

Graphite and Grafana

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Introduction

CPS system and application statistics and Key Performance Indicators (KPI) are collected by the system and can be displayed using a browser-based graphical metrics tool. This chapter provides a high-level overview of the tools CPS uses to collect and display these statistics.

The list of statistics available in CPS is consolidated in an Excel spreadsheet. After CPS is installed, this spreadsheet can be found in the following location on the Cluster Manager VM:

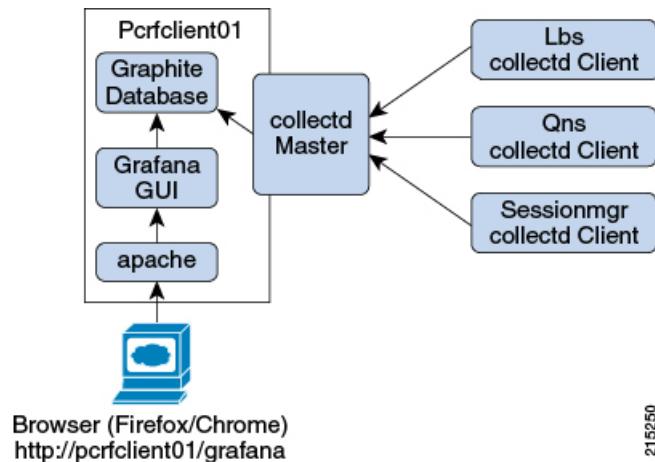
```
/var/qps/install/current/scripts/documents/QPS_statistics.xlsx
```

Graphite

Collected clients running on all CPS Virtual Machines (such as Policy Server (QNS), Policy Director (LB), and sessionmgr) push data to the Collected master on the pcrfclient01. The Collected master node in turn forwards the collected data to the Graphite database on the pcrfclient01.

The Graphite database stores system-related statistics such as CPU usage, memory usage, and Ethernet interface statistics, as well as application message counters such as Gx, Gy, and Sp.

Figure 1: Graphite



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Pcrfclient01 and pcrfclient02 collect and store these bulk statistics independently.

As a best practice, always use the bulk statistics collected from pcrfclient01. Pcrfclient02 can be used as a backup if pcrfclient01 fails.

In the event that pcrfclient01 becomes unavailable, statistics will still be gathered on pcrfclient02. Statistics data is not synchronized between pcrfclient01 and pcrfclient02, so a gap would exist in the collected statistics while pcrfclient01 is down.



Note

It is normal to have slight differences between the data on pcrfclient01 and pcrfclient02. For example, pcrfclient01 will generate a file at time t and pcrfclient02 will generate a file at time t +/- clock drift between the two machines.

Additional Graphite Documentation

To learn more about Grafana, refer to: <http://graphite.readthedocs.org/en/latest/>

For a list of all functions that can be used to transform, combine and perform computations on data stored in Graphite, refer to: <http://graphite.readthedocs.org/en/latest/functions.html>

Grafana

Grafana is a third-party metrics dashboard and graph editor provided with CPS 7.0 and higher.

Grafana provides a graphical or text-based representation of statistics and counters collected in the Graphite database.

**Note**

Grafana supports maximum five concurrent users.

Additional Grafana Documentation

This chapter provides information about the CPS implementation of Grafana. For more information about Grafana, or access the general Grafana documentation, refer to: <http://docs.grafana.org>.

Configure Grafana Users using CLI

In CPS 7.0.5 and higher releases, users must be authenticated to access Grafana. No default users are provided. In order to access Grafana, you must add at least one user as described in the following sections.

The steps mentioned in the sections describe how to add and delete users who are allowed view-only access of Grafana. In order to create or modify dashboards, refer to [Grafana Administrative User, on page 5](#).

After adding or deleting a Grafana user, manually copy the `/var/broadhop/.htpasswd` file from the pcrfclient01 VM to the pcrfclient02 VM.

Also, run `/var/qps/bin/support/grafana_sync.sh` to synchronize the information between two OAM (pcrfclient) VMs.

There is no method to change the password for a Grafana user; you can only add and delete users. The `change_passwd.sh` script cannot be used to change the password for Grafana users.

Log on to the pcrfclient01 VM to perform any of the following operations.

Add First User

-
- Step 1** Run the following command on the pcrfclient01 VM to create first user and encrypt the password:
`/usr/bin/htpasswd -cs /var/broadhop/.htpasswd user1`

- Step 2** When prompted for a password, enter and re-enter the password.
This step creates a password file and forces SHA encryption of the password.
-

Add Another User

-
- Step 1** Run the following command on the pcrfclient01 VM to create another user:
`/usr/bin/htpasswd -s /var/broadhop/.htpasswd user2`

- Step 2** When prompted for a password, enter and re-enter the password.

Delete a User

This step creates a password file and forces SHA encryption of the password.

Delete a User

Run the following command on the pcrfclient01 VM:

```
/usr/bin/htpasswd -D /var/broadhop/.htpasswd user2
```

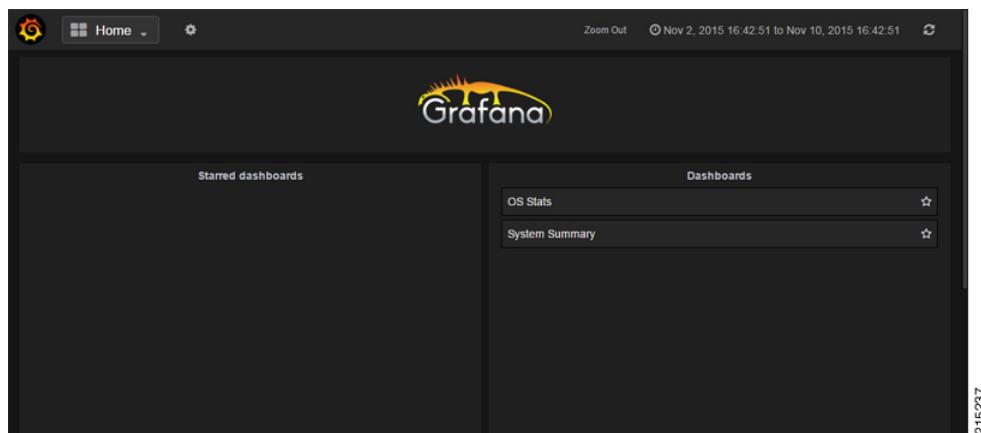
Connect to Grafana

Use the following URL to access Grafana.

- HA: https://<lbvip01>:9443/grafana
- All in One: http://<ip>:80/grafana

When prompted, enter the username and password of a user you created in [Configure Grafana Users using CLI, on page 3](#).

Figure 2: Grafana Home Screen



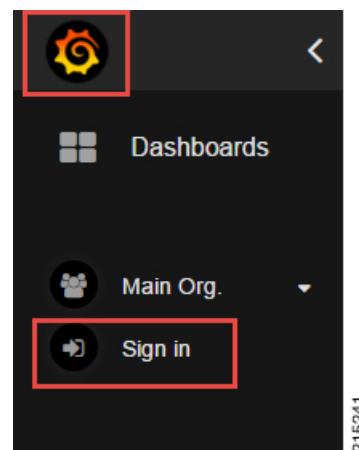
Grafana Administrative User

Log in as Grafana Admin User

To create or modify dashboards in Grafana, you must log in as the Grafana administrative user.

-
- Step 1** Click the Grafana logo in the upper left corner of your screen.

Figure 3: Grafana Logo



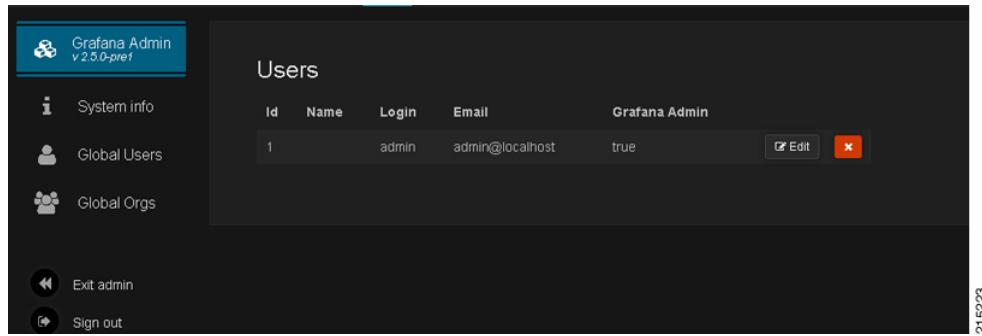
- Step 2** Click **Sign In**.

- Step 3** Enter the administrative username and password: **admin/admin**
-

Change Grafana Admin User Credentials

-
- Step 1** Log in as the administrative user (`admin/admin`).
 - Step 2** Click the Grafana logo, then click **Grafana admin**.
 - Step 3** Click **Global Users**.
 - Step 4** Click **Edit**.

Figure 4: Changing Grafana Admin User Credentials



The screenshot shows the Grafana Admin interface version v2.5.0-pre. The left sidebar has links for System info, Global Users (which is selected), and Global Orgs. The main content area is titled 'Users' and shows a table with one row:

ID	Name	Login	Email	Grafana Admin
1	admin	admin@localhost	true	<input checked="" type="checkbox"/> Edit X

At the bottom left are 'Exit admin' and 'Sign out' buttons. A timestamp '21:52:23' is at the bottom right.

Add a Grafana User

**Note**

The steps mentioned here can be performed only by **administrative** user.

- Step 1** Click the Grafana logo in the upper left corner of your screen.
- Step 2** Click **Sign in**. Enter the administrative username and password.
- Step 3** Click **Grafana admin** from the left side to open the **System info** pane on the right side.
- Step 4** Click **Global Users** to open a pane. By default, the **List** tab appears displaying the list of users currently configured in Grafana.

Figure 5: List Tab

A screenshot of the Grafana interface. At the top, there's a navigation bar with icons for Home, System info, Global Users (which is selected), and Global Orgs. Below the navigation is a header bar with the Grafana Admin logo and version (v 2.5.0-pre1). The main content area has a title 'Users' and a table with columns: Id, Name, Login, Email, and Grafana Admin. One row is shown: Id 1, Name admin, Login admin@localhost, Email true, and Grafana Admin checked. There are 'Edit' and 'Delete' buttons at the bottom of the table row.

- Step 5** Click **Create user** at the top to open **Create a new user** pane.

Figure 6: Create a new user

A screenshot of the 'Create a new user' form. It has four input fields: 'Name', 'Email', 'Username', and 'Password'. To the right of the 'Password' field is a green 'Create' button.

Add a Grafana User

- Step 6** Enter the required parameters in *Name*, *Email*, *Username* and *Password* fields.
- Step 7** Click **Create** to create the grafana user.
- Step 8** You will see the newly added user in the **List** tab. By default, the new user will have only **Viewer** rights.
- Step 9** Click **Edit** to open **Edit User** pane. Only administrative user can update/modify the user properties.

Figure 7: Edit User Information

The screenshot shows the 'Edit User' interface. At the top, there's a table with three rows: Name (test), Email (empty), and Username (test). Below this is a green 'Update' button. The next section is titled 'Change password' with a 'New password' input field and another green 'Update' button. The third section is 'Permissions' with a dropdown menu showing 'Grafana Admin'. Below it is another green 'Update' button. The final section is 'Organizations' with a table. It has a header row with 'Add organization', 'organization name' (containing 'Main Org.'), 'Role' (set to 'Editor'), and an 'Add' button. Underneath is a table with two rows: 'Main Org.' (highlighted in blue) and 'Current' (with a dropdown set to 'Viewer' and a red delete icon). A horizontal line is at the bottom of the form.

Change the Role of Grafana User

You can also change the rights of the user from the main page.

**Note**

The steps mentioned here can be performed only by **administrative** user.

Click **Main Org.** drop-down list to select **Users**. This will open **Organization users** pane, where you can change the role of a user from **Role** drop-down list.

The user can have Admin/Viewer/Editor/Read Only Editor roles.

- **Admin:** An admin user can view, update and create dashboards. Also the admin can edit and add data sources and organization users.
 - **Viewer:** A viewer can only view dashboards, not save or create them.
 - **Editor:** An editor can view, update and create dashboards.
 - **Read Only Editor:** This role behaves just like the Viewer role. The only difference is that you can edit graphs and queries but not save dashboards. The Viewer role has been modified in Grafana 2.1 so that users assigned this role can no longer edit panels.
-

Add an Organization

Grafana supports multiple organizations in order to support a wide variety of deployment models, including using a single Grafana instance to provide service to multiple potentially untrusted Organizations.

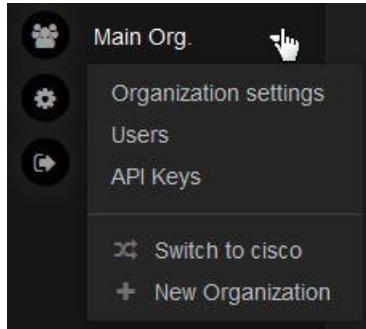
In many cases, Grafana will be deployed with a single Organization. Each Organization can have one or more Data Sources. All Dashboards are owned by a particular Organization.

Add an Organization**Note**

The steps mentioned here can be performed only by **administrative** user.

- Step 1** Click **Main Org.** drop-down list to select **New Organization**.

Figure 8: New Organization



- Step 2** This will open a new pane **Add Organization**. Enter organization name in *Org. name* field. For example, test.
Step 3 After adding the name, click **Create** to open **Organization** pane.

Figure 9: Organization

Address 1		Address 2	
City		Postal code	
State		Country	

In this pane, you can modify the organization name and other organization information. After modifying the information, click **Update** to update the information.

Move Grafana User to another Organization

**Note**

The steps mentioned here can be performed only by **administrative** user.

Step 1 Click **Grafana admin** from the main page to **System Info** page.

Step 2 Click **Global Users** from the left pane to open **Users** pane on the right.

Step 3 Click **Edit** against the user for whom you want to make the changes.

Step 4 Under **Organizations** section, you can add the user to some other organizations.

Figure 10: Move User to another Organization

The screenshot shows the 'Organizations' page in Grafana. At the top, there is a form with fields for 'Add organization' (containing 'organization name') and 'Role' (set to 'Editor'). A green 'Add' button is to the right. Below this, a table lists existing organizations. The first row shows 'Main Org.' with 'Current' selected in a dropdown, 'Viewer' as the role, and a red 'x' button to remove it. The second row shows 'cisco' with 'Editor' as the role and a red 'x' button to remove it.

Name	Role	Action
Main Org. Current	Viewer	x
cisco	Editor	x

Step 5 In *Add organization* field, you need to enter the name of the new organization.

Step 6 You can also change the role of the user from the **Role** drop-down list.

Step 7 After adding the required information, click **Add** to add the user into a new organization.

Step 8 In the above example, you can see that the user is added to the new organization. If you want to remove the user from previous organization, click the **red cross** at the end.

Configure Grafana for First Use

After an initial installation or after upgrading an existing CPS deployment which used Grafana, you must perform the steps in the following sections to validate the existing data sources.

Validate and Finalize Grafana Data Sources

By default, Grafana is configured to have two Data Sources, as shown below. Unless instructed by a Cisco representative, you do not need to modify these Data Sources.

After CPS is installed or upgraded, perform the following steps to verify the integrity of the data sources.

Step 1

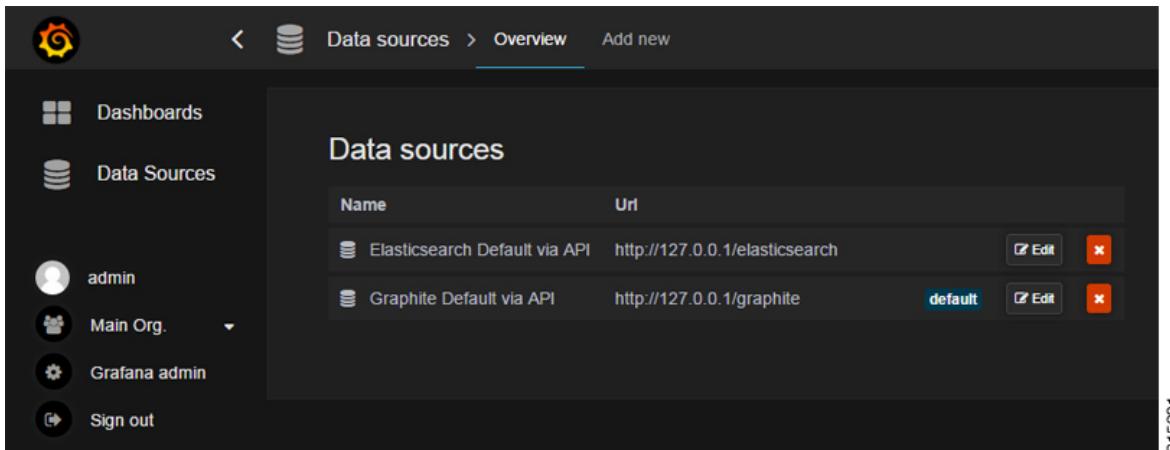
Log in as the Grafana Administrative User.

Step 2

Click **Data Sources**.

If the data sources screen appears as shown below, proceed to [Migrate Existing Grafana Dashboards, on page 13](#).

If there are errors or the screen does not appear as shown, refer to [Repair Data Sources, on page 12](#).



Step 3

To finalize these data source connections, click **Edit**, then click **Save**. Perform these actions separately for each data source.

Repair Data Sources

If a data source connection is missing or becomes corrupted, use the following steps to recreate the data sources.

Step 1

Navigate to the Data Sources screen as described in [Validate and Finalize Grafana Data Sources, on page 12](#).

Step 2

Delete any existing corrupted data sources by clicking the red X.

Step 3

Click **Add new** at the top of the screen, then enter the following information:

Name: Graphite Via UI

Default: Select this checkbox.

Type: Graphite (default)

URL: http://127.0.0.1/graphite

Access: proxy (default)

Basic Auth: leave unchecked

Step 4 Click **Add**.

Step 5 Click **Add new** to create a second data source, then enter the following information.

Name: Elasticsearch Via UI

Default: Leave unchecked.

Type: Elasticsearch (via pulldown)

URL: http://127.0.0.1/elasticsearch

Access: proxy (default)

Basic Auth: leave unchecked

Index name: grafana-dash

Pattern: No pattern (default)

Time field name: @timestamp (default)

Step 6 Click **Add**.

Step 7 Click **Save**. The repair steps are complete.

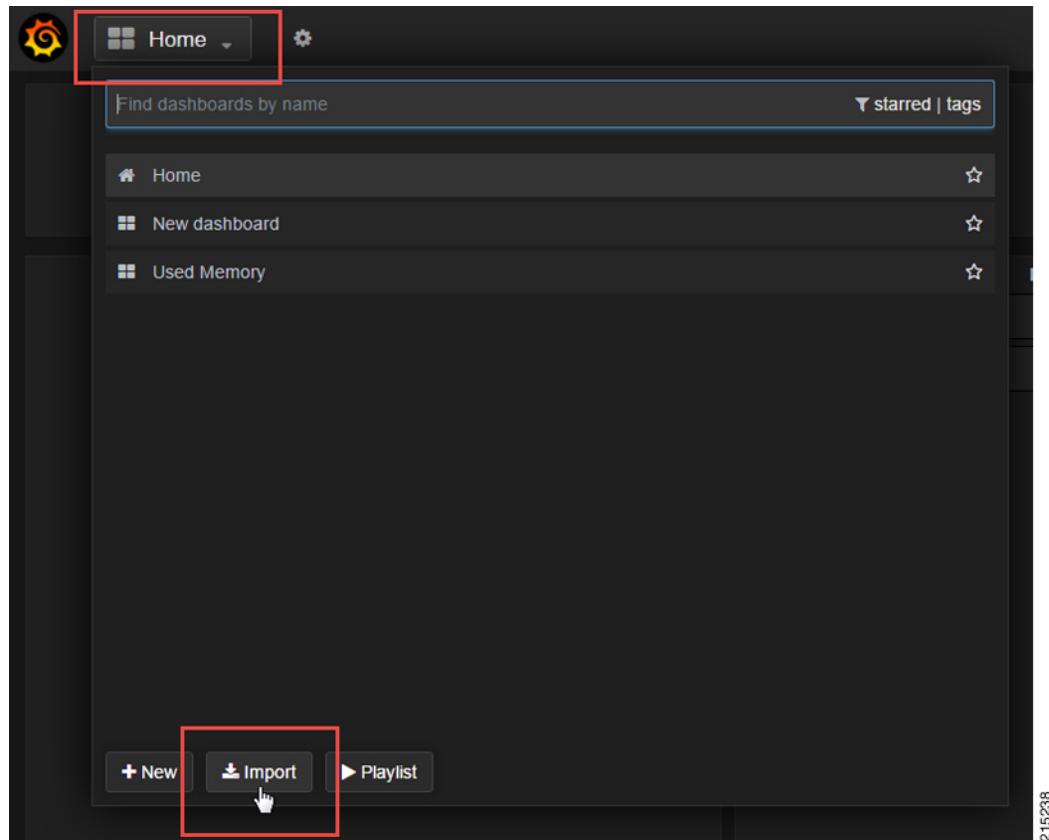
Migrate Existing Grafana Dashboards

During an upgrade of CPS (and Grafana), saved dashboard templates remain intact.

After upgrading an existing CPS deployment, you must manually migrate any existing Grafana dashboards.

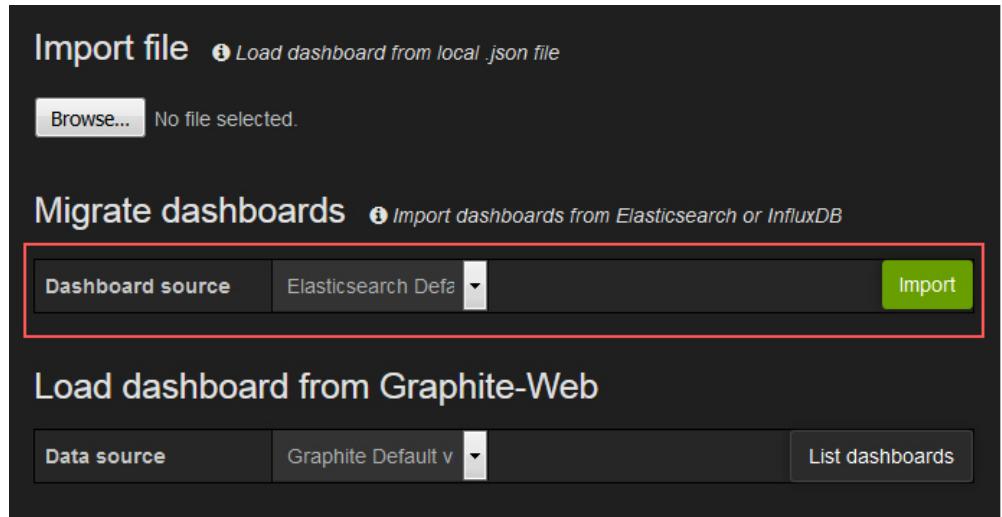
Step 1 Sign in as the Grafana Administrative User. For more information, refer to [Grafana Administrative User, on page 5](#).

Step 2 Click **Home** at the top of the Grafana window and then click **Import** as shown below:

Migrate Existing Grafana Dashboards

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- Step 3** In the Migrate dashboards section, verify that **Elasticsearch Def** (Elasticsearch Default via API) is listed, then click **Import**.



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- Step 4** All existing dashboards are imported and should now be available.

Manual Dashboard Configuration using Grafana

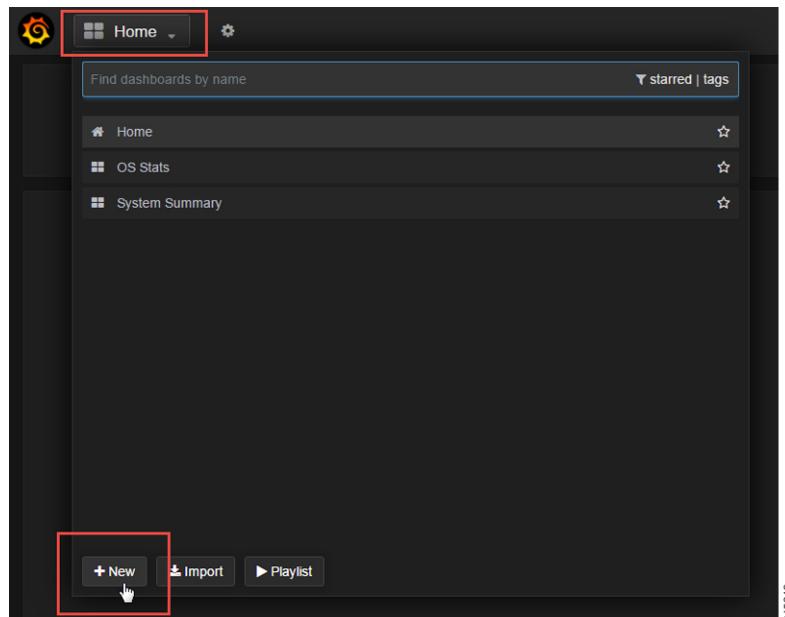
Grafana enables you to create custom dashboards which provide graphical representations of data by fetching information from the Graphite database. Each dashboard is made up of panels spread across the screen in rows.

**Note**

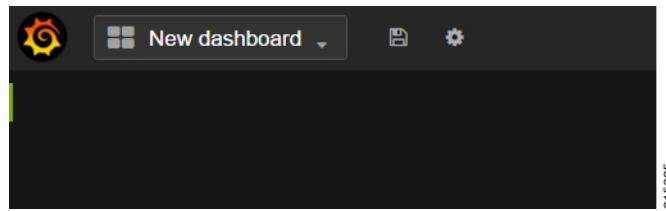
CPS includes a series of preconfigured dashboard templates. To use these dashboards, refer to [Updating Imported Templates](#).

Create a New Dashboard Manually

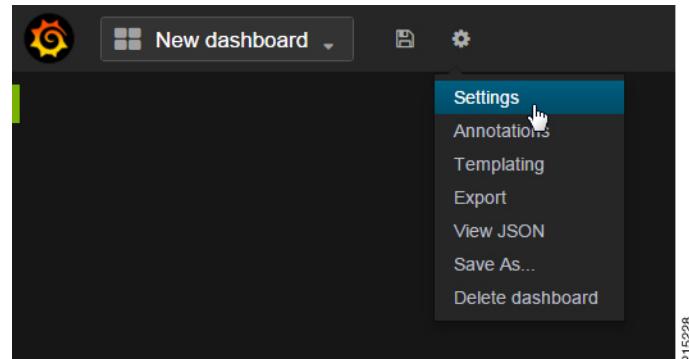
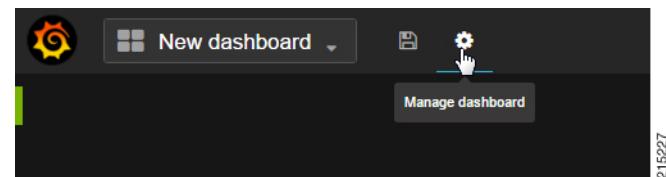
-
- Step 1** Sign-in as a Grafana Administrative user. For more information, see [Grafana Administrative User, on page 5](#).
 - Step 2** Click **Home** at the top of the Grafana window and select **New** as shown below:



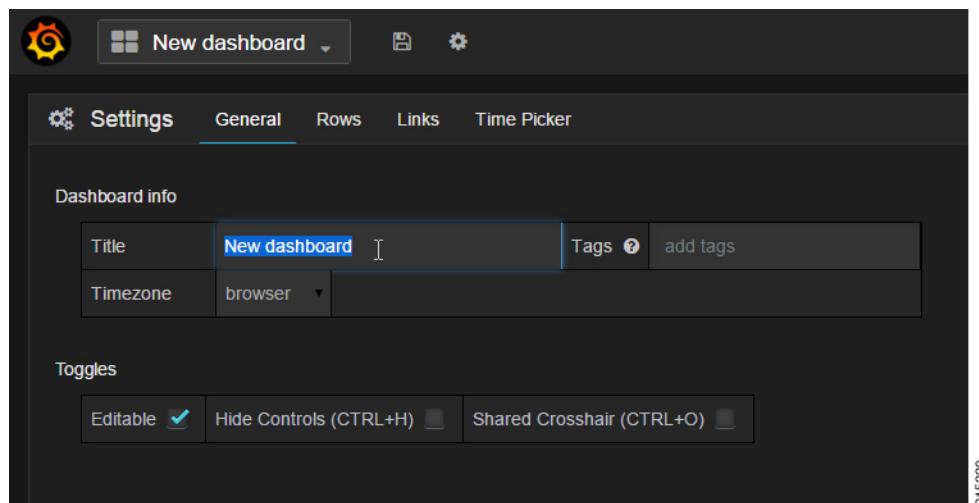
A blank dashboard is created.

Create a New Dashboard Manually

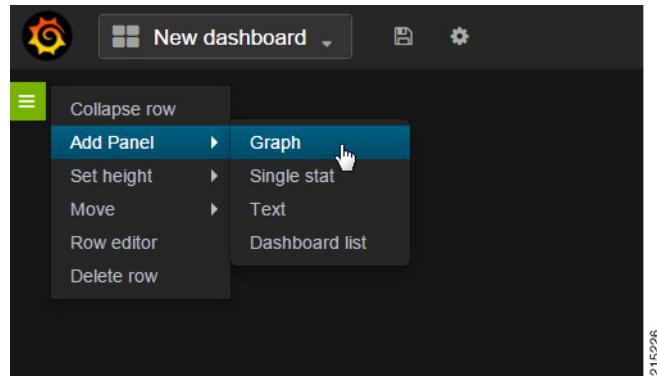
Step 3 At the top of the screen, click the gear icon, then click **Settings**.



Step 4 Provide a name for the dashboard and configure any other Dashboard settings. When you have finished, click the X icon in the upper right corner to close the setting screen.

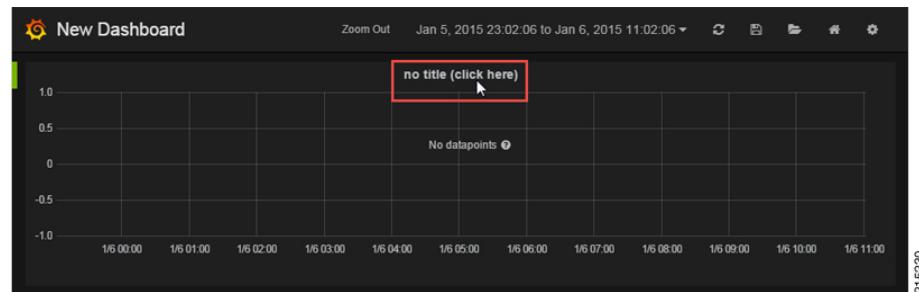


- Step 5** To add a graph to this dashboard, hover over the green box on the left side of the dashboard, then point to **Add Panel**, then click **Graph**.



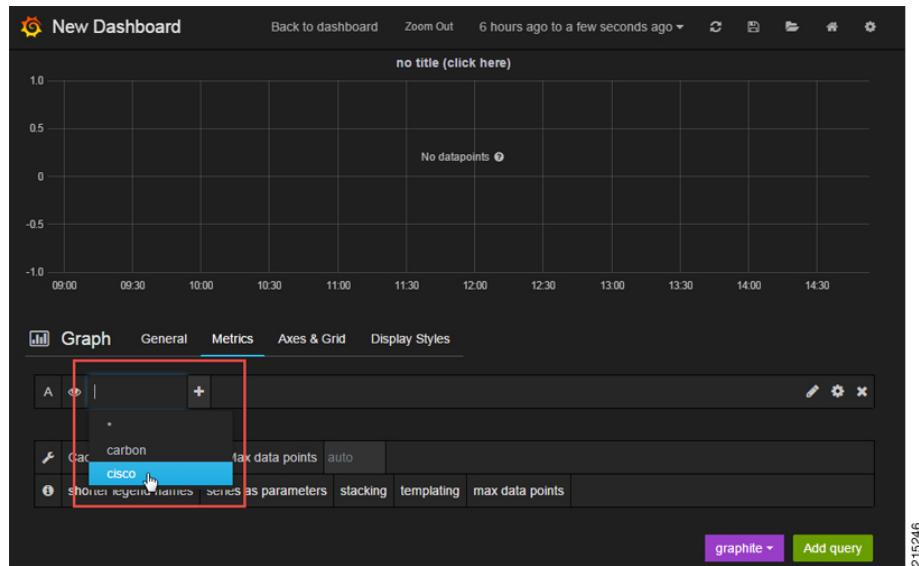
Configure Data Points for the Panel

- Step 1** Click the panel title, as shown below, then select **Edit**.



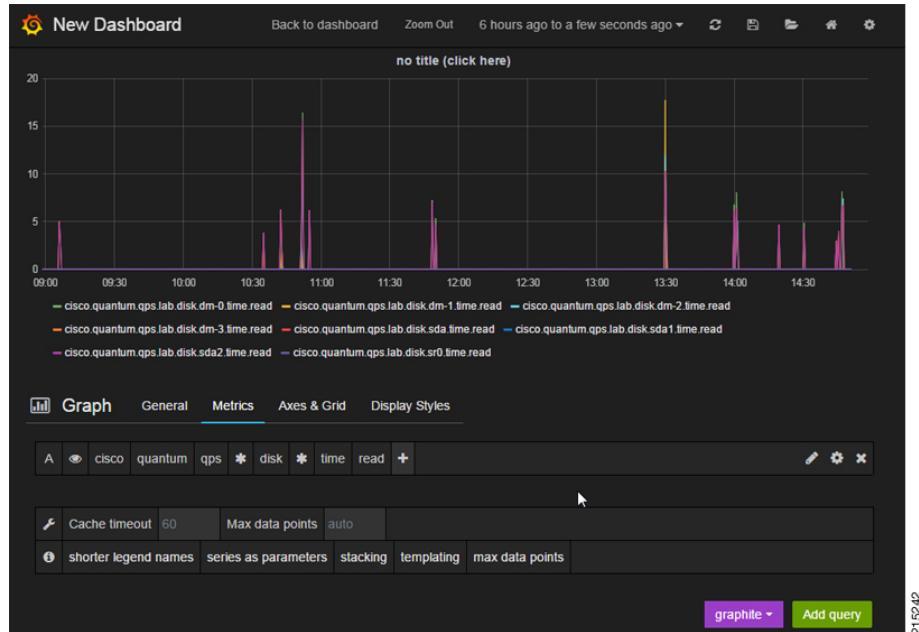
- Step 2** Select the necessary metrics by clicking on the select metric option provided in the query window. A drop-down list appears from which you can choose the required metrics.
Select metrics by clicking select metric repeatedly until the lowest level of the hierarchy.

Configure Data Points for the Panel

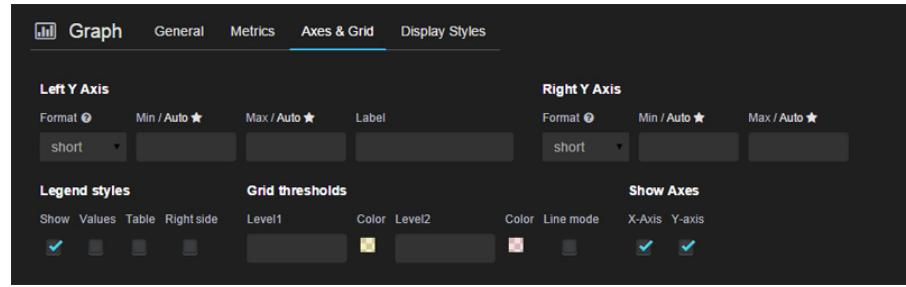


Note Clicking the '*' option in the drop-down list selects all the available metrics.

Step 3 Click the '+' tab to add aggregation functions for the selected metrics. the monitoring graph is displayed as shown below.



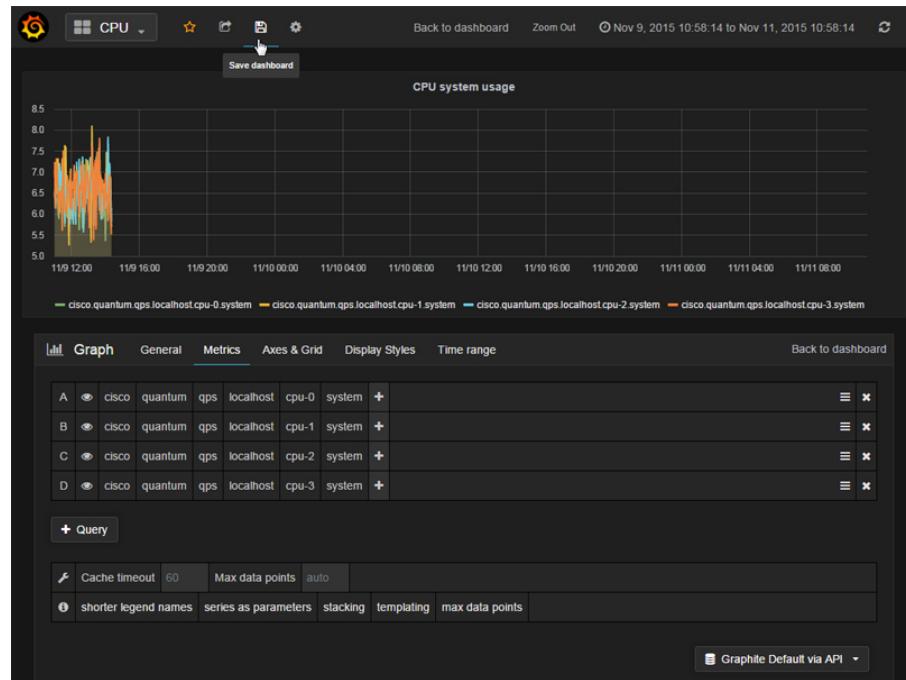
Step 4 The x-axis and y-axis values can be configured in the **Axes & Grid** tab.



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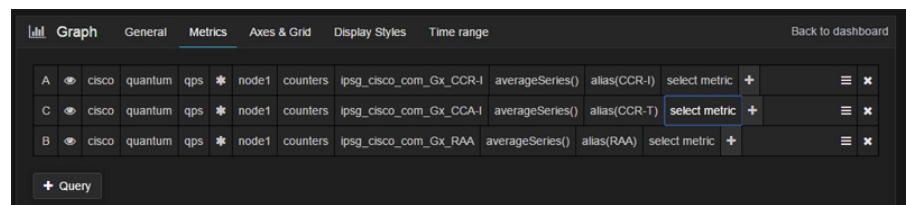
Step 5 Click the disk icon (Save dashboard) at the top of the screen, as shown in the following image.

Note The changes to this dashboard will be lost if you do not click the **Save** icon.



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Graphical representation of application-messages such as - CCR, CCA, Gx, Gy, LDAP, Rx messages and so on, can be configured in the dashboard panel by using the queries shown in the below figure.



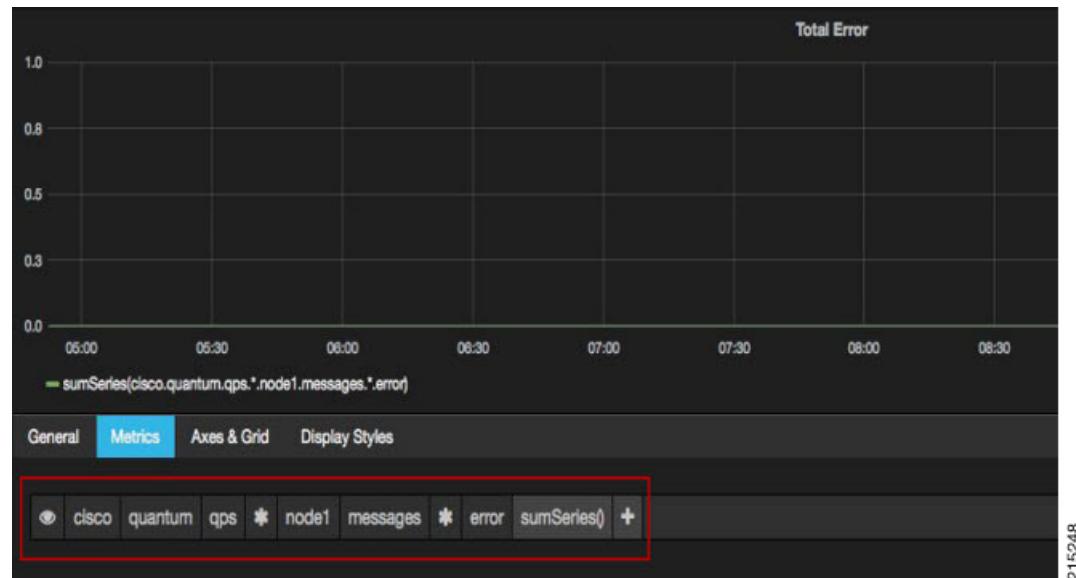
215244

Configure Useful Dashboard Panels

The following section describes the configuration of several useful dashboard panels that can be used while processing Application Messages. Configure the dashboard panel as shown in the screens below.

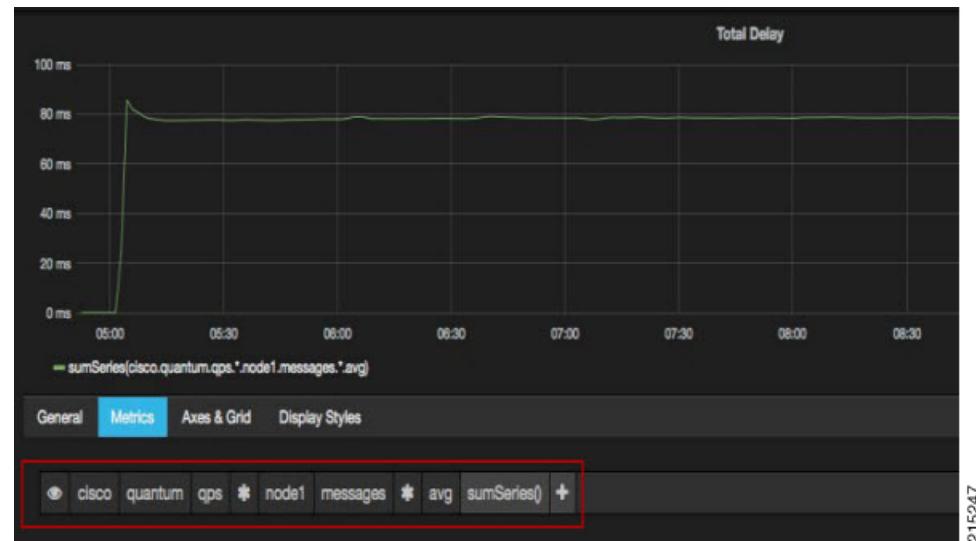
Total Error:

This dashboard panel lists the errors found during the processing of Application Messages. To configure Total Error dashboard panel, create a panel with name 'Total Error' and configure its query as shown:



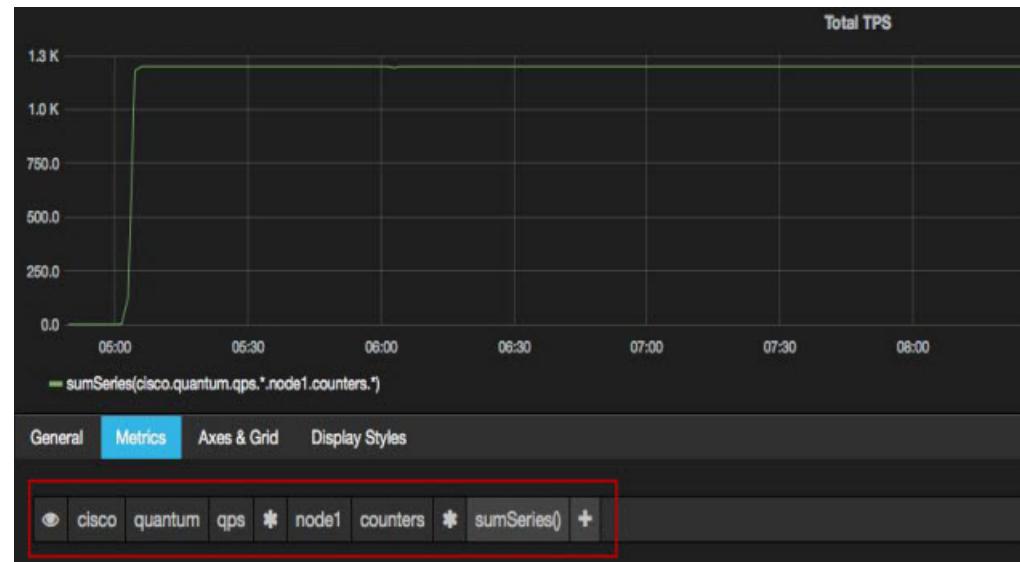
Total Delay:

This dashboard panel displays the total delay in processing various Application Messages. To configure Total Delay dashboard panel, create a panel with name Total Delay and configure its query as shown:



Total TPS:

This panel displays the total TPS of CPS system. Total TPS count includes all Gx, Gy, Rx, Sy, LDAP and so on. The panel can be configured as shown below:



Updating Imported Templates

Some of the preconfigured templates (such as Diameter statistics panels) have matrices configured which are specific to a particular set of Diameter realms. These panels need to be reconfigured to match customer specific Diameter realms.

For example, the Gx P-GW panel in the Diameter Statistics dashboard does not fetch the stats and displays the message “No Datapoints”. The probable reasons could be:

- Matrices used in query uses matrices specific to particular Diameter realm which is different on customer setup.
- No application call of such type has ever landed on CPS Policy Directors (LBs) (no Diameter call from the P-GW has ever landed on Policy Director after the Graphite-Grafana setup).

Copy Dashboards and Users to pcrfclient02

As a best practice, the internal Grafana database should be kept in sync between pcrfclient01 and pcrfclient02. This sync operation should be performed after any dashboard or Grafana user is migrated, updated, added or removed.

Under normal operating conditions, all Grafana operations occur from pcrfclient01. In the event of a pcrfclient01 failure, pcrfclient02 is used as backup, so keeping the database in sync provides a seamless user experience during a failover.

The following steps copy all configured Grafana dashboards, Grafana data sources, and Grafana users configured on pcrfclient01 to pcrfclient02.

Log in to the pcrfclient01 VM and run the following command:

```
/var/qps/bin/support/grafana_sync.sh
```

As a precaution, the existing database on pcrfclient02 is saved as a backup in the `/var/lib/grafana` directory.

Configure Garbage Collector KPIs

The following sections describe the steps to configure Garbage Collector (GC) KPIs in Grafana:

- Backend changes: Changes in the collectd configuration so that GC related KPIs will be collected by collectd and stored in graphite database.
- Frontend changes: Changes in Grafana GUI for configuring metrics for GC graph.

Backend Changes

Check if the following changes are already present in the `jmxplugin.conf` file. If already configured, then skip this section and move to configuring the Grafana dashboard.

Step 1 Edit `/etc/puppet/modules/qps/templates/collectd_worker/collectd.d/jmxplugin.conf` on the Cluster Manager VM as described in the following steps.

Step 2 Verify that the JMX plugin is enabled. The following lines must be present in the `jmxplugin.conf` file.
JVMARG has path for jmx jar

JVMARG

`-Djava.class.path=/usr/share/collectd/java/collectd-api.jar/usr/share/collectd/java/generic-jmx.jar`

And GenericJMX plugin is loaded

```
LoadPlugin org.collectd.java.GenericJMX
```

Step 3 Add an Mbean entry for garbage collector mbean in GenericJMX plugin so that statistics from this mbean will be collected.

```
# Garbage collector information
<MBean "garbage_collector">
    ObjectName "java.lang:type=GarbageCollector,*"
    InstancePrefix "gc-"
    InstanceFrom "name"
<Value>
    Type "invocations"
    #InstancePrefix ""
    #InstanceFrom ""
    Table false
    Attribute "CollectionCount"
</Value>
<Value>
    Type "total_time_in_ms"
    InstancePrefix "collection_time"
    #InstanceFrom ""
    Table false
    Attribute "CollectionTime"
</Value>
</MBean>
```

Step 4 For every “Connection” block in `jmxplugin.conf` file add the entry for garbage collector mbean.
For example:

```
<Connection>
    InstancePrefix "node1."
    ServiceURL "service:jmx:rmi://:jndi/rmi://localhost:9053/jmxrmi"
    Collect "garbage_collector"
    Collect "java-memory"
    Collect "thread"
    Collect "classes"
    Collect "qns-counters"
    Collect "qns-actions"
    Collect "qns-messages"
</Connection>]
```

Step 5 Save the changes to the `jmxplugin.conf` file then synchronize the changes to all CPS VMs as follows:

- Go to the `/var/qps/install/current/scripts/build/` directory on the Cluster Manager and execute the following script:
`./build_puppet.sh`
- Go to the `/var/qps/install/current/scripts/upgrade/` directory on the Cluster Manager and execute the following command:
`./reinit.sh`
- Restart the collectd service on all VMs by running the following command on each VM in the CPS cluster:
`monit restart collectd`

Frontend Changes

The frontend changes must be done in the Grafana GUI.

Step 1 Create a new Grafana dashboard. For more information, see [Manual Dashboard Configuration using Grafana, on page 15](#).

Step 2 In the **Metrics** tab of the new dashboard, configure queries for GC related KPIs.

The query needs to be configured in the following format:

```
cisco.quantum.qps.<hostname>.node*. gc*.total_time_in_ms-collection_time
```

```
cisco.quantum.qps.<hostname>.node*.gc*.invocations
```

where, <hostname> is regular expression for the name of hosts from which KPI needs to be reported.

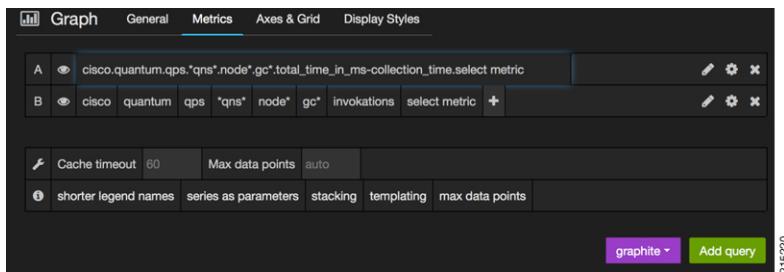
If this is a CPS All in One (AIO) deployment, the hostname is “lab”.

If this is a High Availability (HA) CPS deployment, KPIs need to be reported from all Policy Server (QNS) VMs.

Assuming the Policy Server (QNS) VMs have “qns” in their hostname, then a regular expression would be *qns*. This would report data for all VMs that have a hostname containing “qns” (qns01 qns02 and so on).

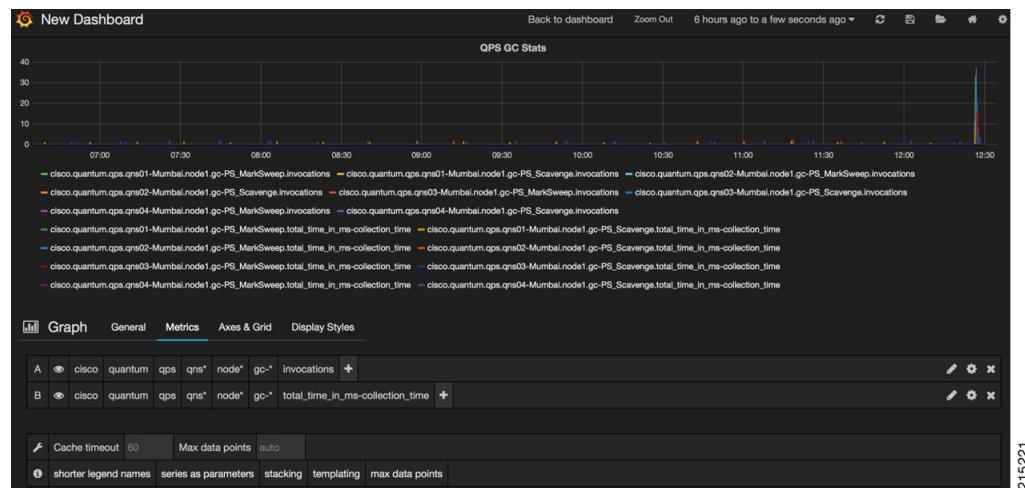
- AIO Setup

Figure 11: On AIO Setup



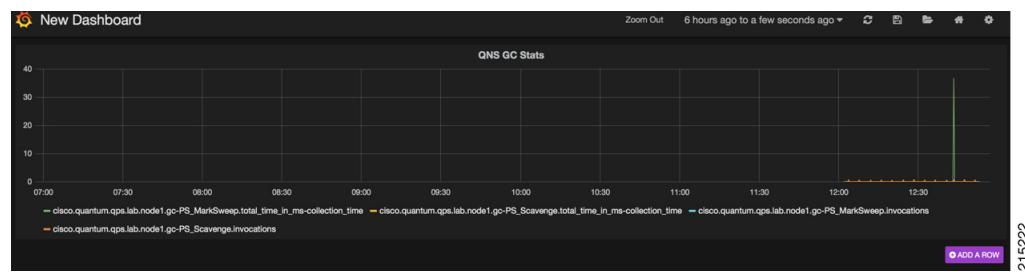
- HA Setup

Figure 12: On HA Setup



An example statistics graph is shown below.

Figure 13: Example Graph



Step 3 Save the dashboard by clicking on Save icon.

Export and Import Dashboards

Existing dashboard templates can be exported and imported between environments. This is useful for sharing Grafana dashboards with others.

Export Dashboard

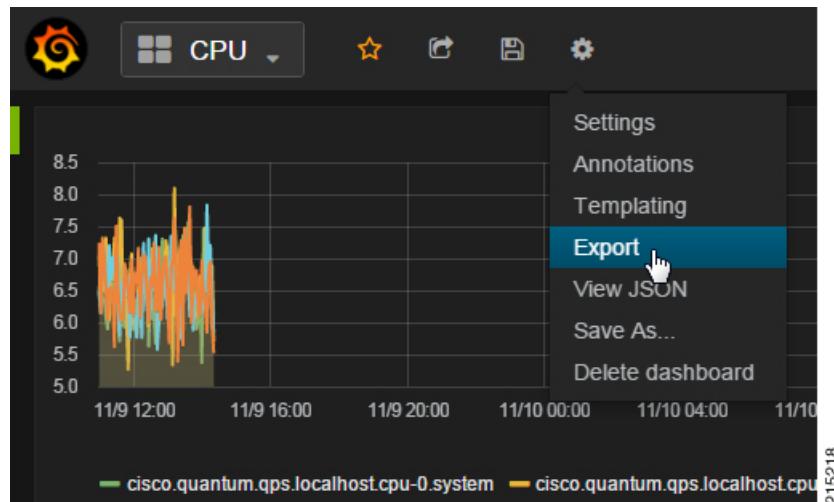
This topic describes how to export a dashboard configuration to a file.

Step 1 Sign-in as a Grafana Administrative User.

Step 2 Open the dashboard to be exported.

Step 3 Click the gear icon at the top of the page, and then select **Export** to save the dashboard configuration on your local system.

Figure 14: Export



Step 4 If prompted, select the location on your local system to save the dashboard template, and click **OK**.

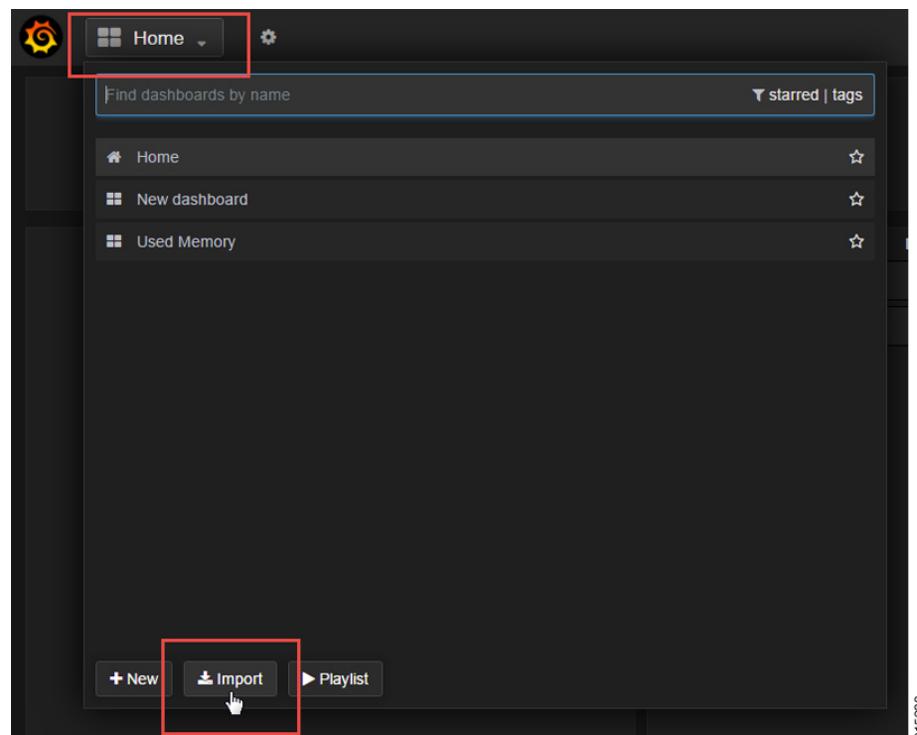
Import Dashboard

This topic describes how to import a dashboard from a file.

Step 1 Sign-in as a Grafana Administrative User.

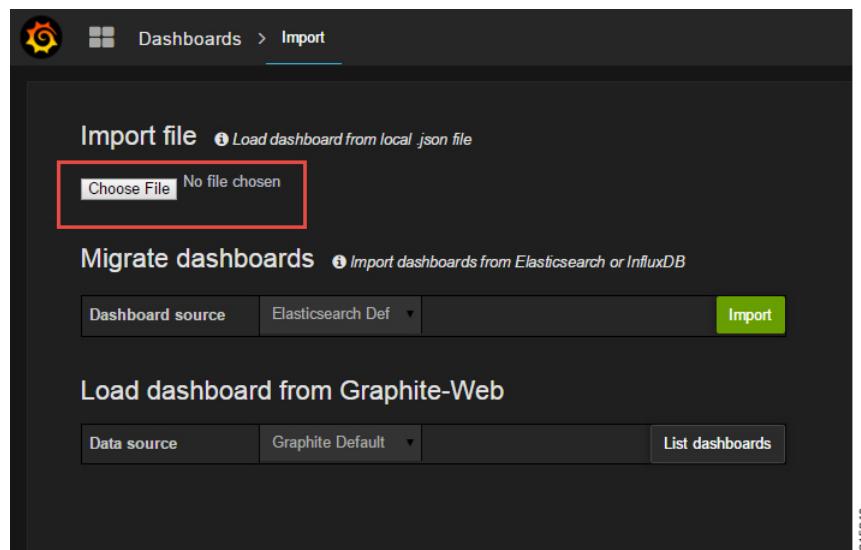
Step 2 Click **Home** at the top of the Grafana window, and then click **Import** as shown below.

Figure 15: Import



Step 3 Click **Choose File**.

Figure 16: Choose File



Step 4 Select the file on your local system to save the dashboard template and click **Open**.

Step 5 After the dashboard is loaded, click the disk icon (Save dashboard) at the top of the screen to save the dashboard.

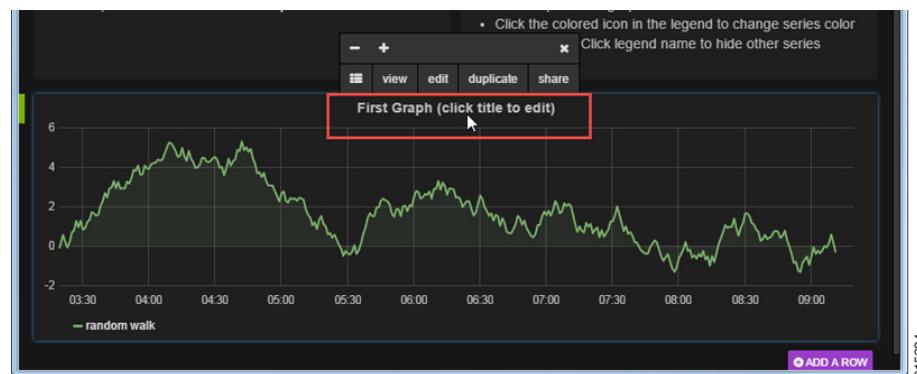
Note Your changes to this dashboard will be lost if you do not save the dashboard.

Export Graph Data to CSV

This topic describes how to export the data in a graph panel to a CSV file.

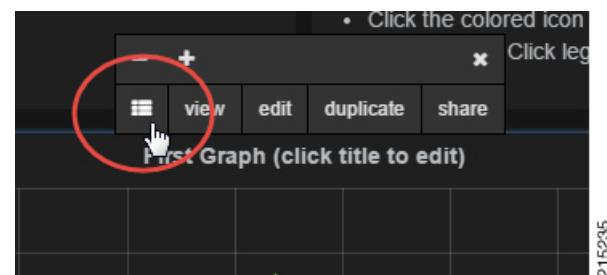
- Step 1** Click the title of the graph as shown below to open the graph controls.

Figure 17: Title



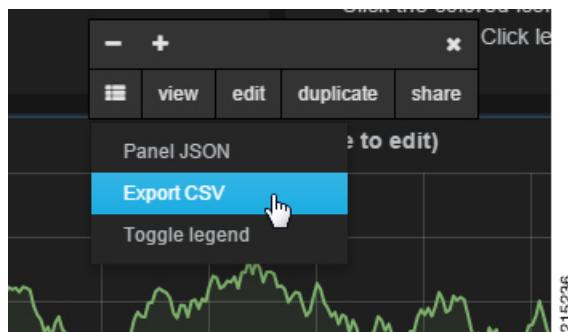
- Step 2** Click the rows button to open another menu.

Figure 18: Rows



Step 3 Click Export CSV.

Figure 19: Export



A grafana_data_export.csv file is downloaded by your browser.

Session Consumption Report

Introduction

This feature generates the session consumption report and stores the data into a separate log. The total number of sessions limited by the license, the total number of active sessions, and total transactions per second are documented at regular time intervals into the log. The core license number is derived from the license file that has the total number of sessions limited by the license. The active session count and the transaction count has been taken from Grafana using the graphite query. A single entity of the feature mainly prints the current time stamp with the statistics values.

Data Collection

The session and TPS count is collected from the graphite API with a JSON response. The JSON response is then parsed to get the counter, which is then logged into the consolidated log. The sample URL and the JSON response are given below:

```
> curl
  "http://localhost:8008/render?target=cisco.quantum.qps.pcrfclient01.set_session_count_
total.records&from=-20second&until=-0hour&format=json"
> [{"target":
"cisco.quantum.qps.localhost.set_session_count_total.records", "datapoints": [[3735.42,
1455148210], [3748.0, 1455148220]]}]
> curl
  "http://localhost:8008/render?target=sumSeries(cisco.quantum.*.*.node*.messages.e2e*.success)
&from=-20second&until=-0hour&format=json"
> [{"target":
"sumSeries(cisco.quantum.*.*.node*.messages.e2e*.success)", "datapoints": [[2345.34324,
1455148210], [2453.23445453,
1455148220]]}]
```

Logging

Data logging is done using the logback mechanism. The consolidated data that is generated is stored in a separate log file named `consolidated-sessions.log` inside the `/var/log/broadhop` directory along with other logs. The data entries are appended to the log every 90 seconds. The logs generated are detailed and have the counter name and the current value with the time stamp.

Performance

The codebase pulls the JSON response from the Graphite API. The overhead by the codebase adds an average of 350 ms of time.

Log Rotation

A log rotation policy is applied on the logs generated for the session Consumption Report. The file size limitation for each log file is 100 MB. The limitation on number of log files is 5. The logs get rotated after reaching the limitations. One file contains a little more than two years of data, so five such files can contain 10 years of data until the first file get replaced.

Sample Report

```

2016-02-15 20:30:01 - TPS_COUNT: 6440.497603 SESSION_COUNT: 200033.0
LICENSE_COUNT: 10000000
2016-02-15 20:31:31 - TPS_COUNT: 6428.235699999999 SESSION_COUNT: 201814.0
LICENSE_COUNT: 10000000
2016-02-15 20:33:01 - TPS_COUNT: 5838.386624000001 SESSION_COUNT: 204818.0
LICENSE_COUNT: 10000000
2016-02-15 20:34:31 - TPS_COUNT: 6266.777699999999 SESSION_COUNT: 208719.0
LICENSE_COUNT: 10000000
2016-02-15 20:36:01 - TPS_COUNT: 6001.863687 SESSION_COUNT: 211663.0
LICENSE_COUNT: 10000000
2016-02-15 20:37:31 - TPS_COUNT: 6528.945054000002 SESSION_COUNT: 213976.0
LICENSE_COUNT: 10000000
2016-02-15 20:39:01 - TPS_COUNT: 6384.073428 SESSION_COUNT: 218851.0
LICENSE_COUNT: 10000000
2016-02-15 20:40:31 - TPS_COUNT: 6376.373494000002 SESSION_COUNT: 220515.0
LICENSE_COUNT: 10000000
2016-02-15 20:42:01 - TPS_COUNT: 6376.063389999999 SESSION_COUNT: 222308.0
LICENSE_COUNT: 10000000
2016-02-15 20:43:31 - TPS_COUNT: 6419.310694000001 SESSION_COUNT: 223146.0
LICENSE_COUNT: 10000000
2016-02-15 20:45:01 - TPS_COUNT: 6455.804928 SESSION_COUNT: 222546.0
LICENSE_COUNT: 10000000
2016-02-15 20:46:31 - TPS_COUNT: 6200.357029999999 SESSION_COUNT: 223786.0
LICENSE_COUNT: 10000000
2016-02-15 20:48:02 - TPS_COUNT: 6299.090987 SESSION_COUNT: 223973.0
LICENSE_COUNT: 10000000
2016-02-15 20:49:31 - TPS_COUNT: 6294.876452 SESSION_COUNT: 226629.0
LICENSE_COUNT: 10000000
2016-02-15 20:51:01 - TPS_COUNT: 6090.202965999999 SESSION_COUNT: 227581.0
LICENSE_COUNT: 10000000
2016-02-15 20:52:31 - TPS_COUNT: 6523.586347999997 SESSION_COUNT: 228450.0
LICENSE_COUNT: 10000000
2016-02-15 20:54:01 - TPS_COUNT: 5842.613997000001 SESSION_COUNT: 229334.0
LICENSE_COUNT: 10000000
2016-02-15 20:55:31 - TPS_COUNT: 6638.526543 SESSION_COUNT: 232683.0
LICENSE_COUNT: 10000000
2016-02-15 20:57:01 - TPS_COUNT: 6073.779743999995 SESSION_COUNT: 230466.0

```

Sample Report

```
LICENSE_COUNT: 10000000  
2016-02-15 20:58:31 - TPS_COUNT: 6354.272679999999 SESSION_COUNT: 234070.0  
LICENSE_COUNT: 10000000  
2016-02-15 21:00:03 - TPS_COUNT: 6217.872034999999 SESSION_COUNT: 236139.0  
LICENSE_COUNT: 10000000
```