

Pivotal™

PRODUCT DOCUMENTATION

# PCF Metrics®

Version 1.1

## User's Guide

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## PCF Metrics

The Pivotal Cloud Foundry (PCF) Metrics tile stores metrics data from applications running on PCF and graphically presents that data for operators and developers. PCF Metrics helps operators and developers better understand the health and performance of their apps by providing a near real-time view of the following data:

- Container metrics: CPU, memory, and disk percentages (updated every 30 seconds)
- Network metrics: requests per second, HTTP errors per second, and request latency (updated every second)
- App events: create, update, start, stop, and crash (updated as they happen)

## Product Snapshot

Current PCF Metrics Details

**Version:** 1.1.5

**Release Date:** 11/15/2016

**Compatible Ops Manager Version(s) for Install** 1.7.0 or later

**Compatible Ops Manager Version(s) for Upgrade** 1.7.8 or later

**Compatible Elastic Runtime Version(s):** 1.7.0 or later

**AWS support?** Yes

**vSphere support?** Yes

**OpenStack support?** Yes

 **Note:** The PCF Metrics tile operates in lockstep with Pivotal Elastic Runtime.

If you are upgrading from PCF 1.7 to PCF 1.8 and you are using PCF Metrics v1.0.x, you must update to a PCF Metrics v1.1.x tile before proceeding with the upgrade.

## PCF Metrics User Guide

See the following topics for details about PCF Metrics:

- [Installing PCF Metrics](#)
- [Sizing PCF Metrics For Your System](#)
- [Using PCF Metrics](#)
- [PCF Metrics Product Architecture](#)
- [Release Notes and Known Issues](#)

## Installing PCF Metrics

This document describes how to install and configure Pivotal Cloud Foundry (PCF) Metrics.

 **Note:** With the addition of application logs in PCF Metrics 1.1.X, the product has introduced new Elastic Search Master and Data nodes for logs storage. The additional storage required to support application logs increases the default tile size on install by approximately 250GB.

## Prerequisites

Ensure that you have installed the [Elastic Runtime Tile](#).

 **Note:** The default **Loggregator Port** in Elastic Runtime is 443. In an AWS environment, the port must be changed to 4443.

## Step 1: Add the PCF Metrics Tile to Ops Manager

 **Note:** PCF Metrics should be installed on the same network as the Elastic Runtime Tile.

1. Download the PCF Metrics file from [Pivotal Network](#).
2. Upload the PCF Metrics file to your Ops Manager installation.
3. Click **Add** next to the uploaded product description in the **Available Products** view to add PCF Metrics to your **Installation Dashboard**.

## Step 2: Configure the PCF Metrics Tile

 **Note:** The following procedures offer a standard configuration. To customize PCF Metrics for high capacity, see the [Sizing PCF Metrics For Your System](#) topic.

From the **Installation Dashboard**, click the **PCF Metrics** tile.

 **Note:** The tile appears orange when it requires configuration.

### Assign Availability Zones (AZs) and Networks.

1. Click **Assign AZs and Networks**.
2. Select an Availability Zone under **Place singleton jobs**.  
Ops Manager runs Metrics jobs with a single instance in this Availability Zone.
3. Select one or more Availability Zones under **Balance other jobs**.  
Ops Manager balances instances of Metrics jobs with more than one instance across the Availability Zones that you specify.
4. Use the drop-down menu to select a network.
5. Click **Save**.

### Ingestor Options

1. Click **Push Ingestor**.

The screenshot shows the 'Metrics' tab of the Installation Dashboard. On the left, there's a sidebar with checkboxes for 'Assign AZs and Networks', 'Push Ingestor' (which is checked), 'Errands', 'Resource Config', and 'Stemcell'. On the right, under 'Ingestor Options', there's a field labeled 'Instance Count (min: 1)\*' with a value of '1', a note 'Number of instances of ingestor to run', and a 'Save' button.

- Review the **Instance Count** value. The PCF Metrics tile deploys one instance of the ingestor by default. You can increase this instance count at any time to accommodate higher levels of inbound log traffic.
- Click **Save**.

## Errands

- Click **Errands**.
- Review the **Pre-Delete Errands**. If you deselect the **Cleanup** checkbox, artifacts may remain after the PCF Metrics tile uninstalls.

**Note:** The PCF Metrics tile selects all **Post-Deploy Errands**, by default. Do not deselect any of these checkboxes.

## Resource Config

- Click **Resource Config**.

The screenshot shows the 'Metrics' tab of the Installation Dashboard. On the left, there's a sidebar with checkboxes for 'Assign AZs and Networks', 'Push Ingestor' (which is checked), 'Errands', 'Resource Config' (which is checked), and 'Stemcell'. On the right, under 'Resource Config', there are two tables: 'INSTANCES' and 'RESOURCES'. The 'INSTANCES' table lists components like Zookeeper, Kafka, Network Metrics Data Store, Container Metrics Data Store, App Event Data Store, ElasticsearchMaster, ElasticsearchData, Compilation, and Cleanup, each with an 'Automatic: 1' row. The 'RESOURCES' table lists various EC2 instance types with their memory and disk configurations. A 'Save' button is at the bottom.

- Review the resource configurations. By default, the settings match the instance types that are best suited for each job. If you expect a high level of use, you may need to increase the disk resources available to your instances.
- Click **Save**.

## Stemcell

- Navigate to [Pivotal Network](#) and click **Stemcells**.
- Download the appropriate stemcell version for your IaaS.



**Note:** On AWS make sure to use a HVM stemcell if you are using the default instance sizes.

3. Click **Import Stemcell** and select the stemcell file you downloaded.

## Step 3: Deploy PCF Metrics

Click **Apply Changes** to install the service. Review the [Using PCF Metrics](#) topic for more information on how to log in, use, and interpret data from PCF Metrics.

## Sizing PCF Metrics For Your System

This topic describes how to configure Pivotal Cloud Foundry (PCF) Metrics for high availability. Operators can use these procedures to optimize PCF Metrics for high capacity.

For more information about PCF Metrics components, see the [PCF Metrics Product Architecture](#) topic.

## Configuring the Metrics Datastore

PCF Metrics uses three In-memory Database System (IMDS) components:

- The Container Metrics IMDS stores container metrics data.
- The Network Metrics IMDS stores network metrics data.
- The App Event IMDS stores app event data.

To customize PCF Metrics for high capacity, you can add memory to the VMs that run these components.

## Considerations for Scaling

To calculate the correct memory allocation for each IMDS component of PCF Metrics, use the following formulas:

- **Container Metrics IMDS:** Each app instance produces around 500 kilobytes of metrics over a 24-hour period. To initially size this IMDS, multiply your number of app instances by 600 kilobytes. This should be your minimal setting for RAM on this IMDS. Consider over-allocating RAM to this resource to account for growth in app instances.
- **Network Metrics IMDS:** Network traffic can be difficult to assess in advance. Consider allocating 4 megabytes of RAM per app as a starting point and then evaluating the memory use on this IMDS.
- **App Event IMDS:** This resource depends on how frequently app events occur within an environment. Start by allocating 600 kilobytes per app instances and then multiply the number of expected app events over a 24-hour period by 20 bytes. As a rule of thumb, you can size this resource at 1 megabytes RAM per app instance, and then evaluate IMDS performance.

Use these results as guidelines. Consider configuring your IMDS components with additional memory if your deployment adds additional app instances.

## Procedures for Scaling

**⚠ warning:** If you modify the memory allocation of IMDS components, they will lose any data currently being stored.

After determining the amount of memory required for each IMDS component, perform the following steps:

1. Navigate to the Ops Manager Installation Dashboard and click the **Metrics** tile.
2. From the **Settings** tab of the **Metrics** tile, click **Resource Config**.
3. Perform one or more of the following procedures, depending on which IMDS component you want to add memory to:

Network Metrics Data Store	Automatic: 1	None	Automatic: r3.2xlarge (cpu: 8, ram: 61 GB, ▾)
Container Metrics Data Store	Automatic: 1	None	Automatic: r3.2xlarge (cpu: 8, ram: 61 GB, ▾)
App Event Data Store	Automatic: 1	None	Automatic: r3.2xlarge (cpu: 8, ram: 61 GB, ▾)

- To increase the memory limit for your App Event IMDS, locate the **App Event Data Store** job and select the dropdown menu under **VM Type** to select a VM with the desired amount of memory.
- To increase the memory limit for your Network Metrics IMDS, locate the **Network Metrics Data Store** job and select the dropdown menu under **VM Type** to select a VM with the desired amount of memory.
- To increase the memory limit for your Container Metrics IMDS, locate the **Container Metrics Data Store** job and select the dropdown menu under **VM Type** to select a VM with the desired amount of memory.

## Configuring the Log Datastore

PCF Metrics uses the [Elasticsearch](#) search engine to store logs. Each Elasticsearch node contains multiple shards of log data, divided by time slice. To customize PCF Metrics for high capacity, you can scale the number of Elasticsearch nodes.

### Considerations for Scaling

To determine the number of Elasticsearch nodes required for PCF Metrics, consider how many logs the apps in your deployment emit and the average size of each log.

If your average log size is 1 kilobyte, and each node has 1 terabyte of available disk space, then each node has a maximum storage capacity of 1 billion log messages. If your apps emit 3 billion logs over a 24-hour period, you need at least 3 nodes to hold the data and 3 additional nodes for high-availability replication.

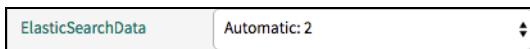
This example assumes that your apps emit logs at a continuous rate over 24 hours. However, apps typically do not emit logs continuously. If your apps emit 2 billion of the 3 billion logs between 8 AM and 4 PM, you must determine the minimum node-to-shard ratio to accommodate that rate over the 8-hour period. Because your apps emit 1 billion logs over a 4 hour span, you need at least 6 nodes (24 hours/6 nodes = 4 hours worth of shards per node) to hold the data and an additional 6 nodes for high-availability replication.

### Procedures for Scaling

**A warning:** If you modify the number of Elasticsearch instances, the Elasticsearch cluster will lose any data currently being stored.

After determining the number of Elasticsearch nodes needed for your deployment, perform the following steps to scale your nodes:

1. Navigate to the Ops Manager Installation Dashboard and click the **Metrics** tile.
2. From the **Settings** tab of the **Metrics** tile, click **Resource Config**.
3. Locate the **ElasticSearchData** job and select the dropdown menu under **Instances** to change the number of instances.



4. Click **Save**.

## Configuring the Ingestor

PCF Metrics deploys the Ingestor as an app within PCF. The Ingestor consumes logs and metrics from the Loggregator Firehose, sending metrics to Kafka and logs to the Logqueue app. To customize PCF Metrics for high capacity, you can scale the number of Ingestor app instances and increase the amount of memory per instance.

### Considerations for Scaling

Because apps emit logs at different volumes and frequencies, you should not scale the Ingestor by matching the number of Ingestor instances to the number of app instances in your deployment.

Because Ingestor performance is affected by Loggregator performance, it can be difficult to determine in advance the proper configuration. Because of the ease in scaling these components, we recommend starting with a minimal configuration then evaluating performance over a period of time and scaling.

The Ingestor app can handle relatively large loads. For high availability, you must have at least two instances of the Ingestor app running. If your deployment runs fewer than 2000 app instances, two instances of the Ingestor app are sufficient.

### Procedures for Scaling

**A warning:** If you decrease the number of Ingestor instances, you may lose data currently being processed on the instances you eliminate.

After determining the number of Ingestor app instances needed for your deployment, perform the following steps to scale the Ingestor:

1. Target your Cloud Controller with the Cloud Foundry Command Line Interface (cf CLI). If you have not installed the cf CLI, see the [Installing the cf CLI](#) topic.

```
$ cf api api.YOUR-SYSTEM-DOMAIN
Setting api endpoint to api.YOUR-SYSTEM-DOMAIN...
OK
API endpoint: https://api.YOUR-SYSTEM-DOMAIN (API version: 2.54.0)
Not logged in. Use 'cf login' to log in.
```

2. Log in with your UAA administrator credentials. To retrieve these credentials, navigate to the **Pivotal Elastic Runtime** tile in the Ops Manager Installation Dashboard and click **Credentials**. Under **UAA**, click **Link to Credential** next to **Admin Credentials** and record the password.

```
$ cf login
API endpoint: https://api.YOUR-SYSTEM-DOMAIN

Email> admin
Password>
Authenticating...
OK
```

3. When prompted, target the `metrics` space.

```
Targeted org system

Select a space (or press enter to skip):
1. system
2. notifications-with-ui
3. autoscaling
4. metrics

Space> 4
Targeted space metrics

API endpoint: https://api.YOUR-SYSTEM-DOMAIN (API version: 2.54.0)
User:      admin
Org:      system
Space:    metrics
```

4. Scale your Ingestor app to the desired number of instances:

```
$ cf scale metrics-ingestor -i INSTANCE-NUMBER
```

5. Evaluate the CPU and memory load on your Ingestor instances:

```
$ cf app metrics-ingestor
Showing health and status for app metrics-ingestor in org system / space metrics as admin...
OK

requested state: started
instances: 1/1
usage: 1G x 1 instances
urls:
last uploaded: Sat Apr 23 16:11:29 UTC 2016
stack: cflinuxfs2
buildpack: binary_buildpack

state      since            cpu    memory   disk      details
#0  running  2016-07-21 03:49:58 PM  2.9%  13.5M of 1G  12.9M of 1G
```

If your average memory usage exceeds 50% or your CPU consistently averages over 85%, add more instances with `cf scale metrics-ingestor -i INSTANCE-NUMBER`.

In general, you should scale the Ingestor app by adding additional instances. However, you can also scale the Ingestor app by increasing the amount of memory per instance:

```
$ cf scale metrics-ingestor -m NEW-MEMORY-LIMIT
```

For more information about scaling app instances, see the [Scaling an Application Using cf scale](#) topic.

## Configuring the Logqueue

PCF Metrics deploys the Logqueue as an app within PCF. The Logqueue consumes logs from the Ingestor and forwards them to the Elasticsearch nodes. To customize PCF Metrics for high capacity, you can scale the number of Logqueue app instances and increase the amount of memory per instance.

### Considerations for Scaling

To determine the number of Logqueue instances required for your deployment, multiply your number of Elasticsearch nodes by 1.5. This is a general estimate and you may need fewer instances depending on your deployment. To optimize resource allocation, provision fewer instances initially and increase instances until you achieve desired performance.

### Procedures for Scaling

To modify your Logqueue app instances, you must first target your Cloud Controller, log in with your UAA administrator credentials, and target the `metrics` space by following steps 1-3 in the [previous section](#).

To scale your Logqueue app instances, perform the following command:

```
$ cf scale metrics-logqueue -i INSTANCE-NUMBER
```

To scale the memory limit per Logqueue app instance, perform the following command:

```
$ cf scale metrics-logqueue -m NEW-MEMORY-LIMIT
```

**⚠ warning:** If you decrease the number of Logqueue instances, you may lose data currently being processed on the instances you eliminate.

## Troubleshooting

To troubleshoot PCF Metrics, review the list of common issues below. To resolve certain issues, you must check the health of your Elasticsearch cluster.

### Common Issues

The following list includes common issues and their solutions:

- **WebSocket Disconnects:** If you see WebSocket disconnects logs in the Ingestor app, consider adding additional Ingestor instances. The Firehose may be dropping the Ingestor connection to avoid back pressure.
- **“503” Error:** If you encounter “503” errors when accessing the PCF Metrics UI in your browser, your Elasticsearch nodes may have become unresponsive. Check the Elasticsearch index health by following the procedure below, and consider adding additional Elasticsearch nodes.
- **Metrics/Logs Failing to Surface in UI:** If you use a load balancer, the event-stream mechanism used by the Metrics UI might be blocked. With one customer of PCF Metrics 1.1 using a F5 load balancer, metrics and logs were not visible in the UI despite successful ingestion and no UI errors reported. The root of the issue was the traffic of type text/event-stream was blocked by the F5 load balancer. When F5 was configured to allow event-stream traffic, the issue was resolved.

### Check Elasticsearch Cluster Health

To check the health of your Elasticsearch cluster, perform the following steps:

1. Retrieve the IP address of your Elasticsearch master node by navigating to the **Metrics** tile in the Ops Manager Installation Dashboard, clicking the

**Status** tab, and recording the IP address next to **ElasticSearchMaster**.

ElasticSearchMaster	0	10.0.16.53	i-63548dfa
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2. SSH into the Ops Manager VM by following the instructions in [SSH into Ops Manager](#).
3. From the Ops Manager VM, use `curl` to target the IP address of your Elasticsearch master node. Follow the instructions in the [Cluster Health](#) topic of the Elasticsearch documentation.

## Using PCF Metrics

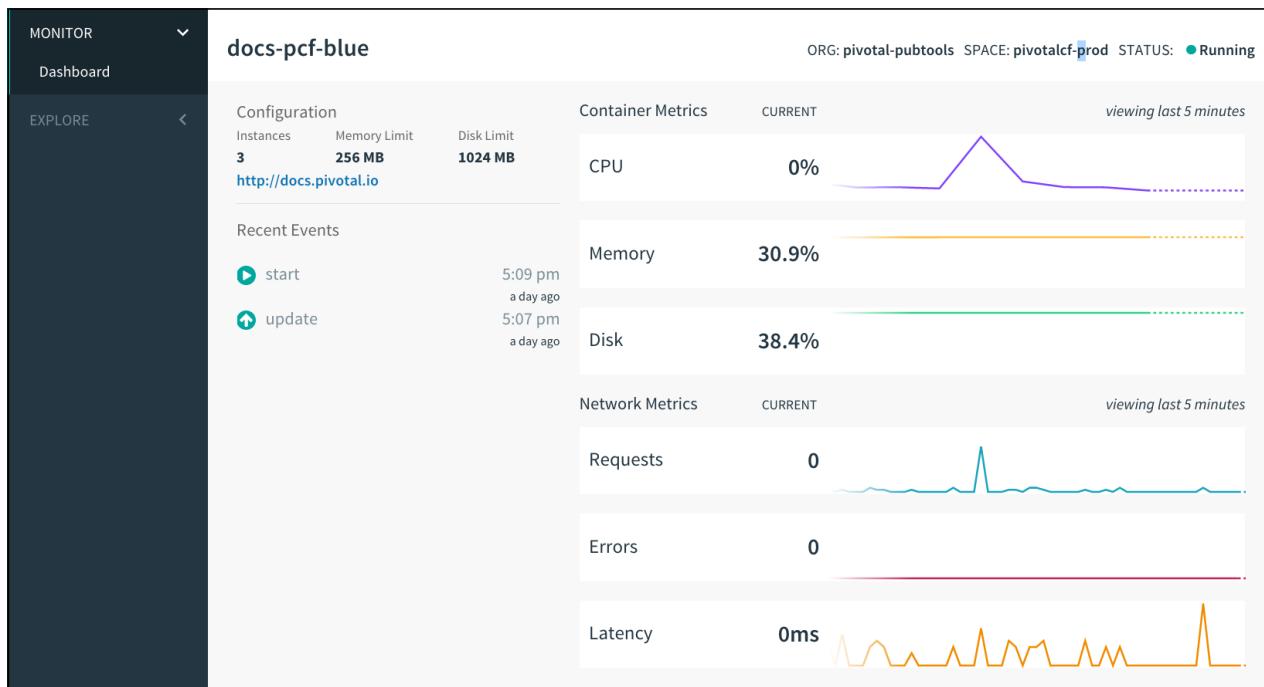
This topic describes how to log into, use, and interpret data from Pivotal Cloud Foundry (PCF) Metrics.

## Get Started with PCF Metrics

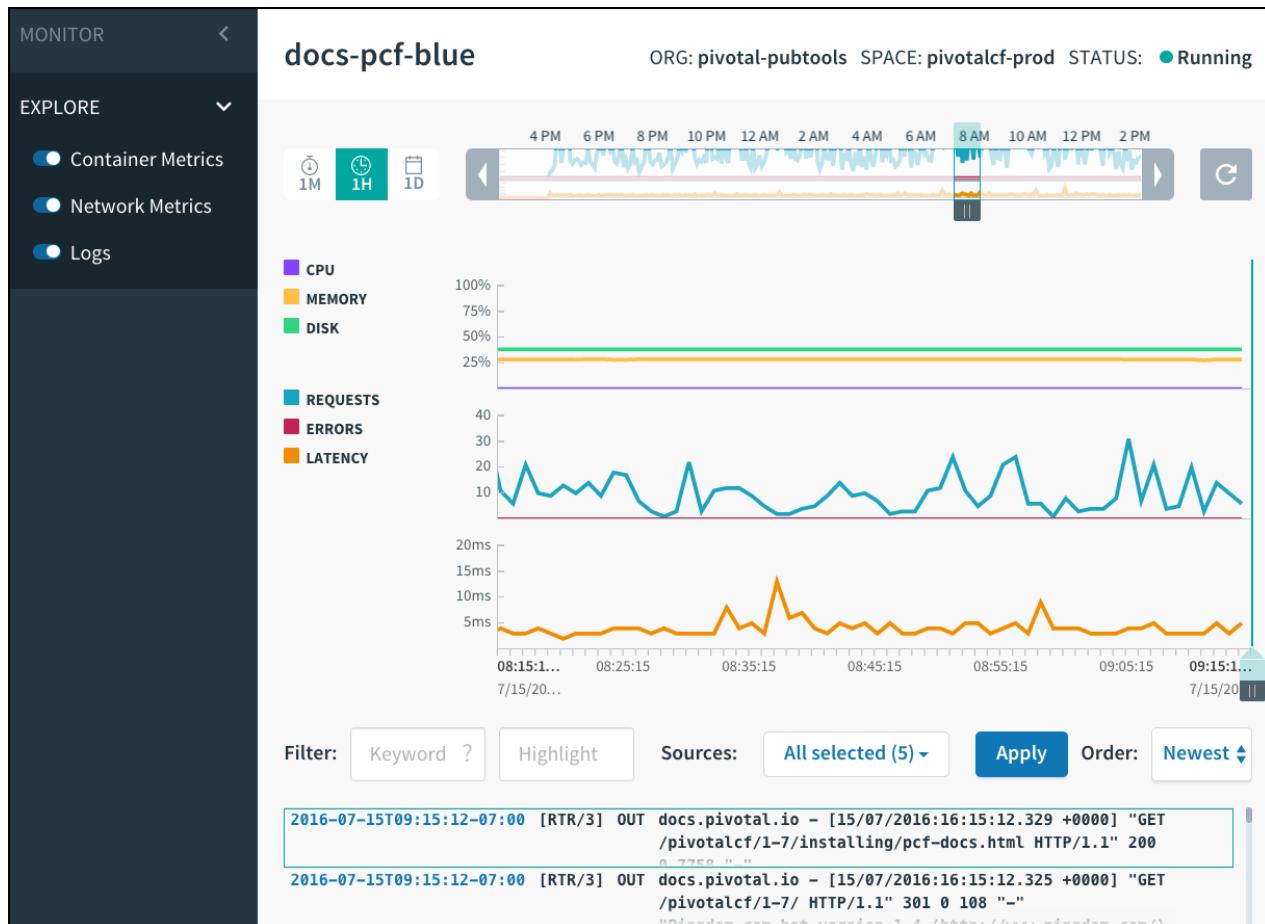
1. In a browser, navigate to `metrics.YOUR-SYSTEM-DOMAIN` and log in with your User Account and Authentication (UAA) credentials.
2. PCF Metrics uses UAA to retrieve a list of apps that correspond to your user's org roles, space roles, and permissions. To view metrics information for an app, enter the name of the app in the search box and select it from the dropdown menu.

A screenshot of the PCF Metrics BETA interface. At the top left is a green 'P' logo. Next to it is the text 'PCF Metrics BETA'. To the right is a search bar with the placeholder 'Search for Application...'. On the far right is a dropdown menu labeled 'admin ▾'.

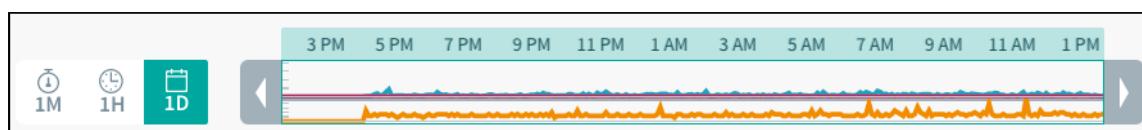
3. Select an app to display the **Dashboard** view. The **Dashboard** includes the following information:
  - The **Configuration** section shows the number of **Instances**, the **Memory Limit**, and the **Disk Limit** for the app. It also shows the URL.
  - The **Recent Events** section lists all events from the past day.
  - **Container Metrics** and **Network Metrics** show streaming trend lines for all metrics over the past five minutes.



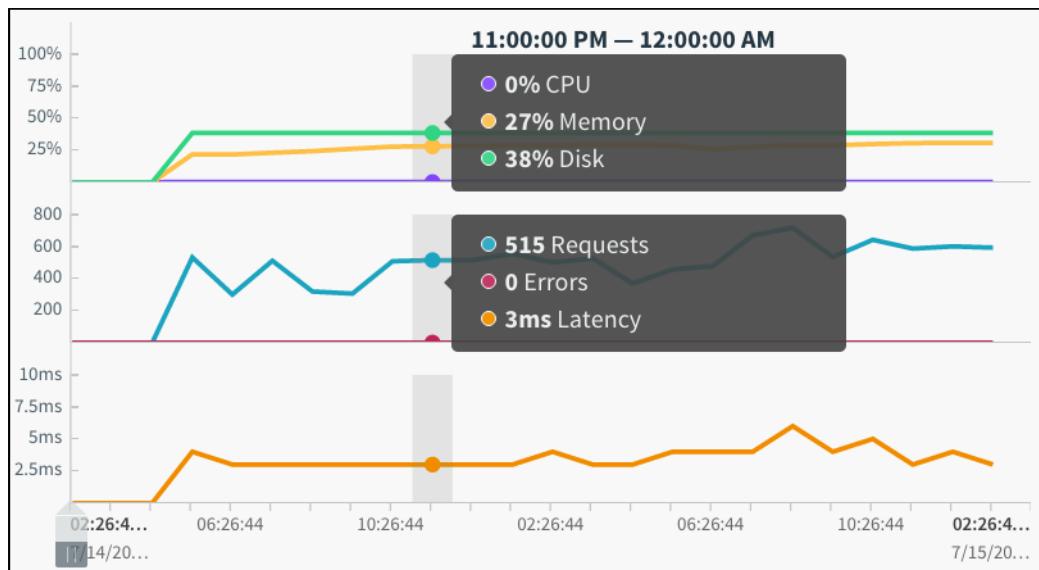
4. Select **Explore** from the left menu to view detailed metrics and logs. You can toggle the following:
  - **Container Metrics** displays CPU, memory, and disk usage.
  - **Network Metrics** displays HTTP requests, errors, and latency.
  - **Logs** displays application log data ingested from the [firehose](#). PCF Metrics stores application log data for 24 hours.



5. Filter your log data by entering a keyword search or selecting a log source.
6. Determine the scope of the historical view by clicking the one minute, one hour, or one day button. Use the left and right arrow keys to navigate adjacent time slices.



7. Hover over either metrics graph to display a view of network and container metrics data.



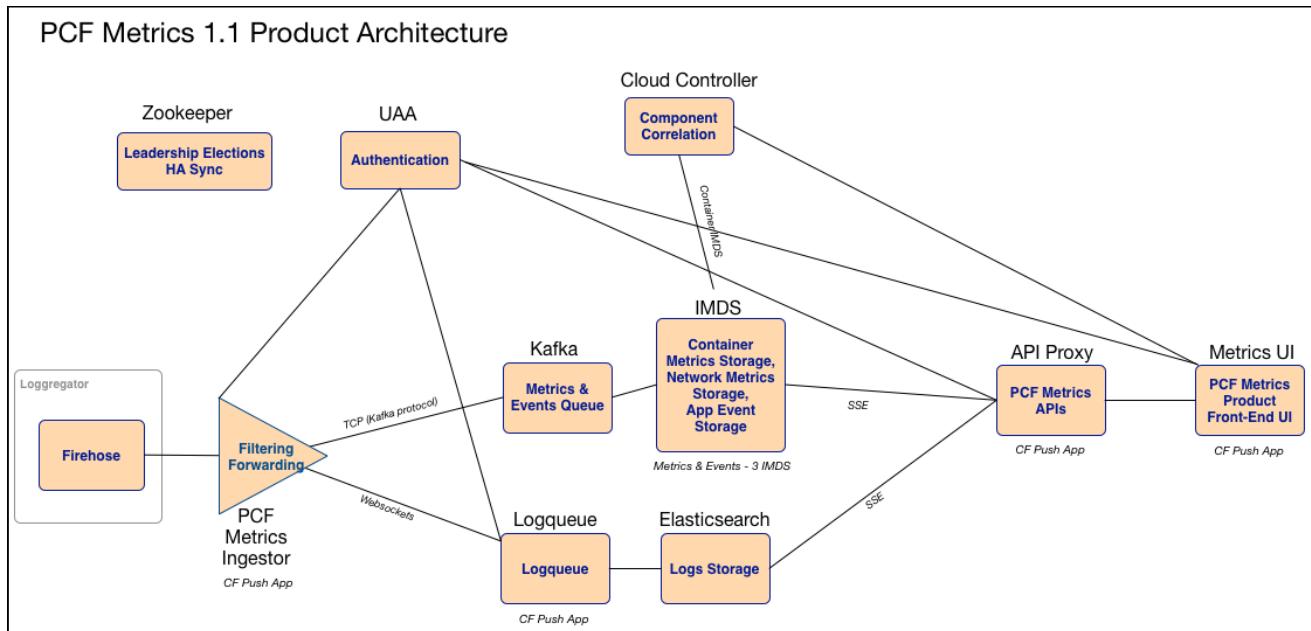
## Interpret Metrics

PCF Metrics provides data on CPU usage, memory usage, disk usage, latency, HTTP errors, and HTTP requests. Refer to the following list for help with interpreting these metrics.

- A spike in CPU might point to a process that is computationally heavy. Scaling app instances can relieve the immediate pressure, but investigate the app to better understand and fix the root cause.
- A spike in memory might mean a resource leak in the code. Scaling app memory can also relieve the immediate pressure, but look for and resolve the underlying issue so that it does not occur again.
- A spike in disk might mean the app is writing logs to files instead of STDOUT, caching data to local disk, or serializing huge sessions to disk.
- A spike in latency means your users are waiting longer to use your app. Scaling app instances can spread that workload over more resources and result in faster response times.
- A spike in HTTP errors means one or more 4xx or 5xx errors have occurred. Check your app logs for more information.
- A spike in HTTP requests means more users are using your app. Scaling app instances can reduce the higher latency that may result.

## PCF Metrics Product Architecture

This topic describes the product architecture of Pivotal Cloud Foundry (PCF) Metrics.



1. The Ingestor consumes application metrics, events, and logs from the PCF deployment through the Loggregator Firehose. For more information about the Loggregator system, see the [Overview of the Loggregator System](#) topic.
2. The Ingestor forwards data to different components based on the type of data:
  - o Metrics and events data go to the [Apache Kafka](#) component.
  - o Logs go to the Logqueue application deployed in PCF.
3. Kafka stores metrics and events data in one of three In-memory Database System (IMDS) components: Container Metrics IMDS, Network Metrics IMDS, and App Event IMDS. The Container Metrics IMDS fetches current quota data from the Cloud Controller. Logqueue stores log data in the [Elasticsearch](#) cluster.
4. Product-specific APIs expose data from the IMDS components and the Elasticsearch cluster.
5. The Metrics UI uses the product-specific APIs to display data to users. The Metrics UI also displays application names, spaces, orgs, and other metadata that it receives from the Cloud Controller.

## PCF Metrics Release Notes and Known Issues

### Version 1.1.5

**Release Date:** November 15, 2016

#### Notes

- PCF Metrics 1.1.5 - now with stemcell 3263

#### Known Issues

- Due to a stemcell upgrade issue in earlier versions of Ops Manager, you must be on Ops Manager 1.7.8 or later to upgrade to PCF Metrics 1.1
- Elastic Runtime deployments running on GCP use a HTTPS load balancer that does not support websockets. Several PCF Metrics components require websockets to communicate with each other, such as the SSE connection between the UI and the API. For this reason, PCF Metrics does not currently work on GCP. A future release of PCF Metrics will provide GCP support.
- If you do not see logs or metrics in the UI after installation and you use an F5 load balancer, you may be experiencing a proxy issue. For help, see the [Troubleshooting](#) section.
- If you have access to more than 50 apps, it is possible that you may not be able to see or search for a particular app in apps dropdown. We will fix this issue in the v1.2 release. In the meantime, the following are available workarounds:
  - Click on PCF Metrics link directly from Apps Manager
  - Copy the appGuid from Apps Manager or from CLI and paste it into the metrics URL
- Due to a known limitation with deep pagination in Elastic Search, if the results of your log query exceed 10k, we are capping the result set that returns to the UI at 10k and disabling the needle navigation interaction. We are working to overcome this issue in the next version of the product. In the meantime, if you are impacted by the 10k result cap on your logs data, you can do the following to ensure more targeted queries:
  - reduce your viewed timeslice to an hour or a minute
  - use the available search filters
  - potentially change the timestamp filter from newest to oldest
- On the Explore view, when using the needle navigation interaction on the metrics graphs to jump to a particular point in time of your application logs, you may occasionally see the needle snap to a slightly different time stamp than the time selected. This can occur when there are fewer log lines available for the chosen time and the needle instead snaps to a nearby time. If you experience this issue, we suggest that you scroll within the logs view to the desired time, at which point you should also see the needle move itself to the same time stamp.
- For applications that do not have any activity in the past 24 hours (which means no app events or http requests have been generated), users will not see any data in the UI. They will also need to refresh their browser after metrics are generated by the use of the app.
- While installing the PCF Metrics tile, the default Resource Config settings for each resource pool may be over-sized for POC/Beta purposes. You may adjust them manually to fit your environment.

### Version 1.1.3

**Release Date:** October 4, 2016

#### Notes

- PCF Metrics 1.1.3 - now with stemcell 3233

#### Known Issues

- Due to a stemcell upgrade issue in earlier versions of Ops Manager, you must be on Ops Manager 1.7.8 or later to upgrade to PCF Metrics 1.1
- If you do not see logs or metrics in the UI after installation and you use an F5 load balancer, you may be experiencing a proxy issue. For help, see the [Troubleshooting](#) section.

- If you have access to more than 50 apps, it is possible that you may not be able to see or search for a particular app in apps dropdown. We will fix this issue in the v1.2 release. In the meantime, the following are available workarounds:
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- While installing the PCF Metrics tile, the default Resource Config settings for each resource pool may be over-sized for POC/Beta purposes. You may adjust them manually to fit your environment.

## Version 1.1.2

**Release Date:** August 31, 2016

### Notes

- PCF Metrics 1.1.2 - Release bumps required CLI to CLI v6.21.1 and configures CLI environment variable CF\_DIAL\_TIMEOUT to 30 seconds to reduce chance of CLI errors when network connection attempts include slow DNS resolution times

### Known Issues

- Due to a stemcell upgrade issue in earlier versions of Ops Manager, you must be on Ops Manager 1.7.8 or later to upgrade to PCF Metrics 1.1
- If you do not see logs or metrics in the UI after installation and you use an F5 load balancer, you may be experiencing a proxy issue. For help, see the [Troubleshooting](#) section.
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  - Click on PCF Metrics link directly from Apps Manager
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  - reduce your viewed timeslice to an hour or a minute
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- On the Explore view, when using the needle navigation interaction on the metrics graphs to jump to a particular point in time of your application logs, you may occasionally see the needle snap to a slightly different time stamp than the time selected. This can occur when there are fewer log lines available for the chosen time and the needle instead snaps to a nearby time. If you experience this issue, we suggest that you scroll within the logs view to the desired time, at which point you should also see the needle move itself to the same time stamp.
- For applications that do not have any activity in the past 24 hours (which means no app events or http requests have been generated), users will not see any data in the UI. They will also need to refresh their browser after metrics are generated by the use of the app.
- While installing the PCF Metrics tile, the default Resource Config settings for each resource pool may be over-sized for POC/Beta purposes. You may adjust them manually to fit your environment.

## Version 1.1.0

Release Date: August 1, 2016

### Notes

- PCF Metrics 1.1.0 introduces a new look and a new capability to search and filter up to 24hrs of your application logs. See the [Using PCF Metrics](#) topic for more info.
  - With the addition of application logs in PCF Metrics 1.1.X, the product has introduced new Elastic Search Master and Data nodes for logs storage. The additional storage required to support application logs increases the default tile size on installation to approximately 250GB.
- PCF Metrics 1.1.0 uses stemcell 3232

### Known Issues

- Due to a stemcell upgrade issue in earlier versions of Ops Manager, you must be on Ops Manager 1.7.8 or later to upgrade to PCF Metrics 1.1
- If you do not see logs or metrics in the UI after installation and you use an F5 load balancer, you may be experiencing a proxy issue. For help, see the [Troubleshooting](#) section.
- If you have access to more than 50 apps, it is possible that you may not be able to see or search for a particular app in apps dropdown. We will fix this issue in the v1.2 release. In the meantime, the following are available workarounds:
  - Click on PCF Metrics link directly from Apps Manager
  - Copy the appGuid from Apps Manager or from CLI and paste it into the metrics URL
- Due to a known limitation with deep pagination in Elastic Search, if the results of your log query exceed 10k, we are capping the result set that returns to the UI at 10k and disabling the needle navigation interaction. We are working to overcome this issue in the next version of the product. In the meantime, if you are impacted by the 10k result cap on your logs data, you can do the following to ensure more targeted queries:
  - reduce your viewed timeslice to an hour or a minute
  - use the available search filters
  - potentially change the timestamp filter from newest to oldest
- On the Explore view, when using the needle navigation interaction on the metrics graphs to jump to a particular point in time of your application logs, you may occasionally see the needle snap to a slightly different time stamp than the time selected. This can occur when there are fewer log lines available for the chosen time and the needle instead snaps to a nearby time. If you experience this issue, we suggest that you scroll within the logs view to the desired time, at which point you should also see the needle move itself to the same time stamp.
- For applications that do not have any activity in the past 24 hours (which means no app events or http requests have been generated), users will not see any data in the UI. They will also need to refresh their browser after metrics are generated by the use of the app.
- While installing the PCF Metrics tile, the default Resource Config settings for each resource pool may be over-sized for POC/Beta purposes. You may adjust them manually to fit your environment.

### Past Minor Version 1.0.X

Release Notes for 1.0.X releases can be found [here](#)