Mysqltuner – оптимизация MySQL

Mysqltuner – это perl-скрипт, который анализирует статистику работы Mysql и выдает свои рекомендации по оптимизации настроек Mysql сервера.

```
# yum -y install mysqltuner
```

Запускаем:

```
# mysqltuner --user root --pass rootpassword
```

Особое внимание стоит уделить строкам, помеченным символами [!!] и секции Recommendations.

Параметры указанные после строки **Variables to adjust** нужно изменить в файле my.cnf, в соответствии с рекомендациями Mysqltuner. Если указанного параметра нет в файле my.cnf, то его следует дописать.

```
-------- Recommendations -------------------------------------
---------------
General recommendations:
Run OPTIMIZE TABLE to defragment tables for better performance
MySQL started within last 24 hours - recommendations may be
inaccurate
Reduce your overall MySQL memory footprint for system
stability
When making adjustments, make
tmp_table_size/max_heap_table_size equal
Reduce your SELECT DISTINCT queries which have no LIMIT clause
Variables to adjust:
*** MySQL's maximum memory usage is dangerously high ***
*** Add RAM before increasing MySQL buffer variables ***
tmp_table_size (> 64M)
max_heap_table_size (> 64M)
```

Согласно рекомендациям правим:

/etc/my.cnf

После внесения изменений в файл my.cnf нужно перезагрузить Mysql-сервер:

```
# systemctl restart mariadb
```

После изменения конфигурации Mysql-сервер должен проработать минимум 24 часа без перезагрузок. Затем, можно снова запустить утилиту Mysqltuner и проанализировать вывод статистики. Таким образом, можно привести конфигурационный файл my.cnf и работу Mysql-сервера, соответственно, к оптимальному состоянию.

Мой пример конфига.

```
# uname -rs
Linux 3.10.0-862.11.6.el7.x86_64

# free -m
total used free shared buff/cache available
Mem: 2811 2086 91 9 633 540
Swap: 2047 0 2047

# cat /etc/my.cnf
[mysqld]
datadir=/var/lib/mysql
socket=/var/lib/mysql/mysql.sock
# Disabling symbolic-links is recommended to prevent assorted security risks
symbolic-links=0
# Settings user and group are ignored when systemd is used.
# If you need to run mysqld under a different user or group,
# customize your systemd unit file for mariadb according to the
# instructions in http://fedoraproject.org/wiki/Systemd

## WordPress/Owncloud
max_connections = 64
wait_timeout = 22222
interactive_timeout = 22222
table_open_cache = 800
open_files_limit = 65535
thread_cache_size = 32
```

```
thread_concurrency = 8
query_cache_type = 1
query_cache_size = 32M
query_cache_limit = 1M
key_buffer_size = 24M
key_cache_division_limit=70
join_buffer_size = 512M
tmp_table_size = 128M
max_heap_table_size = 128M

# INNODB
innodb_buffer_pool_size = 128M
innodb_flush_log_at_trx_commit = 2
innodb_file_per_table = 1
innodb_buffer_pool_size = 512M
innodb_data_file_path = ibdata1:10M:autoextend:max:3999M
innodb_flush_method = O_DIRECT

# MYISAM
myisam_sort_buffer_size = 32M

#Logging
slow_query_log = 1
slow_query_log_file = /var/log/mariadb/mysql-slow.log

[mysqld_safe]
log-error=/var/log/mariadb/mariadb.log
pid-file=/var/run/mariadb/mariadb.pid

#
# include all files from the config directory
#
!includedir /etc/my.cnf.d
```

```
# mysqltuner
Please enter your MySQL administrative login: root
Please enter your MySQL administrative password: >> MySQLTuner
1.6.0 - Major Hayden <major@mhtx.net>
>> Bug reports, feature requests, and downloads at
http://mysqltuner.com/
>> Run with '--help' for additional options and output
filtering
```

```
[--] Skipped version check for MySQLTuner script
[OK] Currently running supported MySQL version 5.5.56-MariaDB
[OK] Operating on 64-bit architecture

-------- Storage Engine Statistics -------------------------
----------------
[--] Status: +ARCHIVE +Aria +BLACKHOLE +CSV +FEDERATED +InnoDB
+MRG_MYISAM
[--] Data in MyISAM tables: 42K (Tables: 10)
[--] Data in InnoDB tables: 39M (Tables: 87)
[!!] Total fragmented tables: 3

-------- Security Recommendations --------------------------
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[OK] There is no anonymous account in all database users
[OK] All database users have passwords assigned
[!!] There is not basic password file list !

-------- Performance Metrics -------------------------------
----------------
[--] Up for: 44m 53s (43K q [16.302 qps], 748 conn, TX: 34M,
RX: 8M)
[--] Reads / Writes: 87% / 13%
[--] Binary logging is disabled
[--] Total buffers: 840.0M global + 514.7M per thread (64 max
threads)
[!!] Maximum reached memory usage: 16.4G (597.34% of installed
RAM)
[!!] Maximum possible memory usage: 33.0G (1201.42% of
installed RAM)
[OK] Slow queries: 0% (0/43K)
[OK] Highest usage of available connections: 48% (31/64)
[OK] Aborted connections: 0.53% (4/748)
[OK] Query cache efficiency: 40.8% (24K cached / 59K selects)
[OK] Query cache prunes per day: 0
[OK] Sorts requiring temporary tables: 0% (0 temp sorts / 627
sorts)
[!!] Temporary tables created on disk: 26% (18 on disk / 67
total)
[OK] Thread cache hit rate: 95% (31 created / 748 connections)
[OK] Table cache hit rate: 122% (140 open / 114 opened)
```

```
[OK] Open file limit used: 7% (72/1K)
[OK] Table locks acquired immediately: 100% (16K immediate / 16K locks)


-------- MyISAM Metrics ---------------------------------------
--------------
[!!] Key buffer used: 18.7% (4M used / 25M cache)
[OK] Key buffer size / total MyISAM indexes: 24.0M/136.0K
[!!] Read Key buffer hit rate: 75.0% (32 cached / 8 reads)

-------- InnoDB Metrics ---------------------------------------
--------------
[--] InnoDB is enabled.
[OK] InnoDB buffer pool / data size: 512.0M/39.7M
[OK] InnoDB buffer pool instances: 1
[!!] InnoDB Used buffer: 5.93% (1943 used/ 32767 total)
[OK] InnoDB Read buffer efficiency: 99.50% (358717 hits/ 360535 total)
[!!] InnoDB Write buffer efficiency: 0.00% (0 hits/ 1 total)
[OK] InnoDB log waits: 0.00% (0 waits / 4616 writes)

-------- AriaDB Metrics ---------------------------------------
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[--] AriaDB is disabled.

-------- Replication Metrics ----------------------------------
----------------
[--] No replication slave(s) for this server.
[--] This is a standalone server..

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