



# Analyze the sustainability of your storage system

Digital Advisor

NetApp  
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# Analyze the sustainability of your storage system

## Learn about sustainability

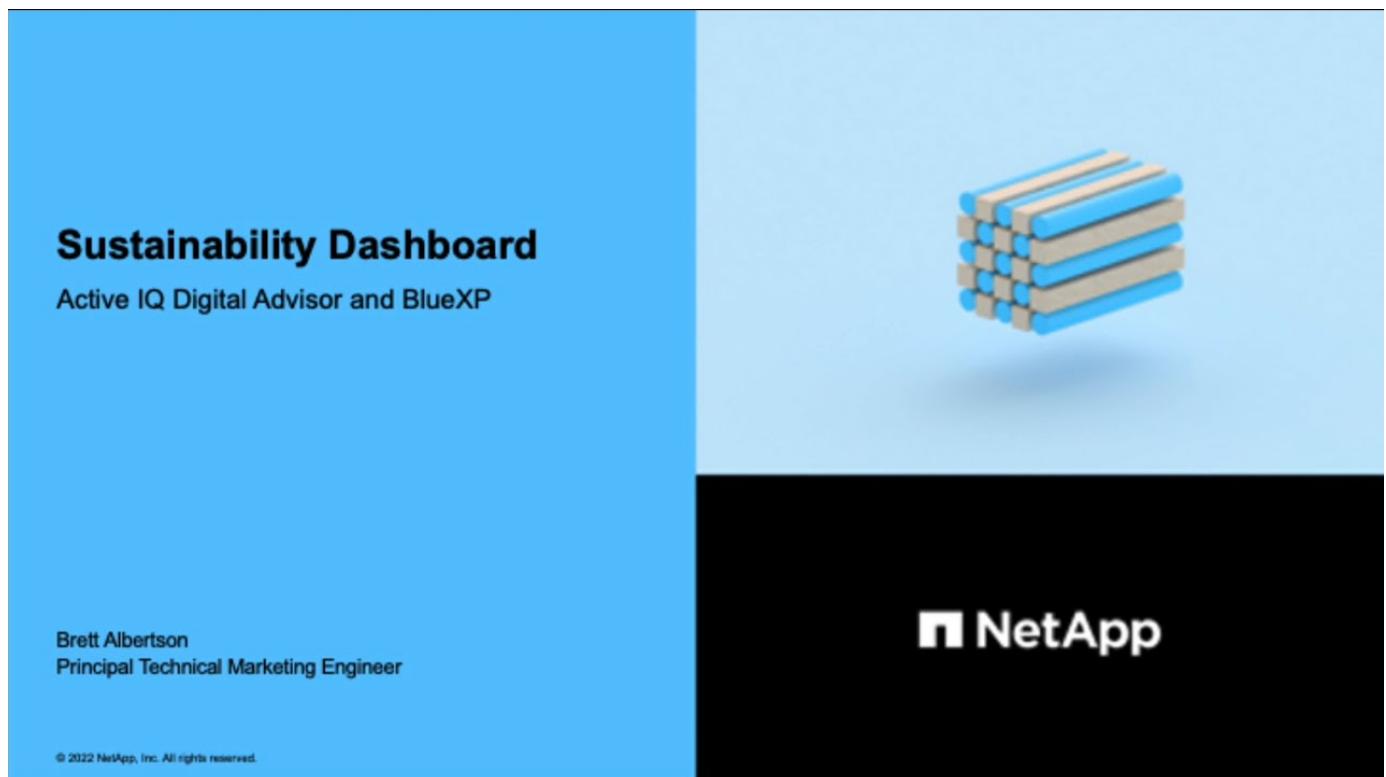
Sustainability, as a service, allows you to reduce the energy consumption and enables you to work towards your environmental goals. This enables you to align your storage systems with eco-friendly practices and achieve the sustainability targets.

You can view the sustainability score, and projected usage of power, direct carbon, and heat from the Sustainability dashboard. You can adjust the carbon mitigation percentage for specific sites. You can also view the sustainability score at the cluster level. Based on the sustainability score, you can assess the sustainability posture and implement NetApp's recommended actions to improve the score. To learn more about the Sustainability dashboard, go to [Sustainability dashboard overview](#).



Sustainability is supported on Cloud Volumes ONTAP, AFF systems (A-Series and C-Series), E-Series, FAS, and StorageGRID systems.

You can view the following video to understand the Sustainability dashboard:



## Benefits of sustainability

Sustainability offers the following benefits:

- Accelerate performance by reducing the number of storage devices to store the same amount of data.
- Lower storage costs by optimizing storage systems utilization.

- Reduce carbon footprints by using renewable energy at data centers.
- Improve energy efficiency by implementing energy-efficient policies.

## **Get started with Sustainability dashboard**

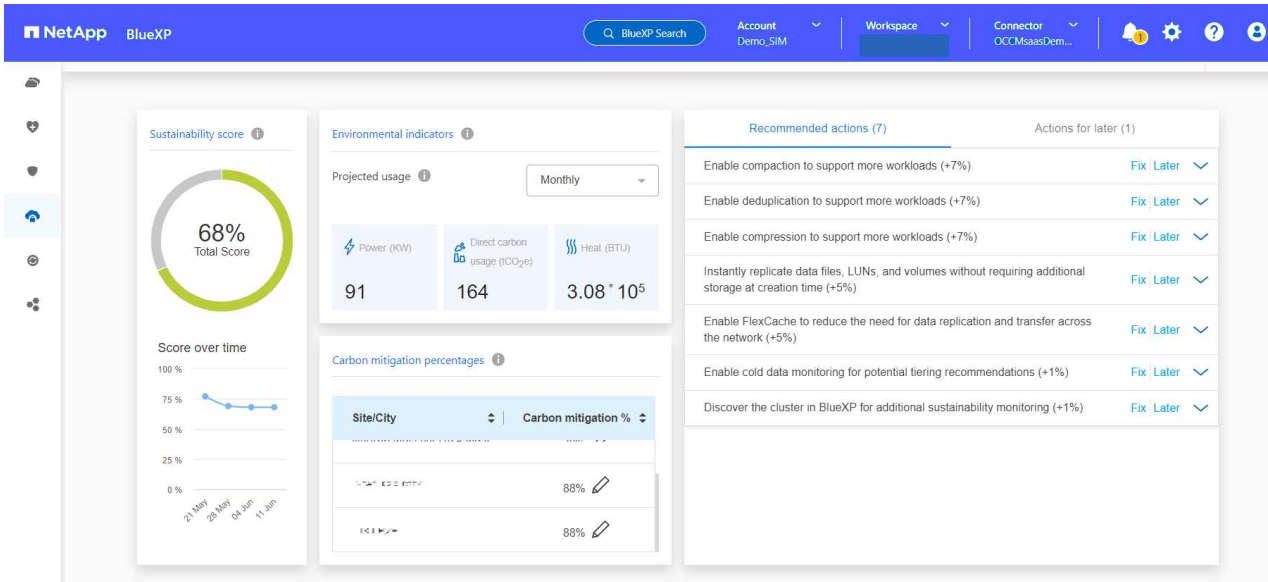
Sustainability dashboard provides AIOps-enabled reporting and scoring with actionable insights to improve your sustainability posture. You can access the Sustainability dashboard through NetApp BlueXP or Digital Advisor.

## BlueXP

To log in to BlueXP, you can use your NetApp Support Site credentials or you can sign up for a NetApp cloud login using your email and a password. Learn more about [logging in to BlueXP](#).

### Steps

1. Open a web browser, and go to the [BlueXP console](#).  
The NetApp BlueXP login page appears.
2. Log in to BlueXP.
3. From the BlueXP left navigation, select **Governance > Sustainability**.  
The Sustainability dashboard appears.



If the Sustainability dashboard is not set up, the option **Add NSS account** appears. Provide your NetApp Support Site (NSS) credentials to view your Sustainability dashboard and the systems associated with your account.

## Digital Advisor

To log in to Digital Advisor, you can use your NetApp Support Site credentials.

### Steps

1. Open a web browser, and go to the [Digital Advisor](#) login page.
2. Provide your username and password and click **Sign In**.
3. From the left navigation, select **STORAGE HEALTH > Sustainability**.

The **Sustainability** option is disabled if the watchlist is not configured. To enable it, you can either create a watchlist or perform a search using customer name, site name, group name, StorageGRID, hostname, cluster, serial number, or system ID. [Learn more about watchlist.](#)

# Sustainability dashboard overview

Sustainability dashboard provides an environmental assessment of your storage systems and actionable insights for improvement in the form of NetApp’s recommended actions.

**Working environments (13)**

Working environment	Site	Sustainability score	Capacity utilization (%)	Direct CO2 Usage	Actual power kWh	Heat BTU/h	Recommended actions
NET-1-1-1-1-1	Site 1	85%	68 TB (94%)	1	0.42	1433	N/A
NET-1-1-1-1-2	Site 2	85%	14 TB (13%)	0.13	0.05	172	5 Actions

AutoSupport should be enabled for accurate calculation of the sustainability score.

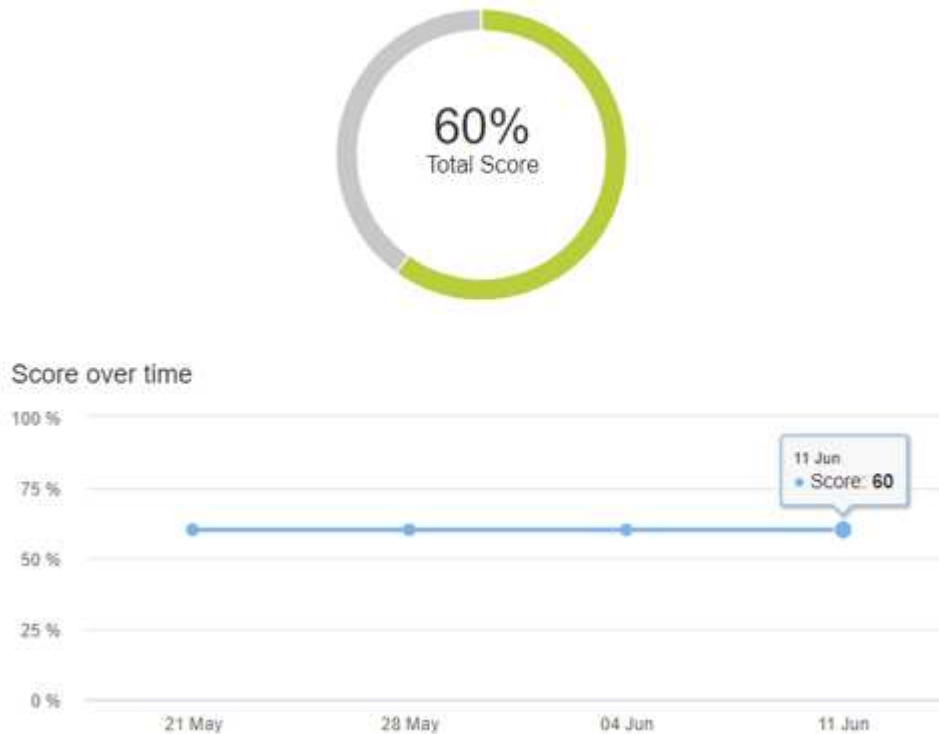
**Sustainability score:** Displays the total score indicating the environmental sustainability of your storage

systems. You can assess the sustainability level of your storage systems based on the following range:


- 76 - 100: Indicates that sustainability is a top priority.
- 51 - 75: Indicates a high level of investment in sustainability initiatives.
- 26 - 50: Indicates good progress towards sustainability initiatives.
- Less than 25: Indicates the need for improvement in sustainability practices.

You can see the graphical representation of the score for up to 5 weeks, which is updated on a weekly basis. You can also see the reason for the increase or decrease in the sustainability score by hovering over the graph.

#### Sustainability score ⓘ



**Environmental indicators:** Displays projections for your power, direct carbon usage, and heat emission to evaluate the environmental health of your storage systems. These projections are based on actual power, if unavailable, typical power values. You can view these projections monthly, quarterly, or yearly by selecting the desired option from the drop-down in the top right corner of this section.

**Carbon mitigation percentages:** Displays the percentage of carbon mitigation at each site/city, and the presented baseline values are based on your location. You can adjust the carbon mitigation percentage for specific sites by clicking the  icon located next to the percentage values, and the carbon numbers will automatically adjust accordingly.

## Carbon mitigation percentages i

Site/City	Carbon mitigation %
	94 <span>✓</span> <span>✕</span>
	92%
	71%

**Recommended actions:** Displays the list of recommended actions to improve the sustainability score of your storage systems. These actions can be taken immediately, or later.

For more information on how to improve the sustainability score, see [Improve sustainability score](#).

**Working environments:** Displays environmental parameters in the table that can help in identifying clusters for moving to more efficient storage. From this table, you can:

- View the sustainability score at cluster level, select the cluster name to access **ClusterViewer**, take specific recommended actions to improve the sustainability. For more information, see [Improve sustainability score at cluster level](#).

Working environments (13)

Working enviro...	Heat BTU/h	Recommended actions	Total capacity	KG CO2/TIB	Typical power kWh	Worst power kWh	Median power kWh	Real-time power kWh	Watts/Tib
	1433	N/A	72 TIB	0.01	2	2	0.42	Enable Monitoring	5
	172	8 Actions	110 TIB	N/A	N/A	N/A	N/A	Enable Monitoring	131
	2434	N/A	117 TIB	N/A	0.6	0.65	0.4	Enable Monitoring	25
	2604	N/A	117 TIB	N/A	1	1	0.79	Enable Monitoring	131
	2947	N/A	130 TIB	N/A	1	1	0.61	Enable Monitoring	5
	2199	N/A	215 TIB	N/A	0.55	0.64	0.3	Enable Monitoring	5
	866	N/A	37 TIB	N/A	0.55	0.64	0.3	Enable Monitoring	131
	1773	N/A	37 TIB	N/A	1	1	0.61	Enable Monitoring	25
	2086	N/A	128 TIB	N/A	N/A	N/A	N/A	Enable Monitoring	5
	2644	N/A	6 TIB	N/A	0.79	1	1	Enable Monitoring	131
	2954	N/A	34 TIB	N/A	2	2	1	Enable Monitoring	25

- Enable monitoring from the **Real-time power** column to view the real-time power details at the cluster level. For more information, see [Cloud Insights](#).

## Improve sustainability score

Sustainability dashboard provides recommended actions that you can implement to improve the overall sustainability score and the cluster-level sustainability score.





To get the best results from the dashboard, you must enable AutoSupport. If AutoSupport is not enabled, the data will be based on product specifications. To get real-time power details, you need to enable Cloud Insights. For more information on how to enable Cloud Insights, see [Cloud Insights](#).

## Sustainability score computation

The sustainability score is calculated based on a set of rules related to storage systems, with each rule addressing specific risks and providing recommended actions for mitigation. Every rule is given a score to reflect its importance. For example, if there are three rules associated with storage systems: maintaining ambient temperature, ensuring ideal capacity utilization, and using a titanium power supply, with scores of 30, 40, and 30 points, respectively. Adding these scores gives a total of 100 points, which acts as the denominator.

If storage systems meet all criteria perfectly would achieve a sustainability score of 100%. If systems perform at half the optimal level might achieve a score of 50%. The total points serve as a standard, and it is used to compare the actual performance against the ideal performance. You can implement the recommended actions to enhance compliance with these rules, which will improve the sustainability score.



The sustainability score is initially calculated at the cluster level, and then it is aggregated at other levels, such as customer or watchlist level.

## Improve overall sustainability score

You can follow these steps to improve the overall sustainability score and that focuses on sustainability efforts at company level:

## BlueXP

1. Go to **Sustainability** from the **Governance** category available in the BlueXP left navigation.
2. Go to the **Recommended actions** tab.
  - You can select **Fix** to take these actions immediately, or select **Later** to address these actions later.
  - If you plan to address the actions immediately, select **Fix**.
    - It expands the view of the selected recommended action. You can also expand the recommended action view using the down arrow. In the expanded view, you can see the cluster name, the sustainability score, and subsequent increase if you proceed with the **Fix** option.

Recommended actions (2) Actions for later (3)

Instantly replicate data files, LUNs, and volumes without requiring additional storage at creation time (+5%) Fix Later

Selecting "Fix" takes you to your system manager instance of your clusters to enable FlexClone. All improvement estimates are approximate.

Cluster Name	Current Sustainability Score	Improvement After Fix
phs01-clusters	60%	N/A

Enable FlexCache to reduce the need for data replication and transfer across the network (+5%) Fix Later

- If you plan to address the actions later, select **Later**.
  - If you select **Later**, it moves the selected recommended action to the **Actions for later** tab. The selected action will be postponed for 30 days. After 30 days, this action will move to the **Recommended actions** tab.
  - You can also review the postponed actions anytime and can click **Consider** to move them to the **Recommended actions** tab.

Recommended actions (7) Actions for later (3)

Enable tiering to reduce on-prem storage needs, which could result in fewer nodes or shelves running (+10%) Consider

Selecting "Fix" takes you to identify and move unused or infrequently used data to the cloud and free up storage. All improvement estimates are approximate.

Cluster Name	Current Sustainability Score	Improvement After Fix
phs01-clusters	67%	77%
phs02-clusters	64%	74%
phs03-clusters	64%	74%

Enable deduplication to support more workloads (+7%) Consider

## Digital Advisor

1. Go to **Sustainability** from the **STORAGE HEALTH** category available in the left navigation of Digital Advisor dashboard.
2. Go to the **Recommended actions** tab.
  - You can select **Fix** to take these actions immediately, or select **Later** to address these actions later.

- If you plan to address the actions immediately, select **Fix**.
  - The view of the selected recommended action expands. You can also expand the recommended action view using the down arrow. In the expanded view, you can see the cluster name, the sustainability score, and subsequent increase if you proceed with the **Fix** option.

Recommended actions (2) Actions for later (3)

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Instantly replicate data files, LUNs, and volumes without requiring additional storage at creation time (+5%) [Fix](#) | [Later](#) ^

Selecting "Fix" takes you to your system manager instance of your clusters to enable FlexClone. All improvement estimates are approximate.

Cluster Name	Current Sustainability Score	Improvement After Fix	
ph4501-cluster1	60%	N/A	<a href="#">Fix</a>   <a href="#">Later</a>

Enable FlexCache to reduce the need for data replication and transfer across the network (+5%) [Fix](#) | [Later](#) v

- If you plan to address the actions later, select **Later**.
  - If you select **Later**, it moves the selected recommended action to the **Actions for later** tab. The selected action will be postponed for 30 days. After 30 days, this action will move to the **Recommended actions** tab.
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Recommended actions (7) Actions for later (3)

---

Enable tiering to reduce on-prem storage needs, which could result in fewer nodes or shelves running (+10%) [Consider](#) ^

Selecting "Fix" takes you to identify and move unused or infrequently used data to the cloud and free up storage. All improvement estimates are approximate.

Cluster Name	Current Sustainability Score	Improvement After Fix	
11111111111111111111	67%	77%	<a href="#">Consider</a>
11111111111111111111	64%	74%	<a href="#">Consider</a>
11111111111111111111	64%	74%	<a href="#">Consider</a>

Enable deduplication to support more workloads (+7%) [Consider](#) v

## Improve sustainability score at cluster level

You can follow these steps to improve the cluster-level sustainability score that focuses on improving sustainability for a specific cluster:

## BlueXP

1. Go to **Sustainability** from the **Governance** category available in the BlueXP left navigation.
2. Go to the **Working environments** table.
3. Click the number of actions from the **Recommended actions** column for the target cluster.

### Working environments (53)

Cluster name	Sustainability score	Recommended actions
<b>Cluster 1</b>	74%	5 Actions
<b>Cluster 2</b>	75%	7 Actions
<b>Cluster 3</b>	64%	5 Actions
<b>Cluster 4</b>	64%	5 Actions
<b>Cluster 5</b>	57%	5 Actions

- You can select **Fix** to take these actions immediately, or select **Later** to address these actions later.

### Review Recommended actions

Recommended actions (7)	Actions for Later (0)
Enable compaction to support more workloads (+7%)	<a href="#">Fix</a>   <a href="#">Later</a>
Enable compression to support more workloads (+7%)	<a href="#">Fix</a>   <a href="#">Later</a>
Instantly replicate data files, LUNs, and volumes without requiring additional storage at creation tim...	<a href="#">Fix</a>   <a href="#">Later</a>
Enable FlexCache to reduce the need for data replication and transfer across the network (+5%)	<a href="#">Fix</a>   <a href="#">Later</a>
Reduce temperature to lower overall power usage (+5%)	<a href="#">Fix</a>   <a href="#">Later</a>



[Dismiss](#)

- If you select **Later**, it moves the selected recommended action to the **Actions for later** tab. The selected action will be postponed for 30 days. After 30 days, this action will move to the

### Recommended actions tab.

- You can also review the postponed actions anytime and can click **Consider** to move them to the **Recommended actions** tab.





You can add or remove the environmental parameters in the **Working environments** table using the  icon, and can export this table in comma-separated values (.csv) format using the  icon.

### Digital Advisor

1. Go to **Sustainability** from the **STORAGE HEALTH** category available in the left navigation of Digital Advisor dashboard.
2. Go to the **Recommended actions** tab.
3. Go to the **Working environments** table.
4. Click the number of actions from the **Recommended actions** column for the target cluster.

### Working environments (53)

Cluster name	 Sustainability score	 Recommended actions
<a href="#">sustainability</a>	74%	<a href="#">5 Actions</a>
<a href="#">sustainability</a>	75%	<a href="#">7 Actions</a>
<a href="#">sustainability</a>	64%	<a href="#">5 Actions</a>
<a href="#">sustainability</a>	64%	<a href="#">5 Actions</a>
<a href="#">sustainability</a>	57%	<a href="#">5 Actions</a>

- You can select **Fix** to take these actions immediately, or select **Later** to address these actions later.



## Review Recommended actions

Recommended actions (7)	Actions for Later (0)
Enable compaction to support more workloads (+7%)	<a href="#">Fix</a>   <a href="#">Later</a>
Enable compression to support more workloads (+7%)	<a href="#">Fix</a>   <a href="#">Later</a>
Instantly replicate data files, LUNs, and volumes without requiring additional storage at creation tim...	<a href="#">Fix</a>   <a href="#">Later</a>
Enable FlexCache to reduce the need for data replication and transfer across the network (+5%)	<a href="#">Fix</a>   <a href="#">Later</a>
Reduce temperature to lower overall power usage (+5%)	<a href="#">Fix</a>   <a href="#">Later</a>

[Dismiss](#)

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