Managing reports

Active IQ Unified Manager

NetApp
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Managing reports

Active IQ Unified Manager enables you to create and manage reports directly from the Unified Manager user interface so that you can view information about the health, capacity, performance, and protection relationships of storage objects in your clusters. Reviewing this information can help you to identify potential problems before they occur.

You can download reports or you can schedule a report to be sent using email to a group of recipients. The reports are sent as email attachments.

In addition to generating reports from the user interface, you can extract health and performance data from Unified Manager using these additional methods:

- Using Open Database Connectivity (ODBC) and ODBC tools to directly access the database for cluster information
- Executing Unified Manager REST APIs to return the information you are interested in reviewing

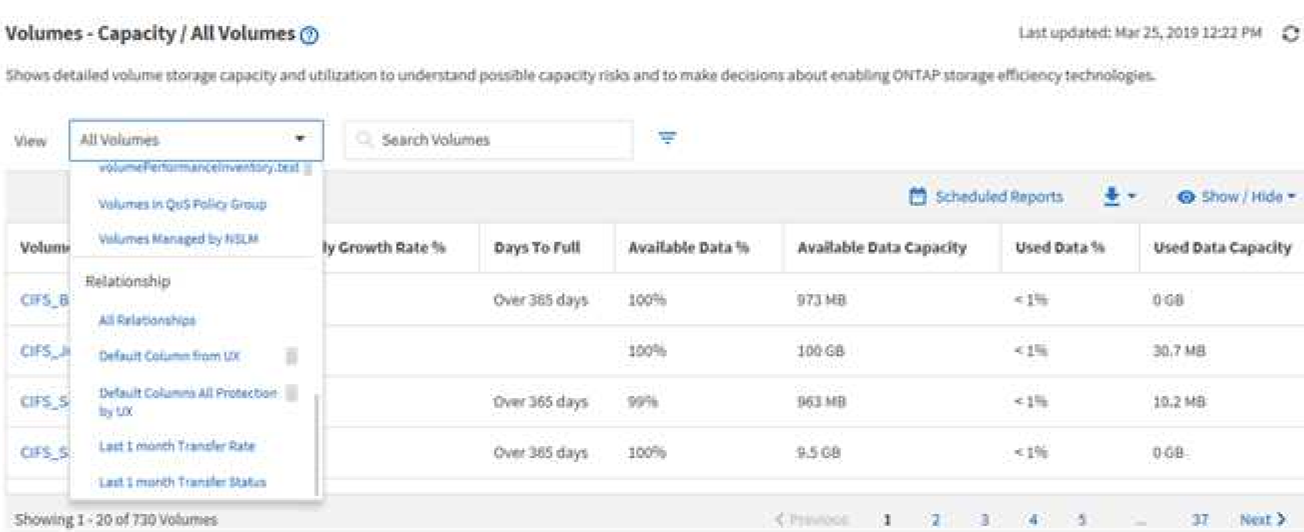
Understanding the view and report relationship

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.

> 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.



Only users with the Application 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.

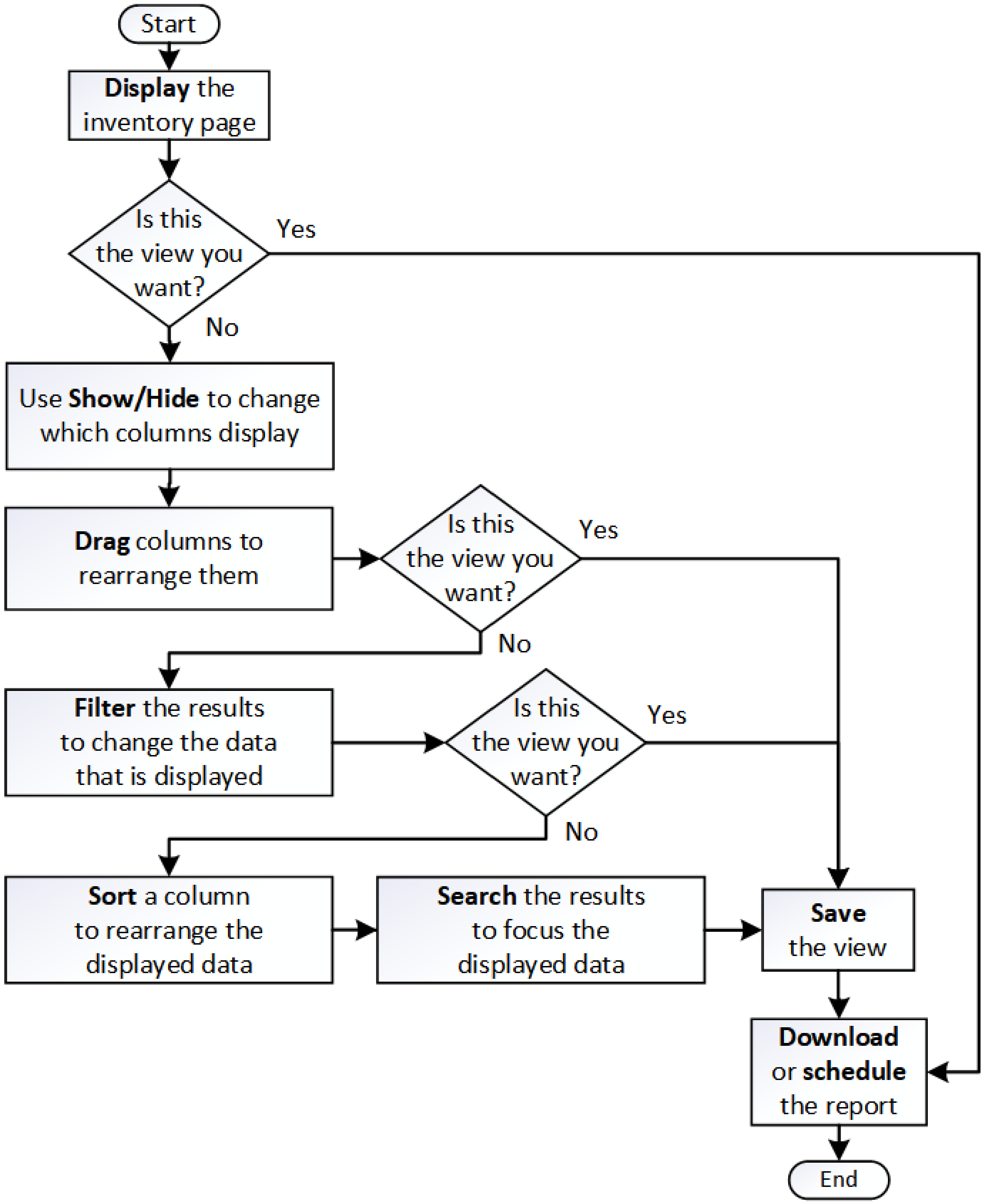
Active IQ Unified Manager reports

Type	Storage or network object
Capacity	Clusters Aggregates Volumes Qtrees
Health	Clusters Nodes Aggregates Storage VMs Volumes SMB/CIFS shares NFS shares
Performance	Clusters Nodes Aggregates Storage VMs Volumes LUNs NVMe namespaces Network Interfaces (LIFs) Ports

Type	Storage or network object
Quality of Service	Traditional QoS policy groups Adaptive QoS policy groups Performance Service Level Objective policy groups
Volume protection relationships (available from the Volumes page)	All relationships Last 1 month transfer status Last 1 month transfer rate

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

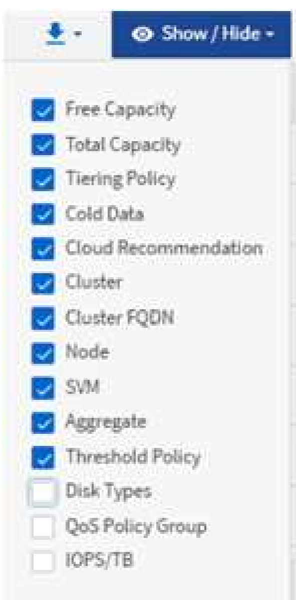
About this task

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

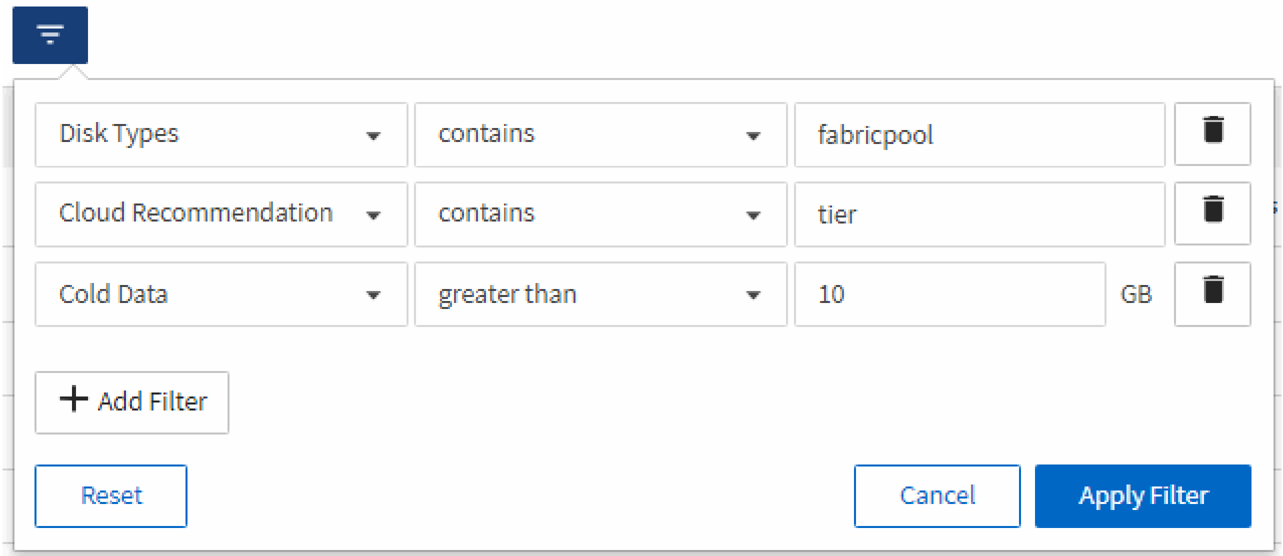
1. In the left navigation pane, click **Storage** > **Volumes**.
2. In the View menu, select **Performance** > **All Volumes**.
3. Click **Show/Hide** to make sure the “Disk Types” column appears in the view.

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

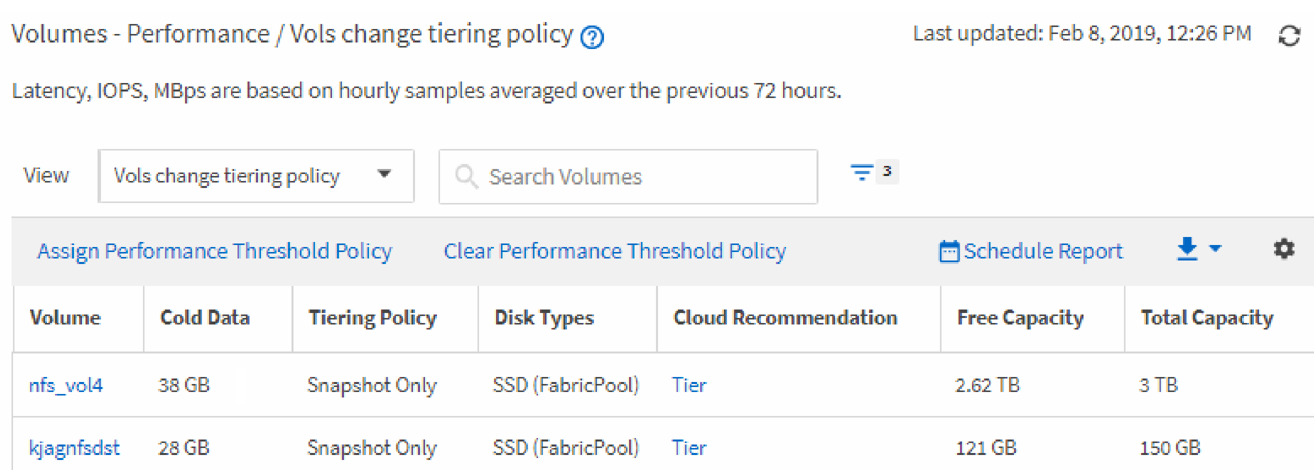
4. Drag the “Disk Types” column next to the “Cloud Recommendation” column.
5. Click the filter icon to add the following three filters, and then click **Apply Filter**:
   - Disk Types contains fabricpool

- Cloud Recommendation contains tier
- Cold Data greater than 10 GB



Note that each filter is joined with a logical AND so that all volumes returned must meet all the criteria. You can add a maximum of 5 filters.

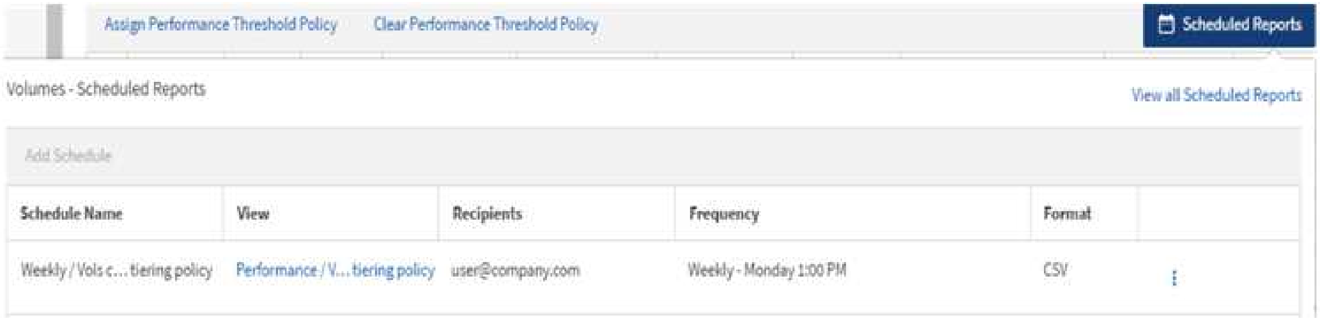
6. Click the top of the **Cold Data** column to sort the results so that the volumes with the most cold data appear at the top of the view.
7. When the view is customized, the view name is Unsaved View. Name the view to reflect what the view is showing, for example “Vols change tiering policy”. When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



8. 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.

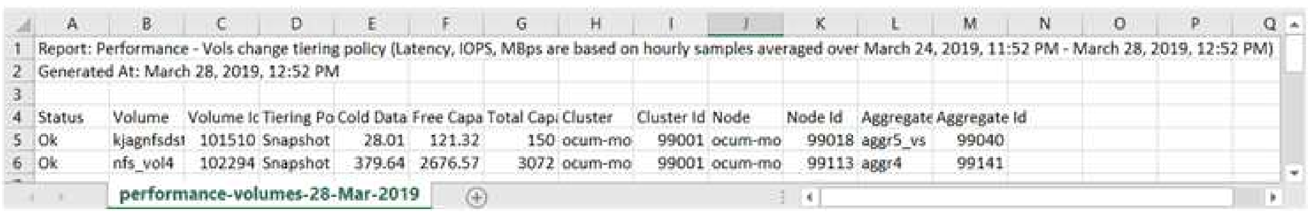
9. Click the **Scheduled Reports** button on the inventory page. All scheduled reports relating to the object, in this case volumes, appear in the list.



10. Click **Add Schedule** to add a new row to the **Report Schedules** page so you can define the schedule characteristics for the new report.
11. 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.

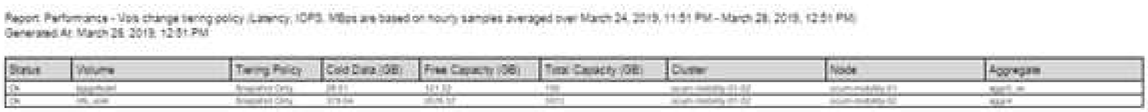
    The following sample report is in CSV format:



	A	B	C	D	E	F	G	H	I	J	K	L	M
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	Volume	Volume Ic	Tiering Po	Cold Data	Free Capa	Total Capi	Cluster	Cluster Id	Node	Node Id	Aggregate	Aggregate Id
5	Ok	kjagnfsdst	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

performance-volumes-28-Mar-2019

    The following sample report is in PDF format:



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 **Storage Management** > **Report Schedules**.
2. Use the **Search Scheduled Reports** text field.

To find reports by …	Try …
Schedule name	Type part of the report schedule name.

To find reports by …	Try …
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.

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.

Steps

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 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

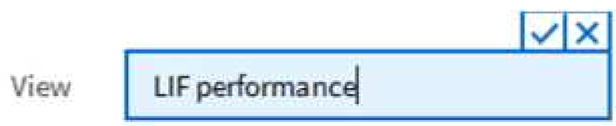
- You must have the Application Administrator or Storage Administrator role.
- You must have configured the SMTP server settings in the **General** > **Notifications** page so that the reporting engine can send reports as email attachments to the list of recipients from the Unified Manager server.
- 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 network interfaces, 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** > **Network Interfaces**.
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 **Report Schedules** 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.

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.

Managing report schedules

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

Before you begin

> You cannot schedule new reports from the Report Schedules page. You can only add scheduled reports from the object inventory pages.

- You must have the Application Administrator or Storage Administrator role.

Steps

1. In the left navigation pane, click **Storage Management** > **Report Schedules**.
2. On the **Report Schedules** 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	a. Click the more icon ⋮ for the schedule you want to use. b. Click **Edit**. c. Make the necessary changes. d. Click the check mark to save your changes.
Delete an existing schedule	a. Click the more icon ⋮ for the schedule you want to use. b. Click **Delete**. c. Confirm your decision.

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.

Database	Description
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.

Report Schedules page

The Report Schedules page enables you to view detailed information about the reports that you have created and the schedule at which they are generated. You can search for a specific report, modify certain attributes of a report schedule, and delete a report schedule.

The Report Schedules page displays the list of reports that have been created on the system.

- **Schedule Name**

  The name of the scheduled report. Initially this name includes the View name and the frequency. You can change this name to better reflect the report contents.

- **View**

  The View that was used to create the report.

- **Recipients**

  The email addresses of users who will receive the generated report. Each email address must be separated by a comma.

- **Frequency**

  How frequently the report is generated and sent to the recipients.

- **Format**

  Whether the report is generated as a PDF file or in CSV format.

- **Action**

  Options available to edit or delete the report schedule.