NetApp

Monitoring and managing clusters from the dashboard

Active IQ Unified Manager 9.9

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Monitoring and managing clusters from the dashboard

The dashboard provides cumulative at-a-glance information about the current health of your monitored ONTAP systems. The dashboard provides "panels" that enable you to assess the overall capacity, performance, and security health of the clusters you are monitoring.

Additionally, there are certain ONTAP issues that you can fix directly from the Unified Manager user interface instead of having to use ONTAP System Manager or the ONTAP CLI.

At the top of the dashboard you can select whether the panels show information for all monitored clusters or for an individual cluster. You can start by viewing the status of all clusters and then drill down to individual clusters when you want to view detailed information.

(i) Some of the panels listed below may not appear on the page based on your configuration.

Panels	Description
Management Actions	When Unified Manager can diagnose and determine a single resolution for an issue, those resolutions are displayed in this panel with a **Fix It** button.
Capacity	Displays the total and used capacity for the local tier and cloud tier, and the number of days until local capacity reaches the upper limit.
Performance Capacity	Displays the performance capacity value for each cluster and the number of days until performance capacity reaches the upper limit.
Workload IOPS	Displays the total number workloads that are currently running in a certain range of IOPS.
Workload Performance	Displays the total number of conforming and non-conforming workloads that are assigned to each defined Performance Service Level.
Security	Displays the number of clusters that are compliant or not compliant, the number of SVMs that are compliant or not compliant, and the number of volumes that are encrypted or not encrypted.
Protection	Displays the number of Storage VM's that are protected by SVM-DR relationship, volumes protected by SnapMirror relationship, and volumes protected by Snapshot.

Panels	Description
Usage Overview	Displays clusters sorted by highest IOPS, highest throughput (MBps), or highest used physical capacity.

Dashboard page

The Dashboard page has "panels" that display the high level capacity, performance, and security health of the clusters you are monitoring. This page also provides a Management Actions panel that lists fixes that Unified Manager can make to resolve certain events.

Most of the panels also display the number of active events in that category, and the number of new events added over the previous 24 hours. This information helps you decide which clusters you may need to analyze further to resolve events. Clicking on the events displays the top events and provides a link to the Event Management inventory page filtered to show the active events in that category.

At the top of the dashboard you can select whether the panels show information for all monitored clusters ("All Clusters") or for an individual cluster. You can start by viewing the status of all clusters and then drill down to individual clusters when you want to view detailed information.

> ⓘ Some of the panels listed below will not appear on the page based on your configuration.

- **Management Actions panel**

  There are certain issues that Unified Manager can diagnose thoroughly and provide a single resolution. When available, those resolutions are displayed in this panel with a **Fix It** or **Fix All** button. You can fix these issues immediately from Unified Manager instead of having to use ONTAP System Manager or the ONTAP CLI. For viewing all the issues, click on

  See Fixing ONTAP issues directly from Unified Manager for more information.

- **Capacity panel**

  When viewing all clusters, this panel displays the physical used capacity (after applying storage efficiency savings) and physical available capacity (not including potential storage efficiency savings) for each cluster, the number of days until the disks are projected to be full, and the data reduction ratio based on configured ONTAP storage efficiency settings. It also lists the used capacity for any configured cloud tiers. Clicking the bar chart takes you to the Aggregates inventory page for that cluster. Clicking the "Days To Full" text displays a message that identifies the aggregate with the least number of capacity days remaining; click the aggregate name to see more details.

  When viewing a single cluster, this panel displays the physical used capacity and physical available capacity for the data aggregates sorted by each individual disk type on the local tier, and for the cloud tier. Clicking the bar chart for a disk type takes you to the Volumes inventory page for the volumes using that disk type.

- **Performance Capacity panel**

  When viewing all clusters, this panel displays the performance capacity value for each cluster (averaged over the previous 1 hour) and the number of days until performance capacity reaches the upper limit (based on daily growth rate). Clicking the bar chart takes you to the Nodes inventory page for that cluster. Note that the Nodes inventory page displays the performance capacity averaged over the previous 72

hours. Clicking the "Days To Full" text displays a message that identifies the node with the least number of performance capacity days remaining; click the node name to see more details.

When viewing a single cluster, this panel displays the cluster performance capacity used percentage, total IOPS, and total throughput (MB/s) values, and the number of days until each of these three metrics are anticipated to reach their upper limit.

- **Workload IOPS panel**

  When viewing a single cluster, this panel displays the total number workloads that are currently running in a certain range of IOPS, and indicates the number for each disk type when you hover your cursor over the chart.

- **Workload Performance panel**

  This panel displays the total number of conforming and non-conforming workloads that are assigned to each Performance Service Level (PSL) policy. It also displays the number of workloads that are not assigned a PSL. Clicking a bar chart takes you to the conforming workloads assigned to that policy in the Workloads page. Clicking the number that follows the bar chart takes you to the conforming and non-conforming workloads assigned to that policy.

- **Security panel**

  When viewing all clusters, this panel displays the number of clusters that are compliant and not compliant, the number of storage VMs that are compliant and not compliant, and the number of volumes that are encrypted and not encrypted. Compliance is based on the NetApp Security Hardening Guide for ONTAP 9. Click the right-arrow at the top of the panel to view security details for all clusters in the Security page.

  When viewing a single cluster, this panel displays whether the cluster is compliant or not compliant, the number of storage VMs that are compliant and not compliant, and the number of volumes that are encrypted and not encrypted. Click the right-arrow at the top of the panel to view security details for the cluster in the Security page.

- **Usage Overview panel**

  When viewing all clusters, you can choose to view clusters sorted by highest IOPS, highest throughput (MB/s), or highest used physical capacity.

  When viewing a single cluster, you can choose to view workloads sorted by highest IOPS, highest throughput (MB/s), or highest used logical capacity.

Fixing ONTAP issues directly from Unified Manager

You can fix certain ONTAP issues directly from the Unified Manager user interface instead of having to use ONTAP System Manager or the ONTAP CLI. The "Management Actions" option provides fixes to a number of ONTAP issues that have triggered Unified Manager events.

You can fix issues directly from the Management Actions page by selecting the **Management Actions** option on the left navigation pane. Management Actions are also available from the Management Actions panel on the Dashboard, Event details page, and Workload Analysis selection on the left-navigation menu.

There are certain issues that Unified Manager can diagnose thoroughly and provide a single resolution. When

available, those resolutions are displayed in Management Actions with a **Fix It** button. Click the **Fix It** button to fix the issue. You must have the Application Administrator or Storage Administrator role.

Unified Manager sends ONTAP commands to the cluster to make the requested fix. When the fix is complete the event is obsoleted.

Some management actions enable you to fix the same issue on multiple storage objects using the **Fix All** button. For example, there may be 5 volumes that have the "Volume Space Full" event that could be resolved by clicking the **Fix All** management action for "Enable volume autogrow". One click enables you to fix this issue on 5 volumes.

What options do I have when I see the Fix It or Fix All button

The Management Actions page provides you with the **Fix It** or **Fix All** button to fix issues that Unified Manager has been notified about through an event.

We recommend that you click the buttons to fix an issue, as required. However, if you are not sure that you want to resolve the issue as recommended by Unified Manager, you can perform the following actions:

What do you want to do?	Action
Have Unified Manager fix the issue on all identified objects.	Click the **Fix All** button.
Do not fix the issue for any of the identified objects at this time and hide this management action until the event is raised again.	Click the down arrow and click **Dismiss All**.
Fix the issue on only some of the identified objects.	Click the name of the management action to expand the list and show all individual **Fix It** actions.Then follow the steps for fixing or dismissing individual management actions.

What do you want to do?	Action
Have Unified Manager fix the issue.	Click the **Fix It** button.
Do not fix the issue at this time and hide this management action until the event is raised again.	Click the down arrow and click **Dismiss**.
Display the details for this event so you can better understand the issue.	• Click the **Fix It** button and review the fix that will be applied in the resulting dialog box. • Click the down arrow and click **View Event Detail** to display the Event details page. Then click **Fix It** from either of these resulting pages if you want to fix the issue.

What do you want to do?	Action
Display the details for this storage object so you can better understand the issue.	Click the name of the storage object to display details in either the Performance Explorer or Health Details page.

In some cases the fix is reflected in the next 15 minute configuration poll. In other cases it can take up to many hours for the configuration change to be verified and for the event to be obsoleted.

To see the list of completed or in progress management actions, click the filter icon and select **Completed** or **In Progress**.

Fix All operations run in a serial fashion, so when you view the **In Progress** panel some objects will have the Status **In Progress** whereas others will have the Status **Scheduled**; meaning they are still waiting to be implemented.

Viewing the status of management actions you have chosen to fix

You can view the status of all management actions that you have chosen to fix in the Management Actions page. Most actions are shown as **Completed** fairly quickly after Unified Manager sends the ONTAP command to the cluster. However, some actions, such as moving a volume, can take longer.

About this task

There are three filters available on the Management Actions page:

- **Completed** shows both management actions that completed successfully and those that have failed. **Failed** actions provide a reason for the failure so that you can address the issue manually.

- **In Progress** shows both those management actions that are being implemented, and those that are scheduled to be implemented.

- **Recommended** shows all the management actions that are currently active for all monitored clusters.

Steps

1. Click **Management Actions** on the left navigation pane. Alternately, click ⋮ at the top of the **Management Actions** panel on the **Dashboard** and select the View you want to see.

   The Management Actions page is displayed.

2. You can click the caret icon next to the management action in the **Description** field to see details about the issue and the command that is being used to fix the issue.

3. To view any actions that **failed**, sort on the **Status** column in the **Completed** View. You can use the **Filter** tool for this same purpose.

4. If you want to view more information about a Failed management action, or if you decide that you want to fix a Recommended management action, you can click **View Event Detail** from the expanded area after you click the caret icon next to the management action. A **Fix It** button is available from that page.

What ONTAP issues can Unified Manager fix

This table describes the ONTAP issues that Unified Manager can resolve directly from the Unified Manager user interface by clicking the **Fix It** or **Fix All** button.

Event Name and Description	Management Action	"Fix It" Operation
Volume Space Full The volume is almost out of space and it has breached the capacity full threshold. This threshold is set by default to 90% of the volume size.	Enable volume autogrow	Unified Manager determines that volume autogrow is not configured for this volume, so it enables this feature so the volume will grow in capacity when needed.
Inodes Full This volume has run out of inodes and cannot accept any new files.	Increase number of inodes on volume	Increases the number of inodes on the volume by 2 percent.
Storage Tier Policy Mismatch Detected The volume has lots of inactive data and the current tiering policy is set to "snapshot-only" or "none".	Enable automatic cloud tiering	Since the volume already resides on a FabricPool, it changes the tiering policy to "auto" so that inactive data is moved to the lower cost cloud tier.
Storage Tier Mismatch Detected The volume has lots of inactive data, but it does not reside on a cloud-enabled storage tier (FabricPool).	Change volumes' storage tier	Moves the volume to cloud-enabled storage tier and sets the tiering policy to "auto" to move inactive data to the cloud tier.
Audit Log Disabled The audit log is not enabled for the storage VM	Enable audit logging for the storage VM	Enables audit logging on the storage VM. Note that the storage VM must already have either a local or remote audit log location configured.
Login Banner Disabled The login banner for the cluster should be enabled to increase security by making access restrictions clear.	Set login banner for the cluster	Sets the cluster login banner to "Access restricted to authorized users".

Event Name and Description	Management Action	"Fix It" Operation
Login Banner Disabled The login banner for the storage VM should be enabled to increase security by making access restrictions clear.	Set login banner for the storage VM	Sets the storage VM login banner to "Access restricted to authorized users".
SSH is Using Insecure Ciphers Ciphers with the suffix "-cbc" are considered insecure.	Remove insecure ciphers from the cluster	Removes the insecure ciphers — such as aes192-cbc and aes128-cbc — from the cluster.
SSH is Using Insecure Ciphers Ciphers with the suffix "-cbc" are considered insecure.	Remove insecure ciphers from the storage VM	Removes the insecure ciphers — such as aes192-cbc and aes128-cbc — from the storage VM.
AutoSupport HTTPS transport disabled The transport protocol used to send AutoSupport messages to technical support should be encrypted.	Set HTTPS as the transport protocol for AutoSupport messages	Sets HTTPS as the transport protocol for AutoSupport messages on the cluster.
Cluster Load Imbalance Threshold Breached Indicates that the load is imbalanced among the nodes in the cluster. This event is generated when the performance capacity used variance is more than 30% between nodes.	Balance cluster workloads	Unified Manager identifies the best volume to move from one node to the other to reduce the imbalance, and then moves the volume.
Cluster Capacity Imbalance Threshold Breached Indicates that the capacity is imbalanced among the aggregates in the cluster. This event is generated when the used capacity variance is more than 70% between aggregates.	Balance cluster capacity	Unified Manager identifies the best volume to move from one aggregate to another to reduce the imbalance, and then moves the volume.

Event Name and Description	Management Action	"Fix It" Operation
Performance Capacity Used Threshold Breached Indicates that the load on the node could become over utilized if you don't reduce the utilization by one or more highly active workloads. This event is generated when the node performance capacity used value is more than 100% for more than 12 hours.	Limit high load on node	Unified Manager identifies the volume with the highest IOPS and it applies a QoS policy using the historical expected and peak IOPS levels to reduce the load on the node.
Dynamic Event Warning Threshold Breached Indicates that the node is already operating in an overloaded state due to the abnormally high load of some of the workloads.	Reduce overload in node	Unified Manager identifies the volume with the highest IOPS and it applies a QoS policy using the historical expected and peak IOPS levels to reduce the load on the node.
Takeover is not possible Failover is currently disabled, so access to the node's resources during an outage or reboot would be lost until the node became available again.	Enable node failover	Unified Manager sends the appropriate command to enable failover on all nodes in the cluster.
Option Cf.takeover.on_panic is Configured OFF The nodeshell option "cf.takeover.on_panic" is set to **off**, which could cause an issue on HA-configured systems.	Enable takeover on panic	Unified Manager sends the appropriate command to the cluster to change this setting to **on**.
Disable nodeshell option snapmirror.enable The old nodeshell option "snapmirror.enable" is set to **on**, which could cause an issue during boot after upgrading to ONTAP 9.3 or greater.	Set snapmirror.enable option to off	Unified Manager sends the appropriate command to the cluster to change this setting to **off**.

Event Name and Description	Management Action	"Fix It" Operation
Telnet enabled Indicates a potential security issue because Telnet is insecure and passes data in an unencrypted manner.	Disable Telnet	Unified Manager sends the appropriate command to the cluster to disable Telnet.

Overriding management actions through scripts

You can create custom scripts and associate them to alerts to take specific actions for specific events, and not opt for the default management actions available for them on the Management Actions page or Unified Manager dashboard.

If you want to take specific actions for an event type and choose not to fix them as a part of the management action capability provided by Unified Manager, you can configure a custom script for the specific action. You can then associate the script with an alert for that event type and take care of such events individually. In this case, management actions are not generated for that specific event type on the Management Actions page or Unified Manager dashboard.

For information about adding and testing scripts, see Managing scripts.