

## Integration

- Instructions: <https://apps.sematext.com/ui/howto/MySQL/overview>

## Metrics

| Metric   |     |     |      |   |
|--|-----|-----|------|---|
| Name   | Key | Agg | Type | Description   |
| openedmysql.tables_definitionOpened table definitions: |     |     |      |   |
| ta-<br>ble<br>def-<br>ini-<br>tions                    |     |     |      | The<br>num-<br>ber<br>of<br>.frm<br>files<br>that<br>have<br>been<br>cached |

| Metric             |             |     |      |  |
|--------------------|-------------|-----|------|--|
| Name               | Key         | Agg | Type | Description  |
| created_tmp_tables | mysql.Sizes | Sum | Long | Created_tmp_tables: The number of internal temporary tables created by the server while executing statements |

| Metric                 |                           |     |      |  |
|------------------------|---------------------------|-----|------|--|
| Name                   | Key                       | Agg | Type | Description  |
| flush<br>com-<br>mands | mysql.<br>table.<br>flush | sum | long | Flush_commands:<br>The<br>num-<br>ber<br>of<br>times<br>the<br>server<br>flushes<br>ta-<br>bles,<br>whether<br>be-<br>cause<br>a<br>user<br>exe-<br>cuted<br>a<br>FLUSH<br>TA-<br>BLES<br>state-<br>ment<br>or<br>due<br>to<br>in-<br>ter-<br>nal<br>server<br>op-<br>era-<br>tion |

| Metric  |              |     |      |                     |
|---|--------------|-----|------|---------------------|
| Name  | Key          | Agg | Type | Description         |
| table_locks_waited  | mysql.Slaves | sum | long | Table locks waited: |
| <p>The number of times that a request for a table lock could not be granted immediately and a wait was needed. If this is high and you have performance problems, you should first optimize your queries, and then either</p> |              |     |      |                     |

| Metric                      |               |     |               |   |
|-----------------------------|---------------|-----|---------------|---|
| Name                        | Key           | Agg | Type          | Description   |
| openedmysql.<br>ta-<br>bles | Tables.Opened | avg | Opened_tables | <p>The number of tables that have been opened. If Opened_tables is big, your table_open_cache value is probably too small</p> |

| Metric                                 |                               |     |      |  |
|--|-------------------------------|-----|------|--|
| Name                                   | Key                           | Agg | Type | Description  |
| table<br>def-<br>ini-<br>tion<br>cache | mysql.tables_definition_cache | Avg | Long | definition_cache:<br>The number of table definitions (from .frm files) that can be stored in the definition cache. If you use a large number of tables, you can create a large table definition cache to speed up opening of ta- |

| Metric |                         |     |      |                       |
|--------|-------------------------|-----|------|-----------------------|
| Name   | Key                     | Agg | Type | Description           |
| open   | mysql.tables_definition | avg | long | Openable definitions: |
| ta-    |                         |     |      | The                   |
| ble    |                         |     |      | num-                  |
| def-   |                         |     |      | ber                   |
| ini-   |                         |     |      | of                    |
| tions  |                         |     |      | cached                |
|        |                         |     |      | .frm                  |
|        |                         |     |      | files                 |

| Metric                 |             |     |      |  |
|------------------------|-------------|-----|------|--|
| Name                   | Key         | Agg | Type | Description  |
| table<br>open<br>cache | mysql.table | avg | long | <p>table_open_cache:</p> <p>The number of open tables for all threads. Increasing this value increases the number of file descriptors that mysqld requires. You can check whether you need to increase the table cache by checking the Opened_tables status variable</p> |



| Metric                  |           |     |      |  |
|-------------------------|-----------|-----|------|--|
| Name                    | Key       | Agg | Type | Description  |
| created_tmp_disk_tables | mysql.CPU | sum | long | Created tmp disk tables:   |
| tmp_disk_tables         |           |     |      | The number of internal on-disk temporary tables created by the server while executing statements. If an internal temporary table is created initially as an in-memory table but becomes too large, |

| Metric                                     |                             |     |      |  |
|--|-----------------------------|-----|------|--|
| Name                                       | Key                         | Agg | Type | Description  |
| open<br>ta-<br>bles                        | mysql.tables_open           | Avg | Long | Open_tables:<br>The<br>num-<br>ber<br>of<br>ta-<br>bles<br>that<br>are<br>open   |
| table<br>locks<br>im-<br>me-<br>di-<br>ate | mysql.table_locks_immediate | Sum | Long | Table_locks_immediate:<br>The<br>num-<br>ber<br>of<br>times<br>that<br>a<br>re-<br>quest<br>for<br>a<br>ta-<br>ble<br>lock<br>could<br>be<br>granted<br>im-<br>me-<br>di-<br>ately |

| Metric                                     |     |     |      |                          |
|--|-----|-----|------|--------------------------|
| Name                                       | Key | Agg | Type | Description              |
| innodbmysql_innodb_buffer_pool_bytes_dirty |     | avg | Long | buffer_pool_bytes_dirty: |
| buffer                                     |     |     |      | The                      |
| pool                                       |     |     |      | to-                      |
| bytes                                      |     |     |      | tal                      |
| dirty                                      |     |     |      | cur-                     |
|  |     |     |      | rent                     |
|  |     |     |      | num-                     |
|  |     |     |      | ber                      |
|  |     |     |      | of                       |
|  |     |     |      | bytes                    |
|  |     |     |      | held                     |
|  |     |     |      | in                       |
|  |     |     |      | dirty                    |
|  |     |     |      | pages                    |
|  |     |     |      | in                       |
|  |     |     |      | the                      |
|  |     |     |      | Inn-                     |
|  |     |     |      | oDB                      |
|  |     |     |      | buffer                   |
|  |     |     |      | pool                     |

| Metric  |     |     |      |  |
|---|-----|-----|------|--|
| Name  | Key | Agg | Type | Description  |
| innodbmysql.SlowLongInnoDB_buffer_pool_reads: |     |     |      |  |
| buffer pool reads                             |     |     |      | The number of logical reads that InnoDB could not satisfy from the buffer pool, and had to read directly from the disk |

| <hr/>                                    |     |     |      |  |
|--|-----|-----|------|--|
| Metric                                   |     |     |      |  |
| Name                                     | Key | Agg | Type | Description  |
| <hr/>                                    |     |     |      |  |
| innodbmysql_avgdbbuffer_pool_pages_free  |     | avg | long | buffer_pool_pages_free: The number of free pages in the Inn-oDB buffer pool  |
| innodbmysql_avgdbbuffer_pool_pages_total |     | avg | long | buffer_pool_pages_total: The total size of the Inn-oDB buffer pool, in pages |

| Metric  |     |     |      |             |
|---|-----|-----|------|-------------|
| Name  | Key | Agg | Type | Description |
| innodbmysql.Smemblufferheadtheadevictpool_read_ahead_evicted: |     |     |      |             |
| buffer  |     |     |      | The         |
| pool  |     |     |      | num-        |
| read  |     |     |      | ber         |
| ahead   |     |     |      | of          |
| evicted   |     |     |      | pages       |
|   |     |     |      | read        |
|   |     |     |      | into        |
|   |     |     |      | the         |
|   |     |     |      | Inn-        |
|   |     |     |      | oDB         |
|   |     |     |      | buffer      |
|   |     |     |      | pool        |
|   |     |     |      | by          |
|   |     |     |      | the         |
|   |     |     |      | read-       |
|   |     |     |      | ahead       |
|   |     |     |      | back-       |
|   |     |     |      | ground      |
|   |     |     |      | thread      |
|   |     |     |      | that        |
|   |     |     |      | were        |
|   |     |     |      | sub-        |
|   |     |     |      | se-         |
|   |     |     |      | quently     |
|   |     |     |      | evicted     |
|   |     |     |      | with-       |
|   |     |     |      | out         |
|   |     |     |      | hav-        |
|   |     |     |      | ing         |
|   |     |     |      | been        |
|   |     |     |      | ac-         |
|   |     |     |      | cessed      |
|   |     |     |      | by          |
|   |     |     |      | queries.    |
|   |     |     |      | This        |
|   |     |     |      | vari-       |
|   |     |     |      | able        |
|   |     |     |      | was         |
|   |     |     |      | added       |
|   |     |     |      | in          |
|   |     |     |      | MySQL       |
|   |     |     |      | 5.1.41      |

| Metric                                   |     |     |      |                             |
|--|-----|-----|------|-----------------------------|
| Name                                     | Key | Agg | Type | Description                 |
| innodbmysql.AvgInnoDBBufferPagesDirty    |     |     | Long | buffer_pool_pages_dirty:    |
| buffer                                   |     |     |      | The                         |
| pool                                     |     |     |      | cur-                        |
| pages                                    |     |     |      | rent                        |
| dirty                                    |     |     |      | num-                        |
|  |     |     |      | ber                         |
|  |     |     |      | of                          |
|  |     |     |      | dirty                       |
|  |     |     |      | pages                       |
|  |     |     |      | in                          |
|  |     |     |      | the                         |
|  |     |     |      | Inn-                        |
|  |     |     |      | oDB                         |
|  |     |     |      | buffer                      |
|  |     |     |      | pool                        |
| innodbmysql.SumInnoDBBufferWriteRequests |     |     | Long | buffer_pool_write_requests: |
| buffer                                   |     |     |      | The                         |
| pool                                     |     |     |      | num-                        |
| write                                    |     |     |      | ber                         |
| re-                                      |     |     |      | writes                      |
| quests                                   |     |     |      | done                        |
|  |     |     |      | to                          |
|  |     |     |      | the                         |
|  |     |     |      | Inn-                        |
|  |     |     |      | oDB                         |
|  |     |     |      | buffer                      |
|  |     |     |      | pool                        |

| Metric                             |     |     |      |                         |
|------------------------------------|-----|-----|------|-------------------------|
| Name                               | Key | Agg | Type | Description             |
| innodbmysql_avgdbbuffer_pages_misc |     |     |      | buffer_pool_pages_misc: |
| buffer                             |     |     |      | The                     |
| pool                               |     |     |      | num-                    |
| pages                              |     |     |      | ber                     |
| misc                               |     |     |      | of                      |
|                                    |     |     |      | pages                   |
|                                    |     |     |      | in                      |
|                                    |     |     |      | the                     |
|                                    |     |     |      | Inn-                    |
|                                    |     |     |      | oDB                     |
|                                    |     |     |      | buffer                  |
|                                    |     |     |      | pool                    |
|                                    |     |     |      | that                    |
|                                    |     |     |      | are                     |
|                                    |     |     |      | busy                    |
|                                    |     |     |      | be-                     |
|                                    |     |     |      | cause                   |
|                                    |     |     |      | they                    |
|                                    |     |     |      | have                    |
|                                    |     |     |      | been                    |
|                                    |     |     |      | allo-                   |
|                                    |     |     |      | cated                   |
|                                    |     |     |      | for                     |
|                                    |     |     |      | ad-                     |
|                                    |     |     |      | min-                    |
|                                    |     |     |      | is-                     |
|                                    |     |     |      | tra-                    |
|                                    |     |     |      | tive                    |
|                                    |     |     |      | over-                   |
|                                    |     |     |      | head,                   |
|                                    |     |     |      | such                    |
|                                    |     |     |      | as                      |
|                                    |     |     |      | row                     |
|                                    |     |     |      | locks                   |
|                                    |     |     |      | or                      |
|                                    |     |     |      | the                     |
|                                    |     |     |      | adap-                   |
|                                    |     |     |      | tive                    |
|                                    |     |     |      | hash                    |
|                                    |     |     |      | in-                     |
|                                    |     |     |      | dex                     |



| Metric                              |     |     |      |   |
|-------------------------------------|-----|-----|------|---|
| Name                                | Key | Agg | Type | Description   |
| innodbmysql.Smndbbufferpagesflushed |     | Sum | Long | innodb_buffer_pool_pages_flushed:   |
| buffer pool pages flushed           |     |     |      | The number of requests to flush pages from the Inn-oDB buffer pool                              |
| innodbmysql.Avgdbbuffer size        |     | Avg | Long | innodb_buffer_pool_size:  |
| buffer pool size                    |     |     |      | The size in bytes of the buffer pool, the memory area where Inn-oDB caches table and index data |

| Metric  |     |     |      |             |
|---|-----|-----|------|-------------|
| Name  | Key | Agg | Type | Description |
| innodbmysql.Smemblongbufferheadtheadbuffer_pool_read_ahead: |     |     |      |             |
| buffer  |     |     |      | The         |
| pool  |     |     |      | num-        |
| read  |     |     |      | ber         |
| ahead   |     |     |      | of          |
|   |     |     |      | pages       |
|   |     |     |      | read        |
|   |     |     |      | into        |
|   |     |     |      | the         |
|   |     |     |      | Inn-        |
|   |     |     |      | oDB         |
|   |     |     |      | buffer      |
|   |     |     |      | pool        |
|   |     |     |      | by          |
|   |     |     |      | the         |
|   |     |     |      | read-       |
|   |     |     |      | ahead       |
|   |     |     |      | back-       |
|   |     |     |      | ground      |
|   |     |     |      | thread.     |
|   |     |     |      | This        |
|   |     |     |      | vari-       |
|   |     |     |      | able        |
|   |     |     |      | was         |
|   |     |     |      | added       |
|   |     |     |      | in          |
|   |     |     |      | MySQL       |
|   |     |     |      | 5.1.41      |

| Metric   |     |     |      |             |
|--|-----|-----|------|-------------|
| Name   | Key | Agg | Type | Description |
| innodbmysql.Simdbbufferheadbuffer_pool_read_ahead_seq: |     |     |      |             |
| buffer   |     |     |      | The         |
| pool   |     |     |      | num-        |
| read   |     |     |      | ber         |
| ahead  |     |     |      | of          |
| seq  |     |     |      | se-         |
|  |     |     |      | quen-       |
|  |     |     |      | tial        |
|  |     |     |      | read-       |
|  |     |     |      | aheads      |
|  |     |     |      | ini-        |
|  |     |     |      | ti-         |
|  |     |     |      | ated        |
|  |     |     |      | by          |
|  |     |     |      | Inn-        |
|  |     |     |      | oDB.        |
|  |     |     |      | This        |
|  |     |     |      | hap-        |
|  |     |     |      | pens        |
|  |     |     |      | when        |
|  |     |     |      | Inn-        |
|  |     |     |      | oDB         |
|  |     |     |      | does        |
|  |     |     |      | a           |
|  |     |     |      | se-         |
|  |     |     |      | quen-       |
|  |     |     |      | tial        |
|  |     |     |      | full        |
|  |     |     |      | ta-         |
|  |     |     |      | ble         |
|  |     |     |      | scan        |

| <hr/>                              |     |     |      |                         |
|------------------------------------|-----|-----|------|-------------------------|
| Metric                             |     |     |      |                         |
| Name                               | Key | Agg | Type | Description             |
| <hr/>                              |     |     |      |                         |
| innodbmysql_avgdbbuffer_bytes_data |     |     |      | buffer_pool_bytes_data: |
| buffer                             |     |     |      | The                     |
| pool                               |     |     |      | to-                     |
| bytes                              |     |     |      | tal                     |
| data                               |     |     |      | num-                    |
|                                    |     |     |      | ber                     |
|                                    |     |     |      | of                      |
|                                    |     |     |      | bytes                   |
|                                    |     |     |      | in                      |
|                                    |     |     |      | the                     |
|                                    |     |     |      | Inn-                    |
|                                    |     |     |      | oDB                     |
|                                    |     |     |      | buffer                  |
|                                    |     |     |      | pool                    |
|                                    |     |     |      | con-                    |
|                                    |     |     |      | tain-                   |
|                                    |     |     |      | ing                     |
|                                    |     |     |      | data.                   |
|                                    |     |     |      | The                     |
|                                    |     |     |      | num-                    |
|                                    |     |     |      | ber                     |
|                                    |     |     |      | in-                     |
|                                    |     |     |      | cludes                  |
|                                    |     |     |      | both                    |
|                                    |     |     |      | dirty                   |
|                                    |     |     |      | and                     |
|                                    |     |     |      | clean                   |
|                                    |     |     |      | pages                   |

| Metric  |     |     |      |             |
|---|-----|-----|------|-------------|
| Name  | Key | Agg | Type | Description |
| innodbmysql.Smdbbufferheadbuffer_pool_read_ahead_rnd: |     |     |      |             |
| buffer  |     |     |      | The         |
| pool  |     |     |      | num-        |
| read  |     |     |      | ber         |
| ahead   |     |     |      | of          |
| rnd   |     |     |      | “ran-       |
|   |     |     |      | dom”        |
|   |     |     |      | read-       |
|   |     |     |      | aheads      |
|   |     |     |      | ini-        |
|   |     |     |      | ti-         |
|   |     |     |      | ated        |
|   |     |     |      | by          |
|   |     |     |      | Inn-        |
|   |     |     |      | oDB.        |
|   |     |     |      | This        |
|   |     |     |      | hap-        |
|   |     |     |      | pens        |
|   |     |     |      | when        |
|   |     |     |      | a           |
|   |     |     |      | query       |
|   |     |     |      | scans       |
|   |     |     |      | a           |
|   |     |     |      | large       |
|   |     |     |      | por-        |
|   |     |     |      | tion        |
|   |     |     |      | of a        |
|   |     |     |      | ta-         |
|   |     |     |      | ble         |
|   |     |     |      | but         |
|   |     |     |      | in          |
|   |     |     |      | ran-        |
|   |     |     |      | dom         |
|   |     |     |      | or-         |
|   |     |     |      | der         |

| Metric                          |     |     |      |  |
|---------------------------------|-----|-----|------|--|
| Name                            | Key | Agg | Type | Description  |
| innodbmysql.Sumofbufferwaitfree |     |     |      | buffer_pool_wait_free: Normally, writes to the Inn-oDB buffer pool happen in the background. However, if it is necessary to read or create a page and no clean pages are available, it is also necessary to wait for pages to be flushed first. This counter |

| <hr/>                                 |                        |     |      |                            |
|---------------------------------------|------------------------|-----|------|----------------------------|
| Metric                                |                        |     |      |                            |
| Name                                  | Key                    | Agg | Type | Description                |
| <hr/>                                 |                        |     |      |                            |
| innodbmysql.SumdbBufferHeaderRequests | buffer_header_requests |     |      | buffer_pool_read_requests: |
| buffer                                |                        |     |      | The                        |
| pool                                  |                        |     |      | num-                       |
| read                                  |                        |     |      | ber                        |
| re-                                   |                        |     |      | of                         |
| quests                                |                        |     |      | logi-                      |
|                                       |                        |     |      | cal                        |
|                                       |                        |     |      | read                       |
|                                       |                        |     |      | re-                        |
|                                       |                        |     |      | quests                     |
| innodbmysql.AvgdbBufferPagesInData    | buffer_pages_in_data   |     |      | buffer_pool_pages_data:    |
| buffer                                |                        |     |      | The                        |
| pool                                  |                        |     |      | num-                       |
| pages                                 |                        |     |      | ber                        |
| data                                  |                        |     |      | of                         |
|                                       |                        |     |      | pages                      |
|                                       |                        |     |      | in                         |
|                                       |                        |     |      | the                        |
|                                       |                        |     |      | Inn-                       |
|                                       |                        |     |      | oDB                        |
|                                       |                        |     |      | buffer                     |
|                                       |                        |     |      | pool                       |
|                                       |                        |     |      | con-                       |
|                                       |                        |     |      | tain-                      |
|                                       |                        |     |      | ing                        |
|                                       |                        |     |      | data.                      |
|                                       |                        |     |      | The                        |
|                                       |                        |     |      | num-                       |
|                                       |                        |     |      | ber                        |
|                                       |                        |     |      | in-                        |
|                                       |                        |     |      | cludes                     |
|                                       |                        |     |      | both                       |
|                                       |                        |     |      | dirty                      |
|                                       |                        |     |      | and                        |
|                                       |                        |     |      | clean                      |
|                                       |                        |     |      | pages                      |

| Metric                                    |     |     |      |   |
|---|-----|-----|------|---|
| Name                                      | Key | Agg | Type | Description   |
| innodbmysql_avgdbbufferreadaheadthreshold |     |     |      | innodbmysql_avgdbbufferreadaheadthreshold_threshold:  |
| readaheadthreshold                        |     |     |      | Controls the sensitivity of linear read-ahead that InnnoDB uses to prefetch pages into the buffer pool. The permissible range of values is 0 to 64. The default is 56: InnnoDB must read at least 56 pages sequentially |



| Metric                      |     |     |      |   |
|-----------------------------|-----|-----|------|---|
| Name                        | Key | Agg | Type | Description   |
| innodbmysql.SmdbLockWait    |     |     |      | innodb_row_lock_waits:                              |
| row lock waits              |     |     |      | The number of times a row lock had to be waited for |
| innodbmysql.AvgdbDataWrites |     |     |      | innodb_pending_writes:                              |
| data pending writes         |     |     |      | The current number of pending writes                |
| innodbmysql.AvgdbPageSize   |     |     |      | innodb_page_size:                                   |
| page size                   |     |     |      | The compiled-in InnoDB page size (default 16KB)     |

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|-------------------------------------|-------|--------|-------|---|
| Metric                              |       |        |       |   |
| Name                                | Key   | Agg    | Type  | Description   |
| <hr/>                               |       |        |       |   |
| innodbmysql.SmdbPagesWritten        | Pages | InnoDB | Pages | innodb_pages_written:   |
| pages<br>writ-<br>ten               |       |        |       | The<br>num-<br>ber<br>of<br>pages<br>writ-<br>ten                 |
| innodbmysql.SmdbDataRead            | Data  | InnoDB | Data  | innodb_data_read:   |
| data<br>read                        |       |        |       | The<br>amount<br>of<br>data<br>read                               |
| innodbmysql.AvgLogWritePending      | Log   | InnoDB | Log   | innodb_log_pending_writes:  |
| os<br>log<br>pend-<br>ing<br>writes |       |        |       | The<br>num-<br>ber<br>of<br>pend-<br>ing<br>log<br>file<br>writes |
| innodbmysql.SmdbPagesRead           | Pages | InnoDB | Pages | innodb_pages_read:  |
| pages<br>read                       |       |        |       | The<br>num-<br>ber<br>of<br>pages<br>read                         |

| Metric                                 |     |     |        |  |
|--|-----|-----|--------|--|
| Name                                   | Key | Agg | Type   | Description                            |
| innodbmysql.InnoDBLockAcquiringTimeAvg |     | avg | double | innodb_lock_time_avg:                  |
| row lock time avg                      |     |     |        | The average time to acquire a row lock |
| innodbmysql.SmLogWriteRequests         |     | sum | long   | innodb_log_write_requests:             |
| log write requests                     |     |     |        | The number of log write requests       |

| Metric                      |                             |     |      |  |
|-----------------------------|-----------------------------|-----|------|--|
| Name                        | Key                         | Agg | Type | Description  |
| innodbmysql_log_buffer_size | innodbmysql_log_buffer_size | avg | Long | <p>buffer_size: The size in bytes of the buffer that Inn-oDB uses to write to the log files on disk. The default value is 8MB. A large log buffer enables large trans-actions to run without a need to write the log to disk before the trans-</p> |

| Metric                               |     |     |      |   |
|--------------------------------------|-----|-----|------|---|
| Name                                 | Key | Agg | Type | Description                                       |
| innodbmysql.Smdb_data_reads          |     | Sum | Int  | innodb_data_reads:                                |
| data reads                           |     |     |      | The number of data reads                          |
| innodbmysql.Avgdb_data_pending_reads |     | Avg | Int  | innodb_data_pending_reads:                        |
| data pending reads                   |     |     |      | The current number of pending reads               |
| innodbmysql.Avgdb_log_file_size      |     | Avg | Long | innodb_log_file_size:                             |
| log file size                        |     |     |      | The size in bytes of each log file in a log group |

| Metric                               |     |     |      |   |
|--------------------------------------|-----|-----|------|---|
| Name                                 | Key | Agg | Type | Description   |
| innodbmysql_avg_log_pending_fsyncs   |     | avg | Long | innodb_log_pending_fsyncs:<br>The number of pending log file fsync() operations |
| innodbmysql_sum_log_writes           |     | sum | Long | innodb_log_writes:<br>The number of physical writes to the log file             |
| innodbmysql_sum_innodb_pages_created |     | sum | Long | innodb_pages_created:<br>The number of pages created                            |

| <hr/>                                  |     |     |      |             |
|--|-----|-----|------|-------------|
| Metric                                 |     |     |      |             |
| Name                                   | Key | Agg | Type | Description |
| <hr/>                                  |     |     |      |             |
| innodbmysql.innodb_log_ahead_time_max: |     |     |      |             |
| row                                    |     |     |      | The         |
| lock                                   |     |     |      | max-        |
| time                                   |     |     |      | i-          |
| max                                    |     |     |      | mum         |
|  |     |     |      | time        |
|  |     |     |      | to          |
|  |     |     |      | ac-         |
|  |     |     |      | quire       |
|  |     |     |      | a           |
|  |     |     |      | row         |
|  |     |     |      | lock        |
|  |     |     |      |             |
| innodbmysql.innodb_data_written:       |     |     |      |             |
| data                                   |     |     |      | The         |
| writ-                                  |     |     |      | amount      |
| ten                                    |     |     |      | of          |
|  |     |     |      | data        |
|  |     |     |      | writ-       |
|  |     |     |      | ten         |
|  |     |     |      | in          |
|  |     |     |      | bytes       |
|  |     |     |      |             |
| innodbmysql.innodb_data_fsyncs:        |     |     |      |             |
| data                                   |     |     |      | The         |
| fsyncs                                 |     |     |      | num-        |
|  |     |     |      | ber         |
|  |     |     |      | of          |
|  |     |     |      | fsync()     |
|  |     |     |      | op-         |
|  |     |     |      | era-        |
|  |     |     |      | tions       |

| <hr/>                                      |     |     |      |  |
|--|-----|-----|------|--|
| Metric                                     |     |     |      |  |
| Name                                       | Key | Agg | Type | Description  |
| <hr/>                                      |     |     |      |  |
| innodbmysql_avg_row_lock_current_waits:    |     |     |      |  |
| row lock current waits                     |     |     |      | The number of row locks currently being waited for |
| innodbmysql_avg_data_fsync_pending_fsyncs: |     |     |      |  |
| data pending fsyncs                        |     |     |      | The current number of pending fsync() operations   |
| innodbmysql_sum_row_lock_time:             |     |     |      |  |
| row lock time                              |     |     |      | The total time spent in acquiring row locks        |



| Metric                         |     |     |                             |  |
|--------------------------------|-----|-----|-----------------------------|--|
| Name                           | Key | Agg | Type                        | Description  |
| innodbmysql.SumdbLogWritten    |     |     | innodb_os_log_written:      |  |
| os<br>log<br>writ-<br>ten      |     |     |                             | The<br>num-<br>ber<br>of<br>bytes<br>writ-<br>ten<br>to<br>the<br>log<br>file  |
| innodbmysql.SumdbPagesWritten  |     |     | innodb_dblwr_pages_written: |  |
| dblwr<br>pages<br>writ-<br>ten |     |     |                             | The<br>num-<br>ber<br>of<br>pages<br>that<br>have<br>been<br>writ-<br>ten<br>for<br>dou-<br>blewrite<br>op-<br>era-<br>tions |

| Metric  |     |     |      |   |
|---|-----|-----|------|---|
| Name  | Key | Agg | Type | Description   |
| innodbmysql.Sum of pages written to dblwr writes: |     |     |      |   |
| dblwr writes                                      |     |     |      | The number of doublewrite operations that have been performed |

| Metric              |     |     |      |                   |
|---------------------|-----|-----|------|-------------------|
| Name                | Key | Agg | Type | Description       |
| innodbmysql.SlowLog |     | Sum | Long | innodb_log_waits: |
| log                 |     |     |      | The               |
| waits               |     |     |      | num-              |
|                     |     |     |      | ber               |
|                     |     |     |      | of                |
|                     |     |     |      | times             |
|                     |     |     |      | that              |
|                     |     |     |      | the               |
|                     |     |     |      | log               |
|                     |     |     |      | buffer            |
|                     |     |     |      | was               |
|                     |     |     |      | too               |
|                     |     |     |      | small             |
|                     |     |     |      | and               |
|                     |     |     |      | a                 |
|                     |     |     |      | wait              |
|                     |     |     |      | was               |
|                     |     |     |      | re-               |
|                     |     |     |      | quired            |
|                     |     |     |      | for               |
|                     |     |     |      | it                |
|                     |     |     |      | to                |
|                     |     |     |      | be                |
|                     |     |     |      | flushed           |
|                     |     |     |      | be-               |
|                     |     |     |      | fore              |
|                     |     |     |      | con-              |
|                     |     |     |      | tin-              |
|                     |     |     |      | u-                |
|                     |     |     |      | ing               |

| Metric                        |     |     |      |   |
|-------------------------------|-----|-----|------|---|
| Name                          | Key | Agg | Type | Description   |
| innodbmysql.SumofRowsInserted |     |     | Sum  | rows_inserted:  |
| rows<br>in-<br>serted         |     |     |      | The<br>num-<br>ber<br>of<br>rows<br>in-<br>serted<br>into<br>Inn-<br>oDB<br>ta-<br>bles |
| innodbmysql.SumofLogfsyncs    |     |     | Sum  | innodb_os_log_fsycs:  |
| os<br>log<br>fsyncs           |     |     |      | The<br>num-<br>ber<br>of<br>fsync()<br>writes<br>done<br>to<br>the<br>log<br>file       |
| innodbmysql.SumofRowsDeleted  |     |     | Sum  | innodb_rows_deleted:  |
| rows<br>deleted               |     |     |      | The<br>num-<br>ber<br>of<br>rows<br>deleted<br>from<br>Inn-<br>oDB<br>ta-<br>bles       |

| <hr/>                          |      |     |      |                      |
|--------------------------------|------|-----|------|----------------------|
| Metric                         |      |     |      |                      |
| Name                           | Key  | Agg | Type | Description          |
| <hr/>                          |      |     |      |                      |
| innodbmysql.SucdbIdatg.writes  | data | sum | long | innodb_data_writes:  |
| data                           |      |     |      | The                  |
| writes                         |      |     |      | num-                 |
|                                |      |     |      | ber                  |
|                                |      |     |      | of                   |
|                                |      |     |      | data                 |
|                                |      |     |      | writes               |
| <br>                           |      |     |      |                      |
| innodbmysql.SucdbIrows.read    | rows | sum | long | innodb_rows_read:    |
| rows                           |      |     |      | The                  |
| read                           |      |     |      | num-                 |
|                                |      |     |      | ber                  |
|                                |      |     |      | of                   |
|                                |      |     |      | rows                 |
|                                |      |     |      | read                 |
|                                |      |     |      | from                 |
|                                |      |     |      | Inn-                 |
|                                |      |     |      | oDB                  |
|                                |      |     |      | ta-                  |
|                                |      |     |      | bles                 |
| <br>                           |      |     |      |                      |
| innodbmysql.SucdbIrows.updated | rows | sum | long | innodb_rows_updated: |
| rows                           |      |     |      | The                  |
| up-                            |      |     |      | num-                 |
| dated                          |      |     |      | ber                  |
|                                |      |     |      | of                   |
|                                |      |     |      | rows                 |
|                                |      |     |      | up-                  |
|                                |      |     |      | dated                |
|                                |      |     |      | in                   |
|                                |      |     |      | Inn-                 |
|                                |      |     |      | oDB                  |
|                                |      |     |      | ta-                  |
|                                |      |     |      | bles                 |

| Metric             |           |     |          |   |
|--------------------|-----------|-----|----------|---|
| Name               | Key       | Agg | Type     | Description   |
| select range check | mysql.Sun | sum | Isolated | select range_check: The number of joins without keys that check for key usage after each row. If this is not 0, you should carefully check the indexes of your tables |

| Metric           |                  |     |      |   |
|------------------|------------------|-----|------|---|
| Name             | Key              | Agg | Type | Description   |
| queriesmysql.sum | queriesmysql.sum | sum | Long | <p>Queries: The number of statements executed by the server. This variable includes statements executed within stored programs, unlike the Questions variable. It does not count COM_PING or COM_STATISTICS commands. This variable was added in MySQL 5.0.76</p> |

| Metric      |              |     |           |  |
|-------------|--------------|-----|-----------|--|
| Name        | Key          | Agg | Type      | Description  |
| select scan | mysql.Sunies | sum | Is select | select scan: The number of joins that did a full scan of the first table |



| Metric       |                    |     |      |  |
|--------------|--------------------|-----|------|--|
| Name         | Key                | Agg | Type | Description  |
| slow_queries | mysql.Slow_queries | sum | Long | Slow_queries: The number of queries that have taken more than long_query_time seconds. This counter increments regardless of whether the slow query log is enabled |

| Metric                    |               |     |                                |   |
|---------------------------|---------------|-----|--------------------------------|---|
| Name                      | Key           | Agg | Type                           | Description   |
| not flushed de-layed rows | mysql_queries | sum | Insert_NonFlushedDelayed_rows: | The number of rows waiting to be written in IN-SERT DE-LAYED queues |
| sort scan                 | mysql_queries | sum | Sort_scan:                     | The number of sorts that were done by scanning the table            |

| Metric                 |              |          |      |   |
|------------------------|--------------|----------|------|---|
| Name                   | Key          | Agg      | Type | Description   |
| select<br>full<br>join | mysql.Sunies | Isselect | Sum  | fullfull_join:<br>The<br>num-<br>ber<br>of<br>joins<br>that<br>per-<br>form<br>ta-<br>ble<br>scans<br>be-<br>cause<br>they<br>do<br>not<br>use<br>in-<br>dexes.<br>If<br>this<br>value<br>is<br>not<br>0,<br>you<br>should<br>care-<br>fully<br>check<br>the<br>in-<br>dexes<br>of<br>your<br>ta-<br>bles |

| Metric       |              |     |      |  |
|--------------|--------------|-----|------|--|
| Name         | Key          | Agg | Type | Description  |
| sort<br>rows | mysql.Sunies | sum | long | Sort_rows:<br>The<br>num-<br>ber<br>of<br>sorted<br>rows |

| Metric            |                             |     |                 |   |
|-------------------|-----------------------------|-----|-----------------|---|
| Name              | Key                         | Agg | Type            | Description   |
| sort merge passes | mysql.SlavesLongMergePasses | sum | LongMergePasses | Sort merge passes: The number of merge passes that the sort algorithm has had to do. If this value is large, you should consider increasing the value of the sort_buffer_size system variable |

| Metric                          |       |     |        |   |
|---------------------------------|-------|-----|--------|---|
| Name                            | Key   | Agg | Type   | Description   |
| select<br>full<br>range<br>join | mysql | Sum | Series | select, full range join:<br>The number of joins that used a range search on a reference table |

| Metric       |       |     |        |   |
|--------------|-------|-----|--------|---|
| Name         | Key   | Agg | Type   | Description   |
| select range | mysql | sum | series | select range: The number of joins that used ranges on the first table. This is normally not a critical issue even if the value is quite large |

| Metric                              |     |     |        |  |
|-------------------------------------|-----|-----|--------|--|
| Name                                | Key | Agg | Type   | Description  |
| delayedmysql_queries_insert_threads |     | Avg | Insert | Delayed insert threads: The number of IN-SERT DE-LAYED han-dler threads in use |



| Metric                                |               |     |      |  |
|---------------------------------------|---------------|-----|------|--|
| Name                                  | Key           | Agg | Type | Description  |
| max<br>pre-<br>pared<br>stmt<br>count | mysql_queries | avg | long | max_stmt_count: This variable limits the total number of prepared statements in the server. (The sum of the number of prepared statements across all sessions) |

| Metric          |               |     |         |   |
|-----------------|---------------|-----|---------|---|
| Name            | Key           | Agg | Type    | Description   |
| long query time | mysql_queries | Avg | Slowlog | <p>slowlog_query_time: If a query takes longer than this many seconds, the server increments the Slow_queries status variable. If you are using the --log-slow-queries option, the query is logged to the slow query log file. This value is measured in real time, not</p> |

| Metric                               |               |     |      |   |
|--------------------------------------|---------------|-----|------|---|
| Name                                 | Key           | Agg | Type | Description   |
| max<br>length<br>for<br>sort<br>data | mysql_queries | avg | long | <p>config.max_length_for_sort_data:</p> <p>The cut-off on the size of index values that determines which file-sort algorithm to use</p> |

| Metric              |                                 |     |         |   |
|---------------------|---------------------------------|-----|---------|---|
| Name                | Key                             | Agg | Type    | Description   |
| delayedmysql_errors | mysql.SlavesInsertDelayedErrors | Sum | Integer | Delayed errors: The number of rows written with IN-SERT DE-LAYED for which some error occurred (probably duplicate key) |
| sort_range          | mysql.SlavesSortRange           | Sum | Integer | Sort_range: The number of sorts that were done using ranges   |

| Metric           |               |     |      |   |
|------------------|---------------|-----|------|---|
| Name             | Key           | Agg | Type | Description   |
| sort buffer size | mysql_queries | avg | long | <p>config.sort_buffer_size: Each session that needs to do a sort allocates a buffer of this size. sort_buffer_size is not specific to any storage engine and applies in a general manner for optimization. If you see many Sort_merge_passes per second, you can con-</p> |

| Metric |     |     |      |             |
|--------|-----|-----|------|-------------|
| Name   | Key | Agg | Type | Description |

---

|           |       |     |      |            |
|-----------|-------|-----|------|------------|
| questions | mysql | Sum | Long | Questions: |
|-----------|-------|-----|------|------------|

The number of statements executed by the server. As of MySQL 5.0.72, this includes only statements sent to the server by clients and no longer includes statements executed within stored programs, unlike the Queries variable. This variable does not

| Metric              |               |     |      |   |
|---------------------|---------------|-----|------|---|
| Name                | Key           | Agg | Type | Description   |
| prepared_stmt_count | mysql_queries | avg | long | PreparedStatement count:  |
|                     |               |     |      | The current number of prepared statements. (The maximum number of statements is given by the max_prepared_stmt_count system variable) |

| Metric                |               |     |      |   |
|-----------------------|---------------|-----|------|---|
| Name                  | Key           | Agg | Type | Description   |
| max<br>sort<br>length | mysql_queries | avg | long | <p>config.sort_length: The number of bytes to use when sorting data values. Only the first max_sort_length bytes of each value are used; the rest are ignored</p> |



| Metric                                       |                                       |     |        |  |
|--|---------------------------------------|-----|--------|--|
| Name   | Key                                   | Agg | Type   | Description                                  |
| delayedmysql_summaries_insert_delayed_writes | mysql_summaries_insert_delayed_writes | sum | Insert | The number of IN-SERT DE-LAYED rows writ-ten |

| Metric                 |                   |     |      |   |
|------------------------|-------------------|-----|------|---|
| Name                   | Key               | Agg | Type | Description   |
| binlog_stmt_cache_size | mysql_binlog_size | sum | long | stmt_cache_size: Beginning with MySQL 5.5.9, this variable determines the size of the cache for the binary log to hold non-transac-tional state-ments is-sued dur-ing a trans-ac-tion. In MySQL 5.5.3 and later, sep-a-rate bi-nary log trans-ac- |

| Metric                        |                               |                               |                               |   |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|---|
| Name                          | Key                           | Agg                           | Type                          | Description   |
| binlog mysql.Simlog.Laong.use | binlog mysql.Simlog.Laong.use | binlog mysql.Simlog.Laong.use | binlog mysql.Simlog.Laong.use | binlog mysql.Simlog.Laong.use                                       |
| cache                         |                               |                               |                               | The number of transactions that used the temporary binary log cache |
| use                           |                               |                               |                               |   |

| Metric                     |                                  |     |      |   |
|----------------------------|----------------------------------|-----|------|---|
| Name                       | Key                              | Agg | Type | Description   |
| slave_retried_transactions | mysql.slave_retried_transactions | sum | Long | The total number of times since startup that the replication slave SQL thread has retried transactions: |

| Metric                       |             |     |        |  |
|------------------------------|-------------|-----|--------|--|
| Name                         | Key         | Agg | Type   | Description  |
| slave<br>sql<br>run-<br>ning | mysql.slave | avg | Double | Slave_SQL_Running:<br>Whether<br>the<br>SQL<br>thread<br>is<br>started.<br>Value<br>1<br>means<br>YES,<br>value<br>0<br>means<br>NO.<br>Dec-<br>i-<br>mal<br>value<br>be-<br>tween<br>0<br>and<br>1<br>means<br>that<br>in<br>mon-<br>i-<br>tored<br>time<br>pe-<br>riod<br>SQL<br>thread<br>was<br>at<br>some<br>points<br>run-<br>ning<br>and<br>at<br>other<br>points<br>not<br>run-<br>ning. |

| Metric                     |                                  |     |         |   |
|----------------------------|----------------------------------|-----|---------|---|
| Name                       | Key                              | Agg | Type    | Description   |
| binlog_stmt_cache_disk_use | mysql.Binlog_stmt_cache_disk_use | Sum | Integer | The number of non-trans-action state-ments that used the bi-nary log state-ment cache but that ex-ceeded the value of bin-log_stmt_cache_size and used a tem-porary file to store those state-ments |

| Metric              |                           |     |      |   |
|---------------------|---------------------------|-----|------|---|
| Name                | Key                       | Agg | Type | Description   |
| slave_re-heartbeats | mysql.slave_re-heartbeats | sum | Long | Slaves received heartbeats: This counter increments with each replication heart-beat received by a replication slave since the last time that the slave was restarted or re-set, or a CHANGE MASTER TO statement was issued |

| Metric                                |             |     |      |  |
|---------------------------------------|-------------|-----|------|--|
| Name                                  | Key         | Agg | Type | Description  |
| seconds<br>be-<br>hind<br>mas-<br>ter | mysql.slave | avg | Long | Seconds_Behind_Master:<br>This field is an indication of how “late” the slave is. In essence, this field measures the time difference in seconds between the slave SQL thread and the slave I/O thread. If the network connection between master and |



| Metric                               |             |     |      |  |
|--------------------------------------|-------------|-----|------|--|
| Name                                 | Key         | Agg | Type | Description  |
| slave<br>open<br>temp<br>ta-<br>bles | mysql.slave | avg | long | Slave open temp tables:<br>The number of temporary tables that the slave SQL thread currently has open. If the value is greater than zero, it is not safe to shut down the slave |

| Metric            |                         |     |                   |  |
|-------------------|-------------------------|-----|-------------------|--|
| Name              | Key                     | Agg | Type              | Description  |
| binlog cache size | mysql_binlog_cache_size | sum | binlog_cache_size | The size of the cache to hold the SQL statements for the binary log during a transaction. A binary log cache is allocated for each client if the server supports any transactional storage engines and if the server has |

| Metric           |                        |        |        |  |
|------------------|------------------------|--------|--------|--|
| Name             | Key                    | Agg    | Type   | Description  |
| slave_io_running | mysql.slave_io_running | DOUBLE | DOUBLE | Slave_IO_Running: Whether the I/O thread is started and has connected successfully to the master. Value 1 means YES, value 0 means NO. Decimal value between 0 and 1 means that in monitored time period I/O thread was at some points running |

| Metric                  |                               |     |        |  |
|-------------------------|-------------------------------|-----|--------|--|
| Name                    | Key                           | Agg | Type   | Description  |
| slave_heart-beat-period | mysql_slave_heart-beat-period | avg | Double | Shows the replication heart-beat interval on a replication slave |

| Metric                |                             |     |      |   |
|-----------------------|-----------------------------|-----|------|---|
| Name                  | Key                         | Agg | Type | Description   |
| binlog_cache_disk_use | mysql.Binlog_cache_disk_use | Sum | Long | The number of transactions that used the temporary binary log cache but that exceeded the value of binlog_cache_size and used a temporary file to store statements from the transaction |

| Metric                |                             |     |      |   |
|-----------------------|-----------------------------|-----|------|---|
| Name                  | Key                         | Agg | Type | Description   |
| binlog_stmt_cache_use | mysql.Binlog_stmt_cache_use | Sum | Long | The number of non-transac-tional state-ments that used the bi-nary log state-ment cache |
| thread_cache_size     | mysql.thread_cache_size     | Avg | Long | How many threads the server should cache for reuse                                      |

| Metric          |                   |     |      |   |
|-----------------|-------------------|-----|------|---|
| Name            | Key               | Agg | Type | Description   |
| max_connections | mysql.connections | avg | Long | Allowed connections:<br>The maximum number of permitted simultaneous client connections |
| opened_files    | mysql.files       | sum | Long | Opened_files:<br>The number of files that have been opened with my_open()               |

| Metric            |                         |     |      |   |
|-------------------|-------------------------|-----|------|---|
| Name              | Key                     | Agg | Type | Description                                       |
| created_tmp_files | mysql.Created_tmp_files | Sum | Long | Created tmp files:                                |
| tmp_files         |                         |     |      | How many temporary files mysqld has created       |
| uptime            | mysql.uptime            | Avg | Long | Uptime:   |
|                   |                         |     |      | The number of seconds that the server has been up |



| Metric               |                   |     |             |  |
|----------------------|-------------------|-----|-------------|--|
| Name                 | Key               | Agg | Type        | Description  |
| max used connections | mysql.connections | max | connections | Maximum connections: The maximum number of connections that have been in use simultaneously since the server started |

| Metric               |                   |     |                  |  |
|----------------------|-------------------|-----|------------------|--|
| Name                 | Key               | Agg | Type             | Description  |
| max user connections | mysql.connections | max | user_connections | The maximum number of simultaneous connections permitted to any given MySQL user account |

| Metric              |                         |     |      |   |
|---------------------|-------------------------|-----|------|---|
| Name                | Key                     | Agg | Type | Description   |
| aborted_connections | mysql.connections       | sum | Long | Aborted_connects:<br>The number of failed attempts to connect to the MySQL server |
| threads_connected   | mysql.threads_connected | avg | Long | Threads_connected:<br>The number of currently open connections                    |

| Metric             |                |      |             |  |
|--------------------|----------------|------|-------------|--|
| Name               | Key            | Agg  | Type        | Description  |
| open files         | mysql.leg.open | Long |             | Open_files:<br>The number of files that are open. This count includes regular files opened by the server |
| uptime since flush | mysql.uptime   | Long | Since flush | uptime_since_flush_status:<br>The number of seconds since the most recent FLUSH STATUS statement         |

| Metric              |                           |     |      |   |
|---------------------|---------------------------|-----|------|---|
| Name                | Key                       | Agg | Type | Description   |
| slow_launch_threads | mysql.Slow_launch_threads | Sum | Long | slow_launch_threads: The number of threads that have taken more than slow_launch_time seconds to create |

| Metric          |                       |     |      |   |
|-----------------|-----------------------|-----|------|---|
| Name            | Key                   | Agg | Type | Description   |
| threads_created | mysql_threads_created | Sum | Long | Threads_created: The number of threads created to handle connections. If Threads_created is big, you may want to increase the thread_cache_size value |
| thread_stack    | mysql_thread_stack    | Avg | Long | thread_stack: The stack size for each thread  |

| Metric          |                       |     |      |   |
|-----------------|-----------------------|-----|------|---|
| Name            | Key                   | Agg | Type | Description   |
| threads_running | mysql.threads_running | avg | Long | Open_streams: The number of threads that are not sleeping                   |
| open_streams    | mysql.open_streams    | avg | Long | Open_streams: The number of streams that are open (used mainly for logging) |

| Metric          |                   |     |                 |   |
|-----------------|-------------------|-----|-----------------|---|
| Name            | Key               | Agg | Type            | Description   |
| aborted_clients | mysql.connections | sum | Aborted_clients | The number of connections that were aborted because the client died without closing the connection properly |
| threads_cached  | mysql.threads     | avg | Threads_cached  | The number of threads in the thread cache   |



| Metric    |       |     |       |   |
|-----------|-------|-----|-------|---|
| Name      | Key   | Agg | Type  | Description   |
| replace   | mysql | Sum | Index | Command replace:  |
|           |       |     |       | The number of times REPLACE command has been executed   |
| drop user | mysql | Sum | Index | Command DROP USER:                                      |
|           |       |     |       | The number of times DROP USER command has been executed |

| Metric                            |     |     |      |  |
|-----------------------------------|-----|-----|------|--|
| Name                              | Key | Agg | Type | Description  |
| updatemysql.SummahdsgpCdn_multi:  |     |     |      |  |
| multi                             |     |     |      | The number of times UP-DATE command with multiple-table syntax has been executed |
| create mysql.SummahdsgpCdn_multi: |     |     |      |  |
| ta-ble                            |     |     |      | The number of times CREATE-TABLE command has been executed                       |

| Metric                 |            |               |               |   |
|------------------------|------------|---------------|---------------|---|
| Name                   | Key        | Agg           | Type          | Description   |
| insert<br>se-<br>lect  | mysql.Summ | mysql.Insert  | mysql.Insert  | insert_select:<br>The<br>num-<br>ber<br>of<br>times<br>IN-<br>SERT<br>with<br>SE-<br>LECT<br>com-<br>mand<br>has<br>been<br>exe-<br>cuted   |
| replace<br>se-<br>lect | mysql.Summ | mysql.Replace | mysql.Replace | replace_select:<br>The<br>num-<br>ber<br>of<br>times<br>RE-<br>PLACE<br>with<br>SE-<br>LECT<br>com-<br>mand<br>has<br>been<br>exe-<br>cuted |

| Metric     |             |       |       |             |
|------------|-------------|-------|-------|-------------|
| Name       | Key         | Agg   | Type  | Description |
| drop_table | mysql.Summa | Index | Count | drop_table: |
| ta-        |             |       |       | The         |
| ble        |             |       |       | num-        |
|            |             |       |       | ber         |
|            |             |       |       | of          |
|            |             |       |       | times       |
|            |             |       |       | DROP        |
|            |             |       |       | TA-         |
|            |             |       |       | BLE         |
|            |             |       |       | com-        |
|            |             |       |       | mand        |
|            |             |       |       | has         |
|            |             |       |       | been        |
|            |             |       |       | exe-        |
|            |             |       |       | cuted       |
| update     | mysql.Summa | Index | Count | update:     |
|            |             |       |       | The         |
|            |             |       |       | num-        |
|            |             |       |       | ber         |
|            |             |       |       | of          |
|            |             |       |       | times       |
|            |             |       |       | UP-         |
|            |             |       |       | DATE        |
|            |             |       |       | com-        |
|            |             |       |       | mand        |
|            |             |       |       | has         |
|            |             |       |       | been        |
|            |             |       |       | exe-        |
|            |             |       |       | cuted       |

| Metric   |       |       |       |  |
|----------|-------|-------|-------|--|
| Name     | Key   | Agg   | Type  | Description  |
| delete   | mysql | Summa | Index | Cmd_delete:  |
|          |       |       |       | The number of times DELETE command has been executed   |
| rollback | mysql | Summa | Index | Cmd_rollback:  |
|          |       |       |       | The number of times ROLLBACK command has been executed |

| Metric                 |                |     |         |  |
|------------------------|----------------|-----|---------|--|
| Name                   | Key            | Agg | Type    | Description  |
| rollback to save-point | mysql_commands | sum | Integer | <p>mysql_commands.rollback_savepoint: The number of times ROLLBACK TO SAVE-POINT command has been executed</p> |
| drop DB                | mysql_commands | sum | Integer | <p>mysql_commands.drop_db: The number of times DROP DATABASE command has been executed</p>                     |

| Metric                |         |       |              |   |
|-----------------------|---------|-------|--------------|---|
| Name                  | Key     | Agg   | Type         | Description   |
| create mysql.<br>user | Summary | Count | create_user: | The number of times CREATE USER command has been executed     |
| create mysql.<br>DB   | Summary | Count | create_db:   | The number of times CREATE DATABASE command has been executed |

| Metric |       |     |       |   |
|--------|-------|-----|-------|---|
| Name   | Key   | Agg | Type  | Description   |
| insert | mysql | Sum | Index | Com_insert:   |
|        |       |     |       | The number of times IN-SERT command has been executed |
| commit | mysql | Sum | Index | Com_commit:   |
|        |       |     |       | The number of times COMMIT command has been executed  |



| Metric       |                          |       |                   |   |
|--------------|--------------------------|-------|-------------------|---|
| Name         | Key                      | Agg   | Type              | Description   |
| load         | mysql.SummaryLoad        | Count | Com_load:         | The number of times LOAD command has been executed                              |
| delete multi | mysql.SummaryDeleteMulti | Count | Com_delete_multi: | The number of times DELETE command with multiple-table syntax has been executed |

| <hr/>              |             |        |        |   |
|--------------------|-------------|--------|--------|---|
| Metric             |             |        |        |   |
| Name               | Key         | Agg    | Type   | Description   |
| <hr/>              |             |        |        |   |
| select             | mysql.summa | And    | select | Com_select:   |
|                    |             |        |        | The number of times SE-LECT com-mand has been exe-cuted |
| free cache mem-ory | mysql.cache | bytes  | free   | Qcache_free_memory:                                     |
|                    |             |        |        | The amount of free mem-ory for the query cache          |
| free blocks        | mysql.cache | blocks | free   | Qcache_free_blocks:                                     |
|                    |             |        |        | The num-ber of free mem-ory blocks in the query cache   |

| Metric   |     |     |      |   |
|--|-----|-----|------|---|
| Name   | Key | Agg | Type | Description   |
| insertsmysql.Slave.Queries.Query_cache_inserts:    |     |     |      | The number of queries added to the query cache  |
| queriesmysql.Slave.Queries.Query_cache_not_cached: |     |     |      | The number of non-cached queries (not cacheable, or not cached due to the query_cache_type setting) |

| Metric           |                     |     |      |   |
|------------------|---------------------|-----|------|---|
| Name             | Key                 | Agg | Type | Description   |
| queries_in_cache | mysql.cache_queries | sum | Long | Qcache_queries_in_cache:<br>The number of queries registered in the query cache |
| hits             | mysql.cache_hits    | sum | Long | Qcache_hits:<br>The number of query cache hits                                  |
| total_blocks     | mysql.cache_blocks  | sum | Long | Qcache_total_blocks:<br>The total number of blocks in the query cache           |

| Metric        |  |     |      |  |
|---------------|--|-----|------|--|
| Name          | Key                                    | Agg | Type | Description  |
| lowmem_prunes | mysql.Slow_queries_cache_lowmem_prunes | Sum | Long | Number of queries that were deleted from the query cache because of low memory |

| Metric           |                      |       |                   |  |
|------------------|----------------------|-------|-------------------|--|
| Name             | Key                  | Agg   | Type              | Description  |
| query_cache_size | mysql.cache_size     | bytes | query_cache_size: | The amount of memory allocated for caching query results. The default value is 0, which disables the query cache |
| bytes_received   | mysql.Bytes_received | bytes | Bytes_received:   | The number of bytes received from all clients  |

| Metric     |             |     |      |  |
|------------|-------------|-----|------|--|
| Name       | Key         | Agg | Type | Description  |
| bytes sent | mysql.Slave | Sum | Long | Bytes_sent: The number of bytes sent to all clients  |
| key reads  | mysql.Slave | Sum | Long | Key_reads: The number of physical reads of a key block from disk. If Key_reads is large, then your key_buffer_size value is probably too small |

| Metric          |            |     |      |  |
|-----------------|------------|-----|------|--|
| Name            | Key        | Agg | Type | Description  |
| key buffer size | mysqlmysam | avg | Long | <p>key_buffer_size: In-dex blocks for My-ISAM ta-bles are buffered and are shared by all threads. key__buffer_size is the size of the buffer used for in-dex blocks. The key buffer is also known as the key cache. The value of this vari-able in-di-cates the amount of mem-</p> |



| Metric        |          |     |      |  |
|---------------|----------|-----|------|--|
| Name          | Key      | Agg | Type | Description  |
| key<br>writes | mysql.Sy | sum | Long | Key blocks:<br>The<br>num-<br>ber<br>of<br>phys-<br>ical<br>writes<br>of a<br>key<br>block<br>to<br>disk |



| Metric             |                       |     |      |  |
|--------------------|-----------------------|-----|------|--|
| Name               | Key                   | Agg | Type | Description  |
| key read re-quests | mysql.SlowLogKeyReads | sum | Long | The number of re-quests to read a key block from the cache |

| Metric             |                          |     |      |   |
|--------------------|--------------------------|-----|------|---|
| Name               | Key                      | Agg | Type | Description   |
| key blocks un-used | mysql_keys_unused:blocks | avg | Long | The number of unused blocks in the key cache. You can use this value to determine how much of the key cache is in use |

| Metric                 |                 |      |      |  |
|------------------------|-----------------|------|------|--|
| Name                   | Key             | Agg  | Type | Description  |
| key blocks not flushed | mysql.Variables | Long | Long | Keys. not flushed: The number of key blocks in the key cache that have changed but have not yet been flushed to disk |
| key write re-quests    | mysql.Variables | Long | Long | Keys. write requests: The number of re-quests to write a key block to the cache                                      |

| Metric          |                 |     |      |  |
|-----------------|-----------------|-----|------|--|
| Name            | Key             | Agg | Type | Description  |
| key blocks used | mysql_keys_used | avg | Long | Keys used:   |
|                 |                 |     |      | The number of used blocks in the key cache. This value is a high-water mark that indicates the maximum number of blocks that have ever been in use at one time |

| Metric               |             |     |      |  |
|----------------------|-------------|-----|------|--|
| Name                 | Key         | Agg | Type | Description  |
| key cache block size | mysqlmysqld | avg | Long | key_block_size: The size in bytes of blocks in the key cache                                   |
| handler_rollback     | mysqlmysqld | sum | Long | Handler_rollback: The number of requests for a storage engine to perform a roll-back operation |

| Metric                 |        |      |                   |   |
|------------------------|--------|------|-------------------|---|
| Name                   | Key    | Agg  | Type              | Description   |
| handlemysql_read_first | Sample | Long | Handle_read_first | The number of times the first entry in an index was read. If this value is high, it suggests that the server is doing a lot of full index scans; for example, SELECT col1 FROM foo, assuming that col1 is |



| Metric                      |                       |      |                   |  |
|-----------------------------|-----------------------|------|-------------------|--|
| Name                        | Key                   | Agg  | Type              | Description  |
| handlemysql.<br>read<br>key | Sample<br>read<br>key | Long | Handler_read_key: | The number of requests to read a row based on a key. If this value is high, it is a good indication that your tables are properly indexed for your queries |

| Metric                       |        |      |      |   |
|------------------------------|--------|------|------|---|
| Name                         | Key    | Agg  | Type | Description   |
| handlemysql.<br>read<br>next | Sample | Long | Text | Handler_read_next:<br>The number of requests to read the next row in key order. This value is incremented if you are querying an index column with a range constraint or if you are doing an index scan |

| Metric                  |            |     |                     |   |
|-------------------------|------------|-----|---------------------|---|
| Name                    | Key        | Agg | Type                | Description   |
| handlemysql.SamplesLong | SampleLong | Sum | Handler__savepoint: |   |
| save-point              |            |     |                     | The number of requests for a storage engine to place a save-point |
| handlemysql.SamplesLong | SampleLong | Sum | Handler__delete:    |   |
| delete                  |            |     |                     | The number of times that rows have been deleted from tables       |

| Metric                  |            |     |      |  |
|-------------------------|------------|-----|------|--|
| Name                    | Key        | Agg | Type | Description  |
| handlemysql.<br>write   | SampleLong | Sum | Long | Handler_write:<br>The number of requests to insert a row in a table  |
| handlemysql.<br>up-date | SampleLong | Sum | Long | Handler_update:<br>The number of requests to update a row in a table |

| Metric                      |        |      |                  |  |
|-----------------------------|--------|------|------------------|--|
| Name                        | Key    | Agg  | Type             | Description  |
| handlemysql.<br>pre-prepare | Sample | Long | Handler_prepare: | A counter for the pre-prepare phase of two-phase commit operations |

| Metric   |     |     |      |  |
|--|-----|-----|------|--|
| Name   | Key | Agg | Type | Description  |
| handlemysql.Sampler Lag.Handler_read_rnd:<br>read<br>rnd |     |     |      | The number of requests to read a row based on a fixed position. This value is high if you are doing a lot of queries that require sorting of the result. You probably have a lot of queries that require |

| Metric                |        |      |      |   |
|-----------------------|--------|------|------|---|
| Name                  | Key    | Agg  | Type | Description   |
| handlemysql_read_last | Sample | Long | Int  | Handler_read_last: The number of requests to read the last key in an index. With ORDER BY, the server will issue a first-key request followed by several next-key requests, whereas with ORDER BY DESC, the server will issue a |

| Metric                         |            |     |      |   |
|--------------------------------|------------|-----|------|---|
| Name                           | Key        | Agg | Type | Description   |
| handlemysql_savepoint_rollback | SampleLong | Sum | Long | The number of requests for a storage engine to roll back to a savepoint |



| Metric                        |        |          |                   |  |
|-------------------------------|--------|----------|-------------------|--|
| Name                          | Key    | Agg      | Type              | Description  |
| handlemysql.<br>dis-<br>cover | Sample | Discover | Handler_discover: | The MySQL server can ask the ND-B-CLOUD storage engine if it knows about a table with a given name. This is called discovery. Handler_discover indicates the number of times that tables have been discovered using this |

| Metric                        |     |     |      |   |
|-------------------------------|-----|-----|------|---|
| Name                          | Key | Agg | Type | Description   |
| handlemysql.Sampler.read_prev |     | Sum | Long | Handler_read_prev:<br>The number of requests to read the previous row in key order. This read method is mainly used to optimize ORDER BY ... DESC |

| Metric   |     |     |      |  |
|--|-----|-----|------|--|
| Name   | Key | Agg | Type | Description  |
| handlemysql.Sampler.Lag.Handler.read_rnd_next: |     |     |      |  |
| read   |     |     |      | The number of requests to read the next row in the data file. This value is high if you are doing a lot of table scans. Generally this suggests that your tables are not properly indexed or that your queries are |
| rnd  |     |     |      |  |
| next   |     |     |      |  |
|  |     |     |      |  |

| Metric                      |        |      |                 |  |
|-----------------------------|--------|------|-----------------|--|
| Name                        | Key    | Agg  | Type            | Description  |
| handlemysql.<br>com-<br>mit | Sample | Long | Handler_commit: | The<br>num-<br>ber<br>of<br>in-<br>ter-<br>nal<br>COM-<br>MIT<br>state-<br>ments |