

A Better mysqltuner

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mysqltuner

- www.mysqltuner.com
- Overview of some MySQL server issues
 - A quick, easy check for low-hanging fruit
- Free & open source

Getting started with mysqltuner

```
wget mysqltuner.pl  
chmod +x mysqltuner.pl  
./mysqltuner.pl
```

- Even this can show problems with mysqltuner!

Example output

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(i.e. “--host 127.0.0.1 should not require --forcemem unless the host is really remote”)

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```
$ ./mysqltuner.pl --host=127.0.0.1 --forcemem 2048

>> MySQLTuner 1.0.0 - Major Hayden <major@mhtx.net>
>> Bug reports, feature requests, and downloads at
http://mysqltuner.com/
>> Run with '--help' for additional options and output filtering
[--] Performing tests on 127.0.0.1:3306
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[OK] InnoDB data size / buffer pool: 16.0K/8.0M
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General recommendations:  
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Variables to adjust:  
  query_cache_size (>= 8M)  
  thread_cache_size (start at 4)  
  table_cache (> 64)
```

Features of mySQLtuner

- Get up-to-date version with wget
 - Can set --checkversion
- Color scheme – blue, green, red
 - Can turn off with --nocolor
- Remote option

Features of mysqltuner

- Easy to read and understand
- Gives percentages and raw numbers

Issues with mysqltuner

- Did not put password security into summary

[!!!] Successfully authenticated with no password - SECURITY RISK!

- Fragmentation check is incorrect
 - If `data_free>0`, then fragmentation

Disk size feature

----- Storage Engine Statistics -----

[--] Status: -Archive -BDB -Federated +InnoDB -ISAM -NDBCluster

[--] Data in MyISAM tables: 8K (Tables: 9)

[--] Data in InnoDB tables: 89G (Tables: 123)

[--] Data in MEMORY tables: 2M (Tables: 3)

[!!] Total fragmented tables: 45

- uses INFORMATION_SCHEMA.TABLES.DATA_LENGTH
 - InnoDB = estimate
- We also care about INDEX_LENGTH

Inaccurate mysqltuner assumptions

- Assumes query_cache being off is bad
- Always recommends turning slow query log on
 - But does not show long_query_time
- Remote mode is assumed with --host
 - Even with --host localhost
 - Does not check architecture, disk size

[!!!] Switch to 64-bit OS - MySQL cannot currently use all of your RAM

Not flexible

- Thresholds/formulas are hard-coded magic numbers
 - Sorts requiring temporary tables is “bad” if it is over 10% of total sorts
 - The memory formula
- Thread_cache_size magic number of 4 to start
- ```
if ($myvar{'long_query_time'} > 10) {
 push(@adjvars, "long_query_time (<=
 10)"); }
```

# Little things

- mysqltuner is aware that table\_cache became table\_open\_cache in 5.1
  - ....recommendations are for table\_cache
- K / M / G used for Kb, Mb, Gb
- K / M / B used for thousand, million, billion
- Recommendations not prioritized

----- Recommendations -----

General recommendations:

Run OPTIMIZE TABLE to defragment tables for better performance

**Reduce your overall MySQL memory footprint for system stability**

**Reduce or eliminate persistent connections to reduce connection usage**

Adjust your join queries to always utilize indexes

Increase table\_cache gradually to avoid file descriptor limits

Variables to adjust:

\*\*\* MySQL's maximum memory usage is dangerously high \*\*\*

\*\*\* Add RAM before increasing MySQL buffer variables \*\*\*

max\_connections (> 3000)

wait\_timeout (< 600)

interactive\_timeout (< 28800)

**query\_cache\_limit (> 4M, or use smaller result sets)**

join\_buffer\_size (> 512.0K, or always use indexes with joins)

table\_cache (> 2048)

**innodb\_buffer\_pool\_size (>= 89G)**

# Other desired features

- Sometimes you want machine-readable information
- Sometimes you want a really remote mode
- Sometimes you want all the information instead of staying silent if something is OK::

```
[!!] Joins performed without indexes: 580953
```

# Other desired features

- Info on deadlocks, dirty page → disk writes
- Show if a variable to change is dynamic
- Check `/etc/my.cnf` for deprecated variables
- More complex checks such as seeing if `auto_increment%` variables are set versus whether or not the system is set up to do master/master replication.

# mysqltunerfile.pl

- Goal was to add functionality transparently
  - Led to more duplication of similar actions
- Added:
  - statfile
  - varfile
  - forcearch
  - spreadsheet
  - debug



# mysqltunerfile.pl

- Completely offline mode:

```
mysql -e "SHOW GLOBAL VARIABLES" > vars.txt
```

```
mysql -e "SHOW GLOBAL STATUS" > status.txt
```

```
perl mysqltunerfile.pl --forcemem 16246
--forceswap 4000 --forcearch 32 --varfile
vars.txt --statfile status.txt
```

# --spreadsheet

- Less human readable
- Compare performance across a time period
- Does not use color
- Has lots more info
- Still has recommendations

# mysqltunerfile.pl

- Requires forceswap if remote is used
- --skipsize now only skips size of tables, not the whole storage engine section

# Biggest Future Desires

- An API to set your own thresholds, algorithms
  - No more magic numbers
- Debug mode and better error/failure messages
-

# Behind-the-scenes

- Lots of similar actions can be combined
- Separate display from calculations

# More?