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Apigee Monitoring Dashboard - Beta Release

This release of Edge contains a Beta version of the new monitoring dashboard. The dashboard helps you understand the health of various components (Routers, Message Processors, ZooKeeper, Cassandra) as well as HTTP error codes for various orgs and environments in your deployment. You can also snapshot these details and share them with Apigee if required for resolving support incidents.

Dashboard display

After installing the dashboard, access it by opening the following URL in a browser:

http://grafana_IP_or_DNS:3000

where grafana_IP_or_DNS is the IP or DNS name of the node running the Apigee apigee-grafana component. You will be prompted to enter the administrator's username: password as defined when you installed apigee-grafana. The default values from the installation instructions below are admin:admin.

After you log in, you see the following screen:

Select the logo in the upper-left corner to open the menu bar. In the menu bar, select Pin to keep the bar open.
In the menu bar, select:

- **admin Main Org.** to set administrator details, such as a password and email address.
- **Dashboards > Home** to open the screen shown above. Then select **Apigee Cloud** to see the dashboard.
- **Data Sources** to see the data sources for the apigee-grafana component. Select each data source, and then select the **Save & Test** button to validate the connection.
- **Plugins** to display the list of installed plugins.
- **Admin** to set information about Grafana.

Selecting **Apigee Cloud** opens the dashboard display shown below:

![Dashboard Display](image)

On this screen, you can see information about the:

- **Router**: status, traffic, errors, load, and more.
- **Message Processor**: status and health, traffic, target latency, target response codes, and more.
- **Node metrics**: CPU usage, disk space, heap usage, and more.
Notice the buttons across the top of the charts:

- **Color**: set to **All**. For the Beta, **All** is the only supported option.
- **Org**: set to the name of your organization.
- **Env**: Set to the name of an environment in the organization.
- **MPPod** and **RTPod**: set to the pod name of the Message Processors and Routers. By default it is "gateway" unless you changed it at install time.
- **apigee-service**: check to display information about executions of the *apigee-service* utility.

Some of the charts show information for individual API proxies and all API proxies together. For example, in the chart below, you can see a line for all proxies, identified by the green line for 192.168.56.103(), the IP address of the Message Processor:

![Target Errors (mp)](image)

There are also individual lines in the chart for different API proxies named *getUsers* and *testAX*, identified in the chart as the orange line for 192.168.56.103(getUsers) and the blue line for 192.168.56.103(testax).

By default, the dashboard shows information for the last 5 minutes. Select the **Today** at the top-right of the dashboard to select a different interval.

**Sending a dashboard snapshot to Apigee**

To help Apigee diagnose and debug an issue, you can send a snapshot of your dashboard to Apigee Support. Apigee can then inspect your dashboard to help determine the cause of the issue.
To send a dashboard snapshot to Apigee:

1. Select the **Share Dashboard** icon at the top of the dashboard (highlighted in the red box below):

![Share Dashboard Icon](image)

2. In the pop-up window, select **Snapshot Sharing**.
3. Leave all fields as they are, and select the **Publish to snapshot.apigee.net** button.
4. A pop-up window appears containing a link. Copy that link and send it to Apigee.
Dashboard components

The dashboard relies on several components that you install after installing Edge:

- **apigee-telegraf**
  
  A wrapper component for [telegraf](https://docs.influxdata.com/influxdb/v1.8/telegraf/), that gathers metrics from the system and running components and pushes them to the [apigee-influxdb](https://docs.influxdata.com/influxdb/v1.8/) **Time Series DataBase (TSDB)**.

  Install this component on all Edge runtime and data components such as the Edge Message Processor, Router, Postgres server, Cassandra, and Zookeeper nodes.

- **apigee-influxdb**
  
  A wrapper component for [influxdb](https://docs.influxdata.com/influxdb/v1.8/), that stores the metrics data and exposes it through an API so the data can be rendered in a UI by using [apigee-grafana](https://grafana.com/).  

  Install this component centrally so it can be accessed by all the [apigee-telegraf](https://docs.influxdata.com/influxdb/v1.8/) components running on individual Edge nodes.

- **apigee-grafana**

  A wrapper component on top of [grafana](https://grafana.com/), that provides a powerful and elegant way to create, explore, and share dashboards and data with your team and Apigee for troubleshooting.

  Install this component on the node where you want to view the dashboard.
Installing the Monitoring Dashboard

This section describes how to install the Monitoring Dashboard.

System requirements

You must install `apigee-telegraf` on all the Edge nodes to collect dashboard data. Therefore, the system requirements for `apigee-telegraf` are the same as for the Edge node on which you are installing it.

You can install `apigee-grafana` on a separate node, or reuse one of the existing Edge nodes such as the Management Server or Edge UI node.

For `apigee-influxdb`, you can install it on an existing Edge node, such as the Management Server node or the Edge UI node, with no change to the system requirements.

If you decide to install `apigee-influxdb` on its own node for performance reasons, then the node should have the following requirements:

- 2 core CPU
- 4 GB RAM
- 1000 or more IOPS

See the InfluxData doc for more information.

Port requirements for apigee-influxdb

Ports 8086 and 8183 must be open on the `apigee-influxdb` data nodes for access by the node running `apigee-grafana` and `apigee-telegraf`.

Config files for installing dashboard components

To install the dashboard components, you pass a config file to the `apigee-service` utility. Store these files in the `/tmp` directory, or in a directory accessible by the 'apigee' user, and make them owned by the 'apigee' user.

Configuration Parameters for apigee-influxdb

Set these properties in a text file that you pass to the `apigee-influxdb setup` command. For example, set them in a text file named `sa_influx.txt`:
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFLUXDB_HOST</td>
<td>IP/DNS of current node.</td>
</tr>
<tr>
<td></td>
<td>Example: 192.168.0.1</td>
</tr>
</tbody>
</table>

**Configuration parameters for apigee-telegraf**

Set these properties in a text file that you pass to the `apigee-telegraf setup` command. For example, set them in a text file named `sa_telegraf.txt`:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFLUXDB_URL</td>
<td>Specify the URL of the <code>apigee-influxdb</code> node, including port 8086. For example: <a href="http://192.168.0.1:8086">http://192.168.0.1:8086</a></td>
</tr>
</tbody>
</table>

**Configuration Parameters for apigee-grafana**

Set these properties in a text file that you pass to the `apigee-grafana setup` command. For example, set them in a text file named `sa_grafana.txt`:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFLUXDB_HOST</td>
<td>Specify the IP address or DNS name of the InfluxDB node. Example: 192.168.0.1</td>
</tr>
<tr>
<td>INFLUXDB_PORT</td>
<td>InfluxDB API port used by Grafana datasource. Specify 8086.</td>
</tr>
<tr>
<td>GRAFANA_USERNAME</td>
<td>Grafana username for logging in to the dashboard UI.</td>
</tr>
<tr>
<td>GRAFANA_PASSWORD</td>
<td>Grafana password for logging in to the dashboard UI.</td>
</tr>
</tbody>
</table>

**Installation instructions**

Follow the instructions below to install the dashboard components in this sequence:

- `apigee-influxdb` *(on a central node)*
- `apigee-telegraf` *(on each node)*
- `apigee-grafana` *(on a central server)*
Note: You must have installed the apigee-service utility on an Edge node to install the dashboard components. For more information on the apigee-service utility, including installation instructions for the utility, see Installing Edge for the Private Cloud.

Install apigee-influxdb on a single Edge node or standalone node

On a standalone node, or an Edge node running the Management Server or Edge UI:

1. Install apigee-influxdb:

   > /opt/apigee/apigee-service/bin/ apigee-service apigee-influxdb install

2. Create a config file for apigee-influxdb. Typically, you store this file in the /tmp directory, or in a directory accessible by the 'apigee' user, and make it owned by the 'apigee' user.

   Set the following property in the file to the IP address of the apigee-influxdb node. This property is described above:

   
   INFLUXDB_HOST=influx_IP

3. Change the owner to 'apigee':

   > chown apigee:apigee /tmp/sa_influx.txt

4. Configure apigee-influxdb using the config file:

   > /opt/apigee/apigee-service/bin/ apigee-service apigee-influxdb setup -f /tmp/sa_influx.txt

5. Setup database and policy.

   > apigee-service apigee-influxdb sync_policy

6. Restart apigee-influxdb:

   > /opt/apigee/apigee-service/bin/ apigee-service apigee-influxdb restart

Install apigee-telegraf on every Edge node

On every node of your Edge installation:
1. On your first Edge node, install `apigee-telegraf`:

   > /opt/apigee/apigee-service/bin/ apigee-service apigee-telegraf install

2. Create a config file for `apigee-telegraf`. Typically, you store this file in the `/tmp` directory, or in a directory accessible by the 'apigee' user, and make it owned by the 'apigee' user.

   Set the following property in the file to specify the URL of the `apigee-influxdb` node, including port 8086:

   \[
   \text{INFLUXDB_URL=}
   \text{http://influx_IP:8086}
   \]

3. Change the owner to 'apigee':

   > chown apigee:apigee /tmp/sa_telegraf.txt

4. Configure `apigee-telegraf`:

   > /opt/apigee/apigee-service/bin/ apigee-service apigee-telegraf setup -f /tmp/sa_telegraf.txt

5. Restart `apigee-telegraf`:

   > /opt/apigee/apigee-service/bin/ apigee-service apigee-telegraf restart

6. Repeat this process on all Edge nodes.

Install apigee-grafana on a single Edge node

On a single node of your Edge installation, such as the Edge UI node:

1. On your first Edge node, install `apigee-grafana`:

   > /opt/apigee/apigee-service/bin/ apigee-service apigee-grafana install

2. Create a config file for `apigee-grafana`. Typically, you store this file in the `/tmp` directory, or in a directory accessible by the 'apigee' user, and make it owned by the 'apigee' user.
Set the following properties in the file. These properties are described above:

```plaintext
INFLUXDB_HOST=192.168.56.101
INFLUXDB_PORT=8086
GRAFANA_USERNAME=admin
GRAFANA_PASSWORD=admin
```

3. Change the owner to 'apigee':

```bash
> chown apigee:apigee /tmp/sa_grafana.txt
```

4. Configure `apigee-grafana` using the config file:

```bash
> /opt/apigee/apigee-service/bin/apigee-service apigee-grafana setup -f /tmp/sa_grafana.txt
```

5. Restart `apigee-grafana`:

```bash
> /opt/apigee/apigee-service/bin/apigee-service apigee-grafana restart
```

To access the dashboard, open the following URL in a browser:

```plaintext
http://<grafana_IP_or_DNS>:3000
```

Log in by using the credentials you specified in the config file for `apigee-grafana`. In the example shown above the username/password is admin/admin.

### Troubleshooting installation

If you do not see data appearing in the dashboard, use the following procedure to troubleshoot your installation:

1. To ensure `apigee-telegraf` is collecting the data
   a. Run the `apigee-service apigee-telegraf setup`, it’s idempotent, check for errors, missing dependencies and resolve them.
   b. Restart `apigee-telegraf` and check
      `/opt/apigee/var/log/apigee-telegraf/apigee-telegraf.log` for any errors

2. To ensure `apigee-influxdb` is receiving data:
   a. Make sure following TCP ports are open on `apigee-influxdb` data nodes: 8086 and 8183.
b. Use the following URL to open the influxdb UI in a browser:

```
http://influxdb_IP_or_DNS:8183
```

i. In the Query field, enter "show databases".

Ensure that the following databases were created: system, application, events, _internal.

ii. In the Query field, enter "show servers".

Ensure that you see the apigee-influxdb nodes are listed.

3. Check the data sources to the dashboard:
   a. Select Data Sources in the main menu. You should see icons for three data sources displayed.
   b. For each data source, select the icon.
   c. In the details page for the data source, select the Save & Test button.
   d. If the data source is configured correctly, you should see a message in the form:

   **Success**
   **Data source is working**