing transaction_deferrable</pre> | off off | |
| transaction_isolation | read committed | ! |
| transaction_read_only | off | į |
| <pre>transform_null_equals unix_socket_directories</pre> | off /var/run/postgresql | |
| unix_socket_directories unix_socket_group | /vai/idii/postglesql | |
| unix_socket_permissions | 0777 | İ |
| update_process_title | on 0 | |
| <pre>vacuum_cost_delay vacuum_cost_limit</pre> | 0 200 | ms |
| vacuum_cost_page_dirty | 20 | Ϊ |
| vacuum_cost_page_hit | 1 | ļ |
| <pre>vacuum_cost_page_miss vacuum_defer_cleanup_age</pre> | 2 0 | |
| vacuum_failsafe_age | 160000000 | ! |
| vacuum_freeze_min_age | 5000000 | ĺ |
| <pre>vacuum_freeze_table_age vacuum_multixact_failsafe_age</pre> | 150000000 160000000 | |
| vacuum_multixact_fallsare_age vacuum_multixact_freeze_min_age | 180000000 | |
| <pre>vacuum_multixact_freeze_table_age</pre> | 15000000 | İ |
| wal_block_size | 8192 | |
| <pre>wal_buffers wal_compression</pre> | 512 off | 8kB |
| wal_consistency_checking | | |
| wal_decode_buffer_size | 524288 | B |
| wal_init_zero wal_keep_size | on 0 | MB |
| wal_keep_size wal_level | 0 replica | MD |
| wal_log_hints | off | İ |
| wal_receiver_create_temp_slot | off 10 | |
| <pre>wal_receiver_status_interval wal_receiver_timeout</pre> | 10 60000 | S ms |
| wal_recycle | on | |
| wal_retrieve_retry_interval | 5000 | ms |
| <pre>wal_segment_size wal_sender_timeout</pre> | 16777216 60000 | B ms |
| wal_skip_threshold | 2048 | IIIS kB |
| wal_sync_method | fdatasync | į |
| <pre>wal_writer_delay wal_writer_flush_after</pre> | 200 128 | MS RVR |
| <pre>wal_writer_flush_after work_mem</pre> | 128 4096 | 8kB kB |
| | | , |

| xmlbinary xmloption | base64 content | |
|------------------------|---------------------|--|
| zero_damaged_pages | off | |
| (353 rows) | | |

Изменить параметры конфигурации можно глобально для свего кластера, изменив соответствующий параметр в файле настроек или с помощью команды:

ALTER SYSTEM SET < napametp > TO < значение >

Сбросить параметр можно так:

ALTER SYSTEM RESET < napametp>

Или сброситьвсе парметра установленные ранее:

ALTER SYSTEM RESET ALL

Более подробно в документации https://postgrespro.ru/docs/postgresql/13/sql-altersystem.html (https://postgrespro.ru/docs/postgresql/13/sql-altersystem.html)