Apigee™

Apigee Edge for Private Cloud

Alpha

Apigee Monitoring Dashboard

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Overview

The 4.16.01 release of Edge contains an Alpha 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 and password as defined when you installed `apigee-grafana.`

After you log in, you see the following screen:
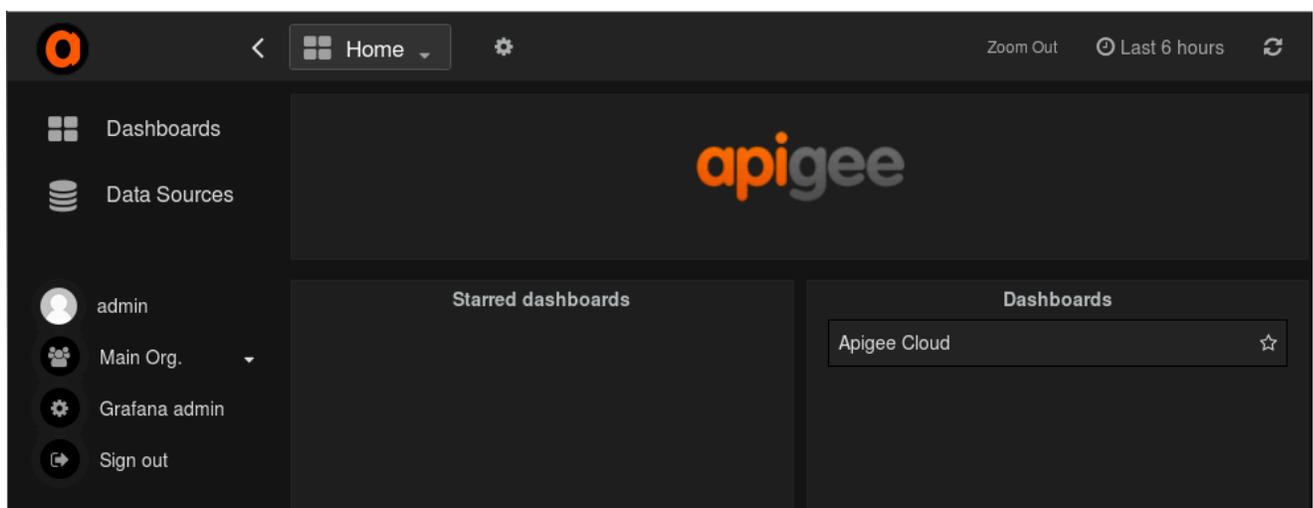
Select:

- **Dashboards** to open this screen. To the right, select **Apigee Cloud** to see the dashboard display.

- **Data Sources** to see the data sources for the `apigee-grafana` component.

- **admin** to set administrator details, such a password and email address.

- **Main Org** to see information about the organization.

- **Grafana admin** to see the settings for the `apigee-grafana` component.

Selecting **Apigee Cloud** opens the dashboard display shown below:
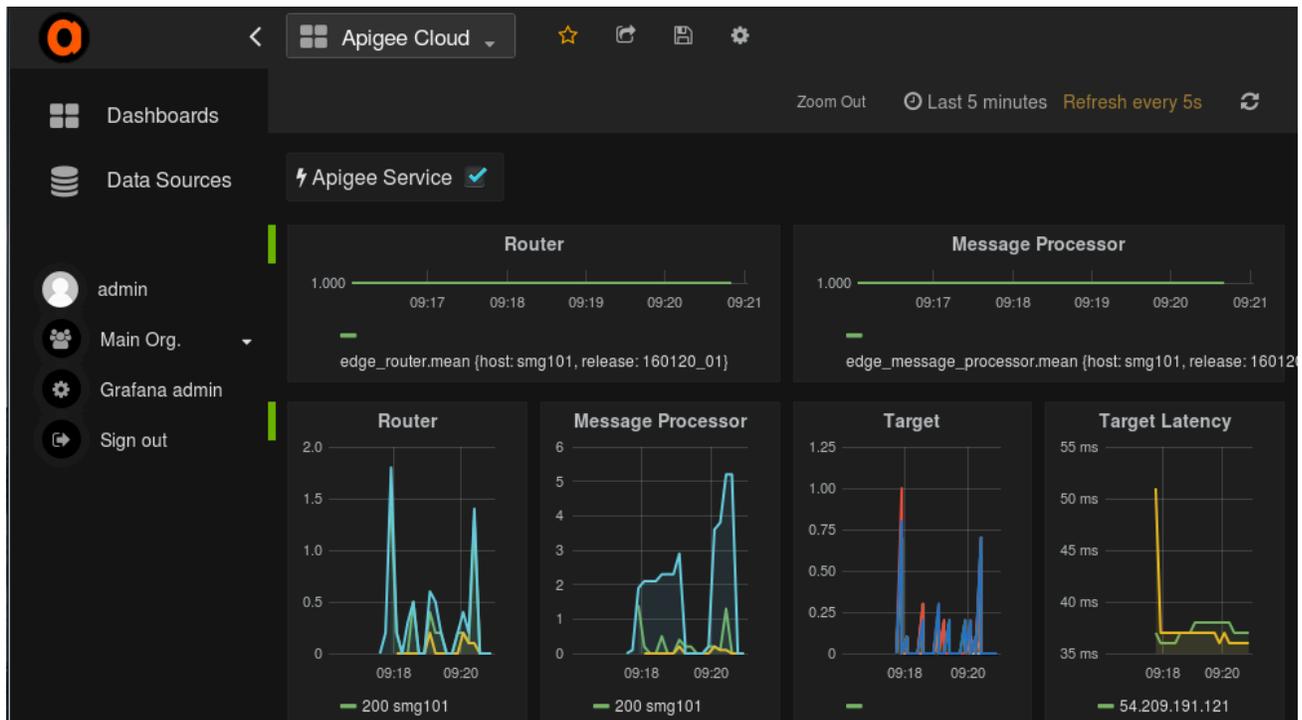
On this screen, you can see information about the:

- Router

- Message Processor

- ZooKeeper load, network usage, and memory usage

- Cassandra read requests, read latency, JVM memory used, write requests, write latency, and compactions

By default, the dashboard shows information for the last 5 minutes. Select the **gear icon** at the top of the dashboard, then select **Settings > Time Picker** to change the 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):
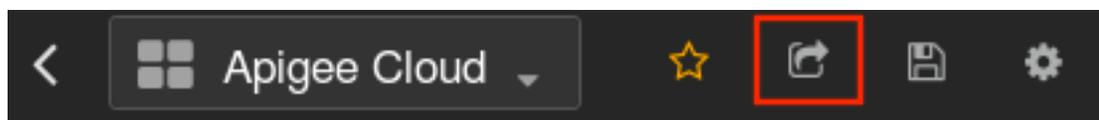
2) In the pop-up window, select **Snapshot Sharing**.

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-collectd`

  A wrapper component for [collectd](), that gathers metrics from the system and running components and pushes them to the `apigee-influxdb` [Time Series DataBase (TSDB)]().

  Install this component on all Edge runtime and data components such as `edge-message-processor`, `edge-router`, `apigee-postgresql`, `apigee-cassandra`, `apigee-zookeeper`.

- `apigee-influxdb`

  A wrapper component for [influxdb](), that stores the metrics data and exposes it through an API so the data can be rendered in a UI by using `apigee-grafana`.

  Install this component centrally so it can be accessed by all the `apigee-collectd` components running on individual Edge nodes.

- `apigee-grafana`

  A wrapper component on top of [grafana](), 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.

- `collectd-zookeeper`

  A collectd component required on ZooKeeper nodes.

System requirements

You must install `apigee-collectd` on all the Edge nodes to collect dashboard data. Therefore, the system requirements for `apigee-collectd` 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.

For performance reasons, if you decide to install `apigee-influxdb` on its own node, 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.

Note: For most Edge for Private Cloud installations, Apigee recommends that you use a single `apigee-influxdb` node. The only risk for a single-node configuration is that you could lose metrics data if the machine crashes and the data cannot be recovered. For large installations, you can optionally configure a cluster for `apigee-influxdb` as described below.

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`.
- Make sure the following UDP ports are open on `apigee-influxdb` data nodes: 25826, 8089, and 8090. These ports are used by `apigee-collectd` to send metrics over UDP.
- If you are running `apigee-influxdb` as a cluster of `apigee-influxdb` nodes, ports 8088 and 8091 must be open between `apigee-influxdb` nodes.

Third-party software requirements

Because of licensing issues, Apigee is unable to host all the software required by the dashboard in the Apigee repo. That means you might run into errors during installation for some dashboard components. For example, you might encounter an error that `collectd-generic-jmx` is missing.

Please enable your epel repo, install any missing components, and retry the installation. For more information, see [Troubleshooting](#) below.

Config files for installing dashboard components

To install the dashboard components, you pass a config file to the `apigee-service` utility.

Note: You must have installed the `apigee-service` utility on an Edge node to install Edge. For more information on the `apigee-service` utility, including installation instructions for the utility, see the Edge *Installation Guide* available on the Apigee ftp site: ftp://ftp.apigee.com/.

Configuration Parameters for apigee-collectd

Property	Default	Description
INFLUXDB_HOST	localhost	If you have a single `apigee-influxdb` node, then specify the IP address or DNS name of that node. If you have a cluster of `apigee-influxdb` nodes with a single data node, the IP address or DNS name of the data node. If you have multiple data nodes, the ELB for the data nodes.
INFLUXDB_SYSTEM_PORT	25826	The `apigee-influxdb` port used by Grafana to access the dashboard data.

Configuration Parameters for apigee-influxdb

Property	Default	Description
INFLUXD_OPTS	" "	For multi-node cluster of apigee-influxdb, a value in the form: "-join <MetaIP1>:8091,<MetaIP2>:8091 ..."
INFLUXDB_HOST	localhost	IP/DNS of current node.
INFLUXDB_DATA_ENABLED	true	Set to true to configure as a data node. Setting both INFLUXDB_DATA_ENABLED and INFLUXDB_META_ENABLED to true creates a "hybrid" node.
INFLUXDB_META_ENABLED	true	Set to true to configure as a meta node.

		Setting both `INFLUXDB_DATA_ENABLED` and `INFLUXDB_META_ENABLED` to true creates a "hybrid" node.

Configuration Parameters for apigee-grafana

Property	Default	Description
`INFLUXDB_HOST`	`localhost`	If you have a single `apigee-influxdb` node, then specify the IP address or DNS name of that node. If you have a cluster of `apigee-influxdb` nodes with a single data node, the IP address or DNS name of the data node. If you have multiple data nodes, the ELB for the data nodes.
`INFLUXDB_PORT`	`8086`	InfluxDB API port used by Grafana datasource.
`GRAFANA_USERNAME`	`admin`	Grafana username for logging in to the dashboard UI.
`GRAFANA_PASSWORD`	`admin`	Grafana password for logging in to the dashboard UI.

Installation instructions

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

- `apigee-influxdb` (on a central node)

- `apigee-collectd` (on each node)

- `collectd-zookeeper` (ZooKeeper nodes only)

- `apigee-grafana` (on a central server)

Complete the Apigee Evaluation Agreement

The documentation ZIP file for Edge 4.16.01 contains an Evaluation Agreement. You must sign this agreement and return it to Apigee before you can install and use the dashboard.

See the Edge 4.16.01 Release Notes for more information.

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) Configure `apigee-influxdb` using the config file:

   ```
   > /opt/apigee/apigee-service/bin/apigee-service apigee-influxdb
   setup -f /tmp/configFile
   ```

3) Start `apigee-influxdb`:

   ```
   > /opt/apigee/apigee-service/bin/apigee-service apigee-influxdb
   start
   ```

Install apigee-collectd on every Edge node

On every node of your Edge installation:

1) On your first Edge node, install `apigee-collectd`:

   ```
   > /opt/apigee/apigee-service/bin/apigee-service apigee-collectd
   install
   ```

2) If this is a ZooKeeper node, install `collectd-zookeeper`:

```
> /opt/apigee/apigee-service/bin/apigee-service collectd-zookeeper
install
```

3) Configure `apigee-collectd` using the config file:

```
> /opt/apigee/apigee-service/bin/apigee-service apigee-collectd
setup -f /tmp/configFile
```

4) Start `apigee-collectd`:

```
> /opt/apigee/apigee-service/bin/apigee-service apigee-collectd
start
```

5) 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) Configure `apigee-grafana` using the config file:

```
> /opt/apigee/apigee-service/bin/apigee-service apigee-grafana
setup -f /tmp/configFile
```

3) Start `apigee-grafana`:

```
> /opt/apigee/apigee-service/bin/apigee-service apigee-grafana
start
```

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

```
http://grafana_IP_or_DNS:3000
```

Install apigee-influxdb on cluster

For maximum performance, you can install `apigee-influxdb` on a cluster of nodes. An `apigee-influxdb` cluster requires an odd number of meta nodes (3 recommended) and N data nodes.

Note: For most Private Cloud installations, Apigee recommends that you use a single `apigee-influxdb` node.

For more on installing as a cluster, see the InfluxDB docs here:

- https://docs.influxdata.com/influxdb/v0.11/guides/hardware_sizing/#general-hardware-guidelines-for-clusters

- https://docs.influxdata.com/influxdb/v0.11/clustering/cluster_node_config/

For example, for a 4-node cluster:

1) Install/setup/start the first `apigee-influxdb` meta node, referred to as `influxdb-meta1` in these instructions. The config file contains:

```
INFLUXDB_HOST=<hostname or IP>
INFLUXDB_DATA_ENABLED=false
```

2) Install/setup/start the second and third meta nodes, referred to as `influxdb-meta2` and `influxdb-meta3` in these instructions. The config file for these two nodes contains:

```
INFLUXD_OPTS="-join <influxdb-meta1>:8091"
INFLUXDB_HOST=<hostname or IP>
INFLUXDB_DATA_ENABLED=false
```

3) Install/setup/start one or more data nodes. The config file for these two nodes contains:

```
INFLUXD_OPTS="-join <influxdb-meta1>:8091,<influxdb-
meta2>:8091,<influxdb-meta3>:8091"
INFLUXDB_HOST=<hostname or IP>
INFLUXDB_META_ENABLED=false
```

Troubleshooting

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

1) To ensure `apigee-collectd` is collecting the data

   a. Run the `apigee-service apigee-collectd setup`, it's idempotent, check for errors, missing dependencies and resolve them.

   b. Restart `apigee-collectd` and check `/var/log/messages` for any errors

2) To ensure `apigee-influxdb` is receiving data:

   a. If you installed `apigee-influxdb` in a cluster, make sure the following TCP ports are open between `apigee-influxdb` nodes: 8088 and 8091.

   b. Make sure following TCP ports are open on `apigee-influxdb` data nodes: 8086 and 8183.

   c. Make sure the following UDP ports are open on `apigee-influxdb` data nodes: 25826, 8089, and 8090. These ports are used by `apigee-collectd` to send metrics over UDP.

   d. 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", and then press enter.

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

ii. In the Query field, enter "show servers" , and then press enter.

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

Contact us

For the most up-to-date information and to report bugs, contact Apigee Customer Support at:

http://community.apigee.com/content/apigee-customer-support

If the installer exits prematurely because of an error, it will give you a log file. Please submit this log file with any bugs you report.
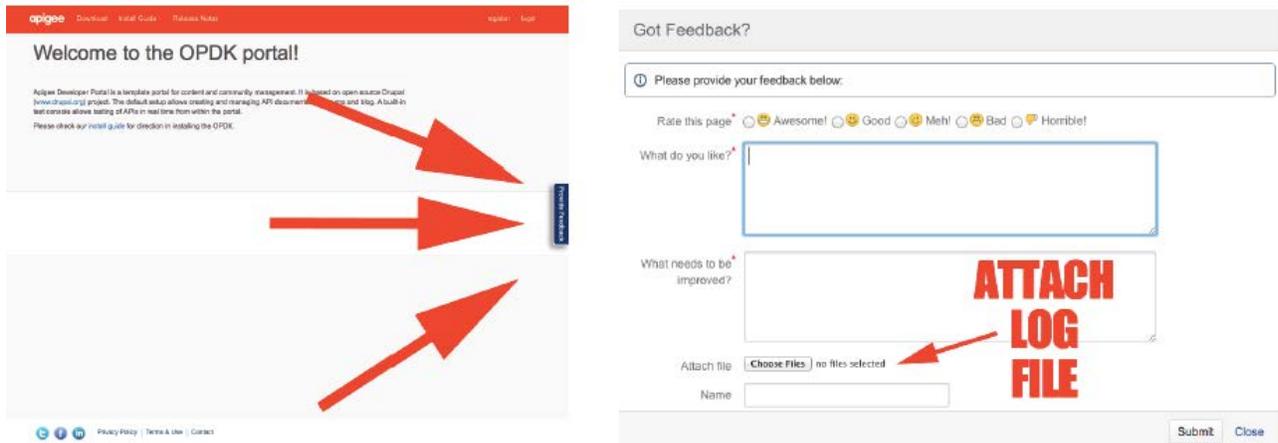
Figure 6: Attaching a log file to a feedback report
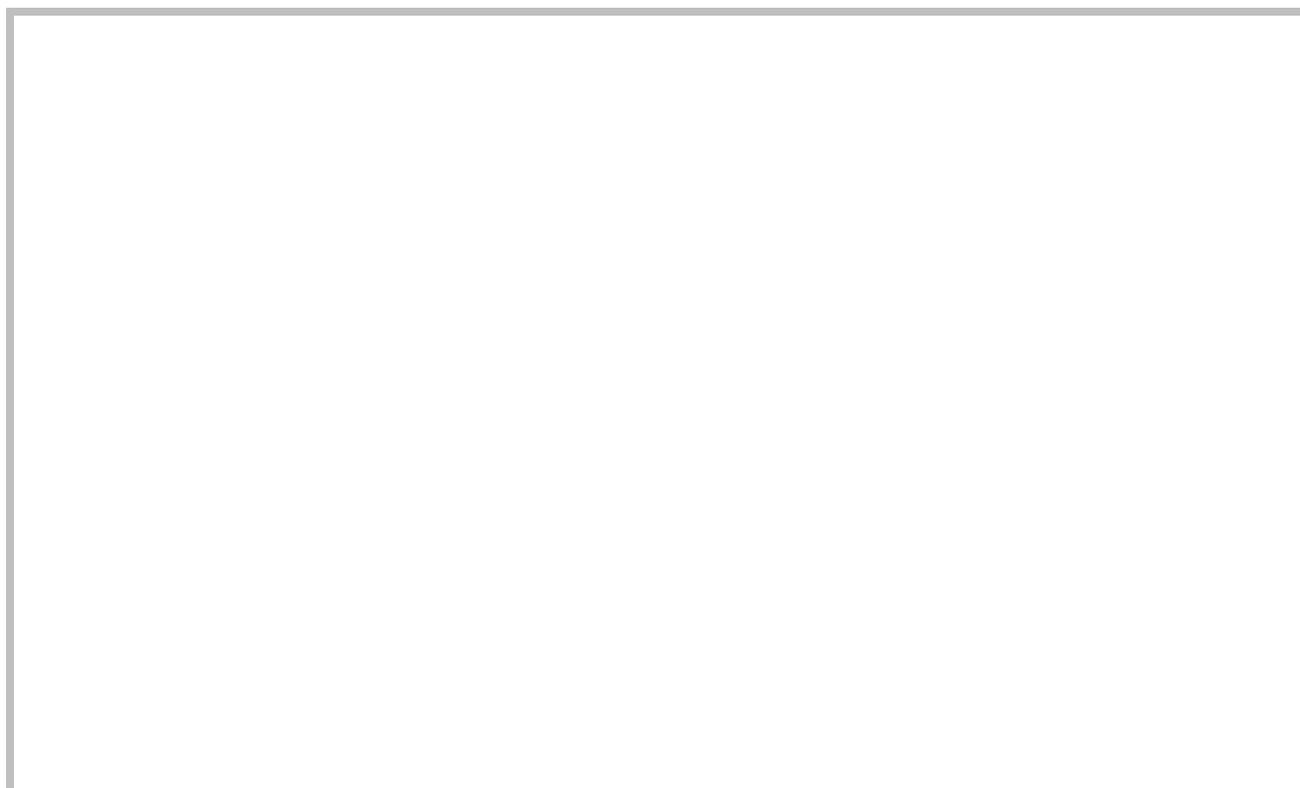
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