



# **Graphical interface and navigational paths**

## **Active IQ Unified Manager**

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# Graphical interface and navigational paths

Unified Manager has great flexibility and enables you to accomplish multiple tasks in various ways. There are many navigation paths you will discover as you work in Unified Manager. While not all of the possible combinations of navigations can be shown, you should be familiar with a few of the more common scenarios.

## Monitor cluster object navigation

You can monitor the performance of all objects in any cluster managed by Unified Manager. Monitoring your storage objects provides you with an overview of cluster and object performance, and includes performance event monitoring. You can view performance and events at a high level, or you can further investigate any details of object performance and performance events.

This is one example of many possible cluster object navigations:

1. From the Dashboard page, review the details in the Performance Capacity panel to identify the cluster that is using the most performance capacity and click the bar chart to navigate to the list of nodes for that cluster.
2. Identify the node with the highest performance capacity used value and click that node.
3. From the Node / Performance Explorer page, click **Aggregates on this Node** from the View and Compare menu.
4. Identify the aggregate that is using the most performance capacity and click that aggregate.
5. From the Aggregate / Performance Explorer page, click **Volumes on this Aggregate** from the View and Compare menu.
6. Identify the volumes that are using the most IOPS.

You should investigate these volumes to see if you should apply a QoS policy or Performance Service Level policy, or change the policy settings, so that those volumes do not use such a large percentage of IOPS on the cluster.

Dashboard All Clusters

Management Actions

- Enable takeover on panic (2)
- Disable telnet (2)
- Enable volume autogrow (9)

Capacity

31 events (No new in past 24 hours)

CLUSTER	USED	DAYS TO FULL	REDUCTION
opm-sl...llicity	40.5 TB	< 1 month	13.0:1
umeng...1-02	83.6 TB	51 days	8.0:1
symgr...0-1-8	33 TB	149 days	8.3:1

Performance Capacity

No new events

CLUSTER	USED	DAYS TO FULL
umeng-aff220-01-02	83%	< 1 month
symgr-fas8060-1-8	49%	< 1 month
fas8040-206-21	46%	77 days

Nodes Last updated: Nov 15, 2019, 10:48 AM

VIEW Nodes on umeng-aff220-01-02 Search Nodes Filter Hardware Inventory Report

Assign Performance Threshold Policy Clear Performance Threshold Policy Scheduled Reports Show / Hide

Status	Node	Latency	IOPS	MB/s	Performance Capacity Used	Utilization	Fr
	umeng-aff220-01	21.7 ms/op	27,333 IOPS	211 MB/s	73%	50%	3.1
	umeng-aff220-02	8.33 ms/op	83.4 IOPS	102 MB/s	53%	42%	6.1

Node / Performance : umeng-aff220-01

Summary Explorer Failover Planning Information

Compare the performance of associated objects and display detailed charts

VIEW AND COMPARE Aggregates on this Node Filter

Aggregate	Lat...	IOPS...	MB/s...	Perf...
NSLM12_002	12.4 ...	47.51...	5.6 M...	11%
NSLM12_001	11.4 ...	216 L...	4.33 ...	5%

Aggregate / Performance : NSLM12\_002

Summary Explorer Information

Compare the performance of associated objects and display detailed charts

VIEW AND COMPARE Volumes on this Aggregate Filter

Volume	Latency	IOPS	MB/s
suchita_vmware_d...	6.38 ms...	76.8 IOPS	2.55 MB/s
suchita_vmware_d...	5.82 ms...	4,775 L...	18.7 MB/s
aiqum_scale_do_no...	0.114 m...	< 1 IOPS	< 1 MB/s

## Monitor cluster performance navigation

You can monitor the performance of all clusters managed by Unified Manager. Monitoring your clusters provides you with an overview of cluster and object performance and includes performance event monitoring. You can view performance and events at a high level, or you can further investigate any details of cluster and object performance and performance events.

This is one example of many possible cluster performance navigational paths:

1. In the left navigation pane, click **Storage > Aggregates**.
2. To view information about the performance in those aggregates, select the Performance: All Aggregates view.
3. Identify the aggregate you want to investigate and click that aggregate name to navigate to the Aggregate / Performance Explorer page.
4. Optionally, select other objects to compare with this aggregate in the View and Compare menu, and then add one of the objects to the comparing pane.

Statistics for both objects will appear in the counter charts for comparison.

5. In the Comparing pane at the right on the Explorer page, click **Zoom View** in one of the counter charts to view details about the performance history for that aggregate.

## Aggregates

Last updated: Nov 15, 2019, 1:18 PM

VIEW **Performance: All Aggregates** Search Aggregates Filter

Assign Performance Threshold Policy

Clear Performance Threshold Policy

Scheduled Reports



Show / Hide

	Status	Aggregate	Type	Latency	IOPS	MB/s	Performance Capacity Used	Utilization
		aggr_evt	SSD	0.29 ms/op	3.79 IOPS	< 1 MB/s	< 1%	< 1%
		aggr4	HDD	5.74 ms/op	14.4 IOPS	1.31 MB/s	6%	5%
		aggr3	HDD	5.06 ms/op	3.06 IOPS	< 1 MB/s	6%	5%
		meg_aggr2	HDD	10.4 ms/op	52.9 IOPS	7.28 MB/s	3%	2%

## Aggregate / Performance : aggr4

Switch to Health View Last updated: Nov 15, 2019, 1:20 PM

Summary

Explorer

Information

Compare the performance of associated objects and display detailed charts

TIME RANGE Last 72 Hours

VIEW AND COMPARE **Aggregates on same Node**

Filter

Aggregate	Latency	IOPS	MB/s	Perf...
aggr3	5.06 ...	3.06 ...	< 1 M...	6%
aggr_evt	0.29 ...	3.79 ...	< 1 M...	< 1%
aggr_automation	0.27 ...	6.35 ...	< 1 M...	< 1%

Comparing

1 Additional Object

X

aggr4

aggr3

CHOOSE CHARTS 7 Charts Selected

Events for Aggregate: aggr4



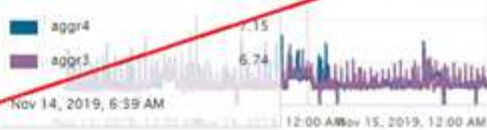
No data to display

Latency

VIEW Total

Zoom View

Latency - Total view (ms/op)



## Latency for Aggregate: aggr4

Last updated: Nov 15, 2019, 1:23 PM

Event Timeline: aggr4

TIME RANGE Last 72 Hours

- Critical Events
- Error Events
- Warning Events
- Information Events

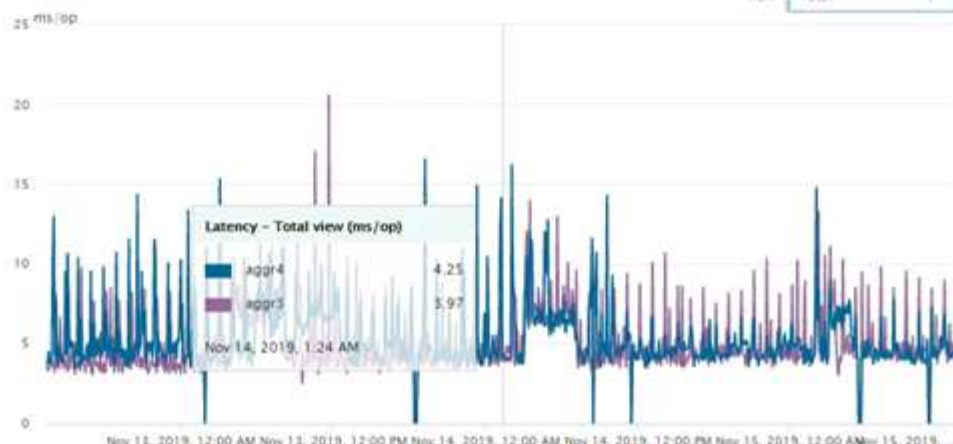


No data to display

Comparing Objects

aggr4

aggr3



# Event investigation navigation

The Unified Manager event detail pages provide you with an in-depth look at any performance event. This is beneficial when investigating performance events, when troubleshooting, and when fine-tuning system performance.

Depending on the type of performance event, you might see one of two types of event detail pages:

- Event details page for user-defined and system-defined threshold policy events
- Event details page for dynamic threshold policy events

This is one example of an event investigation navigation.

1. In the left navigation pane, click **Event Management**.
2. From the View menu, click **Active performance events**.
3. Click the name of the event that you want to investigate and the Event details page is displayed.
4. View the Description of the event and review the Suggested Actions (where available) to view more details about the event that may help you resolve the issue. You can click the **Analyze Workload** button to display detailed performance charts to help further analyze the issue.

## Event Management

Last updated: Nov 15, 2019, 11:23 AM

VIEW **Active performance events** Search Events Filter +

Assign To Acknowledge Mark as Resolved Add Alert

Show / Hide

Triggered Time	Severity	State	Impact Lev	Impact Area	Name	Source	Source Ty
Nov 14, 2019, 11:39 AM	Warning	New	Risk	Performance	QoS Volume Peak IOP... Threshold Breached	vs7:/julia_feb12_vol3	Volume
Nov 14, 2019, 11:39 AM	Warning	New	Risk	Performance	QoS Volume Peak IOP... Threshold Breached	vs7:/julia_non_shared_3	Volume
Nov 15, 2019, 5:04 AM	Warning	New	Risk	Performance	QoS Volume Peak IOP... Threshold Breached	suchita_vmwvar...nt_delete_01	Volume
Nov 15, 2019, 10:39 AM	Warning	New	Risk	Performance	Workload LUN Latency...Service Level Policy	iscsi_boot/ia.../ocum-c220-01	LUN
Nov 15, 2019, 10:39 AM	Warning	New	Risk	Performance	Workload LUN Latency...Service Level Policy	iscsi_boot/ia.../ocum-c220-07	LUN

### Event: QoS Volume Peak IOPS/TB Warning Threshold Breached

(Last Seen: Nov 15, 2019, 11:19 AM)

IOPS value of 570 IOPS on policy group NSLM\_vs7\_Performance\_2\_0 has triggered a WARNING event to identify performance problems for the workloads in this policy group.



Actions

#### Suggested Actions to Fix The Issue

##### Troubleshoot

Analyze Workload

##### Take Action

This is an Adaptive QoS Policy that might be used by other workloads in the system.

If it is acceptable that changes you make to the QoS setting will be applied to other workloads that are using this policy,

- Increase the threshold to 4950 IOPS/TB for this Adaptive QoS Policy.

If you are satisfied with the current limitation on workload throughput

- Leave the QoS configuration setting as it is.

#### Event Information

EVENT TRIGGER TIME	SEVERITY	SOURCE
Nov 14, 2019, 11:39 AM	Warning	vs7:/julia_non_shared_3
STATE	IMPACT LEVEL	SOURCE TYPE
New	Risk	Volume
EVENT DURATION	IMPACT AREA	ION CLUSTER
1 day 40 minutes	Performance	ocum-mobility-01-02
LAST SEEN		AFFECTED OBJECTS COUNT
Nov 15, 2019, 11:19 AM		1
		TRIGGERED POLICY
		QoS Peak IOPS/TB threshold



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