





FIRST_SEEN	YYYYMM
LAST_SEEN	YYYYMM

```
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')),
```



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 Performance

PMM PmaControl performance\_schema

	<b>PmaControl</b>	<b>PMM</b>
	performance_schema	performance_schema + slowlog
	Aspirateur  SSH + MySQL	mysqld_exporter + QAN
	ts_mysql_digest_stat  RocksDB	ClickHouse  QAN
	MariaDB / MySQL	Percona agent
P95		
		ClickHouse
	EXPLAIN  Marina+	Query Analytics + PMM UI

**PMM** **performance\_schema** PmaControl performance\_schema

PmaControl 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`

`country`

```
ALTER TABLE users ADD INDEX idx_country (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  Memory: 78K
```

`234ms` `12ms` `19` `4500` `78K` `577`

`country`

### 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

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Performance\_schema 在 MariaDB / MySQL 中配置 PmaControl 在 Aspirateur -> Digest::integrate -> ts\_mysql\_digest\_stat ->

配置 Marina+ 配置