



# **Move entire workloads to the cloud**

## **ONTAP 9**

NetApp  
February 10, 2022

# Table of Contents

- Move entire workloads to the cloud . . . . . 1
  - Storage protocols . . . . . 1
  - AutoSupport and Active IQ Digital Advisor . . . . . 2
  - Storage VMs . . . . . 2
  - FlexGroup volumes . . . . . 2

# Move entire workloads to the cloud

## 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

[Cloud Manager: 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 Cloud Manager](#)

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

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

## AutoSupport and Active IQ Digital Advisor

AutoSupport proactively monitors the health of your system and automatically sends telemetry to NetApp technical support. You can get detailed actionable information about your systems from NetApp Active IQ Digital Advisor.

The same AutoSupport and Active IQ Digital Advisor features you use on-premises are also available in the cloud. While AutoSupport can't collect data about the underlying hardware that powers Cloud Volumes ONTAP, you still get significantly useful information in Active IQ.

### Related information

[NetApp Active IQ](#)

[AutoSupport for Cloud Volumes ONTAP](#)

## Storage VMs

A storage VM (SVM) serves data to clients and hosts. Like a virtual machine running on a hypervisor, an SVM is a logical entity that abstracts physical resources.

In an on-premises ONTAP environment, you use SVMs to separate workloads. In Cloud Volumes ONTAP, you can use multiple SVMs, or you can use multiple instances of Cloud Volumes ONTAP.

### Related information

[Cloud Volumes ONTAP default configuration](#)

## FlexGroup volumes

FlexGroup volumes enable you to present a single volume of virtually unlimited size to an application. FlexGroup volumes are supported for Cloud Volumes ONTAP, enabling you to deploy a FlexGroup volume in Cloud Volumes ONTAP.

### Related information

[FlexGroup volumes management](#)

## 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.