



# **Improve the efficiency and performance of your storage system**

Active IQ Digital Advisor

NetApp  
April 08, 2022

This PDF was generated from [https://docs.netapp.com/us-en/active-iq/task\\_analyze\\_storage\\_efficiency.html](https://docs.netapp.com/us-en/active-iq/task_analyze_storage_efficiency.html) on April 08, 2022. Always check docs.netapp.com for the latest.

# Table of Contents

- Improve the efficiency and performance of your storage system. . . . . 1
  - Analyze capacity and storage efficiency savings . . . . . 1
  - Analyze performance graphs . . . . . 2

# Improve the efficiency and performance of your storage system

## Analyze capacity and storage efficiency savings

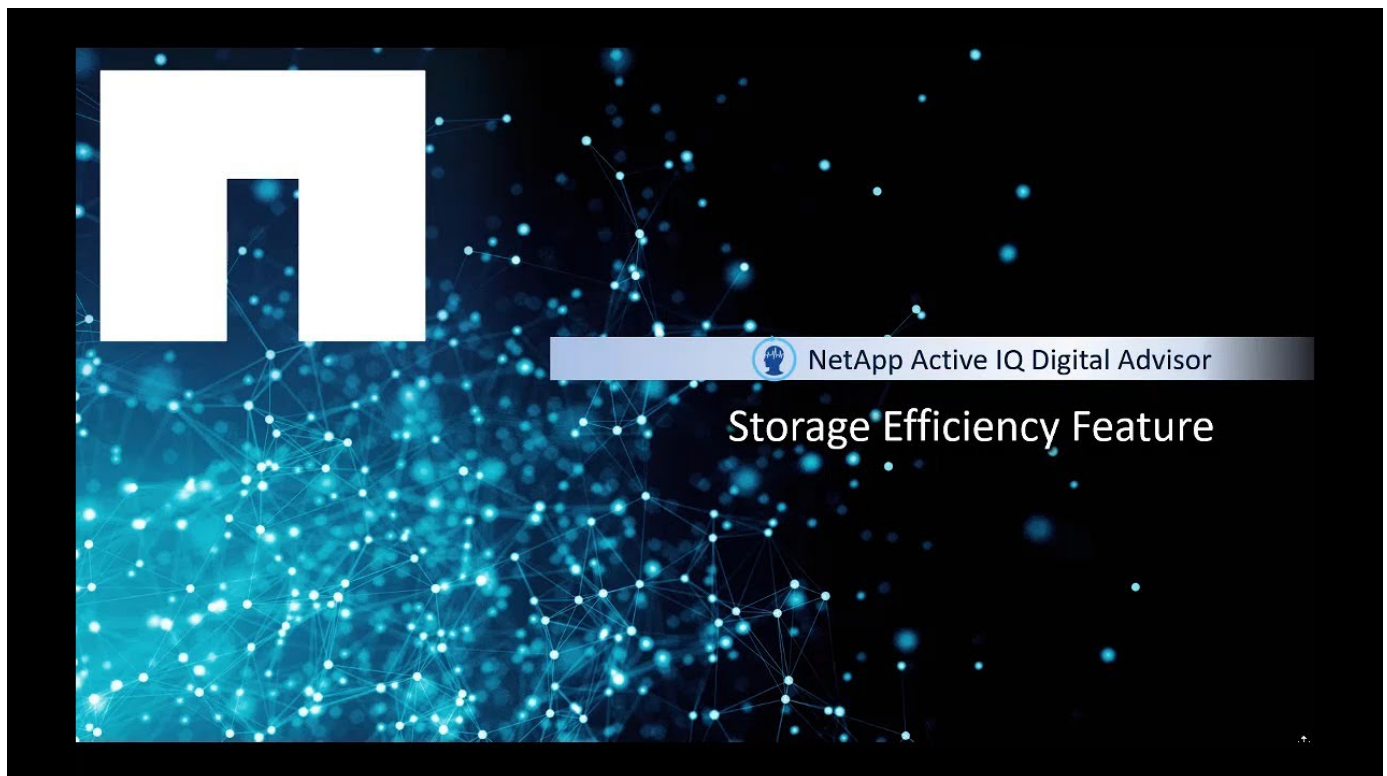
You can view the capacity details and the storage efficiency savings of your system and take appropriate actions. The capacity and storage efficiency information can be viewed either at a cluster level or a node level.



This feature is not supported on E-Series systems.

The capacity dashboard displays the capacity details and the capacity forecast of your system. Capacity forecast uses historical capacity information to identify the utilization of each system. Based on the historical data (a year's data, if available) of utilized and allocated capacity, the algorithm considers the current utilization of each system and generates a forecast for the system's utilization over the next 1 through 6 months.

The storage efficiency dashboard displays the storage efficiency ratio, the logical space used, the physical space used, and the total data saved for storage systems running ONTAP 9.1 and later. The efficiency ratio and savings can be seen with and without Snapshot backups for AFF systems, non-AFF systems, or both. The total savings across customer storage can be seen per efficiency feature such as volume deduplication, volume compression, compaction, FlexClone volumes, and Snapshot backups. You can also view the top 5 storage systems with the best efficiency ratio.



### Steps

1. From the left pane, click **Capacity and Efficiency**.

By default, the **Capacity** tab is selected.

2. View the capacity details at the cluster and node level.
  - a. View the capacity forecast at the node level.

For ONTAP systems, information about RAW capacity is available in ClusterViewer.

- b. Click **Add Capacity** to send a notification to NetApp or your partner to add capacity.
3. View the storage efficiency and the data savings of your storage system.
  - a. If the storage efficiency ratio of your storage system is higher than the average storage efficiency ratio, click **Share Your Success Story** to let us know the best practices followed.
  - b. If the storage efficiency ratio of your storage system is less than the average storage efficiency ratio, click **Contact Us** to let us know the configurations of your storage system.

For more information about capacity and storage efficiency, see [Frequently asked questions about Active IQ](#).

## Analyze performance graphs

Performance graphs enable you to analyze the performance of your storage devices. You can view detailed performance graphs for an ONTAP cluster or multiple nodes of an ONTAP cluster and E-Series controllers. These graphs provide historical performance data, which can be used for understanding performance trend and pattern analysis. You can select a date from the calendar to view performance graphs for a day, week, month, two months, and twelve months. You can select multiple nodes to view a particular graph at the same time.

You have an option to set preferences, for example, you can view either one graph for three nodes or two graphs for three nodes.

When the graph is first displayed, a 1-week tab is preselected and it presents data for a 1 week in a graphical format to make it easier to understand large quantities of data and its relationship between different series of data. If you want to reset the date range, for example, you can click 1-month tab and select dates in the calendar.

You also have an option to zoom in performance graph; the individual data points are displayed.



## Steps

1. On the Dashboard, click **Performance**.

For ONTAP systems, you can click the **Node** tab to view the performance of a single node of an ONTAP cluster, click the **Local Tier** tab to view the performance of the local tier, or click the **Volume** tab to view the performance of the volume. By default, the cluster performance is displayed.

For E-Series systems, you can view the graphs only at a controller level.

2. Select either 1 day, 1 week, 1 month, 2 months, or 12 months, in the calendar, for viewing performance data in a graphical format.

For example, select 2-months tab to view data for 2 months. This enables you to view specific data for a duration based on your performance requirements.

3. The following performance graphs with required metrics are available for ONTAP clusters and nodes:

For Cluster	For Node	For Local Tier	For Volume
IOPS	CPU Utilization - Peak Performance (Headroom)	Average Throughput	IOPS
Network Throughput	Latency	Average Utilization	Latency
	IOPS		
	Protocol IOPS		
	Network Throughput		



Node latency performance graphs and volume performance graphs are supported only on systems that are running ONTAP 9.2 and later.

4. The following performance graphs with required metrics are available for E-Series controllers:
- CPU Utilization
  - Latency
  - IOPS
  - Throughput

## Copyright Information

Copyright © 2022 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.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

## Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.