



# Storage protocols

## ONTAP 9

NetApp  
April 25, 2023

# Table of Contents

Storage protocols .....	1
File sharing with NFS and SMB .....	1
iSCSI .....	1

# Storage protocols

Some customers choose to move entire workloads to the cloud. This can be more complicated than just using the cloud for data protection. But ONTAP makes the move easier because you do not have to rewrite your applications to use cloud-based storage. ONTAP in the cloud works just like your on-premises ONTAP does.

ONTAP offers the same NFS, SMB, and iSCSI protocols in the cloud that you are using today.

## File sharing with NFS and SMB

The NFS and SMB protocols are used to make shares and files available to client applications over a network. Cloud Volumes ONTAP enables you to provide files from a public cloud using either or both of these protocols.

If you choose to move an entire workload to the cloud, Cloud Volumes ONTAP enables your application to work with storage in the cloud exactly as it does on premises. There is no need to change your application, and if you decide to move to a different cloud provider, there is no worry about provider lock in. The same commands and scripts you use to manage file services on premises work in the cloud.

In the cloud, you can scale file shares rapidly, by adding or removing storage and compute instances or by adjusting your service level as needed to respond to changes in client demand without incurring capital expenses. The more resources you use, the more you pay, but only when you are using the resources.

NetApp SnapMirror technology moves and synchronizes your file data between your on-premises ONTAP system and Cloud Volumes ONTAP. You can easily move the data to and from the cloud, and between cloud providers.

### Related information

[BlueXP: Provisioning Storage](#)

[Managing volumes for Azure NetApp Files](#)

[Managing Cloud Volumes Service for AWS](#)

## iSCSI

The iSCSI protocol provides block-level storage to clients such as databases and other applications that want block storage instead of files. ONTAP provides the iSCSI protocol in the cloud.

Once iSCSI storage has been provisioned, there is no difference between on-premises iSCSI access and cloud-based iSCSI access.

The same iSCSI SAN features that are available on-premises such as Snapshot copies, deduplication, compression, and thin provisioning are also available and work the same way in the cloud.

### Related information

[Provisioning block storage with BlueXP](#)

[Provisioning iSCSI LUNs in Cloud Volumes ONTAP](#)

[Deploying Oracle Databases on Azure/AWS](#)

## 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.