Configuring and Using the Profiler Application

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Adding a Server to the Profiler

Adding a Server to the Profiler

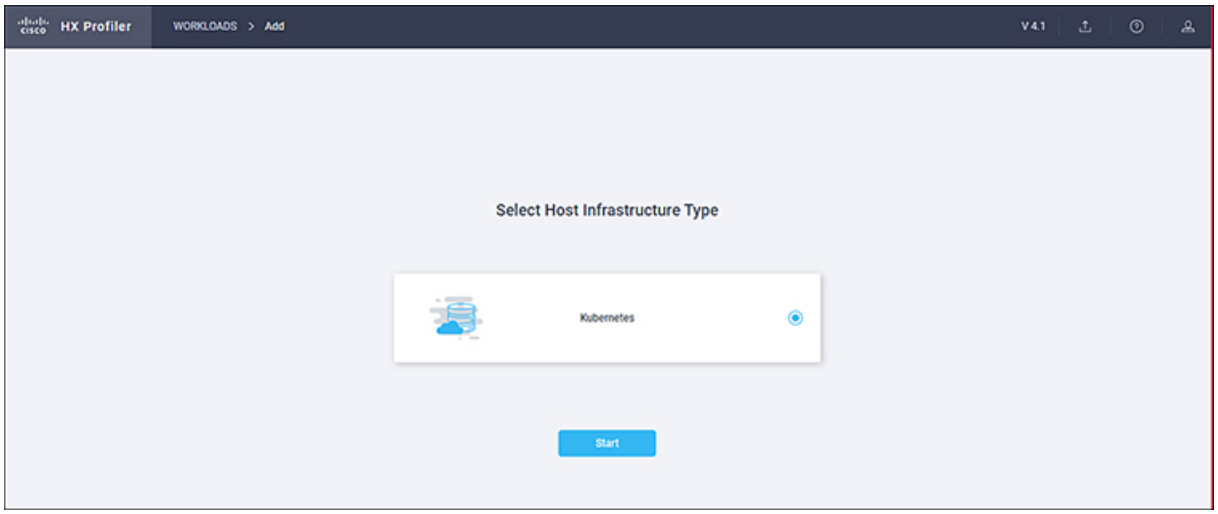
At the first login following installation of HX Workload Profiler, you are redirected to the landing page where you can find the **+ Add Workload** option on the top right corner of the page. You can select Kubernetes, then you can add multiple Kubernetes nodes.

To calculate the metrics for a host, the Profiler captures the metrics for all the Containers on the Nodes. You then need to select the worker nodes to be profiled. By default, all the worker nodes are selected.

The workflow includes:

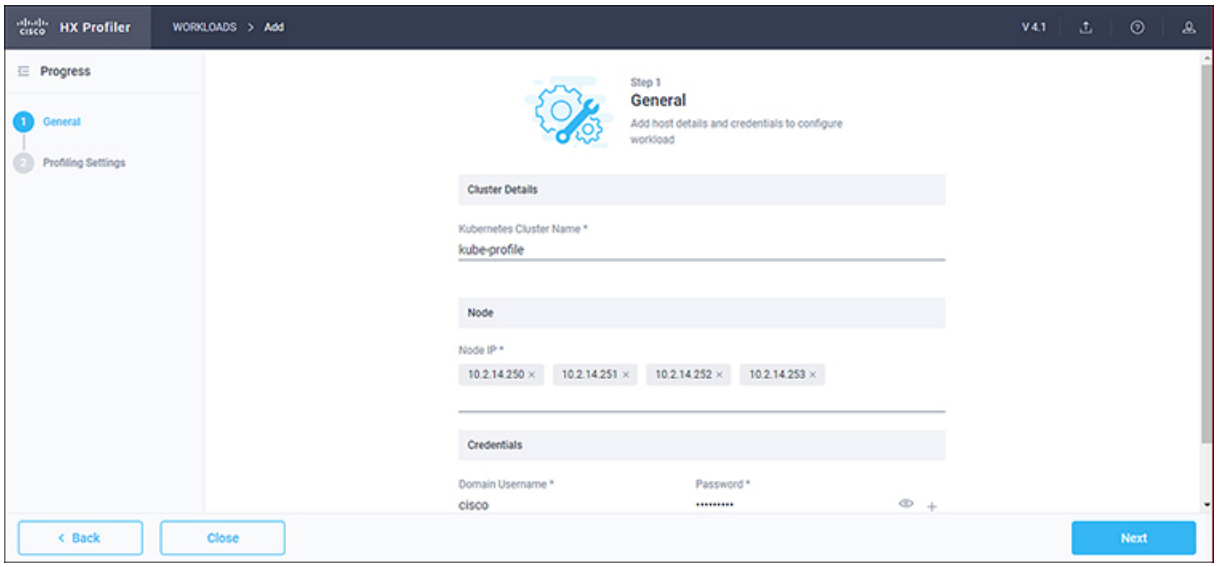
- **General tab:** Records your Kubernetes node details and then connects to the Kubernetes. If the connection succeeds, the Next button displays enabling you to select the profiling settings.
- **Profiling Setting tab:**, which provides:
  - Profile Name: for specifying the name of the profile which must be unique.
  - Profile period: for specifying the period of profiling. Default value is 7days and the minimum value is 1day.
  - Polling Interval: for specifies the frequency for which polling should occur.
  - Quick Profile: for a quick estimate
  - Detailed Profile: for detailed end-to-end profile results.

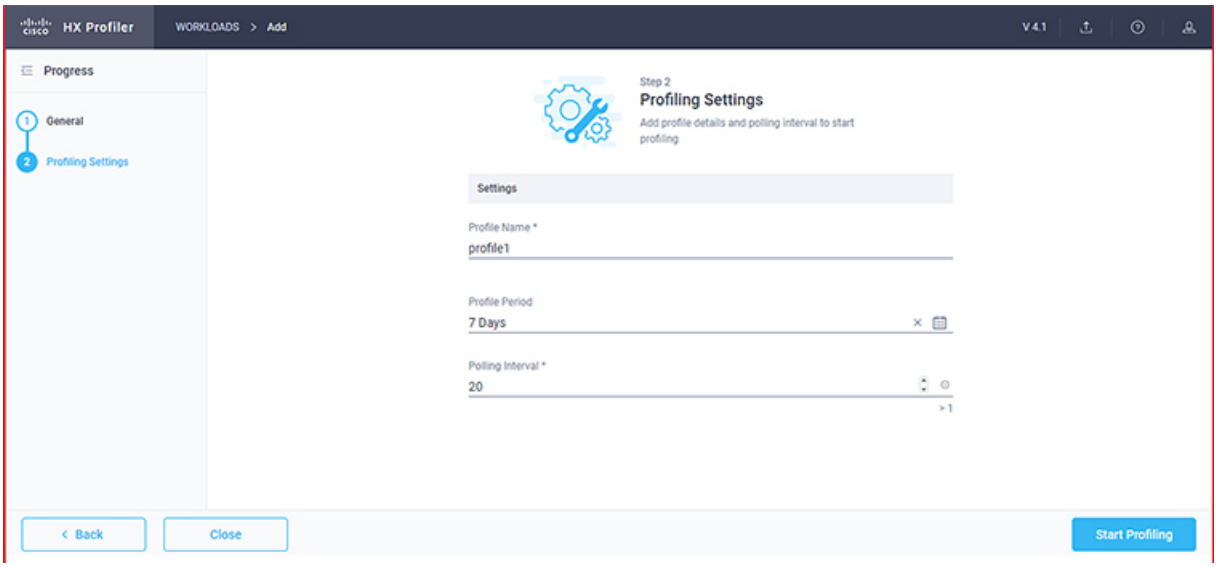
Step 1 Log in to the Profiler. See Logging in to the Profiler.



Step 2 Follow the steps provided to enter values for the following options:

Item	Description
Kubernetes Server Name	Name of the Kubernetes Server you are adding.
User Name	Name of the user as part of the login credentials for the Kubernetes Server.
Password	The password set as part of the login credentials for the Kubernetes Server.
Polling Interval	The interval at which you want polling to occur. The default is 20 seconds. You can change the interval to between 20-120 seconds, based on the number of hosts and Containers being polled in that Kubernetes Server.





Step 3 Click **Start Profiling**. The Profiler service starts automatically.
When the connection status indicates successful connection, click **Next**.

Step 4 On the **Poll filter** tab, review the hierarchy values.

Starting Data Profiling

Starting Kubernetes Data Profiling

Following the successful addition of a Kubernetes Server, the new Kubernetes Server displays on the Data Inventory (home) page. You configure the profiling attributes by providing the profile name and duration.

Table 1: Profiling Operation Options

Item	Description
Delete (trash can)	Deletes a previously added Kubernetes Server.
Edit (pen)	Edit Kubernetes Server properties to add or remove hosts for polling.
Stop (|| symbol)	Stops the profiling so you can resume it later.
Reset (refresh symbol)	Performs a reset operation, which creates a new profile and starts polling. When you trigger reset, the profiler stops the active/running profile and creates a new one. A prompt asks for confirmation.
View Collection	Opens the View Collection page so you can browse through the collected data as part of the profiling to review the HOST and Container level data.

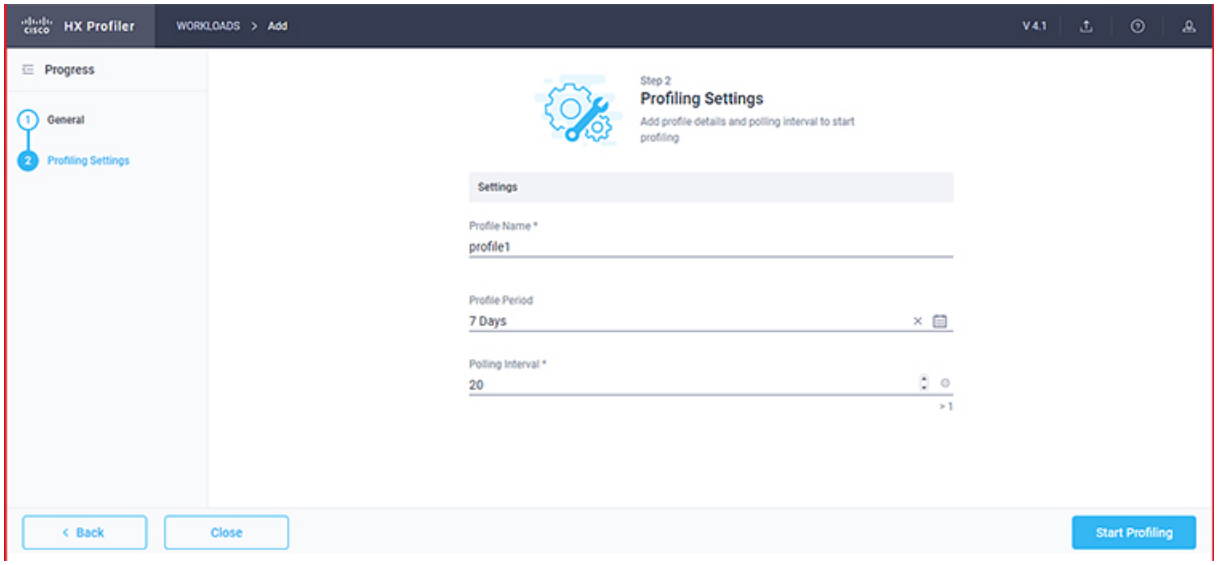
Polling starts as soon as you enter the profiler name, days, and polling period.

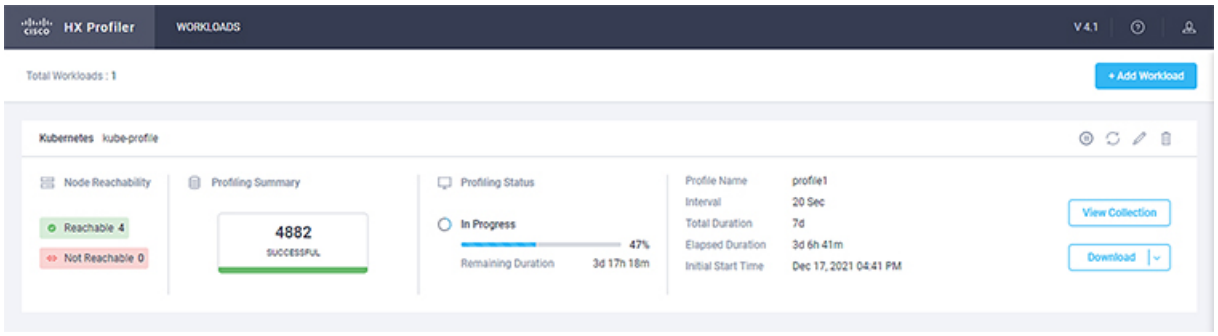
Step 1 In the dialog that displays, perform the following steps:

a) Enter a name for the profile.

b) Select a duration value from the **Profiling Period** down-drop list.

c) Click **Ok**.





Following successful profile creation, the Profiler begins polling the selected hosts and all the Containers on those hosts. When the polling starts, the data collector runs as a background process. The Datacenter Inventory page displays information about the hosts and polling, showing number of hosts and the status of the polling.

Step 2 (Optional) To stop an in-progress profiling operation so you can resume it later, see Stopping the Profiler Service.

Step 3 (Optional) To stop an in-progress profiling operation, click **Reset**. You can then start a new one.

Step 4 (Optional) To browse through the collected data, see Viewing a Kubernetes Collection, on page 10.

Step 5 (Optional) To download profiling data, see Downloading Kubernetes Profiling Results, on page 5.

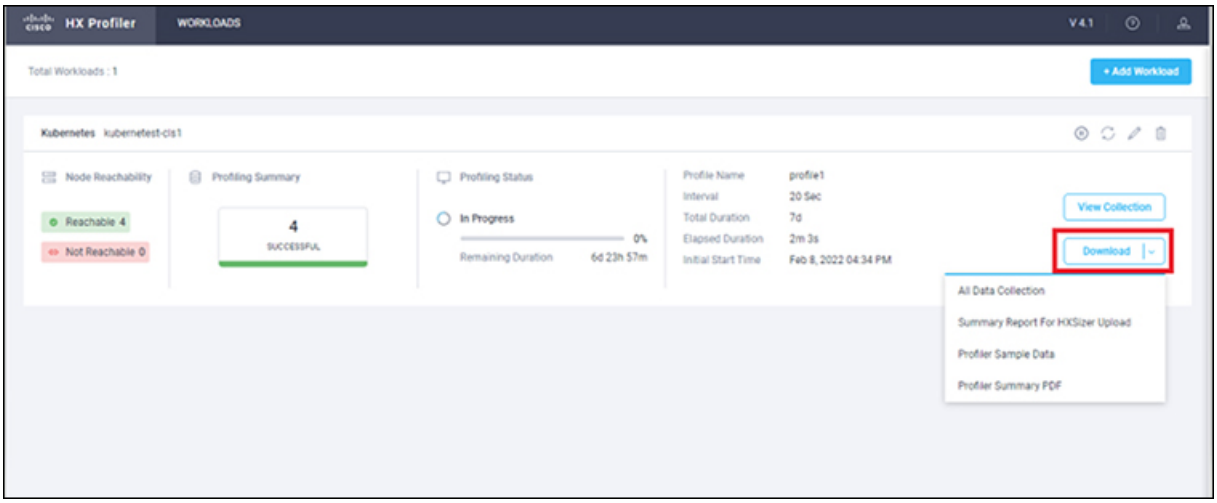
Downloading Profiling Results

Downloading Kubernetes Profiling Results

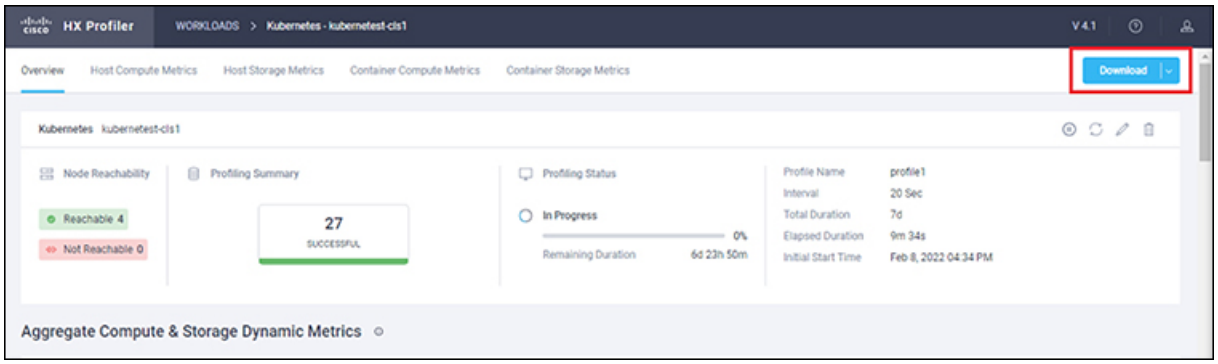
Step 1 On the Datacenter Inventory page, locate and select the profile whose data you want to download.

Step 2 Use the **Download** option to select one of the following:

Option	Description
All Data Collection	Downloads summary, time series, and CVS for both the host and Container
Summary Report for HxSizer Upload	Collects information from Kubernetes cluster. The download provides the output in CSV format and can be directly uploaded to the Compute and Capacity Workload of HxSizer.
Profiler Sample Data	Downloads the sampled data for the selected profile in the following formats: • Summarized host data (CVS) • Summarized Container data (CVS) • Time series data of host (zipped CSV file) • Time series data of Container (zipped CSV file)
Profiler Summary PDF	PDF download



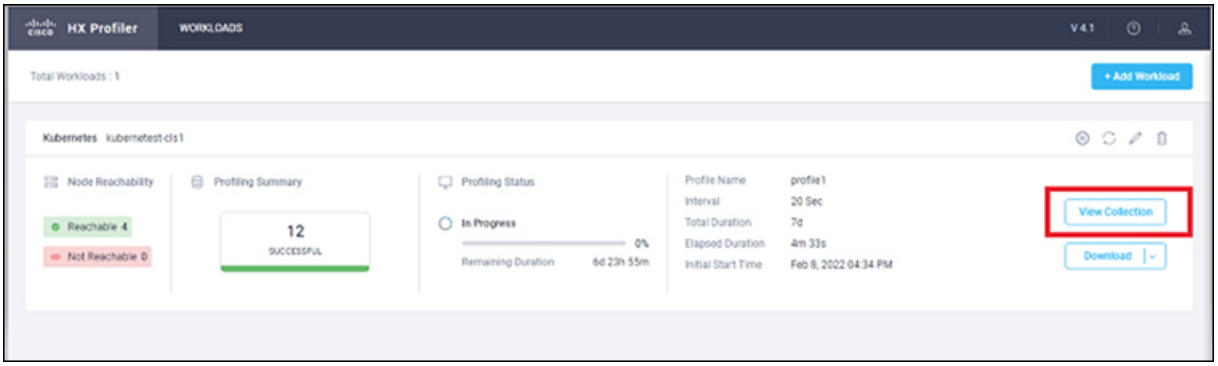
Step 3 You can still download the profiling results when viewing the compute, storage, and network data of various hosts and Containers by clicking on the **Download** button on the top right corner of the UI.

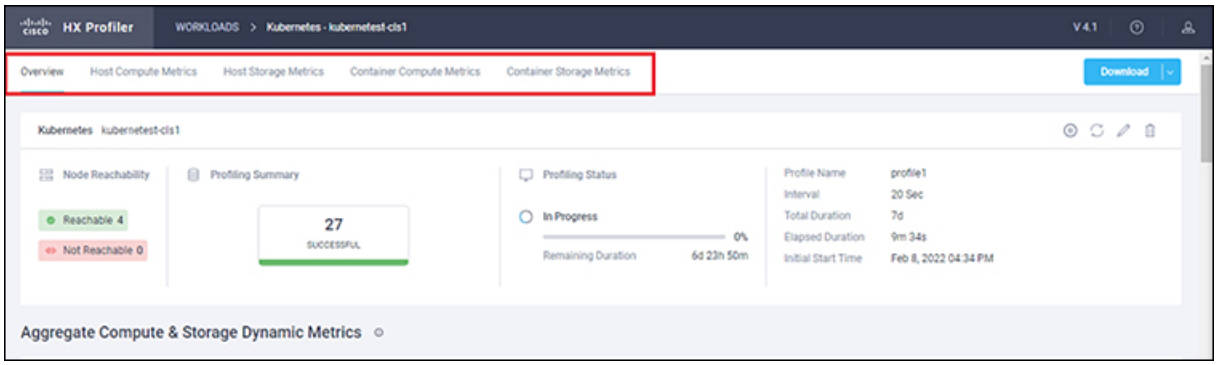


Viewing Data Collections from Servers

Viewing Data Collections from Kubernetes Server

The View Collection page has five tabs at the top left of the page, Overview, Host Compute Metrics, Host Storage Metrics, Container Compute Metrics, Container Storage Metrics. When clicked, they show summary data described in this section. The View Collection page also provides the summarized data for Compute Summary and Storage Summary of individual node and Containers. You can also fetch the data for specific period of profiling using the predefined filter present on the top right corner of the page with the minimum being 30minutes or the user can also use the timeline to select the time period. The following sections describe summary data that appears in each tab and view through filter tool use.





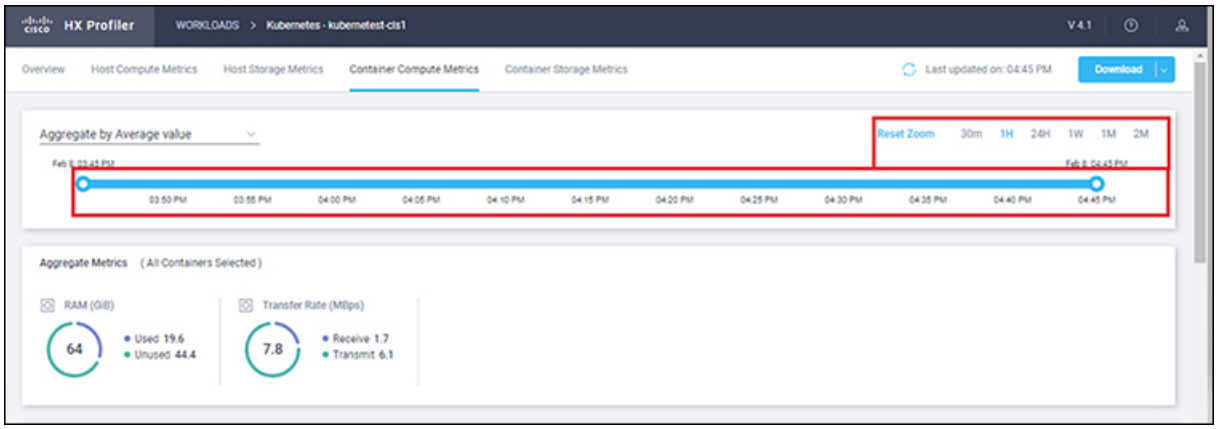
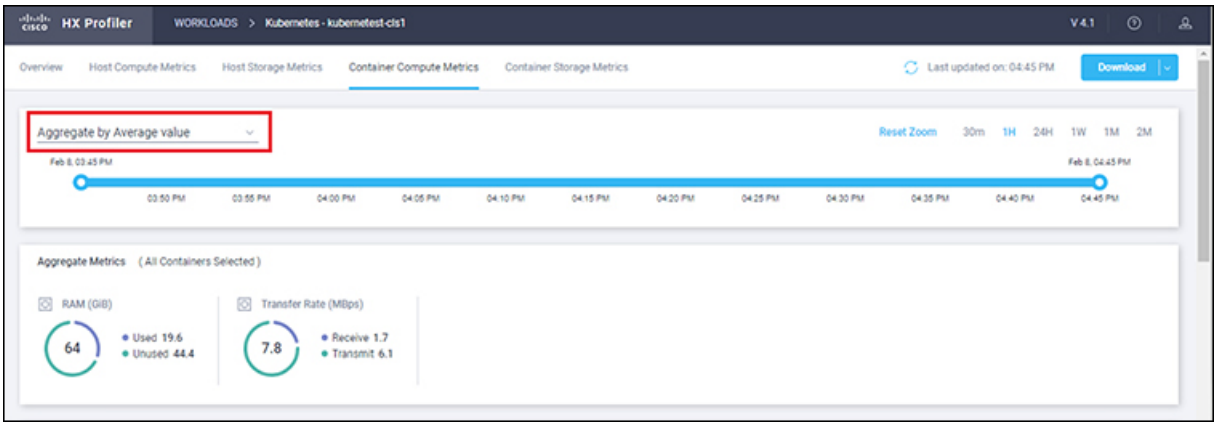
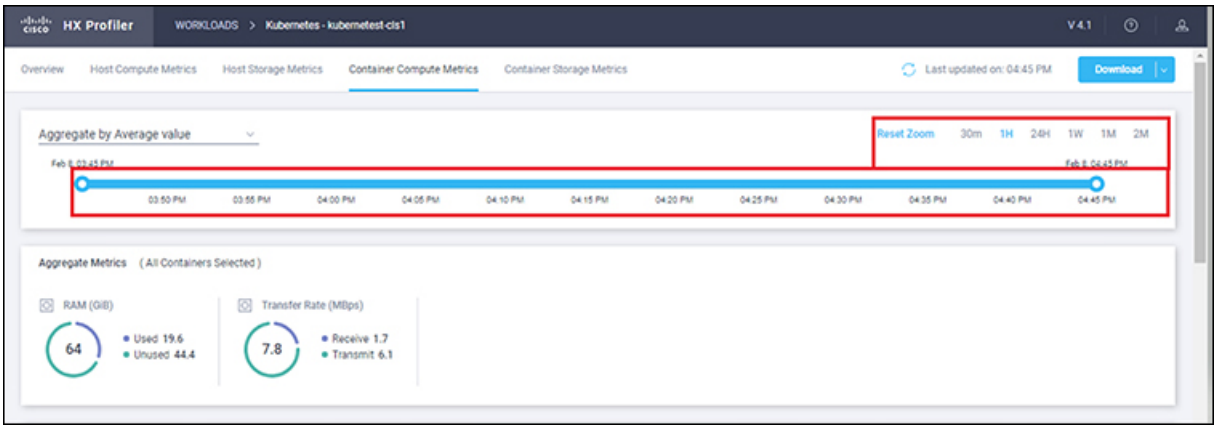


Table 2: Host View Filter Options

Item	Description
Aggregation	Filters to view the summarizations based on peak or average selections. Your selection determines the display of the table metrics and trends. The summarized values represent the following: • Peak: Peak value of all the metrics in the selected interval • Average: Averages of all the values in the selected interval

You can filter Host metrics using the search option by host name only. For Container metrics, you can filter with the Container name, using the search option.





Host and Container Summarized Metrics

Based on your time period and parameters selections, the Profiler computes and populates the compute and storage metrics. Metrics display for the following values:

Host View Compute Table

- Host_Name
- Processor Type
- Clock (GHz)
- #Physical Cores
- CPU Util (%)
- RAM (GB)
- RAM Util (GB)
- Network Throughput- Rx (MBps)
- Network Throughput- Tx (MBps)

Host View Storage Table

- Provisioned Capacity (TB)

- Used Storage Capacity (TB)
- Read Throughput (MBps)
- Write Throughput (MBps)
- Read (%)
- Write (%)
- Read IOPS
- Write IOPS
- Read Latency (ms)
- Write Latency (ms)

Container View Compute Table

- Container Name
- Clock (GHz)
- #Physical Cores
- CPU Util (%)
- RAM (GB)
- RAM Util (GB)
- Network Throughput- Rx (MBps)
- Network Throughput- Tx (MBps)

Container View Storage Table

- Container Name
- Disk Capacity (GB)
- Disk Used (GB)
- Read Throughput (MBps)
- Write Throughput (MBps)
- Read (%)
- Write (%)
- Read IOPS
- Write IOPS
- Read Latency (ms)
- Write Latency (ms)

Host and Container Trends

The View Collection page provides trend charts and an overview of various parameters at a host level and Container level for both compute and storage parameters. The overview provides information aggregate storage and compute matrix along with a 30-day sizing summary. You can view the trend charts by selecting the host or the Container from the table.

Metrics for the following values display in the trend charts:

Host View Compute Trends

- RAM Utilization (GiB)
- Receive Rate (MBps)
- Transmit Rate (MBps)

Container View Compute Trends

- RAM Utilization (GB)
- Receive Rate (Mbps)
- Transmit Rate (Mbps)

Host and Container View Storage Trends

- Read Throughput (MBps)
- Write Throughput (MBps)
- Read Ratio
- Write Ratio
- Read IOPS
- Write IOPS
- Read Latency (ms)
- Write Latency (ms)

Viewing a Kubernetes Collection

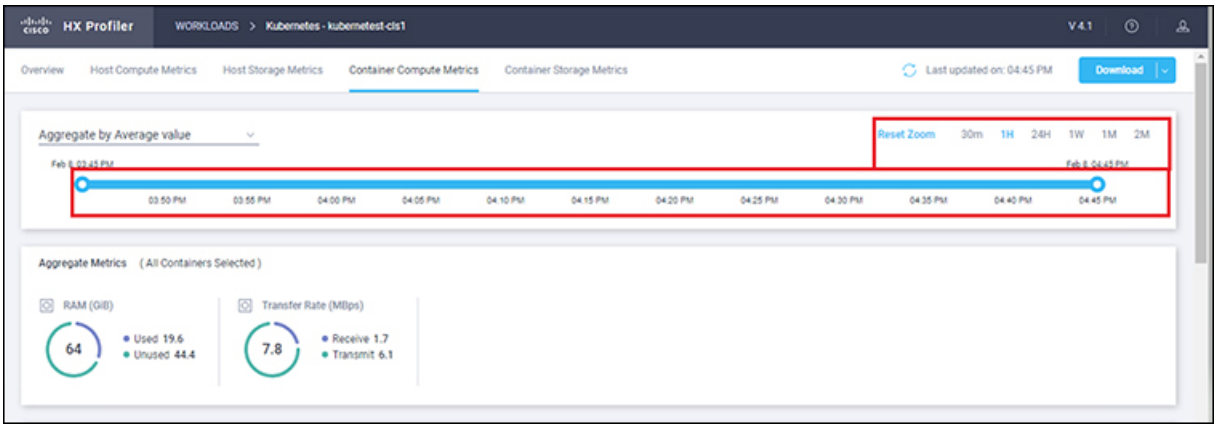
You can also use the filter and search tool in the Hosts and Container views to display only those Hosts and Containers that you want to see.

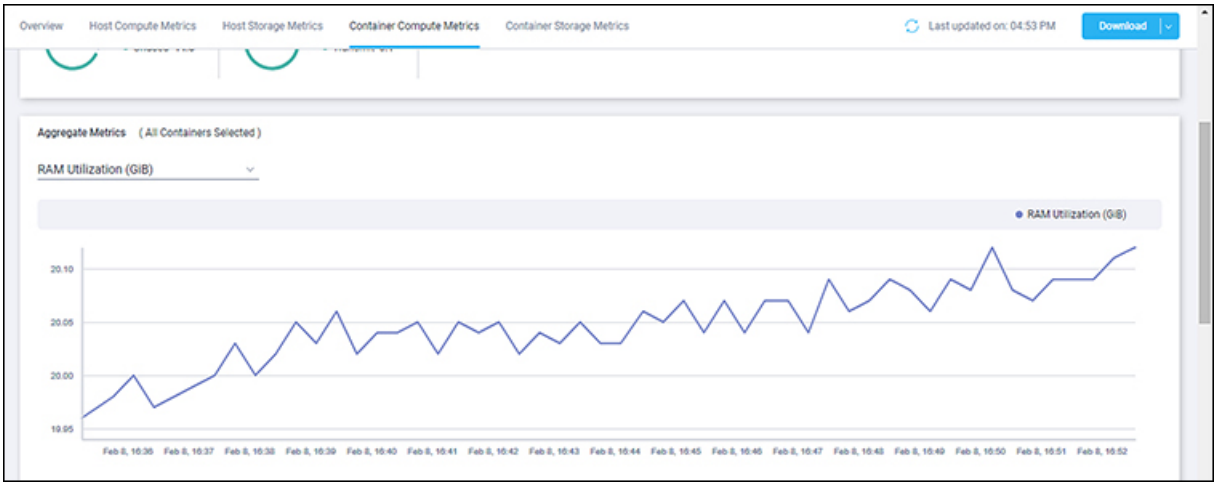
Step 1 In the Datacenter Inventory page, click **View Collection** to browse through the collected data.

Step 2 In the View Collection page, select between **Host Compute Metrics**, **Host StorageMetrics**, **Container Compute Metrics** or **Container Storage Metrics**.

Step 3 In the **Select Containers** tab, select or unselect the toggle switch for the Containers you want to view, then click **Next**. All Containers are selected by default.

Step 4 To view data for a different time period, select from the options in the top right corner with the default minimum value of 30 minutes. Use the time slider above the fixed time period selection to view data for a specific time range from the selected time period.


HX Profiler
WORKLOADS > Kubernetes - kubernetest-cls1
V 4.1
Overview
Host Compute Metrics
Host Storage Metrics
Container Compute Metrics
Container Storage Metrics
Last updated on: 04:45 PM
Download
Aggregate by Average value
Reset Zoom
30m
1H
24H
1W
1M
2M
Aggregate Metrics (All Containers Selected)
RAM (GiB)
64
Used 19.6
Unused 44.4
Transfer Rate (MBps)
7.8
Receive 1.7
Transmit 6.1


Overview
Host Compute Metrics
Host Storage Metrics
Container Compute Metrics
Container Storage Metrics
Last updated on: 04:53 PM
Download
Aggregate Metrics (All Containers Selected)
RAM Utilization (GiB)
RAM Utilization (GiB)
20.10
20.05
20.00
19.95

RAM Utilization (GiB)
20.15
20.10
20.05
20.00
19.95
Search profiler_profiler-8
1 items found
50
per page
1 of 1
containerName_podNa...
Processor Type
Clock (GHz)
Physical Core
CPU Util (%)
RAM (GiB)
RAM Util (GiB)
Rx Rate (MBp...
Tx Rate (MBps)
profiler_profiler-8495b56bb-...
Intel(R) Xeon(R) Gold 5...
9.2
4
0
15.7
0
0
0