PMM for AWS

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Percona
Agenda

• What is different?
• What is additional?
• What is not there?
What is Different?

Doing alternative things
What is Different?

- Adding/Removing instances procedure
- Access requirements
- Configuration Requirements
Adding/Removing instances

No need to use the pmm-admin (From the pmm-client package)
Adding/Removing instances

<table>
<thead>
<tr>
<th>How to Add an Instance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add an Amazon RDS MySQL or Aurora MySQL Instance</td>
</tr>
<tr>
<td>Add a Remote PostgreSQL Instance</td>
</tr>
<tr>
<td>Add a Remote MySQL Instance</td>
</tr>
<tr>
<td>How to add a MySQL Instance</td>
</tr>
<tr>
<td>How to add a MongoDB Instance</td>
</tr>
<tr>
<td>How to add a Linux Instance</td>
</tr>
<tr>
<td>How to add a PostgreSQL Instance</td>
</tr>
</tbody>
</table>

Though you could use pmm-admin (more on that in a bit)
Adding/Removing instances

Use an IAM user account

Where do I get the security credentials for my Amazon RDS DB instance?
Access Requirements

Details on what is an IAM users are out of scope.

But not hard to find:
Access Requirements

IAM policy is part of the scope, though

Details:
Access Requirements

Once

1. IAM user is created
2. Policy is in place
3. And credentials are created….

We can continue adding instances to PMM!
# Adding/Removing instances

## Amazon RDS Credentials

Where do I get the security credentials for my Amazon RDS DB instance?

## Amazon RDS Instances

<table>
<thead>
<tr>
<th>Name</th>
<th>Region</th>
<th>Endpoint</th>
<th>Engine</th>
<th>Enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>jruszotest</td>
<td>eu-west-2</td>
<td>jruszotest.ch86gy8ltjqv.eu-west-2.rds.amazonaws.com:3306</td>
<td>aurora-mysql v5.7.12</td>
<td>○○</td>
</tr>
<tr>
<td>jruszotest-eu-west-2b</td>
<td>eu-west-2</td>
<td>jruszotest-eu-west-2b.ch86gy8ltjqv.eu-west-2.rds.amazonaws.com:3306</td>
<td>aurora-mysql v5.7.12</td>
<td>○○</td>
</tr>
<tr>
<td>cb-test-hc</td>
<td>us-east-1</td>
<td>cb-test-hc.can0nprz8rtd.us-east-1.rds.amazonaws.com:5432</td>
<td>postgres v10.6</td>
<td>○○○○ ○○○○</td>
</tr>
<tr>
<td>dbg-aurora-replicacreated1</td>
<td>us-east-1</td>
<td>dbg-aurora-replicacreated1.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>aurora-mysql v5.7.12</td>
<td>○○</td>
</tr>
<tr>
<td>dbg-aurora1</td>
<td>us-east-1</td>
<td>dbg-aurora1.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>aurora-mysql v5.7.12</td>
<td>○○</td>
</tr>
<tr>
<td>dbg-aurora1-us-east-1c</td>
<td>us-east-1</td>
<td>dbg-aurora1-us-east-1c.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>aurora-mysql v5.7.12</td>
<td>○○</td>
</tr>
<tr>
<td>dbg-rds1</td>
<td>us-east-1</td>
<td>dbg-rds1.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>mysql v5.7.25</td>
<td>○○○○ ○○</td>
</tr>
<tr>
<td>pgdb1</td>
<td>us-east-1</td>
<td>pgdb1.can0nprz8rtd.us-east-1.rds.amazonaws.com:5432</td>
<td>postgres v9.4.20</td>
<td>○○○○ ○○○○</td>
</tr>
<tr>
<td>przemek-test</td>
<td>us-east-1</td>
<td>przemek-test.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>mysql v5.7.25</td>
<td>○○○○ ○○○○</td>
</tr>
</tbody>
</table>
Adding/Removing instances

Amazon RDS and remote instances

<table>
<thead>
<tr>
<th>Name</th>
<th>Endpoint</th>
<th>Region</th>
<th>Engine</th>
<th>Remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>dbg-aurora-repliccreated1</td>
<td>dbg-aurora-repliccreated1.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>us-east-1</td>
<td>aurora-mysql 5.7.12</td>
<td>[trash can]</td>
</tr>
<tr>
<td>dbg-aurora1-us-east-1c</td>
<td>dbg-aurora1-us-east-1c.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>us-east-1</td>
<td>aurora-mysql 5.7.12</td>
<td>[trash can]</td>
</tr>
<tr>
<td>dbg-aurora1</td>
<td>dbg-aurora1.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>us-east-1</td>
<td>aurora-mysql 5.7.12</td>
<td>[trash can]</td>
</tr>
<tr>
<td>dbg-rds1</td>
<td>dbg-rds1.can0nprz8rtd.us-east-1.rds.amazonaws.com:3306</td>
<td>us-east-1</td>
<td>mysql 5.7.25</td>
<td>[trash can]</td>
</tr>
</tbody>
</table>
Adding/Removing instances

What about PostgreSQL?
Adding/Removing instances

PostgreSQL RDS instance can be added as a remote DB instance:
Adding/Removing instances

Only credentials access are required
Adding/Removing instances

But also available on the remote instances dashboard

Amazon RDS and remote instances

<table>
<thead>
<tr>
<th>Name</th>
<th>Endpoint</th>
<th>Region</th>
<th>Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>percona.can0nprz8rtd.us-east-1.rds.amazonaws.com</td>
<td>percona.can0nprz8rtd.us-east-1.rds.amazonaws.com:5432</td>
<td>remote</td>
<td>PostgreSQL 10.6</td>
</tr>
</tbody>
</table>
Adding/Removing instances

the postgres_exporter will immediately kick in
Adding/Removing instances
Adding/Removing instances
Adding/Removing instances
Adding/Removing instances

The “Amazon RDS / Aurora MySQL Metrics” dashboard is going to be **deprecated** on PMM 2
Adding/Removing instances

PMM 2?? Whaat?

Currently on Alpha:
https://www.percona.com/blog/2019/05/03/percona-monitoring-and-management-pmm-2-0-0-alpha2-is-now-available/
Adding/Removing instances

PMM 2?? Whaat?

But coming as Beta TOMORROW
May 30th!!!
Adding/Removing instances

Why is the “Amazon RDS / Aurora MySQL Metrics” dashboard going to be deprecated on PMM 2?
Adding/Removing instances

Because it was an intermediate solution.

It was Grafana’s CloudWatch data source-based
Adding/Removing instances

It was kind of tricky to set it up.

```
[root@4d8baa5fc41e .aws]# pwd
/usr/local/percona/pmm-client/.aws
[root@4d8baa5fc41e .aws]# cat credentials
[default]
aws_access_key_id = 
aws_secret_access_key = 
[root@4d8baa5fc41e .aws]# 
```
Adding/Removing instances

And data was not persisted on Prometheus
Adding/Removing instances

All that was fixed when rds_exporter were introduced
Configuration requirements

- Performance Schema enabled for QAN
Configuration requirements

- Performance Schema enabled for QAN
- Enable *Enhanced Monitoring* for the RDS instance
Configuration requirements

- Performance Schema enabled for QAN
- Enable *Enhanced monitoring* for the RDS instance
- If you want to use the legacy “Amazon RDS/Aurora MySQL Metrics” dashboard: Create the .aws/credentials file
Configuration requirements

Docker steps:

- `docker exec -ti pmm-server bash`
- `mkdir /usr/share/grafana/.aws`
- `vi /usr/share/grafana/.aws/credentials`

```
[default]
aws_access_key_id=YOURACCESSKEY
aws_secret_access_key=YOURSECRETKEY
```
Adding an RDS instance from the command line

Know that pmm-admin can still be used to add RDS instances to PMM...

...But it is not recommended
Adding an RDS instance from the command line

- EC2 instance - `yum -y install pmm-client`
- `pmm-admin config`
- `pmm-admin add mysql:metrics --server-host=SOMETHING-REMOTE`

Caveat is that you lose the rds_exporter - which means you don't have Host level metrics

Caution - if you install linux:metrics (pmm-admin add mysql) you will get local ec2 compute metrics which is weird and won't make sense
QAN

- Available through the Performance Schema.
- No slow log
- Currently not available for PostgreSQL (sorry)
How you manage to get Query Digest-like info from the Performance Schema?
How you manage to get Query Digest-like info from the Performance Schema?

The `performance_schema.events_statements_summary_by_digest` table got your back.

More on that can be found at https://www.percona.com/blog/2015/10/13/mysql-query-digest-with-performance-schema/
**QAN**

### PMM Query Analytics

#### Top 10 of 139 Queries by % Grand Total Time (NGTT)

<table>
<thead>
<tr>
<th>#</th>
<th>Query Abstract</th>
<th>Load</th>
<th>Count</th>
<th>Latency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TOTAL</td>
<td>0.03</td>
<td>100.00%</td>
<td>903.69 µs avg</td>
</tr>
<tr>
<td>2</td>
<td>COMMIT</td>
<td>0.01</td>
<td>34.19%</td>
<td>8.74%</td>
</tr>
<tr>
<td>3</td>
<td>SELECT information_schema.tables</td>
<td>&lt;0.01</td>
<td>8.74%</td>
<td>37.48 QPS</td>
</tr>
<tr>
<td>4</td>
<td>SELECT mysql.rds_history</td>
<td>&lt;0.01</td>
<td>7.94%</td>
<td>1.60 QPS</td>
</tr>
<tr>
<td>5</td>
<td>SELECT information_schema.PLUGINS</td>
<td>&lt;0.01</td>
<td>5.75%</td>
<td>0.02 QPS</td>
</tr>
<tr>
<td>6</td>
<td>SELECT performance_schema.events_statements...</td>
<td>&lt;0.01</td>
<td>5.48%</td>
<td>0.80 QPS</td>
</tr>
<tr>
<td>7</td>
<td>SELECT</td>
<td>&lt;0.01</td>
<td>3.39%</td>
<td>0.49 QPS</td>
</tr>
<tr>
<td>8</td>
<td>SELECT mysql.rds_replication_status</td>
<td>&lt;0.01</td>
<td>1.75%</td>
<td>0.02 QPS</td>
</tr>
<tr>
<td>9</td>
<td>SHOW GLOBAL STATUS</td>
<td>&lt;0.01</td>
<td>1.71%</td>
<td>1.77 QPS</td>
</tr>
<tr>
<td>10</td>
<td>UPDATE sbtest3</td>
<td>&lt;0.01</td>
<td>1.62%</td>
<td>0.63 QPS</td>
</tr>
</tbody>
</table>

**Display** | **All queries** | **First seen** | **Search by query abstract, fingerprint**

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**System Activity**

- Network Activity: 127.21 kbps min, 625.39 kbps max, 464.48 kbps avg
- CPU Utilization: 21.93% min, 26.42% max, 24.83% avg

**Database Server Activity**

- Queries (right y): 41.00 ops min, 73.93 ops max, 54.50 ops avg
- Peak Threads Connected: 9.00 avg
What is Additional?

Things custom made for AWS
What is Additional?

- RDS/Aurora own dashboards
- RDS_EXPORTER
RDS/Aurora dashboards
RDS/Aurora dashboards
rds_exporter

- Collect metrics from CloudWatch AND store it in Prometheus
- Advanced metrics available if Enhanced Monitoring is enabled
- Saves money (credits are used once)
- Allows for standard dashboards utilization

What is not There?

What isn’t available
What is not There?

• Anything that is not exposed by CloudWatch
• Anything that Aurora removed from regular InnoDB (like the change buffer, for example)
• Anything that is not featured for PostgreSQL, like QAN
Rate My Session

**Schedule**
Timezone: Europe/Berlin +02:00

11:20

**Details**
Introducing gh-ost: triggerless, painless, trusted online schema migrations

11:20 → 12:10, Matterhorn 2

**Rate & Review**
Tap a star to rate

Feedback (optional)

SUBMIT