



Active IQ® Unified Manager 9.6

## Reporting Guide

August 2019 | 215-14081\_2019-08\_en-us  
doccomments@netapp.com



# Contents

<b>Unified Manager reporting .....</b>	<b>5</b>
Access points for generating reports .....	5
Unified Manager databases accessible for custom reporting .....	5
Unified Manager REST APIs that can be used for reporting .....	6
Understanding reports .....	6
Understanding the view and report relationship .....	6
Types of reports .....	7
Reporting limitations .....	7
<b>Working with reports .....</b>	<b>9</b>
Report workflow .....	9
Reporting quick start .....	9
Searching for a scheduled report .....	12
Customizing reports .....	12
Customizing columns .....	13
Filtering data .....	13
Sorting data .....	14
Using search to refine your view .....	14
Downloading reports .....	14
<b>Scheduling reports .....</b>	<b>15</b>
Scheduling a report .....	15
Scheduling imported .rptdesign reports .....	16
Managing report schedules .....	17
Editing scheduled reports .....	18
Deleting scheduled reports .....	18
<b>Sample custom reports .....</b>	<b>20</b>
Customizing cluster storage reports .....	20
Creating a report to view capacity by cluster model .....	20
Creating a report to identify clusters with the most unallocated LUN capacity .....	21
Creating a report to view HA pairs with the most available capacity .....	22
Creating a report to view nodes running older versions of ONTAP .....	22
Customizing aggregate capacity reports .....	23
Creating a report to view aggregates reaching full capacity .....	23
Creating a report to view aggregates that are 80% or more full .....	24
Creating a report to view aggregates that are overcommitted .....	25
Customizing volume capacity reports .....	26
Creating a report to identify volumes nearing full capacity that have Snapshot Autodelete turned off .....	26
Creating a report to identify space used by volumes with thin provisioning disabled .....	27

Creating a report to identify volumes on FabricPool aggregates that should move data to the cloud tier .....	27
Customizing Qtree capacity reports .....	29
Creating a report to view qtrees that are nearly full .....	29
Customizing NFS export reports .....	30
Creating a report to view volumes that have an inaccessible junction path .....	30
Creating a report to view volumes that are using the default export policy .....	31
Customizing SVM reports .....	32
Creating a report to view SVMs reaching the maximum volume limit .....	32
Creating a report to view stopped SVMs .....	32
Customizing volume relationship reports .....	33
Creating a report to group volume relationships by source of failure .....	33
Creating a report to group volume relationships by issue .....	34
Creating a report to view volume transfer trends at specific time intervals .....	35
Creating a report to view failed or successful volume transfer .....	35
Creating a report to view volume transfers based on transfer size .....	36
Creating a report to view volume transfers grouped by day .....	37
Customizing volume performance reports .....	37
Creating a report to view volumes with a high amount of cold data on an aggregate that is not FabricPool-enabled. ....	37
<b>Copyright .....</b>	<b>39</b>
<b>Trademark .....</b>	<b>40</b>
<b>How to send comments about documentation and receive update notifications .....</b>	<b>41</b>

## Unified Manager reporting

---

Active IQ Unified Manager (formerly OnCommand Unified Manager) provides the ability to view, customize, download, and schedule reports for your ONTAP storage systems. The reports can provide details about the storage system capacity, health, performance, and protection relationships.

The new Unified Manager reporting and scheduling functionality introduced in Active IQ Unified Manager 9.6 replaces the previous reporting engine that was retired in Unified Manager version 9.5.

Reporting enables different views of your network, providing actionable intelligence on capacity, health, performance, and protection data. You can customize your views by showing and hiding columns, rearranging columns, filtering data, sorting data, and searching the results. You can save custom views for reuse, download them as reports, and schedule them as recurring reports to distribute through email.

## Access points for generating reports

You can gather information in Unified Manager about your clusters to create reports from the UI, MySQL database queries, and REST APIs.

This guide covers Unified Manager reporting and scheduling through the UI.

There are three ways you can access the reporting capabilities provided by Unified Manager:

- Extracting data directly from the inventory pages in the UI.
- Using Open Database Connectivity (ODBC) and ODBC tools to access all the available objects.
- Executing Unified Manager REST APIs to return the information that you want to review.

### Related concepts

[Unified Manager REST APIs that can be used for reporting](#) on page 6

[Unified Manager databases accessible for custom reporting](#) on page 5

## Unified Manager databases accessible for custom reporting

Unified Manager uses a MySQL database to store data from the clusters that it is monitoring. Data is persisted into various schemas in the MySQL database.

All table data from the following databases are available:

Database	Description
netapp_model_view	Data about the objects on ONTAP controllers.
netapp_performance	Cluster specific performance counters.
ocum	Unified Manager application data and information to support UI filtering, sorting, and the calculation of some derived fields.
ocum_report	Data for inventory configuration and capacity-related information.
ocum_report_birt	Same as above, but this database is consumed by built-in BIRT reports.
opm	Performance configuration settings and threshold information.
scalemonitor	Data about the Unified Manager application health and performance issues.

A reporting user — a Database user with the Report Schema role — is able to access the data in these tables. This user has read-only access to reporting and other database views directly from the Unified Manager database. Note that this user does not have permission to access any tables that contain user data or cluster credential information.

See the [Technical Report for Unified Manager Reporting](#) (TR-4565) for more details.

## Unified Manager REST APIs that can be used for reporting

You can use REST APIs to help manage your clusters by viewing the health, capacity, and performance information captured by Unified Manager.

REST APIs are exposed through the Swagger web page. You can access the Swagger web page to display the Unified Manager REST API documentation, as well as to manually issue an API call. From the Unified Manager web UI, in the Menu Bar, click the **Help** button and then select **API Documentation**.

You must have the Operator, Storage Administrator, or Administrator role to access the REST APIs.

## Understanding reports

Reports display detailed information about storage, network, quality of service, and protection relationships, helping you to identify and solve potential problems before they occur.

You can download reports as PDF or comma-separated values (CSV) files. When you customize a view, you can save it with a unique name for future use. You can also schedule a report based on that view to run on a regular basis and share it with others.

You can manage all reports that have been scheduled from the Scheduled Reports page.

**Note:** You must have the Administrator or Storage Administrator role to manage reports.

## Understanding the view and report relationship

Views and inventory pages become reports when you download or schedule them.

You can customize and save views and inventory pages for reuse. Almost everything you can view in Unified Manager can be saved, reused, scheduled, and shared as a report.

In the view drop down, items with the delete icon are existing custom views that you or another user have created. Items without an icon are default views provided with Unified Manager. Default views cannot be modified or deleted.

**Note:** If you delete a custom view from the list, it also deletes any scheduled reports that use that view. If you change a custom view, reports that use that view will contain the change the next time the report is generated and sent by email according to the report schedule.

Volumes - Capacity / All Volumes 

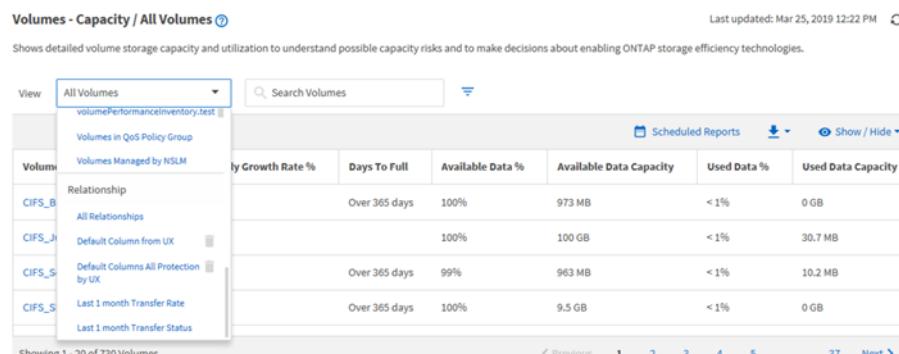
Last updated: Mar 25, 2019 12:22 PM 

Shows detailed volume storage capacity and utilization to understand possible capacity risks and to make decisions about enabling ONTAP storage efficiency technologies.

View	All Volumes	volumePerformanceInventory.test	Search Volumes	Scheduled Reports	Show / Hide		
Volume	Relationship	ly Growth Rate %	Days To Full	Available Data %	Available Data Capacity	Used Data %	Used Data Capacity
CIFS_B	All Relationships	Over 365 days	100%	973 MB	< 1%	0 GB	
CIFS_H	Default Column from UX		100%	100 GB	< 1%	30.7 MB	
CIFS_S	Default Columns All Protection by UX		Over 365 days	99%	963 MB	< 1%	10.2 MB
CIFS_S	Last 1 month Transfer Rate		Over 365 days	100%	9.5 GB	< 1%	0 GB
	Last 1 month Transfer Status						

Showing 1 - 20 of 730 Volumes

< Previous 1 2 3 4 5 ... 37 Next >



Only users with the Administrator or Storage Administrator role can see the delete icon, change or delete a view, or change or delete a scheduled report.

## Types of reports

Comprehensive list of views and inventory pages available as reports that you can customize, save, download, and schedule.

### Active IQ Unified Manager reports

Type	Storage or network object
Capacity	Clusters Aggregates Volumes Qtrees
Health	Clusters Nodes Aggregates SVMs Volumes NFS exports
Performance	Clusters Nodes Aggregates SVMs Volumes LUNs NVMe namespaces LIFs Ports
Quality of Service (QoS) policy groups	Traditional QoS policy groups Adaptive QoS policy groups NSLM performance SLO policy
Volume protection relationships (available from the Volumes page)	All relationships Last 1 month transfer status Last 1 month transfer rate

## Reporting limitations

There are some limitations with the new Active IQ Unified Manager reporting functionality of which you should be aware.

### Existing reports from previous versions of Unified Manager

You can only edit the schedule and recipients for existing reports that were created and imported (as .rptdesign files) in Unified Manager 9.5 and earlier releases. If you customized any of the

standard reports that were provided with Unified Manager 9.5 or earlier, these custom reports are not imported into the new reporting tool.

If you need to edit existing reports imported from .rptdesign files, do one of the following and remove the imported report:

- create a new view and schedule a report from that view (preferred)
- hover over the report, copy the SQL, and pull the data using an external tool

The default views can be generated as reports without the need for any customization. You can use the new reporting solution to recreate any custom reports.

### **Schedule and report relationship**

You can create many different schedules with any combination of recipients for each saved report. However, you cannot reuse the schedule for multiple reports.

### **Report protection**

Any user with the appropriate permissions can edit or delete reports. There is no way to prevent other users from removing or making changes to saved views or schedules.

### **Event reports**

Although you can customize the event view and download the resulting report in CSV format, you cannot schedule recurring event reports for generation and distribution.

### **Report attachments**

Reports cannot be sent in the body of an email. Instead, reports are only sent as PDF or CSV attachments.

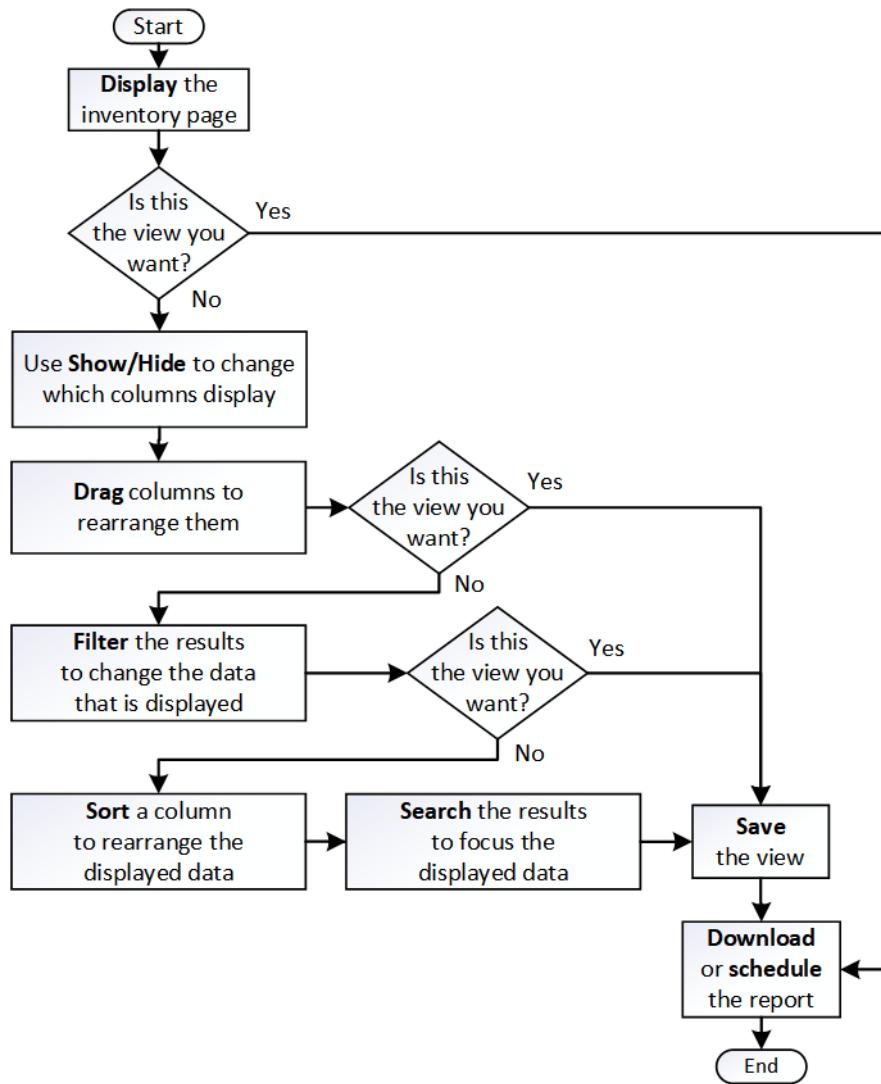
# Working with reports

---

Learn how to find and customize inventory page views into shareable scheduled reports.

## Report workflow

Decision tree that describes the report workflow.



## Reporting quick start

Create a sample custom report to experience exploring views and scheduling reports. This quick start report finds a list of volumes that you might want to move to the cloud tier because there is a fair amount of inactive (cold) data. You will open the Performance/All Volumes view, customize the view

using filters and columns, save the custom view as a report, and schedule the report to share once a week.

### Before you begin

- You must have the Administrator or Storage Administrator role.
- You must have configured FabricPool aggregates and have volumes on those aggregates.

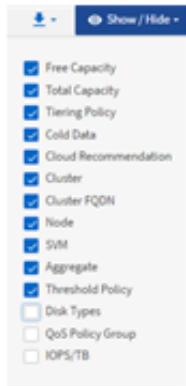
### About this task

Follow the steps below to:

- Open the default view
- Customize the columns by filtering and sorting the data
- Save the view
- Schedule a report to be generated for the custom view

### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Performance > All Volumes**.
3. Click  **Show/Hide** to make sure the “Disk Type” column appears in the view.



Add or remove other columns to create a view that contains the fields that are important for your report.

4. Drag the “Disk Type” column next to the “Cloud Recommendation” column.
5. Click the filter icon to add the following three filters, and then click **Apply Filter**:
  - Disk Type contains fabricpool
  - Cloud Recommendation contains tier
  - Cold Data greater than 10 GB

Disk Types contains fabricpool

Cloud Recommendation contains tier

Cold Data greater than 10 GB

+ Add Filter

Reset Cancel Apply Filter

- Click the top of the **Cold Data** column to sort the results so that the volumes with the most cold data appear at the top of the view.
- When the view is customized, the view name is Unsaved View. Name the view to reflect what the view is showing, for example “Vols change tiering policy”. When done, click the check mark or press Enter to save the view with the new name.

Volumes - Performance / Vols change tiering policy [?](#) Last updated: Feb 8, 2019, 12:26 PM [↻](#)

Latency, IOPS, MBps are based on hourly samples averaged over the previous 72 hours.

Volume	Cold Data	Tiering Policy	Disk Types	Cloud Recommendation	Free Capacity	Total Capacity
nfs_vol4	38 GB	Snapshot Only	SSD (FabricPool)	Tier	2.62 TB	3 TB
kjagnfsdst	28 GB	Snapshot Only	SSD (FabricPool)	Tier	121 GB	150 GB

- Download the report as a **CSV** or **PDF** file to see the output before you schedule or share it. Open the file with an installed application, such as Microsoft Excel (CSV) or Adobe Acrobat (PDF), or save the file.
- Click the **Scheduled Reports** button on the inventory page. All scheduled reports relating to the object, in this case volumes, appear in the list.

Schedule Name	View	Recipients	Frequency	Format
Weekly / Vols ... tiering policy	Performance / V... tiering policy	user@company.com	Weekly - Monday 1:00 PM	CSV

- Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
- Enter a name for the report and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

The following sample report is in CSV format:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1 Report: Performance - Vols change tiering policy (Latency, IOPS, MBps are based on hourly samples averaged over March 24, 2019, 11:52 PM - March 28, 2019, 12:52 PM)																
2 Generated At: March 28, 2019, 12:52 PM																
3																
4 Status																
5 Ok	Volume	Volume Id	Tiering Po	Cold Data	Free Capa	Total Capa	Cluster	Cluster Id	Node	Node Id	Aggregate	Aggregate Id				
5 Ok	kgagnfsdst	101510	Snapshot	28.01	121.32	150	ocum-mo	99001	ocum-mo	99018	aggr5_vs	99040				
6 Ok	nfs_vol4	102294	Snapshot	379.64	2676.57	3072	ocum-mo	99001	ocum-mo	99113	aggr4	99141				

The following sample report is in PDF format:

Report: Performance - Vols change tiering policy (Latency, IOPS, MBps are based on hourly samples averaged over March 24, 2019, 11:51 PM - March 28, 2019, 12:51 PM)  
Generated At: March 28, 2019, 12:51 PM

Status	Volume	Tiering Policy	Cold Data (GB)	Free Capacity (GB)	Total Capacity (GB)	Cluster	Node	Aggregate
Ok	Aggregated	Snapshot Only	28.01	121.32	150	ocum-mobility-01-02	ocum-mobility-01	aggr5_vs
Ok	int_vsm	Snapshot Only	379.64	2676.57	3072	ocum-mobility-01-02	ocum-mobility-02	aggr4

### After you finish

Based on the results shown in the report, you may want to use ONTAP System Manager or the ONTAP CLI to change the tiering policy to “auto” or “all” for certain volumes to offload more cold data to the cloud tier.

## Searching for a scheduled report

You can search for scheduled reports by name, view name, object type, or recipients.

### Steps

1. In the left navigation pane, click **Scheduled Reports**.
2. Use the **Search Scheduled Reports** text field.

To find reports by ...	Try ...
Schedule name	Type part of the report schedule name.
View name	Type part of the report view name. Default views and custom views appear in the view list.
Recipient	Type part of the email address.
File type	Type "PDF" or "CSV".

3. You can click a column heading to sort reports in ascending or descending order by that column, such as schedule name or format.

## Customizing reports

There are many ways you can customize views so that you can create a report that contains all the information you need to manage your ONTAP clusters.

Start with a default inventory page or a custom view, then customize it by adding or removing columns, changing the column order, filtering the data, or sorting on a specific column in ascending or descending order.

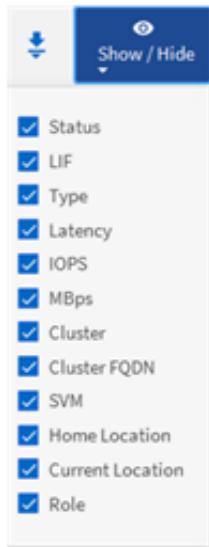
**Note:** You must have the Administrator or Storage Administrator role to manage reports.

## Customizing columns

Use **Show/Hide** to choose the columns you want to use in your report. Drag the columns on the inventory page to rearrange them.

### Steps

1. Click **Show/Hide** to add or remove columns.



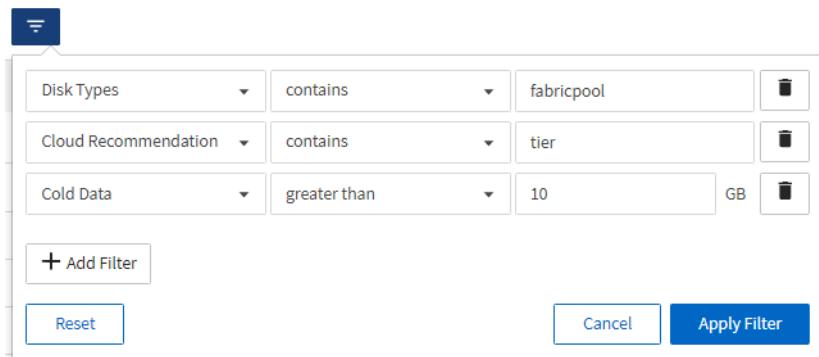
2. On the inventory page, drag columns to rearrange them in the order you want in your report.
3. Name the unsaved view to save your changes.

## Filtering data

Filter the data to make sure the results match your report requirements. Filtering enables you to display only the data in which you are interested.

### Steps

1. Click the filter icon to add filters to focus the results you want to view, and then click **Apply Filter**.



2. Name the unsaved view to save your changes.

## Sorting data

To sort the results, click a column and indicate ascending or descending order. Sorting data prioritizes the information you need for the report.

### Steps

1. Click the top of a column to sort the results so that the most important information appears at the top of the view.
2. Name the unsaved view to save your changes.

## Using search to refine your view

After you have the view you want, you can further refine the results using the Search field to focus on the results that you want to include in the report.

### Steps

1. Open the custom or default view that you want to use as the basis of your report.
2. Type in the Search field to refine the data listed in the view. You can enter partial data in any of the displayed columns. For example, if you want to search for nodes that include "US\_East" in the name, you can refine the full list of nodes.

The results of your search are saved in the custom view and used in the resulting scheduled report.

3. Name the unsaved view to save your changes.

## Downloading reports

You can download reports and save the data to a local or network drive as a comma-separated values (CSV) file, or a PDF file. You can open CSV files with spreadsheet applications, such as Microsoft Excel, and PDF files with readers such as Adobe Acrobat.

### Step

1. Click  to download the report as one of the following:

Choose	To...
CSV	Save the report as a comma-separated values (CSV) file to a local or network drive.
PDF	Save the report as a .pdf file to a local or network drive.

## Scheduling reports

---

After you have a view you want to reuse and share as a report, you can schedule it using Active IQ Unified Manager. You can manage scheduled reports, changing the recipients and distribution frequency for each report schedule.

You can schedule most views or inventory pages in Unified Manager. Exceptions are events, which are reports you can download as CSV files, but you cannot schedule events for regeneration and sharing. You also cannot download or schedule the dashboards, favorites, or configuration pages.

You can schedule the built in views or views you customize. You can choose which file type to send, either CSV or PDF. When you schedule a report for the first time, you can download it and assign yourself as the only recipient to see the report as your recipients will see it.

## Scheduling a report

After you have a view that you want to schedule for regular generation and distribution as a report, you can schedule the report.

### Before you begin

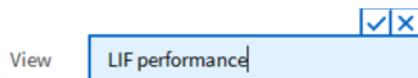
- You must have the Administrator or Storage Administrator role.
- You must have configured the SMTP server settings in the Setup/Notifications page so that the reporting engine can send reports as email attachments to the list of recipients from the Unified Manager server.
- The email server must be configured to allow attachments to be sent with the generated emails.

### About this task

Use the following steps to test and schedule a report to be generated for a view. Select or customize the view you want to use. The following procedure uses a network view that shows the performance of your LIFs, but you can use any view you want.

### Steps

1. Open your view. This example uses the default network view that shows LIF performance. In the left navigation pane, click **Network > LIFs**.
2. Customize the view as needed.
3. After you customized the view, you can provide a unique name in the **View** field and click the check mark to save it.



4. Download the report as a **CSV** or **PDF** file to see the output before you schedule or share it. Open the file with an installed application, such as Microsoft Excel (CSV) or Adobe Acrobat (PDF).
5. If you are satisfied with the report, click **Scheduled Reports**.
6. In the **Scheduled Reports** page, click **Add Schedule**.

7. Accept the default name, which is a combination of the view name and the frequency, or customize the **schedule name**.
8. To test the scheduled report the first time, only add yourself as the **recipient**. When satisfied, add the email addresses for all report recipients.
9. Specify the frequency, either **Daily** or **Weekly**, and the day, if weekly, and time you want the report to be generated and distributed to the recipients.
10. Select the format, either **PDF** or **CSV**.
11. Click the check mark to save the report schedule.

Add Schedule					
Schedule Name	View	Recipients	Frequency	Format	
Weekly / LIF performance	Performance / LIF pe	test@netapp.com	Weekly ▼ Thursday 4:30 PM ▼	PDF ▼	<input checked="" type="checkbox"/>

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

## Scheduling imported .rptdesign reports

You can schedule existing reports that were created and imported in an earlier release of Unified Manager.

### About this task

Scheduling imported reports requires the following:

- imported BIRT designed .rptdesign file reports in an earlier Unified Manager release
- applicable when upgrading to Unified Manager 9.6 GA or later

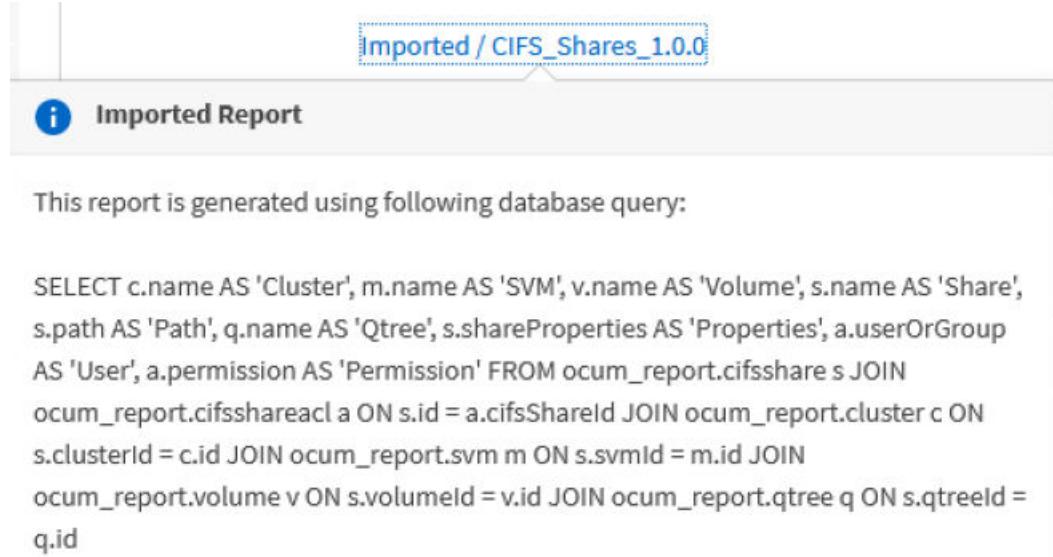
After upgrading to Unified Manager 9.6 GA or later, the Scheduled Reports page lists the imported reports. You can edit the schedule for these reports to specify the recipient email addresses and frequency. Otherwise these reports cannot be edited or viewed in the Unified Manager UI.

### Steps

1. Open the **Scheduled Reports** page. If you have imported reports, a message appears.

**⚠ You have 2 imported reports that are not scheduled. You must schedule them to receive the reports in your mailbox.**

2. Click the **View** name to display the SQL query that is being used to generate the report.



This report is generated using following database query:

```
SELECT c.name AS 'Cluster', m.name AS 'SVM', v.name AS 'Volume', s.name AS 'Share',  
s.path AS 'Path', q.name AS 'Qtree', s.shareProperties AS 'Properties', a.userOrGroup  
AS 'User', a.permission AS 'Permission' FROM ocum_report.cifsshare s JOIN  
ocum_report.cifsshareacl a ON s.id = a.cifsShareId JOIN ocum_report.cluster c ON  
s.clusterId = c.id JOIN ocum_report.svm m ON s.svmId = m.id JOIN  
ocum_report.volume v ON s.volumeId = v.id JOIN ocum_report.qtree q ON s.qtreeId =  
q.id
```

3. Click the more icon  , click **Edit**, define the report schedule details, and save the report.

**Note:** You can also delete any unwanted reports from the more icon  .

## Managing report schedules

You can manage your report schedules from the Scheduled Reports page. You can view, modify, or delete existing schedules.

### Before you begin

**Note:** You cannot schedule new reports from the Scheduled Reports page. You can only add scheduled reports from the object inventory pages.

- You must have the Administrator or Storage Administrator role.

### Steps

1. In the left navigation pane, click **Scheduled Reports**.
2. On the **Scheduled Reports** page:

If you want to...	Then...
View an existing schedule	Scroll through the list of existing reports using the scroll bars and page controls.
Edit an existing schedule	<ol style="list-style-type: none"> <li>a. Click the more icon  for the schedule you want to use.</li> <li>b. Click <b>Edit</b>.</li> <li>c. Make the necessary changes.</li> <li>d. Click the check mark to save your changes.</li> </ol>

If you want to...	Then...
Delete an existing schedule	<ol style="list-style-type: none"> <li>Click the more icon  for the schedule you want to use.</li> <li>Click <b>Delete</b>.</li> <li>Confirm your decision.</li> </ol>

## Editing scheduled reports

After reports are scheduled, you can edit them on the Scheduled Reports page.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### Steps

- In the left navigation pane, click **Scheduled Reports**.

Scheduled Reports 

View and modify existing report scheduling information. To add a new report and create a schedule for the report, click 'Schedule Report' from any Storage / Network inventory page.

Schedule Name	View	Recipients	Frequency	Format	
Weekly /Node performance	Performance / Tom_test	test@netapp.com	Weekly - Monday 5:30 PM	PDF	
Weekly / my view	Health / my view	test@netapp.com	Weekly - Friday 5:30 PM	PDF	
Weekly / LIF performance	Performance / LIF performance	test@netapp.com	Weekly - Thursday 4:30 PM	PDF	

**Note:** If you have the appropriate permissions you can alter any report and its schedule in the system.

- Click the more icon  for the schedule you want to change.
- Click **Edit**.
- You can change the **Schedule Name**, **Recipient** list, **Frequency**, **Day** (for Weekly), **Time**, and **Format** for the report schedule.
- When done, click the check mark to save your changes.

## Deleting scheduled reports

After reports are scheduled, you can delete them from the Scheduled Reports page.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### Steps

- In the left navigation pane, click **Scheduled Reports**.

Scheduled Reports 

View and modify existing report scheduling information. To add a new report and create a schedule for the report, click 'Schedule Report' from any Storage / Network inventory page.

Search Scheduled Reports						
Schedule Name	View	Recipients	Frequency	Format		
Weekly /Node performance	Performance / Tom_test	test@netapp.com	Weekly - Monday 5:30 PM	PDF		
Weekly / my view	Health / my view	test@netapp.com	Weekly - Friday 5:30 PM	PDF		
Weekly / LIF performance	Performance / LIF performance	test@netapp.com	Weekly - Thursday 4:30 PM	PDF		

**Note:** If you have the appropriate permissions you can remove any report and its schedule in the system.

2. Click the more icon  for the schedule you want to remove.
3. Click **Delete**.
4. Confirm your decision.

The scheduled report is removed from the list and will no longer be generated and distributed on the set schedule.

Note that if you delete a custom view from the inventory page, any scheduled reports that use that view are also deleted.

## Sample custom reports

---

These sample custom reports are commonly used to help you identify potential problems and respond to potential issues before problems occur.

The list of reports in this section is not exhaustive and will grow over time. You can suggest custom reports to add to this section by providing documentation feedback.

**Note:** You must have the Administrator or Storage Administrator role to manage reports.

## Customizing cluster storage reports

The sample cluster storage reports in this section are just samples to help you understand how to create reports about cluster capacity to help you monitor your storage system resources.

### Creating a report to view capacity by cluster model

You can create a report to analyze storage capacity and utilization of clusters based on storage system model.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following steps to create a custom view that displays capacity by cluster model, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > Clusters**.
2. In the View menu, select **Capacity > All Clusters**.
3. Select **Show/Hide** to remove any columns, such as “Cluster FQDN” and the “OS Version” that you do not want in the report.
4. Drag the “Total Raw Capacity”, the “Model/Family”, and the three aggregate columns near the “Cluster” column.
5. Click the top of the “Model/Family” column to sort the results by cluster type.
6. Save the view with a specific name that reflects what the view is showing, for example “Capacity by Cluster Model”.
7. Click the  **Scheduled Reports** button on the inventory page.
8. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
9. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you might want to add more capacity to certain clusters, or upgrade older cluster models.

## Creating a report to identify clusters with the most unallocated LUN capacity

You can create a report to find the clusters with the most unallocated LUN capacity, greater than .5 TB, to help identify where additional workloads can be added.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view that displays clusters with the most unallocated LUN capacity, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Clusters**.
2. In the View menu, select **Capacity > All Clusters**.
3. Select **Show/Hide** to remove any columns you do not want in the report.
4. Drag the “Unallocated LUN Capacity” column near the “HA Pair” column.
5. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - Unallocated LUN capacity greater than 0.5 TB
6. Click the top of the “Unallocated LUN Capacity” column to sort the results by the greatest amount of unallocated LUN capacity.
7. Save the view with a specific name that reflects what the view is showing, for example “Most unallocated LUN capacity” and click the check mark (✓).
8. Click the  **Scheduled Reports** button on the inventory page.
9. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
10. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you might want to use the unallocated LUN capacity of the cluster.

## Creating a report to view HA pairs with the most available capacity

You can create a report to find the high availability (HA) pairs with the most capacity to provision new volumes and LUNs.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view that displays HA pairs sorted by the most available capacity to provision new volumes and LUNs, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Clusters**.
2. In the View menu, select **Capacity > All Clusters**.
3. Select **Show/Hide** to remove any columns you do not want in the report.
4. Drag the “Aggregate Unused Capacity” column near the “HA Pair” column.
5. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - Aggregate Unused Capacity greater than 0.5 TB
6. Click the top of the “Aggregate Unused Capacity” column to sort the results by the greatest amount of unused aggregate capacity.
7. Save the view with a specific name that reflects what the view is showing, for example “Least used aggregate capacity” and click the check mark (✓).
8. Click the  **Scheduled Reports** button on the inventory page.
9. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
10. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you might want to balance HA pairs based on aggregate capacity.

## Creating a report to view nodes running older versions of ONTAP

You can create a report to display the version of ONTAP software that is installed on all cluster nodes so that you can see which nodes you should be upgrading.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view that displays nodes running older versions of ONTAP, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Nodes**.
2. Select **Show/Hide** to remove any columns that you do not want in the report.
3. Drag the “OS Version” column near the “Node” column.
4. Click the top of the “OS Version” column to sort the results by oldest version of ONTAP.
5. Save the view with a specific name that reflects what the view is showing, for example “Nodes by ONTAP version”.
6. Click the  **Scheduled Reports** button on the inventory page.
7. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
8. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you might want to upgrade nodes with older ONTAP versions.

## Customizing aggregate capacity reports

These sample custom reports are used to help you identify and respond to potential problems related to aggregate storage capacity.

The reports in this section are just samples to help you understand how to create reports about aggregate capacity to help you monitor your storage system resources.

### Creating a report to view aggregates reaching full capacity

You can create a report to find the aggregates that are reaching full capacity so that you can add more capacity or move workloads to other aggregates.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view that displays aggregates reaching full capacity, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Aggregates**.
2. In the View menu, select **Capacity > All Aggregates**.

3. Select **Show/Hide** to remove any columns you do not want in the report.
4. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - Days to Full less than 45 Days
5. Click the top of the “Days to Full” column to sort the results by the least amount of days remaining to reach full capacity.
6. Save the view with a specific name that reflects what the view is showing, for example “Days to full aggregate capacity” and click the check mark (✓).
7. Click the  **Scheduled Reports** button on the inventory page.
8. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
9. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you might want to increase storage on aggregates reaching full capacity. Additionally, you may want to increase the Days Until Full capacity threshold to more than the default 7 days so that you receive events that provide more time to react to space getting low on aggregates.

## Creating a report to view aggregates that are 80% or more full

You can create a report to highlight the aggregates that are 80% or more full.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following steps to create a custom view that displays aggregates that are 80% or more full, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > Aggregates**.
2. In the View menu, select **Capacity > All Aggregates**.
3. Select **Show/Hide** to remove any columns you do not want in the report.
4. Drag the “Available Data %” and the “Used Data %” columns near the “Aggregate” column.
5. Click the filter icon, add the following filters, and then click **Apply Filter**:
  - Used Data % is greater than 80%
6. Click the top of the “Used Data %” column to sort the results by capacity percent.
7. Save the view with a specific name that reflects what the view is showing, for example “Aggregates nearing full” and click the check mark (✓).
8. Click the  **Scheduled Reports** button on the inventory page.

9. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
10. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you might want to move some data from certain aggregates.

### Creating a report to view aggregates that are overcommitted

You can create a report to analyze storage capacity and use of aggregates, and to view aggregates that are overcommitted.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following the steps to create a custom view that displays aggregates that are exceeding the overcommitted threshold, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > Aggregates**.
2. In the View menu, select **Capacity > All Aggregates**.
3. Select **Show/Hide** to remove any columns that you do not want in the report.
4. Drag the “Overcommitted Capacity %” column near the “Aggregate” column.
5. Click the filter icon, add the following filters, and then click **Apply Filter**:
  - Overcommitted Capacity % is greater than 100%
6. Click the top of the “Overcommitted Capacity %” column to sort the results by capacity percent.
7. Save the view with a specific name that reflects what the view is showing, for example “Aggregates overcommitted” and click the check mark (✓).
8. Click the  **Scheduled Reports** button on the inventory page.
9. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
10. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you might want to add some more capacity to aggregates, or move some data from certain aggregates.

## Customizing volume capacity reports

These sample custom reports are used to help you identify and respond to potential problems related to volume capacity and performance.

### Creating a report to identify volumes nearing full capacity that have Snapshot Autodelete turned off

You can create a report that contains the list of volumes that are approaching full capacity with the Snapshot Autodelete feature disabled. The results can help identify volumes where you may want to configure Snapshot Autodelete.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Follow the steps below to create a custom view that displays the required columns in the correct order, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Capacity > All Volumes**.
3. Select **Show/Hide** to remove any columns you do not want in the report.
4. Drag and drop the “Snapshot Autodelete” and “Days To Full” columns near the “Available Data Capacity” column.
5. Click the filter icon, add the following two filters, and then click **Apply Filter**:
  - Days To Full less than 30 days
  - Snapshot Autodelete is Disabled
6. Click the top of the **Days To Full** column so that the volumes with the fewest remaining days appear at the top of the list.
7. Save the view with a specific name that reflects what the view is showing, for example “Vols near capacity”.
8. Click the  **Scheduled Reports** button on the inventory page.
9. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you might want to enable Snapshot Autodelete on the volumes or find a way to increase the available space.

## Creating a report to identify space used by volumes with thin provisioning disabled

When a volume is not thin provisioned it takes up the full amount of space on the disk as defined when the volume was created. Identifying volumes that have thin provisioning disabled helps you decide whether you want to enable thin-provisioning on certain volumes.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Follow the steps below to create a custom view that displays the required columns in the correct order, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Capacity > All Volumes**.
3. Select **Show/Hide** to remove any columns you do not want in the report.
4. Drag and drop the “Used Data %” and the “Thin Provisioned” columns near the “Available Data Capacity” column.
5. Click the filter icon, add the following filter, **Thin provisioned is No**, and then click **Apply Filter**.
6. Click the top of the “Used Data %” column to sort the results so that the volumes with the highest percentage appear at the top of the list.
7. Save the view with a name to reflect what the view is showing, for example “Vols no thin provisioning”.
8. Click the  **Scheduled Reports** button on the inventory page.
9. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
10. Enter a name for the report schedule and complete the other report fields, then click the checkmark () at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you might want to enable thin provisioning on certain volumes.

## Creating a report to identify volumes on FabricPool aggregates that should move data to the cloud tier

You can create a report that contains the list of volumes that currently reside on FabricPool aggregates, that have a cloud recommendation of Tier, and that have a large amount of cold data. This

report can help you decide if you should change the tiering policy for certain volumes to “auto” or “all” to offload more cold (inactive) data to the cloud tier.

### Before you begin

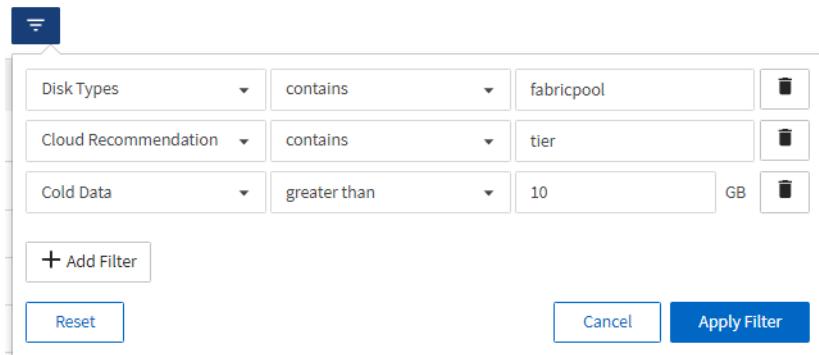
- You must have the Administrator or Storage Administrator role.
- You must have configured FabricPool aggregates and have volumes on those aggregates.

### About this task

Follow the steps below to create a custom view that displays the required columns in the correct order, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Performance > All Volumes**.
3. In the column chooser make sure the “Disk Type” column appears in the view.  
Add or remove other columns to create a view that is important for your report.
4. Drag and drop the “Disk Type” column near the “Cloud Recommendation” column.
5. Click the filter icon, add the following three filters, and then click **Apply Filter**:
  - Disk Type contains fabricpool
  - Cloud Recommendation contains tier
  - Cold Data greater than 10 GB



6. Click the top of the **Cold Data** column so that the volumes with the most cold data appear at the top of the view.

7. Save the view with a name to reflect what the view is showing, for example “Vols change tiering policy”.

Volume	Cold Data	Tiering Policy	Disk Types	Cloud Recommendation	Free Capacity	Total Capacity
nfs_vol4	38 GB	Snapshot Only	SSD (FabricPool)	Tier	2.62 TB	3 TB
kjagnfsdst	28 GB	Snapshot Only	SSD (FabricPool)	Tier	121 GB	150 GB

8. Click the **Scheduled Reports** button on the inventory page.

9. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.

10. Enter a name for the report schedule and complete the other report fields, then click the checkmark () at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you may want to use System Manager or the ONTAP CLI to change the tiering policy to “auto” or “all” for certain volumes to offload more cold data to the cloud tier.

## Customizing Qtree capacity reports

These sample custom reports are used to help you identify and respond to potential problems related to Qtree capacity.

### Creating a report to view qtrees that are nearly full

You can create a report to analyze storage capacity and utilization of qtrees, and to view qtrees that are nearly full.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following steps to create a custom view that displays qtrees that are nearly full, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > Qtrees**.
2. Select **Show/Hide** to remove any columns you do not want in the report.
3. Drag the “Disk Used %” column near the “Qtrees” column.
4. Click the filter icon, add the following filters, and then click **Apply Filter**:

- Disk Used % is greater than 75%

5. Click the top of the “Disk Used %” column to sort the results by capacity percent.
6. Save the view with a specific name that reflects what the view is showing, for example “Qtrees nearing full” and click the check mark (✓).
7. Click the  **Scheduled Reports** button on the inventory page.
8. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
9. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you might want to adjust the disk hard and soft limits (if set), or balance data across the qtrees.

## Customizing NFS export reports

You can customize NFS export reports to analyze information about NFS export policies and rules for volumes on your storage systems. For example, you can customize reports to display volumes with inaccessible junction paths and volumes with the default export policy.

### Creating a report to view volumes that have an inaccessible junction path

You can create a report to find volumes that have an inaccessible junction path.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following steps to create a custom view for volumes that have an inaccessible junction path, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > NFS Exports**.
2. Select **Show/Hide** to remove any columns that you do not want in the report.
3. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - Junction Path Active is No
4. Save the view with a specific name that reflects what the view is showing, for example “Volumes with an inaccessible junction path” and click the check mark (✓).
5. Click the  **Scheduled Reports** button on the inventory page.
6. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.

7. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you might want to correct the inaccessible junction paths.

## Creating a report to view volumes that are using the default export policy

You can create a report to find volumes that are using the default export policy.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following steps to create a custom view for volumes that are using the default export policy, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > NFS Exports**.
2. Select **Show/Hide** to remove any columns that you do not want in the report.
3. Drag the “Export Policy” column near the “Volume” column.
4. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - Export Policy contains Default
5. Save the view with a specific name that reflects what the view is showing, for example “Volumes with a default export policy” and click the check mark (✓).
6. Click the  **Scheduled Reports** button on the inventory page.
7. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
8. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you might want to configure a custom export policy.

## Customizing SVM reports

You can create SVM reports to analyze volume information and to view overall health and storage availability. For example, you can create reports to display SVMs reaching the maximum volume count and to analyze stopped SVMs.

### Creating a report to view SVMs reaching the maximum volume limit

You can create a report to find SVMs that are reaching the maximum volume limit.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following steps to create a custom view that displays SVMs that are reaching the maximum volume limit, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > SVMs**.
2. Select **Show/Hide** to remove any columns you do not want in the report.
3. Drag the “Volume Count” and “Maximum Allowed Volumes” columns near the “SVM” column.
4. Click the top of the “Maximum Allowed Volumes” column to sort the results by the highest number of volumes.
5. Save the view with a specific name that reflects what the view is showing, for example “SVMs reaching max volumes” and click the check mark (✓).
6. Click the  **Scheduled Reports** button on the inventory page.
7. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
8. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you might want to balance the volumes assigned to SVMs or, if possible, use System Manager to change the max allowed volumes.

### Creating a report to view stopped SVMs

You can create a report to display a list of all stopped SVMs.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view that displays stopped SVMs, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > SVMs**.
2. In the View menu, select **Health > All SVMs**.
3. Select **Show/Hide** to remove any columns that you do not want in the report.
4. Drag the “State” column near the “SVM” column.
5. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - State is Stopped
6. Save the view with a specific name that reflects what the view is showing, for example “Stopped SVMs” and click the check mark (✓).
7. Click the  **Scheduled Reports** button on the inventory page.
8. Click **Add Schedule** to add a new row to the **Scheduled Reports** page so you can define the schedule characteristics for the new report.
9. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you might want to investigate why the SVM is stopped to see if you should restart the stopped SVMs.

## Customizing volume relationship reports

The Volume Relationships Inventory report enables you to analyze the storage inventory details in a cluster, understand the degree of protection that is required for volumes, and filter the volume details based on source of failure, pattern, and schedules.

### Creating a report to group volume relationships by source of failure

You can create a report that groups volumes by the reason the relationship is in an unhealthy state.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view that group volumes by source of failure, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Volumes**.

2. In the View menu, select **Relationship > All Relationships**.
3. Select **Show/Hide** to make sure the “Relationship Health” and “Unhealthy Reason” columns appear in the view.  
Add or remove other columns to create a view that is important for your report.
4. Drag the “Relationship Health” and “Unhealthy Reason” columns near the “State” column.
5. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - Relationship health is bad
6. Click the top of the “Unhealthy Reason” column to group the volume relationships by source of failure.
7. Save the view with a specific name that reflects what the view is showing, for example “Vol relationships by failure”.
8. Click the  **Scheduled Reports** button on the inventory page.
9. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you can investigate the source and impact of each type of failure.

## Creating a report to group volume relationships by issue

You can create a report that groups volume relationships by issue.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following steps to create a custom view that groups volume relationships by issue, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Relationship > All Relationships**.
3. Select **Show/Hide** to remove any columns you do not want in the report.
4. Drag the “Unhealthy Reason” column near the “State” column.
5. Click the top of the “Unhealthy Reason” column to group the volumes by issue.
6. Save the view with a specific name that reflects what the view is showing, for example “Vol relationships by issue”.
7. Click the  **Scheduled Reports** button on the inventory page.
8. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you can investigate the source and impact of each type of issue.

### Creating a report to view volume transfer trends at specific time intervals

You can create a report that displays volume transfer trends at specific time intervals.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

#### About this task

Use the following steps to create a custom view for volumes at specific time intervals, and then schedule a report to be generated for that view.

#### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Relationship > Last 1 month Transfer Status**.
3. Select **Show/Hide** to remove any columns you do not want in the report.
4. Drag the “Transfer Duration” column near the “Operational Result” column.
5. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - Transfer End Time in the last 7 Days
6. Click the top of the “Transfer Duration” column to sort the volumes by time interval.
7. Save the view with a specific name that reflects what the view is showing, for example “Volumes by duration”.
8. Click the  **Scheduled Reports** button on the inventory page.
9. Enter a name for the report schedule, set the frequency as “Weekly”, and complete the other report fields, then click the checkmark () at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

#### After you finish

Based on the results shown in the report, you can investigate the transfer time intervals.

### Creating a report to view failed or successful volume transfer

You can create a report that displays the status of volume transfers. You can view both failed and successful volume transfers in this report.

#### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view to show which transfers failed and which were successful, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Relationship > Last 1 month Transfer Status**.
3. Select **Show/Hide** to remove any columns that you do not want in the report.
4. Drag the “Operation Result” column near the “State” column.
5. Click the top of the “Operation Result” column to sort the volumes by the status.
6. Save the view with a specific name that reflects what the view is showing, for example “Volumes by transfer status”.
7. Click the  **Scheduled Reports** button on the inventory page.
8. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you can investigate the transfer status.

## Creating a report to view volume transfers based on transfer size

You can create a report to view volume transfers based on transfer size.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view for volume transfers based on transfer size, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Relationship > Last 1 month Transfer Rate**.
3. Click the top of the “Total Transfer Size” column to sort the volume transfers by size.
4. Save the view with a specific name that reflects what the view is showing, for example “Volumes by transfer size”.
5. Click the  **Scheduled Reports** button on the inventory page.
6. Enter a name for the report schedule and complete the other report fields, then click the checkmark (✓) at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you can investigate the volume relationships by transfer size.

## Creating a report to view volume transfers grouped by day

You can create a report to view volume transfers grouped by day.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view for volume transfers grouped by day, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Relationship > Last 1 month Transfer Rate**.
3. Click the top of the “Day” column to sort the volume transfers by day.
4. Save the view with a specific name that reflects what the view is showing, for example “Volume transfers by day”.
5. Click the  **Scheduled Reports** button on the inventory page.
6. Enter a name for the report schedule and complete the other report fields, then click the checkmark () at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you can investigate the volume transfers by day.

## Customizing volume performance reports

These sample custom reports are used to help you identify and respond to potential problems related to volume performance.

### Creating a report to view volumes with a high amount of cold data on an aggregate that is not FabricPool-enabled.

You can create a report to display volumes with a high amount of cold data on a non-FabricPool aggregate. This can help you identify volumes that should be moved to a FabricPool aggregate.

### Before you begin

- You must have the Administrator or Storage Administrator role.

### About this task

Use the following steps to create a custom view for volumes with a high amount of cold data on a non-FabricPool-enabled aggregate, and then schedule a report to be generated for that view.

### Steps

1. In the left navigation pane, click **Storage > Volumes**.
2. In the View menu, select **Performance > All Volumes**.
3. Select **Show/Hide** to make sure the “Disk Type” column appears in the view.  
Add or remove other columns to create a view that is important for your report.
4. Drag the “Disk Type” column near the “Cold Data” column.
5. Click the filter icon, add the following filter, and then click **Apply Filter**:
  - Cold Data greater than 100 GB
  - Disk Type contains SSD
6. Click the top of the “Disk Type” column to sort the volumes by disk type so that the disk type “SSD (FabricPool)” is at the bottom.
7. Save the view with a specific name that reflects what the view is showing, for example “Cold data vols not FabricPool”.
8. Click the  **Scheduled Reports** button on the inventory page.
9. Enter a name for the report schedule and complete the other report fields, then click the checkmark () at the end of the row.

The report is sent immediately as a test. After that, the report generates and is sent by email to the recipients listed using the specified frequency.

### After you finish

Based on the results shown in the report, you can find volumes that are good candidates to be moved to FabricPool aggregates.

## **Copyright**

---

Copyright © 2019 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.

Data contained herein pertains to a commercial item (as defined in FAR 2.101) and is proprietary to NetApp, Inc. The U.S. Government has a non-exclusive, non-transferable, non-sublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b).

## Trademark

---

NETAPP, the NETAPP logo, and the marks listed on the NetApp Trademarks page are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.

*<http://www.netapp.com/us/legal/netapptmlist.aspx>*

## **How to send comments about documentation and receive update notifications**

---

You can help us to improve the quality of our documentation by sending us your feedback. You can receive automatic notification when production-level (GA/FCS) documentation is initially released or important changes are made to existing production-level documents.

If you have suggestions for improving this document, send us your comments by email.

*[doccomments@netapp.com](mailto:doccomments@netapp.com)*

To help us direct your comments to the correct division, include in the subject line the product name, version, and operating system.

If you want to be notified automatically when production-level documentation is released or important changes are made to existing production-level documents, follow Twitter account [@NetAppDoc](#).

You can also contact us in the following ways:

- NetApp, Inc., 1395 Crossman Ave., Sunnyvale, CA 94089 U.S.
- Telephone: +1 (408) 822-6000
- Fax: +1 (408) 822-4501
- Support telephone: +1 (888) 463-8277