

FIRST_SEEN	
LAST_SEEN	

```
SELECT * FROM users WHERE id = 42 SELECT * FROM users WHERE id = 1337 SELECT * FROM users
WHERE id = ?
```

PmaControl

Aspirateur

Aspirateur

```
SELECT
    DIGEST,
    DIGEST_TEXT,
    COUNT_STAR,
    SUM_TIMER_WAIT,
    AVG_TIMER_WAIT,
    SUM_ROWS_EXAMINED,
    SUM_ROWS_SENT,
    SUM_NO_INDEX_USED,
    SUM_NO_GOOD_INDEX_USED,
    FIRST_SEEN,
    LAST_SEEN
FROM performance_schema.events_statements_summary_by_digest
WHERE DIGEST IS NOT NULL
ORDER BY SUM_TIMER_WAIT DESC
LIMIT 500;
```

```
LIMIT 500 PmaControl 500
```

```
set_value('general_json')
```

Listener

```
Listener Digest::integrate()
```

1. performance_schema TRUNCATE Digest::integrate

2. [REDACTED]

3. [REDACTED] P95 [REDACTED] 95 [REDACTED]

4. [REDACTED] **ts_mysql_digest_stat** [REDACTED] RocksDB [REDACTED]

Aspirateur

```
-> SELECT FROM performance_schema[REDACTED]
-> INSERT INTO ts_value_general_json
```

Listener

```
-> [REDACTED]ts_max_date [REDACTED]
-> Digest::integrate()
-> [REDACTED] - [REDACTED]
-> [REDACTED]
-> [REDACTED] P95
-> INSERT INTO ts_mysql_digest_stat
```

ts_mysql_digest_stat [REDACTED]

[REDACTED]

```
CREATE TABLE ts_mysql_digest_stat (
  id BIGINT UNSIGNED AUTO_INCREMENT,
  server_id INT UNSIGNED,
  digest VARCHAR(64),
  digest_text TEXT,
  period_start DATETIME,
  period_end DATETIME,
  exec_count BIGINT UNSIGNED,
  total_time_ms DECIMAL(20,3),
  avg_time_ms DECIMAL(15,3),
  p95_time_ms DECIMAL(15,3),
  rows_examined BIGINT UNSIGNED,
  rows_sent BIGINT UNSIGNED,
  no_index_used BIGINT UNSIGNED,
  PRIMARY KEY (id),
  KEY idx_server_digest (server_id, digest, period_start)
) ENGINE=ROCKSDB
PARTITION BY RANGE (TO_DAYS(period_start)) (
  PARTITION p20260413 VALUES LESS THAN (TO_DAYS('2026-04-14')),
```

```
PARTITION p20260414 VALUES LESS THAN (TO_DAYS('2026-04-15')),
...
);
```

操作

- `ALTER TABLE ts_mysql_digest_stat DROP PARTITION p20260401;`
- `ALTER TABLE ts_mysql_digest_stat DROP PARTITION p20260402;`
- `ALTER TABLE ts_mysql_digest_stat DROP PARTITION p20260403;`

配置

配置项

配置项

ID	SQL	Rows	Exec Time (ms)	P95 (ms)	IO (KB)
1	SELECT * FROM orders WHERE customer_id = ? AND status = ?	12,430	45.2	234.5	1,245,000
2	UPDATE inventory SET stock = stock - ? WHERE product_id = ?	8,200	12.3	89.1	820,000
3	SELECT o.*, c.name FROM orders o JOIN customers c ON o.customer_id = c.id	3,150	78.9	445.2	3,150,000
4	INSERT INTO audit_log (...)	45,600	1.2	5.3	0
5	SELECT COUNT(*) FROM sessions WHERE last_active < ?	980	234.5	890.1	98,000,000

配置项

配置项

配置项 PmaControl 配置

- `no_index_used`
- `rows_examined / rows_sent > 100:1`
- `no_index_used`

配置项

rows_examined / rows_sent []

```
SELECT * FROM orders WHERE customer_id = ?
1,245,000
12,430
100:1
```

100:1 MariaDB / MySQL 100 1 []

customer_id []

```
SHOW INDEX FROM orders WHERE Column_name = 'customer_id';
```

[]

```
ALTER TABLE orders ADD INDEX idx_customer_id (customer_id);
```

SUM_NO_INDEX_USED []

PmaControl SUM_NO_INDEX_USED MariaDB / MySQL []

PmaControl EXPLAIN []

PmaControl []

```
EXPLAIN SELECT * FROM orders WHERE customer_id = 42 AND status = 'pending';
```

[]

- Type = ref type = eq_ref []
- Type = range []
- Type = ALL []

Marina+ Agent []

Marina+ PmaControl []

- rows_examined/rows_sent []
- SELECT * [] ORDER BY []
- sort_buffer_size join_buffer_size []

Marina+ — DBA

PMM **Percona**

PMM

	PmaControl	PMM
	performance_schema	performance_schema + slowlog
	Aspirateur + MySQL	mysqld_exporter + QAN
	ts_mysql_digest_stat	ClickHouse
	/ MySQL	
P95		
		ClickHouse
	Marina+	Query Analytics + PMM UI

PMM

PmaControl PmaControl

40%

```
#1 SELECT u.*, p.* FROM users u
JOIN purchases p ON u.id = p.user_id
WHERE p.created_at > ? AND u.country = ?

/: 5,200 : 234ms P95: 1,200ms : 45M
```

rows_examined / rows_sent 4500 5,200

PmaControl `EXPLAIN`

```
+----+-----+-----+-----+-----+-----+-----+
| id | type | table   | key  | rows | filt | Extra |
+----+-----+-----+-----+-----+-----+-----+
| 1  | ALL  | users   | NULL | 1.2M | 10%  | where |
| 1  | ref  | purchases | idx1 | 15   | 33%  | where |
+----+-----+-----+-----+-----+-----+-----+
```

`users` `type=ALL` `country`

```
ALTER TABLE users ADD INDEX idx_country (country);
```

`PmaControl`

```
#1 SELECT u.*, p.* FROM users u
JOIN purchases p ON u.id = p.user_id
WHERE p.created_at > ? AND u.country = ?

Rows: 5,200  Time: 12ms  P95: 45ms  Rows Read: 78K
```

234ms 12ms 19 4500 78K 577

1. `TRUNCATE performance_schema`

PmaControl `TRUNCATE TABLE performance_schema.events_statements_summary_by_digest`

2. `performance_schema_digests_size`

MariaDB / MySQL `N`

```
[mysqld]
performance_schema_digests_size = 10000 ; 5000
```

3. 数据库连接

PmaControl 在 performance_schema 中配置数据库连接

4. 配置 rows_examined / rows_sent

配置 rows_examined > 100:1 和 rows_sent > 1000:1

5. 配置 P95

配置 P95 为 10ms 和 P95 为 500ms

配置

Performance_schema 在 MariaDB / MySQL 中配置 PmaControl 在 Aspirateur -> Digest::integrate -> ts_mysql_digest_stat -> 配置

配置 Marina+ 配置