



# Do more with Keystone Services

## Keystone

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# Do more with Keystone Services

## Keystone and BlueXP

If you purchase a cloud service on your Keystone subscription, you can access and manage those services through BlueXP.

As a Keystone customer, if you have Cloud Volumes ONTAP subscription, you can use Keystone services to charge your Cloud Volumes ONTAP usage and view your billing and consumption details through BlueXP.

For this, you should create one or more BlueXP accounts and link them with your Keystone account. While you purchase a cloud service through Keystone, you need to provide the details of your BlueXP accounts to your Keystone Success Manager (KSM). This enables proper metering and charging of your cloud service usage through your Keystone subscription.

For more information, see the following links in the BlueXP documents:

- [Keystone Subscription](#)
- [Manage Keystone Subscriptions](#)

## Keystone and Digital Advisor

If you have subscribed to NetApp Keystone services, you can view your usage reports and graphs on the Digital Advisor dashboard.

Digital Advisor enables you to view storage-as-a-service (STaaS) details and information on the NetApp infrastructure that you own. Digital Advisor provides a single dashboard with visibility into your subscriptions, service levels, and capacity usage with the ability to create detailed reports.

For more information about Digital Advisor dashboard widget for Keystone, see [Digital Advisor documentation](#).

For more information about Keystone dashboard and reporting, see [Keystone Subscription dashboard and reporting](#).

For more information about data flow, see [Monitoring tools](#).

## Keystone Subscription dashboard and reporting

If you have subscribed to NetApp Keystone STaaS services, you can monitor your usage on the **Keystone Subscriptions** widget on the Digital Advisor dashboard.

For information about the Digital Advisor widget, see [View capacity utilization with NetApp Keystone Subscription](#).

Click **View More Details** on the widget to view the usage details and alerts on your volumes on the **Keystone Subscription** page. Alternately, from the left navigation pane, go to **GENERAL > Keystone Subscription**.

The details of the subscriptions, usage charts for each service level, and volume details are displayed in the different tabs on this screen.



Capacity consumption in Keystone subscriptions is displayed in TiBs on the dashboards and reports, up to two decimal places. If the usage is less than 0.01 TiB, then the value is shown as 0 or No Usage. For other usage metrics, see [Metrics measurement](#). For information about different capacities used in Keystone, see [Supported storage capacities](#).

## View subscription details

You can view all the subscriptions for an account name in the **Subscription Details** tab.

Keystone Subscription

Subscription Details    Subscription Time Series    System Details

[View Usage Indicators](#)

<input type="checkbox"/>	Subscription Number	Tracking ID	Billing Period	Start Date	End Date ↑	Usage Status	
<input type="checkbox"/>	1856047600	-SLOUGH	Month	November 1, 2021	November 1, 2026	● Above Burst Limit	▼
<input type="checkbox"/>	1859840900	-Singapore	Month	April 1, 2022	April 1, 2027	● Above Burst Limit	▼
<input type="checkbox"/>	1859851300	-Amsterdam	Month	June 1, 2022	June 1, 2027	● Above Burst Limit	▲

**Warning:** [88 volumes do not comply with this subscription's AQoS policies.](#)

Service Level ↑	Committed	Consumed	Available	Available With Burst	Current Burst	Accrued Burst
Premium	500 TiB	● 601 TiB	0 TiB	0 TiB	● 101 TiB	100.52 TiB
Standard	900 TiB	● 108.05 TiB	791.95 TiB	971.95 TiB	● 0 TiB	0 TiB

For each subscription number, you can see the following information:

- **Subscription Number:** The subscription number of the Keystone subscription assigned by NetApp.
- **Tracking ID:** The tracking ID assigned at the time of subscription activation. This is a unique ID for each subscription and site, used for tracking the subscription.
- **Billing Period:** The billing period of the subscription, such as monthly, quarterly, or annual.
- **Start Date:** The start date of the subscription.
- **End date:** The end date of the subscription. Based on this date, you might see information messages for subscriptions that are nearing expiry or a stipulated grace period.
- **Usage Status:** Indicates how much of the subscription has been used or overused. You can sort the list by this column if you want to view the highest consumption records.



: Clicking this icon opens the **Subscription Time Series** tab where you can see the historical usage data for each service level included in this subscription

You can see more details by clicking the downward arrow for a subscription record. Details, such as the service level name, committed, consumed, available capacities, and current and accrued burst usage are displayed in TiB. Specific service levels that record higher consumption are highlighted. Any warnings and alerts generated for your volumes are also displayed.

You can refer to the following usage indicators to check the usage status of each subscription:

- No Usage 0%
  - Consuming 0% - 80%
  - Consuming Above 80%
  - Within Burst Limit (20% of Committed)
  - Above Burst Limit
- 
- The diagram shows two blue brackets on the right side. The top bracket groups the first three items (No Usage 0%, Consuming 0% - 80%, and Consuming Above 80%) and is labeled 'Indicate consumed capacity'. The bottom bracket groups the last two items (Within Burst Limit (20% of Committed) and Above Burst Limit) and is labeled 'Indicate burst usage'.

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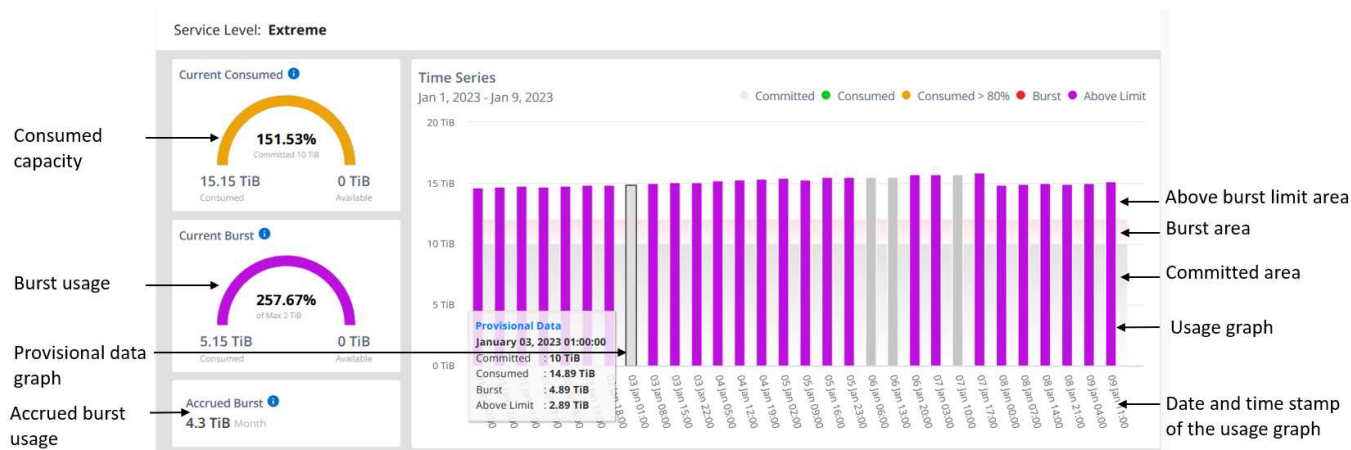
- : No capacity usage recorded against the committed capacity of the service level
- : The consumption is normal, within 80% of the committed capacity
- : Maximum consumption, that is the usage is about to reach 100% or more of the committed capacity. The **Consumed** column displays this indicator for any consumption above 80% of the committed capacity
- : The consumption is within the burst limit. The burst consumption is the consumption that tops the 100% committed capacity of a service level, and is within the agreed-upon burst usage limit, such as 120%
- : Indicates consumption above the stipulated burst limit

## View historical subscription data

The **Subscription Time Series** tab displays historical data of your subscriptions for a specific period. The vertical graphs display the usage details for the selected time range with appropriate indicators for you to compare and generate reports.

### Steps

1. Click the **Subscription Time Series** tab.
2. Select the required subscription for which you want to view the details. The first subscription in your account name is selected by default.
3. Select the time range from the calendar icons in the **From Date** and **To Date** fields. The default time range selected is from the start date of the billing period to the current date.
4. Click **View Details**. The historical consumption data of the subscription for each service level is displayed based on the selected time range. You can hover your mouse cursor over the charts to view the usage breakdown in terms of committed, consumed, burst, and above the burst limit data at that point.



The following details are displayed:



- **Current Consumed:** This gauge/donut chart on the left indicates the consumed capacity for a service level for the billing period. This chart displays specific colors to indicate the following usage:
  - Grey: None
  - Green: Within 80% of the committed capacity
  - Amber: Any consumption above 80% of the committed capacity
- **Current Burst:** This gauge/donut chart indicates the consumed capacity for a service level that is within or above the burst limit. For a service level, any usage between 100% and the burst limit agreed upon, for example 20% above the committed capacity, is within the burst limit. Further usage is considered as usage above the burst limit. This chart displays specific colors to indicate the following usage:
  - Grey: None
  - Red: Burst
  - Purple: Above the burst limit
- **Accrued Burst:** The accrued burst usage or used capacity is calculated per month for the current billing period. The accrued burst usage is calculated based on the committed and consumed capacity for a service level:  $(\text{consumed} - \text{committed}) / 365.25 / 12$
- **Time Series:** The bar charts display the capacity usage for the time selected. The date and time of the collection are displayed at the bottom of the chart. The bar charts appear in these colors to indicate usage:
  - Green: Within 80%
  - Amber: 80% - 100%
  - Red: Burst usage (100% of the committed capacity to the agreed burst limit)
  - Purple: Above the burst limit or Above Limit
  - Grey: Provisional usage - usage recorded when the exact data for the time period is unavailable and is substituted by the data available at the previous data collection point

## View volume details

Click the **System Details** tab to view the details of each volume in your storage environment managed by a Keystone subscription.

Subscription Details    Subscription Time Series    **System Details**

Subscription  
Track123 (A-S00021... ▾)

 Copy Node Serials     Download CSV

Volume Name	Physical Utilization ⓘ	Logical Delta ⓘ	Physical Delta ⓘ	Cold Data
volume21e1	0.07 %	0.02 TiB	0.02 TiB	
voltesclon	0.07 %	0 TiB	0.02 TiB	
volume21j	0.1 %	0 TiB	0.01 TiB	

You can sort by the columns and filter the lists to view specific information. You can copy individual node serial numbers by clicking the **Copy Node Serials** button.

## Generate reports

You can generate and view reports for your subscription details, historical usage data for a time range, and

system details from each of the tabs by clicking the download button: 

The details are generated in CSV format that you can save for future use.

A sample report for the **Subscription Time Series** tab, where the graphical data is converted:

	1	2	3	4	5	6
1	Service Level	Timestamp	Committed (TiB)	Consumed (TiB)	Burst (TiB)	
2	Standard	12/31/2022 18:30	30	1.0293	0	
3	Standard	1/10/2023 21:30	30	3.5401	0	
4	Standard	1/11/2023 6:30	30	1.0293	0	
5	Value	12/31/2022 18:30	40	3.0781	0	
6	Value	1/1/2023 3:30	40	3.0781	0	
7	Value	1/1/2023 12:30	40	3.0781	0	
8	Value	1/1/2023 21:30	40	3.0781	0	
9	Data-Protect Premium	1/9/2023 18:30	33	2	0	
10	Data-Protect Premium	1/10/2023 3:30	33	2	0	
11	Data-Protect Premium	1/10/2023 12:30	33	2	0	
12	Data-Protect Premium	1/10/2023 21:30	33	2	0	
13	Data-Protect Premium	1/11/2023 6:30	33	2	0	
14	Extreme	12/31/2022 18:30	10	14.6221	4.6221	
15	Extreme	1/1/2023 3:30	10	14.6221	4.6221	
16	Extreme	1/1/2023 12:30	10	14.7998	4.7998	
17	Extreme	1/1/2023 21:30	10	14.7998	4.7998	
18	Extreme	1/2/2023 6:30	10	14.8556	4.8556	
19	Extreme	1/2/2023 15:30	10	14.8556	4.8556	
20	Extreme	1/3/2023 0:30	10	15.0064	5.0064	

## View alerts


Alerts on the dashboard send caution messages that enable you to understand the issues occurring in your storage environment.


The alerts can be of two types:

- **Information:** For issues, such as your subscriptions nearing an end or reaching the grace period, you can see information alerts. Hover your cursor over the information icon to understand more about the issue.
- **Warning:** Issues, such as non-compliance, are displayed as warnings. For example, if there are volumes within your managed clusters that do not have adaptive QoS (AQoS) policies attached, you can see a warning message. You can click the link on the warning message to see the list of the non-compliant volumes in the **System Details** tab.

For information about AQoS policies, see [Adaptive QoS](#).



<input type="checkbox"/>	Subscription Number	Tracking ID	Billing Period	Start Date
<input type="checkbox"/>	A-S00010796 	TCDI-1	Quarter	February 1, 2021
<input type="checkbox"/>	A-S00021371	Track123	Annual	July 1, 2022

 **Warning:** [168 volumes do not comply with this subscription's AQoS policies.](#)

Contact support for more information on these caution and warning messages. For information, see [Generating service requests](#).

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