



Graphical interface and navigational paths

Active IQ Unified Manager

NetApp
May 24, 2022

Table of Contents

- Graphical interface and navigational paths 1
 - Monitor cluster object navigation 1
 - Monitor cluster performance navigation 2
 - Event investigation navigation 5

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.

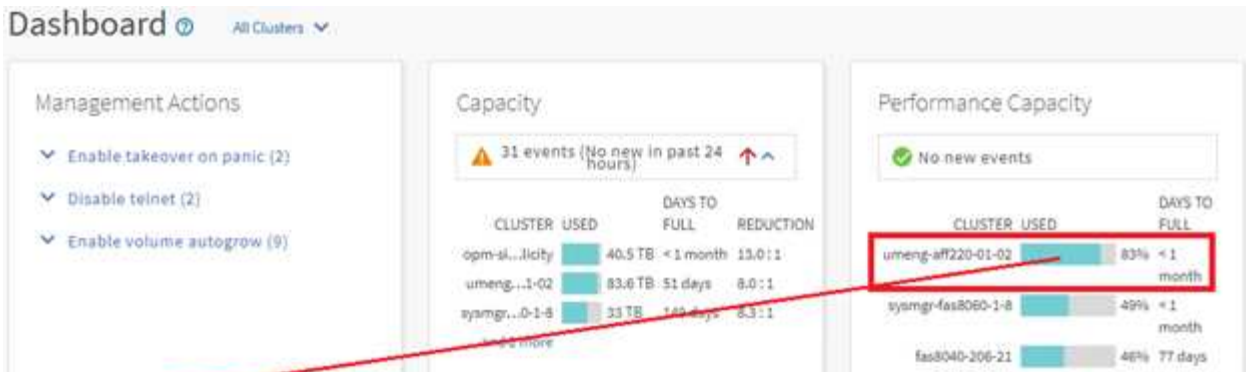
Monitor cluster object navigation

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.



Nodes

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

VIEW: Nodes on umeng-aff220-01-02

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 | 221 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

| Aggregate | Latency | IOPS | MB/s | Perf... |
|------------|----------|----------|----------|---------|
| NSLM12_002 | 12.4 ... | 47.51... | 5.6 M... | 8% |
| NSLM12_001 | 11.4 ... | 216 L... | 4.33 ... | 5% |

Comparing: 0 Additional Objects

umeng-aff220-01

Aggregate / Performance : NSLM12_002

Summary | Explorer | Information

Compare the performance of associated objects and display detailed charts

VIEW AND COMPARE: Volumes on this Aggregate

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

Comparing: 0 Additional Objects

NSLM12_002

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, 1:16 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 | Late..Y | IOP... | MB/... | Perf... | |
|-----------------|----------|----------|---------|---------|-----|
| aggr3 | 5.06 ... | 3.06 ... | <1 M... | 6% | |
| aggr_evt | 0.29 ... | 3.79 ... | <1 M... | <1% | Add |
| aggr_automation | 0.27... | 8.35 ... | <1 M... | <1% | Add |

Comparing 1 Additional Object

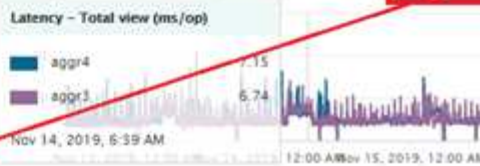
- aggr4
- aggr3

CHOOSE CHARTS: 7 Charts Selected

Events for Aggregate: aggr4

No data to display

Latency view: Total Zoom View



Latency for Aggregate: aggr4

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

Event Timeline: aggr4

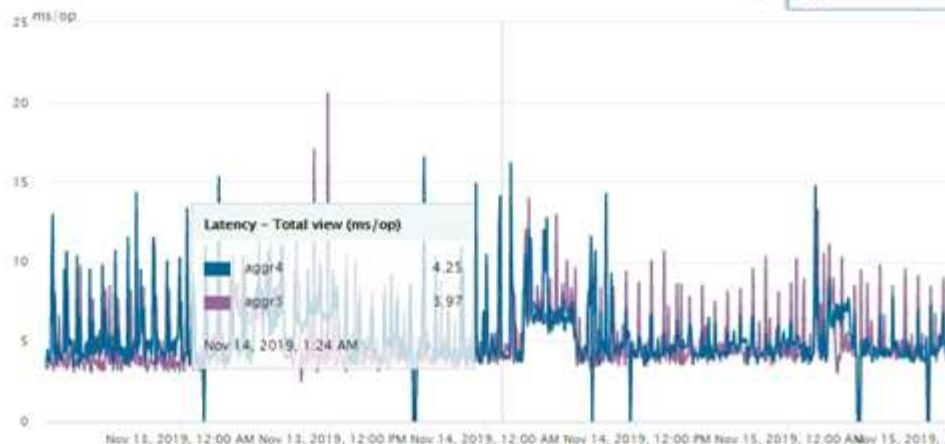
TIME RANGE: Last 72 Hours

- 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.

| 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 | vs2:/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_vmwar...nt_delete_01 | Volume |
| Nov 15, 2019, 10:39 AM | Warning | New | Risk | Performance | Workload LUN Latency ... Service Level Policy | iscsi_boot/is.../ocum-c220-01 | LUN |
| Nov 15, 2019, 10:39 AM | Warning | New | Risk | Performance | Workload LUN Latency ... Service Level Policy | iscsi_boot/is.../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.

Suggested Actions to Fix The Issue

Troubleshoot

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 | ON 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 |

Copyright Information

Copyright © 2022 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system- without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.