MySQL Configuration for a Large Database

Prepared by
ViSolve Inc.,
6559, Springpath Lane, San Jose, California 95120, USA
Email: support@visolve.com
02nd August 2017

MySQL configuration for a Large Database

Mysqld Option	Value	Description
table_cache	2048	Number of open tables for all threads. Default is 512
sort_buffer_size	64K	Buffer size for each thread that needs to sort results. Increase for faster ORDER BY and GROUP BY operations.
binlog_cache_size	1M	Size of cache to hold SQL statements for the binary log during a transaction. Increase for large, multiple-statement transactions.
join_buffer_size	1M	Buffer size for joins that do not use indexes and require a full table scan.
thread_cache_size	16	Number of server threads to cache for reuse.
thread_stack	64K	per-thread stack size. Default is 192K.
query_cache_size	0	Amount of memory allocated for caching query results. 0 disables query cache.
ft_min_word_len	4	Minimum length of the word to be included in a FULLTEXT Index
tmp_table_size	64M	Maximum size of in-memory temp tables. Increase for GROUP BY innodb_data_file_path ibdata1:100M\:autoextend path to INNODB data files and sizes. Increase size from 10M to 100M.

- No One size fits ALL and care should be taken in configuring these parameters based on your application needs as this can adversely affect the application performance.

- Reasonable size processor speed and at least two Physical processors are recommended.

- Tune the application and parameters so that the CPU is under 80% utilization

- Possibly keep the log, data and index files in separate physical disks to avoid any I/O bottle neck. Also, avoid using root disk as you don't want to compete with the system swapping

- With these config one can obtain ~450transaction(s) per second (Sysbench). That is over 25,000 transactions per minute! We used 4GB of physical memory for this benchmark.

innodb_buffer_pool_size	1800M	Number of bytes of the memory buffer to cache data and indexes.
innodb_additional_mem_pool_size	20M	Number of bytes of memory pool used to store data dictionary information and data structures. Default is 1M.
innodb_log_file_size	900M	Size of each log file in log group. Default is 5MB.
innodb_flush_log_at_trx_commit	2	Determines how log buffer is written to disk. Value of 2 means data is flushed on every commit, but no disk flush. Default is 1.
innodb_lock_wait_timeout	300	Seconds to wait on a lock before being rolled back. Default is 50.
innodb_locks_unsafe_for_bin log	1	Controls next-key locking in search and index scans. Default is 0 (disabled).
innodb_thread_concurrency	1000	Number of threads currently inside innodb engine. Default varies with MySQL version. For MySQL v5.0.17c, Default is 20.
innodb_concurrency_tickets	500	Number of 'free tickets' to allow reentry into innodb engine.
Innodb_log_buffer_size	8M	The size of the buffer which INNODB uses to write log to the log files on disk. Sensible values range from 1M to 8M.

Need more help in performance, scalability and security please send a mail to:
openemr.support@visolve.com or visit www.visolve.com