



Kubernetes Explorer

Cloud Insights

NetApp
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Table of Contents

- Kubernetes Explorer 1
- Kubernetes Cluster Overview 1
- Kubernetes Cluster Detail Page 4

Kubernetes Explorer

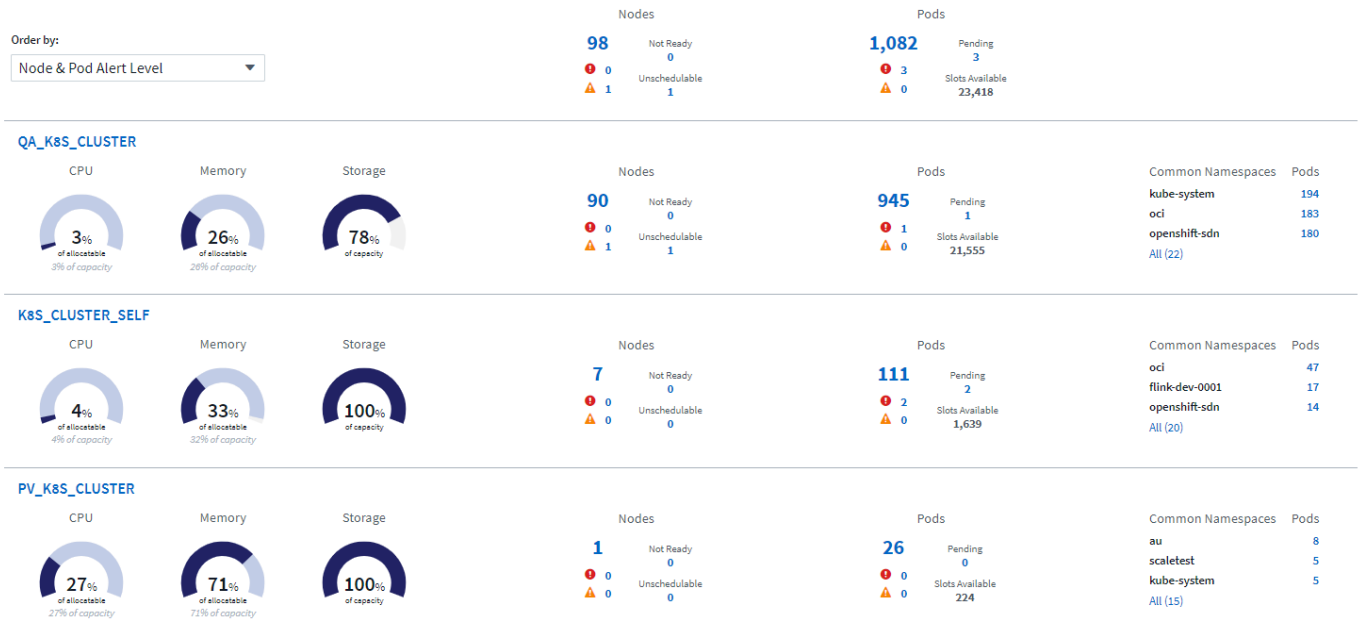
Kubernetes Cluster Overview

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 overview page. This overview page contains a wide variety of at-a-glance information.

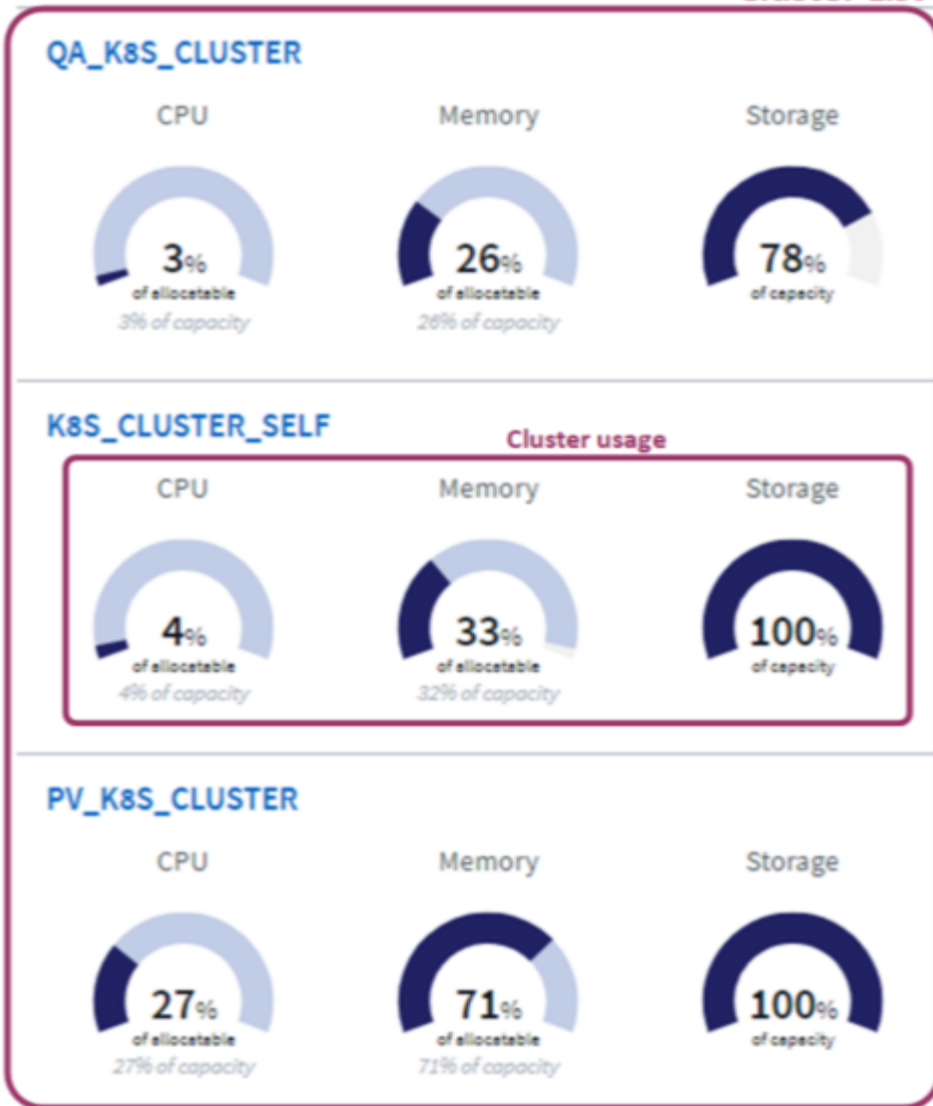


Numbers displayed in blue in the various sections of this and subsequent Kubernetes Explorer pages (for example, node/pod status, namespace counts, etc.) are links to related query pages that show the details behind those numbers.



Cluster Usage overview

Cluster List



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

- CPU: percentage of total CPU capacity in use
- Memory: percentage of total memory used
- Storage: percentage of total storage in use

You can sort the cluster list by any of the following factors:

- Node & Pod Alert Level (default)
- Cluster Name
- Number of Nodes
- Most Utilized by Compute
- Least Utilized by Compute
- Most Utilized by Storage
- Least Utilized by Storage

Clicking on a Cluster Name will open the [detail page](#) for that cluster

Node and Pod Status



Namespaces

To the right of the screen is a list of the top three namespaces utilized in each cluster. Click the **All** link to see all namespaces for the cluster.

Top Namespaces

Common Namespaces	Pods
kube-system	194
oci	183
openshift-sdn	180
All (22)	Click to see all namespaces

Common Namespaces	Pods
oci	47
flink-dev-0001	17
openshift-sdn	14
All (20)	

Common Namespaces	Pods
au	8
scaletest	5
kube-system	5
All (15)	

Kubernetes Cluster Detail Page

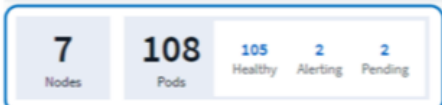
The Kubernetes cluster detail page displays detailed information about your Kubernetes cluster.

The detail page is comprised of three distinct but linked landing pages showing cluster, node, and pod information. The "Resource Usage" section changes to show the details of the selected item (cluster, node, or pod). You can see the current page type and name at the top of the screen. The current page is shown in the following hierarchy: *Site Name / Kubernetes / Cluster / Node / Pod*. You can click any part of this "breadcrumb" trail to go directly to that specific page.

My_Cl_Site / Kubernetes / * My_Cluster / ip-10-30-12-200 / ds-4dbmk

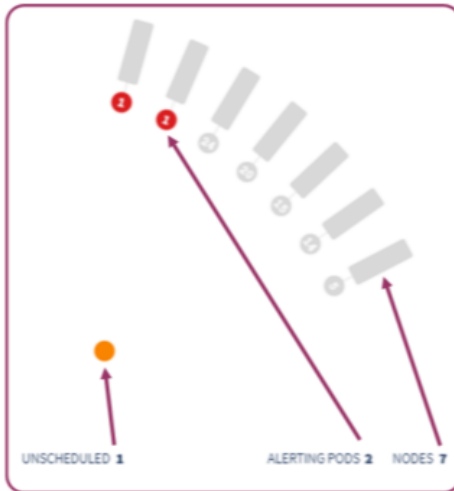
Cluster Overview

The cluster overview page provides useful information at a glance:

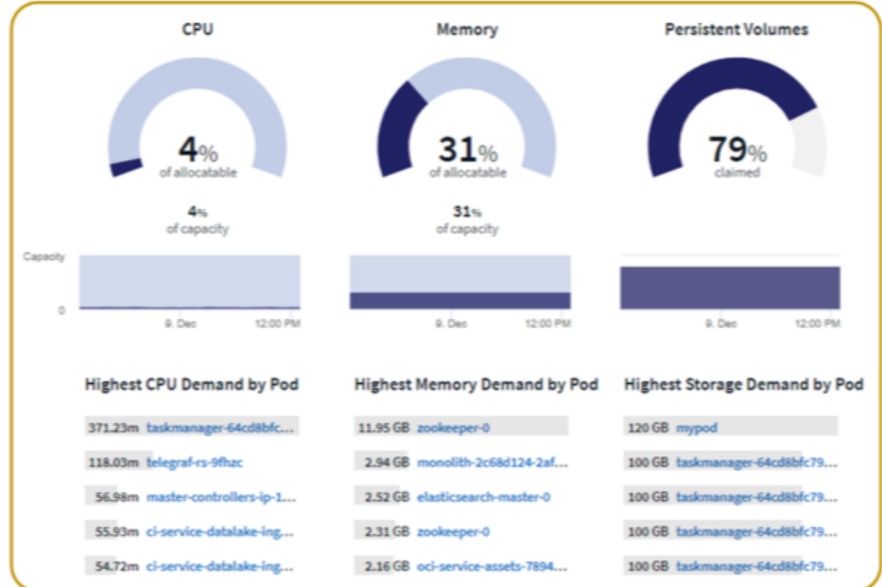


Order by: Node and Pod Counts
 Node & Pod Alert Level ▼

Cluster Health at a Glance

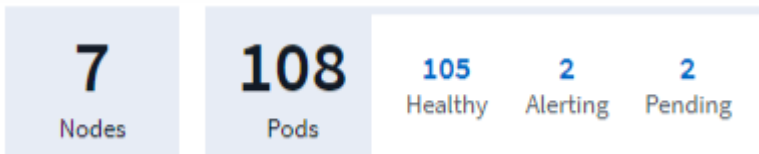


Resource Usage



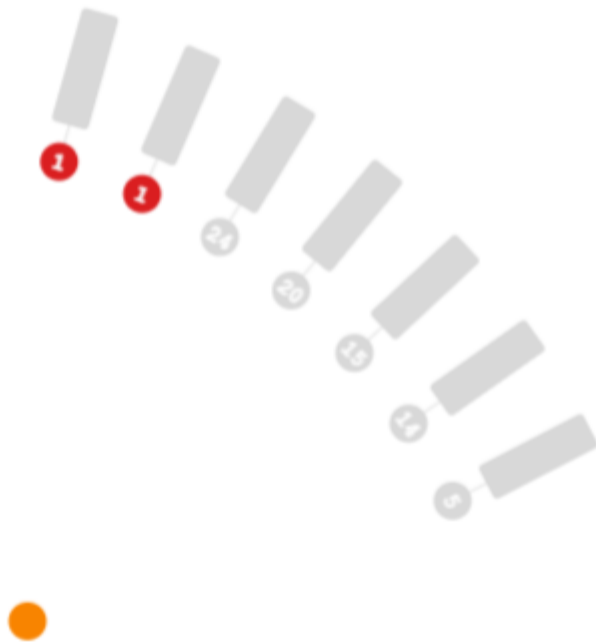
Node and Pod Counts

The Node/Pod counts at the top of the page show you the total number of nodes and pods in the cluster, as well as a breakdown of how many pods are currently alerting or pending.



It is possible that the three pod sub-counts (healthy, alerting, pending) can add up to more than the displayed total number of pods. This can happen because the *pending* count includes *all* pending pods, both unscheduled and scheduled (in other words, unattached and attached to nodes).

The Cluster "Wheel"



UNSCHEDULED 1

ALERTING PODS 2 NODES 7

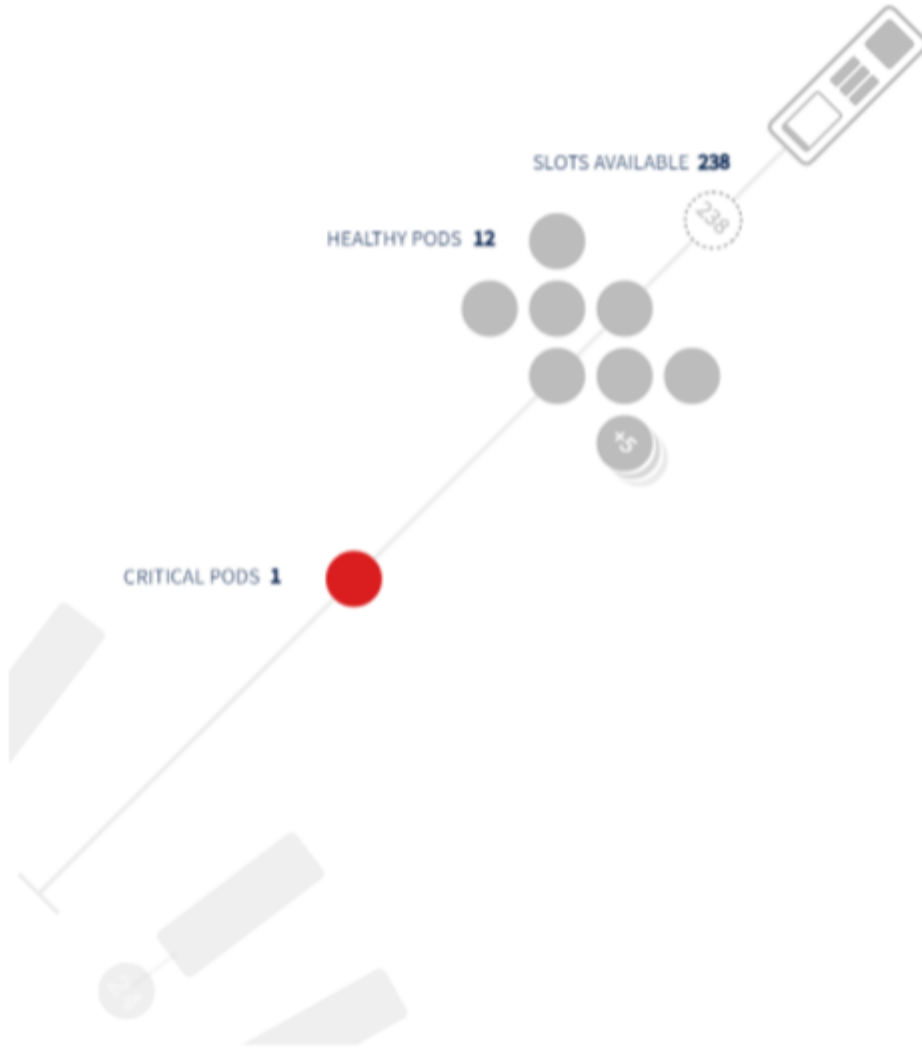
The Cluster "Wheel" section provides node and pod health at a glance, which you can drill into for more information. If your cluster contains more nodes than can be displayed in this area of the page, you will be able to turn the wheel using the buttons available.

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".

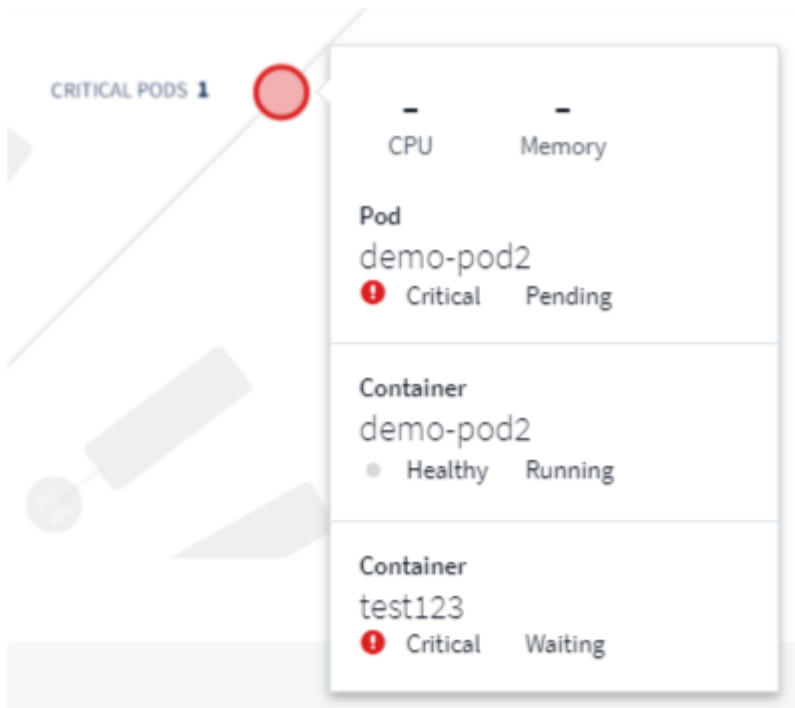
Hovering over a pod (circle) or Node (bar) will extend the view of the node.



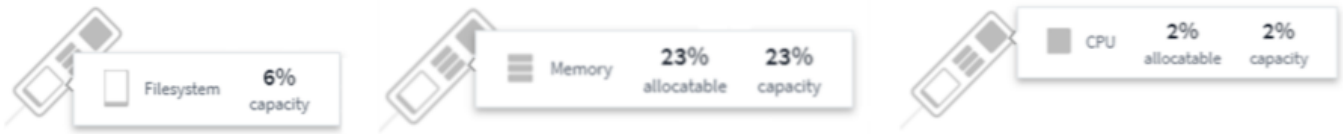
Clicking on the pod or node in that view will zoom in to the expanded Node view.



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.

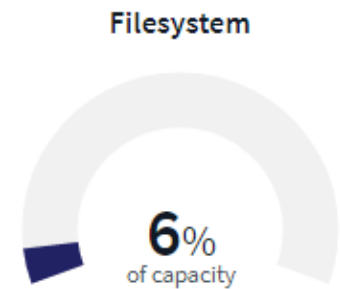
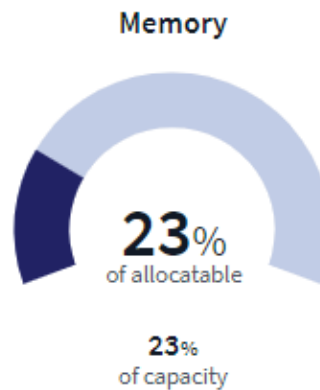
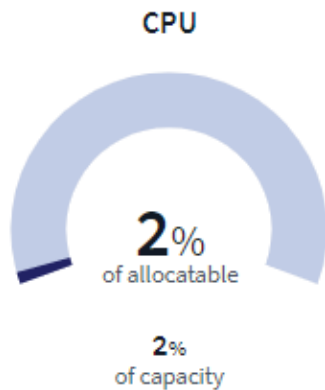


Detail Section

Each page of the Kubernetes Explorer displays a set of usage graphs that may include CPU, Memory, and Storage. Below these graphs are summaries and lists of the top objects in each category, with links to underlying details. For example, *Node* shows pods and containers, *Pod* shows PVCs and related objects and containers, etc. The following illustration shows an example of the detailed information on a *Node* page:

Labels
-

Node IP
10.30.23.207



Pods

Containers

Status ↑		Name	Healthy Containers	Namespace
🚨 Critical	Pending	demo-pod2	1 of 2	k8wheel
● Healthy	Running	ci-exclusive-node-scheduler-6dc4dd96-s6h9t	2 of 2	kafka-lake-0001
● Healthy	Running	ci-service-apikey-7676fd5f7d-ptmh9	1 of 1	oci
● Healthy	Running	ci-service-notifications-7f594c4bbd-4p7hz	1 of 1	oci
● Healthy	Running	ci-service-webui-rest-5d454c8648-98llk	1 of 1	oci
● Healthy	Succeeded	job-odata-2c68d124-2af5-4b6b-864f-f04c04e77de5-75fnf	1 of 1	oci

Resources experiencing alerts will show at the top of the lists. Click on the affected resource to drill into it for more detail.

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*. Storage gauges only show two colors because they only show a single pair of values: *used* in relation to *total*.

Keep the following in mind when reading the gauges.

The dark blue band shows the amount used.

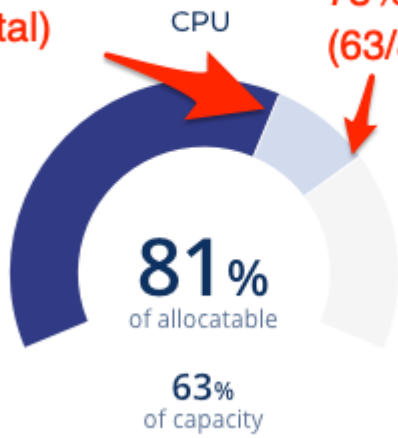
- When viewed against the *light blue band*, the dark blue shows used as the % of allocatable amount. This

matches the "% of allocatable" value shown (81 in the example below).

- When viewed against the *white background*, the dark blue shows used as the % of total capacity. This matches the "% of capacity" value shown (63 in this example).

81% of light blue (allocatable), 63% of white (total)

Total allocatable = 78% $(63/81)*100$



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