REVISION HISTORY

Version	Date	Change description	Created by	Updated by	Reviewed by
V 1.0	November, 2022	Release 6.0	Hemanth/Yash	Raksha	Chiranjib

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Recommended Alerts using Grafana

Grafana allows to create alerting rules that query one or more data sources, reduce or transform the results and compare them to each other or to fix thresholds. When these are executed, Grafana sends notifications to the contact point. First create a contact point. When an alert fires, a notification is sent to all the contacts listed in contact point.

Addition of Contact Point:

1. In the Grafana menu, click the Alerting (bell) icon to open the Alerting page listing existing alerts.
2. Click Contact points to open the page listing existing contact points.
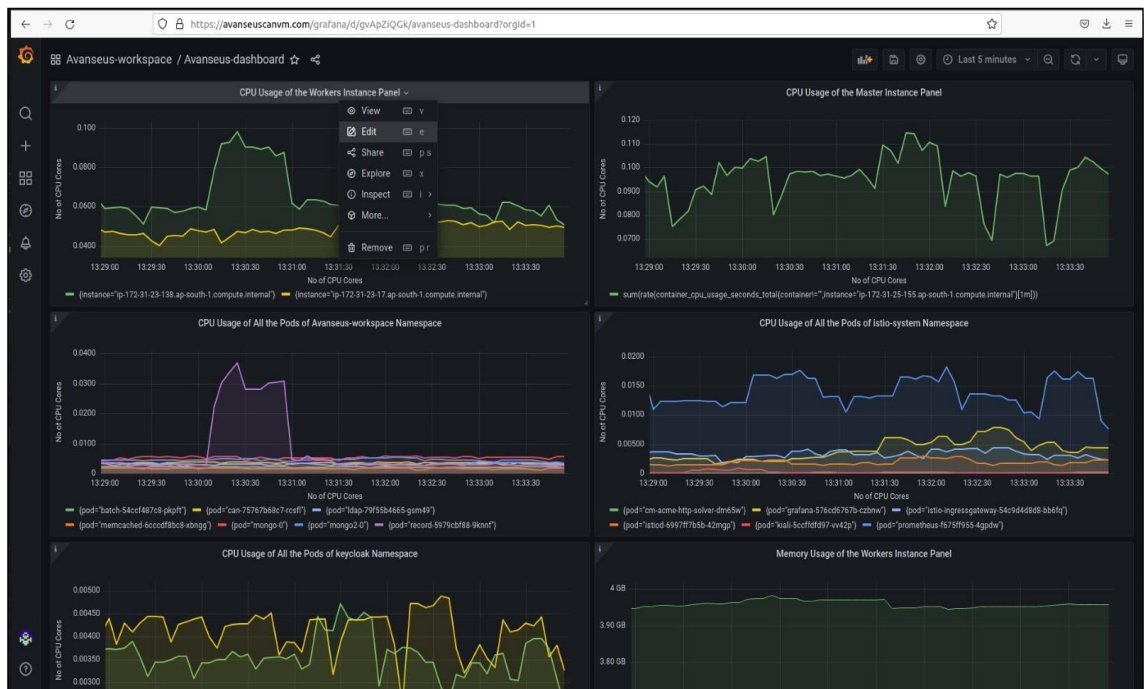3. Click edit on grafana-default-email contact point.

4. From Contact point type, select a type and fill out mandatory fields. For example, if email is selected, enter the email addresses. Or if Slack is selected, enter the Slack channel(s) and users who should be contacted.
5. In Notification settings, select Disable resolved message to stop being notified when an alert is resolved. This is an optional setting.
6. Click Save contact point to save the changes.

Creation of Alerts:

- **Create a Grafana managed alert for CPU Usage of 2 worker nodes of 4 CPU cores each.**

1. In the Grafana menu, search and open the Avanseus-dashboard which is in the Avanseus-workspace folder.

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2. In Avanseus-dashboard, from the CPU Usage of the Workers Instance Panel dropdown click edit where CPU Utilization of all the workers instances can be monitored.

3. In the Alert section, click **Create alert rule from this panel** where an alert rule for CPU usage of the workers instance panel is created.
4. Alerts are created for two worker nodes when CPU utilization is above 90%. Since two worker nodes are of four CPU cores, when 3.6 CPU cores (90%) is used, an alert is notified.
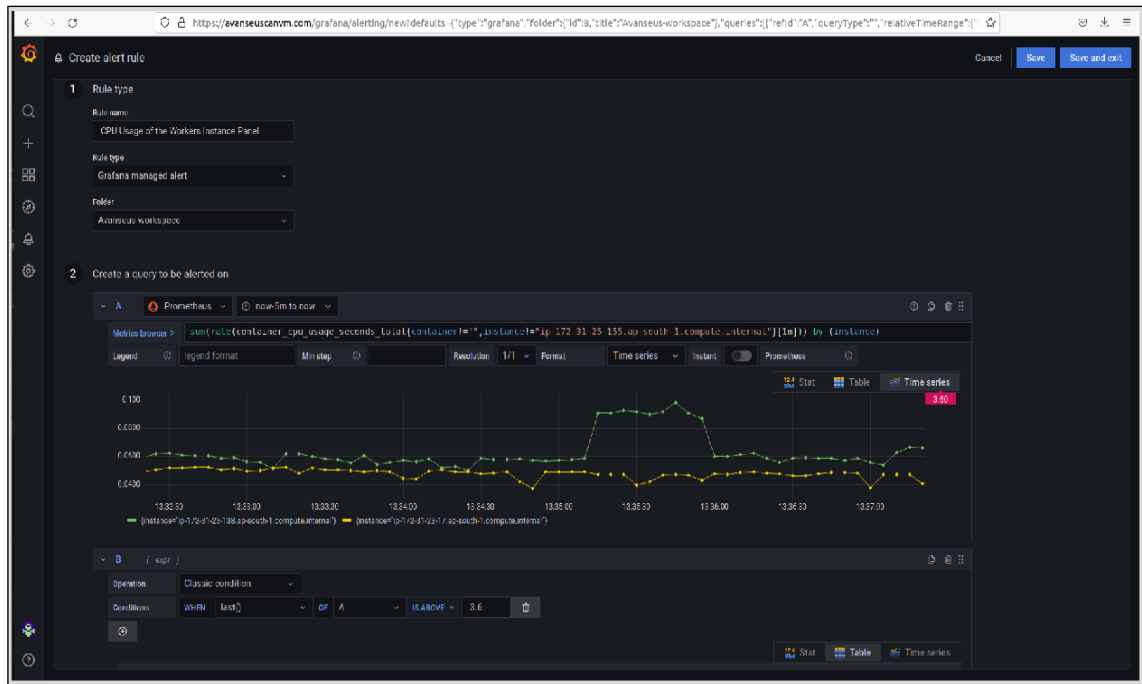5. In **Create a query to be alerted on** section, check the query A to only worker nodes.

```
sum(rate(container_cpu_usage_seconds_total{container!="",instance!="ip-172-31-25-155.ap-south-1.compute.internal"}[1m])) by (instance)
```
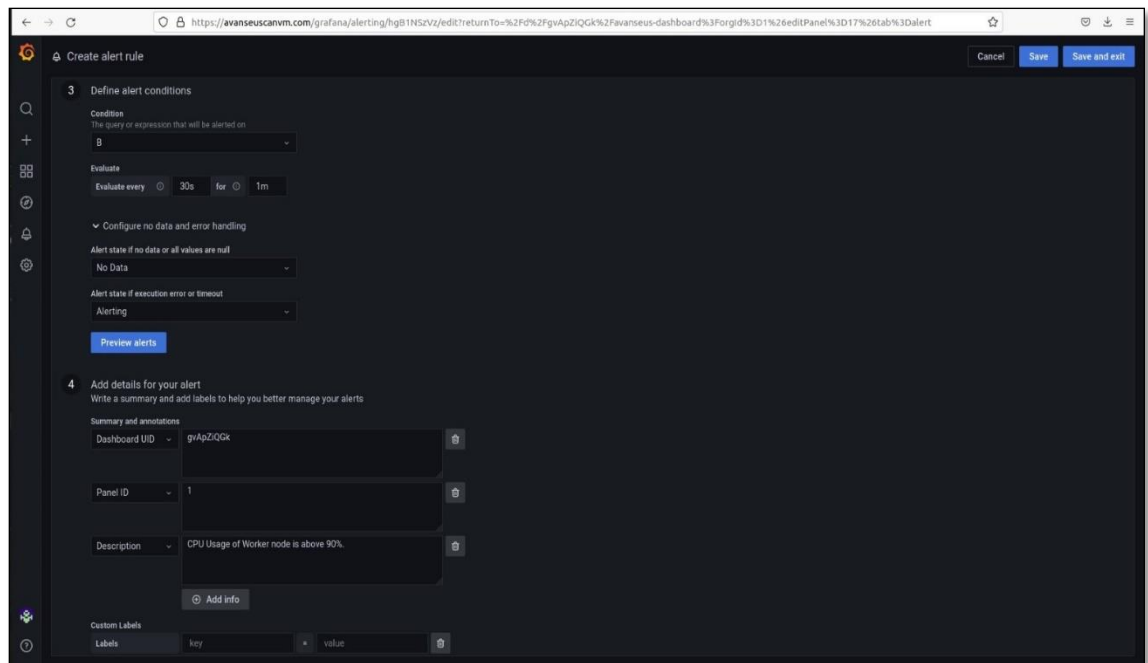
Here master node is ignored using:

(**instance!="ip-172-31-25-155.ap-south-1.compute.internl"**)

6. Add the condition in Expression part (B).

Select operation as **Classic condition** and condition as **WHEN - avg() OF - A ISABOVE - 3.6**

7. In **Define alert conditions** section, from the Condition drop-down, select the query or expression to trigger the alert (Select the expression B).
8. For Evaluate every, specify the frequency of evaluation. Must be a multiple of 10 seconds. For example, 1m, 30s (Set it as 30s).
9. For Evaluate for, specify the duration for which the condition must be true before an alert fires (Set it as 1m).
10. In Configure no data and error handling, configure alerting behavior in the absence of data.
11. Click Preview alerts to check the result of running the query at any particular moment. Preview excludes no data and error handling.
12. In **Add details for your alert** section, add a description and summary to customize alert messages. (Here we add a description as CPU usage of worker node is above 90%)
13. Click Save to save the rule or Save and Exit to save the rule and go back to the Alerting page.

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- **Create a Grafana managed alert for CPU Usage of a master node of 2 CPU cores.**

  1. In the CPU Usage of the Master Instance Panel, move to the alert section. Click **Create alert rule from this panel** where alert rule for CPU usage of the master instance panel can be created.
  2. Creating alerts for a master node when CPU utilization is above 90%. Since a master node is of two CPU cores, when 1.8 CPU cores (90%) is used, an alert is notified.
  3. In **Create a query to be alerted on** section, check the query A to only master node.
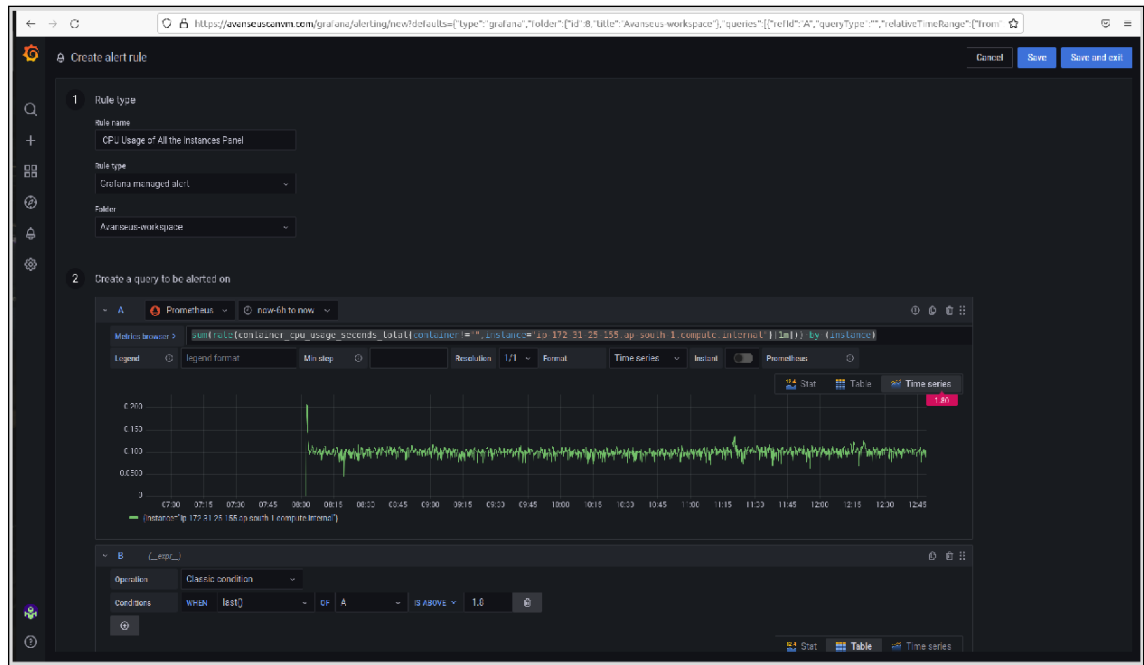
  ```
  sum(rate(container_cpu_usage_seconds_total{container!="",instance="ip-172-31-25-
  155.ap-south-1.compute.internal"}[1m])) by (instance)
  ```

  Master node is provided using:

  (**instance="ip-172-31-25-155.ap-south-1.compute.internl"**)
  4. Add the condition in Expression part (B).

  Select operation as **Classic condition** and condition as **WHEN - avg() OF - A ISABOVE - 1.8**

5. In **Define alert conditions** section, from the Condition drop-down, select the query or expression to trigger the alert (Select the expression B).
6. For Evaluate every, specify the frequency of evaluation. Must be a multiple of 10 seconds. For example, 1m, 30s (Set it as 30s).
7. For Evaluate for, specify the duration for which the condition must be true before an alert fires (Set it as 1m).
8. In Configure no data and error handling, configure alerting behavior in the absence of data.
9. Click Preview alerts to check the result of running the query at this moment. Preview excludes no data and error handling.
10. In **Add details for your alert** section, add a description and summary to customize alert messages (Add a description as CPU usage of master node is above 90%).
11. Click Save to save the rule or Save and exit to save the rule and go back to the Alerting page.

NOTE: All the alerts are configured based on the number of CPU cores that can be changes as per the user requirement.

● **Create a Grafana managed alert for Memory Usage of 2 worker nodes of 16 GB memory each.**

1. In the Memory Usage of the Workers Instance Panel, move to the alert section. Click the Create alert rule from this panel where alert rule can be created for Memory usage of the workers instance panel.
2. Creating alerts for two worker nodes when Memory utilization is above 90%. Since two worker nodes are of 16 GB Memory, when 14.4 GB Memory (90%) is used, an alert is notified.
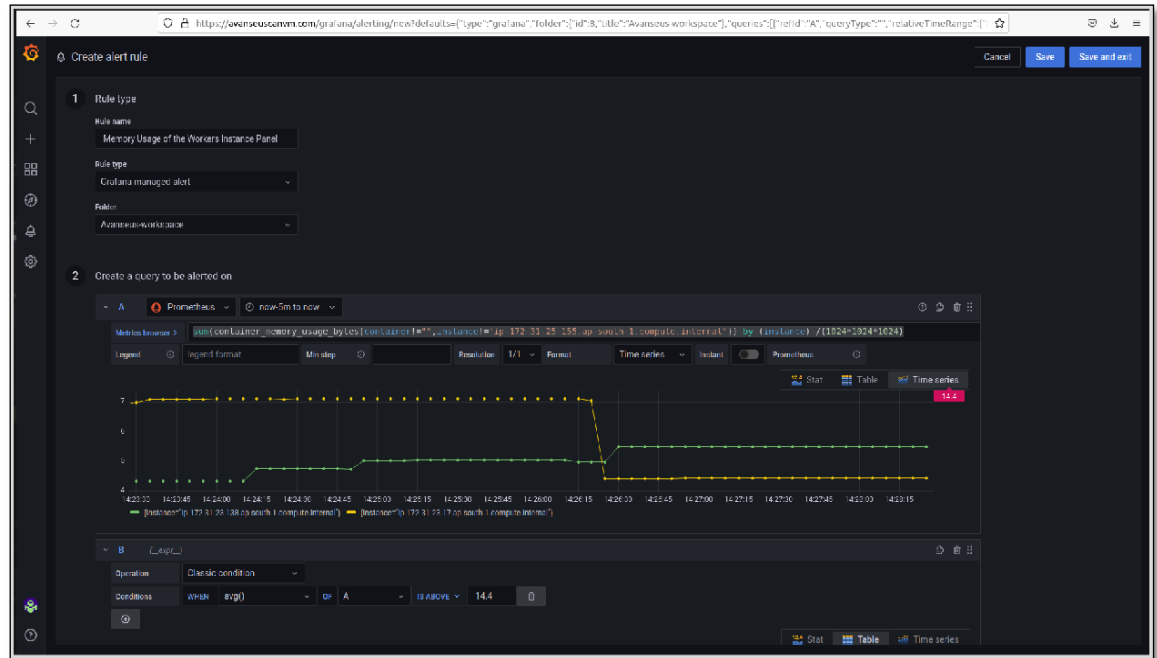3. In Create a query to be alerted on section, check the query A to only worker nodes.

```
sum(container_memory_usage_bytes{container!="",instance!="ip-172-31-25-155.ap-
south-1.compute.internal"})by(instance) /(1024*1024*1024)
```

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Ignore master node by

(**instance**!=**"ip-172-31-25-155.ap-south-1.compute.internl"**)

4. Add the condition in Expression part (B).

   Select operation as **Classic condition** and conditions as **WHEN - avg() OF - A ISABOVE - 14.4**

5. In **Define alert conditions** section, from the Condition drop-down, select the query or expression to trigger the alert (Select the expression B).
6. For Evaluate every, specify the frequency of evaluation. Must be a multiple of 10 seconds. For example, 1m, 30s (Set it as 30s).
7. For Evaluate for, specify the duration for which the condition must be true before an alert fires (Set it as 1m).
8. In Configure no data and error handling, configure alerting behavior in the absence of data.
9. Click Preview alerts to check the result of running the query at this moment. Preview excludes no data and error handling.
10. In **Add details for your alert** section, add a description and summary to customize alert messages (Add a description as Memory usage of worker node is above 90%).
11. Click Save to save the rule or Save and exit to save the rule and go back to the Alerting page.

● **Create a Grafana managed alert for Memory Usage of a master node of 8 GB Memory.**

1. In the Memory Usage of the Master Instance Panel, move to the alert section. Click the **Create alert rule from this panel** where alert rule can be created for Memory usage of the master instance panel.

2. Create alerts for a master node when Memory utilization is above 90%. Since a master node is of 8 GB Memory, when 7.2 GB Memory (90%) is used, an alert is notified.

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3. In **Create a query to be alerted on** section check the query A to only worker nodes.
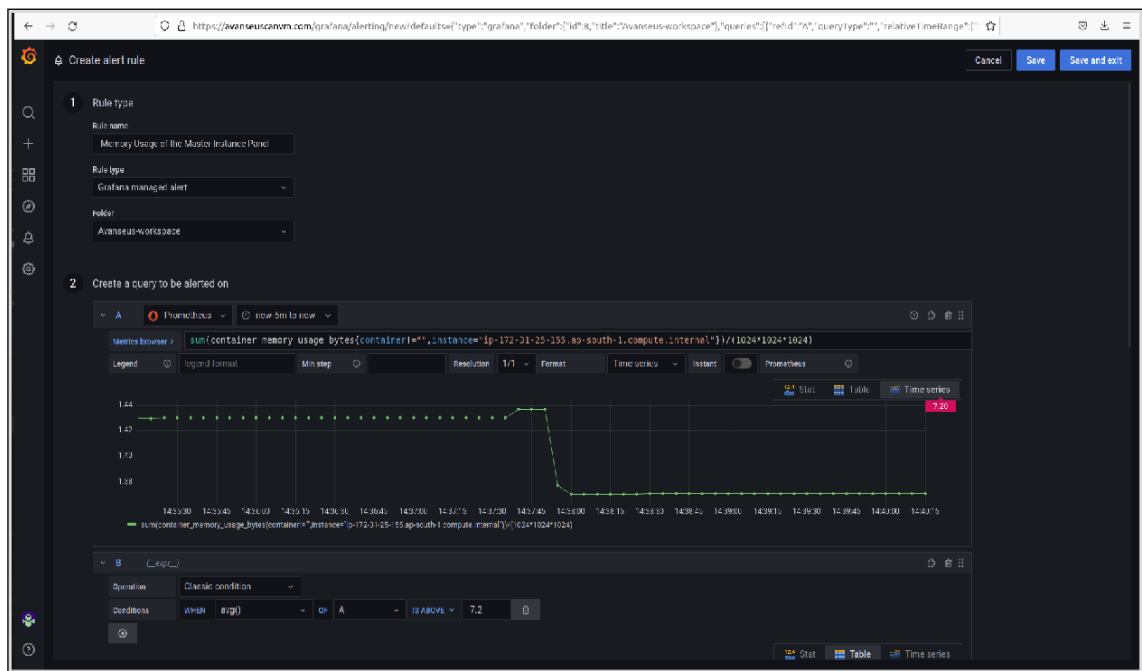
```
sum(container_memory_usage_bytes{container!="",instance="ip-172-31-25-155.ap-
south-1.compute.internal"})/(1024*1024*1024)
```

Provide master node by

(**instance="ip-172-31-25-155.ap-south-1.compute.internl"**)

4. Then add the condition in Expression part (B).

Select operation as **Classic condition** and conditions as **WHEN - avg() OF - A ISABOVE - 7.2**

5. In **Define alert conditions** section, from the Condition drop-down, select the query or expression to trigger the alert (Select the expression B).
6. For Evaluate every, specify the frequency of evaluation. Must be a multiple of 10 seconds. For example, 1m, 30s (Set it as 30s).
7. For Evaluate for, specify the duration for which the condition must be true before an alert fires. (Set it as 1m).
8. In Configure no data and error handling, configure alerting behavior in the absence of data.
9. Click Preview alerts to check the result of running the query at this moment. Preview excludes no data and error handling.
10. In **Add details for your alert** section, add a description and summary to customize alert messages (Add a description as Memory usage of master node is above 90%).
11. Click Save to save the rule or Save and exit to save the rule and go back to the Alerting page.

All the alerts are configured based on the Total Memory. Change the configuration as per user requirement.

For more details on how to configure alerts, refer to 'Customizing Alerts using Grafana' document.

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