



# **Performance and efficiency in the cloud**

## **ONTAP 9**

NetApp  
February 22, 2023

This PDF was generated from <https://docs.netapp.com/us-en/ontap/cloud/performance-efficiency-concept.html> on February 22, 2023. Always check docs.netapp.com for the latest.

# Table of Contents

- Performance and efficiency in the cloud ..... 1
  - Performance and efficiency in the cloud overview ..... 1
  - FabricPool ..... 1
  - Storage Efficiency ..... 1

# Performance and efficiency in the cloud

## Performance and efficiency in the cloud overview

Your on-premises ONTAP system offers data efficiency features that enable you to store more data in less physical space, and to tier rarely used data to lower cost storage. Whether you use a hybrid cloud configuration, or you move an entire workload to the cloud, ONTAP enables you to maximize storage performance and efficiency.

## FabricPool

Many NetApp customers have significant amounts of stored data that is rarely accessed. We call that *cold* data. Customers also have data that is frequently accessed, which we call *hot* data. Ideally, you want to keep your hot data on your fastest storage for best performance. Cold data can move to slower storage as long as it is immediately available if needed. But how do you know which parts of your data are hot and which are cold?

FabricPool is an ONTAP feature that automatically moves data between a high-performance local tier (aggregate) and a cloud tier based on access patterns. Tiering frees up expensive local storage for hot data while keeping cold data readily available from low-cost object storage in the cloud. FabricPool constantly monitors data access and moves data between tiers for best performance and maximum savings.

Using FabricPool to tier cold data to the cloud is one of the easiest ways to gain cloud efficiency and create a hybrid cloud configuration. FabricPool works at the storage block level, so it works with both file and LUN data.

But FabricPool is not just for tiering on-premises data to the cloud. Many customers use FabricPool in Cloud Volumes ONTAP to tier cold data from more-expensive cloud storage to lower-cost object storage within the cloud provider. Beginning with ONTAP 9.8, you can capture analytics on FabricPool-enabled volumes with [File System Analytics](#) or [temperature-sensitive storage efficiency](#).

The applications using the data are not aware that data is tiered, so no changes to your applications are needed. Tiering is fully automatic, so there is no ongoing administration needed.

You can store cold data in object storage from one of the major cloud providers. Or choose NetApp StorageGRID to keep your cold data in your own private cloud for highest performance and complete control over your data.

### Related information

[FabricPool System Manager doc](#)

[Cloud Tiering Service](#)

[FabricPool playlist on NetApp TechComm TV](#)

## Storage Efficiency

The same storage efficiency features of on-premises ONTAP are available in the Cloud. SnapShot copies, deduplication, compression, compaction, thin provisioning, and FlexClone data clones are all available in NetApp Cloud offerings.

When you move data from on-premises ONTAP to the cloud, the existing storage efficiency is preserved. Whether you are moving an entire dataset, or just tiering cold data to the cloud, you won't move uncompressed or duplicate data.

**Related information**

[Cloud Volumes ONTAP Feature Spotlight: Storage Efficiency Case Studies](#)

[Using a volume usage profile in BlueXP to manage cloud storage efficiency](#)

## Copyright information

Copyright © 2023 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.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, 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) (FEB 2014).

## 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.