

TASCA ASGBD04:

Optimització del rendiment i monitorització

Utilitzant el programa adequat, codifica la sentència necessària per a:

1. Saber si el servidor està actiu.

Para saber si el servidor de **MySQL** está activo podemos hacerlo de varias formas. Voy a mostrar algunas de ellas.

Podemos ver a través de los servicios de GNU/Linux si está arrancado con el comando:

/etc/init.d/mysql status ó *service mysql status*

```
root@ASGBD:/home/pedro# /etc/init.d/mysql status
● mysql.service - MySQL Community Server
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
   Active: active (running) since mié 2017-03-29 19:04:15 CEST; 1h 10min ago
     Main PID: 22987 (mysqld)
       CGroup: /system.slice/mysql.service
               └─22987 /usr/sbin/mysqld

mar 29 19:04:14 IAW systemd[1]: Stopped MySQL Community Server.
mar 29 19:04:14 IAW systemd[1]: Starting MySQL Community Server...
mar 29 19:04:15 IAW systemd[1]: Started MySQL Community Server.
```

Podemos hacer un conexión **telnet** al puerto **3306** donde escucha *por defecto* **MySQL**. Si la conexión funciona, podemos decir que el servidor está activo, aunque es posible que otro servicio esté escuchando en ese puerto y nos lleve a confusión. Por defecto escucha por el puerto **3306**. Con esta prueba solo garantizamos que algún servicio está escuchando por ese puerto:

echo q | telnet localhost 3306

```
root@ASGBD:/home/pedro# echo q | telnet localhost 3306
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
Connection closed by foreign host.
root@ASGBD:/home/pedro#
```

La mejor manera de averiguar si el servicio de **MySQL** está levantado o activo es *loguearnos* en el servidor con un *usuario con privilegios*. Sin conseguimos entrar podemos garantizar al 100% que el servicio está funcionando:

mysql -u root -p

```

root@ASGBD:/home/pedro# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 7
Server version: 5.7.17-0ubuntu0.16.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>

```

NOTA: si observamos el prompt “*mysql*” significa que estamos conectados.

Ahora podemos ver el estado del servidor con el comando *status*:

```

mysql> status;
-----
mysql Ver 14.14 Distrib 5.7.17, for Linux (x86_64) using EditLine wrapper

Connection id:          7
Current database:
Current user:           root@localhost
SSL:                    Not in use
Current pager:          stdout
Using outfile:          ''
Using delimiter:        ;
Server version:         5.7.17-0ubuntu0.16.04.1 (Ubuntu)
Protocol version:       10
Connection:             Localhost via UNIX socket
Server characterset:    latin1
Db characterset:        latin1
Client characterset:    utf8
Conn. characterset:     utf8
UNIX socket:            /var/run/mysqld/mysqld.sock
Uptime:                 1 hour 20 min 53 sec

Threads: 1  Questions: 14  Slow queries: 0  Opens: 108  Flush tables: 1  Open tables: 27  Queries per second avg: 0.002
-----
mysql>

```

También podemos ver el tiempo que lleva activo con el siguiente comando:

mysql -u root -p -e "SHOW STATUS" | grep "^Uptime"

```

root@ASGBD:/home/pedro# mysql -u root -p -e "SHOW STATUS" | grep "^Uptime"
Enter password:
Uptime 5060
Uptime_since_flush_status 5060
root@ASGBD:/home/pedro#

```

2. Mostrar les variables d'estat del servidor i els seus valors.

Para mostrar las variables de estado ejecutaremos el siguiente comando una vez iniciada la conexión con el servidor:

tee ejer2.txt

SHOW VARIABLES

	<i>binlog_direct_non_transactional_updates</i>	<i>OFF</i>
	<i>binlog_error_action</i>	<i>ABORT_SERVER</i>
	<i>binlog_format</i>	<i>ROW</i>
	<i>binlog_group_commit_sync_delay</i>	<i>0</i>
	<i>binlog_group_commit_sync_no_delay_count</i>	<i>0</i>
	<i>binlog_gtid_simple_recovery</i>	<i>ON</i>
	<i>binlog_max_flush_queue_time</i>	<i>0</i>
	<i>binlog_order_commits</i>	<i>ON</i>
	<i>binlog_row_image</i>	<i>FULL</i>
	<i>binlog_rows_query_log_events</i>	<i>OFF</i>
	<i>binlog_stmt_cache_size</i>	<i>32768</i>
	<i>block_encryption_mode</i>	<i>aes-128-ecb</i>
	<i>bulk_insert_buffer_size</i>	<i>8388608</i>
	<i>character_set_client</i>	<i>utf8</i>
	<i>character_set_connection</i>	<i>utf8</i>
	<i>character_set_database</i>	<i>latin1</i>
	<i>character_set_filesystem</i>	<i>binary</i>
	<i>character_set_results</i>	<i>utf8</i>
	<i>character_set_server</i>	<i>latin1</i>
	<i>character_set_system</i>	<i>utf8</i>
	<i>character_sets_dir</i>	<i>/usr/share/mysql/charsets/</i>
	<i>check_proxy_users</i>	<i>OFF</i>

<i>collation_connection</i>	<i>utf8_general_ci</i>
<i>collation_database</i>	<i>latin1_swedish_ci</i>
<i>collation_server</i>	<i>latin1_swedish_ci</i>
<i>completion_type</i>	<i>NO_CHAIN</i>
<i>concurrent_insert</i>	<i>AUTO</i>
<i>connect_timeout</i>	<i>10</i>
<i>core_file</i>	<i>OFF</i>
<i>datadir</i>	<i>/var/lib/mysql/</i>
<i>date_format</i>	<i>%Y-%m-%d</i>
<i>datetime_format</i>	<i>%Y-%m-%d %H:%i:%s</i>
<i>default_authentication_plugin</i>	<i>mysql_native_password</i>
<i>default_password_lifetime</i>	<i>0</i>
<i>default_storage_engine</i>	<i>InnoDB</i>
<i>default_tmp_storage_engine</i>	<i>InnoDB</i>
<i>default_week_format</i>	<i>0</i>
<i>delay_key_write</i>	<i>ON</i>
<i>delayed_insert_limit</i>	<i>100</i>
<i>delayed_insert_timeout</i>	<i>300</i>
<i>delayed_queue_size</i>	<i>1000</i>
<i>disabled_storage_engines</i>	
<i>disconnect_on_expired_password</i>	<i>ON</i>
<i>div_precision_increment</i>	<i>4</i>

	<i>end_markers_in_json</i>	<i>OFF</i>
	<i>enforce_gtid_consistency</i>	<i>OFF</i>
	<i>eq_range_index_dive_limit</i>	<i>200</i>
	<i>error_count</i>	<i>0</i>
	<i>event_scheduler</i>	<i>OFF</i>
	<i>expire_logs_days</i>	<i>10</i>
	<i>explicit_defaults_for_timestamp</i>	<i>OFF</i>
	<i>external_user</i>	
	<i>flush</i>	<i>OFF</i>
	<i>flush_time</i>	<i>0</i>
	<i>foreign_key_checks</i>	<i>ON</i>
	<i>ft_boolean_syntax</i>	<i>+ -><()~*:"'&</i>
	<i>ft_max_word_len</i>	<i>84</i>
	<i>ft_min_word_len</i>	<i>4</i>
	<i>ft_query_expansion_limit</i>	<i>20</i>
	<i>ft_stopword_file</i>	<i>(built-in)</i>
	<i>general_log</i>	<i>OFF</i>
	<i>general_log_file</i>	<i>/var/lib/mysql/IAW.log</i>
	<i>group_concat_max_len</i>	<i>1024</i>
	<i>gtid_executed_compression_period</i>	<i>1000</i>
	<i>gtid_mode</i>	<i>OFF</i>
	<i>gtid_next</i>	<i>AUTOMATIC</i>

<i>gtid_owned</i>		
<i>gtid_purged</i>		
<i>have_compress</i>	<i>YES</i>	
<i>have_crypt</i>	<i>YES</i>	
<i>have_dynamic_loading</i>	<i>YES</i>	
<i>have_geometry</i>	<i>YES</i>	
<i>have_openssl</i>	<i>DISABLED</i>	
<i>have_profiling</i>	<i>YES</i>	
<i>have_query_cache</i>	<i>YES</i>	
<i>have_rtree_keys</i>	<i>YES</i>	
<i>have_ssl</i>	<i>DISABLED</i>	
<i>have_statement_timeout</i>	<i>YES</i>	
<i>have_symlink</i>	<i>YES</i>	
<i>host_cache_size</i>	<i>279</i>	
<i>hostname</i>	<i>IAW</i>	
<i>identity</i>	<i>0</i>	
<i>ignore_builtin_innodb</i>	<i>OFF</i>	
<i>ignore_db_dirs</i>		
<i>init_connect</i>		
<i>init_file</i>		
<i>init_slave</i>		
<i>innodb_adaptive_flushing</i>	<i>ON</i>	

	<i>innodb_adaptive_flushing_lwm</i>	<i>10</i>
	<i>innodb_adaptive_hash_index</i>	<i>ON</i>
	<i>innodb_adaptive_hash_index_parts</i>	<i>8</i>
	<i>innodb_adaptive_max_sleep_delay</i>	<i>150000</i>
	<i>innodb_api_bk_commit_interval</i>	<i>5</i>
	<i>innodb_api_disable_rowlock</i>	<i>OFF</i>
	<i>innodb_api_enable_binlog</i>	<i>OFF</i>
	<i>innodb_api_enable_mdl</i>	<i>OFF</i>
	<i>innodb_api_trx_level</i>	<i>0</i>
	<i>innodb_autoextend_increment</i>	<i>64</i>
	<i>innodb_autoinc_lock_mode</i>	<i>1</i>
	<i>innodb_buffer_pool_chunk_size</i>	<i>134217728</i>
	<i>innodb_buffer_pool_dump_at_shutdown</i>	<i>ON</i>
	<i>innodb_buffer_pool_dump_now</i>	<i>OFF</i>
	<i>innodb_buffer_pool_dump_pct</i>	<i>25</i>
	<i>innodb_buffer_pool_filename</i>	<i>ib_buffer_pool</i>
	<i>innodb_buffer_pool_instances</i>	<i>1</i>
	<i>innodb_buffer_pool_load_abort</i>	<i>OFF</i>
	<i>innodb_buffer_pool_load_at_startup</i>	<i>ON</i>
	<i>innodb_buffer_pool_load_now</i>	<i>OFF</i>
	<i>innodb_buffer_pool_size</i>	<i>134217728</i>
	<i>innodb_change_buffer_max_size</i>	<i>25</i>

	<i>innodb_change_buffering</i>	<i>all</i>
	<i>innodb_checksum_algorithm</i>	<i>crc32</i>
	<i>innodb_checksums</i>	<i>ON</i>
	<i>innodb_cmp_per_index_enabled</i>	<i>OFF</i>
	<i>innodb_commit_concurrency</i>	<i>0</i>
	<i>innodb_compression_failure_threshold_pct</i>	<i>5</i>
	<i>innodb_compression_level</i>	<i>6</i>
	<i>innodb_compression_pad_pct_max</i>	<i>50</i>
	<i>innodb_concurrency_tickets</i>	<i>5000</i>
	<i>innodb_data_file_path</i>	<i>ibdata1:12M:autoextend</i>
	<i>innodb_data_home_dir</i>	
	<i>innodb_deadlock_detect</i>	<i>ON</i>
	<i>innodb_default_row_format</i>	<i>dynamic</i>
	<i>innodb_disable_sort_file_cache</i>	<i>OFF</i>
	<i>innodb_doublewrite</i>	<i>ON</i>
	<i>innodb_fast_shutdown</i>	<i>1</i>
	<i>innodb_file_format</i>	<i>Barracuda</i>
	<i>innodb_file_format_check</i>	<i>ON</i>
	<i>innodb_file_format_max</i>	<i>Barracuda</i>
	<i>innodb_file_per_table</i>	<i>ON</i>
	<i>innodb_fill_factor</i>	<i>100</i>
	<i>innodb_flush_log_at_timeout</i>	<i>1</i>

	<i>innodb_flush_log_at_trx_commit</i>	1
	<i>innodb_flush_method</i>	
	<i>innodb_flush_neighbors</i>	1
	<i>innodb_flush_sync</i>	ON
	<i>innodb_flushing_avg_loops</i>	30
	<i>innodb_force_load_corrupted</i>	OFF
	<i>innodb_force_recovery</i>	0
	<i>innodb_ft_aux_table</i>	
	<i>innodb_ft_cache_size</i>	8000000
	<i>innodb_ft_enable_diag_print</i>	OFF
	<i>innodb_ft_enable_stopword</i>	ON
	<i>innodb_ft_max_token_size</i>	84
	<i>innodb_ft_min_token_size</i>	3
	<i>innodb_ft_num_word_optimize</i>	2000
	<i>innodb_ft_result_cache_limit</i>	2000000000
	<i>innodb_ft_server_stopword_table</i>	
	<i>innodb_ft_sort_pll_degree</i>	2
	<i>innodb_ft_total_cache_size</i>	640000000
	<i>innodb_ft_user_stopword_table</i>	
	<i>innodb_io_capacity</i>	200
	<i>innodb_io_capacity_max</i>	2000
	<i>innodb_large_prefix</i>	ON

	<i>innodb_lock_wait_timeout</i>	<i>50</i>
	<i>innodb_locks_unsafe_for_binlog</i>	<i>OFF</i>
	<i>innodb_log_buffer_size</i>	<i>16777216</i>
	<i>innodb_log_checksums</i>	<i>ON</i>
	<i>innodb_log_compressed_pages</i>	<i>ON</i>
	<i>innodb_log_file_size</i>	<i>50331648</i>
	<i>innodb_log_files_in_group</i>	<i>2</i>
	<i>innodb_log_group_home_dir</i>	<i>./</i>
	<i>innodb_log_write_ahead_size</i>	<i>8192</i>
	<i>innodb_lru_scan_depth</i>	<i>1024</i>
	<i>innodb_max_dirty_pages_pct</i>	<i>75.000000</i>
	<i>innodb_max_dirty_pages_pct_lwm</i>	<i>0.000000</i>
	<i>innodb_max_purge_lag</i>	<i>0</i>
	<i>innodb_max_purge_lag_delay</i>	<i>0</i>
	<i>innodb_max_undo_log_size</i>	<i>1073741824</i>
	<i>innodb_monitor_disable</i>	
	<i>innodb_monitor_enable</i>	
	<i>innodb_monitor_reset</i>	
	<i>innodb_monitor_reset_all</i>	
	<i>innodb_numa_interleave</i>	<i>OFF</i>
	<i>innodb_old_blocks_pct</i>	<i>37</i>
	<i>innodb_old_blocks_time</i>	<i>1000</i>

	<i>innodb_online_alter_log_max_size</i>	<i>134217728</i>
	<i>innodb_open_files</i>	<i>431</i>
	<i>innodb_optimize_fulltext_only</i>	<i>OFF</i>
	<i>innodb_page_cleaners</i>	<i>1</i>
	<i>innodb_page_size</i>	<i>16384</i>
	<i>innodb_print_all_deadlocks</i>	<i>OFF</i>
	<i>innodb_purge_batch_size</i>	<i>300</i>
	<i>innodb_purge_rseg_truncate_frequency</i>	<i>128</i>
	<i>innodb_purge_threads</i>	<i>4</i>
	<i>innodb_random_read_ahead</i>	<i>OFF</i>
	<i>innodb_read_ahead_threshold</i>	<i>56</i>
	<i>innodb_read_io_threads</i>	<i>4</i>
	<i>innodb_read_only</i>	<i>OFF</i>
	<i>innodb_replication_delay</i>	<i>0</i>
	<i>innodb_rollback_on_timeout</i>	<i>OFF</i>
	<i>innodb_rollback_segments</i>	<i>128</i>
	<i>innodb_sort_buffer_size</i>	<i>1048576</i>
	<i>innodb_spin_wait_delay</i>	<i>6</i>
	<i>innodb_stats_auto_recalc</i>	<i>ON</i>
	<i>innodb_stats_include_delete_marked</i>	<i>OFF</i>
	<i>innodb_stats_method</i>	<i>nulls_equal</i>
	<i>innodb_stats_on_metadata</i>	<i>OFF</i>

	<i>innodb_stats_persistent</i>	<i>ON</i>
	<i>innodb_stats_persistent_sample_pages</i>	<i>20</i>
	<i>innodb_stats_sample_pages</i>	<i>8</i>
	<i>innodb_stats_transient_sample_pages</i>	<i>8</i>
	<i>innodb_status_output</i>	<i>OFF</i>
	<i>innodb_status_output_locks</i>	<i>OFF</i>
	<i>innodb_strict_mode</i>	<i>ON</i>
	<i>innodb_support_xa</i>	<i>ON</i>
	<i>innodb_sync_array_size</i>	<i>1</i>
	<i>innodb_sync_spin_loops</i>	<i>30</i>
	<i>innodb_table_locks</i>	<i>ON</i>
	<i>innodb_temp_data_file_path</i>	<i>ibtmp1:12M:autoextend</i>
	<i>innodb_thread_concurrency</i>	<i>0</i>
	<i>innodb_thread_sleep_delay</i>	<i>10000</i>
	<i>innodb_tmpdir</i>	
	<i>innodb_undo_directory</i>	<i>./</i>
	<i>innodb_undo_log_truncate</i>	<i>OFF</i>
	<i>innodb_undo_logs</i>	<i>128</i>
	<i>innodb_undo_tablespaces</i>	<i>0</i>
	<i>innodb_use_native_aio</i>	<i>ON</i>
	<i>innodb_version</i>	<i>5.7.17</i>
	<i>innodb_write_io_threads</i>	<i>4</i>

<i>insert_id</i>	0
<i>interactive_timeout</i>	28800
<i>internal_tmp_disk_storage_engine</i>	InnoDB
<i>join_buffer_size</i>	262144
<i>keep_files_on_create</i>	OFF
<i>key_buffer_size</i>	16777216
<i>key_cache_age_threshold</i>	300
<i>key_cache_block_size</i>	1024
<i>key_cache_division_limit</i>	100
<i>large_files_support</i>	ON
<i>large_page_size</i>	0
<i>large_pages</i>	OFF
<i>last_insert_id</i>	0
<i>lc_messages</i>	en_US
<i>lc_messages_dir</i>	/usr/share/mysql/
<i>lc_time_names</i>	en_US
<i>license</i>	GPL
<i>local_infile</i>	ON
<i>lock_wait_timeout</i>	31536000
<i>locked_in_memory</i>	OFF
<i>log_bin</i>	OFF
<i>log_bin_basename</i>	

	<i>log_bin_index</i>	
	<i>log_bin_trust_function_creators</i>	<i>OFF</i>
	<i>log_bin_use_v1_row_events</i>	<i>OFF</i>
	<i>log_builtin_as_identified_by_password</i>	<i>OFF</i>
	<i>log_error</i>	<i>/var/log/mysql/error.log</i>
	<i>log_error_verbosity</i>	<i>3</i>
	<i>log_output</i>	<i>FILE</i>
	<i>log_queries_not_using_indexes</i>	<i>OFF</i>
	<i>log_slave_updates</i>	<i>OFF</i>
	<i>log_slow_admin_statements</i>	<i>OFF</i>
	<i>log_slow_slave_statements</i>	<i>OFF</i>
	<i>log_statements_unsafe_for_binlog</i>	<i>ON</i>
	<i>log_syslog</i>	<i>OFF</i>
	<i>log_syslog_facility</i>	<i>daemon</i>
	<i>log_syslog_include_pid</i>	<i>ON</i>
	<i>log_syslog_tag</i>	
	<i>log_throttle_queries_not_using_indexes</i>	<i>0</i>
	<i>log_timestamps</i>	<i>UTC</i>
	<i>log_warnings</i>	<i>2</i>
	<i>long_query_time</i>	<i>10.000000</i>
	<i>low_priority_updates</i>	<i>OFF</i>
	<i>lower_case_file_system</i>	<i>OFF</i>

	<i>lower_case_table_names</i>	<i>0</i>
	<i>master_info_repository</i>	<i>FILE</i>
	<i>master_verify_checksum</i>	<i>OFF</i>
	<i>max_allowed_packet</i>	<i>16777216</i>
	<i>max_binlog_cache_size</i>	<i>18446744073709547520</i>
	<i>max_binlog_size</i>	<i>104857600</i>
	<i>max_binlog_stmt_cache_size</i>	<i>18446744073709547520</i>
	<i>max_connect_errors</i>	<i>100</i>
	<i>max_connections</i>	<i>151</i>
	<i>max_delayed_threads</i>	<i>20</i>
	<i>max_digest_length</i>	<i>1024</i>
	<i>max_error_count</i>	<i>64</i>
	<i>max_execution_time</i>	<i>0</i>
	<i>max_heap_table_size</i>	<i>16777216</i>
	<i>max_insert_delayed_threads</i>	<i>20</i>
	<i>max_join_size</i>	<i>18446744073709551615</i>
	<i>max_length_for_sort_data</i>	<i>1024</i>
	<i>max_points_in_geometry</i>	<i>65536</i>
	<i>max_prepared_stmt_count</i>	<i>16382</i>
	<i>max_relay_log_size</i>	<i>0</i>
	<i>max_seeks_for_key</i>	<i>18446744073709551615</i>
	<i>max_sort_length</i>	<i>1024</i>

	<i>max_sp_recursion_depth</i>	0
	<i>max_tmp_tables</i>	32
	<i>max_user_connections</i>	0
	<i>max_write_lock_count</i>	18446744073709551615
	<i>metadata_locks_cache_size</i>	1024
	<i>metadata_locks_hash_instances</i>	8
	<i>min_examined_row_limit</i>	0
	<i>multi_range_count</i>	256
	<i>myisam_data_pointer_size</i>	6
	<i>myisam_max_sort_file_size</i>	9223372036853727232
	<i>myisam_mmap_size</i>	18446744073709551615
	<i>myisam_recover_options</i>	BACKUP
	<i>myisam_repair_threads</i>	1
	<i>myisam_sort_buffer_size</i>	8388608
	<i>myisam_stats_method</i>	<i>nulls_unequal</i>
	<i>myisam_use_mmap</i>	OFF
	<i>mysql_native_password_proxy_users</i>	OFF
	<i>net_buffer_length</i>	16384
	<i>net_read_timeout</i>	30
	<i>net_retry_count</i>	10
	<i>net_write_timeout</i>	60
	<i>new</i>	OFF

	<i>ngram_token_size</i>	2
	<i>offline_mode</i>	OFF
	<i>old</i>	OFF
	<i>old_alter_table</i>	OFF
	<i>old_passwords</i>	0
	<i>open_files_limit</i>	1024
	<i>optimizer_prune_level</i>	1
	<i>optimizer_search_depth</i>	62
	<i>optimizer_switch</i>	
	<i>index_merge=on,index_merge_union=on,index_merge_sort_union=on,index_merge_intersection=on,engine_condition_pushdown=on,index_condition_pushdown=on,mrr=on,mrr_cost_based=on,block_nested_loop=on,batched_key_access=off,materialization=on,semijoin=on,loosescan=on,firstmatch=on,duplicateweedout=on,subquery_materialization_cost_based=on,use_index_extensions=on,condition_fanout_filter=on,derived_merge=on</i>	
	<i>optimizer_trace</i>	enabled=off,one_line=off
	<i>optimizer_trace_features</i>	
	<i>greedy_search=on,range_optimizer=on,dynamic_range=on,repeated_subselect=on</i>	
	<i>optimizer_trace_limit</i>	1
	<i>optimizer_trace_max_mem_size</i>	16384
	<i>optimizer_trace_offset</i>	-1
	<i>parser_max_mem_size</i>	18446744073709551615
	<i>performance_schema</i>	ON
	<i>performance_schema_accounts_size</i>	-1
	<i>performance_schema_digests_size</i>	5000
	<i>performance_schema_events_stages_history_long_size</i>	1000

<i>performance_schema_events_stages_history_size</i>	10
<i>performance_schema_events_statements_history_long_size</i>	1000
<i>performance_schema_events_statements_history_size</i>	10
<i>performance_schema_events_transactions_history_long_size</i>	1000
<i>performance_schema_events_transactions_history_size</i>	10
<i>performance_schema_events_waits_history_long_size</i>	1000
<i>performance_schema_events_waits_history_size</i>	10
<i>performance_schema_hosts_size</i>	-1
<i>performance_schema_max_cond_classes</i>	80
<i>performance_schema_max_cond_instances</i>	-1
<i>performance_schema_max_digest_length</i>	1024
<i>performance_schema_max_file_classes</i>	80
<i>performance_schema_max_file_handles</i>	32768
<i>performance_schema_max_file_instances</i>	-1
<i>performance_schema_max_index_stat</i>	-1
<i>performance_schema_max_memory_classes</i>	320
<i>performance_schema_max_metadata_locks</i>	-1
<i>performance_schema_max_mutex_classes</i>	200
<i>performance_schema_max_mutex_instances</i>	-1
<i>performance_schema_max_prepared_statements_instances</i>	-1
<i>performance_schema_max_program_instances</i>	-1
<i>performance_schema_max_rwlock_classes</i>	40

<i>performance_schema_max_rwlock_instances</i>	-1
<i>performance_schema_max_socket_classes</i>	10
<i>performance_schema_max_socket_instances</i>	-1
<i>performance_schema_max_sql_text_length</i>	1024
<i>performance_schema_max_stage_classes</i>	150
<i>performance_schema_max_statement_classes</i>	193
<i>performance_schema_max_statement_stack</i>	10
<i>performance_schema_max_table_handles</i>	-1
<i>performance_schema_max_table_instances</i>	-1
<i>performance_schema_max_table_lock_stat</i>	-1
<i>performance_schema_max_thread_classes</i>	50
<i>performance_schema_max_thread_instances</i>	-1
<i>performance_schema_session_connect_attrs_size</i>	512
<i>performance_schema_setup_actors_size</i>	-1
<i>performance_schema_setup_objects_size</i>	-1
<i>performance_schema_users_size</i>	-1
<i>pid_file</i>	/var/run/mysqld/mysqld.pid
<i>plugin_dir</i>	/usr/lib/mysql/plugin/
<i>port</i>	3306
<i>preload_buffer_size</i>	32768
<i>profiling</i>	OFF
<i>profiling_history_size</i>	15

<i>protocol_version</i>	10
<i>proxy_user</i>	
<i>pseudo_slave_mode</i>	OFF
<i>pseudo_thread_id</i>	11
<i>query_alloc_block_size</i>	8192
<i>query_cache_limit</i>	1048576
<i>query_cache_min_res_unit</i>	4096
<i>query_cache_size</i>	16777216
<i>query_cache_type</i>	OFF
<i>query_cache_wlock_invalidate</i>	OFF
<i>query_prealloc_size</i>	8192
<i>rand_seed1</i>	0
<i>rand_seed2</i>	0
<i>range_alloc_block_size</i>	4096
<i>range_optimizer_max_mem_size</i>	8388608
<i>rbr_exec_mode</i>	STRICT
<i>read_buffer_size</i>	131072
<i>read_only</i>	OFF
<i>read_rnd_buffer_size</i>	262144
<i>relay_log</i>	
<i>relay_log_basename</i>	/var/lib/mysql/IAW-relay-bin
<i>relay_log_index</i>	/var/lib/mysql/IAW-relay-bin.index

<i>relay_log_info_file</i>	<i>relay-log.info</i>
<i>relay_log_info_repository</i>	<i>FILE</i>
<i>relay_log_purge</i>	<i>ON</i>
<i>relay_log_recovery</i>	<i>OFF</i>
<i>relay_log_space_limit</i>	<i>0</i>
<i>report_host</i>	
<i>report_password</i>	
<i>report_port</i>	<i>3306</i>
<i>report_user</i>	
<i>require_secure_transport</i>	<i>OFF</i>
<i>rpl_stop_slave_timeout</i>	<i>31536000</i>
<i>secure_auth</i>	<i>ON</i>
<i>secure_file_priv</i>	<i>/var/lib/mysql-files/</i>
<i>server_id</i>	<i>0</i>
<i>server_id_bits</i>	<i>32</i>
<i>server_uuid</i>	<i>273f9cb6-a83c-11e6-8295-08002706ddf4</i>
<i>session_track_gtids</i>	<i>OFF</i>
<i>session_track_schema</i>	<i>ON</i>
<i>session_track_state_change</i>	<i>OFF</i>
<i>session_track_system_variables</i>	
<i>time_zone,autocommit,character_set_client,character_set_results,character_set_connection</i>	
<i>session_track_transaction_info</i>	<i>OFF</i>

<i>sha256_password_proxy_users</i>	<i>OFF</i>
<i>show_compatibility_56</i>	<i>OFF</i>
<i>show_old_temporals</i>	<i>OFF</i>
<i>skip_external_locking</i>	<i>ON</i>
<i>skip_name_resolve</i>	<i>OFF</i>
<i>skip_networking</i>	<i>OFF</i>
<i>skip_show_database</i>	<i>OFF</i>
<i>slave_allow_batching</i>	<i>OFF</i>
<i>slave_checkpoint_group</i>	<i>512</i>
<i>slave_checkpoint_period</i>	<i>300</i>
<i>slave_compressed_protocol</i>	<i>OFF</i>
<i>slave_exec_mode</i>	<i>STRICT</i>
<i>slave_load_tmpdir</i>	<i>/tmp</i>
<i>slave_max_allowed_packet</i>	<i>1073741824</i>
<i>slave_net_timeout</i>	<i>60</i>
<i>slave_parallel_type</i>	<i>DATABASE</i>
<i>slave_parallel_workers</i>	<i>0</i>
<i>slave_pending_jobs_size_max</i>	<i>16777216</i>
<i>slave_preserve_commit_order</i>	<i>OFF</i>
<i>slave_rows_search_algorithms</i>	<i>TABLE_SCAN,INDEX_SCAN</i>
<i>slave_skip_errors</i>	<i>OFF</i>
<i>slave_sql_verify_checksum</i>	<i>ON</i>

<i>slave_transaction_retries</i>	<i>10</i>
<i>slave_type_conversions</i>	
<i>slow_launch_time</i>	<i>2</i>
<i>slow_query_log</i>	<i>OFF</i>
<i>slow_query_log_file</i>	<i>/var/lib/mysql/IAW-slow.log</i>
<i>socket</i>	<i>/var/run/mysqld/mysqld.sock</i>
<i>sort_buffer_size</i>	<i>262144</i>
<i>sql_auto_is_null</i>	<i>OFF</i>
<i>sql_big_selects</i>	<i>ON</i>
<i>sql_buffer_result</i>	<i>OFF</i>
<i>sql_log_bin</i>	<i>ON</i>
<i>sql_log_off</i>	<i>OFF</i>
<i>sql_mode</i>	 <i>ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION</i>
<i>sql_notes</i>	<i>ON</i>
<i>sql_quote_show_create</i>	<i>ON</i>
<i>sql_safe_updates</i>	<i>OFF</i>
<i>sql_select_limit</i>	<i>18446744073709551615</i>
<i>sql_slave_skip_counter</i>	<i>0</i>
<i>sql_warnings</i>	<i>OFF</i>
<i>ssl_ca</i>	
<i>ssl_capath</i>	

<i>ssl_cert</i>		
<i>ssl_cipher</i>		
<i>ssl_crl</i>		
<i>ssl_crlpath</i>		
<i>ssl_key</i>		
<i>stored_program_cache</i>		<i>256</i>
<i>super_read_only</i>		<i>OFF</i>
<i>sync_binlog</i>		<i>1</i>
<i>sync_frm</i>		<i>ON</i>
<i>sync_master_info</i>		<i>10000</i>
<i>sync_relay_log</i>		<i>10000</i>
<i>sync_relay_log_info</i>		<i>10000</i>
<i>system_time_zone</i>		<i>CEST</i>
<i>table_definition_cache</i>		<i>615</i>
<i>table_open_cache</i>		<i>431</i>
<i>table_open_cache_instances</i>		<i>16</i>
<i>thread_cache_size</i>		<i>8</i>
<i>thread_handling</i>		<i>one-thread-per-connection</i>
<i>thread_stack</i>		<i>196608</i>
<i>time_format</i>		<i>%H:%i:%s</i>
<i>time_zone</i>		<i>SYSTEM</i>
<i>timestamp</i>		<i>1490812883.129312</i>

```
|
| tls_version | TLSv1,TLSv1.1
|
| tmp_table_size | 16777216
|
| tmpdir | /tmp
|
| transaction_alloc_block_size | 8192
|
| transaction_allow_batching | OFF
|
| transaction_prealloc_size | 4096
|
| transaction_write_set_extraction | OFF
|
| tx_isolation | REPEATABLE-READ
|
| tx_read_only | OFF
|
| unique_checks | ON
|
| updatable_views_with_limit | YES
|
| version | 5.7.17-0ubuntu0.16.04.1
|
| version_comment | (Ubuntu)
|
| version_compile_machine | x86_64
|
| version_compile_os | Linux
|
| wait_timeout | 28800
|
| warning_count | 0
|
+-----+
-----
-----
-----
-----+
507 rows in set (0,00 sec)
```

...ahora acabamos con *mysql> notee;*

3. Mostrar la informació d'estat del motor InnoDB.

Para ver el estado del motor **INNODB**, ejecutaremos el siguiente comando desde un terminal una vez conectados a **MySQL**:

tee ejer3.txt

SHOW ENGINE INNODB STATUS\G

```
mysql> tee ejer3.txt
Logging to file 'ejer3.txt'
mysql> SHOW ENGINE INNODB STATUS\G
***** 1. row *****
Type: InnoDB
Name:
Status:
=====
2017-03-29 21:09:58 0x7f203c1da700 INNODB MONITOR OUTPUT
=====
Per second averages calculated from the last 22 seconds
-----
BACKGROUND THREAD
-----
srv_master_thread loops: 1 srv_active, 0 srv_shutdown, 7539 srv_idle
srv_master_thread log flush and writes: 7537
```

mysql> SHOW ENGINE INNODB STATUS\G

******* 1. row *******

Type: InnoDB

Name:

Status:

=====

2017-03-29 21:09:58 0x7f203c1da700 INNODB MONITOR OUTPUT

=====

Per second averages calculated from the last 22 seconds

BACKGROUND THREAD

srv_master_thread loops: 1 srv_active, 0 srv_shutdown, 7539 srv_idle

srv_master_thread log flush and writes: 7537

SEMAPHORES

OS WAIT ARRAY INFO: reservation count 4

OS WAIT ARRAY INFO: signal count 4

RW-shared spins 0, rounds 4, OS waits 2

RW-excl spins 0, rounds 0, OS waits 0

RW-sx spins 0, rounds 0, OS waits 0

Spin rounds per wait: 4.00 RW-shared, 0.00 RW-excl, 0.00 RW-sx

TRANSACTIONS

Trx id counter 11010

Purge done for trx's n:o < 0 undo n:o < 0 state: running but idle

History list length 0

LIST OF TRANSACTIONS FOR EACH SESSION:

---TRANSACTION 421251709532000, not started

0 lock struct(s), heap size 1136, 0 row lock(s)

FILE I/O

I/O thread 0 state: waiting for completed aio requests (insert buffer thread)

I/O thread 1 state: waiting for completed aio requests (log thread)

I/O thread 2 state: waiting for completed aio requests (read thread)

I/O thread 3 state: waiting for completed aio requests (read thread)

I/O thread 4 state: waiting for completed aio requests (read thread)

I/O thread 5 state: waiting for completed aio requests (read thread)

I/O thread 6 state: waiting for completed aio requests (write thread)

I/O thread 7 state: waiting for completed aio requests (write thread)

I/O thread 8 state: waiting for completed aio requests (write thread)

I/O thread 9 state: waiting for completed aio requests (write thread)

Pending normal aio reads: [0, 0, 0, 0] , aio writes: [0, 0, 0, 0] ,

ibuf aio reads:, log i/o's:, sync i/o's:

Pending flushes (fsync) log: 0; buffer pool: 0

297 OS file reads, 54 OS file writes, 7 OS fsyncs

0.00 reads/s, 0 avg bytes/read, 0.00 writes/s, 0.00 fsyncs/s

INSERT BUFFER AND ADAPTIVE HASH INDEX

Ibuf: size 1, free list len 0, seg size 2, 0 merges

merged operations:

insert 0, delete mark 0, delete 0

discarded operations:

insert 0, delete mark 0, delete 0

Hash table size 34673, node heap has 0 buffer(s)

Hash table size 34673, node heap has 0 buffer(s)

Hash table size 34673, node heap has 0 buffer(s)

Hash table size 34673, node heap has 0 buffer(s)

Hash table size 34673, node heap has 0 buffer(s)

Hash table size 34673, node heap has 0 buffer(s)

Hash table size 34673, node heap has 0 buffer(s)

Hash table size 34673, node heap has 0 buffer(s)

0.00 hash searches/s, 0.00 non-hash searches/s

LOG

Log sequence number 2798450

Log flushed up to 2798450
Pages flushed up to 2798450
Last checkpoint at 2798441
0 pending log flushes, 0 pending chkp writes
10 log i/o's done, 0.00 log i/o's/second

BUFFER POOL AND MEMORY

Total large memory allocated 137428992
Dictionary memory allocated 267804
Buffer pool size 8191
Free buffers 7886
Database pages 305
Old database pages 0
Modified db pages 0
Pending reads 0
Pending writes: LRU 0, flush list 0, single page 0
Pages made young 0, not young 0
0.00 youngs/s, 0.00 non-youngs/s
Pages read 270, created 35, written 37
0.00 reads/s, 0.00 creates/s, 0.00 writes/s
No buffer pool page gets since the last printout
Pages read ahead 0.00/s, evicted without access 0.00/s, Random read ahead 0.00/s
LRU len: 305, unzip_LRU len: 0
I/O sum[0]:cur[0], unzip sum[0]:cur[0]

ROW OPERATIONS

0 queries inside InnoDB, 0 queries in queue
0 read views open inside InnoDB
Process ID=22987, Main thread ID=139776432850688, state: sleeping
Number of rows inserted 0, updated 0, deleted 0, read 8
0.00 inserts/s, 0.00 updates/s, 0.00 deletes/s, 0.00 reads/s

END OF INNODB MONITOR OUTPUT
=====

1 row in set (0,00 sec)

...ahora acabamos con *mysql> notee;*

4. Mostrar la informació dels fluxos que estan en execució, però per a més de 100 caràcters (no es pot emprar mysqladmin).

Para ver el número de flujos en ejecución ejecutaremos:

SHOW PROCESSLIST;

```
mysql> SHOW PROCESSLIST;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Id | User | Host      | db  | Command | Time | State  | Info                |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 11 | root | localhost | NULL | Query   | 0    | starting | SHOW PROCESSLIST |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0,00 sec)

mysql> 
```

Ahora si queremos ver más de 100 *caracteres*, ejecutamos:

SHOW FULL PROCESSLIST\G;

```
mysql> SHOW FULL PROCESSLIST\G
***** 1. row *****
I      Id: 11
      User: root
      Host: localhost
      db: NULL
Command: Query
      Time: 0
      State: starting
      Info: SHOW FULL PROCESSLIST
1 row in set (0,00 sec)
```

El campo donde están las consultas es “**INFO**”, por lo tanto debemos aplicar la restricción *únicamente en ese campo*:

SELECT * FROM information_schema.processlist WHERE LENGTH('INFO') > 100;

```
mysql> SELECT * FROM information schema.processlist WHERE LENGTH('INFO') > 100;
Empty set (0,01 sec)
```