Sys用户使用说明

# 视图

Many of the views in the sys schema have both a command line user friendly format output, as well as tooling friendly versions of any view that contains formatted output duplicated as an x$ table.

## host\_summary / x$host\_summary

Description：Summarizes statement activity, file IO and connections by host.When the host found is NULL, it is assumed to be a "background" thread.Structures (5.7)

mysql>desc host\_summary;

+------------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------+---------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| statements | decimal(64,0) | YES | | NULL | |

| statement\_latency | text | YES | | NULL | |

| statement\_avg\_latency | text | YES | | NULL | |

| table\_scans | decimal(65,0) | YES | | NULL | |

| file\_ios | decimal(64,0) | YES | | NULL | |

| file\_io\_latency | text | YES | | NULL | |

| current\_connections | decimal(41,0) | YES | | NULL | |

| total\_connections | decimal(41,0) | YES | | NULL | |

| unique\_users | bigint(21) | NO | | 0 | |

| current\_memory | text | YES | | NULL | |

| total\_memory\_allocated | text | YES | | NULL | |

+------------------------+---------------+------+-----+---------+-------+

12 rows inset (0.15 sec)

mysql>desc x$host\_summary;

+------------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------+---------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| statements | decimal(64,0) | YES | | NULL | |

| statement\_latency | decimal(64,0) | YES | | NULL | |

| statement\_avg\_latency | decimal(65,4) | YES | | NULL | |

| table\_scans | decimal(65,0) | YES | | NULL | |

| file\_ios | decimal(64,0) | YES | | NULL | |

| file\_io\_latency | decimal(64,0) | YES | | NULL | |

| current\_connections | decimal(41,0) | YES | | NULL | |

| total\_connections | decimal(41,0) | YES | | NULL | |

| unique\_users | bigint(21) | NO | | 0 | |

| current\_memory | decimal(63,0) | YES | | NULL | |

| total\_memory\_allocated | decimal(64,0) | YES | | NULL | |

+------------------------+---------------+------+-----+---------+-------+

12 rows inset (0.00 sec)

Example

mysql>select \* from host\_summary;

+------+------------+-------------------+-----------------------+-------------+----------+-----------------+---------------------+-------------------+--------------+

| host | statements | statement\_latency | statement\_avg\_latency | table\_scans | file\_ios | file\_io\_latency | current\_connections | total\_connections | unique\_users |

+------+------------+-------------------+-----------------------+-------------+----------+-----------------+---------------------+-------------------+--------------+

| hal1 | 2924 | 00:03:59.53 | 81.92 ms | 82 | 54702 | 55.61 s | 1 | 1 | 1 |

+------+------------+-------------------+-----------------------+-------------+----------+-----------------+---------------------+-------------------+--------------+

## host\_summary\_by\_file\_io / x$host\_summary\_by\_file\_io

Description：Summarizes file IO totals per host.When the host found is NULL, it is assumed to be a "background" thread.Structures

mysql>desc host\_summary\_by\_file\_io;

+------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+---------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| ios | decimal(42,0) | YES | | NULL | |

| io\_latency | text | YES | | NULL | |

+------------+---------------+------+-----+---------+-------+

3 rows inset (0.00 sec)

mysql>desc x$host\_summary\_by\_file\_io;

+------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+---------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| ios | decimal(42,0) | YES | | NULL | |

| io\_latency | decimal(42,0) | YES | | NULL | |

+------------+---------------+------+-----+---------+-------+

3 rows inset (0.06 sec)

Example

mysql>select \* from host\_summary\_by\_file\_io;

+------------+-------+------------+

| host | ios | io\_latency |

+------------+-------+------------+

| hal1 | 26457 | 21.58 s |

| hal2 | 1189 | 394.21 ms |

+------------+-------+------------+

## host\_summary\_by\_file\_io\_typ/ x$host\_summary\_by\_file\_io\_type

Description：Summarizes file IO by event type per host.When the host found is NULL, it is assumed to be a "background" thread.Structures

mysql>desc host\_summary\_by\_file\_io\_type;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| event\_name | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

5 rows inset (0.70 sec)

mysql>desc x$host\_summary\_by\_file\_io\_type;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| event\_name | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

5 rows inset (0.01 sec)

Example

mysql>select \* from host\_summary\_by\_file\_io\_type;

+------------+--------------------------------------+-------+---------------+-------------+

| host | event\_name | total | total\_latency | max\_latency |

+------------+--------------------------------------+-------+---------------+-------------+

| hal1 | wait/io/file/sql/FRM | 871 | 168.15 ms | 18.48 ms |

| hal1 | wait/io/file/innodb/innodb\_data\_file | 173 | 129.56 ms | 34.09 ms |

| hal1 | wait/io/file/innodb/innodb\_log\_file | 20 | 77.53 ms | 60.66 ms |

| hal1 | wait/io/file/myisam/dfile | 40 | 6.54 ms | 4.58 ms |

| hal1 | wait/io/file/mysys/charset | 3 | 4.79 ms | 4.71 ms |

| hal1 | wait/io/file/myisam/kfile | 67 | 4.38 ms | 300.04 us |

| hal1 | wait/io/file/sql/ERRMSG | 5 | 2.72 ms | 1.69 ms |

| hal1 | wait/io/file/sql/pid | 3 | 266.30 us | 185.47 us |

| hal1 | wait/io/file/sql/casetest | 5 | 246.81 us | 150.19 us |

| hal1 | wait/io/file/sql/global\_ddl\_log | 2 | 21.24 us | 18.59 us |

| hal2 | wait/io/file/sql/file\_parser | 1422 | 4.80 s | 135.14 ms |

| hal2 | wait/io/file/sql/FRM | 865 | 85.82 ms | 9.81 ms |

| hal2 | wait/io/file/myisam/kfile | 1073 | 37.14 ms | 15.79 ms |

| hal2 | wait/io/file/myisam/dfile | 2991 | 25.53 ms | 5.25 ms |

| hal2 | wait/io/file/sql/dbopt | 20 | 1.07 ms | 153.07 us |

| hal2 | wait/io/file/sql/misc | 4 | 59.71 us | 33.75 us |

| hal2 | wait/io/file/archive/data | 1 | 13.91 us | 13.91 us |

+------------+--------------------------------------+-------+---------------+-------------+

## host\_summary\_by\_stages / x$host\_summary\_by\_stages

Description：Summarizes stages by host, ordered by host and total latency per stage.When the host found is NULL, it is assumed to be a "background" thread.Structures

mysql>desc host\_summary\_by\_stages;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| event\_name | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

5 rows inset (0.06 sec)

mysql>desc x$host\_summary\_by\_stages;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| event\_name | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

5 rows inset (0.81 sec)

Example

mysql>select \* from host\_summary\_by\_stages;

+------+--------------------------------+-------+---------------+-------------+

| host | event\_name | total | total\_latency | avg\_latency |

+------+--------------------------------+-------+---------------+-------------+

| hal | stage/sql/Opening tables | 889 | 1.97 ms | 2.22 us |

| hal | stage/sql/Creating sort index | 4 | 1.79 ms | 446.30 us |

| hal | stage/sql/init | 10 | 312.27 us | 31.23 us |

| hal | stage/sql/checking permissions | 10 | 300.62 us | 30.06 us |

| hal | stage/sql/freeing items | 5 | 85.89 us | 17.18 us |

| hal | stage/sql/statistics | 5 | 79.15 us | 15.83 us |

| hal | stage/sql/preparing | 5 | 69.12 us | 13.82 us |

| hal | stage/sql/optimizing | 5 | 53.11 us | 10.62 us |

| hal | stage/sql/Sending data | 5 | 44.66 us | 8.93 us |

| hal | stage/sql/closing tables | 5 | 37.54 us | 7.51 us |

| hal | stage/sql/System lock | 5 | 34.28 us | 6.86 us |

| hal | stage/sql/query end | 5 | 24.37 us | 4.87 us |

| hal | stage/sql/end | 5 | 8.60 us | 1.72 us |

| hal | stage/sql/Sorting result | 5 | 8.33 us | 1.67 us |

| hal | stage/sql/executing | 5 | 5.37 us | 1.07 us |

| hal | stage/sql/cleaning up | 5 | 4.60 us | 919.00 ns |

+------+--------------------------------+-------+---------------+-------------+

## host\_summary\_by\_statement\_latency / x$host\_summary\_by\_statement\_latency

Description：Summarizes overall statement statistics by host.When the host found is NULL, it is assumed to be a "background" thread.Structures

mysql>desc host\_summary\_by\_statement\_latency;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| lock\_latency | text | YES | | NULL | |

| rows\_sent | decimal(42,0) | YES | | NULL | |

| rows\_examined | decimal(42,0) | YES | | NULL | |

| rows\_affected | decimal(42,0) | YES | | NULL | |

| full\_scans | decimal(43,0) | YES | | NULL | |

+---------------+---------------+------+-----+---------+-------+

9 rows inset (0.29 sec)

mysql>desc x$host\_summary\_by\_statement\_latency;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | decimal(42,0) | YES | | NULL | |

| max\_latency | decimal(42,0) | YES | | NULL | |

| lock\_latency | decimal(42,0) | YES | | NULL | |

| rows\_sent | decimal(42,0) | YES | | NULL | |

| rows\_examined | decimal(42,0) | YES | | NULL | |

| rows\_affected | decimal(42,0) | YES | | NULL | |

| full\_scans | decimal(43,0) | YES | | NULL | |

+---------------+---------------+------+-----+---------+-------+

9 rows inset (0.54 sec)

Example

mysql>select \* from host\_summary\_by\_statement\_latency;

+------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

| host | total | total\_latency | max\_latency | lock\_latency | rows\_sent | rows\_examined | rows\_affected | full\_scans |

+------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

| hal | 3381 | 00:02:09.13 | 1.48 s | 1.07 s | 1151 | 93947 | 150 | 91 |

+------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

## host\_summary\_by\_statement\_type / x$host\_summary\_by\_statement\_type

Description：Summarizes the types of statements executed by each host.

When the host found is NULL, it is assumed to be a "background" thread.

Structures

mysql>desc host\_summary\_by\_statement\_type;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| statement | varchar(128) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| lock\_latency | text | YES | | NULL | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_affected | bigint(20) unsigned | NO | | NULL | |

| full\_scans | bigint(21) unsigned | NO | | 0 | |

+---------------+---------------------+------+-----+---------+-------+

10 rows inset (0.30 sec)

mysql>desc x$host\_summary\_by\_statement\_type;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| statement | varchar(128) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

| lock\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_affected | bigint(20) unsigned | NO | | NULL | |

| full\_scans | bigint(21) unsigned | NO | | 0 | |

+---------------+---------------------+------+-----+---------+-------+

10 rows inset (0.76 sec)

Example

mysql>select \* from host\_summary\_by\_statement\_type;

+------+----------------------+--------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

| host | statement | total | total\_latency | max\_latency | lock\_latency | rows\_sent | rows\_examined | rows\_affected | full\_scans |

+------+----------------------+--------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

| hal | create\_view | 2063 | 00:05:04.20 | 463.58 ms | 1.42 s | 0 | 0 | 0 | 0 |

| hal | select | 174 | 40.87 s | 28.83 s | 858.13 ms | 5212 | 157022 | 0 | 82 |

| hal | stmt | 6645 | 15.31 s | 491.78 ms | 0 ps | 0 | 0 | 7951 | 0 |

| hal | call\_procedure | 17 | 4.78 s | 1.02 s | 37.94 ms | 0 | 0 | 19 | 0 |

| hal | create\_table | 19 | 3.04 s | 431.71 ms | 0 ps | 0 | 0 | 0 | 0 |

...

+------+----------------------+--------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

## innodb\_buffer\_stats\_by\_schema / x$innodb\_buffer\_stats\_by\_schema

Description:Summarizes the output of the INFORMATION\_SCHEMA.INNODB\_BUFFER\_PAGE table, aggregating by schema.

Structures

mysql>desc innodb\_buffer\_stats\_by\_schema;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| object\_schema | text | YES | | NULL | |

| allocated | text | YES | | NULL | |

| data | text | YES | | NULL | |

| pages | bigint(21) | NO | | 0 | |

| pages\_hashed | bigint(21) | NO | | 0 | |

| pages\_old | bigint(21) | NO | | 0 | |

| rows\_cached | decimal(44,0) | YES | | NULL | |

+---------------+---------------+------+-----+---------+-------+

7 rows inset (0.08 sec)

mysql>desc x$innodb\_buffer\_stats\_by\_schema;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| object\_schema | text | YES | | NULL | |

| allocated | decimal(43,0) | YES | | NULL | |

| data | decimal(43,0) | YES | | NULL | |

| pages | bigint(21) | NO | | 0 | |

| pages\_hashed | bigint(21) | NO | | 0 | |

| pages\_old | bigint(21) | NO | | 0 | |

| rows\_cached | decimal(44,0) | NO | | 0 | |

+---------------+---------------+------+-----+---------+-------+

7 rows inset (0.12 sec)

Example

mysql>select \* from innodb\_buffer\_stats\_by\_schema;

+--------------------------+------------+------------+-------+--------------+-----------+-------------+

| object\_schema | allocated | data | pages | pages\_hashed | pages\_old | rows\_cached |

+--------------------------+------------+------------+-------+--------------+-----------+-------------+

| mem30\_trunk\_\_instruments | 1.69 MiB | 510.03 KiB | 108 | 108 | 108 | 3885 |

| InnoDB System | 688.00 KiB | 351.62 KiB | 43 | 43 | 43 | 862 |

| mem30\_trunk\_\_events | 80.00 KiB | 21.61 KiB | 5 | 5 | 5 | 229 |

+--------------------------+------------+------------+-------+--------------+-----------+-------------+

## innodb\_buffer\_stats\_by\_table / x$innodb\_buffer\_stats\_by\_table

Description:Summarizes the output of the INFORMATION\_SCHEMA.INNODB\_BUFFER\_PAGE table, aggregating by schema and table name.

Structures

mysql>desc innodb\_buffer\_stats\_by\_table;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| object\_schema | text | YES | | NULL | |

| object\_name | text | YES | | NULL | |

| allocated | text | YES | | NULL | |

| data | text | YES | | NULL | |

| pages | bigint(21) | NO | | 0 | |

| pages\_hashed | bigint(21) | NO | | 0 | |

| pages\_old | bigint(21) | NO | | 0 | |

| rows\_cached | decimal(44,0) | YES | | NULL | |

+---------------+---------------+------+-----+---------+-------+

8 rows inset (0.09 sec)

mysql>desc x$innodb\_buffer\_stats\_by\_table;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| object\_schema | text | YES | | NULL | |

| object\_name | text | YES | | NULL | |

| allocated | decimal(43,0) | YES | | NULL | |

| data | decimal(43,0) | YES | | NULL | |

| pages | bigint(21) | NO | | 0 | |

| pages\_hashed | bigint(21) | NO | | 0 | |

| pages\_old | bigint(21) | NO | | 0 | |

| rows\_cached | decimal(44,0) | NO | | 0 | |

+---------------+---------------+------+-----+---------+-------+

8 rows inset (0.18 sec)

Example

mysql>select \* from innodb\_buffer\_stats\_by\_table;

+--------------------------+------------------------------------+------------+-----------+-------+--------------+-----------+-------------+

| object\_schema | object\_name | allocated | data | pages | pages\_hashed | pages\_old | rows\_cached |

+--------------------------+------------------------------------+------------+-----------+-------+--------------+-----------+-------------+

| InnoDB System | SYS\_COLUMNS | 128.00 KiB | 98.97 KiB | 8 | 8 | 8 | 1532 |

| InnoDB System | SYS\_FOREIGN | 128.00 KiB | 55.48 KiB | 8 | 8 | 8 | 172 |

| InnoDB System | SYS\_TABLES | 128.00 KiB | 56.18 KiB | 8 | 8 | 8 | 365 |

| InnoDB System | SYS\_INDEXES | 112.00 KiB | 76.16 KiB | 7 | 7 | 7 | 1046 |

| mem30\_trunk\_\_instruments | agentlatencytime | 96.00 KiB | 28.83 KiB | 6 | 6 | 6 | 252 |

| mem30\_trunk\_\_instruments | binlogspaceusagedata | 96.00 KiB | 22.54 KiB | 6 | 6 | 6 | 196 |

| mem30\_trunk\_\_instruments | connectionsdata | 96.00 KiB | 36.68 KiB | 6 | 6 | 6 | 276 |

| mem30\_trunk\_\_instruments | connectionsmaxdata | 96.00 KiB | 31.88 KiB | 6 | 6 | 6 | 271 |

| mem30\_trunk\_\_instruments | cpuaverage | 96.00 KiB | 14.32 KiB | 6 | 6 | 6 | 55 |

| mem30\_trunk\_\_instruments | diskiototaldata | 96.00 KiB | 42.71 KiB | 6 | 6 | 6 | 152 |

| mem30\_trunk\_\_instruments | innodbopenfilesdata | 96.00 KiB | 32.61 KiB | 6 | 6 | 6 | 266 |

| mem30\_trunk\_\_instruments | innodbrowlocktimestatisticsdata | 96.00 KiB | 32.16 KiB | 6 | 6 | 6 | 261 |

| mem30\_trunk\_\_instruments | myisamkeybufferusagedata | 96.00 KiB | 25.99 KiB | 6 | 6 | 6 | 232 |

| mem30\_trunk\_\_instruments | mysqlprocessactivity | 96.00 KiB | 31.99 KiB | 6 | 6 | 6 | 252 |

| mem30\_trunk\_\_instruments | querycacheaveragefreeblocksizedata | 96.00 KiB | 27.00 KiB | 6 | 6 | 6 | 237 |

| mem30\_trunk\_\_instruments | querycacheaveragequerysizedata | 96.00 KiB | 38.29 KiB | 6 | 6 | 6 | 315 |

| mem30\_trunk\_\_instruments | querycachefragmentationdata | 96.00 KiB | 27.00 KiB | 6 | 6 | 6 | 237 |

| mem30\_trunk\_\_instruments | querycachememorydata | 96.00 KiB | 32.58 KiB | 6 | 6 | 6 | 278 |

| mem30\_trunk\_\_instruments | querycachequeriesincachedata | 96.00 KiB | 27.15 KiB | 6 | 6 | 6 | 238 |

| mem30\_trunk\_\_instruments | ramusagedata | 96.00 KiB | 15.02 KiB | 6 | 6 | 6 | 59 |

| mem30\_trunk\_\_instruments | slaverelaylogspaceusagedata | 96.00 KiB | 28.28 KiB | 6 | 6 | 6 | 249 |

| mem30\_trunk\_\_instruments | swapusagedata | 96.00 KiB | 15.02 KiB | 6 | 6 | 6 | 59 |

| InnoDB System | SYS\_FIELDS | 80.00 KiB | 49.78 KiB | 5 | 5 | 5 | 1147 |

| InnoDB System | SYS\_DATAFILES | 32.00 KiB | 3.97 KiB | 2 | 2 | 2 | 60 |

| InnoDB System | SYS\_FOREIGN\_COLS | 32.00 KiB | 7.43 KiB | 2 | 2 | 2 | 83 |

| InnoDB System | SYS\_TABLESPACES | 32.00 KiB | 3.65 KiB | 2 | 2 | 2 | 56 |

| InnoDB System | SYS\_IBUF\_TABLE | 16.00 KiB | 0 bytes | 1 | 1 | 1 | 0 |

+--------------------------+------------------------------------+------------+-----------+-------+--------------+-----------+-------------+

## innodb\_lock\_waits / x$innodb\_lock\_waits

Description:Gives a snapshot of which InnoDB locks transactions are waiting for. The lock waits are ordered by the age of the lock descending.

Structures

mysql>desc sys.innodb\_lock\_waits;

+------------------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------------+---------------------+------+-----+---------------------+-------+

| wait\_started | datetime | YES | | NULL | |

| wait\_age | time | YES | | NULL | |

| wait\_age\_secs | bigint(21) | YES | | NULL | |

| locked\_table | varchar(1024) | NO | | | |

| locked\_index | varchar(1024) | YES | | NULL | |

| locked\_type | varchar(32) | NO | | | |

| waiting\_trx\_id | varchar(18) | NO | | | |

| waiting\_trx\_started | datetime | NO | | 0000-00-0000:00:00 | |

| waiting\_trx\_age | time | YES | | NULL | |

| waiting\_trx\_rows\_locked | bigint(21) unsigned | NO | | 0 | |

| waiting\_trx\_rows\_modified | bigint(21) unsigned | NO | | 0 | |

| waiting\_pid | bigint(21) unsigned | NO | | 0 | |

| waiting\_query | longtext | YES | | NULL | |

| waiting\_lock\_id | varchar(81) | NO | | | |

| waiting\_lock\_mode | varchar(32) | NO | | | |

| blocking\_trx\_id | varchar(18) | NO | | | |

| blocking\_pid | bigint(21) unsigned | NO | | 0 | |

| blocking\_query | longtext | YES | | NULL | |

| blocking\_lock\_id | varchar(81) | NO | | | |

| blocking\_lock\_mode | varchar(32) | NO | | | |

| blocking\_trx\_started | datetime | NO | | 0000-00-0000:00:00 | |

| blocking\_trx\_age | time | YES | | NULL | |

| blocking\_trx\_rows\_locked | bigint(21) unsigned | NO | | 0 | |

| blocking\_trx\_rows\_modified | bigint(21) unsigned | NO | | 0 | |

| sql\_kill\_blocking\_query | varchar(32) | YES | | NULL | |

| sql\_kill\_blocking\_connection | varchar(26) | YES | | NULL | |

+------------------------------+---------------------+------+-----+---------------------+-------+

26 rows inset (0.01 sec)

mysql>desc sys.x$innodb\_lock\_waits;

+------------------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------------+---------------------+------+-----+---------------------+-------+

| wait\_started | datetime | YES | | NULL | |

| wait\_age | time | YES | | NULL | |

| wait\_age\_secs | bigint(21) | YES | | NULL | |

| locked\_table | varchar(1024) | NO | | | |

| locked\_index | varchar(1024) | YES | | NULL | |

| locked\_type | varchar(32) | NO | | | |

| waiting\_trx\_id | varchar(18) | NO | | | |

| waiting\_trx\_started | datetime | NO | | 0000-00-0000:00:00 | |

| waiting\_trx\_age | time | YES | | NULL | |

| waiting\_trx\_rows\_locked | bigint(21) unsigned | NO | | 0 | |

| waiting\_trx\_rows\_modified | bigint(21) unsigned | NO | | 0 | |

| waiting\_pid | bigint(21) unsigned | NO | | 0 | |

| waiting\_query | varchar(1024) | YES | | NULL | |

| waiting\_lock\_id | varchar(81) | NO | | | |

| waiting\_lock\_mode | varchar(32) | NO | | | |

| blocking\_trx\_id | varchar(18) | NO | | | |

| blocking\_pid | bigint(21) unsigned | NO | | 0 | |

| blocking\_query | varchar(1024) | YES | | NULL | |

| blocking\_lock\_id | varchar(81) | NO | | | |

| blocking\_lock\_mode | varchar(32) | NO | | | |

| blocking\_trx\_started | datetime | NO | | 0000-00-0000:00:00 | |

| blocking\_trx\_age | time | YES | | NULL | |

| blocking\_trx\_rows\_locked | bigint(21) unsigned | NO | | 0 | |

| blocking\_trx\_rows\_modified | bigint(21) unsigned | NO | | 0 | |

| sql\_kill\_blocking\_query | varchar(32) | YES | | NULL | |

| sql\_kill\_blocking\_connection | varchar(26) | YES | | NULL | |

+------------------------------+---------------------+------+-----+---------------------+-------+

26 rows inset (0.02 sec)

Example

mysql>SELECT \* FROM innodb\_lock\_waits\G

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

wait\_started: 2014-11-1113:39:20

wait\_age: 00:00:07

wait\_age\_secs: 7

locked\_table: `db1`.`t1`

locked\_index: PRIMARY

locked\_type: RECORD

waiting\_trx\_id: 867158

waiting\_trx\_started: 2014-11-1113:39:15

waiting\_trx\_age: 00:00:12

waiting\_trx\_rows\_locked: 0

waiting\_trx\_rows\_modified: 0

waiting\_pid: 3

waiting\_query: UPDATE t1 SET val = val +1WHERE id =2

waiting\_lock\_id: 867158:2363:3:3

waiting\_lock\_mode: X

blocking\_trx\_id: 867157

blocking\_pid: 4

blocking\_query: UPDATE t1 SET val = val +1+ SLEEP(10) WHERE id =2

blocking\_lock\_id: 867157:2363:3:3

blocking\_lock\_mode: X

blocking\_trx\_started: 2014-11-1113:39:11

blocking\_trx\_age: 00:00:16

blocking\_trx\_rows\_locked: 1

blocking\_trx\_rows\_modified: 1

sql\_kill\_blocking\_query: KILL QUERY 4

sql\_kill\_blocking\_connection: KILL 4

## io\_by\_thread\_by\_latency / x$io\_by\_thread\_by\_latency

Description:Shows the top IO consumers by thread, ordered by total latency.

Structures

mysql>desc io\_by\_thread\_by\_latency;

+----------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+---------------------+------+-----+---------+-------+

| user | varchar(128) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | text | YES | | NULL | |

| min\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| thread\_id | bigint(20) unsigned | NO | | NULL | |

| processlist\_id | bigint(20) unsigned | YES | | NULL | |

+----------------+---------------------+------+-----+---------+-------+

8 rows inset (0.14 sec)

mysql>desc x$io\_by\_thread\_by\_latency;

+----------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+---------------------+------+-----+---------+-------+

| user | varchar(128) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | decimal(42,0) | YES | | NULL | |

| min\_latency | bigint(20) unsigned | YES | | NULL | |

| avg\_latency | decimal(24,4) | YES | | NULL | |

| max\_latency | bigint(20) unsigned | YES | | NULL | |

| thread\_id | bigint(20) unsigned | NO | | NULL | |

| processlist\_id | bigint(20) unsigned | YES | | NULL | |

+----------------+---------------------+------+-----+---------+-------+

8 rows inset (0.03 sec)

Example

mysql>select \* from io\_by\_thread\_by\_latency;

+---------------------+-------+---------------+-------------+-------------+-------------+-----------+----------------+

| user | total | total\_latency | min\_latency | avg\_latency | max\_latency | thread\_id | processlist\_id |

+---------------------+-------+---------------+-------------+-------------+-------------+-----------+----------------+

| root@localhost | 11580 | 18.01 s | 429.78 ns | 1.12 ms | 181.07 ms | 25 | 6 |

| main | 1358 | 1.31 s | 475.02 ns | 2.27 ms | 350.70 ms | 1 | NULL |

| page\_cleaner\_thread | 654 | 147.44 ms | 588.12 ns | 225.44 us | 46.41 ms | 18 | NULL |

| io\_write\_thread | 131 | 107.75 ms | 8.60 us | 822.55 us | 27.69 ms | 8 | NULL |

| io\_write\_thread | 46 | 47.07 ms | 10.64 us | 1.02 ms | 16.90 ms | 9 | NULL |

| io\_write\_thread | 71 | 46.99 ms | 9.11 us | 661.81 us | 17.04 ms | 11 | NULL |

| io\_log\_thread | 20 | 21.01 ms | 14.25 us | 1.05 ms | 7.08 ms | 3 | NULL |

| srv\_master\_thread | 13 | 17.60 ms | 8.49 us | 1.35 ms | 9.99 ms | 16 | NULL |

| srv\_purge\_thread | 4 | 1.81 ms | 34.31 us | 452.45 us | 1.02 ms | 17 | NULL |

| io\_write\_thread | 19 | 951.39 us | 9.75 us | 50.07 us | 297.47 us | 10 | NULL |

| signal\_handler | 3 | 218.03 us | 21.64 us | 72.68 us | 154.84 us | 19 | NULL |

+---------------------+-------+---------------+-------------+-------------+-------------+-----------+----------------+

## io\_global\_by\_file\_by\_bytes / x$io\_global\_by\_file\_by\_bytes

Description:Shows the top global IO consumers by bytes usage by file.Structures

mysql>desc io\_global\_by\_file\_by\_bytes;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| file | varchar(512) | YES | | NULL | |

| count\_read | bigint(20) unsigned | NO | | NULL | |

| total\_read | text | YES | | NULL | |

| avg\_read | text | YES | | NULL | |

| count\_write | bigint(20) unsigned | NO | | NULL | |

| total\_written | text | YES | | NULL | |

| avg\_write | text | YES | | NULL | |

| total | text | YES | | NULL | |

| write\_pct | decimal(26,2) | NO | | 0.00 | |

+---------------+---------------------+------+-----+---------+-------+

9 rows inset (0.15 sec)

mysql>desc x$io\_global\_by\_file\_by\_bytes;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| file | varchar(512) | NO | | NULL | |

| count\_read | bigint(20) unsigned | NO | | NULL | |

| total\_read | bigint(20) | NO | | NULL | |

| avg\_read | decimal(23,4) | NO | | 0.0000 | |

| count\_write | bigint(20) unsigned | NO | | NULL | |

| total\_written | bigint(20) | NO | | NULL | |

| avg\_write | decimal(23,4) | NO | | 0.0000 | |

| total | bigint(21) | NO | | 0 | |

| write\_pct | decimal(26,2) | NO | | 0.00 | |

+---------------+---------------------+------+-----+---------+-------+

9 rows inset (0.14 sec)

Example

mysql>SELECT \* FROM io\_global\_by\_file\_by\_bytes LIMIT 5;

+--------------------------------------------+------------+------------+-----------+-------------+---------------+-----------+------------+-----------+

| file | count\_read | total\_read | avg\_read | count\_write | total\_written | avg\_write | total | write\_pct |

+--------------------------------------------+------------+------------+-----------+-------------+---------------+-----------+------------+-----------+

| @@datadir/ibdata1 | 147 | 4.27 MiB | 29.71 KiB | 3 | 48.00 KiB | 16.00 KiB | 4.31 MiB | 1.09 |

| @@datadir/mysql/proc.MYD | 347 | 85.35 KiB | 252 bytes | 111 | 19.08 KiB | 176 bytes | 104.43 KiB | 18.27 |

| @@datadir/ib\_logfile0 | 6 | 68.00 KiB | 11.33 KiB | 8 | 4.00 KiB | 512 bytes | 72.00 KiB | 5.56 |

| /opt/mysql/5.5.33/share/english/errmsg.sys | 3 | 43.68 KiB | 14.56 KiB | 0 | 0 bytes | 0 bytes | 43.68 KiB | 0.00 |

| /opt/mysql/5.5.33/share/charsets/Index.xml | 1 | 17.89 KiB | 17.89 KiB | 0 | 0 bytes | 0 bytes | 17.89 KiB | 0.00 |

+--------------------------------------------+------------+------------+-----------+-------------+---------------+-----------+------------+-----------+

## io\_global\_by\_file\_by\_latency / x$io\_global\_by\_file\_by\_latency

Description:Shows the top global IO consumers by latency by file.Structures

mysql>desc io\_global\_by\_file\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| file | varchar(512) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| count\_read | bigint(20) unsigned | NO | | NULL | |

| read\_latency | text | YES | | NULL | |

| count\_write | bigint(20) unsigned | NO | | NULL | |

| write\_latency | text | YES | | NULL | |

| count\_misc | bigint(20) unsigned | NO | | NULL | |

| misc\_latency | text | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

9 rows inset (0.00 sec)

mysql>desc x$io\_global\_by\_file\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| file | varchar(512) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| count\_read | bigint(20) unsigned | NO | | NULL | |

| read\_latency | bigint(20) unsigned | NO | | NULL | |

| count\_write | bigint(20) unsigned | NO | | NULL | |

| write\_latency | bigint(20) unsigned | NO | | NULL | |

| count\_misc | bigint(20) unsigned | NO | | NULL | |

| misc\_latency | bigint(20) unsigned | NO | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

9 rows inset (0.07 sec)

Example

mysql>select \* from io\_global\_by\_file\_by\_latency limit 5;

+-----------------------------------------------------------+-------+---------------+------------+--------------+-------------+---------------+------------+--------------+

| file | total | total\_latency | count\_read | read\_latency | count\_write | write\_latency | count\_misc | misc\_latency |

+-----------------------------------------------------------+-------+---------------+------------+--------------+-------------+---------------+------------+--------------+

| @@datadir/sys/wait\_classes\_global\_by\_avg\_latency\_raw.frm~ | 24 | 451.99 ms | 0 | 0 ps | 4 | 108.07 us | 20 | 451.88 ms |

| @@datadir/sys/innodb\_buffer\_stats\_by\_schema\_raw.frm~ | 24 | 379.84 ms | 0 | 0 ps | 4 | 108.88 us | 20 | 379.73 ms |

| @@datadir/sys/io\_by\_thread\_by\_latency\_raw.frm~ | 24 | 379.46 ms | 0 | 0 ps | 4 | 101.37 us | 20 | 379.36 ms |

| @@datadir/ibtmp1 | 53 | 373.45 ms | 0 | 0 ps | 48 | 246.08 ms | 5 | 127.37 ms |

| @@datadir/sys/statement\_analysis\_raw.frm~ | 24 | 353.14 ms | 0 | 0 ps | 4 | 94.96 us | 20 | 353.04 ms |

+-----------------------------------------------------------+-------+---------------+------------+--------------+-------------+---------------+------------+--------------+

## io\_global\_by\_wait\_by\_bytes / x$io\_global\_by\_wait\_by\_bytes

Description:Shows the top global IO consumer classes by bytes usage.Structures

mysql>desc io\_global\_by\_wait\_by\_bytes;

+-----------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------------+---------------------+------+-----+---------+-------+

| event\_name | varchar(128) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| min\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| count\_read | bigint(20) unsigned | NO | | NULL | |

| total\_read | text | YES | | NULL | |

| avg\_read | text | YES | | NULL | |

| count\_write | bigint(20) unsigned | NO | | NULL | |

| total\_written | text | YES | | NULL | |

| avg\_written | text | YES | | NULL | |

| total\_requested | text | YES | | NULL | |

+-----------------+---------------------+------+-----+---------+-------+

13 rows inset (0.02 sec)

mysql>desc x$io\_global\_by\_wait\_by\_bytes;

+-----------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------------+---------------------+------+-----+---------+-------+

| event\_name | varchar(128) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| min\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

| count\_read | bigint(20) unsigned | NO | | NULL | |

| total\_read | bigint(20) | NO | | NULL | |

| avg\_read | decimal(23,4) | NO | | 0.0000 | |

| count\_write | bigint(20) unsigned | NO | | NULL | |

| total\_written | bigint(20) | NO | | NULL | |

| avg\_written | decimal(23,4) | NO | | 0.0000 | |

| total\_requested | bigint(21) | NO | | 0 | |

+-----------------+---------------------+------+-----+---------+-------+

13 rows inset (0.01 sec)

Example

mysql>select \* from io\_global\_by\_wait\_by\_bytes;

+--------------------+--------+---------------+-------------+-------------+-------------+------------+------------+-----------+-------------+---------------+-------------+-----------------+

| event\_name | total | total\_latency | min\_latency | avg\_latency | max\_latency | count\_read | total\_read | avg\_read | count\_write | total\_written | avg\_written | total\_requested |

+--------------------+--------+---------------+-------------+-------------+-------------+------------+------------+-----------+-------------+---------------+-------------+-----------------+

| myisam/dfile | 163681 | 983.13 ms | 379.08 ns | 6.01 us | 22.06 ms | 68737 | 127.31 MiB | 1.90 KiB | 1012221 | 121.52 MiB | 126 bytes | 248.83 MiB |

| myisam/kfile | 1775 | 375.13 ms | 1.02 us | 211.34 µs | 35.15 ms | 54066 | 9.97 MiB | 193 bytes | 428257 | 12.40 MiB | 30 bytes | 22.37 MiB |

| sql/FRM | 57889 | 8.40 s | 19.44 ns | 145.05 us | 336.71 ms | 8009 | 2.60 MiB | 341 bytes | 14675 | 2.91 MiB | 208 bytes | 5.51 MiB |

| sql/global\_ddl\_log | 164 | 75.96 ms | 5.72 us | 463.19 µs | 7.43 ms | 20 | 80.00 KiB | 4.00 KiB | 76 | 304.00 KiB | 4.00 KiB | 384.00 KiB |

| sql/file\_parser | 419 | 601.37 ms | 1.96 us | 1.44 ms | 37.14 ms | 66 | 42.01 KiB | 652 bytes | 64 | 226.98 KiB | 3.55 KiB | 268.99 KiB |

| sql/binlog | 190 | 6.79 s | 1.56 us | 35.76 ms | 4.21 s | 52 | 60.54 KiB | 1.16 KiB | 0 | 0 bytes | 0 bytes | 60.54 KiB |

| sql/ERRMSG | 5 | 2.03 s | 8.61 us | 405.40 ms | 2.03 s | 3 | 51.82 KiB | 17.27 KiB | 0 | 0 bytes | 0 bytes | 51.82 KiB |

| mysys/charset | 3 | 196.52 us | 17.61 µs | 65.51 µs | 137.33 µs | 1 | 17.83 KiB | 17.83 KiB | 0 | 0 bytes | 0 bytes | 17.83 KiB |

| sql/partition | 81 | 18.87 ms | 888.08 ns | 232.92 us | 4.67 ms | 66 | 2.75 KiB | 43 bytes | 8 | 288 bytes | 36 bytes | 3.04 KiB |

| sql/dbopt | 329166 | 26.95 s | 2.06 us | 81.89 µs | 178.71 ms | 0 | 0 bytes | 0 bytes | 9 | 585 bytes | 65 bytes | 585 bytes |

| sql/relaylog | 7 | 1.18 ms | 838.84 ns | 168.30 us | 892.70 µs | 0 | 0 bytes | 0 bytes | 1 | 120 bytes | 120 bytes | 120 bytes |

| mysys/cnf | 5 | 171.61 us | 303.26 ns | 34.32 µs | 115.21 µs | 3 | 56 bytes | 19 bytes | 0 | 0 bytes | 0 bytes | 56 bytes |

| sql/pid | 3 | 220.55 us | 29.29 µs | 73.52 µs | 143.11 µs | 0 | 0 bytes | 0 bytes | 1 | 5 bytes | 5 bytes | 5 bytes |

| sql/casetest | 1 | 121.19 us | 121.19 µs | 121.19 µs | 121.19 µs | 0 | 0 bytes | 0 bytes | 0 | 0 bytes | 0 bytes | 0 bytes |

| sql/binlog\_index | 5 | 593.47 us | 1.07 µs | 118.69 µs | 535.90 µs | 0 | 0 bytes | 0 bytes | 0 | 0 bytes | 0 bytes | 0 bytes |

| sql/misc | 23 | 2.73 ms | 65.14 us | 118.50 µs | 255.31 µs | 0 | 0 bytes | 0 bytes | 0 | 0 bytes | 0 bytes | 0 bytes |

+--------------------+--------+---------------+-------------+-------------+-------------+------------+------------+-----------+-------------+---------------+-------------+-----------------+

## io\_global\_by\_wait\_by\_latency / x$io\_global\_by\_wait\_by\_latency

Description:Shows the top global IO consumers by latency.Structures

mysql>desc io\_global\_by\_wait\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| event\_name | varchar(128) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| read\_latency | text | YES | | NULL | |

| write\_latency | text | YES | | NULL | |

| misc\_latency | text | YES | | NULL | |

| count\_read | bigint(20) unsigned | NO | | NULL | |

| total\_read | text | YES | | NULL | |

| avg\_read | text | YES | | NULL | |

| count\_write | bigint(20) unsigned | NO | | NULL | |

| total\_written | text | YES | | NULL | |

| avg\_written | text | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

14 rows inset (0.19 sec)

mysql>desc x$io\_global\_by\_wait\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| event\_name | varchar(128) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

| read\_latency | bigint(20) unsigned | NO | | NULL | |

| write\_latency | bigint(20) unsigned | NO | | NULL | |

| misc\_latency | bigint(20) unsigned | NO | | NULL | |

| count\_read | bigint(20) unsigned | NO | | NULL | |

| total\_read | bigint(20) | NO | | NULL | |

| avg\_read | decimal(23,4) | NO | | 0.0000 | |

| count\_write | bigint(20) unsigned | NO | | NULL | |

| total\_written | bigint(20) | NO | | NULL | |

| avg\_written | decimal(23,4) | NO | | 0.0000 | |

+---------------+---------------------+------+-----+---------+-------+

14 rows inset (0.01 sec)

Example

mysql>SELECT \* FROM io\_global\_by\_wait\_by\_latency;

+-------------------------+-------+---------------+-------------+-------------+--------------+---------------+--------------+------------+------------+-----------+-------------+---------------+-------------+

| event\_name | total | total\_latency | avg\_latency | max\_latency | read\_latency | write\_latency | misc\_latency | count\_read | total\_read | avg\_read | count\_write | total\_written | avg\_written |

+-------------------------+-------+---------------+-------------+-------------+--------------+---------------+--------------+------------+------------+-----------+-------------+---------------+-------------+

| sql/file\_parser | 5433 | 30.20 s | 5.56 ms | 203.65 ms | 22.08 ms | 24.89 ms | 30.16 s | 24 | 6.18 KiB | 264 bytes | 737 | 2.15 MiB | 2.99 KiB |

| innodb/innodb\_data\_file | 1344 | 1.52 s | 1.13 ms | 350.70 ms | 203.82 ms | 450.96 ms | 868.21 ms | 147 | 2.30 MiB | 16.00 KiB | 1001 | 53.61 MiB | 54.84 KiB |

| innodb/innodb\_log\_file | 828 | 893.48 ms | 1.08 ms | 30.11 ms | 16.32 ms | 705.89 ms | 171.27 ms | 6 | 68.00 KiB | 11.33 KiB | 413 | 2.19 MiB | 5.42 KiB |

| myisam/kfile | 7642 | 242.34 ms | 31.71 us | 19.27 ms | 73.60 ms | 23.48 ms | 145.26 ms | 758 | 135.63 KiB | 183 bytes | 4386 | 232.52 KiB | 54 bytes |

| myisam/dfile | 12540 | 223.47 ms | 17.82 us | 32.50 ms | 87.76 ms | 16.97 ms | 118.74 ms | 5390 | 4.49 MiB | 873 bytes | 1448 | 2.65 MiB | 1.88 KiB |

| csv/metadata | 8 | 28.98 ms | 3.62 ms | 20.15 ms | 399.27 us | 0 ps | 28.58 ms | 2 | 70 bytes | 35 bytes | 0 | 0 bytes | 0 bytes |

| mysys/charset | 3 | 24.24 ms | 8.08 ms | 24.15 ms | 24.15 ms | 0 ps | 93.18 us | 1 | 17.31 KiB | 17.31 KiB | 0 | 0 bytes | 0 bytes |

| sql/ERRMSG | 5 | 20.43 ms | 4.09 ms | 19.31 ms | 20.32 ms | 0 ps | 103.20 us | 3 | 58.97 KiB | 19.66 KiB | 0 | 0 bytes | 0 bytes |

| mysys/cnf | 5 | 11.37 ms | 2.27 ms | 11.28 ms | 11.29 ms | 0 ps | 78.22 us | 3 | 56 bytes | 19 bytes | 0 | 0 bytes | 0 bytes |

| sql/dbopt | 57 | 4.04 ms | 70.92 us | 843.70 us | 0 ps | 186.43 us | 3.86 ms | 0 | 0 bytes | 0 bytes | 7 | 431 bytes | 62 bytes |

| csv/data | 4 | 411.55 us | 102.89 us | 234.89 us | 0 ps | 0 ps | 411.55 us | 0 | 0 bytes | 0 bytes | 0 | 0 bytes | 0 bytes |

| sql/misc | 22 | 340.38 us | 15.47 us | 33.77 us | 0 ps | 0 ps | 340.38 us | 0 | 0 bytes | 0 bytes | 0 | 0 bytes | 0 bytes |

| archive/data | 39 | 277.86 us | 7.12 us | 16.18 us | 0 ps | 0 ps | 277.86 us | 0 | 0 bytes | 0 bytes | 0 | 0 bytes | 0 bytes |

| sql/pid | 3 | 218.03 us | 72.68 us | 154.84 us | 0 ps | 21.64 us | 196.39 us | 0 | 0 bytes | 0 bytes | 1 | 6 bytes | 6 bytes |

| sql/casetest | 5 | 197.15 us | 39.43 us | 126.31 us | 0 ps | 0 ps | 197.15 us | 0 | 0 bytes | 0 bytes | 0 | 0 bytes | 0 bytes |

| sql/global\_ddl\_log | 2 | 14.60 us | 7.30 us | 12.12 us | 0 ps | 0 ps | 14.60 us | 0 | 0 bytes | 0 bytes | 0 | 0 bytes | 0 bytes |

+-------------------------+-------+---------------+-------------+-------------+--------------+---------------+--------------+------------+------------+-----------+-------------+---------------+-------------+

## latest\_file\_io / x$latest\_file\_io

Description:Shows the latest file IO, by file / thread.Structures

mysql>desc latest\_file\_io;

+-----------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+--------------+------+-----+---------+-------+

| thread | varchar(149) | YES | | NULL | |

| file | varchar(512) | YES | | NULL | |

| latency | text | YES | | NULL | |

| operation | varchar(32) | NO | | NULL | |

| requested | text | YES | | NULL | |

+-----------+--------------+------+-----+---------+-------+

5 rows inset (0.10 sec)

mysql>desc x$latest\_file\_io;

+-----------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------+---------------------+------+-----+---------+-------+

| thread | varchar(149) | YES | | NULL | |

| file | varchar(512) | YES | | NULL | |

| latency | bigint(20) unsigned | YES | | NULL | |

| operation | varchar(32) | NO | | NULL | |

| requested | bigint(20) | YES | | NULL | |

+-----------+---------------------+------+-----+---------+-------+

5 rows inset (0.05 sec)

Example

mysql>select \* from latest\_file\_io limit 5;

+----------------------+----------------------------------------+------------+-----------+-----------+

| thread | file | latency | operation | requested |

+----------------------+----------------------------------------+------------+-----------+-----------+

| msandbox@localhost:1 | @@tmpdir/#sqlcf28\_1\_4e.MYI | 9.26 us | write | 124 bytes |

| msandbox@localhost:1 | @@tmpdir/#sqlcf28\_1\_4e.MYI | 4.00 us | write | 2 bytes |

| msandbox@localhost:1 | @@tmpdir/#sqlcf28\_1\_4e.MYI | 56.34 us | close | NULL |

| msandbox@localhost:1 | @@tmpdir/#sqlcf28\_1\_4e.MYD | 53.93 us | close | NULL |

| msandbox@localhost:1 | @@tmpdir/#sqlcf28\_1\_4e.MYI | 104.05 ms | delete | NULL |

+----------------------+----------------------------------------+------------+-----------+-----------+

## memory\_by\_host\_by\_current\_bytes / x$memory\_by\_host\_by\_current\_bytes

Description:Summarizes memory use by host using the 5.7 Performance Schema instrumentation.When the host found is NULL, it is assumed to be a local "background" thread.Structures

mysql>desc memory\_by\_host\_by\_current\_bytes;

+--------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------+---------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| current\_count\_used | decimal(41,0) | YES | | NULL | |

| current\_allocated | text | YES | | NULL | |

| current\_avg\_alloc | text | YES | | NULL | |

| current\_max\_alloc | text | YES | | NULL | |

| total\_allocated | text | YES | | NULL | |

+--------------------+---------------+------+-----+---------+-------+

6 rows inset (0.24 sec)

mysql>desc x$memory\_by\_host\_by\_current\_bytes;

+--------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------+---------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| current\_count\_used | decimal(41,0) | YES | | NULL | |

| current\_allocated | decimal(41,0) | YES | | NULL | |

| current\_avg\_alloc | decimal(45,4) | NO | | 0.0000 | |

| current\_max\_alloc | bigint(20) | YES | | NULL | |

| total\_allocated | decimal(42,0) | YES | | NULL | |

+--------------------+---------------+------+-----+---------+-------+

6 rows inset (0.28 sec)

Example

mysql>select \* from memory\_by\_host\_by\_current\_bytes WHERE host IS NOT NULL;

+------------+--------------------+-------------------+-------------------+-------------------+-----------------+

| host | current\_count\_used | current\_allocated | current\_avg\_alloc | current\_max\_alloc | total\_allocated |

+------------+--------------------+-------------------+-------------------+-------------------+-----------------+

| background | 2773 | 10.84 MiB | 4.00 KiB | 8.00 MiB | 30.69 MiB |

| localhost | 1509 | 809.30 KiB | 549 bytes | 176.38 KiB | 83.59 MiB |

+------------+--------------------+-------------------+-------------------+-------------------+-----------------+

## memory\_by\_thread\_by\_current\_bytes / x$memory\_by\_thread\_by\_current\_bytes

Description:Summarizes memory use by user using the 5.7 Performance Schema instrumentation.The user columns shows either the background or foreground user name appropriately.Structures

mysql>desc memory\_by\_thread\_by\_current\_bytes;

+--------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------+---------------------+------+-----+---------+-------+

| thread\_id | bigint(20) unsigned | NO | | NULL | |

| user | varchar(128) | YES | | NULL | |

| current\_count\_used | decimal(41,0) | YES | | NULL | |

| current\_allocated | text | YES | | NULL | |

| current\_avg\_alloc | text | YES | | NULL | |

| current\_max\_alloc | text | YES | | NULL | |

| total\_allocated | text | YES | | NULL | |

+--------------------+---------------------+------+-----+---------+-------+

7 rows inset (0.49 sec)

mysql>desc x$memory\_by\_thread\_by\_current\_bytes;

+--------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------+---------------------+------+-----+---------+-------+

| thread\_id | bigint(20) unsigned | NO | | NULL | |

| user | varchar(128) | YES | | NULL | |

| current\_count\_used | decimal(41,0) | YES | | NULL | |

| current\_allocated | decimal(41,0) | YES | | NULL | |

| current\_avg\_alloc | decimal(45,4) | NO | | 0.0000 | |

| current\_max\_alloc | bigint(20) | YES | | NULL | |

| total\_allocated | decimal(42,0) | YES | | NULL | |

+--------------------+---------------------+------+-----+---------+-------+

7 rows inset (0.25 sec)

Example

mysql>select \* from sys.memory\_by\_thread\_by\_current\_bytes limit 5;

+-----------+----------------+--------------------+-------------------+-------------------+-------------------+-----------------+

| thread\_id | user | current\_count\_used | current\_allocated | current\_avg\_alloc | current\_max\_alloc | total\_allocated |

+-----------+----------------+--------------------+-------------------+-------------------+-------------------+-----------------+

| 1 | sql/main | 29333 | 166.02 MiB | 5.80 KiB | 131.13 MiB | 196.00 MiB |

| 55 | root@localhost | 175 | 1.04 MiB | 6.09 KiB | 350.86 KiB | 67.37 MiB |

| 58 | root@localhost | 236 | 368.13 KiB | 1.56 KiB | 312.05 KiB | 130.34 MiB |

| 904 | root@localhost | 32 | 18.00 KiB | 576 bytes | 16.00 KiB | 6.68 MiB |

| 970 | root@localhost | 12 | 16.80 KiB | 1.40 KiB | 16.00 KiB | 1.20 MiB |

+-----------+----------------+--------------------+-------------------+-------------------+-------------------+-----------------+

## memory\_by\_user\_by\_current\_bytes / x$memory\_by\_user\_by\_current\_bytes

Description:Summarizes memory use by user using the 5.7 Performance Schema instrumentation.When the user found is NULL, it is assumed to be a "background" thread.Structures

mysql>desc memory\_by\_user\_by\_current\_bytes;

+--------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------+---------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| current\_count\_used | decimal(41,0) | YES | | NULL | |

| current\_allocated | text | YES | | NULL | |

| current\_avg\_alloc | text | YES | | NULL | |

| current\_max\_alloc | text | YES | | NULL | |

| total\_allocated | text | YES | | NULL | |

+--------------------+---------------+------+-----+---------+-------+

6 rows inset (0.06 sec)

mysql>desc x$memory\_by\_user\_by\_current\_bytes;

+--------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------+---------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| current\_count\_used | decimal(41,0) | YES | | NULL | |

| current\_allocated | decimal(41,0) | YES | | NULL | |

| current\_avg\_alloc | decimal(45,4) | NO | | 0.0000 | |

| current\_max\_alloc | bigint(20) | YES | | NULL | |

| total\_allocated | decimal(42,0) | YES | | NULL | |

+--------------------+---------------+------+-----+---------+-------+

6 rows inset (0.12 sec)

Example

mysql>select \* from memory\_by\_user\_by\_current\_bytes;

+------+--------------------+-------------------+-------------------+-------------------+-----------------+

| user | current\_count\_used | current\_allocated | current\_avg\_alloc | current\_max\_alloc | total\_allocated |

+------+--------------------+-------------------+-------------------+-------------------+-----------------+

| root | 1401 | 1.09 MiB | 815 bytes | 334.97 KiB | 42.73 MiB |

| mark | 201 | 496.08 KiB | 2.47 KiB | 334.97 KiB | 5.50 MiB |

+------+--------------------+-------------------+-------------------+-------------------+-----------------+

## memory\_global\_by\_current\_bytes / x$memory\_global\_by\_current\_bytes

Description:Shows the current memory usage within the server globally broken down by allocation type.Structures

mysql>desc memory\_global\_by\_current\_bytes;

+-------------------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+--------------+------+-----+---------+-------+

| event\_name | varchar(128) | NO | | NULL | |

| current\_count | bigint(20) | NO | | NULL | |

| current\_alloc | text | YES | | NULL | |

| current\_avg\_alloc | text | YES | | NULL | |

| high\_count | bigint(20) | NO | | NULL | |

| high\_alloc | text | YES | | NULL | |

| high\_avg\_alloc | text | YES | | NULL | |

+-------------------+--------------+------+-----+---------+-------+

7 rows inset (0.08 sec)

mysql>desc x$memory\_global\_by\_current\_bytes;

+-------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------+------+-----+---------+-------+

| event\_name | varchar(128) | NO | | NULL | |

| current\_count | bigint(20) | NO | | NULL | |

| current\_alloc | bigint(20) | NO | | NULL | |

| current\_avg\_alloc | decimal(23,4) | NO | | 0.0000 | |

| high\_count | bigint(20) | NO | | NULL | |

| high\_alloc | bigint(20) | NO | | NULL | |

| high\_avg\_alloc | decimal(23,4) | NO | | 0.0000 | |

+-------------------+---------------+------+-----+---------+-------+

7 rows inset (0.16 sec)

Example

mysql>select \* from memory\_global\_by\_current\_bytes;

+----------------------------------------+---------------+---------------+-------------------+------------+------------+----------------+

| event\_name | current\_count | current\_alloc | current\_avg\_alloc | high\_count | high\_alloc | high\_avg\_alloc |

+----------------------------------------+---------------+---------------+-------------------+------------+------------+----------------+

| memory/sql/TABLE\_SHARE::mem\_root | 269 | 568.21 KiB | 2.11 KiB | 339 | 706.04 KiB | 2.08 KiB |

| memory/sql/TABLE | 214 | 366.56 KiB | 1.71 KiB | 245 | 481.13 KiB | 1.96 KiB |

| memory/sql/sp\_head::main\_mem\_root | 32 | 334.97 KiB | 10.47 KiB | 421 | 9.73 MiB | 23.66 KiB |

| memory/sql/Filesort\_buffer::sort\_keys | 1 | 255.89 KiB | 255.89 KiB | 1 | 256.00 KiB | 256.00 KiB |

| memory/mysys/array\_buffer | 82 | 121.66 KiB | 1.48 KiB | 1124 | 852.55 KiB | 777 bytes |

...

+----------------------------------------+---------------+---------------+-------------------+------------+------------+----------------+

## memory\_global\_total / x$memory\_global\_total

Description:Shows the total memory usage within the server globally.

Structures

mysql>desc memory\_global\_total;

+-----------------+------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------------+------+------+-----+---------+-------+

| total\_allocated | text | YES | | NULL | |

+-----------------+------+------+-----+---------+-------+

1 row inset (0.07 sec)

mysql>desc x$memory\_global\_total;

+-----------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-----------------+---------------+------+-----+---------+-------+

| total\_allocated | decimal(41,0) | YES | | NULL | |

+-----------------+---------------+------+-----+---------+-------+

1 row inset (0.00 sec)

Example

mysql>select\*from memory\_global\_total;

+-----------------+

| total\_allocated |

+-----------------+

| 458.44 MiB |

|  |
| --- |
|  |

## metrics

Description:Creates a union of the following information:

performance\_schema.global\_status (information\_schema.GLOBAL\_STATUS in MySQL 5.6)information\_schema.INNODB\_METRICS Performance Schema global memory usage information (only in MySQL 5.7)Current time In MySQL 5.7 it is required that performance\_schema = ON, though there is no requirements to which instruments and consumers that are enabled. See also the description of the Enabled column below.For view has the following columns:

Variable\_name: The name of the variable

Variable\_value: The value of the variable

Type: The type of the variable. This will depend on the source, e.g. Global Status, InnoDB Metrics - ..., etc.

Enabled: Whether the variable is enabled or not. Possible values are 'YES', 'NO', 'PARTIAL'. PARTIAL is currently only supported for the memory usage variables and means some but not all of the memory/% instruments are enabled.

Structures

mysql>DESC metrics;

+----------------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+--------------+------+-----+---------+-------+

| Variable\_name | varchar(193) | YES | | NULL | |

| Variable\_value | text | YES | | NULL | |

| Type | varchar(210) | YES | | NULL | |

| Enabled | varchar(7) | NO | | | |

+----------------+--------------+------+-----+---------+-------+

4 rows inset (0.00 sec)

mysq>DESC metrics\_56;

+----------------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+--------------+------+-----+---------+-------+

| Variable\_name | varchar(193) | YES | | NULL | |

| Variable\_value | text | YES | | NULL | |

| Type | varchar(210) | YES | | NULL | |

| Enabled | varchar(7) | NO | | | |

+----------------+--------------+------+-----+---------+-------+

4 rows inset (0.01 sec)

Example

mysql>SELECT \* FROM metrics;

+-----------------------------------------------+-------------------------...+--------------------------------------+---------+

| Variable\_name | Variable\_value ...| Type | Enabled |

+-----------------------------------------------+-------------------------...+--------------------------------------+---------+

| aborted\_clients | 0 ...| Global Status | YES |

| aborted\_connects | 0 ...| Global Status | YES |

| binlog\_cache\_disk\_use | 0 ...| Global Status | YES |

| binlog\_cache\_use | 0 ...| Global Status | YES |

| binlog\_stmt\_cache\_disk\_use | 0 ...| Global Status | YES |

| binlog\_stmt\_cache\_use | 0 ...| Global Status | YES |

| bytes\_received | 217081 ...| Global Status | YES |

| bytes\_sent | 27257 ...| Global Status | YES |

...

| innodb\_rwlock\_x\_os\_waits | 0 ...| InnoDB Metrics - server | YES |

| innodb\_rwlock\_x\_spin\_rounds | 2723 ...| InnoDB Metrics - server | YES |

| innodb\_rwlock\_x\_spin\_waits | 1 ...| InnoDB Metrics - server | YES |

| trx\_active\_transactions | 0 ...| InnoDB Metrics - transaction | NO |

...

| trx\_rseg\_current\_size | 0 ...| InnoDB Metrics - transaction | NO |

| trx\_rseg\_history\_len | 4 ...| InnoDB Metrics - transaction | YES |

| trx\_rw\_commits | 0 ...| InnoDB Metrics - transaction | NO |

| trx\_undo\_slots\_cached | 0 ...| InnoDB Metrics - transaction | NO |

| trx\_undo\_slots\_used | 0 ...| InnoDB Metrics - transaction | NO |

| memory\_current\_allocated | 138244216 ...| Performance Schema | PARTIAL |

| memory\_total\_allocated | 138244216 ...| Performance Schema | PARTIAL |

| NOW() | 2015-05-3113:27:50.382 ...| System Time | YES |

| UNIX\_TIMESTAMP() | 1433042870.382 ...| System Time | YES |

+-----------------------------------------------+-------------------------...+--------------------------------------+---------+

412 rows inset (0.02 sec)

## processlist / x$processlist

Description:A detailed non-blocking processlist view to replace [INFORMATION\_SCHEMA. | SHOW FULL] PROCESSLIST.Performs less locking than the legacy sources, whilst giving extra information.The output includes both background threads and user connections by default. See also session / x$session for a view that contains only user session information.Structures (5.7)

mysql>desc processlist;

+------------------------+------------------------------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------+------------------------------------------+------+-----+---------+-------+

| thd\_id | bigint(20) unsigned | NO | | NULL | |

| conn\_id | bigint(20) unsigned | YES | | NULL | |

| user | varchar(128) | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| command | varchar(16) | YES | | NULL | |

| state | varchar(64) | YES | | NULL | |

| time | bigint(20) | YES | | NULL | |

| current\_statement | longtext | YES | | NULL | |

| statement\_latency | text | YES | | NULL | |

| progress | decimal(26,2) | YES | | NULL | |

| lock\_latency | text | YES | | NULL | |

| rows\_examined | bigint(20) unsigned | YES | | NULL | |

| rows\_sent | bigint(20) unsigned | YES | | NULL | |

| rows\_affected | bigint(20) unsigned | YES | | NULL | |

| tmp\_tables | bigint(20) unsigned | YES | | NULL | |

| tmp\_disk\_tables | bigint(20) unsigned | YES | | NULL | |

| full\_scan | varchar(3) | NO | | | |

| last\_statement | longtext | YES | | NULL | |

| last\_statement\_latency | text | YES | | NULL | |

| current\_memory | text | YES | | NULL | |

| last\_wait | varchar(128) | YES | | NULL | |

| last\_wait\_latency | text | YES | | NULL | |

| source | varchar(64) | YES | | NULL | |

| trx\_latency | text | YES | | NULL | |

| trx\_state | enum('ACTIVE','COMMITTED','ROLLED BACK') | YES | | NULL | |

| trx\_autocommit | enum('YES','NO') | YES | | NULL | |

| pid | varchar(1024) | YES | | NULL | |

| program\_name | varchar(1024) | YES | | NULL | |

+------------------------+------------------------------------------+------+-----+---------+-------+

28 rows inset (0.04 sec)

mysql>desc x$processlist;

+------------------------+------------------------------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------+------------------------------------------+------+-----+---------+-------+

| thd\_id | bigint(20) unsigned | NO | | NULL | |

| conn\_id | bigint(20) unsigned | YES | | NULL | |

| user | varchar(128) | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| command | varchar(16) | YES | | NULL | |

| state | varchar(64) | YES | | NULL | |

| time | bigint(20) | YES | | NULL | |

| current\_statement | longtext | YES | | NULL | |

| statement\_latency | bigint(20) unsigned | YES | | NULL | |

| progress | decimal(26,2) | YES | | NULL | |

| lock\_latency | bigint(20) unsigned | YES | | NULL | |

| rows\_examined | bigint(20) unsigned | YES | | NULL | |

| rows\_sent | bigint(20) unsigned | YES | | NULL | |

| rows\_affected | bigint(20) unsigned | YES | | NULL | |

| tmp\_tables | bigint(20) unsigned | YES | | NULL | |

| tmp\_disk\_tables | bigint(20) unsigned | YES | | NULL | |

| full\_scan | varchar(3) | NO | | | |

| last\_statement | longtext | YES | | NULL | |

| last\_statement\_latency | bigint(20) unsigned | YES | | NULL | |

| current\_memory | decimal(41,0) | YES | | NULL | |

| last\_wait | varchar(128) | YES | | NULL | |

| last\_wait\_latency | varchar(20) | YES | | NULL | |

| source | varchar(64) | YES | | NULL | |

| trx\_latency | bigint(20) unsigned | YES | | NULL | |

| trx\_state | enum('ACTIVE','COMMITTED','ROLLED BACK') | YES | | NULL | |

| trx\_autocommit | enum('YES','NO') | YES | | NULL | |

| pid | varchar(1024) | YES | | NULL | |

| program\_name | varchar(1024) | YES | | NULL | |

+------------------------+------------------------------------------+------+-----+---------+-------+

28 rows inset (0.01 sec)

Example

mysql>select \* from sys.processlist where conn\_id is not null and command !='daemon'and conn\_id != connection\_id()\G

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

thd\_id: 44524

conn\_id: 44502

user: msandbox@localhost

db: test

command: Query

state: alter table (flush)

time: 18

current\_statement: alter table t1 add column g int

statement\_latency: 18.45 s

progress: 98.84

lock\_latency: 265.43 ms

rows\_examined: 0

rows\_sent: 0

rows\_affected: 0

tmp\_tables: 0

tmp\_disk\_tables: 0

full\_scan: NO

last\_statement: NULL

last\_statement\_latency: NULL

current\_memory: 664.06 KiB

last\_wait: wait/io/file/innodb/innodb\_data\_file

last\_wait\_latency: 1.07 us

source: fil0fil.cc:5146

trx\_latency: NULL

trx\_state: NULL

trx\_autocommit: NULL

pid: 4212

program\_name: mysql

## ps\_check\_lost\_instrumentation

Description:Used to check whether Performance Schema is not able to monitor all runtime data - only returns variables that have lost instruments.Structure

mysql>desc ps\_check\_lost\_instrumentation;

+----------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+---------------+------+-----+---------+-------+

| variable\_name | varchar(64) | NO | | | |

| variable\_value | varchar(1024) | YES | | NULL | |

+----------------+---------------+------+-----+---------+-------+

2 rows inset (0.09 sec)

Example

mysql>select \* from ps\_check\_lost\_instrumentation;

+----------------------------------------+----------------+

| variable\_name | variable\_value |

+----------------------------------------+----------------+

| Performance\_schema\_file\_handles\_lost | 101223 |

| Performance\_schema\_file\_instances\_lost | 1231 |

+----------------------------------------+----------------+

## schema\_auto\_increment\_columns

Description:Present current auto\_increment usage/capacity in all tables.

Structures

mysql>desc schema\_auto\_increment\_columns;

+----------------------+------------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------------+------------------------+------+-----+---------+-------+

| table\_schema | varchar(64) | NO | | | |

| table\_name | varchar(64) | NO | | | |

| column\_name | varchar(64) | NO | | | |

| data\_type | varchar(64) | NO | | | |

| column\_type | longtext | NO | | NULL | |

| is\_signed | int(1) | NO | | 0 | |

| is\_unsigned | int(1) | NO | | 0 | |

| max\_value | bigint(21) unsigned | YES | | NULL | |

| auto\_increment | bigint(21) unsigned | YES | | NULL | |

| auto\_increment\_ratio | decimal(25,4) unsigned | YES | | NULL | |

+----------------------+------------------------+------+-----+---------+-------+

Example

mysql>select \* from schema\_auto\_increment\_columns limit 5;

+-------------------+-------------------+-------------+-----------+-------------+-----------+-------------+---------------------+----------------+----------------------+

| table\_schema | table\_name | column\_name | data\_type | column\_type | is\_signed | is\_unsigned | max\_value | auto\_increment | auto\_increment\_ratio |

+-------------------+-------------------+-------------+-----------+-------------+-----------+-------------+---------------------+----------------+----------------------+

| test | t1 | i | tinyint | tinyint(4) | 1 | 0 | 127 | 34 | 0.2677 |

| mem\_\_advisor\_text | template\_meta | hib\_id | int | int(11) | 1 | 0 | 2147483647 | 516 | 0.0000 |

| mem\_\_advisors | advisor\_schedules | schedule\_id | int | int(11) | 1 | 0 | 2147483647 | 249 | 0.0000 |

| mem\_\_advisors | app\_identity\_path | hib\_id | int | int(11) | 1 | 0 | 2147483647 | 251 | 0.0000 |

| mem\_\_bean\_config | plists | id | bigint | bigint(20) | 1 | 0 | 9223372036854775807 | 1 | 0.0000 |

+-------------------+-------------------+-------------+-----------+-------------+-----------+-------------+---------------------+----------------+----------------------+

## schema\_index\_statistics / x$schema\_index\_statistics

Description:Statistics around indexes.Ordered by the total wait time descending - top indexes are most contended.Structures

mysql>desc schema\_index\_statistics;

+----------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+---------------------+------+-----+---------+-------+

| table\_schema | varchar(64) | YES | | NULL | |

| table\_name | varchar(64) | YES | | NULL | |

| index\_name | varchar(64) | YES | | NULL | |

| rows\_selected | bigint(20) unsigned | NO | | NULL | |

| select\_latency | text | YES | | NULL | |

| rows\_inserted | bigint(20) unsigned | NO | | NULL | |

| insert\_latency | text | YES | | NULL | |

| rows\_updated | bigint(20) unsigned | NO | | NULL | |

| update\_latency | text | YES | | NULL | |

| rows\_deleted | bigint(20) unsigned | NO | | NULL | |

| delete\_latency | text | YES | | NULL | |

+----------------+---------------------+------+-----+---------+-------+

11 rows inset (0.17 sec)

mysql>desc x$schema\_index\_statistics;

+----------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+---------------------+------+-----+---------+-------+

| table\_schema | varchar(64) | YES | | NULL | |

| table\_name | varchar(64) | YES | | NULL | |

| index\_name | varchar(64) | YES | | NULL | |

| rows\_selected | bigint(20) unsigned | NO | | NULL | |

| select\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_inserted | bigint(20) unsigned | NO | | NULL | |

| insert\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_updated | bigint(20) unsigned | NO | | NULL | |

| update\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_deleted | bigint(20) unsigned | NO | | NULL | |

| delete\_latency | bigint(20) unsigned | NO | | NULL | |

+----------------+---------------------+------+-----+---------+-------+

11 rows inset (0.42 sec)

Example

mysql>select \* from schema\_index\_statistics limit 5;

+------------------+-------------+------------+---------------+----------------+---------------+----------------+--------------+----------------+--------------+----------------+

| table\_schema | table\_name | index\_name | rows\_selected | select\_latency | rows\_inserted | insert\_latency | rows\_updated | update\_latency | rows\_deleted | delete\_latency |

+------------------+-------------+------------+---------------+----------------+---------------+----------------+--------------+----------------+--------------+----------------+

| mem | mysqlserver | PRIMARY | 6208 | 108.27 ms | 0 | 0 ps | 5470 | 1.47 s | 0 | 0 ps |

| mem | innodb | PRIMARY | 4666 | 76.27 ms | 0 | 0 ps | 4454 | 571.47 ms | 0 | 0 ps |

| mem | connection | PRIMARY | 1064 | 20.98 ms | 0 | 0 ps | 1064 | 457.30 ms | 0 | 0 ps |

| mem | environment | PRIMARY | 5566 | 151.17 ms | 0 | 0 ps | 694 | 252.57 ms | 0 | 0 ps |

| mem | querycache | PRIMARY | 1698 | 27.99 ms | 0 | 0 ps | 1698 | 371.72 ms | 0 | 0 ps |

+------------------+-------------+------------+---------------+----------------+---------------+----------------+--------------+----------------+--------------+----------------+

## schema\_object\_overview

Description:Shows an overview of the types of objects within each schema

Note: On instances with a large numbers of objects, this could take some time to execute, and may not be recommended.Structure

mysql>desc schema\_object\_overview;

+-------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+-------------+------+-----+---------+-------+

| db | varchar(64) | NO | | | |

| object\_type | varchar(64) | NO | | | |

| count | bigint(21) | NO | | 0 | |

+-------------+-------------+------+-----+---------+-------+

3 rows inset (0.08 sec)

Example

mysql>select\*from schema\_object\_overview;

+--------------------+---------------+-------+

| db | object\_type | count |

+--------------------+---------------+-------+

| information\_schema | SYSTEM VIEW | 60 |

| mysql | BASE TABLE | 31 |

| mysql | INDEX (BTREE) | 69 |

| performance\_schema | BASE TABLE | 76 |

| sys | BASE TABLE | 1 |

| sys | FUNCTION | 12 |

| sys | INDEX (BTREE) | 1 |

| sys | PROCEDURE | 22 |

| sys | TRIGGER | 2 |

| sys | VIEW | 91 |

+--------------------+---------------+-------+

10 rows inset (1.58 sec)

## schema\_table\_statistics / x$schema\_table\_statistics

Description:Statistics around tables.Ordered by the total wait time descending - top tables are most contended.Also includes the helper view (used by schema\_table\_statistics\_with\_buffer as well):x$ps\_schema\_table\_statistics\_io

Structures

mysql>desc schema\_table\_statistics;

+-------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------+-------+

| table\_schema | varchar(64) | YES | | NULL | |

| table\_name | varchar(64) | YES | | NULL | |

| total\_latency | text | YES | | NULL | |

| rows\_fetched | bigint(20) unsigned | NO | | NULL | |

| fetch\_latency | text | YES | | NULL | |

| rows\_inserted | bigint(20) unsigned | NO | | NULL | |

| insert\_latency | text | YES | | NULL | |

| rows\_updated | bigint(20) unsigned | NO | | NULL | |

| update\_latency | text | YES | | NULL | |

| rows\_deleted | bigint(20) unsigned | NO | | NULL | |

| delete\_latency | text | YES | | NULL | |

| io\_read\_requests | decimal(42,0) | YES | | NULL | |

| io\_read | text | YES | | NULL | |

| io\_read\_latency | text | YES | | NULL | |

| io\_write\_requests | decimal(42,0) | YES | | NULL | |

| io\_write | text | YES | | NULL | |

| io\_write\_latency | text | YES | | NULL | |

| io\_misc\_requests | decimal(42,0) | YES | | NULL | |

| io\_misc\_latency | text | YES | | NULL | |

+-------------------+---------------------+------+-----+---------+-------+

19 rows inset (0.12 sec)

mysql>desc x$schema\_table\_statistics;

+-------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------+-------+

| table\_schema | varchar(64) | YES | | NULL | |

| table\_name | varchar(64) | YES | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_fetched | bigint(20) unsigned | NO | | NULL | |

| fetch\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_inserted | bigint(20) unsigned | NO | | NULL | |

| insert\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_updated | bigint(20) unsigned | NO | | NULL | |

| update\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_deleted | bigint(20) unsigned | NO | | NULL | |

| delete\_latency | bigint(20) unsigned | NO | | NULL | |

| io\_read\_requests | decimal(42,0) | YES | | NULL | |

| io\_read | decimal(41,0) | YES | | NULL | |

| io\_read\_latency | decimal(42,0) | YES | | NULL | |

| io\_write\_requests | decimal(42,0) | YES | | NULL | |

| io\_write | decimal(41,0) | YES | | NULL | |

| io\_write\_latency | decimal(42,0) | YES | | NULL | |

| io\_misc\_requests | decimal(42,0) | YES | | NULL | |

| io\_misc\_latency | decimal(42,0) | YES | | NULL | |

+-------------------+---------------------+------+-----+---------+-------+

19 rows inset (0.13 sec)

mysql>desc x$ps\_schema\_table\_statistics\_io;

+---------------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------------------+---------------+------+-----+---------+-------+

| table\_schema | varchar(64) | YES | | NULL | |

| table\_name | varchar(64) | YES | | NULL | |

| count\_read | decimal(42,0) | YES | | NULL | |

| sum\_number\_of\_bytes\_read | decimal(41,0) | YES | | NULL | |

| sum\_timer\_read | decimal(42,0) | YES | | NULL | |

| count\_write | decimal(42,0) | YES | | NULL | |

| sum\_number\_of\_bytes\_write | decimal(41,0) | YES | | NULL | |

| sum\_timer\_write | decimal(42,0) | YES | | NULL | |

| count\_misc | decimal(42,0) | YES | | NULL | |

| sum\_timer\_misc | decimal(42,0) | YES | | NULL | |

+---------------------------+---------------+------+-----+---------+-------+

10 rows inset (0.10 sec)

Example

mysql>select\*from schema\_table\_statistics\G

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

table\_schema: sys

table\_name: sys\_config

total\_latency: 0 ps

rows\_fetched: 0

fetch\_latency: 0 ps

rows\_inserted: 0

insert\_latency: 0 ps

rows\_updated: 0

update\_latency: 0 ps

rows\_deleted: 0

delete\_latency: 0 ps

io\_read\_requests: 8

io\_read: 2.28 KiB

io\_read\_latency: 727.32 us

io\_write\_requests: 0

io\_write: 0 bytes

io\_write\_latency: 0 ps

io\_misc\_requests: 10

io\_misc\_latency: 126.88 us

## schema\_redundant\_indexes / x$schema\_flattened\_keys

Description:Shows indexes which are made redundant (or duplicate) by other (dominant) keys.Also includes the the helper view x$schema\_flattened\_keys.

Structures

mysql>descsys.schema\_redundant\_indexes;

+----------------------------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------------------+--------------+------+-----+---------+-------+

| table\_schema | varchar(64) | NO | | | |

| table\_name | varchar(64) | NO | | | |

| redundant\_index\_name | varchar(64) | NO | | | |

| redundant\_index\_columns | text | YES | | NULL | |

| redundant\_index\_non\_unique | bigint(1) | YES | | NULL | |

| dominant\_index\_name | varchar(64) | NO | | | |

| dominant\_index\_columns | text | YES | | NULL | |

| dominant\_index\_non\_unique | bigint(1) | YES | | NULL | |

| subpart\_exists | int(1) | NO | | 0 | |

| sql\_drop\_index | varchar(223) | YES | | NULL | |

+----------------------------+--------------+------+-----+---------+-------+

10 rows inset (0.00 sec)

mysql>descsys.x$schema\_flattened\_keys;

+----------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+-------------+------+-----+---------+-------+

| table\_schema | varchar(64) | NO | | | |

| table\_name | varchar(64) | NO | | | |

| index\_name | varchar(64) | NO | | | |

| non\_unique | bigint(1) | YES | | NULL | |

| subpart\_exists | bigint(1) | YES | | NULL | |

| index\_columns | text | YES | | NULL | |

+----------------+-------------+------+-----+---------+-------+

6 rows inset (0.00 sec)

Example

mysql>select\*fromsys.schema\_redundant\_indexes\G

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

table\_schema: test

table\_name: rkey

redundant\_index\_name: j

redundant\_index\_columns: j

redundant\_index\_non\_unique: 1

dominant\_index\_name: j\_2

dominant\_index\_columns: j,k

dominant\_index\_non\_unique: 1

subpart\_exists: 0

sql\_drop\_index: ALTER TABLE `test`.`rkey` DROP INDEX `j`

1 row inset (0.20 sec)

mysql> SHOW CREATE TABLE test.rkey\G

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

Table: rkey

Create Table: CREATE TABLE `rkey` (

`i`int(11) NOT NULL,

`j`int(11) DEFAULT NULL,

`k`int(11) DEFAULT NULL,

PRIMARY KEY (`i`),

KEY `j` (`j`),

KEY `j\_2` (`j`,`k`)

) ENGINE=InnoDB DEFAULT CHARSET=latin1

1 row inset (0.06 sec)

## schema\_table\_lock\_waits / x$schema\_table\_lock\_waits

Description:Shows sessions that are blocked waiting on table metadata locks, and who is blocking them.

Structures

mysql>desc schema\_table\_lock\_waits;

+------------------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------------+---------------------+------+-----+---------+-------+

| object\_schema | varchar(64) | YES | | NULL | |

| object\_name | varchar(64) | YES | | NULL | |

| waiting\_thread\_id | bigint(20) unsigned | NO | | NULL | |

| waiting\_pid | bigint(20) unsigned | YES | | NULL | |

| waiting\_account | text | YES | | NULL | |

| waiting\_lock\_type | varchar(32) | NO | | NULL | |

| waiting\_lock\_duration | varchar(32) | NO | | NULL | |

| waiting\_query | longtext | YES | | NULL | |

| waiting\_query\_secs | bigint(20) | YES | | NULL | |

| waiting\_query\_rows\_affected | bigint(20) unsigned | YES | | NULL | |

| waiting\_query\_rows\_examined | bigint(20) unsigned | YES | | NULL | |

| blocking\_thread\_id | bigint(20) unsigned | NO | | NULL | |

| blocking\_pid | bigint(20) unsigned | YES | | NULL | |

| blocking\_account | text | YES | | NULL | |

| blocking\_lock\_type | varchar(32) | NO | | NULL | |

| blocking\_lock\_duration | varchar(32) | NO | | NULL | |

| sql\_kill\_blocking\_query | varchar(31) | YES | | NULL | |

| sql\_kill\_blocking\_connection | varchar(25) | YES | | NULL | |

+------------------------------+---------------------+------+-----+---------+-------+

18 rows inset (0.15 sec)

mysql>desc x$schema\_table\_lock\_waits;

+------------------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------------+---------------------+------+-----+---------+-------+

| object\_schema | varchar(64) | YES | | NULL | |

| object\_name | varchar(64) | YES | | NULL | |

| waiting\_thread\_id | bigint(20) unsigned | NO | | NULL | |

| waiting\_pid | bigint(20) unsigned | YES | | NULL | |

| waiting\_account | text | YES | | NULL | |

| waiting\_lock\_type | varchar(32) | NO | | NULL | |

| waiting\_lock\_duration | varchar(32) | NO | | NULL | |

| waiting\_query | longtext | YES | | NULL | |

| waiting\_query\_secs | bigint(20) | YES | | NULL | |

| waiting\_query\_rows\_affected | bigint(20) unsigned | YES | | NULL | |

| waiting\_query\_rows\_examined | bigint(20) unsigned | YES | | NULL | |

| blocking\_thread\_id | bigint(20) unsigned | NO | | NULL | |

| blocking\_pid | bigint(20) unsigned | YES | | NULL | |

| blocking\_account | text | YES | | NULL | |

| blocking\_lock\_type | varchar(32) | NO | | NULL | |

| blocking\_lock\_duration | varchar(32) | NO | | NULL | |

| sql\_kill\_blocking\_query | varchar(31) | YES | | NULL | |

| sql\_kill\_blocking\_connection | varchar(25) | YES | | NULL | |

+------------------------------+---------------------+------+-----+---------+-------+

18 rows inset (0.03 sec)

Example

mysql>select \* fromsys.schema\_table\_lock\_waits\G

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

object\_schema: test

object\_name: t

waiting\_thread\_id: 43

waiting\_pid: 21

waiting\_account: msandbox@localhost

waiting\_lock\_type: SHARED\_UPGRADABLE

waiting\_lock\_duration: TRANSACTION

waiting\_query: alter table test.t add foo int

waiting\_query\_secs: 988

waiting\_query\_rows\_affected: 0

waiting\_query\_rows\_examined: 0

blocking\_thread\_id: 42

blocking\_pid: 20

blocking\_account: msandbox@localhost

blocking\_lock\_type: SHARED\_NO\_READ\_WRITE

blocking\_lock\_duration: TRANSACTION

sql\_kill\_blocking\_query: KILL QUERY 20

sql\_kill\_blocking\_connection: KILL 20

## schema\_table\_statistics\_with\_buffer / x$schema\_table\_statistics\_with\_buffer

Description:Statistics around tables.Ordered by the total wait time descending - top tables are most contended.More statistics such as caching stats for the InnoDB buffer pool with InnoDB tablesUses the x$ps\_schema\_table\_statistics\_io helper view from schema\_table\_statistics.Structures

mysql>desc schema\_table\_statistics\_with\_buffer;

+----------------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------------------+---------------------+------+-----+---------+-------+

| table\_schema | varchar(64) | YES | | NULL | |

| table\_name | varchar(64) | YES | | NULL | |

| rows\_fetched | bigint(20) unsigned | NO | | NULL | |

| fetch\_latency | text | YES | | NULL | |

| rows\_inserted | bigint(20) unsigned | NO | | NULL | |

| insert\_latency | text | YES | | NULL | |

| rows\_updated | bigint(20) unsigned | NO | | NULL | |

| update\_latency | text | YES | | NULL | |

| rows\_deleted | bigint(20) unsigned | NO | | NULL | |

| delete\_latency | text | YES | | NULL | |

| io\_read\_requests | decimal(42,0) | YES | | NULL | |

| io\_read | text | YES | | NULL | |

| io\_read\_latency | text | YES | | NULL | |

| io\_write\_requests | decimal(42,0) | YES | | NULL | |

| io\_write | text | YES | | NULL | |

| io\_write\_latency | text | YES | | NULL | |

| io\_misc\_requests | decimal(42,0) | YES | | NULL | |

| io\_misc\_latency | text | YES | | NULL | |

| innodb\_buffer\_allocated | text | YES | | NULL | |

| innodb\_buffer\_data | text | YES | | NULL | |

| innodb\_buffer\_free | text | YES | | NULL | |

| innodb\_buffer\_pages | bigint(21) | YES | | 0 | |

| innodb\_buffer\_pages\_hashed | bigint(21) | YES | | 0 | |

| innodb\_buffer\_pages\_old | bigint(21) | YES | | 0 | |

| innodb\_buffer\_rows\_cached | decimal(44,0) | YES | | 0 | |

+----------------------------+---------------------+------+-----+---------+-------+

25 rows inset (0.05 sec)

mysql>desc x$schema\_table\_statistics\_with\_buffer;

+----------------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------------------+---------------------+------+-----+---------+-------+

| table\_schema | varchar(64) | YES | | NULL | |

| table\_name | varchar(64) | YES | | NULL | |

| rows\_fetched | bigint(20) unsigned | NO | | NULL | |

| fetch\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_inserted | bigint(20) unsigned | NO | | NULL | |

| insert\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_updated | bigint(20) unsigned | NO | | NULL | |

| update\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_deleted | bigint(20) unsigned | NO | | NULL | |

| delete\_latency | bigint(20) unsigned | NO | | NULL | |

| io\_read\_requests | decimal(42,0) | YES | | NULL | |

| io\_read | decimal(41,0) | YES | | NULL | |

| io\_read\_latency | decimal(42,0) | YES | | NULL | |

| io\_write\_requests | decimal(42,0) | YES | | NULL | |

| io\_write | decimal(41,0) | YES | | NULL | |

| io\_write\_latency | decimal(42,0) | YES | | NULL | |

| io\_misc\_requests | decimal(42,0) | YES | | NULL | |

| io\_misc\_latency | decimal(42,0) | YES | | NULL | |

| innodb\_buffer\_allocated | decimal(43,0) | YES | | NULL | |

| innodb\_buffer\_data | decimal(43,0) | YES | | NULL | |

| innodb\_buffer\_free | decimal(44,0) | YES | | NULL | |

| innodb\_buffer\_pages | bigint(21) | YES | | 0 | |

| innodb\_buffer\_pages\_hashed | bigint(21) | YES | | 0 | |

| innodb\_buffer\_pages\_old | bigint(21) | YES | | 0 | |

| innodb\_buffer\_rows\_cached | decimal(44,0) | YES | | 0 | |

+----------------------------+---------------------+------+-----+---------+-------+

25 rows inset (0.17 sec)

Example

mysql>select\*from schema\_table\_statistics\_with\_buffer limit1\G

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

table\_schema: mem

table\_name: mysqlserver

rows\_fetched: 27087

fetch\_latency: 442.72 ms

rows\_inserted: 2

insert\_latency: 185.04 us

rows\_updated: 5096

update\_latency: 1.39 s

rows\_deleted: 0

delete\_latency: 0 ps

io\_read\_requests: 2565

io\_read\_bytes: 1121627

io\_read\_latency: 10.07 ms

io\_write\_requests: 1691

io\_write\_bytes: 128383

io\_write\_latency: 14.17 ms

io\_misc\_requests: 2698

io\_misc\_latency: 433.66 ms

innodb\_buffer\_pages: 19

innodb\_buffer\_pages\_hashed: 19

innodb\_buffer\_pages\_old: 19

innodb\_buffer\_bytes\_allocated: 311296

innodb\_buffer\_bytes\_data: 1924

innodb\_buffer\_rows\_cached: 2

## schema\_tables\_with\_full\_table\_scans / x$schema\_tables\_with\_full\_table\_scans

Description:Finds tables that are being accessed by full table scans ordering by the number of rows scanned descending.Structures

mysql>desc schema\_tables\_with\_full\_table\_scans;

+-------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------+-------+

| object\_schema | varchar(64) | YES | | NULL | |

| object\_name | varchar(64) | YES | | NULL | |

| rows\_full\_scanned | bigint(20) unsigned | NO | | NULL | |

| latency | text | YES | | NULL | |

+-------------------+---------------------+------+-----+---------+-------+

4 rows inset (0.02 sec)

mysql>desc x$schema\_tables\_with\_full\_table\_scans;

+-------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------+-------+

| object\_schema | varchar(64) | YES | | NULL | |

| object\_name | varchar(64) | YES | | NULL | |

| rows\_full\_scanned | bigint(20) unsigned | NO | | NULL | |

| latency | bigint(20) unsigned | NO | | NULL | |

+-------------------+---------------------+------+-----+---------+-------+

4 rows inset (0.03 sec)

Example

mysql>select \* from schema\_tables\_with\_full\_table\_scans limit 5;

+--------------------+--------------------------------+-------------------+-----------+

| object\_schema | object\_name | rows\_full\_scanned | latency |

+--------------------+--------------------------------+-------------------+-----------+

| mem30\_\_instruments | fsstatistics | 10207042 | 13.10 s |

| mem30\_\_instruments | preparedstatementapidata | 436428 | 973.27 ms |

| mem30\_\_instruments | mysqlprocessactivity | 411702 | 282.07 ms |

| mem30\_\_instruments | querycachequeriesincachedata | 374011 | 767.15 ms |

| mem30\_\_instruments | rowaccessesdata | 322321 | 1.55 s |

+--------------------+--------------------------------+-------------------+-----------+

## schema\_unused\_indexes

Description:Finds indexes that have had no events against them (and hence, no usage).To trust whether the data from this view is representative of your workload, you should ensure that the server has been up for a representative amount of time before using it.PRIMARY (key) indexes are ignored.

Structure

mysql>desc schema\_unused\_indexes;

+---------------+-------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+-------------+------+-----+---------+-------+

| object\_schema | varchar(64) | YES | | NULL | |

| object\_name | varchar(64) | YES | | NULL | |

| index\_name | varchar(64) | YES | | NULL | |

+---------------+-------------+------+-----+---------+-------+

3 rows inset (0.09 sec)

Example

mysql>select\*from schema\_unused\_indexes limit5;

+--------------------+---------------------+--------------------+

| object\_schema | object\_name | index\_name |

+--------------------+---------------------+--------------------+

| mem30\_\_bean\_config | plists | path |

| mem30\_\_config | group\_selections | name |

| mem30\_\_config | notification\_groups | name |

| mem30\_\_config | user\_form\_defaults | FKC1AEF1F9E7EE2CFB |

| mem30\_\_enterprise | whats\_new\_entries | entryId |

+--------------------+---------------------+--------------------+

## session / x$session

Description:A detailed non-blocking processlist view to replace [INFORMATION\_SCHEMA. | SHOW FULL] PROCESSLIST.Performs less locking than the legacy sources, whilst giving extra information.The output of this view is restricted to threads from user sessions. See also processlist / x$processlist which contains both user and background threads.

Structures (5.7)

mysql>desc session;

+------------------------+------------------------------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------+------------------------------------------+------+-----+---------+-------+

| thd\_id | bigint(20) unsigned | NO | | NULL | |

| conn\_id | bigint(20) unsigned | YES | | NULL | |

| user | varchar(128) | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| command | varchar(16) | YES | | NULL | |

| state | varchar(64) | YES | | NULL | |

| time | bigint(20) | YES | | NULL | |

| current\_statement | longtext | YES | | NULL | |

| statement\_latency | text | YES | | NULL | |

| progress | decimal(26,2) | YES | | NULL | |

| lock\_latency | text | YES | | NULL | |

| rows\_examined | bigint(20) unsigned | YES | | NULL | |

| rows\_sent | bigint(20) unsigned | YES | | NULL | |

| rows\_affected | bigint(20) unsigned | YES | | NULL | |

| tmp\_tables | bigint(20) unsigned | YES | | NULL | |

| tmp\_disk\_tables | bigint(20) unsigned | YES | | NULL | |

| full\_scan | varchar(3) | NO | | | |

| last\_statement | longtext | YES | | NULL | |

| last\_statement\_latency | text | YES | | NULL | |

| current\_memory | text | YES | | NULL | |

| last\_wait | varchar(128) | YES | | NULL | |

| last\_wait\_latency | text | YES | | NULL | |

| source | varchar(64) | YES | | NULL | |

| trx\_latency | text | YES | | NULL | |

| trx\_state | enum('ACTIVE','COMMITTED','ROLLED BACK') | YES | | NULL | |

| trx\_autocommit | enum('YES','NO') | YES | | NULL | |

| pid | varchar(1024) | YES | | NULL | |

| program\_name | varchar(1024) | YES | | NULL | |

+------------------------+------------------------------------------+------+-----+---------+-------+

28 rows inset (0.00 sec)

mysql>desc x$session;

+------------------------+------------------------------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------+------------------------------------------+------+-----+---------+-------+

| thd\_id | bigint(20) unsigned | NO | | NULL | |

| conn\_id | bigint(20) unsigned | YES | | NULL | |

| user | varchar(128) | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| command | varchar(16) | YES | | NULL | |

| state | varchar(64) | YES | | NULL | |

| time | bigint(20) | YES | | NULL | |

| current\_statement | longtext | YES | | NULL | |

| statement\_latency | bigint(20) unsigned | YES | | NULL | |

| progress | decimal(26,2) | YES | | NULL | |

| lock\_latency | bigint(20) unsigned | YES | | NULL | |

| rows\_examined | bigint(20) unsigned | YES | | NULL | |

| rows\_sent | bigint(20) unsigned | YES | | NULL | |

| rows\_affected | bigint(20) unsigned | YES | | NULL | |

| tmp\_tables | bigint(20) unsigned | YES | | NULL | |

| tmp\_disk\_tables | bigint(20) unsigned | YES | | NULL | |

| full\_scan | varchar(3) | NO | | | |

| last\_statement | longtext | YES | | NULL | |

| last\_statement\_latency | bigint(20) unsigned | YES | | NULL | |

| current\_memory | decimal(41,0) | YES | | NULL | |

| last\_wait | varchar(128) | YES | | NULL | |

| last\_wait\_latency | varchar(20) | YES | | NULL | |

| source | varchar(64) | YES | | NULL | |

| trx\_latency | bigint(20) unsigned | YES | | NULL | |

| trx\_state | enum('ACTIVE','COMMITTED','ROLLED BACK') | YES | | NULL | |

| trx\_autocommit | enum('YES','NO') | YES | | NULL | |

| pid | varchar(1024) | YES | | NULL | |

| program\_name | varchar(1024) | YES | | NULL | |

+------------------------+------------------------------------------+------+-----+---------+-------+

28 rows inset (0.00 sec)

Example

mysql>select\*fromsys.session\G

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

thd\_id: 24

conn\_id: 2

user: root@localhost

db: sys

command: Query

state: Sending data

time: 0

current\_statement: select\*fromsys.session

statement\_latency: 137.22 ms

progress: NULL

lock\_latency: 33.75 ms

rows\_examined: 0

rows\_sent: 0

rows\_affected: 0

tmp\_tables: 4

tmp\_disk\_tables: 1

full\_scan: YES

last\_statement: NULL

last\_statement\_latency: NULL

current\_memory: 3.26 MiB

last\_wait: wait/synch/mutex/innodb/file\_format\_max\_mutex

last\_wait\_latency: 64.09 ns

source: trx0sys.cc:778

trx\_latency: 7.88 s

trx\_state: ACTIVE

trx\_autocommit: NO

pid: 4212

program\_name: mysql

## session\_ssl\_status

DescriptionShows SSL version, cipher and the count of re-used SSL sessions per connection。Structures

mysql>descsys.session\_ssl\_status;

+---------------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------------+---------------------+------+-----+---------+-------+

| thread\_id | bigint(20) unsigned | NO | | NULL | |

| ssl\_version | varchar(1024) | YES | | NULL | |

| ssl\_cipher | varchar(1024) | YES | | NULL | |

| ssl\_sessions\_reused | varchar(1024) | YES | | NULL | |

+---------------------+---------------------+------+-----+---------+-------+

4 rows inset (0.00 sec)

Example

mysql>select\*from session\_ssl\_status;

+-----------+-------------+--------------------+---------------------+

| thread\_id | ssl\_version | ssl\_cipher | ssl\_sessions\_reused |

+-----------+-------------+--------------------+---------------------+

| 26 | TLSv1 | DHE-RSA-AES256-SHA | 0 |

| 27 | TLSv1 | DHE-RSA-AES256-SHA | 0 |

| 28 | TLSv1 | DHE-RSA-AES256-SHA | 0 |

+-----------+-------------+--------------------+---------------------+

3 rows inset (0.00 sec)

## statement\_analysis / x$statement\_analysis

Description:Lists a normalized statement view with aggregated statistics, mimics the MySQL Enterprise Monitor Query Analysis view, ordered by the total execution time per normalized statement.Structures

mysql>desc statement\_analysis;

+-------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| full\_scan | varchar(1) | NO | | | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| err\_count | bigint(20) unsigned | NO | | NULL | |

| warn\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| lock\_latency | text | YES | | NULL | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_sent\_avg | decimal(21,0) | NO | | 0 | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_examined\_avg | decimal(21,0) | NO | | 0 | |

| rows\_affected | bigint(20) unsigned | NO | | NULL | |

| rows\_affected\_avg | decimal(21,0) | NO | | 0 | |

| tmp\_tables | bigint(20) unsigned | NO | | NULL | |

| tmp\_disk\_tables | bigint(20) unsigned | NO | | NULL | |

| rows\_sorted | bigint(20) unsigned | NO | | NULL | |

| sort\_merge\_passes | bigint(20) unsigned | NO | | NULL | |

| digest | varchar(32) | YES | | NULL | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

+-------------------+---------------------+------+-----+---------------------+-------+

23 rows inset (0.26 sec)

mysql>desc x$statement\_analysis;

+-------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| full\_scan | varchar(1) | NO | | | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| err\_count | bigint(20) unsigned | NO | | NULL | |

| warn\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

| lock\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_sent\_avg | decimal(21,0) | NO | | 0 | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_examined\_avg | decimal(21,0) | NO | | 0 | |

| rows\_affected | bigint(20) unsigned | NO | | NULL | |

| rows\_affected\_avg | decimal(21,0) | NO | | 0 | |

| tmp\_tables | bigint(20) unsigned | NO | | NULL | |

| tmp\_disk\_tables | bigint(20) unsigned | NO | | NULL | |

| rows\_sorted | bigint(20) unsigned | NO | | NULL | |

| sort\_merge\_passes | bigint(20) unsigned | NO | | NULL | |

| digest | varchar(32) | YES | | NULL | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

+-------------------+---------------------+------+-----+---------------------+-------+

23 rows inset (0.27 sec)

Example

mysql>select\*from statement\_analysis limit1\G

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

query: SELECT\*FROM`schema\_object\_o ... MA` , `information\_schema` ...

db: sys

full\_scan: \*

exec\_count: 2

err\_count: 0

warn\_count: 0

total\_latency: 16.75 s

max\_latency: 16.57 s

avg\_latency: 8.38 s

lock\_latency: 16.69 s

rows\_sent: 84

rows\_sent\_avg: 42

rows\_examined: 20012

rows\_examined\_avg: 10006

rows\_affected: 0

rows\_affected\_avg: 0

tmp\_tables: 378

tmp\_disk\_tables: 66

rows\_sorted: 168

sort\_merge\_passes: 0

digest: 54f9bd520f0bbf15db0c2ed93386bec9

first\_seen: 2014-03-0713:13:41

last\_seen: 2014-03-0713:13:48

## statements\_with\_errors\_or\_warnings / x$statements\_with\_errors\_or\_warnings

Description:Lists all normalized statements that have raised errors or warnings.

Structures

mysql>desc statements\_with\_errors\_or\_warnings;

+-------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| errors | bigint(20) unsigned | NO | | NULL | |

| error\_pct | decimal(27,4) | NO | | 0.0000 | |

| warnings | bigint(20) unsigned | NO | | NULL | |

| warning\_pct | decimal(27,4) | NO | | 0.0000 | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+-------------+---------------------+------+-----+---------------------+-------+

10 rows inset (0.55 sec)

mysql>desc x$statements\_with\_errors\_or\_warnings;

+-------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| errors | bigint(20) unsigned | NO | | NULL | |

| error\_pct | decimal(27,4) | NO | | 0.0000 | |

| warnings | bigint(20) unsigned | NO | | NULL | |

| warning\_pct | decimal(27,4) | NO | | 0.0000 | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+-------------+---------------------+------+-----+---------------------+-------+

10 rows inset (0.25 sec)

Example

mysql>select\*from statements\_with\_errors\_or\_warnings LIMIT1\G

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

query: CREATE OR REPLACE ALGORITHM = ... \_delete` AS `rows\_deleted` ...

db: sys

exec\_count: 2

errors: 1

error\_pct: 50.0000

warnings: 0

warning\_pct: 0.0000

first\_seen: 2014-03-07 12:56:54

last\_seen: 2014-03-07 13:01:01

digest: 943a788859e623d5f7798ba0ae0fd8a9

## statements\_with\_full\_table\_scans / x$statements\_with\_full\_table\_scans

Description:Lists all normalized statements that use have done a full table scan ordered by number the percentage of times a full scan was done, then by the statement latency.This view ignores SHOW statements, as these always cause a full table scan, and there is nothing that can be done about this.Structures

mysql>desc statements\_with\_full\_table\_scans;

+--------------------------+------------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------------+------------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| no\_index\_used\_count | bigint(20) unsigned | NO | | NULL | |

| no\_good\_index\_used\_count | bigint(20) unsigned | NO | | NULL | |

| no\_index\_used\_pct | decimal(24,0) | NO | | 0 | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_sent\_avg | decimal(21,0) unsigned | YES | | NULL | |

| rows\_examined\_avg | decimal(21,0) unsigned | YES | | NULL | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+--------------------------+------------------------+------+-----+---------------------+-------+

14 rows inset (0.04 sec)

mysql>desc x$statements\_with\_full\_table\_scans;

+--------------------------+------------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------------+------------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| no\_index\_used\_count | bigint(20) unsigned | NO | | NULL | |

| no\_good\_index\_used\_count | bigint(20) unsigned | NO | | NULL | |

| no\_index\_used\_pct | decimal(24,0) | NO | | 0 | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_sent\_avg | decimal(21,0) unsigned | YES | | NULL | |

| rows\_examined\_avg | decimal(21,0) unsigned | YES | | NULL | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+--------------------------+------------------------+------+-----+---------------------+-------+

14 rows inset (0.14 sec)

Example

mysql>select\*from statements\_with\_full\_table\_scans limit1\G

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

query: SELECT\*FROM`schema\_tables\_w ... ex\_usage` . `COUNT\_READ`DESC

db: sys

exec\_count: 1

total\_latency: 88.20 ms

no\_index\_used\_count: 1

no\_good\_index\_used\_count: 0

no\_index\_used\_pct: 100

rows\_sent: 0

rows\_examined: 1501

rows\_sent\_avg: 0

rows\_examined\_avg: 1501

first\_seen: 2014-03-0713:58:20

last\_seen: 2014-03-0713:58:20

digest: 64baecd5c1e1e1651a6b92e55442a288

## statements\_with\_runtimes\_in\_95th\_percentile / x$statements\_with\_runtimes\_in\_95th\_percentile

Description:Lists all statements whose average runtime, in microseconds, is in the top 95th percentile.Also includes two helper views:

x$ps\_digest\_avg\_latency\_distribution

x$ps\_digest\_95th\_percentile\_by\_avg\_us

Structures

mysql>desc statements\_with\_runtimes\_in\_95th\_percentile;

+-------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| full\_scan | varchar(1) | NO | | | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| err\_count | bigint(20) unsigned | NO | | NULL | |

| warn\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_sent\_avg | decimal(21,0) | NO | | 0 | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_examined\_avg | decimal(21,0) | NO | | 0 | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+-------------------+---------------------+------+-----+---------------------+-------+

16 rows inset (0.11 sec)

mysql>desc x$statements\_with\_runtimes\_in\_95th\_percentile;

+-------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| full\_scan | varchar(1) | NO | | | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| err\_count | bigint(20) unsigned | NO | | NULL | |

| warn\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_sent\_avg | decimal(21,0) | NO | | 0 | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_examined\_avg | decimal(21,0) | NO | | 0 | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+-------------------+---------------------+------+-----+---------------------+-------+

16 rows inset (0.00 sec)

mysql>desc x$ps\_digest\_avg\_latency\_distribution;

+--------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------+---------------+------+-----+---------+-------+

| cnt | bigint(21) | NO | | 0 | |

| avg\_us | decimal(21,0) | YES | | NULL | |

+--------+---------------+------+-----+---------+-------+

2 rows inset (0.10 sec)

mysql>desc x$ps\_digest\_95th\_percentile\_by\_avg\_us;

+------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+---------------+------+-----+---------+-------+

| avg\_us | decimal(21,0) | YES | | NULL | |

| percentile | decimal(46,4) | NO | | 0.0000 | |

+------------+---------------+------+-----+---------+-------+

2 rows inset (0.15 sec)

Example

mysql>select\*from statements\_with\_runtimes\_in\_95th\_percentile\G

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

query: SELECT\*FROM`schema\_object\_o ... MA` , `information\_schema` ...

db: sys

full\_scan: \*

exec\_count: 2

err\_count: 0

warn\_count: 0

total\_latency: 16.75 s

max\_latency: 16.57 s

avg\_latency: 8.38 s

rows\_sent: 84

rows\_sent\_avg: 42

rows\_examined: 20012

rows\_examined\_avg: 10006

first\_seen: 2014-03-0713:13:41

last\_seen: 2014-03-0713:13:48

digest: 54f9bd520f0bbf15db0c2ed93386bec9

## statements\_with\_sorting / x$statements\_with\_sorting

Description:Lists all normalized statements that have done sorts, ordered by total\_latency descending.Structures

mysql>desc statements\_with\_sorting;

+-------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| sort\_merge\_passes | bigint(20) unsigned | NO | | NULL | |

| avg\_sort\_merges | decimal(21,0) | NO | | 0 | |

| sorts\_using\_scans | bigint(20) unsigned | NO | | NULL | |

| sort\_using\_range | bigint(20) unsigned | NO | | NULL | |

| rows\_sorted | bigint(20) unsigned | NO | | NULL | |

| avg\_rows\_sorted | decimal(21,0) | NO | | 0 | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+-------------------+---------------------+------+-----+---------------------+-------+

13 rows inset (0.01 sec)

mysql>desc x$statements\_with\_sorting;

+-------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| sort\_merge\_passes | bigint(20) unsigned | NO | | NULL | |

| avg\_sort\_merges | decimal(21,0) | NO | | 0 | |

| sorts\_using\_scans | bigint(20) unsigned | NO | | NULL | |

| sort\_using\_range | bigint(20) unsigned | NO | | NULL | |

| rows\_sorted | bigint(20) unsigned | NO | | NULL | |

| avg\_rows\_sorted | decimal(21,0) | NO | | 0 | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+-------------------+---------------------+------+-----+---------------------+-------+

13 rows inset (0.04 sec)

Example

mysql>select\*from statements\_with\_sorting limit1\G

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

query: SELECT\*FROM`schema\_object\_o ... MA` , `information\_schema` ...

db: sys

exec\_count: 2

total\_latency: 16.75 s

sort\_merge\_passes: 0

avg\_sort\_merges: 0

sorts\_using\_scans: 12

sort\_using\_range: 0

rows\_sorted: 168

avg\_rows\_sorted: 84

first\_seen: 2014-03-0713:13:41

last\_seen: 2014-03-0713:13:48

digest: 54f9bd520f0bbf15db0c2ed93386bec9

## statements\_with\_temp\_tables / x$statements\_with\_temp\_tables

Description:Lists all normalized statements that use temporary tables ordered by number of on disk temporary tables descending first, then by the number of memory tables.Structures

mysql>desc statements\_with\_temp\_tables;

+--------------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| memory\_tmp\_tables | bigint(20) unsigned | NO | | NULL | |

| disk\_tmp\_tables | bigint(20) unsigned | NO | | NULL | |

| avg\_tmp\_tables\_per\_query | decimal(21,0) | NO | | 0 | |

| tmp\_tables\_to\_disk\_pct | decimal(24,0) | NO | | 0 | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+--------------------------+---------------------+------+-----+---------------------+-------+

11 rows inset (0.30 sec)

mysql>desc x$statements\_with\_temp\_tables;

+--------------------------+---------------------+------+-----+---------------------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------------------+---------------------+------+-----+---------------------+-------+

| query | longtext | YES | | NULL | |

| db | varchar(64) | YES | | NULL | |

| exec\_count | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| memory\_tmp\_tables | bigint(20) unsigned | NO | | NULL | |

| disk\_tmp\_tables | bigint(20) unsigned | NO | | NULL | |

| avg\_tmp\_tables\_per\_query | decimal(21,0) | NO | | 0 | |

| tmp\_tables\_to\_disk\_pct | decimal(24,0) | NO | | 0 | |

| first\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| last\_seen | timestamp | NO | | 0000-00-0000:00:00 | |

| digest | varchar(32) | YES | | NULL | |

+--------------------------+---------------------+------+-----+---------------------+-------+

11 rows inset (0.05 sec)

Example

mysql>select\*from statements\_with\_temp\_tables limit1\G

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

query: SELECT\*FROM`schema\_object\_o ... MA` , `information\_schema` ...

db: sys

exec\_count: 2

total\_latency: 16.75 s

memory\_tmp\_tables: 378

disk\_tmp\_tables: 66

avg\_tmp\_tables\_per\_query: 189

tmp\_tables\_to\_disk\_pct: 17

first\_seen: 2014-03-0713:13:41

last\_seen: 2014-03-0713:13:48

digest: 54f9bd520f0bbf15db0c2ed93386bec9

## user\_summary / x$user\_summary

Description:Summarizes statement activity, file IO and connections by user.

When the user found is NULL, it is assumed to be a "background" thread.

Structures (5.7)

mysql>desc user\_summary;

+------------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------+---------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| statements | decimal(64,0) | YES | | NULL | |

| statement\_latency | text | YES | | NULL | |

| statement\_avg\_latency | text | YES | | NULL | |

| table\_scans | decimal(65,0) | YES | | NULL | |

| file\_ios | decimal(64,0) | YES | | NULL | |

| file\_io\_latency | text | YES | | NULL | |

| current\_connections | decimal(41,0) | YES | | NULL | |

| total\_connections | decimal(41,0) | YES | | NULL | |

| unique\_hosts | bigint(21) | NO | | 0 | |

| current\_memory | text | YES | | NULL | |

| total\_memory\_allocated | text | YES | | NULL | |

+------------------------+---------------+------+-----+---------+-------+

12 rows inset (0.00 sec)

mysql>desc x$user\_summary;

+------------------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------------------+---------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| statements | decimal(64,0) | YES | | NULL | |

| statement\_latency | decimal(64,0) | YES | | NULL | |

| statement\_avg\_latency | decimal(65,4) | NO | | 0.0000 | |

| table\_scans | decimal(65,0) | YES | | NULL | |

| file\_ios | decimal(64,0) | YES | | NULL | |

| file\_io\_latency | decimal(64,0) | YES | | NULL | |

| current\_connections | decimal(41,0) | YES | | NULL | |

| total\_connections | decimal(41,0) | YES | | NULL | |

| unique\_hosts | bigint(21) | NO | | 0 | |

| current\_memory | decimal(63,0) | YES | | NULL | |

| total\_memory\_allocated | decimal(64,0) | YES | | NULL | |

+------------------------+---------------+------+-----+---------+-------+

12 rows inset (0.01 sec)

Example

mysql>select\*from user\_summary\G

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

user: root

statements: 4981

statement\_latency: 26.54 s

statement\_avg\_latency: 5.33 ms

table\_scans: 74

file\_ios: 7792

file\_io\_latency: 40.08 s

current\_connections: 1

total\_connections: 2

unique\_hosts: 1

current\_memory: 3.57 MiB

total\_memory\_allocated: 83.37 MiB

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*2. row \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

user: background

statements: 0

statement\_latency: 0 ps

statement\_avg\_latency: 0 ps

table\_scans: 0

file\_ios: 1618

file\_io\_latency: 4.78 s

current\_connections: 21

total\_connections: 23

unique\_hosts: 0

current\_memory: 165.94 MiB

total\_memory\_allocated: 197.29 MiB

## user\_summary\_by\_file\_io / x$user\_summary\_by\_file\_io

Description:Summarizes file IO totals per user.When the user found is NULL, it is assumed to be a "background" thread.

Structures

mysql>desc user\_summary\_by\_file\_io;

+------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+---------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| ios | decimal(42,0) | YES | | NULL | |

| io\_latency | text | YES | | NULL | |

+------------+---------------+------+-----+---------+-------+

3 rows inset (0.20 sec)

mysql>desc x$user\_summary\_by\_file\_io;

+------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+---------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| ios | decimal(42,0) | YES | | NULL | |

| io\_latency | decimal(42,0) | YES | | NULL | |

+------------+---------------+------+-----+---------+-------+

3 rows inset (0.02 sec)

Example

mysql>select\*from user\_summary\_by\_file\_io;

+------------+-------+------------+

| user | ios | io\_latency |

+------------+-------+------------+

| root | 26457 | 21.58 s |

| background | 1189 | 394.21 ms |

+------------+-------+------------+

## user\_summary\_by\_file\_io\_type / x$user\_summary\_by\_file\_io\_type

Description:Summarizes file IO by event type per user.

When the user found is NULL, it is assumed to be a "background" thread.

Structures

mysql>desc user\_summary\_by\_file\_io\_type;

+-------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+---------------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| event\_name | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

+-------------+---------------------+------+-----+---------+-------+

5 rows inset (0.02 sec)

mysql>desc x$user\_summary\_by\_file\_io\_type;

+-------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------------+---------------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| event\_name | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

+-------------+---------------------+------+-----+---------+-------+

5 rows inset (0.00 sec)

Example

mysql>select\*from user\_summary\_by\_file\_io\_type;

+------------+--------------------------------------+-------+-----------+-------------+

| user | event\_name | total | latency | max\_latency |

+------------+--------------------------------------+-------+-----------+-------------+

| background | wait/io/file/innodb/innodb\_data\_file | 1434 | 3.29 s | 147.56 ms |

| background | wait/io/file/sql/FRM | 910 | 286.61 ms | 32.92 ms |

| background | wait/io/file/sql/relaylog | 9 | 252.28 ms | 144.17 ms |

| background | wait/io/file/sql/binlog | 56 | 193.73 ms | 153.72 ms |

| background | wait/io/file/sql/binlog\_index | 22 | 183.02 ms | 81.83 ms |

| background | wait/io/file/innodb/innodb\_log\_file | 20 | 117.17 ms | 36.53 ms |

| background | wait/io/file/sql/relaylog\_index | 9 | 50.15 ms | 48.04 ms |

| background | wait/io/file/sql/ERRMSG | 5 | 35.41 ms | 31.78 ms |

| background | wait/io/file/myisam/kfile | 67 | 18.14 ms | 9.00 ms |

| background | wait/io/file/mysys/charset | 3 | 7.46 ms | 4.13 ms |

| background | wait/io/file/sql/casetest | 5 | 6.01 ms | 5.86 ms |

| background | wait/io/file/sql/pid | 3 | 5.96 ms | 3.06 ms |

| background | wait/io/file/myisam/dfile | 43 | 980.38 us | 152.46 us |

| background | wait/io/file/mysys/cnf | 5 | 154.97 us | 58.87 us |

| background | wait/io/file/sql/global\_ddl\_log | 2 | 18.64 us | 16.40 us |

| root | wait/io/file/sql/file\_parser | 11048 | 48.79 s | 201.11 ms |

| root | wait/io/file/innodb/innodb\_data\_file | 4699 | 3.02 s | 46.93 ms |

| root | wait/io/file/sql/FRM | 10403 | 2.38 s | 61.72 ms |

| root | wait/io/file/myisam/dfile | 22143 | 726.77 ms | 308.79 ms |

| root | wait/io/file/myisam/kfile | 6213 | 435.35 ms | 88.76 ms |

| root | wait/io/file/sql/dbopt | 159 | 130.86 ms | 15.46 ms |

| root | wait/io/file/csv/metadata | 8 | 86.60 ms | 50.32 ms |

| root | wait/io/file/sql/binlog | 15 | 38.79 ms | 9.40 ms |

| root | wait/io/file/sql/misc | 21 | 22.33 ms | 15.30 ms |

| root | wait/io/file/csv/data | 4 | 297.46 us | 111.93 us |

| root | wait/io/file/archive/data | 3 | 54.10 us | 40.74 us |

+------------+--------------------------------------+-------+-----------+-------------+

## user\_summary\_by\_stages / x$user\_summary\_by\_stages

Description:Summarizes stages by user, ordered by user and total latency per stage.When the user found is NULL, it is assumed to be a "background" thread.

Structures

mysql>desc user\_summary\_by\_stages;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| event\_name | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

5 rows inset (0.01 sec)

mysql>desc x$user\_summary\_by\_stages;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| user | varchar(16) | YES | | NULL | |

| event\_name | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

5 rows inset (0.05 sec)

Example

mysql>select\*from user\_summary\_by\_stages;

+------+--------------------------------+-------+---------------+-------------+

| user | event\_name | total | total\_latency | avg\_latency |

+------+--------------------------------+-------+---------------+-------------+

| root | stage/sql/Opening tables | 889 | 1.97 ms | 2.22 us |

| root | stage/sql/Creating sort index | 4 | 1.79 ms | 446.30 us |

| root | stage/sql/init | 10 | 312.27 us | 31.23 us |

| root | stage/sql/checking permissions | 10 | 300.62 us | 30.06 us |

| root | stage/sql/freeing items | 5 | 85.89 us | 17.18 us |

| root | stage/sql/statistics | 5 | 79.15 us | 15.83 us |

| root | stage/sql/preparing | 5 | 69.12 us | 13.82 us |

| root | stage/sql/optimizing | 5 | 53.11 us | 10.62 us |

| root | stage/sql/Sending data | 5 | 44.66 us | 8.93 us |

| root | stage/sql/closing tables | 5 | 37.54 us | 7.51 us |

| root | stage/sql/System lock | 5 | 34.28 us | 6.86 us |

| root | stage/sql/query end | 5 | 24.37 us | 4.87 us |

| root | stage/sql/end | 5 | 8.60 us | 1.72 us |

| root | stage/sql/Sorting result | 5 | 8.33 us | 1.67 us |

| root | stage/sql/executing | 5 | 5.37 us | 1.07 us |

| root | stage/sql/cleaning up | 5 | 4.60 us | 919.00 ns |

+------+--------------------------------+-------+---------------+-------------+

## user\_summary\_by\_statement\_latency / x$user\_summary\_by\_statement\_latency

Description:Summarizes overall statement statistics by user.

When the user found is NULL, it is assumed to be a "background" thread.

Structures

mysql>desc user\_summary\_by\_statement\_latency;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| lock\_latency | text | YES | | NULL | |

| rows\_sent | decimal(42,0) | YES | | NULL | |

| rows\_examined | decimal(42,0) | YES | | NULL | |

| rows\_affected | decimal(42,0) | YES | | NULL | |

| full\_scans | decimal(43,0) | YES | | NULL | |

+---------------+---------------+------+-----+---------+-------+

9 rows inset (0.00 sec)

mysql>desc x$user\_summary\_by\_statement\_latency;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | decimal(42,0) | YES | | NULL | |

| max\_latency | decimal(42,0) | YES | | NULL | |

| lock\_latency | decimal(42,0) | YES | | NULL | |

| rows\_sent | decimal(42,0) | YES | | NULL | |

| rows\_examined | decimal(42,0) | YES | | NULL | |

| rows\_affected | decimal(42,0) | YES | | NULL | |

| full\_scans | decimal(43,0) | YES | | NULL | |

+---------------+---------------+------+-----+---------+-------+

9 rows inset (0.28 sec)

Example

mysql>select\*from user\_summary\_by\_statement\_latency;

+------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

| user | total | total\_latency | max\_latency | lock\_latency | rows\_sent | rows\_examined | rows\_affected | full\_scans |

+------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

| root | 3381 | 00:02:09.13 | 1.48 s | 1.07 s | 1151 | 93947 | 150 | 91 |

+------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

## user\_summary\_by\_statement\_type / x$user\_summary\_by\_statement\_type

Description:Summarizes the types of statements executed by each user.

When the user found is NULL, it is assumed to be a "background" thread.

Structures

mysql>desc user\_summary\_by\_statement\_type;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| statement | varchar(128) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

| lock\_latency | text | YES | | NULL | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_affected | bigint(20) unsigned | NO | | NULL | |

| full\_scans | bigint(21) unsigned | NO | | 0 | |

+---------------+---------------------+------+-----+---------+-------+

10 rows inset (0.21 sec)

mysql>desc x$user\_summary\_by\_statement\_type;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| statement | varchar(128) | YES | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

| lock\_latency | bigint(20) unsigned | NO | | NULL | |

| rows\_sent | bigint(20) unsigned | NO | | NULL | |

| rows\_examined | bigint(20) unsigned | NO | | NULL | |

| rows\_affected | bigint(20) unsigned | NO | | NULL | |

| full\_scans | bigint(21) unsigned | NO | | 0 | |

+---------------+---------------------+------+-----+---------+-------+

10 rows inset (0.37 sec)

Example

mysql>select\*from user\_summary\_by\_statement\_type;

+------+------------------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

| user | statement | total | total\_latency | max\_latency | lock\_latency | rows\_sent | rows\_examined | rows\_affected | full\_scans |

+------+------------------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

| root | create\_view | 1332 | 00:03:39.08 | 677.76 ms | 494.56 ms | 0 | 0 | 0 | 0 |

| root | select | 88 | 20.13 s | 16.57 s | 17.40 s | 1804 | 77285 | 0 | 48 |

| root | drop\_db | 16 | 6.83 s | 1.14 s | 5.73 s | 0 | 0 | 953 | 0 |

| root | drop\_view | 392 | 1.70 s | 739.49 ms | 0 ps | 0 | 0 | 0 | 0 |

| root | show\_databases | 16 | 1.37 s | 587.44 ms | 1.31 ms | 400 | 400 | 0 | 16 |

| root | show\_tables | 34 | 676.78 ms | 167.04 ms | 3.46 ms | 1087 | 1087 | 0 | 34 |

| root | create\_db | 22 | 334.90 ms | 38.93 ms | 0 ps | 0 | 0 | 22 | 0 |

| root | create\_procedure | 352 | 250.02 ms | 21.90 ms | 165.17 ms | 0 | 0 | 0 | 0 |

| root | drop\_function | 176 | 122.44 ms | 69.18 ms | 87.24 ms | 0 | 0 | 0 | 0 |

| root | create\_function | 176 | 76.12 ms | 1.36 ms | 49.50 ms | 0 | 0 | 0 | 0 |

| root | drop\_procedure | 352 | 67.41 ms | 1.57 ms | 36.22 ms | 0 | 0 | 0 | 0 |

| root | update | 2 | 41.75 ms | 35.96 ms | 35.52 ms | 0 | 557 | 338 | 0 |

| root | error | 3 | 17.22 ms | 17.05 ms | 0 ps | 0 | 0 | 0 | 0 |

| root | set\_option | 88 | 8.02 ms | 1.63 ms | 0 ps | 0 | 0 | 0 | 0 |

| root | call\_procedure | 2 | 2.98 ms | 2.29 ms | 95.00 us | 0 | 0 | 0 | 0 |

| root | Init DB | 22 | 1.07 ms | 117.65 us | 0 ps | 0 | 0 | 0 | 0 |

| root | show\_status | 1 | 408.69 us | 408.69 us | 102.00 us | 23 | 23 | 0 | 1 |

+------+------------------+-------+---------------+-------------+--------------+-----------+---------------+---------------+------------+

## wait\_classes\_global\_by\_avg\_latency / x$wait\_classes\_global\_by\_avg\_latency

Description:Lists the top wait classes by average latency, ignoring idle (this may be very large).Structures

mysql>desc wait\_classes\_global\_by\_avg\_latency;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| event\_class | varchar(128) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | text | YES | | NULL | |

| min\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

+---------------+---------------+------+-----+---------+-------+

6 rows inset (0.11 sec)

mysql>desc x$wait\_classes\_global\_by\_avg\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| event\_class | varchar(128) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | decimal(42,0) | YES | | NULL | |

| min\_latency | bigint(20) unsigned | YES | | NULL | |

| avg\_latency | decimal(46,4) | NO | | 0.0000 | |

| max\_latency | bigint(20) unsigned | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

6 rows inset (0.02 sec)

Example

mysql>select\*from wait\_classes\_global\_by\_avg\_latency where event\_class !='idle';

+-------------------+--------+---------------+-------------+-------------+-------------+

| event\_class | total | total\_latency | min\_latency | avg\_latency | max\_latency |

+-------------------+--------+---------------+-------------+-------------+-------------+

| wait/io/file | 543123 | 44.60 s | 19.44 ns | 82.11 us | 4.21 s |

| wait/io/table | 22002 | 766.60 ms | 148.72 ns | 34.84 us | 44.97 ms |

| wait/io/socket | 79613 | 967.17 ms | 0 ps | 12.15 us | 27.10 ms |

| wait/lock/table | 35409 | 18.68 ms | 65.45 ns | 527.51 ns | 969.88 us |

| wait/synch/rwlock | 37935 | 4.61 ms | 21.38 ns | 121.61 ns | 34.65 us |

| wait/synch/mutex | 390622 | 18.60 ms | 19.44 ns | 47.61 ns | 10.32 us |

+-------------------+--------+---------------+-------------+-------------+-------------+

## wait\_classes\_global\_by\_latency / x$wait\_classes\_global\_by\_latency

Description:Lists the top wait classes by total latency, ignoring idle (this may be very large).Structures

mysql>desc wait\_classes\_global\_by\_latency;

+---------------+---------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------+------+-----+---------+-------+

| event\_class | varchar(128) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | text | YES | | NULL | |

| min\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

+---------------+---------------+------+-----+---------+-------+

6 rows inset (0.00 sec)

mysql>desc x$wait\_classes\_global\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| event\_class | varchar(128) | YES | | NULL | |

| total | decimal(42,0) | YES | | NULL | |

| total\_latency | decimal(42,0) | YES | | NULL | |

| min\_latency | bigint(20) unsigned | YES | | NULL | |

| avg\_latency | decimal(46,4) | NO | | 0.0000 | |

| max\_latency | bigint(20) unsigned | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

6 rows inset (0.02 sec)

Example

mysql>select\*from wait\_classes\_global\_by\_latency;

+-------------------+--------+---------------+-------------+-------------+-------------+

| event\_class | total | total\_latency | min\_latency | avg\_latency | max\_latency |

+-------------------+--------+---------------+-------------+-------------+-------------+

| wait/io/file | 550470 | 46.01 s | 19.44 ns | 83.58 us | 4.21 s |

| wait/io/socket | 228833 | 2.71 s | 0 ps | 11.86 us | 29.93 ms |

| wait/io/table | 64063 | 1.89 s | 99.79 ns | 29.43 us | 68.07 ms |

| wait/lock/table | 76029 | 47.19 ms | 65.45 ns | 620.74 ns | 969.88 us |

| wait/synch/mutex | 635925 | 34.93 ms | 19.44 ns | 54.93 ns | 107.70 us |

| wait/synch/rwlock | 61287 | 7.62 ms | 21.38 ns | 124.37 ns | 34.65 us |

+-------------------+--------+---------------+-------------+-------------+-------------+

## waits\_by\_user\_by\_latency / x$waits\_by\_user\_by\_latency

Description:Lists the top wait events per user by their total latency, ignoring idle (this may be very large) per user.Structures

mysql>desc waits\_by\_user\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| event | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

6 rows inset (0.00 sec)

mysql>desc x$waits\_by\_user\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| user | varchar(32) | YES | | NULL | |

| event | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

6 rows inset (0.30 sec)

Example

mysql>select\*from waits\_by\_user\_by\_latency;

+------+-----------------------------------------------------+--------+---------------+-------------+-------------+

| user | event | total | total\_latency | avg\_latency | max\_latency |

+------+-----------------------------------------------------+--------+---------------+-------------+-------------+

| root | wait/io/file/sql/file\_parser | 13743 | 00:01:00.46 | 4.40 ms | 231.88 ms |

| root | wait/io/file/innodb/innodb\_data\_file | 4699 | 3.02 s | 643.38 us | 46.93 ms |

| root | wait/io/file/sql/FRM | 11462 | 2.60 s | 226.83 us | 61.72 ms |

| root | wait/io/file/myisam/dfile | 26776 | 746.70 ms | 27.89 us | 308.79 ms |

| root | wait/io/file/myisam/kfile | 7126 | 462.66 ms | 64.93 us | 88.76 ms |

| root | wait/io/file/sql/dbopt | 179 | 137.58 ms | 768.59 us | 15.46 ms |

| root | wait/io/file/csv/metadata | 8 | 86.60 ms | 10.82 ms | 50.32 ms |

| root | wait/synch/mutex/mysys/IO\_CACHE::append\_buffer\_lock | 798080 | 66.46 ms | 82.94 ns | 161.03 us |

| root | wait/io/file/sql/binlog | 19 | 49.11 ms | 2.58 ms | 9.40 ms |

| root | wait/io/file/sql/misc | 26 | 22.38 ms | 860.80 us | 15.30 ms |

| root | wait/io/file/csv/data | 4 | 297.46 us | 74.37 us | 111.93 us |

| root | wait/synch/rwlock/sql/MDL\_lock::rwlock | 944 | 287.86 us | 304.62 ns | 874.64 ns |

| root | wait/io/file/archive/data | 4 | 82.71 us | 20.68 us | 40.74 us |

| root | wait/synch/mutex/myisam/MYISAM\_SHARE::intern\_lock | 60 | 12.21 us | 203.20 ns | 512.72 ns |

| root | wait/synch/mutex/innodb/trx\_mutex | 81 | 5.93 us | 73.14 ns | 252.59 ns |

+------+-----------------------------------------------------+--------+---------------+-------------+-------------+

## waits\_by\_host\_by\_latency / x$waits\_by\_host\_by\_latency

Description:Lists the top wait events per host by their total latency, ignoring idle (this may be very large) per host.Structures

mysql>desc waits\_by\_host\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| event | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

6 rows inset (0.36 sec)

mysql>desc x$waits\_by\_host\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| host | varchar(60) | YES | | NULL | |

| event | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

6 rows inset (0.25 sec)

Example

mysql>select\*from waits\_by\_host\_by\_latency;

+------+-----------------------------------------------------+--------+---------------+-------------+-------------+

| host | event | total | total\_latency | avg\_latency | max\_latency |

+------+-----------------------------------------------------+--------+---------------+-------------+-------------+

| hal1 | wait/io/file/sql/file\_parser | 13743 | 00:01:00.46 | 4.40 ms | 231.88 ms |

| hal1 | wait/io/file/innodb/innodb\_data\_file | 4699 | 3.02 s | 643.38 us | 46.93 ms |

| hal1 | wait/io/file/sql/FRM | 11462 | 2.60 s | 226.83 us | 61.72 ms |

| hal1 | wait/io/file/myisam/dfile | 26776 | 746.70 ms | 27.89 us | 308.79 ms |

| hal1 | wait/io/file/myisam/kfile | 7126 | 462.66 ms | 64.93 us | 88.76 ms |

| hal1 | wait/io/file/sql/dbopt | 179 | 137.58 ms | 768.59 us | 15.46 ms |

| hal1 | wait/io/file/csv/metadata | 8 | 86.60 ms | 10.82 ms | 50.32 ms |

| hal1 | wait/synch/mutex/mysys/IO\_CACHE::append\_buffer\_lock | 798080 | 66.46 ms | 82.94 ns | 161.03 us |

| hal1 | wait/io/file/sql/binlog | 19 | 49.11 ms | 2.58 ms | 9.40 ms |

| hal1 | wait/io/file/sql/misc | 26 | 22.38 ms | 860.80 us | 15.30 ms |

| hal1 | wait/io/file/csv/data | 4 | 297.46 us | 74.37 us | 111.93 us |

| hal1 | wait/synch/rwlock/sql/MDL\_lock::rwlock | 944 | 287.86 us | 304.62 ns | 874.64 ns |

| hal1 | wait/io/file/archive/data | 4 | 82.71 us | 20.68 us | 40.74 us |

| hal1 | wait/synch/mutex/myisam/MYISAM\_SHARE::intern\_lock | 60 | 12.21 us | 203.20 ns | 512.72 ns |

| hal1 | wait/synch/mutex/innodb/trx\_mutex | 81 | 5.93 us | 73.14 ns | 252.59 ns |

+------+-----------------------------------------------------+--------+---------------+-------------+-------------+

## waits\_global\_by\_latency / x$waits\_global\_by\_latency

Description:Lists the top wait events by their total latency, ignoring idle (this may be very large).Structures

mysql>desc waits\_global\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| events | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | text | YES | | NULL | |

| avg\_latency | text | YES | | NULL | |

| max\_latency | text | YES | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

5 rows inset (0.01 sec)

mysql>desc x$waits\_global\_by\_latency;

+---------------+---------------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------------+---------------------+------+-----+---------+-------+

| events | varchar(128) | NO | | NULL | |

| total | bigint(20) unsigned | NO | | NULL | |

| total\_latency | bigint(20) unsigned | NO | | NULL | |

| avg\_latency | bigint(20) unsigned | NO | | NULL | |

| max\_latency | bigint(20) unsigned | NO | | NULL | |

+---------------+---------------------+------+-----+---------+-------+

5 rows inset (0.03 sec)

Example

mysql>select\*from waits\_global\_by\_latency;

+-----------------------------------------------------+---------+---------------+-------------+-------------+

| events | total | total\_latency | avg\_latency | max\_latency |

+-----------------------------------------------------+---------+---------------+-------------+-------------+

| wait/io/file/sql/file\_parser | 14936 | 00:01:06.64 | 4.46 ms | 231.88 ms |

| wait/io/file/innodb/innodb\_data\_file | 6133 | 6.31 s | 1.03 ms | 147.56 ms |

| wait/io/file/sql/FRM | 12677 | 2.83 s | 223.37 us | 40.86 ms |

| wait/io/file/myisam/dfile | 28446 | 754.40 ms | 26.52 us | 308.79 ms |

| wait/io/file/myisam/kfile | 7572 | 491.17 ms | 64.87 us | 88.76 ms |

| wait/io/file/sql/relaylog | 9 | 252.28 ms | 28.03 ms | 144.17 ms |

| wait/io/file/sql/binlog | 76 | 242.87 ms | 3.20 ms | 153.72 ms |

| wait/io/file/sql/binlog\_index | 21 | 173.07 ms | 8.24 ms | 81.83 ms |

| wait/io/file/sql/dbopt | 184 | 149.52 ms | 812.62 us | 15.46 ms |

| wait/io/file/innodb/innodb\_log\_file | 20 | 117.17 ms | 5.86 ms | 36.53 ms |

| wait/synch/mutex/mysys/IO\_CACHE::append\_buffer\_lock | 1197128 | 99.27 ms | 82.56 ns | 161.03 us |

| wait/io/file/csv/metadata | 8 | 86.60 ms | 10.82 ms | 50.32 ms |

| wait/io/file/sql/relaylog\_index | 10 | 60.10 ms | 6.01 ms | 48.04 ms |

| wait/io/file/sql/ERRMSG | 5 | 35.41 ms | 7.08 ms | 31.78 ms |

| wait/io/file/sql/misc | 28 | 22.40 ms | 800.06 us | 15.30 ms |

| wait/io/file/mysys/charset | 3 | 7.46 ms | 2.49 ms | 4.13 ms |

| wait/io/file/sql/casetest | 5 | 6.01 ms | 1.20 ms | 5.86 ms |

| wait/io/file/sql/pid | 3 | 5.96 ms | 1.99 ms | 3.06 ms |

| wait/synch/rwlock/sql/MDL\_lock::rwlock | 1396 | 420.58 us | 301.22 ns | 874.64 ns |

| wait/io/file/csv/data | 4 | 297.46 us | 74.37 us | 111.93 us |

| wait/io/file/mysys/cnf | 5 | 154.97 us | 30.99 us | 58.87 us |

| wait/io/file/archive/data | 4 | 82.71 us | 20.68 us | 40.74 us |

| wait/synch/mutex/myisam/MYISAM\_SHARE::intern\_lock | 90 | 19.23 us | 213.38 ns | 576.81 ns |

| wait/io/file/sql/global\_ddl\_log | 2 | 18.64 us | 9.32 us | 16.40 us |

| wait/synch/mutex/innodb/trx\_mutex | 108 | 8.23 us | 76.15 ns | 365.69 ns |

+-----------------------------------------------------+---------+---------------+-------------+-------------+

# Functions

## extract\_schema\_from\_file\_name

Description:Takes a raw file path, and attempts to extract the schema name from it.Useful for when interacting with Performance Schema data concerning IO statistics, for example.Currently relies on the fact that a table data file will be within a specified database directory (will not work with partitions or tables that specify an individual DATA\_DIRECTORY).

Parameters

path (VARCHAR(512)): The full file path to a data file to extract the schema name from.

Returns

VARCHAR(64)

Example

mysql>SELECTsys.extract\_schema\_from\_file\_name('/var/lib/mysql/employees/employee.ibd');

+----------------------------------------------------------------------------+

| sys.extract\_schema\_from\_file\_name('/var/lib/mysql/employees/employee.ibd') |

+----------------------------------------------------------------------------+

| employees |

+----------------------------------------------------------------------------+

1 row inset (0.00 sec)

## extract\_table\_from\_file\_name

Description:Takes a raw file path, and extracts the table name from it.Useful for when interacting with Performance Schema data concerning IO statistics, for example.

Parameters

path (VARCHAR(512)): The full file path to a data file to extract the table name from.

Returns

VARCHAR(64)

Example

mysql>SELECTsys.extract\_table\_from\_file\_name('/var/lib/mysql/employees/employee.ibd');

+---------------------------------------------------------------------------+

| sys.extract\_table\_from\_file\_name('/var/lib/mysql/employees/employee.ibd') |

+---------------------------------------------------------------------------+

| employee |

+---------------------------------------------------------------------------+

1 row inset (0.02 sec)

## format\_bytes

Description:Takes a raw bytes value, and converts it to a human readable format.

Parameters

bytes (TEXT): A raw bytes value.

Returns

TEXT

Example

mysql>SELECTsys.format\_bytes(2348723492723746) AS size;

+----------+

| size |

+----------+

| 2.09 PiB |

+----------+

1 row inset (0.00 sec)

mysql>SELECTsys.format\_bytes(2348723492723) AS size;

+----------+

| size |

+----------+

| 2.14 TiB |

+----------+

1 row inset (0.00 sec)

mysql>SELECTsys.format\_bytes(23487234) AS size;

+-----------+

| size |

+-----------+

| 22.40 MiB |

+-----------+

1 row inset (0.00 sec)

## format\_path

Description:Takes a raw path value, and strips out the datadir or tmpdir replacing with @@datadir and @@tmpdir respectively.Also normalizes the paths across operating systems, so backslashes on Windows are converted to forward slashes.

Parameters

path (VARCHAR(512)): The raw file path value to format.

Returns

VARCHAR(512) CHARSET UTF8

Example

mysql>select @@datadir;

+-----------------------------------------------+

| @@datadir |

+-----------------------------------------------+

| /Users/mark/sandboxes/SmallTree/AMaster/data/ |

+-----------------------------------------------+

1 row inset (0.06 sec)

mysql>select format\_path('/Users/mark/sandboxes/SmallTree/AMaster/data/mysql/proc.MYD') ASpath;

+--------------------------+

| path |

+--------------------------+

| @@datadir/mysql/proc.MYD |

+--------------------------+

1 row inset (0.03 sec)

## format\_statement

Description:Formats a normalized statement, truncating it if it is > 64 characters long by default.To configure the length to truncate the statement to by default, update the statement\_truncate\_len variable with sys\_configtable to a different value. Alternatively, to change it just for just your particular session, use SET @sys.statement\_truncate\_len := <some new value>.Useful for printing statement related data from Performance Schema from the command line.

Parameters

statement (LONGTEXT): The statement to format.

Returns

VARCHAR(65)

Example

mysql>SELECT sys.format\_statement(digest\_text)

->FROM performance\_schema.events\_statements\_summary\_by\_digest

->ORDER by sum\_timer\_wait DESC limit 5;

+-------------------------------------------------------------------+

| sys.format\_statement(digest\_text) |

+-------------------------------------------------------------------+

| CREATE SQL SECURITY INVOKER VI ... KE ? AND`variable\_value`> ? |

| CREATE SQL SECURITY INVOKER VI ... ait` IS NOT NULL , `esc` . ... |

| CREATE SQL SECURITY INVOKER VI ... ait`IS NOT NULL , `sys` . ... |

| CREATE SQL SECURITY INVOKER VI ... , `compressed\_size` ) ) DESC |

| CREATE SQL SECURITY INVOKER VI ... LIKE ? ORDER BY`timer\_start` |

+-------------------------------------------------------------------+

5 rows inset (0.00 sec)

## format\_time

Description:Takes a raw picoseconds value, and converts it to a human readable form.Picoseconds are the precision that all latency values are printed in within Performance Schema, however are not user friendly when wanting to scan output from the command line.

Parameters

picoseconds (TEXT): The raw picoseconds value to convert.

Returns

TEXT

Example

mysql>select format\_time(342342342342345);

+------------------------------+

| format\_time(342342342342345) |

+------------------------------+

| 00:05:42 |

+------------------------------+

1 row inset (0.00 sec)

mysql>select format\_time(342342342);

+------------------------+

| format\_time(342342342) |

+------------------------+

| 342.34 us |

+------------------------+

1 row inset (0.00 sec)

mysql>select format\_time(34234);

+--------------------+

| format\_time(34234) |

+--------------------+

| 34.23 ns |

+--------------------+

1 row inset (0.00 sec)

## list\_add

Description:Takes a list, and a value to add to the list, and returns the resulting list.Useful for altering certain session variables, like sql\_mode or optimizer\_switch for instance.

Parameters

in\_list (TEXT): The comma separated list to add a value to

in\_add\_value (TEXT): The value to add to the input list

Returns

TEXT

Example

mysql>select @@sql\_mode;

+-----------------------------------------------------------------------------------+

| @@sql\_mode |

+-----------------------------------------------------------------------------------+

| ONLY\_FULL\_GROUP\_BY,STRICT\_TRANS\_TABLES,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION |

+-----------------------------------------------------------------------------------+

1 row inset (0.00 sec)

mysql>set sql\_mode =sys.list\_add(@@sql\_mode, 'ANSI\_QUOTES');

Query OK, 0 rows affected (0.06 sec)

mysql>select @@sql\_mode;

+-----------------------------------------------------------------------------------------------+

| @@sql\_mode |

+-----------------------------------------------------------------------------------------------+

| ANSI\_QUOTES,ONLY\_FULL\_GROUP\_BY,STRICT\_TRANS\_TABLES,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION |

+-----------------------------------------------------------------------------------------------+

1 row inset (0.00 sec)

## list\_drop

Description:Takes a list, and a value to attempt to remove from the list, and returns the resulting list.Useful for altering certain session variables, like sql\_mode or optimizer\_switch for instance.

Parameters

in\_list (TEXT): The comma separated list to drop a value from

in\_drop\_value (TEXT): The value to drop from the input list

Returns

TEXT

Example

mysql>select @@sql\_mode;

+-----------------------------------------------------------------------------------------------+

| @@sql\_mode |

+-----------------------------------------------------------------------------------------------+

| ANSI\_QUOTES,ONLY\_FULL\_GROUP\_BY,STRICT\_TRANS\_TABLES,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION |

+-----------------------------------------------------------------------------------------------+

1 row inset (0.00 sec)

mysql>set sql\_mode =sys.list\_drop(@@sql\_mode, 'ONLY\_FULL\_GROUP\_BY');

Query OK, 0 rows affected (0.03 sec)

mysql>select @@sql\_mode;

+----------------------------------------------------------------------------+

| @@sql\_mode |

+----------------------------------------------------------------------------+

| ANSI\_QUOTES,STRICT\_TRANS\_TABLES,NO\_AUTO\_CREATE\_USER,NO\_ENGINE\_SUBSTITUTION |

+----------------------------------------------------------------------------+

1 row inset (0.00 sec)

## ps\_is\_account\_enabled

Description:Determines whether instrumentation of an account is enabled within Performance Schema.

Parameters

in\_host VARCHAR(60): The hostname of the account to check.

in\_user VARCHAR(32): The username of the account to check.

Returns

ENUM('YES', 'NO')

Example

mysql>SELECT sys.ps\_is\_account\_enabled('localhost', 'root');

+------------------------------------------------+

| sys.ps\_is\_account\_enabled('localhost', 'root') |

+------------------------------------------------+

| YES |

+------------------------------------------------+

1 row inset (0.01 sec)

## ps\_is\_consumer\_enabled

Description:Determines whether a consumer is enabled (taking the consumer hierarchy into consideration) within the Performance Schema.

Parameters

in\_consumer VARCHAR(64): The name of the consumer to check.

Returns

ENUM('YES', 'NO')

Example

mysql>SELECTsys.ps\_is\_consumer\_enabled('events\_stages\_history');

+-----------------------------------------------------+

| sys.ps\_is\_consumer\_enabled('events\_stages\_history') |

+-----------------------------------------------------+

| NO |

+-----------------------------------------------------+

1 row inset (0.00 sec)

## ps\_is\_instrument\_default\_enabled

Description:Returns whether an instrument is enabled by default in this version of MySQL.

Parameters

in\_instrument VARCHAR(128): The instrument to check.

Returns

ENUM('YES', 'NO')

Example

mysql>SELECTsys.ps\_is\_instrument\_default\_enabled('statement/sql/select');

+--------------------------------------------------------------+

| sys.ps\_is\_instrument\_default\_enabled('statement/sql/select') |

+--------------------------------------------------------------+

| YES |

+--------------------------------------------------------------+

1 row inset (0.00 sec)

## ps\_is\_instrument\_default\_timed

Description:Returns whether an instrument is timed by default in this version of MySQL.

Parameters

in\_instrument VARCHAR(128): The instrument to check.

Returns

ENUM('YES', 'NO')

Example

mysql>SELECTsys.ps\_is\_instrument\_default\_timed('statement/sql/select');

+------------------------------------------------------------+

| sys.ps\_is\_instrument\_default\_timed('statement/sql/select') |

+------------------------------------------------------------+

| YES |

+------------------------------------------------------------+

1 row inset (0.00 sec)

## ps\_is\_thread\_instrumented

Description:Checks whether the provided connection id is instrumented within Performance Schema.

Parameters

in\_connection\_id (BIGINT UNSIGNED): the id of the connection to check.

Returns

ENUM('YES', 'NO', 'UNKNOWN')

Example

mysql>SELECTsys.ps\_is\_thread\_instrumented(CONNECTION\_ID());

+------------------------------------------------+

| sys.ps\_is\_thread\_instrumented(CONNECTION\_ID()) |

+------------------------------------------------+

| YES |

+------------------------------------------------+

1 row inset (0.10 sec)

## ps\_thread\_id

Description

Return the Performance Schema THREAD\_ID for the specified connection ID.

Parameters

in\_connection\_id (BIGINT UNSIGNED): The id of the connection to return the thread id for. If NULL, the current connection thread id is returned.

Returns

BIGINT UNSIGNED

Example

mysql>SELECTsys.ps\_thread\_id(79);

+----------------------+

| sys.ps\_thread\_id(79) |

+----------------------+

| 98 |

+----------------------+

1 row inset (0.00 sec)

mysql>SELECTsys.ps\_thread\_id(CONNECTION\_ID());

+-----------------------------------+

| sys.ps\_thread\_id(CONNECTION\_ID()) |

+-----------------------------------+

| 98 |

+-----------------------------------+

1 row inset (0.00 sec)

## ps\_thread\_stack

Description:Outputs a JSON formatted stack of all statements, stages and events within Performance Schema for the specified thread.

Parameters

thd\_id (BIGINT): The id of the thread to trace. This should match the thread\_id column from the performance\_schema.threads table.

Example

(line separation added for output)

mysql>SELECTsys.ps\_thread\_stack(37, FALSE) AS thread\_stack\G

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

thread\_stack: {"rankdir": "LR","nodesep": "0.10","stack\_created": "2014-02-19 13:39:03",

"mysql\_version": "5.7.3-m13","mysql\_user": "root@localhost","events":

[{"nesting\_event\_id": "0", "event\_id": "10", "timer\_wait": 256.35, "event\_info":

"sql/select", "wait\_info": "select @@version\_comment limit 1\nerrors: 0\nwarnings: 0\nlock time:

...

## ps\_thread\_trx\_info

Description:Returns a JSON object with info on the given thread's current transaction, and the statements it has already executed, derived from the performance\_schema.events\_transactions\_current and performance\_schema.events\_statements\_historytables (so the consumers for these also have to be enabled within Performance Schema to get full data in the object).

When the output exceeds the default truncation length (65535), a JSON error object is returned, such as:

{ "error": "Trx info truncated: Row 6 was cut by GROUP\_CONCAT()" }

Similar error objects are returned for other warnings/and exceptions raised when calling the function.

The max length of the output of this function can be controlled with the ps\_thread\_trx\_info.max\_length variable set viasys\_config, or the @sys.ps\_thread\_trx\_info.max\_length user variable, as appropriate.

Parameters

in\_thread\_id (BIGINT UNSIGNED): The id of the thread to return the transaction info for.

Example

SELECTsys.ps\_thread\_trx\_info(48)\G

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

sys.ps\_thread\_trx\_info(48): [

{

"time": "790.70 us",

"state": "COMMITTED",

"mode": "READ WRITE",

"autocommitted": "NO",

"gtid": "AUTOMATIC",

"isolation": "REPEATABLE READ",

"statements\_executed": [

{

"sql\_text": "INSERT INTO info VALUES (1, \'foo\')",

"time": "471.02 us",

"schema": "trx",

"rows\_examined": 0,

"rows\_affected": 1,

"rows\_sent": 0,

"tmp\_tables": 0,

"tmp\_disk\_tables": 0,

"sort\_rows": 0,

"sort\_merge\_passes": 0

},

{

"sql\_text": "COMMIT",

"time": "254.42 us",

"schema": "trx",

"rows\_examined": 0,

"rows\_affected": 0,

"rows\_sent": 0,

"tmp\_tables": 0,

"tmp\_disk\_tables": 0,

"sort\_rows": 0,

"sort\_merge\_passes": 0

}

]

},

{

"time": "426.20 us",

"state": "COMMITTED",

"mode": "READ WRITE",

"autocommitted": "NO",

"gtid": "AUTOMATIC",

"isolation": "REPEATABLE READ",

"statements\_executed": [

{

"sql\_text": "INSERT INTO info VALUES (2, \'bar\')",

"time": "107.33 us",

"schema": "trx",

"rows\_examined": 0,

"rows\_affected": 1,

"rows\_sent": 0,

"tmp\_tables": 0,

"tmp\_disk\_tables": 0,

"sort\_rows": 0,

"sort\_merge\_passes": 0

},

{

"sql\_text": "COMMIT",

"time": "213.23 us",

"schema": "trx",

"rows\_examined": 0,

"rows\_affected": 0,

"rows\_sent": 0,

"tmp\_tables": 0,

"tmp\_disk\_tables": 0,

"sort\_rows": 0,

"sort\_merge\_passes": 0

}

]

}

]

1 row inset (0.03 sec)

## sys\_get\_config

Description:Returns the value for the requested variable using the following logic:

If the option exists in sys.sys\_config return the value from there.

Else fall back on the provided default value.

Notes for using sys\_get\_config():

If the default value argument to sys\_get\_config() is NULL and case 2. is reached, NULL is returned. It is then expected that the caller is able to handle NULL for the given configuration option.

The convention is to name the user variables @sys.. It is that is stored in the sys\_config table and is what is expected as the argument to sys\_get\_config().

If you want to check whether the configuration option has already been set and if not assign with the return value of sys\_get\_config() you can use IFNULL(...) (see example below). However this should not be done inside a loop (e.g. for each row in a result set) as for repeated calls where assignment is only needed in the first iteration using IFNULL(...) is expected to be significantly slower than using an IF (...) THEN ... END IF; block (see example below).

Parameters

in\_variable\_name (VARCHAR(128)): The name of the config option to return the value for.

in\_default\_value (VARCHAR(128)): The default value to return if neither a use variable exists nor the variable exists in sys.sys\_config.

Returns

VARCHAR(128)

Example

-- Get the configuration value from sys.sys\_config falling back on 128 if the option is not present in the table.

mysql>SELECTsys.sys\_get\_config('statement\_truncate\_len', 128) AS Value;

+-------+

| Value |

+-------+

| 64 |

+-------+

1 row inset (0.00 sec)

-- Check whether the option is already set, if not assign - IFNULL(...) one liner example.

mysql>SET @sys.statement\_truncate\_len= IFNULL(@sys.statement\_truncate\_len, sys.sys\_get\_config('statement\_truncate\_len', 64));

Query OK, 0 rows affected (0.00 sec)

-- Check whether the option is already set, if not assign - IF ... THEN ... END IF example.

IF (@sys.statement\_truncate\_len IS NULL) THEN

SET @sys.statement\_truncate\_len=sys.sys\_get\_config('statement\_truncate\_len', 64);

END IF;

version\_major

Description

Returns the major version of MySQL Server.

Returns

TINYINT UNSIGNED

Example

mysql>SELECT VERSION(), sys.version\_major();

+--------------------------------------+---------------------+

| VERSION() | sys.version\_major() |

+--------------------------------------+---------------------+

| 5.7.9-enterprise-commercial-advanced | 5 |

+--------------------------------------+---------------------+

1 row inset (0.00 sec)

## version\_minor

Description:Returns the minor (release series) version of MySQL Server.

Returns

TINYINT UNSIGNED

Example

mysql>SELECT VERSION(), sys.server\_minor();

+--------------------------------------+---------------------+

| VERSION() | sys.version\_minor() |

+--------------------------------------+---------------------+

| 5.7.9-enterprise-commercial-advanced | 7 |

+--------------------------------------+---------------------+

1 row inset (0.00 sec)

## version\_patch

Description

Returns the patch release version of MySQL Server.

Returns

TINYINT UNSIGNED

Example

mysql>SELECT VERSION(), sys.version\_patch();

+--------------------------------------+---------------------+

| VERSION() | sys.version\_patch() |

+--------------------------------------+---------------------+

| 5.7.9-enterprise-commercial-advanced | 9 |

+--------------------------------------+---------------------+

1 row inset (0.00 sec)

# Procedures

## create\_synonym\_db

Description:Takes a source database name and synonym name, and then creates the synonym database with views that point to all of the tables within the source database.Useful for creating a "ps" synonym for "performance\_schema", or "is" instead of "information\_schema", for example.

Parameters

in\_db\_name (VARCHAR(64)): \*\* The database name that you would like to create a synonym for.

in\_synonym (VARCHAR(64)): \*\* The database synonym name.

Example

mysql> SHOW DATABASES;

+--------------------+

| Database |

+--------------------+

| information\_schema |

| mysql |

| performance\_schema |

| sys |

| test |

+--------------------+

5 rows inset (0.00 sec)

mysql> CALL sys.create\_synonym\_db('performance\_schema', 'ps');

+-------------------------------------+

| summary |

+-------------------------------------+

| Created 74 views in the ps database |

+-------------------------------------+

1 row inset (8.57 sec)

Query OK, 0 rows affected (8.57 sec)

mysql> SHOW DATABASES;

+--------------------+

| Database |

+--------------------+

| information\_schema |

| mysql |

| performance\_schema |

| ps |

| sys |

| test |

+--------------------+

6 rows inset (0.00 sec)

mysql> SHOW FULL TABLES FROM ps;

+-----------------------------------------+------------+

| Tables\_in\_ps | Table\_type |

+-----------------------------------------+------------+

| accounts | VIEW |

| cond\_instances | VIEW |

| events\_stages\_current | VIEW |

| events\_stages\_history | VIEW |

...

## execute\_prepared\_stmt

Description:Takes the query in the argument and executes it using a prepared statement. The prepared statement is deallocated, so the procedure is mainly useful for executing one off dynamically created queries.

The sys\_execute\_prepared\_stmt prepared statement name is used for the query and is required not to exist.

Parameters

in\_query (longtext CHARACTER SET UTF8): \*\* The query to execute.

The following configuration option is supported:sys.debug Whether to provide debugging output. Default is 'OFF'. Set to 'ON' to include.

Example

mysql> CALL sys.execute\_prepared\_stmt(''SELECT\*FROMsys.sys\_config'');

+------------------------+-------+---------------------+--------+

| variable | value | set\_time | set\_by |

+------------------------+-------+---------------------+--------+

| statement\_truncate\_len | 64 | 2015-06-3013:06:00 | NULL |

+------------------------+-------+---------------------+--------+

1 row inset (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

## diagnostics

Description:Create a report of the current status of the server for diagnostics purposes. Data collected includes (some items depends on versions and settings):

The GLOBAL VARIABLES Several sys schema views including metrics or equivalent (depending on version and settings)

Queries in the 95th percentile

Several ndbinfo views for MySQL Cluster

Replication (both master and slave) information.

Some of the sys schema views are calculated as initial (optional), overall, delta:

The initial view is the content of the view at the start of this procedure. This output will be the same as the the start values used for the delta view. The initial view is included if @sys.diagnostics.include\_raw = 'ON'.

The overall view is the content of the view at the end of this procedure. This output is the same as the end values used for the delta view. The overall view is always included.

The delta view is the difference from the beginning to the end. Note that for min and max values they are simply the min or max value from the end view respectively, so does not necessarily reflect the minimum/maximum value in the monitored period. Note: except for the metrics view the delta is only calculation between the first and last outputs.

Requires the SUPER privilege for "SET sql\_log\_bin = 0;".

Versions supported:

MySQL 5.6: 5.6.10 and later

MySQL 5.7: 5.7.9 and later

Some configuration options are supported:

sys.diagnostics.allow\_i\_s\_tables Specifies whether it is allowed to do table scan queries on information\_schema.TABLES. This can be expensive if there are many tables. Set to 'ON' to allow, 'OFF' to not allow. Default is 'OFF'.

sys.diagnostics.include\_raw Set to 'ON' to include the raw data (e.g. the original output of "SELECT \* FROM sys.metrics"). Use this to get the initial values of the various views. Default is 'OFF'.

sys.statement\_truncate\_len How much of queries in the process list output to include. Default is 64.

sys.debug Whether to provide debugging output. Default is 'OFF'. Set to 'ON' to include.

Parameters

in\_max\_runtime (INT UNSIGNED): The maximum time to keep collecting data. Use NULL to get the default which is 60 seconds, otherwise enter a value greater than 0.

in\_interval (INT UNSIGNED): How long to sleep between data collections. Use NULL to get the default which is 30 seconds, otherwise enter a value greater than 0.

in\_auto\_config (ENUM('current', 'medium', 'full')) Automatically enable Performance Schema instruments and consumers. NOTE: The more that are enabled, the more impact on the performance. If another setting the 'current' is chosen, the current settings are restored at the end of the procedure. Supported values are: \*\* current - use the current settings. \*\* medium - enable some settings. This requires the SUPER privilege. \*\* full - enables all settings. This will have a big impact on the performance - be careful using this option. This requires the SUPER privilege.

Example

mysql> TEE diag.out;

mysql> CALL sys.diagnostics(120, 30, 'current');

...

mysql> NOTEE;

ps\_setup\_disable\_background\_threads

Description

Disable all background thread instrumentation within Performance Schema.

Parameters

None.

Example

mysql> CALL sys.ps\_setup\_disable\_background\_threads();

+--------------------------------+

| summary |

+--------------------------------+

| Disabled 18 background threads |

+--------------------------------+

1 row inset (0.00 sec)

## ps\_setup\_disable\_instrument

Description:Disables instruments within Performance Schema matching the input pattern.

Parameters

in\_pattern (VARCHAR(128)): A LIKE pattern match (using "%in\_pattern%") of events to disable

Example

To disable all mutex instruments:

mysql> CALL sys.ps\_setup\_disable\_instrument('wait/synch/mutex');

+--------------------------+

| summary |

+--------------------------+

| Disabled 155 instruments |

+--------------------------+

1 row inset (0.02 sec)

To disable just a the scpecific TCP/IP based network IO instrument:

mysql> CALL sys.ps\_setup\_disable\_instrument('wait/io/socket/sql/server\_tcpip\_socket');

+------------------------+

| summary |

+------------------------+

| Disabled 1 instruments |

+------------------------+

1 row inset (0.00 sec)

To enable all instruments:

mysql> CALL sys.ps\_setup\_disable\_instrument('');

+--------------------------+

| summary |

+--------------------------+

| Disabled 547 instruments |

+--------------------------+

1 row inset (0.01 sec)

## ps\_setup\_disable\_consumer

Description:Disables consumers within Performance Schema matching the input pattern.

Parameters

consumer (VARCHAR(128)): A LIKE pattern match (using "%consumer%") of consumers to disable

Example

To disable all consumers:

mysql> CALL sys.ps\_setup\_disable\_consumer('');

+--------------------------+

| summary |

+--------------------------+

| Disabled 15 consumers |

+--------------------------+

1 row inset (0.02 sec)

To disable just the event\_stage consumers:

mysql> CALL sys.ps\_setup\_disable\_consumer('stage');

+------------------------+

| summary |

+------------------------+

| Disabled 3 consumers |

+------------------------+

1 row inset (0.00 sec)

## ps\_setup\_disable\_thread

Description:Disable the given connection/thread in Performance Schema.

Parameters

in\_connection\_id (BIGINT): The connection ID (PROCESSLIST\_ID from performance\_schema.threads or the ID shown within SHOW PROCESSLIST)

Example

mysql> CALL sys.ps\_setup\_disable\_thread(3);

+-------------------+

| summary |

+-------------------+

| Disabled 1 thread |

+-------------------+

1 row inset (0.01 sec)

To disable the current connection:

mysql> CALL sys.ps\_setup\_disable\_thread(CONNECTION\_ID());

+-------------------+

| summary |

+-------------------+

| Disabled 1 thread |

+-------------------+

1 row inset (0.00 sec)

## ps\_setup\_enable\_background\_threads

Description:Enable all background thread instrumentation within Performance Schema.

Parameters

None.

Example

mysql> CALL sys.ps\_setup\_enable\_background\_threads();

+-------------------------------+

| summary |

+-------------------------------+

| Enabled 18 background threads |

+-------------------------------+

1 row inset (0.00 sec)

## ps\_setup\_enable\_consumer

Description:Enables consumers within Performance Schema matching the input pattern.

Parameters

consumer (VARCHAR(128)): A LIKE pattern match (using "%consumer%") of consumers to enable

Example

To enable all consumers:

mysql> CALL sys.ps\_setup\_enable\_consumer('');

+-------------------------+

| summary |

+-------------------------+

| Enabled 10 consumers |

+-------------------------+

1 row inset (0.02 sec)

To enable just "waits" consumers:

mysql> CALL sys.ps\_setup\_enable\_consumer('waits');

+-----------------------+

| summary |

+-----------------------+

| Enabled 3 consumers |

+-----------------------+

1 row inset (0.00 sec)

## ps\_setup\_enable\_instrument

Description:Enables instruments within Performance Schema matching the input pattern.

Parameters

in\_pattern (VARCHAR(128)): A LIKE pattern match (using "%in\_pattern%") of events to enable

Example

To enable all mutex instruments:

mysql> CALL sys.ps\_setup\_enable\_instrument('wait/synch/mutex');

+-------------------------+

| summary |

+-------------------------+

| Enabled 155 instruments |

+-------------------------+

1 row inset (0.02 sec)

To enable just a the scpecific TCP/IP based network IO instrument:

mysql> CALL sys.ps\_setup\_enable\_instrument('wait/io/socket/sql/server\_tcpip\_socket');

+-----------------------+

| summary |

+-----------------------+

| Enabled 1 instruments |

+-----------------------+

1 row inset (0.00 sec)

To enable all instruments:

mysql> CALL sys.ps\_setup\_enable\_instrument('');

+-------------------------+

| summary |

+-------------------------+

| Enabled 547 instruments |

+-------------------------+

1 row inset (0.01 sec)

## ps\_setup\_enable\_thread

Description:Enable the given connection/thread in Performance Schema.

Parameters

in\_connection\_id (BIGINT): The connection ID (PROCESSLIST\_ID from performance\_schema.threads or the ID shown within SHOW PROCESSLIST)

Example

mysql> CALL sys.ps\_setup\_enable\_thread(3);

+------------------+

| summary |

+------------------+

| Enabled 1 thread |

+------------------+

1 row inset (0.01 sec)

To enable the current connection:

mysql> CALL sys.ps\_setup\_enable\_thread(CONNECTION\_ID());

+------------------+

| summary |

+------------------+

| Enabled 1 thread |

+------------------+

1 row inset (0.00 sec)

## ps\_setup\_reload\_saved

Description:Reloads a saved Performance Schema configuration, so that you can alter the setup for debugging purposes, but restore it to a previous state.

Use the companion procedure - ps\_setup\_save(), to save a configuration.

Requires the SUPER privilege for "SET sql\_log\_bin = 0;".

Parameters

None.

Example

mysql> CALL sys.ps\_setup\_save();

Query OK, 0 rows affected (0.08 sec)

mysql>UPDATEperformance\_schema.setup\_instrumentsSET enabled ='YES', timed ='YES';

Query OK, 547 rows affected (0.40 sec)

Rows matched: 784 Changed: 547 Warnings: 0

/\* Run some tests that need more detailed instrumentation here \*/

mysql> CALL sys.ps\_setup\_reload\_saved();

Query OK, 0 rows affected (0.32 sec)

ps\_setup\_reset\_to\_default

Description

Resets the Performance Schema setup to the default settings.

Parameters

in\_verbose (BOOLEAN): Whether to print each setup stage (including the SQL) whilst running.

Example

mysql> CALL sys.ps\_setup\_reset\_to\_default(true)\G

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

status: Resetting: setup\_actors

DELETE

FROMperformance\_schema.setup\_actors

WHERE NOT (HOST ='%'AND USER ='%'AND ROLE ='%')

1 row inset (0.00 sec)

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

status: Resetting: setup\_actors

INSERT IGNORE INTOperformance\_schema.setup\_actors

VALUES ('%', '%', '%')

1 row inset (0.00 sec)

...

mysql> CALL sys.ps\_setup\_reset\_to\_default(false)G

Query OK, 0 rows affected (0.00 sec)

ps\_setup\_save

Description

Saves the current configuration of Performance Schema, so that you can alter the setup for debugging purposes, but restore it to a previous state.

Use the companion procedure - ps\_setup\_reload\_saved(), to restore the saved config.

Requires the SUPER privilege for "SET sql\_log\_bin = 0;".

Parameters

None.

Example

mysql> CALL sys.ps\_setup\_save();

Query OK, 0 rows affected (0.08 sec)

mysql>UPDATEperformance\_schema.setup\_instruments

->SET enabled ='YES', timed ='YES';

Query OK, 547 rows affected (0.40 sec)

Rows matched: 784 Changed: 547 Warnings: 0

/\* Run some tests that need more detailed instrumentation here \*/

mysql> CALL sys.ps\_setup\_reload\_saved();

Query OK, 0 rows affected (0.32 sec)

## ps\_setup\_show\_disabled

Description:Shows all currently disable Performance Schema configuration.

Parameters

in\_in\_show\_instruments (BOOLEAN): Whether to print disabled instruments (can print many items)

in\_in\_show\_threads (BOOLEAN): Whether to print disabled threads

Example

mysql> CALL sys.ps\_setup\_show\_disabled(TRUE, TRUE);

+----------------------------+

| performance\_schema\_enabled |

+----------------------------+

| 1 |

+----------------------------+

1 row inset (0.00 sec)

+--------------------+

| enabled\_users |

+--------------------+

| 'mark'@'localhost' |

+--------------------+

1 row inset (0.00 sec)

+-------------+----------------------+---------+-------+

| object\_type | objects | enabled | timed |

+-------------+----------------------+---------+-------+

| EVENT | mysql.% | NO | NO |

| EVENT | performance\_schema.% | NO | NO |

| EVENT | information\_schema.% | NO | NO |

| FUNCTION | mysql.% | NO | NO |

| FUNCTION | performance\_schema.% | NO | NO |

| FUNCTION | information\_schema.% | NO | NO |

| PROCEDURE | mysql.% | NO | NO |

| PROCEDURE | performance\_schema.% | NO | NO |

| PROCEDURE | information\_schema.% | NO | NO |

| TABLE | mysql.% | NO | NO |

| TABLE | performance\_schema.% | NO | NO |

| TABLE | information\_schema.% | NO | NO |

| TRIGGER | mysql.% | NO | NO |

| TRIGGER | performance\_schema.% | NO | NO |

| TRIGGER | information\_schema.% | NO | NO |

+-------------+----------------------+---------+-------+

15 rows inset (0.00 sec)

+----------------------------------+

| disabled\_consumers |

+----------------------------------+

| events\_stages\_current |

| events\_stages\_history |

| events\_stages\_history\_long |

| events\_statements\_history |

| events\_statements\_history\_long |

| events\_transactions\_history |

| events\_transactions\_history\_long |

| events\_waits\_current |

| events\_waits\_history |

| events\_waits\_history\_long |

+----------------------------------+

10 rows inset (0.00 sec)

Empty set (0.00 sec)

+---------------------------------------------------------------------------------------+-------+

| disabled\_instruments | timed |

+---------------------------------------------------------------------------------------+-------+

| wait/synch/mutex/sql/TC\_LOG\_MMAP::LOCK\_tc | NO |

| wait/synch/mutex/sql/LOCK\_des\_key\_file | NO |

| wait/synch/mutex/sql/MYSQL\_BIN\_LOG::LOCK\_commit | NO |

...

| memory/sql/servers\_cache | NO |

| memory/sql/udf\_mem | NO |

| wait/lock/metadata/sql/mdl | NO |

+---------------------------------------------------------------------------------------+-------+

547 rows inset (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

## ps\_setup\_show\_disabled\_consumers

Description:Shows all currently disabled consumers.

Parameters

None

 Example

mysql> CALL sys.ps\_setup\_show\_disabled\_consumers();

+---------------------------+

| disabled\_consumers |

+---------------------------+

| events\_statements\_current |

| global\_instrumentation |

| thread\_instrumentation |

| statements\_digest |

+---------------------------+

4 rows inset (0.05 sec)

## ps\_setup\_show\_disabled\_instruments

Description

Shows all currently disabled instruments.

Parameters

None

Example

mysql> CALL sys.ps\_setup\_show\_disabled\_instruments();

## ps\_setup\_show\_enabled

Description:Shows all currently enabled Performance Schema configuration.

Parameters

in\_show\_instruments (BOOLEAN): Whether to print enabled instruments (can print many items)

in\_show\_threads (BOOLEAN): Whether to print enabled threads

Example

mysql> CALL sys.ps\_setup\_show\_enabled(TRUE, TRUE);

+----------------------------+

| performance\_schema\_enabled |

+----------------------------+

| 1 |

+----------------------------+

1 row inset (0.00 sec)

+---------------+

| enabled\_users |

+---------------+

| '%'@'%' |

+---------------+

1 row inset (0.01 sec)

+----------------------+---------+-------+

| objects | enabled | timed |

+----------------------+---------+-------+

| mysql.% | NO | NO |

| performance\_schema.% | NO | NO |

| information\_schema.% | NO | NO |

| %.% | YES | YES |

+----------------------+---------+-------+

4 rows inset (0.01 sec)

+---------------------------+

| enabled\_consumers |

+---------------------------+

| events\_statements\_current |

| global\_instrumentation |

| thread\_instrumentation |

| statements\_digest |

+---------------------------+

4 rows inset (0.05 sec)

+--------------------------+-------------+

| enabled\_threads | thread\_type |

+--------------------------+-------------+

| innodb/srv\_master\_thread | BACKGROUND |

| root@localhost | FOREGROUND |

| root@localhost | FOREGROUND |

| root@localhost | FOREGROUND |

| root@localhost | FOREGROUND |

+--------------------------+-------------+

5 rows inset (0.03 sec)

+-------------------------------------+-------+

| enabled\_instruments | timed |

+-------------------------------------+-------+

| wait/io/file/sql/map | YES |

| wait/io/file/sql/binlog | YES |

...

| statement/com/Error | YES |

| statement/com/ | YES |

| idle | YES |

+-------------------------------------+-------+

210 rows inset (0.08 sec)

Query OK, 0 rows affected (0.89 sec)

## ps\_setup\_show\_enabled\_consumers

Description:Shows all currently enabled consumers.

Parameters

None

Example

mysql> CALL sys.ps\_setup\_show\_enabled\_consumers();

+---------------------------+

| enabled\_consumers |

+---------------------------+

| events\_statements\_current |

| global\_instrumentation |

| thread\_instrumentation |

| statements\_digest |

+---------------------------+

4 rows inset (0.05 sec)

## ps\_setup\_show\_enabled\_instruments

Description

Shows all currently enabled instruments.

Parameters

None

Example

mysql> CALL sys.ps\_setup\_show\_enabled\_instruments();

## ps\_statement\_avg\_latency\_histogram

Description:Outputs a textual histogram graph of the average latency values across all normalized queries tracked within the Performance Schema events\_statements\_summary\_by\_digest table.

Can be used to show a very high level picture of what kind of latency distribution statements running within this instance have.

Parameters

None.

Example

mysql> CALL sys.ps\_statement\_avg\_latency\_histogram()G

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

Performance Schema Statement Digest Average Latency Histogram:

. =1 unit

\*=2 units

# = 3 units

(0- 38ms) 240 | ################################################################################

(38- 77ms) 38 | ......................................

(77- 115ms) 3 | ...

(115- 154ms) 62 | \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

(154- 192ms) 3 | ...

(192- 231ms) 0 |

(231- 269ms) 0 |

(269- 307ms) 0 |

(307- 346ms) 0 |

(346- 384ms) 1 | .

(384- 423ms) 1 | .

(423- 461ms) 0 |

(461- 499ms) 0 |

(499- 538ms) 0 |

(538- 576ms) 0 |

(576- 615ms) 1 | .

Total Statements: 350; Buckets: 16; Bucket Size: 38 ms;

## ps\_trace\_statement\_digest

Description:Traces all instrumentation within Performance Schema for a specific Statement Digest.

When finding a statement of interest within the performance\_schema.events\_statements\_summary\_by\_digest table, feed the DIGEST MD5 value in to this procedure, set how long to poll for, and at what interval to poll, and it will generate a report of all statistics tracked within Performance Schema for that digest for the interval.

It will also attempt to generate an EXPLAIN for the longest running example of the digest during the interval.

Note this may fail, as Performance Schema truncates long SQL\_TEXT values (and hence the EXPLAIN will fail due to parse errors).

Requires the SUPER privilege for "SET sql\_log\_bin = 0;".

Parameters

in\_digest VARCHAR(32): The statement digest identifier you would like to analyze

in\_runtime (INT): The number of seconds to run analysis for (defaults to a minute)

in\_interval (DECIMAL(2,2)): The interval (in seconds, may be fractional) at which to try and take snapshots (defaults to a second)

in\_start\_fresh (BOOLEAN): Whether to TRUNCATE the events\_statements\_history\_long and events\_stages\_history\_long tables before starting (default false)

in\_auto\_enable (BOOLEAN): Whether to automatically turn on required consumers (default false)

Example

mysql> call ps\_analyze\_statement\_digest('891ec6860f98ba46d89dd20b0c03652c', 10, 0.1, true, true);

+--------------------+

| SUMMARY STATISTICS |

+--------------------+

| SUMMARY STATISTICS |

+--------------------+

1 row inset (9.11 sec)

+------------+-----------+-----------+-----------+---------------+------------+------------+

| executions | exec\_time | lock\_time | rows\_sent | rows\_examined | tmp\_tables | full\_scans |

+------------+-----------+-----------+-----------+---------------+------------+------------+

| 21 | 4.11 ms | 2.00 ms | 0 | 21 | 0 | 0 |

+------------+-----------+-----------+-----------+---------------+------------+------------+

1 row inset (9.11 sec)

+------------------------------------------+-------+-----------+

| event\_name | count | latency |

+------------------------------------------+-------+-----------+

| stage/sql/checking query cache for query | 16 | 724.37 us |

| stage/sql/statistics | 16 | 546.92 us |

| stage/sql/freeing items | 18 | 520.11 us |

| stage/sql/init | 51 | 466.80 us |

...

| stage/sql/cleaning up | 18 | 11.92 us |

| stage/sql/executing | 16 | 6.95 us |

+------------------------------------------+-------+-----------+

17 rows inset (9.12 sec)

+---------------------------+

| LONGEST RUNNING STATEMENT |

+---------------------------+

| LONGEST RUNNING STATEMENT |

+---------------------------+

1 row inset (9.16 sec)

+-----------+-----------+-----------+-----------+---------------+------------+-----------+

| thread\_id | exec\_time | lock\_time | rows\_sent | rows\_examined | tmp\_tables | full\_scan |

+-----------+-----------+-----------+-----------+---------------+------------+-----------+

| 166646 | 618.43 us | 1.00 ms | 0 | 1 | 0 | 0 |

+-----------+-----------+-----------+-----------+---------------+------------+-----------+

1 row inset (9.16 sec)

// Truncated for clarity...

+-----------------------------------------------------------------+

| sql\_text |

+-----------------------------------------------------------------+

| selecthibeventhe0\_.idas id1382\_, hibeventhe0\_.createdTime ... |

+-----------------------------------------------------------------+

1 row inset (9.17 sec)

+------------------------------------------+-----------+

| event\_name | latency |

+------------------------------------------+-----------+

| stage/sql/init | 8.61 us |

| stage/sql/Waiting for query cache lock | 453.23 us |

| stage/sql/init | 331.07 ns |

| stage/sql/checking query cache for query | 43.04 us |

...

| stage/sql/freeing items | 30.46 us |

| stage/sql/cleaning up | 662.13 ns |

+------------------------------------------+-----------+

18 rows inset (9.23 sec)

+----+-------------+--------------+-------+---------------+-----------+---------+-------------+------+-------+

| id | select\_type | table | type | possible\_keys | key | key\_len | ref | rows | Extra |

+----+-------------+--------------+-------+---------------+-----------+---------+-------------+------+-------+

| 1 | SIMPLE | hibeventhe0\_ | const | fixedTime | fixedTime | 775 | const,const | 1 | NULL |

+----+-------------+--------------+-------+---------------+-----------+---------+-------------+------+-------+

1 row inset (9.27 sec)

Query OK, 0 rows affected (9.28 sec)

## ps\_trace\_thread

Description:Dumps all data within Performance Schema for an instrumented thread, to create a DOT formatted graph file.

Each resultset returned from the procedure should be used for a complete graph

Requires the SUPER privilege for "SET sql\_log\_bin = 0;".

Parameters

in\_thread\_id (INT): The thread that you would like a stack trace for

in\_outfile (VARCHAR(255)): The filename the dot file will be written to

in\_max\_runtime (DECIMAL(20,2)): The maximum time to keep collecting data. Use NULL to get the default which is 60 seconds.

in\_interval (DECIMAL(20,2)): How long to sleep between data collections. Use NULL to get the default which is 1 second.

in\_start\_fresh (BOOLEAN): Whether to reset all Performance Schema data before tracing.

in\_auto\_setup (BOOLEAN): Whether to disable all other threads and enable all consumers/instruments. This will also reset the settings at the end of the run.

in\_debug (BOOLEAN): Whether you would like to include file:lineno in the graph

Example

mysql> CALL sys.ps\_trace\_thread(25, CONCAT('/tmp/stack-', REPLACE(NOW(), ' ', '-'), '.dot'), NULL, NULL, TRUE, TRUE, TRUE);

+-------------------+

| summary |

+-------------------+

| Disabled 1 thread |

+-------------------+

1 row inset (0.00 sec)

+---------------------------------------------+

| Info |

+---------------------------------------------+

| Data collection starting for THREAD\_ID =25 |

+---------------------------------------------+

1 row inset (0.03 sec)

+-----------------------------------------------------------+

| Info |

+-----------------------------------------------------------+

| Stack trace written to /tmp/stack-2014-02-16-21:18:41.dot |

+-----------------------------------------------------------+

1 row inset (60.07 sec)

+-------------------------------------------------------------------+

| Convert to PDF |

+-------------------------------------------------------------------+

| dot -Tpdf -o /tmp/stack\_25.pdf/tmp/stack-2014-02-16-21:18:41.dot |

+-------------------------------------------------------------------+

1 row inset (60.07 sec)

+-------------------------------------------------------------------+

| Convert to PNG |

+-------------------------------------------------------------------+

| dot -Tpng -o /tmp/stack\_25.png/tmp/stack-2014-02-16-21:18:41.dot |

+-------------------------------------------------------------------+

1 row inset (60.07 sec)

+------------------+

| summary |

+------------------+

| Enabled 1 thread |

+------------------+

1 row inset (60.32 sec)

## ps\_truncate\_all\_tables

Description:Truncates all summary tables within Performance Schema, resetting all aggregated instrumentation as a snapshot.

Parameters

in\_verbose (BOOLEAN): Whether to print each TRUNCATE statement before running

Example

mysql> CALL sys.ps\_truncate\_all\_tables(false);

+---------------------+

| summary |

+---------------------+

| Truncated 44 tables |

+---------------------+

1 row inset (0.10 sec)

## statement\_performance\_analyzer

Description:Create a report of the statements running on the server.

The views are calculated based on the overall and/or delta activity.

Requires the SUPER privilege for "SET sql\_log\_bin = 0;".

The following configuration options are supported:

sys.statement\_performance\_analyzer.limit The maximum number of rows to include for the views that does not have a built-in limit (e.g. the 95th percentile view). If not set the limit is 100.

sys.statement\_performance\_analyzer.view Used together with the 'custom' view. If the value contains a space, it is considered a query, otherwise it must be an existing view querying the performance\_schema.events\_statements\_summary\_by\_digest table. There cannot be any limit clause including in the query or view definition if @sys.statement\_performance\_analyzer.limit > 0. If specifying a view, use the same format as for in\_table.

sys.debug Whether to provide debugging output. Default is 'OFF'. Set to 'ON' to include.

Parameters

in\_action (ENUM('snapshot', 'overall', 'delta', 'create\_tmp', 'create\_table', 'save', 'cleanup')): The action to take. Supported actions are:

snapshot Store a snapshot. The default is to make a snapshot of the current content of performance\_schema.events\_statements\_summary\_by\_digest, but by setting in\_table this can be overwritten to copy the content of the specified table. The snapshot is stored in the sys.tmp\_digests temporary table.

overall Generate analyzis based on the content specified by in\_table. For the overall analyzis, in\_table can be NOW() to use a fresh snapshot. This will overwrite an existing snapshot. Use NULL for in\_table to use the existing snapshot. If in\_table IS NULL and no snapshot exists, a new will be created. See also in\_views and @sys.statement\_performance\_analyzer.limit.

delta Generate a delta analysis. The delta will be calculated between the reference table in in\_table and the snapshot. An existing snapshot must exist. The action uses the sys.tmp\_digests\_delta temporary table. See also in\_views and @sys.statement\_performance\_analyzer.limit.

create\_table Create a regular table suitable for storing the snapshot for later use, e.g. for calculating deltas.

create\_tmp Create a temporary table suitable for storing the snapshot for later use, e.g. for calculating deltas.

save Save the snapshot in the table specified by in\_table. The table must exists and have the correct structure. If no snapshot exists, a new is created.

cleanup Remove the temporary tables used for the snapshot and delta.

in\_table (VARCHAR(129)): The table argument used for some actions. Use the format 'db1.t1' or 't1' without using any backticks (`) for quoting. Periods (.) are not supported in the database and table names.

The meaning of the table for each action supporting the argument is:

snapshot The snapshot is created based on the specified table. Set to NULL or NOW() to use the current content of performance\_schema.events\_statements\_summary\_by\_digest.

overall The table with the content to create the overall analyzis for. The following values can be used: - A table name - use the content of that table. - NOW() - create a fresh snapshot and overwrite the existing snapshot. - NULL - use the last stored snapshot.

delta The table name is mandatory and specified the reference view to compare the currently stored snapshot against. If no snapshot exists, a new will be created.

create\_table The name of the regular table to create.

create\_tmp The name of the temporary table to create.

save The name of the table to save the currently stored snapshot into.

in\_views (SET ('with\_runtimes\_in\_95th\_percentile', 'analysis', 'with\_errors\_or\_warnings', 'with\_full\_table\_scans', 'with\_sorting', 'with\_temp\_tables', 'custom')) Which views to include:

with\_runtimes\_in\_95th\_percentile Based on the sys.statements\_with\_runtimes\_in\_95th\_percentile view

analysis Based on the sys.statement\_analysis view

with\_errors\_or\_warnings Based on the sys.statements\_with\_errors\_or\_warnings view

with\_full\_table\_scans Based on the sys.statements\_with\_full\_table\_scans view

with\_sorting Based on the sys.statements\_with\_sorting view

with\_temp\_tables Based on the sys.statements\_with\_temp\_tables view

custom Use a custom view. This view must be specified in @sys.statement\_performance\_analyzer.view to an existing view or a query

Default is to include all except 'custom'.

Example

-- To create a report with the queries in the 95th percentile since last truncate of performance\_schema.events\_statements\_summary\_by\_digest and the delta for a 1 minute period:

--

-- 1. Create a temporary table to store the initial snapshot.

-- 2. Create the initial snapshot.

-- 3. Save the initial snapshot in the temporary table.

-- 4. Wait one minute.

-- 5. Create a new snapshot.

-- 6. Perform analyzis based on the new snapshot.

-- 7. Perform analyzis based on the delta between the initial and new snapshots.

mysql> CALL sys.statement\_performance\_analyzer('create\_tmp', 'mydb.tmp\_digests\_ini', NULL);

Query OK, 0 rows affected (0.08 sec)

mysql> CALL sys.statement\_performance\_analyzer('snapshot', NULL, NULL);

Query OK, 0 rows affected (0.02 sec)

mysql> CALL sys.statement\_performance\_analyzer('save', 'mydb.tmp\_digests\_ini', NULL);

Query OK, 0 rows affected (0.00 sec)

mysql> DO SLEEP(60);

Query OK, 0 rows affected (1 min 0.00 sec)

mysql> CALL sys.statement\_performance\_analyzer('snapshot', NULL, NULL);

Query OK, 0 rows affected (0.02 sec)

mysql> CALL sys.statement\_performance\_analyzer('overall', NULL, 'with\_runtimes\_in\_95th\_percentile');

+-----------------------------------------+

| Next Output |

+-----------------------------------------+

| Queries with Runtime in 95th Percentile |

+-----------------------------------------+

1 row inset (0.05 sec)

...

mysql> CALL sys.statement\_performance\_analyzer('delta', 'mydb.tmp\_digests\_ini', 'with\_runtimes\_in\_95th\_percentile');

+-----------------------------------------+

| Next Output |

+-----------------------------------------+

| Queries with Runtime in 95th Percentile |

+-----------------------------------------+

1 row inset (0.03 sec)

...

-- To create an overall report of the 95th percentile queries and the top 10 queries with full table scans:

mysql> CALL sys.statement\_performance\_analyzer('snapshot', NULL, NULL);

Query OK, 0 rows affected (0.01 sec)

mysql>SET @sys.statement\_performance\_analyzer.limit=10;

Query OK, 0 rows affected (0.00 sec)

mysql> CALL sys.statement\_performance\_analyzer('overall', NULL, 'with\_runtimes\_in\_95th\_percentile,with\_full\_table\_scans');

+-----------------------------------------+

| Next Output |

+-----------------------------------------+

| Queries with Runtime in 95th Percentile |

+-----------------------------------------+

1 row inset (0.01 sec)

...

+-------------------------------------+

| Next Output |

+-------------------------------------+

| Top 10 Queries with Full Table Scan |

+-------------------------------------+

1 row inset (0.09 sec)

...

-- Use a custom view showing the top 10 query sorted by total execution time refreshing the view every minute using

-- the watch command in Linux.

mysql> CREATE OR REPLACE VIEW mydb.my\_statementsAS

->SELECTsys.format\_statement(DIGEST\_TEXT) AS query,

-> SCHEMA\_NAME AS db,

-> COUNT\_STAR AS exec\_count,

->sys.format\_time(SUM\_TIMER\_WAIT) AS total\_latency,

->sys.format\_time(AVG\_TIMER\_WAIT) AS avg\_latency,

-> ROUND(IFNULL(SUM\_ROWS\_SENT / NULLIF(COUNT\_STAR, 0), 0)) AS rows\_sent\_avg,

-> ROUND(IFNULL(SUM\_ROWS\_EXAMINED / NULLIF(COUNT\_STAR, 0), 0)) AS rows\_examined\_avg,

-> ROUND(IFNULL(SUM\_ROWS\_AFFECTED / NULLIF(COUNT\_STAR, 0), 0)) AS rows\_affected\_avg,

-> DIGEST AS digest

->FROMperformance\_schema.events\_statements\_summary\_by\_digest

->ORDER BY SUM\_TIMER\_WAIT DESC;

Query OK, 0 rows affected (0.01 sec)

mysql> CALL sys.statement\_performance\_analyzer('create\_table', 'mydb.digests\_prev', NULL);

Query OK, 0 rows affected (0.10 sec)

shell$ watch -n 60"mysql sys --table -e \"

>SET @sys.statement\_performance\_analyzer.view ='mydb.my\_statements';

>SET @sys.statement\_performance\_analyzer.limit=10;

> CALL statement\_performance\_analyzer('snapshot', NULL, NULL);

> CALL statement\_performance\_analyzer('delta', 'mydb.digests\_prev', 'custom');

> CALL statement\_performance\_analyzer('save', 'mydb.digests\_prev', NULL);

> \""

Every 60.0s: mysql sys --table -e " ... Mon Dec 22 10:58:51 2014

+----------------------------------+

| Next Output |

+----------------------------------+

| Top 10 Queries Using Custom View |

+----------------------------------+

+-------------------+-------+------------+---------------+-------------+---------------+-------------------+-------------------+----------------------------------+

| query | db | exec\_count | total\_latency | avg\_latency | rows\_sent\_avg | rows\_examined\_avg | rows\_affected\_avg | digest |

+-------------------+-------+------------+---------------+-------------+---------------+-------------------+-------------------+----------------------------------+

...

## table\_exists

Description:Tests whether the table specified in in\_db and in\_table exists either as a regular table, or as a temporary table. The returned value corresponds to the table that will be used, so if there's both a temporary and a permanent table with the given name, then 'TEMPORARY' will be returned.

Parameters

in\_db (VARCHAR(64)): The database name to check for the existance of the table in.

in\_table (VARCHAR(64)): The name of the table to check the existance of.

out\_exists ENUM('', 'BASE TABLE', 'VIEW', 'TEMPORARY'): The return value: whether the table exists. The value is one of:

'' - the table does not exist neither as a base table, view, nor temporary table.

'BASE TABLE' - the table name exists as a permanent base table table.

'VIEW' - the table name exists as a view.

'TEMPORARY' - the table name exists as a temporary table.

Example

mysql> CREATE DATABASE db1;

Query OK, 1 row affected (0.07 sec)

mysql> use db1;

Database changed

mysql> CREATE TABLE t1 (id INTPRIMARY KEY);

Query OK, 0 rows affected (0.08 sec)

mysql> CREATE TABLE t2 (id INTPRIMARY KEY);

Query OK, 0 rows affected (0.08 sec)

mysql> CREATE view v\_t1 ASSELECT\*FROM t1;

Query OK, 0 rows affected (0.00 sec)

mysql> CREATE TEMPORARY TABLE t1 (id INTPRIMARY KEY);

Query OK, 0 rows affected (0.00 sec)

mysql> CALL sys.table\_exists('db1', 't1', @exists); SELECT @exists;

Query OK, 0 rows affected (0.00 sec)

+------------+

| @exists |

+------------+

| TEMPORARY |

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1 row inset (0.00 sec)

mysql> CALL sys.table\_exists('db1', 't2', @exists); SELECT @exists;

Query OK, 0 rows affected (0.00 sec)

+------------+

| @exists |

+------------+

| BASE TABLE |

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1 row inset (0.01 sec)

mysql> CALL sys.table\_exists('db1', 'v\_t1', @exists); SELECT @exists;

Query OK, 0 rows affected (0.00 sec)

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| @exists |

+---------+

| VIEW |

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1 row inset (0.00 sec)

mysql> CALL sys.table\_exists('db1', 't3', @exists); SELECT @exists;

Query OK, 0 rows affected (0.01 sec)

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| @exists |

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| |

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1 row inset (0.00 sec)