QoS Management

SolidFire Active IQ

NetApp
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From the **QoS Management** page, available from the side panel for a selected cluster, you can view information on QoS recommendations, throttling, and volumes for the nodes in a cluster.

Learn about viewing information on QoS recommendations, throttling, and volumes for a selected node:

- Recommendations
- Node Throttling
- Busiest Volumes

Find more information

NetApp Product Documentation

Recommendations

The **QoS Management** > **Recommendations** page, available from the side panel for a selected cluster, provides daily quality of service (QoS) recommendations for a cluster based on recent performance data. QoS recommendations are only supported for clusters on Element software 11.x or later.

SolidFire Active IQ makes performance recommendations based on volume statistics data for recent activity. Recommendations focus on QoS maximum and minimum guaranteed IOPS for a volume and are only visible in the UI when cluster improvements might be needed.

Find more information

- Performance and QoS for a SolidFire storage cluster
- Create and manage volume QoS policies
- NetApp Product Documentation

Node Throttling

From the **QoS Management** > **Node Throttling** page, available from the side panel for a selected cluster, you can view the percent throttling for the nodes in the cluster. The nodes are listed as thumbnail layouts on the left side of the display and are ordered depending on the degree of throttling for a selected time range.

Learn about viewing node throttling information:

- View graphs and select date ranges
- Export node throttling data

View graphs and select date ranges

The graphs and date ranges in SolidFire Active IQ are seamlessly integrated with each other. When selecting a date range, the **Node Throttling** and **Total Volume Throughput** graphs on that page adjust to the range selected. The default date range displayed for each graph is seven days. When you select a node from the graph selection tabs, these graphs change to the newly selected node.

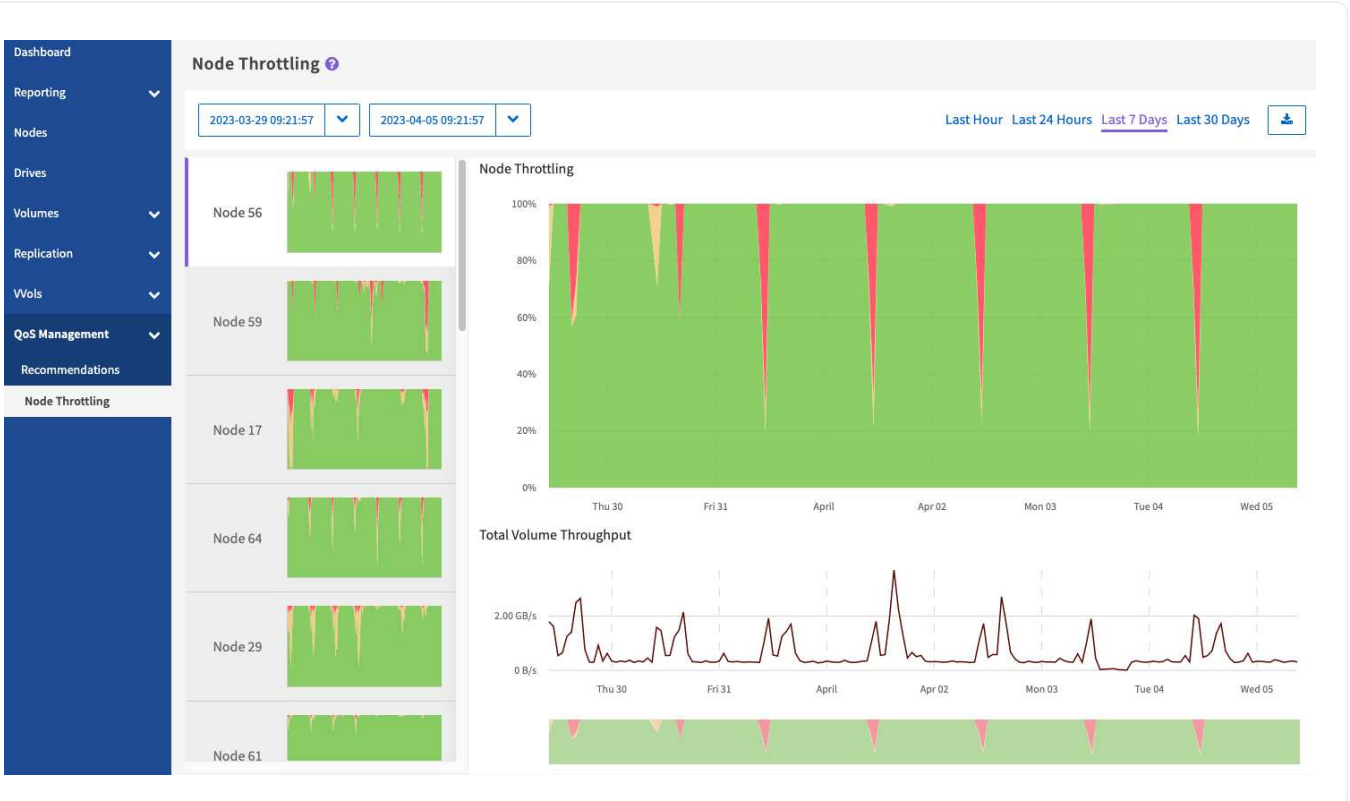
You can select a date range from the calendar drop-down box or from a set of pre-defined ranges. Date ranges are calculated using the current browser time (at the time of selection) and the configured amount of time. You can also select a desired interval by brushing directly over the bar graph at the bottom. To switch between graphs, select the thumbnail layouts on the left.

The **Node Throttling** graph displays node throttling over the selected time period based on the minimum and maximum IOPS settings for the volumes hosted on the selected node. The color represents the amount of throttling:

- Green: The node is not being throttled. Volumes are permitted to perform up to their maximum configured IOPs.
- Yellow: The node is experiencing limited throttling. Volumes are throttled down from their maximum IOPs setting, but still retain performance at or above their minimum IOPS setting.
- Red: The node is experiencing high throttling. When volumes are throttled more severely, performance can fall below the minimum IOPs setting.

The **Total Volume Throughput** graph displays the sum of the throughput for the primary volumes for a selected node. The graph shows the sum of volume read and write throughput. It does not include metadata or other node traffic. It also takes into account when volumes are present on a node, which results in a drop in throughput when volumes are transferred off a node.

Expand the graph example



Position the mouse pointer at any point in the graph to see point-in-time details.

Learn about QoS recommendations for a cluster.

From the Node Throttling page, you can determine if there is QoS pushback in a storage cluster, see this KB article for information.

Export node throttling data

You can export graph data to a comma-separated values (CSV) format. Only the information displayed in the graph is exported.

Steps

1. In a list view or graph, select the icon.

Find more information

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Busiest Volumes

From the **QoS Management** > **Busiest Volumes** page, available from the side panel for a selected cluster, you can view the ten volumes with the highest throughput for a selected node and time range in the cluster.

Learn about viewing the busiest volume information:

- View graphs and select date ranges
- Export busiest node data

View graphs and select date ranges

After selecting the node from the drop-down list, the ten volumes with the highest throughput on that node are displayed. For each volume, you can view the **Throughput**, **Average IO Size**, **IOPS**, and **Latency** graphs; to see the last graph, you might need to scroll down the page. To switch between volumes, select the thumbnail layouts on the left. When you select a different node, these graphs change to the newly selected node.

The graphs and date ranges in SolidFire Active IQ are seamlessly integrated with each other. When selecting a date range, the graphs on that page adjust to the range selected. The default date range displayed for each graph is seven days. You can select a date range from the calendar drop-down box or from a set of pre-defined ranges. You can also select a desired interval by brushing directly over the bar graph at the bottom. Date ranges are calculated using the current browser time (at the time of selection) and the configured amount of time. When you change the selected date range for a node, the ten busiest volumes displayed might also change.

Expand the graph example

Position the mouse pointer at any point in the graph to see point-in-time details for the read, write, and total operations. If a volume is not present on the node for part of the selected time range, it is represented by a dotted line

Export busiest node data

You can export graph data to a comma-separated values (CSV) format. Only the information displayed in the graph is exported.

Steps

1. In a list view or graph, select the icon.

Find more information

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