Kubernetes Explorer

Cloud Insights

NetApp
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Kubernetes Cluster Overview

The Cloud Insights Kubernetes Explorer is a powerful tool for displaying the overall health and usage of your Kubernetes clusters and allows you to easily drill down into areas of investigation.

Clicking on **Dashboards > Kubernetes Explorer** opens the Kubernetes Cluster list page. This overview page contains table of the Kubernetes clusters in your environment.

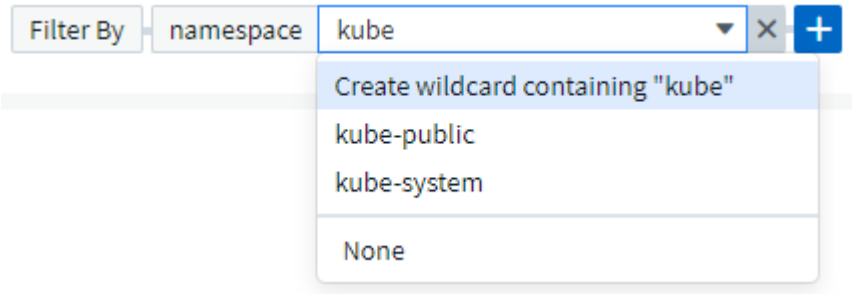
Cluster list

The cluster list displays the following information for each cluster in your environment:

- Cluster **Name**. Clicking on a cluster name will open the **detail page** for that cluster.
- **Saturation** percentages. Overall Saturation is the highest of CPU, Memory, or Storage Saturation.
- Number of **Nodes** in the cluster. Clicking this number will open the Node list page.
- Number of **Pods** in the cluster. Clicking this number will open the Pod list page.
- Number of **Namespaces** in the cluster. Clicking this number will open the Namespace list page.
- Number of **Workloads** in the cluster. Clicking this number will open the Workload list page.

Refining the Filter

When you are filtering, as you begin typing you are presented with the option to create a **wildcard filter** based on the current text. Selecting this option will return all results that match the wildcard expression. You can also create **expressions** using NOT or AND, or you can select the "None" option to filter for null values in the field.



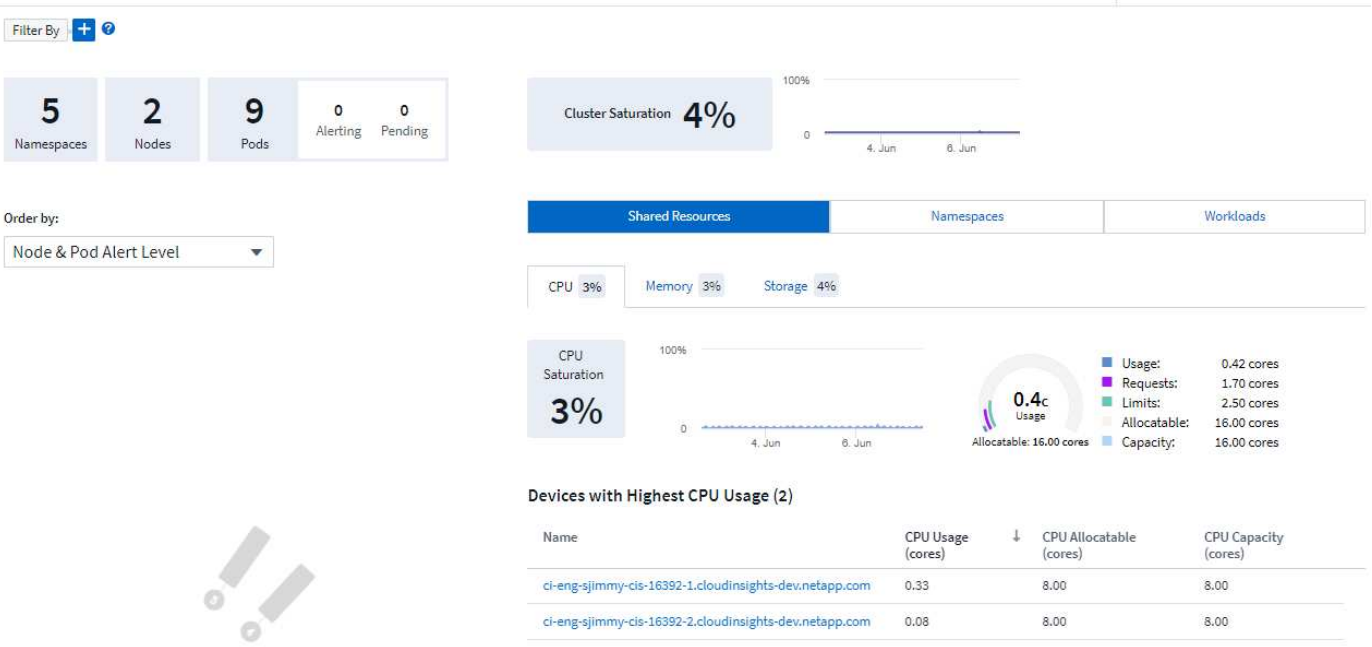
Filters based on wildcards or expressions (e.g. NOT, AND, "None", etc.) display in dark blue in the filter field. Items that you select directly from the list are displayed in light blue.

Kubernetes filters are contextual, meaning for example that if you are on a specific node page, the pod_name filter only lists pods related to that node. Moreover, if you apply a filter for a specific namespace, then the pod_name filter will list only pods on that node *and* in that namespace.

Note that Wildcard and Expression filtering works with text or lists but not with numerics, dates or booleans.

Kubernetes Cluster Detail Page

The Kubernetes cluster detail page displays a detailed overview of your Kubernetes cluster.



Namespace, Node, and Pod Counts

The counts at the top of the page show you the total number of namespaces, nodes, and pods in the cluster, as well as the number of popds that are currently alerting and pending.

Shared Resources and Saturation

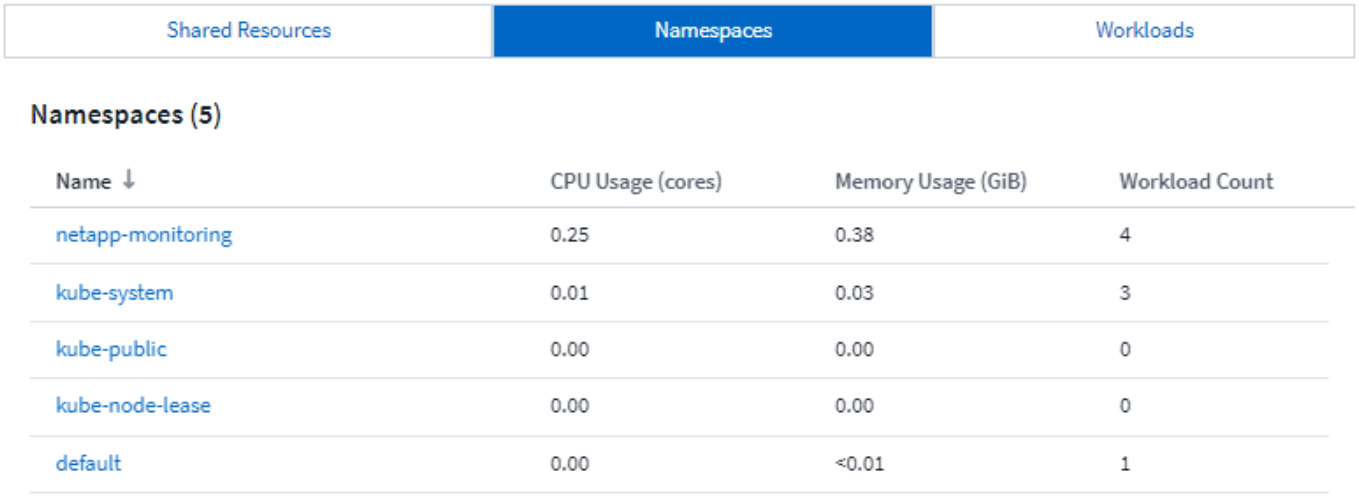
On the top right of the detail page is your cluster saturation as a current percentage as well as a graph showing the recent trend over time. Cluster saturation is the highest of CPU, memory, or storage saturation at each point in time.

Below that, the page shows by default **Shared Resources** usage, with tabs for CPU, Memory, and Storage. Each tab shows the saturation percentage and trend over time, with additional usage details. For storage, the value shown is the greater of backend and filesystem saturation, which are calculated independently.

The devices with the highest usage are shown in a table at the bottom. Click any link to explore these devices.

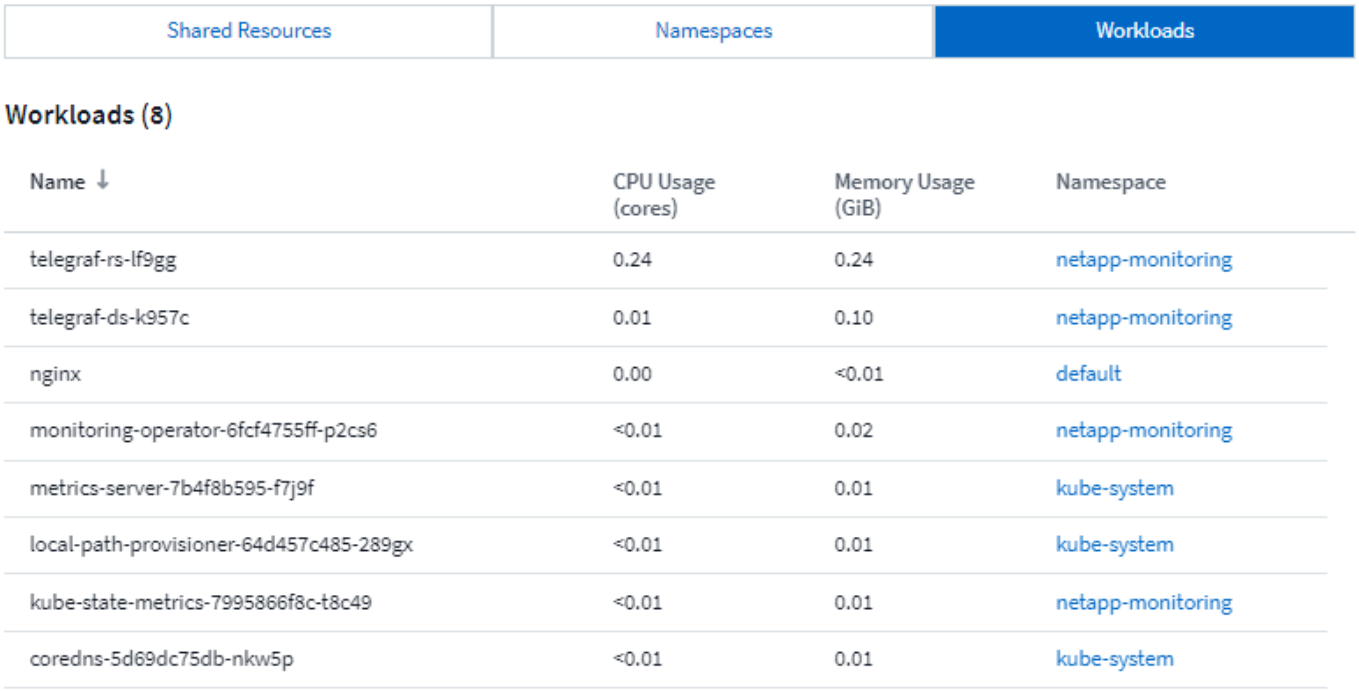
Namespaces

The Namespaces tab displays a list of all the namespaces in your Kubernetes environment, showing CPU and Memory usage as well as a count of workloads in each namespace. Click the Name links to explore each namespace.



Workloads

Similarly, the Workloads tab displays a list of the workloads in each namespace, again showing CPU and Memory usage. Clicking the Namespace links drills into each.



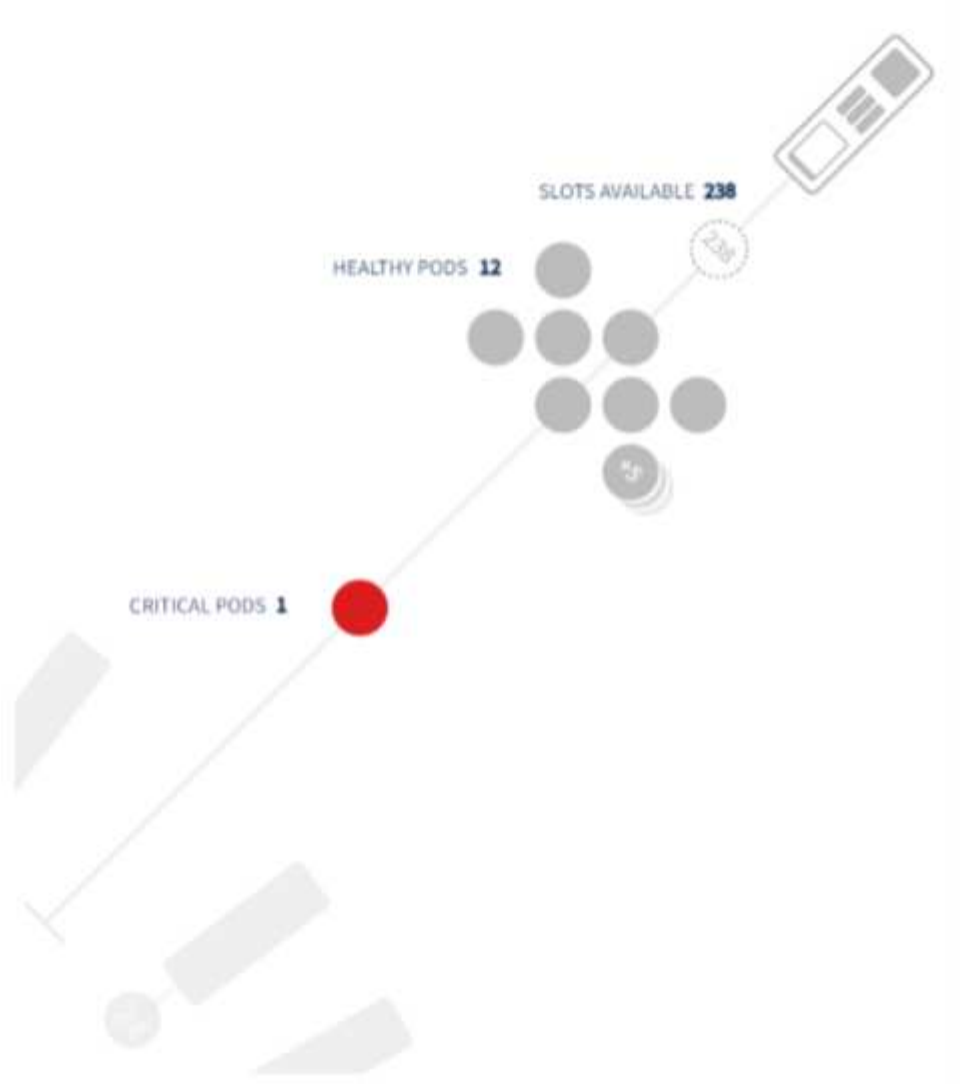
The Cluster "Wheel"

The Cluster "Wheel" section provides node and pod health at a glance, which you can drill into for more information. If your cluster contains more nodes than can be displayed in this area of the page, you will be able to turn the wheel using the buttons available.

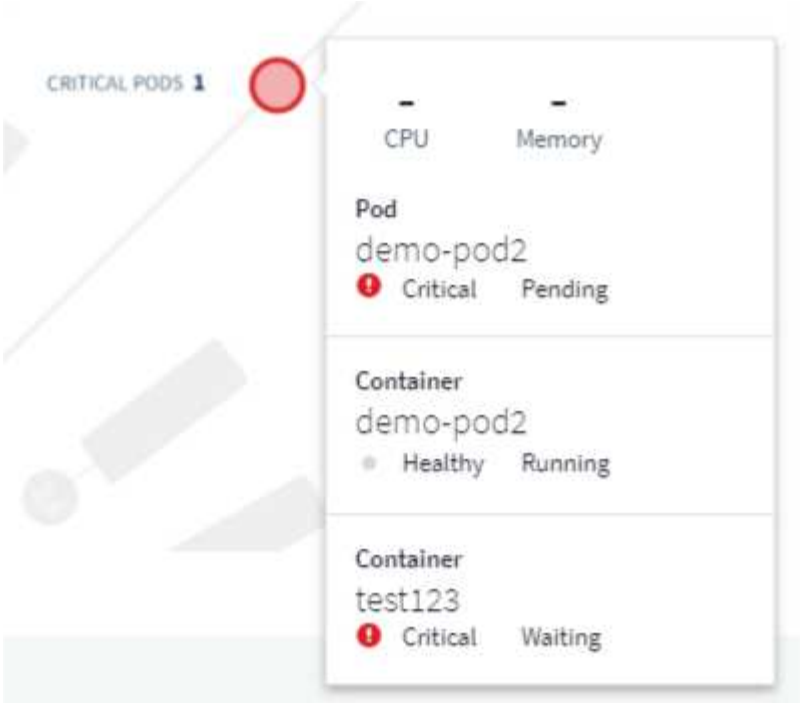
Alerting pods or nodes are displayed in red. "Warning" areas are displayed in orange. Pods that are unscheduled (that is, unattached) will display in the lower corner of the Cluster "Wheel".

Hovering over a pod (circle) or Node (bar) will extend the view of the node.

Clicking on the pod or node in that view will zoom in to the expanded Node view.



From here, you can hover over an element to display details about that element. For example, hovering over the critical pod in this example displays details about that pod.



You can view Filesystem, Memory, and CPU information by hovering over the Node elements.

A note about the gauges

The Memory and CPU gauges show three colors, since they show *used* in relation to both *allocatable capacity* and *total capacity*.