Server System Variables

About the Server System Variables

MariaDB has many system variables that can be changed to suit your needs.

The full list of server variables are listed in the contents on this page, and most are described on this page, but some are described elsewhere:

- Aria System Variables
- CONNECT System Variables
- Galera System Variables
- Global Transaction ID System Variables
- HandlerSocket Plugin System Variables
- XtraDB/InnoDB System Variables
- Mroonga System Variables
- MyRocks System Variables
- MyISAM System Variables
- Performance Schema System Variables
- Replication and Binary Log System Variables
- Server_Audit System Variables
- Spider System Variables
- SQL_ERROR_LOG Plugin System Variables
- SSL System Variables
- Threadpool System Variables
- TokuDB System Variables

See also the Full list of MariaDB options, system and status variables.

Most of these can be set with command line options and many of them can be changed at runtime.

There are a few ways to see the full list of server system variables:

- While in the mysql client, run:

  ```
  SHOW VARIABLES;
  ```

  See SHOW VARIABLES for instructions on using this command.

- From your shell, run mysqld like so:

  ```
  mysqld --verbose --help
  ```

- View the Information Schema GLOBAL_VARIABLES, SESSION_VARIABLES, and SYSTEM_VARIABLES tables.

Setting Server System Variables

There are several ways to set server system variables:

- Specify them on the command line:

  ```
  shell> ./mysqld_safe --aria_group_commit="hard"
  ```

- Specify them in your my.cnf file (see Configuring MariaDB with my.cnf for more information):

  ```
  aria_group_commit = "hard"
  ```

- Set them from the mysql client using the SET command. Only variables that are dynamic can be set at runtime in this way. Note that variables set in this way will not pe a restart.

  ```
  SET GLOBAL aria_group_commit="hard";
  ```

By convention, server variables have usually been specified with an underscore in the configuration files, and a dash on the command line. You can however specify undersc dashes - they are interchangeable.

Variables that take a numeric size can either be specified in full, or with a suffix for easier readability. Valid suffixes are:

Suffix	Description	Value
K	kilobytes	1024
M	megabytes	1024^2
G	gigabytes	1024^3
T	terabytes	1024^4 (from MariaDB 10.3.3)
P	petabytes	1024^5 (from MariaDB 10.3.3)

E	exabytes	1024^6 (from MariaDB 10.3.3)

The suffix can be upper or lower-case.

List of Server System Variables

autocommit

- **Description:** If set to 1, the default, all queries are committed immediately. The LOCK IN SHARE MODE and FOR UPDATE clauses therefore have no effect. If set to 0 are only committed upon a COMMIT statement, or rolled back with a ROLLBACK statement. If autocommit is set to 0, and then changed to 1, all open transactions are immediately committed.
- **Commandline:** `--autocommit[=#]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `1`

---

automatic_sp_privileges

- **Description:** When set to 1, the default, when a stored routine is created, the creator is automatically granted permission to ALTER (which includes dropping) and to E the routine. If set to 0, the creator is not automatically granted these privileges.
- **Commandline:** `--automatic-sp-privileges`, `--skip-automatic-sp-privileges`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `1`

---

back_log

- **Description:** Connections take a small amount of time to start, and this setting determines the number of outstanding connection requests MariaDB can have, or the si listen queue for incoming TCP/IP requests. Requests beyond this will be refused. Increase if you expect short bursts of connections. Cannot be set higher than the ope system limit (see the Unix listen() man page).
- **Commandline:** `--back-log=#`
- **Scope:** Global
- **Dynamic:** No
- **Type:** number
- **Default Value:**
  - The lower of `900` and (50 + max_connections/5) (>= MariaDB 10.1.7)
  - The lower of `150` or the value of max_connections (beween MariaDB 10.0.8 and MariaDB 10.1.7)
  - `50` (<= MariaDB 10.0.8)

---

basedir

- **Description:** Path to the MariaDB installation directory. Other paths are usually resolved relative to this base directory.
- **Commandline:** `--basedir=path` or `-b path`
- **Scope:** Global
- **Dynamic:** No
- **Type:** directory name

---

big_tables

- **Description:** Old variable, which if set to 1, allows large result sets by saving all temporary sets to disk, avoiding 'table full' errors. No longer needed, as the server now this automatically. sql_big_tables is a synonym.
- **Commandline:** `--big-tables`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `0`

---

bind_address

- **Description:** By default, the MariaDB server listens for TCP/IP connections on a network socket bound to a single address, 0.0.0.0. You can specify an alternative whe server starts using this option; either a host name, an IPv4 or an IPv6 address. In Debian and Ubuntu, the default bind_address is 127.0.0.1, which binds the server to l localhost only. Has always been available as a mysqld option, from MariaDB 10.3.3 also available as a system variable.
- **Commandline:** `--bind-address=addr`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `string`
- **Valid Values:** Host name, IPv4, IPv6 (>= MariaDB 5.5)
- **Introduced:** MariaDB 10.3.3 (as a system variable)

bulk_insert_buffer_size

- **Description:** Size in bytes of the per-thread cache tree used to speed up bulk inserts into MyISAM and Aria tables. A value of 0 disables the cache tree.
- **Commandline:** `--bulk-insert-buffer-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `8388608`
- **Range - 32 bit:** `0` to `4294967295`
- **Range - 64 bit:** `0` to `18446744073709547520`

character_set_client

- **Description:** Determines the character set for queries arriving from the client. It can be set per session by the client, although the server can be configured to ignore cli requests with the `--skip-character-set-client-handshake` option. If the client does not request a character set, or requests a character set that the server does support, the global value will be used. utf16, utf32 and ucs2 cannot be used as client character sets.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `utf8` (>= MariaDB 5.5)

character_set_connection

- **Description:** Character set used for number to string conversion, as well as for literals that don't have a character set introducer.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `utf8` (>= MariaDB 5.5)

character_set_database

- **Description:** Character set used by the default database, and set by the server whenever the default database is changed. If there's no default database, character_set_database contains the same value as character_set_server. This variable is dynamic, but should not be set manually, only by the server.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `latin1`

character_set_filesystem

- **Description:** The character set for the filesystem. Used for converting file names specified as a string literal from character_set_client to character_set_filesystem befo opening the file. By default set to `binary`, so no conversion takes place. This could be useful for statements such as LOAD_FILE() or LOAD DATA INFILE on system multi-byte file names are use.
- **Commandline:** `--character-set-filesystem=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `binary`

character_set_results

- **Description:** Character set used for results and error messages returned to the client.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `utf8`

character_set_server

- **Description:** Default character set used by the server. See character_set_database for character sets used by the default database. Defaults may be different on some systems, see for example Differences in MariaDB in Debian.
- **Commandline:** `--character-set-server`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `latin1`

character_set_system

- **Description:** Character set used by the server to store identifiers, always set to utf8.
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `string`
- **Default Value:** `utf8`

---

character_sets_dir

- **Description:** Directory where the character sets are installed.
- **Commandline:** `--character-sets-dir=path`
- **Scope:** Global
- **Dynamic:** No
- **Type:** directory name

---

check_constraint_checks

- **Description:** If set to `0`, will disable constraint checks, for example when loading a table that violates some constraints that you plan to fix later.
- **Commandline:** `--check-constraint-checks=[0|1]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** boolean
- **Default:** ON
- **Introduced:** MariaDB 10.2.1

---

collation_connection

- **Description:** Collation used for the connection character set.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`

---

collation_database

- **Description:** Collation used for the default database. Set by the server if the default database changes, if there is no default database the value from the `collation_s` variable is used. This variable is dynamic, but should not be set manually, only by the server.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`

---

collation_server

- **Description:** Default collation used by the server. This is set to the default collation for a given character set automatically when character_set_server is changed, but i be set manually. Defaults may be different on some systems, see for example Differences in MariaDB in Debian.
- **Commandline:** `--collation-server=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `latin1_swedish_ci`

---

completion_type

- **Description:** The transaction completion type. If set to `NO_CHAIN` or `0` (the default), there is no effect on commits and rollbacks. If set to `CHAIN` or `1`, a COMMIT st is equivalent to COMMIT AND CHAIN, while a ROLLBACK is equivalent to ROLLBACK AND CHAIN, so a new transaction starts straight away with the same isolation transaction that's just finished. If set to `RELEASE` or `2`, a COMMIT statement is equivalent to COMMIT RELEASE, while a ROLLBACK is equivalent to ROLLBACK RE so the server will disconnect after the transaction completes. Note that the transaction completion type only applies to explicit commits, not implicit commits.
- **Commandline:** `--completion-type=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `enumerated` (>=MariaDB/MySQL 5.5.3), `numeric` (<= MariaDB/MySQL 5.5.2)
- **Default Value:** `NO_CHAIN` (>=MariaDB/MySQL 5.5.3), `0` (<= MariaDB/MySQL 5.5.2)
- **Valid Values:** `0`, `1`, `2` (All versions), `NO_CHAIN`, `CHAIN`, `RELEASE` (>=MariaDB/MySQL 5.5.3)

---

concurrent_insert

- **Description:** If set to `AUTO` or `1`, the default, MariaDB allows concurrent INSERTs and SELECTs for MyISAM tables with no free blocks in the data. If set to `NEVER` o concurrent inserts are disabled. If set to `ALWAYS` or `2`, concurrent inserts are permitted for all MyISAM tables, even those with holes, in which case new rows are adde end of a table if the table is being used by another thread. If the --skip-new option is used when starting the server, concurrent_insert is set to `NEVER`.

- **Commandline:** `--concurrent-insert[=name]`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `enumerated` (>=MariaDB/MySQL 5.5.3), `numeric` (<= MariaDB/MySQL 5.5.2)
- **Default Value:** `AUTO` (>=MariaDB/MySQL 5.5.3), `1` (<= MariaDB/MySQL 5.5.2)
- **Valid Values:** `0`, `1`, `2` (All versions), `AUTO`, `NEVER`, `ALWAYS` (>=MariaDB/MySQL 5.5.3)
- **Documentation:** concurrent-inserts
- **Notes:** Changing the variable only affects new opened tables. Use `FLUSH TABLES` If you want it to affect also cached tables.

---

connect_timeout

- **Description:** Time in seconds that the server waits for a connect packet before returning a 'Bad handshake'. Increasing may help if clients regularly encounter 'Lost cor to MySQL server at 'X', system error: error_number' type-errors
- **Commandline:** `--connect-timeout=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Type:** numeric
- **Default Value:** `10`

---

datadir

- **Description:** Directory where the data is stored.
- **Commandline:** `--datadir=path` or `-h path`
- **Scope:** Global
- **Dynamic:** No
- **Type:** directory name

---

date_format

- **Description:** Unused.

---

datetime_format

- **Description:** Unused.

---

debug

- **Description:** Used in debugging to write to a trace file. MariaDB needs to be configured with -SWITH_DEBUG=1 to enable this option.
- **Commandline:** `--debug[=debug_options]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `d:t:i:o,/tmp/mysqld.trace` (Unix) or `d:t:i:O,\mysqld.trace` (Windows)

---

debug_no_thread_alarm

- **Description:** Disable system thread alarm calls. Disabling it may be useful in debugging or testing, never do it in production.
- **Commandline:** `--debug-no-thead-alarm=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `OFF`
- **Introduced:** MariaDB

---

debug_sync

- **Description:** Used in debugging to show the interface to the Debug Sync facility. MariaDB needs to be configured with -DENABLE_DEBUG_SYNC=1 for this variable t available.
- **Scope:** Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `OFF` or `ON - current signal` *`signal name`*

---

default_regex_flags

- **Description:** Introduced to address remaining incompatibilities between PCRE and the old regex library. Accepts a comma-separated list of zero or more of the followir

Value	Pattern equivalent	Meaning

DOTALL	(?s)	. matches anything including NL
DUPNAMES	(?J)	Allow duplicate names for subpatterns
EXTENDED	(?x)	Ignore white space and # comments
EXTRA	(?X)	extra features (e.g. error on unknown escape character)
MULTILINE	(?m)	^ and $ match newlines within data
UNGREEDY	(?U)	Invert greediness of quantifiers

- **Commandline:** `--default-regex-flags=value`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Default Value:** empty
- **Valid Values:** `DOTALL`, `DUPNAMES`, `EXTENDED`, `EXTRA`, `MULTILINE`, `UNGREEDY`
- **Introduced:** MariaDB 10.0.11

---

default_storage_engine

- **Description:** The default storage engine. The default storage engine must be enabled at server startup or the server won't start.
- **Commandline:** `--default-storage-engine=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** enumeration
- **Default Value:** `InnoDB` (>= MariaDB 5.5), `MyISAM` (<MariaDB 5.3)
- **Introduced:** MariaDB 5.5 (previously storage_engine)

---

default_table_type

- **Description:** A synonym for default_storage_engine. Removed in MariaDB 5.5.
- **Commandline:** `--default-table-type=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Removed:** MariaDB/MySQL 5.5

---

default_tmp_storage_engine

- **Description:** Default storage engine that will be used for tables created with CREATE TEMPORARY TABLE where no engine is specified. For internal temporary tables aria_used_for_temp_tables). The storage engine used must be active or the server will not start. See default_storage_engine for the default for non-temporary tables. D to NULL, in which case the value from default_storage_engine is used.
- **Commandline:** `--default-tmp-storage-engine=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `enumeration`
- **Default Value:** NULL
- **Introduced:** MariaDB 10.1.0

---

default_week_format

- **Description:** Default mode for the WEEK() function. See that page for details on the different modes
- **Commandline:** `--default-week-format=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `7`

---

delay_key_write

- **Description:** Specifies how MyISAM tables handles CREATE TABLE DELAY_KEY_WRITE. If set to `ON`, the default, any DELAY KEY WRITEs are honored. The key b then flushed only when the table closes, speeding up writes. MyISAM tables should be automatically checked upon startup in this case, and --external locking should n used, as it can lead to index corruption. If set to `OFF`, DELAY KEY WRITEs are ignored, while if set to `ALL`, all new opened tables are treated as if created with DELA WRITEs enabled.
- **Commandline:** `--delay-key-write[=name]`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `enumeration`
- **Default Value:** `ON`
- **Valid Values:** `ON`, `OFF`, `ALL`

---

delayed_insert_limit

- **Description:** After this many rows have been inserted with INSERT DELAYED, the handler will check for and execute any waiting SELECT statements.
- **Commandline:** `--delayed-insert-limit=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `100`
- **Range:** `1` to `4294967295`

---

delayed_insert_timeout

- **Description:** Time in seconds that the INSERT DELAYED handler will wait for INSERTs before terminating.
- **Commandline:** `--delayed-insert-timeout=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `300`

---

delayed_queue_size

- **Description:** Number of rows, per table, that can be queued when performing INSERT DELAYED statements. If the queue becomes full, clients attempting to perform I DELAYED's will wait until the queue has room available again.
- **Commandline:** `--delayed-queue-size=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Type:** numeric
- **Default Value:** `1000`
- **Range:** `1 to 4294967295`

---

div_precision_increment

- **Description:** Number of digits to be returned after the decimal point in division operations. By default `4`, so `SELECT 2/15` would return 0.1333. After setting div_precision_increment to `6`, for example, the same operation would return 0.133333.
- **Commandline:** `--div-precision-increment=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `4`
- **Range:** `0` to `30`

---

encrypt_tmp_disk_tables

- **Description:** Encrypt tmp disk tables (created as part of query execution). See Table and Tablespace Encryption.
- **Commandline:** `--encrypt-tmp-disk-tables[={0|1}]`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`
- **Introduced:** 10.1.3

---

encrypt_tmp_files

- **Description:** Encrypt temporary files (created for filesort, binary log cache, etc). See Table and Tablespace Encryption.
- **Commandline:** `--encrypt-tmp-files[={0|1}]`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `OFF` (>= MariaDB 10.1.7), `ON` (<= MariaDB 10.1.6)
- **Introduced:** MariaDB 10.1.5

---

encryption_algorithm

- **Description:** Which encryption algorithm to use for table encryption. `aes_cbc` is the recommended one. See Table and Tablespace Encryption.
- **Commandline:** `--encryption-algorithm=value`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `enum`
- **Default Value:** `none`
- **Valid Values:** `none`, `aes_ecb`, `aes_cbc`, `aes_ctr`
- **Introduced:** MariaDB 10.1.3

- **Removed:** MariaDB 10.1.4

---

enforce_storage_engine

- **Description:** Force the use of a particular storage engine for new tables. Used to avoid unwanted creation of tables using another engine. For example, setting to Inno prevent any MyISAM tables from being created. If another engine is specified in a CREATE TABLE statement, the outcome depends on whether the `NO_ENGINE_SUBSTITUTION` SQL_MODE has been set or not. If set (the default from MariaDB 10.1.7), the query will fail, while if not set, a warning will be returned and table created according to the engine specified by this variable. The variable has a session scope, but is only modifiable by a user with the SUPER privilege.
- **Commandline:** None
- **Scope:** Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `none`
- **Introduced:** MariaDB 10.1.4

---

engine_condition_pushdown

- **Description:** Deprecated in MariaDB 5.5 and removed and replaced by the optimizer_switch `engine_condition_pushdown={on|off}` flag in MariaDB 10.0.. Specif whether the engine condition pushdown optimization is enabled. Since MariaDB 10.1.1, engine condition pushdown is enabled for all engines that support it.
- **Commandline:** `--engine-condition-pushdown`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:**
  - `OFF` (MariaDB 5.5)
  - `ON` (<= MariaDB 5.3)
- **Deprecated:** MariaDB 5.5
- **Removed:** MariaDB 10.0

---

error_count

- **Description:** Read-only variable denoting the number of errors from the most recent statement in the current session that generated errors. See SHOW_ERRORS().
- **Scope:** Session
- **Dynamic:** Yes
- **Data Type:** `numeric`

---

event_scheduler

- **Description:** Status of the Event Scheduler. Can be set to `ON` or `OFF`, while `DISABLED` means it cannot be set at runtime. Setting the variable will cause a load of ev they were not loaded at startup.
- **Commandline:** `--event-scheduler[=value]`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `enumeration`
- **Default Value:** `OFF`
- **Valid Values:** `ON` (or `1`), `OFF` (or `0`), `DISABLED`

---

expensive_subquery_limit

- **Description:** Number of rows to be examined for a query to be considered expensive, that is, maximum number of rows a subquery may examine in order to be execut optimization and used for constant optimization.
- **Commandline:** `--expensive-subquery-limit=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `100`
- **Range:** `0` upwards
- **Introduced:** MariaDB 5.5.25

---

explicit_defaults_for_timestamp

- **Description:** This option causes CREATE TABLE to create all TIMESTAMP columns as NULL with the DEFAULT NULL attribute, Without this option, TIMESTAMP colu NOT NULL and have implicit DEFAULT clauses. The old behavior is deprecated.
- **Commandline:** `--explicit-defaults-for-timestamp=[={0|1}]`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `bolean`
- **Default Value:** `OFF`
- **Introduced:** MariaDB 10.1.8

---

external_user

- **Description:** External user name set by the plugin used to authenticate the client. `NULL` if native MariaDB authentication is used.
- **Scope:** Session
- **Dynamic:** No
- **Data Type:** `string`
- **Default Value:** `NULL`
- **Introduced:** MariaDB 5.5

---

flush

- **Description:** Usually, MariaDB writes changes to disk after each SQL statement, and the operating system handles synchronizing (flushing) it to disk. If set to `ON`, the will synchronize all changes to disk after each statement.
- **Commandline:** `--flush`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

flush_time

- **Description:** Interval in seconds that tables are closed to synchronize (flush) data to disk and free up resources. If set to 0, the default, there is no automatic synchroni tables and closing of tables. This option should not be necessary on systems with sufficient resources.
- **Commandline:** `--flush_time=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`

---

foreign_key_checks

- **Description:** If set to 1 (the default) foreign key constraints (including ON UPDATE and ON DELETE behavior) InnoDB tables are checked, while if set to 0, they are nc checked. `0` is not recommended for normal use, though it can be useful in situations where you know the data is consistent, but want to reload data in a different order that specified by parent/child relationships. Setting this variable to 1 does not retrospectively check for inconsistencies introduced while set to 0.
- **Commandline:** None
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `1`

---

ft_boolean_syntax

- **Description:** List of operators supported by an IN BOOLEAN MODE full-text search. If you wish to change, note that each character must be ASCII and non-alphanum full string must be 14 characters and the first or second character must be a space. Positions 10, 13 and 14 are reserved for future extensions. Also, no duplicates are p except for the phrase quoting characters in positions 11 and 12, which may be the same.
- **Commandline:** `--ft-boolean-syntax=name`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `+ -><()*:""&|`

---

ft_max_word_len

- **Description:** Maximum length for a word to be included in the MyISAM full-text index. If this variable is changed, the full-text index must be rebuilt. The quickest way to by issuing a `REPAIR TABLE table_name QUICK` statement. See innodb_ft_max_token_size for the InnoDB equivalent.
- **Commandline:** `--ft-max-word-len=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `84`
- **Minimum Value:** `10`

---

ft_min_word_len

- **Description:** Minimum length for a word to be included in the MyISAM full-text index. If this variable is changed, the full-text index must be rebuilt. The quickest way to by issuing a `REPAIR TABLE table_name QUICK` statement. See innodb_ft_min_token_size for the InnoDB equivalent.
- **Commandline:** `--ft-min-word-len=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`

- **Default Value:** `4`
- **Minimum Value:** `1`

---

ft_query_expansion_limit

- **Description:** For full-text searches, denotes the numer of top matches when using WITH QUERY EXPANSION.
- **Commandline:** `--ft-query-expansion-limit=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `20`
- **Range:** `0` to `1000`

---

ft_stopword_file

- **Description:** File containing a list of stopwords for use in MyISAM full-text searches. Unless an absolute path is specified the file will be looked for in the data directory. is not parsed for comments, so all words found become stopwords. By default, a built-in list of words (built from `storage/myisam/ft_static.c file`) is used. Stopw be disabled by setting this variable to `''` (an empty string). If this variable is changed, the full-text index must be rebuilt. The quickest way to do this is by issuing a `RE TABLE table_name QUICK` statement. See innodb_ft_server_stopword_table for the InnoDB equivalent.
- **Commandline:** `--ft-stopword-file=file_name`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `file name`
- **Default Value:** `(built-in)`

---

general_log

- **Description:** If set to 0, the default unless the --general-log option is used, the general query log is disabled, while if set to 1, the general query log is enabled. See log_ for how log files are written. If that variable is set to `NONE`, no logs will be written even if general_query_log is set to `1`.
- **Commandline:** `--general-log`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `0`

---

general_log_file

- **Description:** Name of the general query log file. If this is not specified, the name is taken from the log-basename setting or from your system hostname with `.log` as
- **Commandline:** `--general-log-file=file_name`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `file name`
- **Default Value:** *`host_name`*`.log`

---

group_concat_max_len

- **Description:** Maximum length in bytes of the returned result for a GROUP_CONCAT() function.
- **Commandline:** `--group-concat-max-len=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:**
  - `1048576` (1M) >= MariaDB 10.2.4
  - `1024` (1K) <= MariaDB 10.2.3
- **Range - 32-bit:** `4` to `4294967295`
- **Range - 64-bit:** `4` to `18446744073709547520`

---

have_compress

- **Description:** If the zlib compression library is accessible to the server, this will be set to `YES`, otherwise it will be `NO`. The COMPRESS() and UNCOMPRESS() functio only be available if set to `YES`.
- **Scope:** Global
- **Dynamic:** No

---

have_crypt

- **Description:** If the crypt() system call is available this variable will be set to `YES`, otherwise it will be set to `NO`. If set to `NO`, the ENCRYPT() function cannot be used.
- **Scope:** Global

- **Dynamic:** No

`have_csv`

- **Description:** If the server supports CSV tables, will be set to `YES`, otherwise will be set to `NO`. Removed in MariaDB 10.0, use the Information Schema PLUGINS tabl SHOW ENGINES instead.
- **Scope:** Global
- **Dynamic:** No
- **Removed:** MariaDB 10.0

`have_dynamic_loading`

- **Description:** If the server supports dynamic loading of plugins, will be set to `YES`, otherwise will be set to `NO`.
- **Scope:** Global
- **Dynamic:** No

`have_geometry`

- **Description:** If the server supports spatial data types, will be set to `YES`, otherwise will be set to `NO`.
- **Scope:** Global
- **Dynamic:** No

`have_ndbcluster`

- **Description:** If the server supports NDBCluster (disabled in MariaDB).
- **Scope:** Global
- **Dynamic:** No
- **Removed:** MariaDB 10.0

`have_partitioning`

- **Description:** If the server supports partitioning, will be set to `YES`, unless the `--skip-partition` option is used, in which case will be set to `DISABLED`. Will be set otherwise. Removed in MariaDB 10.0 - SHOW PLUGINS should be used instead.
- **Scope:** Global
- **Dynamic:** No
- **Removed:** MariaDB 10.0

`have_profiling`

- **Description:** If statement profiling is available, will be set to `YES`, otherwise will be set to `NO`. See SHOW PROFILES() and SHOW PROFILE().
- **Scope:** Global
- **Dynamic:** No

`have_query_cache`

- **Description:** If the server supports the query cache, will be set to `YES`, otherwise will be set to `NO`.
- **Scope:** Global
- **Dynamic:** No

`have_rtree_keys`

- **Description:** If RTREE indexes (used for spatial indexes) are available, will be set to `YES`, otherwise will be set to `NO`.
- **Scope:** Global
- **Dynamic:** No

`have_symlink`

- **Description:** If symbolic link support is enabled, will be set to `YES`, otherwise will be set to `NO`. Required for the INDEX DIRECTORY and DATA DIRECTORY table o (see CREATE TABLE) and Windows symlink support. Will be set to `DISABLED` if the server is started with the --skip-symbolic-links option.
- **Scope:** Global
- **Dynamic:** No

`histogram_size`

- **Description:** Number of bytes used for a histogram. If set to 0, no histograms are created by ANALYZE.

- **Commandline:** `--histogram-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `255`
- **Introduced:** MariaDB 10.0.2

---

histogram_type

- **Description:** Specifies the type of histograms created by ANALYZE.
  - `SINGLE_PREC_HB` - single precision height-balanced.
  - `DOUBLE_PREC_HB` - double precision height-balanced.
- **Commandline:** `--histogram-type=value`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `enumeration`
- **Default Value:** `SINGLE_PREC_HB`
- **Valid Values:** `SINGLE_PREC_HB`, `DOUBLE_PREC_HB`
- **Introduced:** MariaDB 10.0.2

---

host_cache_size

- **Description:** Number of host names that will be cached to avoid resolving. Setting to `0` disables the cache. Changing the value while the server is running causes an FLUSH HOSTS, clearing the host cache and truncating the performance_schema.host_cache table. If you are connecting from a lot of different machines you should c increasing.
- **Commandline:** `--host-cache-size=#`.
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `128`
- **Range:** `0` to `65536`
- **Introduced:** MariaDB 10.0

---

hostname

- **Description:** When the server starts, this variable is set to the server host name.
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `string`

---

identity

- **Description:** A synonym for last_insert_id variable.

---

idle_readonly_transaction_timeout

- **Description:** Time in seconds that the server waits for idle read-only transactions before killing the connection. If set to `0`, the default, connections are never killed. Se idle_transaction_timeout, idle_write_transaction_timeout and Transaction Timeouts.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `31536000`
- **Introduced:** MariaDB 10.3.0

---

idle_transaction_timeout

- **Description:** Time in seconds that the server waits for idle transactions before killing the connection. If set to `0`, the default, connections are never killed. See also idle_readonly_transaction_timeout, idle_write_transaction_timeout and Transaction Timeouts.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `31536000`
- **Introduced:** MariaDB 10.3.0

---

idle_write_transaction_timeout

- **Description:** Time in seconds that the server waits for idle read-write transactions before killing the connection. If set to `0`, the default, connections are never killed. Se idle_transaction_timeout, idle_readonly_transaction_timeout and Transaction Timeouts. Called `idle_readwrite_transaction_timeout` until MariaDB 10.3.2.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `31536000`
- **Introduced:** MariaDB 10.3.0

`ignore_db_dirs`

- **Description:** Comma-delimited list of directories in the data directory that are not considered as database directories. Set from --ignore-db-dir at startup.
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `string`
- **Introduced:** MariaDB 5.5

`in_transaction`

- **Description:** Session-only and read-only variable that is set to `1` if you are in a transaction, and `0` if not.
- **Commandline:** No
- **Scope:** Session
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `0`
- **Introduced:** MariaDB 5.3

`init_connect`

- **Description:** String containing one or more SQL statements, separated by semicolons, that will be executed by the server for each client connecting. If there's a syntax the one of the statements, the client will fail to connect. For this reason, the statements are not executed for users with the SUPER privilege, who can then still connect correct the error. See also init_file.
- **Commandline:** `--init-connect=name`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `string`

`init_file`

- **Description:** Name of a file containing SQL statements that will be executed by the server on startup. Each statement should be on a new line, and end with a semicol also init_connect.
- **Commandline:** `init-file=file_name`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `file name`

`insert_id`

- **Description:** Value to be used for the next statement inserting a new AUTO_INCREMENT value.
- **Scope:** Session
- **Dynamic:** Yes
- **Data Type:** `numeric`

`interactive_timeout`

- **Description:** Time in seconds that the server waits for an interactive connection (one that connects with the mysql_real_connect() CLIENT_INTERACTIVE option) to b active before closing it. See also wait_timeout.
- **Commandline:** `--interactive-timeout=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `28800`
- **Minimum Value:** `1`

`join_buffer_size`

- **Description:** Minimum size in bytes of the buffer used for queries that cannot use an index, and instead perform a full table scan. Increase to get faster full joins when a indexes is not possible, although be aware of memory issues, since joins will always allocate the minimum size. Best left low globally and set high in sessions that requ full joins. In 64-bit platforms, Windows truncates values above 4GB to 4GB with a warning.

- **Commandline:** `--join-buffer-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `262144` (256kB) (>=MariaDB 10.1.7), `131072` (128kB) (<=MariaDB 10.1.6)
- **Range (>=MariaDB/MySQL 5.5):** `128` to `18446744073709547520`
- **Range (<=MariaDB/MySQL 5.3, Windows):** `8228` to `18446744073709547520`

---

join_buffer_space_limit

- **Description:** Maximum size in bytes of the query buffer, By default 1024*128*10. See Block-based join algorithms.
- **Commandline:** `--join-buffer-space-limit=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `2097152`
- **Range:** `2048` to `99999999997952`
- **Introduced:** MariaDB 5.3

---

join_cache_level

- **Description:** Controls which of the eight block-based algorithms can be used for join operations. See Block-based join algorithms for more information.
  - 1 – flat (Block Nested Loop) BNL
  - 2 – incremental BNL
  - 3 – flat Block Nested Loop Hash (BNLH)
  - 4 – incremental BNLH
  - 5 – flat Batch Key Access (BKA)
  - 6 – incremental BKA
  - 7 – flat Batch Key Access Hash (BKAH)
  - 8 – incremental BKAH
- **Commandline:** `--join-cache-level=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `2`
- **Range:** `0` to `8`
- **Introduced:** MariaDB 5.3

---

keep_files_on_create

- **Description:** If a MyISAM table is created with no DATA DIRECTORY option, the .MYD file is stored in the database directory. When set to `0`, the default, if MariaDB f another .MYD file in the database directory it will overwrite it. Setting this variable to `1` means that MariaDB will return an error instead, just as it usually does in the sa situation outside of the database directory. The same applies for .MYI files and no INDEX DIRECTORY option.
- **Commandline:** `--keep-files-on-create=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

language

- **Description:** Language to use for the server error messages. Either just the language name, or the directory where the error messages are stored. An alternative is to lc_messages_dir and lc_messages instead. See Setting the language for error messages.
- **Commandline:** `--language=name, -L`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `directory name`
- **Default Value:** `/usr/local/mysql/share/mysql/english/`

---

large_files_support

- **Description:** ON if the server if was compiled with large file support or not, else OFF
- **Scope:** Global
- **Dynamic:** No
- **Introduced:** MySQL 3.23.28

---

large_page_size

- **Description:** Indicates the size of memory page if large page support (Linux only) is enabled. The page size is determined from the Hugepagesize setting in `/proc/me` See large_pages.

- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** Autosized (see description)

---

large_pages

- **Description:** Indicates whether large page support (Linux only - called huge pages) is used. This is set with `--large-pages` or disabled with `--skip-large-pages` pages are used for the innodb buffer pool and for online DDL (of size 3* innodb_sort_buffer_size (or 6 when encryption is used)). To use large pages, the Linux `sysctl` variable `kernel.shmmax` must be large than the llocation. Also the `sysctl` variable `vm.nr_hugepages` multipled by large-page) must be larger than the usage. The locked memory must be sufficient to cover the amount used (`ulimit -l` and equalivent in /etc/security/limits.conf / or in systemd LimitMEMLOCK). If these operating controls or insufficient free huge pages are available, the allocation of large pages will fall back to conventional memory allocation and a warning will appear in the logs allocations of the default `Hugepagesize` currently occur (see `/proc/meminfo`).
- **Commandline:** `--large-pages` , `--skip-large-pages`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

last_insert_id

- **Description:** Contains the same value as that returned by LAST_INSERT_ID(). Note that setting this variable doen't update the value returned by the underlying functi
- **Scope:** Session
- **Dynamic:** Yes
- **Data Type:** `numeric`

---

lc_messages

- **Description:** Locale to use for error messages. This will be converted to a language name and along with lc_messages_dir will produce the location for the error mess See locales for a list of available locales and their related languages.
- **Commandline:** `--lc-messages=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `en_us`
- **Introduced:** MariaDB 5.5

---

lc_messages_dir

- **Description:** Directory where the error messages are located. Together with lc_messages will produce the location for the error message file.
- **Commandline:** `--lc-messages-dir=path`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `directory name`
- **Introduced:** MariaDB 5.5

---

lc_time_names

- **Description:** The locale that determines the language used for the date and time functions DAYNAME(), MONTHNAME() and DATE_FORMAT(). Locale names are lar and region subtags, for example 'en_ZA' (English - South Africa) or 'es_US: Spanish - United States'. The default is always 'en-US' regardless of the system's locale se server locale for a full list of supported locales.
- **Commandline:** `--lc-time-names=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `en_US`

---

license

- **Description:** Server license, for example `GPL` .
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `string`

---

local_infile

- **Description:** If set to `1` , LOCAL is supported for LOAD DATA INFILE statements. If set to `0` , usually for security reasons, attempts to perform a LOAD DATA LOCAL with an error message.

- **Commandline:** `--local-infile=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `ON`

---

lock_wait_timeout

- **Description:** Timeout in seconds for attempts to acquire metadata locks. Statements using metadata locks include FLUSH TABLES WITH READ LOCK, LOCK TABLE HANDLER and DML and DDL operations on tables, stored procedures and functions, and views. The timeout is separate for each attempt, of which there may be multi single statement. `0` (from MariaDB 10.3.0) means no wait. See WAIT and NOWAIT.
- **Commandline:** `--lock-wait-timeout=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:**
  - `86400` (1 day) >= MariaDB 10.2.4
  - `31536000` (1 year) <= MariaDB 10.2.3
- **Range:**
  - `0` to `31536000` (>= MariaDB 10.3)
  - `1` to `31536000` (<= MariaDB 10.2)
- **Introduced:** MariaDB 5.5

---

locked_in_memory

- **Description:** Indicates whether --memlock was used to lock mysqld in memory.
- **Commandline:** `--memlock`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

log

- **Description:** Deprecated and removed in MariaDB 10.0, use general_log instead.
- **Commandline:** `-l [filename]` or `--log[=filename]`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `OFF`
- **Deprecated:** `MySQL 5.1.29` and replaced by general_log
- **Removed:** `MariaDB 10.0`

---

log_disabled_statements

- **Description:** If set, the specified type of statements (slave or stored procedure statements) will not be logged to the general log.
- **Commandline:** `--log-disabled_statements=value`
- **Scope:** Global, Session
- **Dynamic:** No
- **Data Type:** `set`
- **Default Value:** (empty string)
- **Valid Vales:** `slave` and/or `sp`
- **Introduced:** MariaDB 10.3.1

---

log_error

- **Description:** Specifies the name of the error log. If --console is specified later in the configuration (Windows only) or this option isn't specified, errors will be logged to s no name is provided, errors will still be logged to `hostname.err`.
- **Commandline:** `--log-error[=name]`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `file name`
- **Default Value:** (empty string)

---

log_output

- **Description:** How the output for the general query log and the slow query log is stored. By default written to file (`FILE`), it can also be stored in the general_log and sl tables in the mysql database (`TABLE`), or not stored at all (`NONE`). More than one option can be chosen at the same time, with `NONE` taking precedence if present. Lo be written if logging is not enabled. See Writing logs into tables, and the slow_query_log and general_log server system variables.

- **Commandline:** `--log-output=name`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `set`
- **Default Value:** `FILE`
- **Valid Values:** `TABLE`, `FILE` or `NONE`

---

log_queries_not_using_indexes

- **Description:** Queries that don't use an index, or that perform a full index scan where the index doesn't limit the number of rows, will be logged to the slow query log (re of time taken). The slow query log needs to be enabled for this to have an effect.
- **Commandline:** `--log-queries-not-using-indexes`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

log_slow_admin_statements

- **Description:** Log slow OPTIMIZE, ANALYZE, ALTER and other administrative statements to the slow log if it is open. Before MariaDB 10.1.13, this was only available mysqld option, not a server variable. See also log_slow_disabled_statements and log_slow_filter.
- **Commandline:** `--log-slow-admin-statements`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:**
  - `ON` (>= MariaDB 10.2.4)
  - `OFF` (<= MariaDB 10.2.3)
- **Introduced:** MariaDB 10.1.13 (variable)

---

log_slow_disabled_statements

- **Description:** If set, the specified type of statements will not be logged to the slow query log. See also log_slow_admin_statements and log_slow_filter.
- **Commandline:** `--log-slow-disabled_statements=value`
- **Scope:** Global, Session
- **Dynamic:** No
- **Data Type:** `set`
- **Default Value:** `sp`
- **Valid Vales:** `admin`, `call`, `slave` and/or `sp`
- **Introduced:** MariaDB 10.3.1

---

log_slow_filter

- **Description:** Comma-delimited string containing one or more settings for filtering what is logged to the slow query log. If a query matches one of the types listed in the takes longer than long_query_time, it will be logged. Sets log-slow-admin-statements to ON. See also log_slow_disabled_statements.
  - `admin` log administrative queries (create, optimize, drop etc...)
  - `filesort` logs queries that use a filesort.
  - `filesort_on_disk` logs queries that perform a a filesort on disk.
  - `filesort_priority_queue` (from MariaDB 10.3.2)
  - `full_join` logs queries that perform a join without indexes.
  - `full_scan` logs queries that perform full table scans.
  - `query_cache` log queries that are resolved by the query cache .
  - `query_cache_miss` logs queries that are not found in the query cache.
  - `tmp_table` logs queries that create an implicit temporary table.
  - `tmp_table_on_disk` logs queries that create a temporary table on disk.
- **Commandline:** `log-slow-filter=value1[,value2...]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `enumeration`
- **Default Value:**
  - `admin`, `filesort`, `filesort_on_disk`, `full_join`, `full_scan`, `query_cache`, `query_cache_miss`, `tmp_table`, `tmp_table_on_disk` (<= MariaDB
  - `admin`, `filesort`, `filesort_on_disk`, `filsort_priority_queue`, `full_join`, `full_scan`, `query_cache`, `query_cache_miss`, `tmp_table`, `tmp_table_on_disk` (>= MariaDB 10.3.1)
- **Valid Values:** `admin`, `filesort`, `filesort_on_disk`, `filsort_priority_queue`, `full_join`, `full_scan`, `query_cache`, `query_cache_miss`, `tmp_table` `tmp_table_on_disk`

---

log_slow_queries

- **Description:** Deprecated and removed in MariaDB 10.0, use slow_query_log instead.
- **Commandline:** `--log-slow-queries[=name]`

- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`
- **Deprecated:** MySQL 5.1.29
- **Removed:** MariaDB 10.0/MySQL 5.6.1

---

log_slow_rate_limit

- **Description:** The slow query log will log every this many queries. The default is `1`, or every query, while setting it to `20` would log every 20 queries, or five percent. A reduce I/O usage and excessively large slow query logs. See also Slow Query Log Extended Statistics.
- **Commandline:** `log-slow-rate-limit=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `1`
- **Range:** `1` upwards
- **Introduced:** MariaDB 5.1

---

log_slow_verbosity

- **Description:** Controls information to be added to the slow query log. Options are added in a comma-delimited string. See also Slow Query Log Extended Statistics.
  - `query_plan` logs query execution plan information
  - `innodb` logs XtraDB/InnoDB statistics
  - `explain` prints EXPLAIN output in the slow query log. See EXPLAIN in the Slow Query Log. (added in MariaDB 10.0.5)
- **Commandline:** `log-slow-verbosity=value1[,value2...]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `enumeration`
- **Default Value:** `query_plan`
- **Valid Values:** `query_plan`, `innodb`, `explain` (from MariaDB 10.0.5)
- **Introduced:** MariaDB 5.1

---

log_tc_size

- **Description:** Size in bytes of the transaction coordinator log, defined in multiples of 4096. Always available as a commandline option, but added as a variable in MariaI
- **Commandline:** `log-tc-size=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `24576`
- **Range:** `12288` to `18446744073709551615`
- **Introduced:** MariaDB 10.1.3 (variable)

---

log_warnings

- **Description:** If set to `1`, the default, all critical warnings are logged to the error log. Slave servers also log status information, including the binary log and relay log co- where they start replicating from, reconnects after a disconnect and when the slave switches to a new relay-log. If set to `0`, warnings are not logged. If set to a number than `1`, aborted connections and access-denied errors are also logged. Specifically, the following are logged:
  - log_warnings >= 1
    - Events_scheduler info and warnings
    - Access denied errors
    - Connections that were forced to be closed or aborted
    - System signals
    - Wrong usage of `--user`
    - Failed setrlimit() and mlockall()
    - Changed limits
    - Wrong values of lower_case_table_names and stack_size
    - Wrong values for command line options
    - Start log position and some master information when starting slaves
    - Slave reconnects
    - Killed slaves
    - Error reading relay logs
    - Before MariaDB 10.0.14: Statements that were unsafe to log as statement-based (when BINLOG_FLAG_UNSAFE_STMT_PRINTED is also set)
    - Disabled plugins that one tried to enable or use
    - UDF files that didn't include the required init functions.
  - log_warnings >= 2
    - Table handler errors
    - Starting from MariaDB 10.0.14: Statements that were unsafe to log as statement-based (when BINLOG_FLAG_UNSAFE_STMT_PRINTED is also set)
  - log_warnings >= 3
    - All errors and warnings during MyISAM repair and auto recover.
  - log_warnings >=4

    - Too many connections errors.
- **Commandline:** `-W [level]` or `--log-warnings[=level]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:**
    - `2` (>= MariaDB 10.2.4)
    - `1` (<= MariaDB 10.2.3)
- **Range:** `0` to `4294967295`

---

long_query_time

- **Description:** If a query takes longer than this many seconds to execute (microseconds can be specified too), the Slow_queries status variable is incremented and, if er the query is logged to the slow query log.
- **Commandline:** `--long-query-time=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `10.000000` >= MariaDB 10.1.13, `10` <= MariaDB 10.1.12
- **Range:** `0` upwards

---

low_priority_updates

- **Description:** If set to 1 (0 is the default), for storage engines that use only table-level locking (Aria, MyISAM, MEMORY and MERGE), all INSERTs, UPDATEs, DELETI LOCK TABLE WRITEs will wait until there are no more SELECTs or LOCK TABLE READs pending on the relevant tables. Set this to 1 if reads are prioritized over write Previously named sql_low_priority_updates, which is still a synonym.
- **Commandline:** `--low-priority-updates`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `0`

---

lower_case_file_system

- **Description:** Read-only variable describing whether the file system is case-sensitive. If set to `OFF`, file names are case-sensitive. If set to `ON`, they are not case-sens
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `##`

---

lower_case_table_names

- **Description:** If set to `0` (the default on Unix-based systems), table names and aliases and database names are compared in a case-sensitive manner. If set to `1` (the on Windows), names are stored in lowercase and not compared in a case-sensitive manner. If set to `2` (the default on Mac OS X), names are stored as declared, but c in lowercase.
- **Commandline:** `--lower-case-table-names[=#]`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `0` (Unix), `1` (Windows), `2` (Mac OS X)
- **Range:** `0` to `2`

---

max_allowed_packet

- **Description:** Maximum size in bytes of a packet or a generated/intermediate string. The packet message buffer is initialized with the value from net_buffer_length, but up to max_allowed_packet bytes. Set as large as the largest BLOB, in multiples of 1024. If this value is changed, it should be changed on the client side as well. See slave_max_allowed_packet for a specific limit for replication purposes.
- **Commandline:** `--max-allowed-packet=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:**
    - `16777216` (16M) >= MariaDB 10.2.4
    - `4194304` (4M) >= MariaDB 10.1.7
    - `1048576` (1MB) <= MariaDB 10.1.6
    - `1073741824` (1GB) (client-side)
- **Range:** `1024` to `1073741824`

---

max_connect_errors

- **Description:** Limit to the number of successive failed connects from a host before the host is blocked from making further connections. The count for a host is reset to they successfully connect. To unblock, flush the host cache with a FLUSH HOSTS statement or mysqladmin flush-hosts.
- **Commandline:** `--max-connect-errors=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `100` (from MariaDB 10.0), `10` (before MariaDB 10.0)

---

max_connections

- **Description:** The maximum number of simultaneous client connections. See also Handling Too Many Connections. Note that this value affects the number of file descr required on the operating system.
- **Commandline:** `--max-connections=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `151`
- **Range:** `1` to `100000`

---

max_delayed_threads

- **Description:** Limits to the number of INSERT DELAYED threads. Once this limit is reached, the insert is handled as if there was no DELAYED attribute. If set to `0`, DE is ignored entirely. The session value can only be set to `0` or to the same as the global value.
- **Commandline:** `--max-delayed-threads=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `20`
- **Range:** `0` to `16384`

---

max_digest_length

- **Description:** Maximum length considered for computing a statement digest, such as used by the Performance Schema and query rewrite plugins. Statements that diffe this many bytes produce the same digest, and are aggregated for statistics purposes. The variable is allocated per session. Increasing will allow longer statements to b distinguished from each other, but increase memory use, while decreasing will reduce memory use, but more statements may become indistinguishable.
- **Commandline:** `--max-digest-length=#`
- **Scope:** Global,
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `1024`
- **Range:** `0` to `1048576`
- **Introduced:** MariaDB 10.1.5

---

max_error_count

- **Description:** Specifies the maximum number of messages stored for display by SHOW ERRORS and SHOW WARNINGS statements.
- **Commandline:** `--max-error-count=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `64`
- **Range:** `0` to `65535`

---

max_heap_table_size

- **Description:** Maximum size in bytes for user-created MEMORY tables. Setting the variable while the server is active has no effect on existing tables unless they are re or altered. The smaller of max_heap_table_size and tmp_table_size also limits internal in-memory tables. When the maximum size is reached, any further attempts to i data will receive a "table ... is full" error. Temporary tables created with CREATE TEMPORARY will not be converted to Aria, as occurs with internal temporary tables, b also receive a table full error.
- **Commandline:** `--max-heap-table-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `16777216`
- **Range :** `16384` to `4294966272`

---

max_insert_delayed_threads

- **Description:** Synonym for max_delayed_threads.

max_join_size

- **Description:** Statements will not be performed if they are likely to need to examine more than this number of rows, row combinations or do more disk seeks. Can preve poorly-formatted queries from taking server resources. Changing this value to anything other the default will reset sql_big_selects to 0. If sql_big_selects is set again, max_join_size will be ignored. This limit is also ignored if the query result is sitting in the query cache. Previously named sql_max_join_size, which is still a synonym.
- **Commandline:** `--max-join-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `18446744073709551615` (>= MariaDB/MySQL 5.5.0), `4294967295` (< MariaDB/MySQL 5.5.0)
- **Range:** `1` to `18446744073709551615` (>= MariaDB/MySQL 5.5.0), `1` to `4294967295` (< MariaDB/MySQL 5.5.0)

max_length_for_sort_data

- **Description:** Used to decide which algorithm to choose when sorting rows. If the total size of the column data, not including columns that are part of the sort, is less tha `max_length_for_sort_data`, then we add these to the sort key. This can speed up the sort as we don't have to re-read the same row again later. Setting the value t can slow things down as there will be a higher disk activity for doing the sort.
- **Commandline:** `--max-length-for-sort-data=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `1024`
- **Range:** `4` to `8388608`

max_long_data_size

- **Description:** Maximum size for parameter values sent with mysql_stmt_send_long_data(). If not set, will default to the value of max_allowed_packet. Deprecated; use max_allowed_packet instead.
- **Commandline:** `--max-long-data-size=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:**
  - `16777216` (16M) >= MariaDB 10.2.4
  - `4194304` (4M) <= MariaDB 10.2.3, >= MariaDB 10.1.7
  - `1048576` (1M) <= MariaDB 10.1.6
- **Range:** `1024` to `4294967295`
- **Introduced:** MariaDB 5.5
- **Deprecated:** MariaDB 5.5

max_prepared_stmt_count

- **Description:** Maximum number of prepared statements on the server. Can help prevent certain forms of denial-of-service attacks. If set to `0`, no prepared statements permitted on the server.
- **Commandline:** `--max-prepared-stmt-count=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `16382`
- **Range:** `0` to `1048576`

max_recursive_iterations

- **Description:** Maximum number of iterations when executing recursive queries.
- **Commandline:** `--max-recursive-iterations=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `4294967295`
- **Range:** `0` to `4294967295`
- **Introduced:** MariaDB 10.2.2

max_seeks_for_key

- **Description:** The optimizer assumes that the number specified here is the most key seeks required when searching with an index, regardless of the actual index cardir this value is set lower than its default and maximum, indexes will tend to be preferred over table scans.
- **Commandline:** `--max-seeks-for-key=#`
- **Scope:** Global, Session
- **Dynamic:** Yes

- **Data Type:** `numeric`
- **Default Value:** `4294967295`
- **Range:** `1` to `4294967295`

---

max_session_mem_used

- **Description:** Amount of memory a single user session is allowed to allocate. This limits the value of the session variable MEM_USED.
- **Commandline:** `--max-session-mem-used=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `9223372036854775807` (8.6GB)
- **Range:** `8192` to `18446744073709551615`
- **Introduced:** MariaDB 10.1.21

---

max_sort_length

- **Description:** Maximum size in bytes used for sorting data values - anything exceeding this is ignored.
- **Commandline:** `--max-sort-length=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `1024`
- **Range:** `4` to `8388608`

---

max_sp_recursion_depth

- **Description:** Permitted number of recursive calls for a stored procedure. `0` , the default, no recursion is permitted. Increasing this value increases the thread stack requirements, so you may need to increase thread_stack as well. This limit doesn't apply to stored functions.
- **Commandline:** `--max-sp-recursion-depth[=#]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `255`

---

max_statement_time

- **Description:** Maximum time in seconds that a query can execute before being aborted. This includes all queries, not just SELECT statements, but excludes statements stored procedures. If set to 0, no limit is applied. See Aborting statements that take longer than a certain time to execute. Useful when combined with SET STATEMENT limiting the execution times of individual queries.
- **Commandline:** `--max-statement-time[=#]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0.000000` >= MariaDB 10.1.13, `0` <= MariaDB 10.1.12
- **Range:** `0` upwards
- **Introduced:** MariaDB 10.1.1

---

max_tmp_tables

- **Description:** Unused.

---

max_user_connections

- **Description:** Maximum simultaneous connections permitted for each user account. When set to `0` , there is no per user limit. From MariaDB 5.3, setting it to `-1` stops without the `SUPER` privilege from connecting to the server. The session variable is always read-only and only privileged users can modify user limits. The session varia defaults to the global `max_user_connections` variable, unless the user's specific `MAX_USER_CONNECTIONS` resource option is non-zero. When both global variable a user resource option are set, the user's `MAX_USER_CONNECTIONS` is used. Note: This variable does not affect users with the `SUPER` privilege.
- **Commandline:** `--max-user-connections=#`
- **Scope:** Global, Session
- **Dynamic:** Yes, (except when globally set to `0` or `-1`)
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `-1` to `4294967295`

---

max_write_lock_count

- **Description:** Read lock requests will be permitted for processing after this many write locks. Applies only to storage engines that use table level locks (thr_lock), so no with InnoDB/XtraDB or Archive.
- **Commandline:** `--max-write-lock-count=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `4294967295`
- **Range:** `0-4294967295`

---

metadata_locks_cache_size

- **Description:** Size of the metadata locks cache, used for reducing the need to create and destroy synchronization objects. It is particularly helpful on systems where thi is inefficient, such as Windows XP.
- **Commandline:** `--metadata-locks-cache-size=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `1024`
- **Range:** `1` to `1048576`
- **Introduced:** MariaDB 5.5

---

metadata_locks_hash_instances

- **Description:** Number of hashes used by the set of metadata locks. The metadata locks are partitioned into separate hashes in order to reduce contention.
- **Commandline:** `--metadata-locks-hash-instances=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `8`
- **Range:** `1` to `1024`
- **Introduced:** MariaDB 10.0

---

min_examined_row_limit

- **Description:** If a query examines more than this number of rows, it is logged to the slow-query-log. If set to `0`, the default, no row limit is used.
- **Commandline:** `--min-examined-row-limit=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0-4294967295`

---

mrr_buffer_size

- **Description:** Size of buffer to use when using multi-range read with range access. See Multi Range Read optimization for more information.
- **Commandline:** `--mrr-buffer-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `262144`
- **Range** `8192` to `2147483648`
- **Introduced:** MariaDB 5.3

---

multi_range_count

- **Description:** Deprecated in 5.1 and ignored from MariaDB 5.3. Use mrr_buffer_size instead.
- **Default Value:** `256`
- **Deprecated:** MariaDB 5.1

---

mysql56_temporal_format

- **Description:** If set (the default), MariaDB uses the MySQL 5.6 low level formats for TIME, DATETIME and TIMESTAMP instead of the MariaDB 5.3 version. The versio introduced in 5.6 requires more storage, but potentially allows negative dates and has some advantages in replication. There should be no reason to revert to the old M 5.3 microsecond format. See also MDEV-10723.
- **Commandline:** `--mysql56-temporal-format`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `ON`

- **Introduced:** MariaDB 10.1.2

---

named_pipe

- **Description:** On Windows systems, determines whether connections over named pipes are permitted.
- **Commandline:** `--enable-named-pipe`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

net_buffer_length

- **Description:** The starting size, in bytes, for the connection and thread buffers for each client thread. The size can grow to max_allowed_packet. This variable's session
read-only. Can be set to the expected length of client statements if memory is a limitation.
- **Commandline:** `--net-buffer-length=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `16384`
- **Range:** `1024` to `1048576`

---

net_read_timeout

- **Description:** Time in seconds the server will wait for a client connection to send more data before aborting the read. See also net_write_timeout and slave_net_timeou
- **Commandline:** `--net-read-timeout=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `30`
- **Range:** `1` upwards

---

net_retry_count

- **Description:** Permit this many retries before aborting when attempting to read or write on a communication port. On FreeBSD systems should be set higher as threads
internal interrupts..
- **Commandline:** `--net-retry-count=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `10`
- **Range:** `1` to `4294967295`

---

net_write_timeout

- **Description:** Time in seconds to wait on writing a block to a connection before aborting the write. See also net_read_timeout and slave_net_timeout.
- **Commandline:** `--net-write-timeout=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `60`
- **Range:** `1` upwards

---

old

- **Description:** Disabled by default, enabling it reverts index hints to those used before MySQL 5.1.17. Enabling may lead to replication errors. Being replaced by old_mo
Before MariaDB 5.5, the variable was read-only and global in scope only.
- **Commandline:** `--old`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

old_alter_table

- **Description:** If set to `1` (`0` is default), MariaDB reverts to the non-optimized, pre-MySQL 5.0, method of processing ALTER TABLE statements. A temporary table is c
the data is copied over, and then the temporary table is renamed to the original.
- **Commandline:** `--old-alter-table`

- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

old_mode

- **Description:** Used for getting MariaDB to emulate behavior from an old version of MySQL or MariaDB. See OLD Mode. Will be used to replace the old variable over tir
- **Commandline:** `--old-mode`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `(empty string)`
- **Introduced:** MariaDB 5.5.35
- **Valid Values:** See OLD Mode for the full list.

---

old_passwords

- **Description:** If set to `1` (`0` is default), MariaDB reverts to the pre-MySQL 4.1 form of password hashing.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

open_files_limit

- **Description:** The number of file descriptors available to mysqld. Increase if you are getting the `Too many open files` error. If set to 0, then mysqld will reserve max_connections*5 or max_connections + table_open_cache*2 (whichever is larger) number of files. Note that MariaDB cannot set this to exceed the hard limit impose operating system, and you may need to change this. For example, by adding the following lines to `/etc/security/limits.conf`

```
mysql soft nofile 65535
mysql hard nofile 65535
```

rebooting, and then create `/etc/systemd/system/mysqld.service.d/filelimit.conf` or `/etc/systemd/system/mariadb.service.d/filelimit.conf` (corresponding to the service name).

```
[service]
LimitNOFILE=infinity
```

- **Commandline:** `--open-files-limit=count`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** Autosized (see description)
- **Range:** `0` to `4294967295`

---

optimizer_prune_level

- **Description:** If set to `1` , the default, the optimizer will use heuristics to prune less-promising partial plans from the optimizer search space. If set to `0` , heuristics are d and an exhaustive search is performed.
- **Commandline:** `--optimizer-prune-level[=#]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `1`

---

optimizer_search_depth

- **Description:** Maximum search depth by the query optimizer. Smaller values lead to less time spent on execution plans, but potentially less optimal results. If set to `0` , will automatically choose a reasonable value. Since the better results from more optimal planning usually offset the longer time spent on planning, this is set as high as by default. `63` is a valid value, but its effects (switching to the original find_best search) are deprecated.
- **Commandline:** `--optimizer-search-depth[=#]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `62`
- **Range:** `0` to `63`

---

optimizer_selectivity_sampling_limit

- **Description:** Controls number of record samples to check condition selectivity
- **Commandline:** `optimizer-selectivity-sampling-limit[=#]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `100`
- **Range:** `10` upwards
- **Introduced:** MariaDB 10.0

---

optimizer_switch

- **Description:** A series of flags for controlling the query optimizer. See Optimizer Switch for defaults, and a comparison to MySQL.
- **Commandline:** `--optimizer-switch=value`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Valid Values:**
  - `condition_pushdown_for_derived={on|off}` (>=MariaDB 10.2.2)
  - `default` - set all optimizations to their default values.
  - `derived_merge={on|off}` (>=MariaDB 5.3) - see Derived table merge optimization
  - `derived_with_keys={on|off}` (>=MariaDB 5.3) - see Derived table with key optimization
  - `engine_condition_pushdown={on|off}` (>=MariaDB 5.5). Deprecated in MariaDB 10.1.1 as engine condition pushdown is now automatically enabled for all that support it.
  - `exists_to_in={on|off}` (>=MariaDB 10.0) - see EXISTS-to-IN optimization
  - `extended_keys={on|off}` (>= MariaDB 5.5) - see Extended Keys
  - `firstmatch={on|off}` (>=MariaDB 5.3) - see First Match Strategy
  - `index_condition_pushdown={on|off}` (>=MariaDB 5.3) - see Index Condition Pushdown
  - `index_merge={on|off}`
  - `index_merge_intersection={on|off}`
  - `index_merge_sort_intersection={on|off}` (>=MariaDB 5.3) - more details
  - `index_merge_sort_union={on|off}`
  - `index_merge_union={on|off}`
  - `in_to_exists={on|off}` (>=MariaDB 5.3) - see IN-TO-EXISTS transformation
  - `join_cache_bka={on|off}` (>=MariaDB 5.3) - see Block-Based Join Algorithms
  - `join_cache_hashed={on|off}` (>=MariaDB 5.3) - see Block-Based Join Algorithms
  - `join_cache_incremental={on|off}` (>=MariaDB 5.3) - see Block-Based Join Algorithms
  - `loosescan={on|off}` (>=MariaDB 5.3) - see LooseScan strategy
  - `materialization={on|off}` (>=MariaDB 5.3) - Semi-join and non semi-join materialization.
  - `mrr={on|off}` (>=MariaDB 5.3) - see Multi Range Read optimization
  - `mrr_cost_based={on|off}` (>=MariaDB 5.3) - see Multi Range Read optimization
  - `mrr_sort_keys={on|off}` (>=MariaDB 5.3) - see Multi Range Read optimization
  - `optimize_join_buffer_size={on|off}` (>=MariaDB 5.3) - see Block-Based Join Algorithms
  - `orderby_uses_equalities={on|off}` (>= MariaDB 10.1.15, MariaDB 10.2.1) - if not set, the optimizer ignores equality propagation. See MDEV-8989.
  - `outer_join_with_cache={on|off}` (>=MariaDB 5.3) - see Block-Based Join Algorithms
  - `partial_match_rowid_merge={on|off}` (>= MariaDB 5.3) - see Non-semi-join subquery optimizations
  - `partial_match_table_scan={on|off}` (>= MariaDB 5.3) - see Non-semi-join subquery optimizations
  - `semijoin={on|off}` (>=MariaDB 5.3) - see Semi-join subquery optimizations
  - `semijoin_with_cache={on|off}` (>=MariaDB 5.3) - see Block-Based Join Algorithms
  - `subquery_cache={on|off}` (>=MariaDB 5.5) - see subquery cache.
  - `table_elimination={on|off}` (>=MariaDB 5.3) - see Table Elimination User Interface

---

optimizer_use_condition_selectivity

- **Description:** Controls which statistics can be used by the optimizer when looking for the best query execution plan.
  - `1` Use selectivity of predicates as in MariaDB 5.5.
  - `2` Use selectivity of all range predicates supported by indexes.
  - `3` Use selectivity of all range predicates estimated without histogram.
  - `4` Use selectivity of all range predicates estimated with histogram.
  - `5` Additionally use selectivity of certain non-range predicates calculated on record sample.
- **Commandline:** `--optimizer-use-condition-selectivity=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `1`
- **Range:** `1` to `5`
- **Introduced:** MariaDB 10.0

---

pam_use_cleartext_plugin

- **Description:** Use mysql_cleartext_plugin on the client side instead of the dialog plugin. This may be needed for compatibility reasons, but it only supports simple PAM that don't require anything besides a password. See PAM Authentication Plugin.
- **Commandline:** `<<code>>` --pam-use-cleartext-plugin</code>>

- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `OFF`
- **Introduced:** MariaDB 10.1.3 (default)

---

pid_file

- **Description:** Full path of the process ID file.
- **Commandline:** `--pid-file=file_name`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `file name`

---

plugin_dir

- **Description:** Path to the plugin directory. For security reasons, either make sure this directory can only be read by the server, or set secure_file_priv.
- **Commandline:** `--plugin-dir=path`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `directory name`
- **Default Value:** `BASEDIR/lib/plugin`
- **Introduced:** MariaDB 5.5

---

plugin_maturity

- **Description:** The lowest acceptable plugin maturity. MariaDB will not load plugins less mature than that.
- **Commandline:** `--plugin-maturity=level`
- **Scope:** Global
- **Dynamic:** No
- **Type:** enum
- **Default Value:** One less than the server maturity (>= MariaDB 10.3.3), `unknown` (<= MariaDB 10.3.2)
- **Valid Values:** `unknown` , `experimental` , `alpha` , `beta` , `gamma` , `stable`
- **Introduced:** MariaDB 5.2.1

---

port

- **Description:** Port to listen for TCP/IP connections. If set to `0` , will default to, in order of preference, my.cnf, the MYSQL_TCP_PORT environment variable, /etc/service default (3306).
- **Commandline:** `--port=#` , `-P`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `3306`
- **Range:** `0` to `65535`

---

preload_buffer_size

- **Description:** Size in bytes of the buffer allocated when indexes are preloaded.
- **Commandline:** `--preload-buffer-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `32768`
- **Range:** `1024` to `1073741824`

---

profiling

- **Description:** If set to `1` (`0` is default), statement profiling will be enabled. See SHOW PROFILES() and SHOW PROFILE().
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

profiling_history_size

- **Description:** Number of statements about which profiling information is maintained. If set to `0` , no profiles are stored. See SHOW PROFILES.
- **Commandline:** `--profiling-history-size=#`

- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `15`
- **Range:** `0` to `100`

---

progress_report_time

- **Description:** Time in seconds between sending progress reports to the client for time-consuming statements. If set to `0`, progress reporting will be disabled.
- **Commandline:** `--progress-report-time=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `56` before MariaDB 5.5.39 and MariaDB 10.0.10, `5` as of MariaDB 5.5.40 and MariaDB 10.0.11
- **Range:** `0` to `4294967295`
- **Introduced:** MariaDB 5.3

---

protocol_version

- **Description:** The version of the client/server protocol used by the MariaDB server.
- **Commandline:** None
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `10`
- **Range:** `0` to `4294967295`

---

proxy_protocol_networks

- **Description:** Enable proxy protocol for these source networks. The syntax is a comma separated list of IPv4 and IPv6 networks. If the network doesn't contain a mask, considered to be a single host. "*" represents all networks and must be the only directive on the line. String "localhost" represents non-TCP local connections (Unix dom socket, Windows named pipe or shared memory). See Proxy Protocol Support.
- **Commandline:** `--proxy-protocol-networks=value`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `string`
- **Default Value:** (empty)
- **Introduced:** MariaDB 10.3.1

---

proxy_user

- **Description:** Set to the proxy user account name if the current client is a proxy, else `NULL`.
- **Scope:** Session
- **Dynamic:** No
- **Data Type:** `string`
- **Introduced:** MariaDB 5.5.20

---

pseudo_slave_mode

- **Description:** For internal use by the server.
- **Scope:** Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `OFF`
- **Introduced:** MariaDB/MySQL 5.5.30

---

pseudo_thread_id

- **Description:** For internal use only.
- **Scope:** Session
- **Dynamic:** Yes
- **Data Type:** `numeric`

---

query_alloc_block_size

- **Description:** Size in bytes of the extra blocks allocated during query parsing and execution (after query_prealloc_size is used up).
- **Commandline:** `--query-alloc-block-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes

- **Data Type:** `numeric`
- **Default Value:** `16384` (from MariaDB 10.1.2), `8192` (before MariaDB 10.1.2)
- **Range:** `1024` to `4294967295`

---

query_cache_limit

- **Description:** Size in bytes for which results larger than this are not stored in the query cache.
- **Commandline:** `--query-cache-limit=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `1048576` (1MB)
- **Range:** `0` to `4294967295`

---

query_cache_min_res_unit

- **Description:** Minimum size in bytes of the blocks allocated for query cache results.
- **Commandline:** `--query-cache-min-res-unit=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `4096` (4KB)
- **Range:** `0` to `4294967295`

---

query_cache_size

- **Description:** Size in bytes available to the query cache. About 40KB is needed for query cache structures, so setting a size lower than this will result in a warning. `0` , t default before MariaDB 10.1.7, effectively disables the query cache. Starting from MariaDB 10.1.7, query_cache_type is automatically set to ON if the server is started v query_cache_size set to a non-zero (and non-default) value.
- **Commandline:** `--query-cache-size=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `1M` (>= MariaDB 10.1.7), `0` (<= MariaDB 10.1.6) (although frequently given a default value in some setups)
- **Valid Values:** `0` upwards in units of 1024.

---

query_cache_strip_comments

- **Description:** If set to `1` (`0` is default), the server will strip any comments from the query before searching to see if it exists in the query cache. Multiple space, line fee and other white space characters will also be removed.
- **Commandline:** `query-cache-strip-comments`
- **Scope:** Session (from MariaDB 5.5.20), Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

query_cache_type

- **Description:** If set to `0` , the query cache is disabled (although a buffer of query_cache_size bytes is still allocated). If set to `1` all SELECT queries will be cached unle SQL_NO_CACHE is specified. If set to `2` (or `DEMAND`), only queries with the SQL CACHE clause will be cached. Note that if the server is started with the query cache disabled, it cannot be enabled at runtime. Starting from MariaDB 10.1.7, query_cache_type is automatically set to ON if the server is started with the query_cache_size non-zero (and non-default) value.
- **Commandline:** `--query-cache-type=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `enumeration`
- **Default Value:** `OFF` (>= MariaDB 10.1.7), `ON` (<= MariaDB 10.1.6)
- **Valid Values:** `0` or `OFF` , `1` or `ON` , `2` or `DEMAND`

---

query_cache_wlock_invalidate

- **Description:** If set to `0` , the default, results present in the query cache will be returned even if there's a write lock on the table. If set to `1` , the client will first have to w lock to be released.
- **Commandline:** `--query-cache-wlock-invalidate`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

query_prealloc_size

- **Description:** Size in bytes of the persistent buffer for query parsing and execution, allocated on connect and freed on disconnect. Increasing may be useful if complex are being run, as this will reduce the need for more memory allocations during query operation. See also query_alloc_block_size.
- **Commandline:** `--query-prealloc-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `24576` (from MariaDB 10.1.2) `8192` (before MariaDB 10.1.2)
- **Range:** `1024` to `4294967295` (from MariaDB 10.1.2), `8192` to `4294967295` (before MariaDB 10.1.2)

---

rand_seed1

- **Description:** rand_seed1 and rand_seed2 facilitate replication of the RAND() function. The master passes the value of these to the slaves so that the random number is seeded in the same way, and generates the same value, on the slave as on the master. The variable value cannot be viewed.

---

rand_seed2

- **Description:** See rand_seed1.

---

range_alloc_block_size

- **Description:** Size in bytes of blocks allocated during range optimization. The unit size in 1024.
- **Commandline:** `--range-alloc-block-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `4096`
- **Range - 32 bit:** `4096` to `4294967295`

---

read_buffer_size

- **Description:** Each thread performing a sequential scan (for MyISAM, Aria and MERGE tables) allocates a buffer of this size in bytes for each table scanned. Increase i perform many sequential scans. If not in a multiple of 4KB, will be rounded down to the nearest multiple. Also used in ORDER BY's for caching indexes in a temporary t temporary table), for caching results of nested queries, for bulk inserts into partitions, and to determine the memory block size of MEMORY tables.
- **Commandline:** `--read-buffer-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `131072`
- **Range:** `8200 to 2147479552`

---

read_only

- **Description:** When set to `1` (`0` is default), no updates are permitted except from users with the SUPER privilege or slave servers updating from a master. The `read_` variable is useful for slave servers to ensure no updates are accidentally made outside of what are performed on the master. Inserting rows to log tables, updates to ter tables and OPTIMIZE or ANALYZE TABLE statements are excluded from this limitation. From MariaDB 5.5, if read_only is set to `1` , SET PASSWORD is limited only to with the SUPER privilege. Attempting to set this variable to `1` will fail if the current session has table locks or transactions pending, while if other sessions hold table lo statement will wait until these locks are released before completing. While the attempt to set read_only is waiting, other requests for table locks or transactions will also read_only has been set.
- **Commandline:** `--read-only`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`

---

read_rnd_buffer_size

- **Description:** Size in bytes of the buffer used when reading rows from a MyISAM table in sorted order after a key sort. Larger values improve ORDER BY performance, rather increase the size by SESSION where the need arises to avoid excessive memory use.
- **Commandline:** `--read-rnd-buffer-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `262144`
- **Range:** `8200` to `2147483647`

-

-

rowid_merge_buff_size

- **Description:** The maximum size in bytes of the memory available to the Rowid-merge strategy. See Non-semi-join subquery optimizations for more information.
- **Commandline:** `--rowid-merge-buff-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `8388608`
- **Range:** `0` to `2147483647`
- **Introduced:** MariaDB 5.3.0

---

rpl_recovery_rank

- **Description:** Unused.
- **Removed:** MariaDB 10.1.2

---

safe_show_database

- **Description:** This variable was removed in MariaDB 5.5, and has been replaced by the more flexible SHOW DATABASES privilege.
- **Commandline:** `--safe-show-database` (until MySQL 4.1.1)
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Removed:** MariaDB 5.5

---

secure_auth

- **Description:** Connections will be blocked unless clients use the current password format. Prior to MySQL 4.1 passwords used an old, less secure format.. For the mys the `--secure-auth` option blocks connections to servers requiring the old format. The server will also fail to start if the privilege tables are in the old, pre-MySQL 4.1 f
- **Commandline:** `--secure-auth`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `ON` (>= MariaDB 10.1.7), `OFF` (<= MariaDB 10.1.6)

---

secure_file_priv

- **Description:** LOAD DATA, SELECT ... INTO and LOAD FILE() will only work with files in the specified path. If not set, the default, the statements will work with any files be accessed.
- **Commandline:** `--secure-file-priv=path`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `path name`
- **Default Value:** None

---

session_track_schema

- **Description:** Whether to track changes to the default schema within the current session.
- **Commandline:** `--session-track-schema={0|1}`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `ON`
- **Introduced:** MariaDB 10.2.2

---

session_track_state_change

- **Description:** Whether to track changes to the session state.
- **Commandline:** `--session-track-state-change={0|1}`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`
- **Introduced:** MariaDB 10.2.2

---

session_track_system_variables

- **Description:** Comma-separated list of session system variables for which to track changes. In MariaDB 10.2, by default no variables are tracked. For compatibility with defaults, this variable should be set to "autocommit, character_set_client, character_set_connection, character_set_results, time_zone" (the default from MariaDB 10.3 `*` character tracks all session variables.
- **Commandline:** `--session-track-system-variables=value`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `autocommit, character_set_client, character_set_connection, character_set_results, time_zone` (>= MariaDB 10.3.1), empty string MariaDB 10.3.0)
- **Introduced:** MariaDB 10.2.2

`session_track_transaction_info`

- **Description:** Track changes to the transaction attributes. OFF to disable; STATE to track just transaction state (Is there an active transaction? Does it have any data? e CHARACTERISTICS to track transaction state and report all statements needed to start a transaction with the same characteristics (isolation level, read only/read write,snapshot - but not any work done / data modified within the transaction).
- **Commandline:** `--session-track-transaction-info=value`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `enum`
- **Default Value:** `OFF`
- **Valid Values:** `OFF`, `STATE`, `CHARACTERISTICS`
- **Introduced:** MariaDB 10.2.2

`shared_memory`

- **Description:** Windows only, determines whether the server permits shared memory connections. See also shared_memory_base_name.
- **Scope:** Global
- **Dynamic:** No

`shared_memory_base_name`

- **Description:** Windows only, specifies the name of the shared memory to use for shared memory connection. Mainly used when running more than one instance on the physical machine. By default the name is `MYSQL` and is case sensitive. See also shared_memory.
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `string`
- **Default Value:** `MYSQL`

`skip_external_locking`

- **Description:** If set, external locking for MyISAM tables is disabled.
- **Commandline:** `--skip-external-locking`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `1`

`skip_name_resolve`

- **Description:** If set to 1 (0 is the default), only IP addresses are used for connections. Host names are not resolved. All host values in the GRANT tables must be IP ad (or localhost).
- **Commandline:** `--skip-name-resolve`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `0`

`skip_networking`

- **Description:** If set to 1, (0 is the default), the server does not listen for TCP/IP connections. All interaction with the server by be through socket files (Unix) or named pi shared memory (Windows). It's recommended to use this option if only local clients are permitted to connect to the server. Enabling this option also prevents a server fr functioning as a replication client.
- **Commandline:** `--skip-networking`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `0`

---

skip_show_database

- **Description:** If set to 1, (0 is the default), only users with the SHOW DATABASES privilege can use the SHOW DATABASES statement to see all database names.
- **Commandline:** `--skip-show-database`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `boolean`
- **Default Value:** `0`

---

slow_launch_time

- **Description:** Time in seconds. If a thread takes longer than this to launch, the `slow_launch_threads` server status variable is incremented.
- **Commandline:** `--slow-launch-time=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `2`

---

slow_query_log

- **Description:** If set to 0, the default unless the --slow-query-log option is used, the slow query log is disabled, while if set to 1 (both global and session variables), the sl log is enabled. MariaDB 10.1 added support for session variables.
- **Commandline:** `--slow-query-log`
- **Scope:** Global, Session (MariaDB 10.1)
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `0`
- **See also:** See log_output to see how log files are written. If that variable is set to `NONE`, no logs will be written even if slow_query_log is set to `1`.

---

slow_query_log_file

- **Description:** Name of the slow query log file.
- **Commandline:** `--slow-query-log-file=file_name`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `file name`
- **Default Value:** *`host_name`*`-slow.log`

---

socket

- **Description:** On Unix-like systems, this is the name of the socket file used for local client connections, by default `/tmp/mysql.sock`, often changed by the distributio example `/var/lib/mysql/mysql.sock`. On Windows, this is the name of the named pipe used for local client connections, by default `MySQL`. On Windows, this is n sensitive.
- **Commandline:** `--socket=name`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `file name`
- **Default Value:** `/tmp/mysql.sock` (Unix), `MySQL` (Windows)

---

sort_buffer_size

- **Description:** Each session performing a sort allocates a buffer with this amount of memory. Not specific to any storage engine. If the status variable sort_merge_passe high, you may need to look at improving your query indexes, or increasing this. Consider reducing where there are many small sorts, such as OLTP, and increasing whe needed by session. 16k is a suggested minimum.
- **Commandline:** `--sort-buffer-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `number`
- **Default Value:** `2M (2097152)` (some distributions increase the default)

---

sql_auto_is_null

- **Description:** If set to 1, the query `SELECT * FROM table_name WHERE auto_increment_column IS NULL` will return an auto-increment that has just been succes inserted, the same as the LAST_INSERT_ID() function. Some ODBC programs make use of this IS NULL comparison.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `0 (>= MariaDB/MySQL 5.5.3), 1 (MariaDB/MySQL <= 5.5.2)`

---

sql_big_selects

- **Description:** If set to 0, MariaDB will not perform large SELECTs. See max_join_size for details. If max_join_size is set to anything but DEFAULT, sql_big_selects is automatically set to 0. If sql_big_selects is again set, max_join_size will be ignored.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `1`

---

sql_big_tables

- **Description:** A synonym for big_tables.

---

sql_buffer_result

- **Description:** If set to 1 (0 is default), results from SELECT statements are always placed into temporary tables. This can help the server when it takes a long time to se results to the client by allowing the table locks to be freed early.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `0`

---

sql_log_off

- **Description:** If set to 1 (0 is the default), no logging to the general query log is done for the client. Only clients with the SUPER privilege can update this variable.
- **Scope:** Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `0`

---

sql_log_update

- **Description:** Removed. Use sql_log_bin instead.
- **Removed:** MariaDB/MySQL 5.5

---

sql_low_priority_updates

- **Description:** Synonym for low_priority_updates, the preferred name.

---

sql_max_join_size

- **Description:** Synonym for max_join_size, the preferred name.
- **Deprecated:** MariaDB 5.5
- **Removed:** MariaDB 10.0

---

sql_mode

- **Description:** Sets the SQL Mode. Multiple modes can be set, separated by a comma.
- **Commandline:** `--sql-mode=value[,value[,value...]]`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:**
  - `STRICT_TRANS_TABLES,ERROR_FOR_DIVISION_BY_ZERO,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION` (>= MariaDB 10.2.4)
  - `NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION` (>= MariaDB 10.1.7)
  - `(empty string)` (<= MariaDB 10.1.6)
- **Valid Values:** See SQL Mode for the full list.

---

sql_notes

- **Description:** If set to 1, the default, warning_count is incremented each time a Note warning is encountered. If set to 0, Note warnings are not recorded. mysqldump ha to set this variable to 0 so that no unnecessary increments occur when data is reloaded.
- **Commandline:** None
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `1`

---

sql_quote_show_create

- **Description:** If set to 1, the default, the server will quote identifiers for SHOW CREATE DATABASE, SHOW CREATE TABLE and SHOW CREATE VIEW statements. C disabled if set to 0. Enable to ensure replications works when identifiers require quoting.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `1`

---

sql_safe_updates

- **Description:** If set to 1, UPDATEs and DELETEs need either a key in the WHERE clause, or a LIMIT clause, or else they will aborted. Prevents the common mistake o accidentally deleting or updating every row in a table.
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF (0)`

---

sql_select_limit

- **Description:** Maximum number of rows that can be returned from a SELECT query. Default is the maximum number of rows permitted per table by the server, usually 2 2^{64}-1. Can be restored to the default value after being changed by assigning it a value of DEFAULT.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`

---

sql_warnings

- **Description:** If set to 1, single-row INSERTs will produce a string containing warning information if a warning occurs.
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF (0)`

---

storage_engine

- **Description:** See default_storage_engine.
- **Deprecated:** MariaDB 5.5

---

standard_compliant_cte

- **Description:** Allow only standard-compliant common table expressions. Prior to version 10.2.4, this variable was named `standards_compliant_cte`.
- **Commandline:** `--standard-compliant-cte={0|1}`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `ON`
- **Introduced:** MariaDB 10.2.2

---

stored_program_cache

- **Description:** Limit to the number of stored routines held in the stored procedures and stored functions caches. Each time a stored routine is executed, this limit is first c and if the number held in the cache exceeds this, that cache is flushed and memory freed.
- **Commandline:** `--stored-program-cache=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `256`
- **Range:** `256` to `524288`
- **Introduced:** MariaDB/MySQL 5.5.21

---

strict_password_validation

- **Description:** When password validation plugins are enabled, reject passwords that cannot be validated (passwords specified as a hash). This excludes direct updates privilege tables.
- **Commandline:** `--strict-password-validation`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`

- **Default Value:** `ON`
- **Introduced:** MariaDB 10.1.2

---

sync_frm

- **Description:** If set to 1, the default, each time a non-temporary table is created, its .frm definition file is synced to disk. Fractionally slower, but safer in case of a crash.
- **Commandline:** `--sync-frm`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `TRUE`

---

system_time_zone

- **Description:** Server system time zone, inherited from the machine setting when the server starts. Usually specified by the TZ environment variable, can also be specifi `--timezone` option of the mysqld_safe script, or affected by the environment of the account starting the server. Not the same as the time_zone system variable, whicl for client time zones.
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `string`

---

table_definition_cache

- **Description:** Number of table definitions that can be cached. Table definitions are taken from the .frm files, and if there are a large number of tables increasing the cacl can speed up table opening. Unlike the table_open_cache, as the table_definition_cache doesn't use file descriptors, and is much smaller.
- **Commandline:** `--table-definition-cache=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `400`
- **Range:** `400` to `524288`

---

table_lock_wait_timeout

- **Description:** Unused, and removed in MariaDB/MySQL 5.5.3
- **Commandline:** `--table-lock-wait-timeout=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `50`
- **Range:** `1` to `1073741824`
- **Removed:** `MariaDB/MySQL 5.5.3`

---

table_open_cache

- **Description:** Maximum number of open tables cached in one table cache instance. See Optimizing table_open_cache for suggestions on optimizing. Increasing table_open_cache increases the number of file descriptors required.
- **Commandline:** `--table-open-cache=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `2000` (>= MariaDB 10.1.7), `400` (<= MariaDB 10.1.6)
- **Range:** `1` to `1048576` (1024K) (>= MariaDB 10.1.20), `1` to `524288` (512K) (<= MariaDB 10.1.19)

---

table_open_cache_instances

- **Description:** From MariaDB 10.2.2, specifies the maximum number of table cache instances. This is different to the MySQL version which specifies the number of tabl instances. The MariaDB implementation is more efficient, and always starts with 1 instance, increasing the number up to the maximum when there's contention. Whene instance is activated a note is written to error log, for example *Detected table cache mutex contention at instance 1: 25% waits. Additional table cache instance activate Number of instances after activation: 2.* The number of instances does not decrease again. The current default value (8) is expected to handle up to 100 CPU cores - b this, the setting should be increased. Until MariaDB 10.0.7, this was an unused MySQL 5.6 compatibility option, as MariaDB achieved similar results in a different way (MDEV-4702).
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `8` (>= MariaDB 10.2.2), `1` (<= MariaDB 10.0.7)
- **Range:**
- **Introduced:** MariaDB 10.2.2 (previously in MariaDB 10.0.4)
- **Removed:** MariaDB 10.0.7, reintroduced MariaDB 10.2.2

---

table_type

- **Description:** Removed and replaced by storage_engine in MariaDB/MySQL 5.5.3. Use default_storage_engine instead.

---

tcp_keepalive_interval

- **Description:** The interval, in seconds, between when successive keep-alive packets are sent if no acknowledgement is received. If set to 0, the system dependent defa used.
- **Commandline:** `--tcp-keepalive-interval=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `2147483`
- **Introduced:** MariaDB 10.3.3

---

tcp_keepalive_probes

- **Description:** The number of unacknowledged probes to send before considering the connection dead and notifying the application layer. If set to 0, a system dependen is used.
- **Commandline:** `--tcp-keepalive-probes=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `2147483`
- **Introduced:** MariaDB 10.3.3

---

tcp_keepalive_time

- **Description:** Timeout, in milliseconds, with no activity until the first TCP keep-alive packet is sent. If set to 0, a system dependent default is used.
- **Commandline:** `--tcp-keepalive-time=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0`
- **Range:** `0` to `2147483`
- **Introduced:** MariaDB 10.3.3

---

thread_cache_size

- **Description:** Number of threads server caches for re-use. If this limit hasn't been reached, when a client disconnects, its threads are put into the cache, and re-used w possible. These are freed after 5 minutes of idle time. Normally this setting has little effect, as the other aspects of the thread implementation are more important, but in it can help servers with high volumes of connections per second so that most can use a cached, rather than a new, thread. The cache miss rate can be calculated as th status variables threads_created/connections. If the thread pool is active, `thread_cache_size` is ignored. From MariaDB 10.2.0, the default is automatically set to the of either 256, or the max_connections size.
- **Commandline:** `--thread-cache-size=#`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `0` (<= MariaDB 10.1), Auto (from MariaDB 10.2.0)
- **Range:** `0` to `16384`

---

thread_concurrency

- **Description:** Allows applications to give the system a hint about the desired number of threads. Specific to Solaris only, invokes thr_setconcurrency(). Deprecated and effect in MariaDB 5.5.
- **Commandline:** `--thread-concurrency=#`
- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:** `10`
- **Range:** `1` to `512`
- **Deprecated:** MariaDB 5.5

---

thread_stack

- **Description:** Stack size for each thread. If set too small, limits recursion depth of stored procedures and complexity of SQL statements the server can handle in memor affects limits in the crash-me test.
- **Commandline:** `--thread-stack=#`

- **Scope:** Global
- **Dynamic:** No
- **Data Type:** `numeric`
- **Default Value:**
  - `299008` (MariaDB 10.2.5)
  - `297984` (MariaDB 10.2.1)
  - `296960` (MariaDB 10.2.0)
  - `295936` (MariaDB 10.1)
  - `294912` (<= MariaDB 10.0)
- **Range:** `131072` to `18446744073709551615`

---

time_format

- **Description:** Unused.

---

time_zone

- **Description:** The current time zone, used to initialize the time zone for a client when it connects. Set to `SYSTEM` by default, in which the client uses the system time zo
- **Commandline:** `--default-time-zone=string`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `string`
- **Default Value:** `SYSTEM`

---

timed_mutexes

- **Description:** Determines whether InnoDB mutexes are timed. `OFF` , the default, disables mutex timing, while `ON` enables it. See also SHOW ENGINE for more on mu statistics. Deprecated in MariaDB 5.5.39, as has no effect anymore.
- **Commandline:** `--timed-mutexes`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`
- **Deprecated:** MariaDB 5.5.39

---

timestamp

- **Description:** Sets the time for the client. This will affect the result returned by the NOW() function, not the SYSDATE() function, unless the server is started with the --s now option, in which case SYSDATE becomes an alias of NOW, and will also be affected. Also used to get the original timestamp when restoring rows from the binary l
- **Scope:** Session
- **Dynamic:** Yes
- **Valid Values:** `timestamp_value` (Unix epoch timestamp, not MariaDB timestamp), `DEFAULT`

---

tmp_disk_table_size

- **Description:** Max size for data for an internal temporary on-disk MyISAM or Aria table. These tables are created as part of complex queries when the result doesn't fit i memory engine. You can set this variable if you want to limit the size of temporary tables created in your temporary directory tmpdir.
- **Commandline:** `--tmp-disk-table-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `18446744073709551615` (max unsigned integer, no limit)
- **Range:** `1024` to `18446744073709551615`
- **Introduced:** MariaDB 10.2.7

---

tmp_memory_table_size

- **Description:** An alias for tmp_table_size.
- **Commandline:** `--tmp-memory-table-size=#`
- **Introduced:** MariaDB 10.2.7

---

tmp_table_size

- **Description:** The largest size for temporary tables in memory (not MEMORY tables) although if max_heap_table_size is smaller the lower limit will apply. If a table exc limit, MariaDB converts it to a MyISAM or Aria table. You can see if it's necessary to increase by comparing the status variables `Created_tmp_disk_tables` and `Created_tmp_tables` to see how many temporary tables out of the total created needed to be converted to disk. Often complex GROUP BY queries are responsible exceeding the limit. Defaults may be different on some systems, see for example Differences in MariaDB in Debian. From MariaDB 10.2.7, tmp_memory_table_size is
- **Commandline:** `--tmp-table-size=#`

- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `numeric`
- **Default Value:** `16777216` (16MB)
- **Range:** `1024` to `4294967295`

---

tmpdir

- **Description:** Directory for storing temporary tables and files. Can specify a list (separated by semicolons in Windows, and colons in Unix that will then be used in round fashion. This can be used for load balancing across several disks. Note that if the server is a replication slave, and slave_load_tmpdir, which overrides tmpdir for slave replication, is not set, you should not set tmpdir to a directory that is cleared when the machine restarts, or else replication may fail.
- **Commandline:** `--tmpdir=path` or `-t path`
- **Scope:** Global
- **Dynamic:** No
- **Type:** directory name/s

---

transaction_alloc_block_size

- **Description:** Size in bytes to increase the memory pool available to each transaction when the available pool is not large enough. See transaction_prealloc_size.
- **Commandline:** `--transaction-alloc-block-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** numeric
- **Default Value:** `8192`
- **Range:** `1024` to `4294967295`
- **Block Size:** `1024`

---

transaction_prealloc_size

- **Description:** Initial size of a memory pool available to each transaction for various memory allocations. If the memory pool is not large enough for an allocation, it is inc by transaction_alloc_block_size bytes, and truncated back to transaction_prealloc_size bytes when the transaction is completed. If set large enough to contain all state a transaction, extra malloc() calls are avoided.
- **Commandline:** `--transaction-prealloc-size=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** numeric
- **Default Value:** `4096`
- **Range:** `1024` to `4294967295`
- **Block Size:** `1024`

---

tx_isolation

- **Description:** The transaction isolation level. See also SET TRANSACTION ISOLATION LEVEL.
- **Commandline:** `--transaction-isolation=name`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** enumeration
- **Default Value:** `REPEATABLE-READ`
- **Valid Values:** `READ-UNCOMMITTED`, `READ-COMMITTED`, `REPEATABLE-READ`, `SERIALIZABLE`

---

tx_read_only

- **Description:** Default transaction access mode. If set to `OFF`, the default, access is read/write. If set to `ON`, access is read-only. The `SET TRANSACTION` statement ca change the value of this variable. See SET TRANSACTION and START TRANSACTION.
- **Commandline:** `--transaction-read-only=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** boolean
- **Default Value:** `OFF-READ`
- **Introduced:** MariaDB 10.0

---

unique_checks

- **Description:** If set to 1, the default, secondary indexes in InnoDB tables are performed. If set to 0, storage engines can (but are not required to) assume that duplicate not present in input data. Set to 0 to speed up imports of large tables to InnoDB. The storage engine will still issue a duplicate key error if it detects one, even if set to 0
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** boolean
- **Default Value:** `1`

---

updatable_views_with_limit

- **Description:** Determines whether view updates can be made with an UPDATE or DELETE statement with a LIMIT clause if the view does not contain all primary or not unique key columns from the underlying table. `0` prohibits this, while `1` permits it while issuing a warning (the default).
- **Commandline:** `--updatable-views-with-limit=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** boolean
- **Default Value:** `1`

---

use_stat_tables

- **Description:** Controls the use of engine-independent table statistics.
  - `never` The optimizer will not use data from statistics tables.
  - `complementary` The optimizer uses data from statistics tables if the same kind of data is not provided by the storage engine.
  - `preferably` Prefer the data from statistics tables, if it's not available there, use the data from the storage engine.
- **Commandline:** `--use-stat-tables=mode`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** `enum`
- **Default Value:** `never`
- **Introduced:** MariaDB 10.0.1

---

userstat

- **Description:** If set to `1`, user statistics will be activated.
- **Commandline:** `--userstat=1`
- **Scope:** Global
- **Dynamic:** Yes
- **Data Type:** `boolean`
- **Default Value:** `OFF`
- **Introduced:** MariaDB 5.2.0

---

version

- **Description:** Server version number. It may also include a suffix with configuration or build information. `-debug` indicates debugging support was enabled on the serv `log` indicates at least one of the binary log, general log or slow query log are enabled, for example `10.0.1-MariaDB-mariadb1precise-log`. From MariaDB 10.2.1, variable can be set at startup in order to fake the server version.
- **Commandline:** `-V`, `--version[=name]` (>= MariaDB 10.2.1), `--version` (<= MariaDB 10.2.0)
- **Scope:** Global
- **Dynamic:** No
- **Type:** string

---

version_comment

- **Description:** Value of the COMPILATION_COMMENT option specified by CMake when building MariaDB, for example `mariadb.org binary distribution`.
- **Scope:** Global
- **Dynamic:** No
- **Type:** string

---

version_compile_machine

- **Description:** The machine type or architecture MariaDB was built on, for example `i686`.
- **Scope:** Global
- **Dynamic:** No
- **Type:** string

---

version_compile_os

- **Description:** Operating system that MariaDB was built on, for example `debian-linux-gnu`.
- **Scope:** Global
- **Dynamic:** No
- **Type:** string

---

version_malloc_library

- **Description:** Version of the used malloc library.
- **Commandline:** No
- **Scope:** Global

- **Dynamic:** No
- **Type:** string
- **Introduced:** MariaDB 10.0.8

`version_source_revision`

- **Description:** Source control revision id for MariaDB source code, enabling one to see exactly which version of the source was used for a build.
- **Commandline:** None
- **Scope:** Global
- **Dynamic:** No
- **Type:** string
- **Introduced:** MariaDB 10.3.2

`wait_timeout`

- **Description:** Time in seconds that the server waits for a connection to become active before closing it. The session value is initialized when a thread starts up from eith global value, if the connection is non-interactive, or from the interactive_timeout value, if the connection is interactive.
- **Commandline:** `--wait-timeout=#`
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Type:** numeric
- **Default Value:** `28800`
- **Range:** `1 to 2147483`

`warning_count`

- **Description:** Read-only variable indicating the number of warnings, errors and notes resulting from the most recent statement that generated messages. See SHOW WARNINGS for more. Note warnings will only be recorded if sql_notes is true (the default).
- **Scope:** Session
- **Dynamic:** No
- **Type:** numeric

← Server Status Variables ↑ System Variables ↑ Aria Server Status Variables →

Comments

No comments