



**PERCONA**

Databases run better with Percona

PERCONA

# Percona Monitoring and Management:

## The Essential Tool for Monitoring and Managing Production Databases

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MySQL DBA, Percona



PERCONA  
Monitoring and  
Management

# Bhuvaneshwaran



- ❖ Over 8 years of experience in MySQL and its related technologies
- ❖ Joined Percona in July 2021.
- ❖ Serve as a custodian of data health and security for our clients, managing high-performance MySQL clusters to ensure they are both resilient and secure.
- ❖ Check out my technical blogs and contributions on the Percona website: <https://www.percona.com/blog/author/bhuvaneshwaran/>

# What is PMM

- Free and Open Source observability platform
- Combines deep query analytics with real-time metrics
- Give single pane of glass
- Solves block box problem of database
- Eliminates vendor lock-in and high licensing cost
- Not just a monitoring tool, its a management tool



# What does PMM do?

- Monitoring
- Alerting
- QAN
- Advisors
- Backup/restore



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# Use of PMM

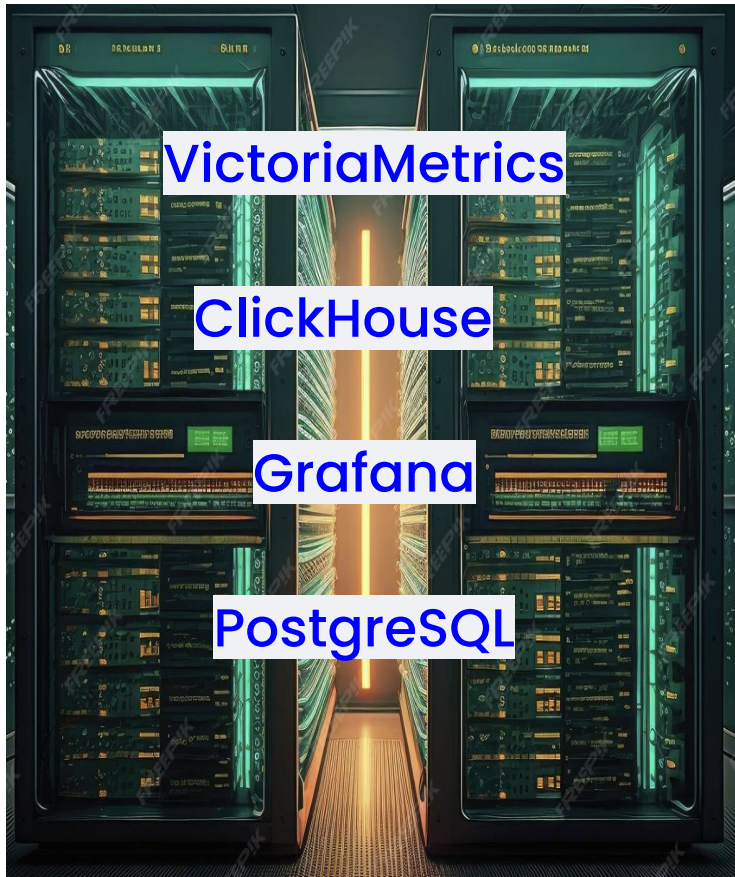
- Performance Troubleshooting (Root Cause Analysis)
- Capacity Planning and Forecasting
- Database Health and Security Auditing
- High Availability (HA) and Replication Monitoring



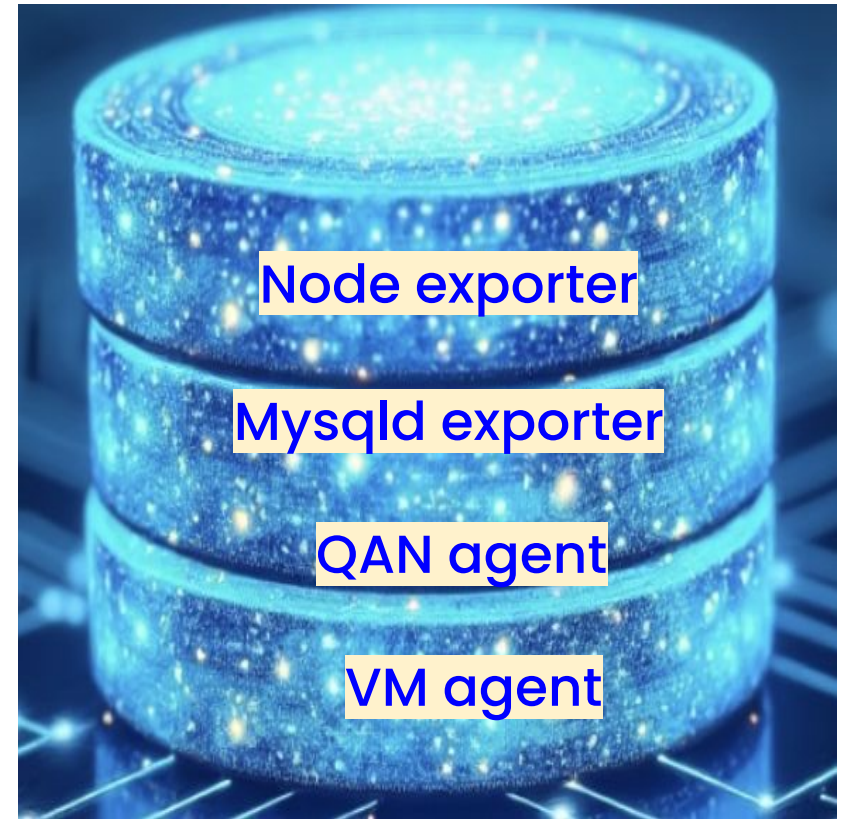
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# How PMM works

PMM server



DB server



# Default Dashboard

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Home

Interval: Auto | Environment: All | Node Names: All | PMM Annotations:

Last 12 hours | Refresh | 1m

### Overview

Monitored DB Services					Monitored DB Instances				
MySQL	MongoDB	PostgreSQL	ProxySQL	Valkey	MySQL	MongoDB	PostgreSQL	ProxySQL	Valkey
4	0	1	0	0	3	0	1	0	0

Monitored Nodes	Min Node Uptime	Min DB Uptime	Database Connections	Database Queries/s (QPS)
5	2.0 days	2.0 days	22	87.9

Total RAM	Virtual Memory Total	Disk Space Total	Disk Reads	Disk Writes
37.1 GiB	37.1 GiB	162.4 GiB	1.3 MB/s	599.0 kB/s

Total Virtual CPUs	Failed advisors	PMM Upgrade
20	0 / 5 / 13 / 16	Current version: 3.6.0 (February 03, 2026 UTC) You are up to date Last check: March 01, 10:20 UTC

### Anomaly Detection

CPU Anomalies	High CPU Servers
	Last 15 minutes



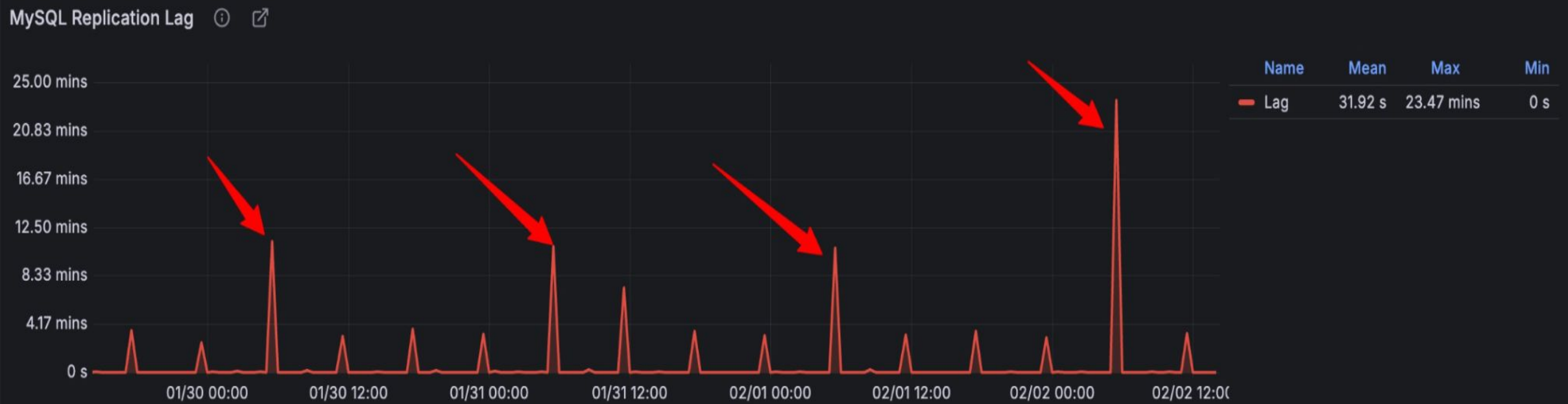
# Troubleshooting with PMM

# Problem

Interval: Auto | Replication Set: All | Service Name: [redacted] | PMM Annotations:  | Home | Query Analytics | Last 4 days UTC | Refresh | 1m

Compare | MySQL | HA | Services | PMM

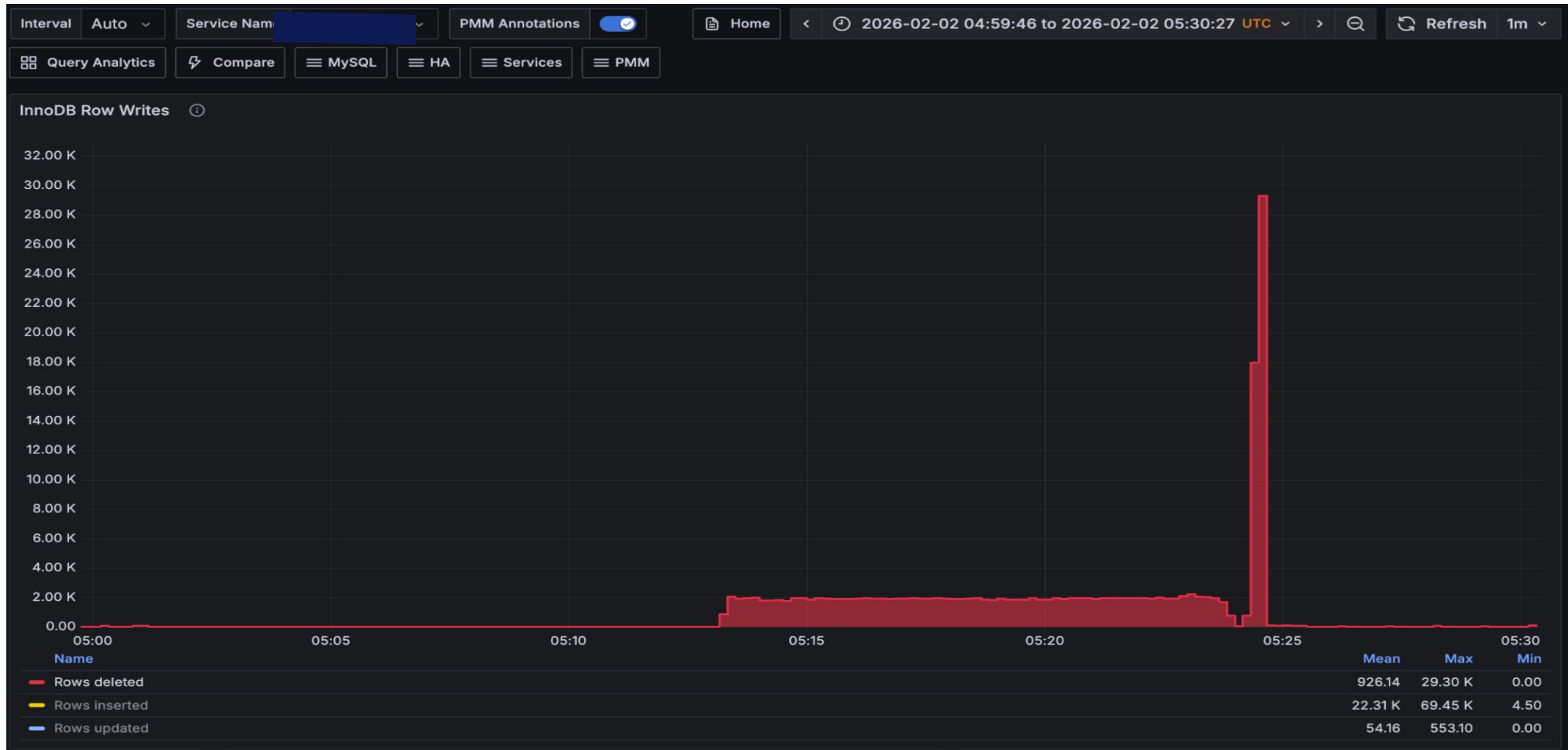
Node	IO Thread Ru...	SQL Thread R...	Replication Er...	Read Only	Replication De...
[redacted]	Yes	Yes	N/A	Yes	0 s



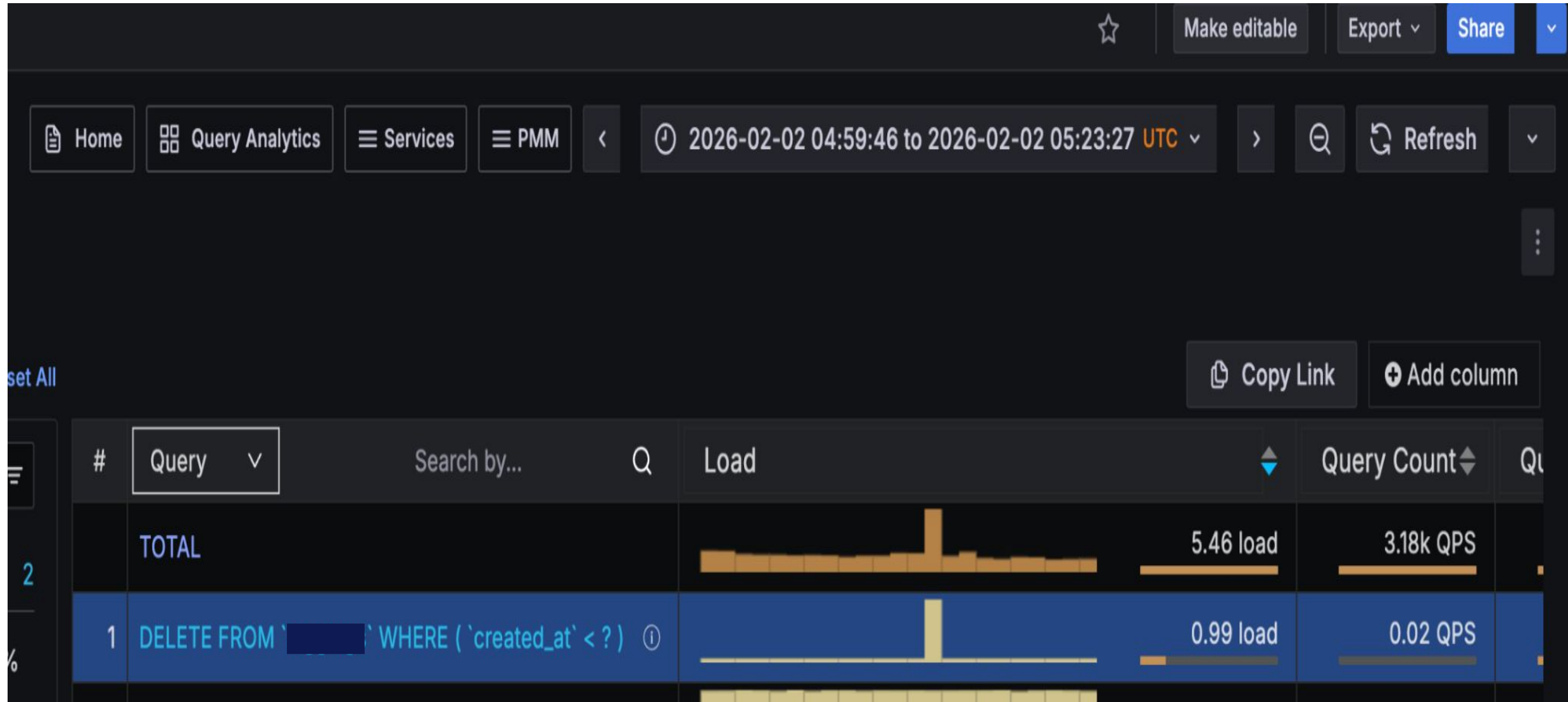
# Analysis



# Analysis



# Analysis



# Analysis

Metrics

Metric	Rate/Second	Sum	Per Query Stats
Query Count	0.02 QPS	24.00	1.00
Query Count with errors	<0.01 QPS	12.00	25.53% of total 0.50
Query Time	0.99 load	0:23:29	18.17% of total 58.70 sec
Lock Time	0.43 (avg load)	0:10:11	98.97% of total 43.37% of query time 25.46 sec
Rows Examined	865.43 (per sec)	1.23m	0.02% of total 51.24k
Rows Affected	865.43 (per sec)	1.23m	65.86% of total 51.24k

# Recommendations

1. Perform DELETES in Smaller Batches.
2. Configuration optimization

```
innodb_use_fdatasync = OFF -> ON
```

```
innodb_doublewrite_pages = 4 -> 128
```



# Alerting

- The system ability to detect unusual activity in database environments
- Watch as watchman 24/7
- Notifies of important
- Core goal - When something needs your attention
- Use smart trigger
- Rule -> threshold-> Contact point
- Silence when needed

1. Default Alerts

2. Custom Alerts



# Configure Mail/Slack alert

- Alerting → Contact points
- <https://www.percona.com/blog/enable-email-sending-in-percona-monitoring-and-management-2/>

Alerting > Contact points

## Contact points

Choose how to notify your contact points when an alert instance fires

Alertmanager Grafana

### Update contact point

Manage permissions

Name \*

Percona\_alert\_email

Integration

Email

Addresses

You can enter multiple email addresses using a ";", "\n" or "," separator

waranbhuvanes396@gmail.com

> Optional Email settings

> Notification settings

Integration

Slack

Recipient

Specify channel, private group, or IM channel (can be an encoded ID or a name) - required unless you provide a webhook

general

Token

Provide a Slack API token (starts with "xoxb") - required unless you provide a webhook

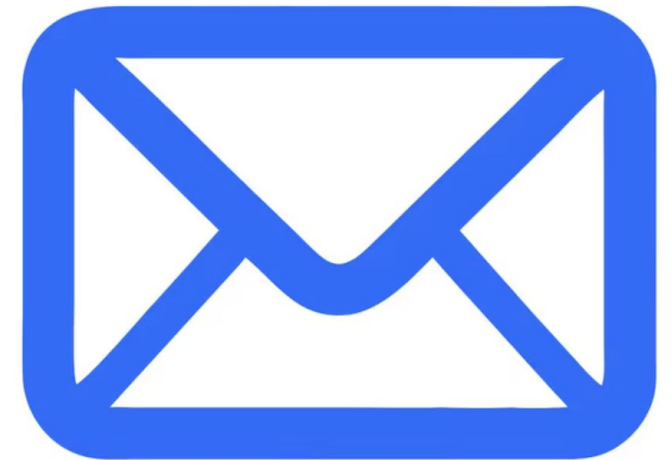
Webhook URL

Optionally provide a Slack incoming webhook URL for sending messages, in this case the token isn't necessary

configured

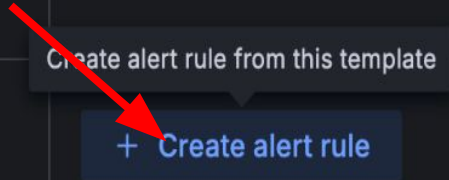
Reset

Test Duplicate Delete



# Default Alerts

MySQL down	Built-in Created at: 2001-01-01	+ Create alert rule
MySQL replication running IO	Built-in Created at: 2001-01-01	+ Create alert rule
MySQL replication running SQL	Built-in Created at: 2001-01-01	+ Create alert rule
MySQL restarted	Built-in Created at: 2001-01-01	+ Create alert rule
MySQL connections in use	Built-in Created at: 2001-01-01	+ Create alert rule



Save rule and exit

Cancel

# Create alert rule from template

## Template

The alert template to use for this rule.

MySQL replication running IO

## Name

The name for this rule.

pmm\_mysql\_replication\_io\_running Alerting Rule

## Duration

Once condition is breached, alert will go into pending state. If it is pending for longer than this value, it will become a firing alert.

60s

## Severity

The severity level for the alert triggered by this rule.

Critical

## Folder

Select a folder to store your rule in.

alerts

or

+ New folder

## Evaluation group and interval

small

or

+ New evaluation group

All rules in the selected group are evaluated every 10s.

## Filters

Apply rule only to required services or nodes.

Add Filter

> Advanced details

# Create custom alert

- Alerting → Alert Rules → New Alert Rule

### 1. Enter alert rule name

Enter a name to identify your alert rule.

Name

### 2. Define query and alert condition

Define query and alert condition. [Need help?](#)  Advanced options

**Metrics**  10 minutes

[Kick start your query](#) [Explain](#)

Metrics browser >

> Options Legend: Auto Format: Time series Step: auto Type: Instant

Alert condition

WHEN QUERY IS ABOVE

### 3. Add folder and labels

Organize your alert rule with a folder and set of labels. [Need help?](#)

Folder

Select a folder to store your rule in.

or

Labels

Add labels to your rule for searching, silencing, or routing to a notification policy. [Need help?](#)

No labels selected

### 4. Set evaluation behavior

Define how the alert rule is evaluated. [Need help?](#)

Evaluation group and interval

or

All rules in the selected group are evaluated every 30s.

Pending period

Period during which the threshold condition must be met to trigger an alert. Selecting "None" triggers the alert immediately once the condition is met.

> [Configure no data and error handling](#)

### 5. Configure notifications

Select who should receive a notification when an alert rule fires.  Advanced options

Recipient

Notifications for firing alerts are routed to a selected contact point. [Need help?](#)

Alertmanager: grafana

Contact point

[View or create contact points](#)

Email

Slack

Muting, grouping and timings (optional)

### 6. Configure notification message

Add more context to your alert notifications. [Need help?](#)

Summary (optional)

Short summary of what happened and why.

# Advisor

- Provide automated insights and recommendations
- Scan database to see if the best practices followed
- Uncover problems before become larger issues
- Give detailed explanations of the risk and specific recommendations



# Configuration Advisor

- Version check for 5.6 and 5.7
- Generic configuration for binlog, redo log, general log and error log
- Replication configuration (read-only, replica\_parallel\_workers, sync\_binlog, log\_replica\_update, replica\_skip\_error, replica\_exec\_mode)
- InnoDB configuration (innodb\_log\_file\_size, innodb\_file\_per\_table, innodb\_strict\_mode)

# Security Advisor

- Secure\_file\_priv - select into outfile file.csv
- Secured transport - require-secure-transport
- password lifetime -default-password-lifetime
- Anonymous user creation
- Users with host like '%'
- Root with remote login
- User with super privileges
- User without password
- Replica without replication\_slave

# Query Advisor

- On disk temporary tables
- Table without primary key
- Index size larger than data size

# Backup

- Pmm allows to take backup using PMM users
- Cron schedule
- Available options

Only xtrabackup

Only s3 upload

Mysql version should match with XB version

All Backups Create backup

Filter	Status	Backup Name	Service Name	DB Technology	Created	Type	Location	Actions
	✔	Newserver_XB_schedule_2026...	ip-172-31-71-13-mysql	MySQL	2026-03-01 22:09:00	Full	s3disk (S3)	↓ ⋮
	✔	Newserver_XB_schedule_2026...	ip-172-31-71-13-mysql	MySQL	2026-03-01 22:08:00	Full	s3disk (S3)	↓ ⋮
	✔	new1_2026-02-27T11:08:16Z	ip-172-31-71-13-mysql	MySQL	2026-02-27 16:38:16	Full	s3disk (S3)	↓ ⋮
	✔	newserver_2026-02-27T10:45:...	ip-172-31-16-132-mysql	MySQL	2026-02-27 16:15:56	Full	s3disk (S3)	↓ ⋮

# Restore using PMM

Explore	Alerts	Advisors	Inventory	Service	Host	Vendor	Backup Date	Time	Backup Type	Storage	Actions
				Newsrerver_XB_schedule_2026...	ip-172-31-71-13-mysql	MySQL	2026-03-01	22:14:00	Full	s3disk (S3)	Restore from backup Delete backup
				new1_2026-02-27T11:08:16Z	ip-172-31-71-13-mysql	MySQL	2026-02-27	16:38:16	Full	s3disk (S3)	↓ ⋮
				newsrerver_2026-02-27T10:45:...	ip-172-31-16-132-mysql	MySQL	2026-02-27	16:15:56	Full	s3disk (S3)	↓ ⋮

### Restore from backup

Service selection:  Same service  Compatible services

Vendor: MySQL

Service name: ip-172-31-71-13-mysql

Data model: Physical

**Warning:** All scheduled backups for this service will be disabled. Please enable them after the restore.

# Useful links

PMM Demo : <https://pmmdemo.percona.com/>

PMM Document :

<https://docs.percona.com/percona-monitoring-and-management/3>

Percona community forum : <https://forums.percona.com/>

# Questions?



Thank You!