



# **Cloud Manager release notes**

## **Release Notes**

NetApp  
April 06, 2022

This PDF was generated from <https://docs.netapp.com/us-en/cloud-manager-relnotes/index.html> on April 06, 2022. Always check docs.netapp.com for the latest.

# Table of Contents

- Cloud Manager release notes . . . . . 1
- Recent changes in Cloud Manager . . . . . 2
  - Administrative features . . . . . 2
  - Azure NetApp Files . . . . . 4
  - Amazon FSx for ONTAP . . . . . 5
  - Application Template . . . . . 6
  - Cloud Backup . . . . . 6
  - Cloud Data Sense . . . . . 7
  - Cloud Sync . . . . . 9
  - Cloud Tiering . . . . . 11
  - Cloud Volumes ONTAP . . . . . 12
  - Cloud Volumes Service for GCP . . . . . 13
  - Compute . . . . . 13
  - Global File Cache . . . . . 14
  - Kubernetes . . . . . 15
  - Monitoring . . . . . 16
  - On-prem ONTAP clusters . . . . . 17
  - Ransomware Protection . . . . . 17
  - Replication . . . . . 18
  - SnapCenter Service . . . . . 18
- Release notes index . . . . . 19
  - Storage . . . . . 19
  - Data services . . . . . 19
  - Administration . . . . . 19

# Cloud Manager release notes

# Recent changes in Cloud Manager

Learn about the most recent changes to the cloud services that are part of the Cloud Manager platform. For more details, go to the [full set of release notes](#) for each individual service.

## Administrative features

This section describes new features related to Cloud Manager's administration features: Accounts, Connectors, cloud provider credentials, and more.

### 27 February 2022

#### Connector enhancement in Google Cloud

When you create a new Connector in Google Cloud, Cloud Manager will now display all of your existing firewall policies. Previously, Cloud Manager wouldn't display any policies that didn't have a target tag.

### 30 January 2022

#### Reminder about NetApp Support Site accounts

As a reminder, NetApp now uses Microsoft Azure Active Directory as the identity provider for authentication services specific to support and licensing. As a result of this update, Cloud Manager will prompt you to update the NetApp Support Site (NSS) credentials for any existing accounts that you previously added.

If you haven't yet migrated your NSS account to IDaaS, you first need to migrate the account and then update your credentials in Cloud Manager.

- [Learn more about NetApp's use of Microsoft Azure AD for identity management](#)
- [Learn how to update an NSS account to the new authentication method](#)

### 2 January 2022

#### Reduced endpoints for the Connector

We reduced the number of endpoints that a Connector needs to contact in order to manage resources and processes within your public cloud environment.

[View the list of required endpoints.](#)

#### EBS disk encryption for the Connector

When you deploy a new Connector in AWS from Cloud Manager, you can now choose to encrypt the Connector's EBS disks using the default master key or a managed key.

✓ Get Ready

✓ AWS Credentials

3 Details

4 Network

5 Security Group

6 Review

### Details

Connector Instance Name

Connector1

Connector Role

☒ Create Role ☐ Select an existing Role

Role Name

Cloud-Manager-Operator-9yils3K

+ Add Tags to Connector Instance

☒ AWS Managed Encryption

Master Key: aws/ebs (default) [Change Key](#)

### Email address for NSS accounts

Cloud Manager can now display the email address that's associated with a NetApp Support Site account.



## Azure NetApp Files

11 April 2021

### Support for volume templates

A new Application Templates service enables you to set up a volume template for Azure NetApp Files. The template should make your job easier because certain volume parameters will already be defined in the template, such as capacity pool, size, protocol, VNet and subnet where the volume should reside, and more. When a parameter is already predefined, you can just skip to the next volume parameter.

- [Learn about Application Templates and how you can use them in your environment](#)
- [Learn how to create an Azure NetApp Files volume from a template](#)

8 March 2021

### Dynamically change service levels

You can now dynamically change the service level for a volume to meet workload needs and optimize your costs. The volume is moved to the other capacity pool with no impact to the volume.

[Learn how to change a volume's service level.](#)

## 3 August 2020

### Azure NetApp Files set up and management

Set up and manage Azure NetApp Files directly from Cloud Manager. After you create an Azure NetApp Files working environment, you can complete the following tasks:

- Create NFS and SMB volumes.
- Manage capacity pools and volume snapshots

Cloud Manager enables you to create, delete, and restore volume snapshots. You can also create new capacity pools and specify their service levels.

- Edit a volume by changing its size and managing tags.

The ability to create and manage Azure NetApp Files directly from Cloud Manager replaces the previous data migration functionality.

## Amazon FSx for ONTAP

### 27 February 2022

#### Assume IAM role

When you create an FSx for ONTAP working environment, you now must provide the ARN of an IAM role that Cloud Manager can assume to create an FSx for ONTAP working environment. You previously needed to provide AWS access keys.

[Learn how to set up permissions for FSx for ONTAP.](#)

### 31 October 2021

#### Create iSCSI volumes using Cloud Manager API

You can create iSCSI volumes for FSx for ONTAP using the Cloud Manager API and manage them in your working environment.

#### Select volume units when creating volumes

You can [select volume units \(GiB or TiB\) when creating volumes](#) in FSx for ONTAP.

### 4 October 2021

#### Create CIFS volumes using Cloud Manager

Now you can [create CIFS volumes in FSx for ONTAP using Cloud Manager](#).

#### Edit volumes using Cloud Manager

Now you can [edit FSx for ONTAP volumes using Cloud Manager](#).

# Application Template

**3 March 2022**

**Now you can build a Template to find specific working environments.**

Using the "Find Existing Resources" action you can identify the working environment, and then use other template actions, such as creating a volume, to easily perform actions on existing working environments. [Go here for details.](#)

**Ability to create a Cloud Volumes ONTAP HA working environment in AWS.**

The existing support for creating a Cloud Volumes ONTAP working environment in AWS has been expanded to include creating a high-availability system in addition to a single-node system. [See how to create a template for a Cloud Volumes ONTAP working environment.](#)

**9 February 2022**

**Now you can build a Template to find specific existing volumes and then enable Cloud Backup.**

Using the new "Find Resource" action you can identify all the volumes on which you want to enable Cloud Backup, and then use the Cloud Backup action to enable backup on those volumes.

Current support is for volumes on Cloud Volumes ONTAP and on-premises ONTAP systems. [Go here for details.](#)

**31 October 2021**

**Now you can tag your Sync relationships so you can group or categorize them for easy access.**

[Learn more about resource tagging.](#)

## Cloud Backup

**4 April 2022**

**Cloud Backup for Applications 1.1.0 (powered by SnapCenter) is now GA**

The new Cloud Backup for Applications capability enables you to offload existing application consistent Snapshots (backups) for Oracle and Microsoft SQL from on-premises primary storage to cloud object storage in AWS S3 or Azure Blob.

When required, you can restore this data from cloud to on-premises.

[Learn more about protecting on-premises applications data to cloud.](#)

**New Search & Restore feature to search for volumes or files across all ONTAP backup files**

Now you can search for a volume or file across **all ONTAP backup files** by partial or full volume name, partial or full file name, size range, and additional search filters. This is a great new way to find the data you want to restore if you are not sure which cluster or volume was the source for the data. [Learn how to use Search & Restore.](#)



## 3 March 2022

### Ability to back up persistent volumes from your GKE Kubernetes clusters to Google Cloud storage

If your GKE cluster has NetApp Astra Trident installed, and it's using Cloud Volumes ONTAP for GCP as backend storage for the cluster, then you can back up and restore your persistent volumes to and from Google Cloud storage. [Go here for details](#).

**The Beta capability to use Cloud Data Sense to scan your Cloud Backup files has been discontinued in this release**

## 14 February 2022

### Now you can assign backup policies to individual volumes in a single cluster

In the past you could assign only a single backup policy to all volumes in a cluster. Now you can create multiple backup policies for a single cluster and apply different policies to different volumes. [See how to create new backup policies for a cluster and assign them to selected volumes](#).

### A new option enables you to automatically apply a default backup policy to newly created volumes

In the past, new volumes created in a working environment after Cloud Backup was activated required that you manually apply a backup policy. Now, regardless of if the volume was created in Cloud Manager, System Manager, the CLI, or by using APIs, Cloud Backup will discover the volume and apply the backup policy you have chosen as the default policy.

This option is available when enabling backup in a new working environment, or from the *Manage Volumes* page for existing working environments.

### New Job Monitor is available to see the in-process status of all backup and restore jobs

The Job Monitor can be very helpful when you have initiated an operation against multiple volumes, like changing the backup policy, or deleting backups, so you can see when the operation has completed on all volumes. [See how to use the Job Monitor](#).

## Cloud Data Sense

## 5 April 2022

### Four new types of Australian personal data can be identified by Data Sense

Data Sense can identify and categorize files that contain the Australian TFN (Tax File Number), Australian Driver's License Number, Australian Medicare Number, and Australian Passport Number. [See all the types of personal data that Data Sense can identify in your data](#).

### Global Active Directory server can be an LDAP server now

The global Active Directory server you integrate with Data Sense can be an LDAP Server now in addition to the previously supported DNS Server. [Go here for details](#).

## 15 March 2022

### **New Filter to show the files to which a specific user or a group has read or write permissions**

A new Filter called "User / Group Permissions" has been added so you can list the files that a specific user or a group has read and/or write permissions to. You can specify a user name or group name - or partial name. This functionality is available for volumes on Cloud Volumes ONTAP, on-prem ONTAP, Azure NetApp Files, Amazon FSx for ONTAP, and File Shares.

### **Data Sense can determine the permissions for files in SharePoint and OneDrive accounts**

Data Sense can read the permissions that exist for files that are being scanned in OneDrive accounts and SharePoint accounts now. This information appears in the Investigation pane details for files and in the Open Permissions area in the Governance Dashboard.

### **Two additional types of personal data can be identified by Data Sense**

- French INSEE - The INSEE code is a numerical code used by the French National Institute for Statistics and Economic Studies (INSEE) to identify various entities.
- Passwords - This information is identified using proximity validation by looking for permutations of the word "password" next to an alphanumeric string. The number of items found will be listed under "Personal Results" in the Compliance Dashboard. You can search for files that contain passwords in the Investigation pane using the Filter **Personal Data > Password**.

**The Beta capability to use Cloud Data Sense to scan your Cloud Backup files has been discontinued in this release**

## 9 February 2022

### **Added support for scanning Microsoft SharePoint online accounts**

Now you can add your SharePoint online accounts to Data Sense in order to scan the documents and files from your SharePoint sites. [See how to scan your SharePoint accounts](#).

### **Data Sense can copy files from a data source to a target location and synchronize those files**

This is helpful for situations where you're migrating data and you want to catch any last changes that are being made to the files. This action uses the [NetApp Cloud Sync](#) functionality to copy and sync data from a source to a target.

[See how to copy and sync files](#).

### **New language support for DSAR reports**

German and Spanish are now supported when searching for names of data subjects in order to create Data Subject Access Request (DSAR) reports. This report is designed to aid in your organization's requirement to comply with GDPR or similar data privacy laws.

### **Three additional types of personal data can be identified by Data Sense**

Data Sense can now find French social security numbers, French IDs, and French driver license numbers in files. [See the list of all personal data types that Data Sense identifies in scans](#).

## Security group port changed for Data Sense communication to the Connector

The security group for the Cloud Manager Connector will use port 443 instead of port 80 for inbound and outbound traffic to and from the Data Sense instance for added security. Both ports remain open at this time, so you shouldn't see any issues, but you should update the security group in any older deployments of the Connector as port 80 will be deprecated in a future release.

# Cloud Sync

3 April 2022

## Data broker group enhancements

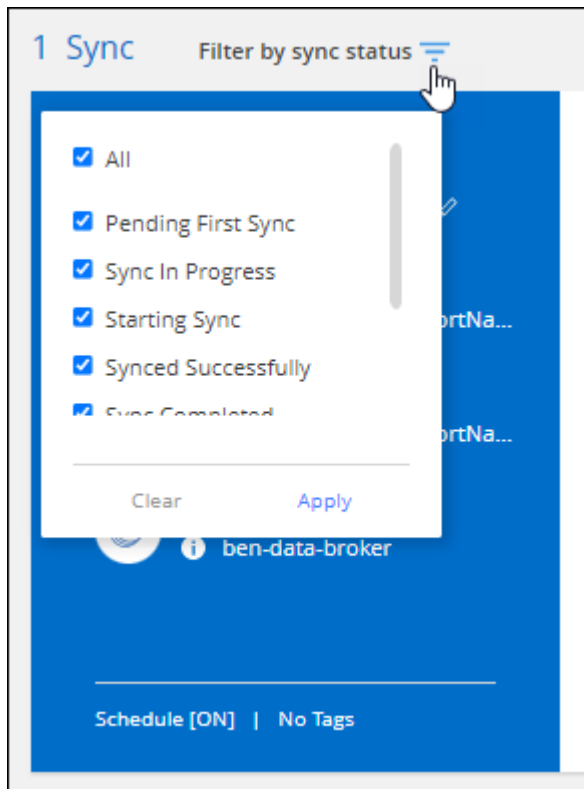
We made several enhancements to data broker groups:

- You can now move a data broker to a new or existing group.
- You can now update the proxy configuration for a data broker.
- Finally, you can also delete data broker groups.

[Learn how to manage data broker groups.](#)

## Dashboard filter

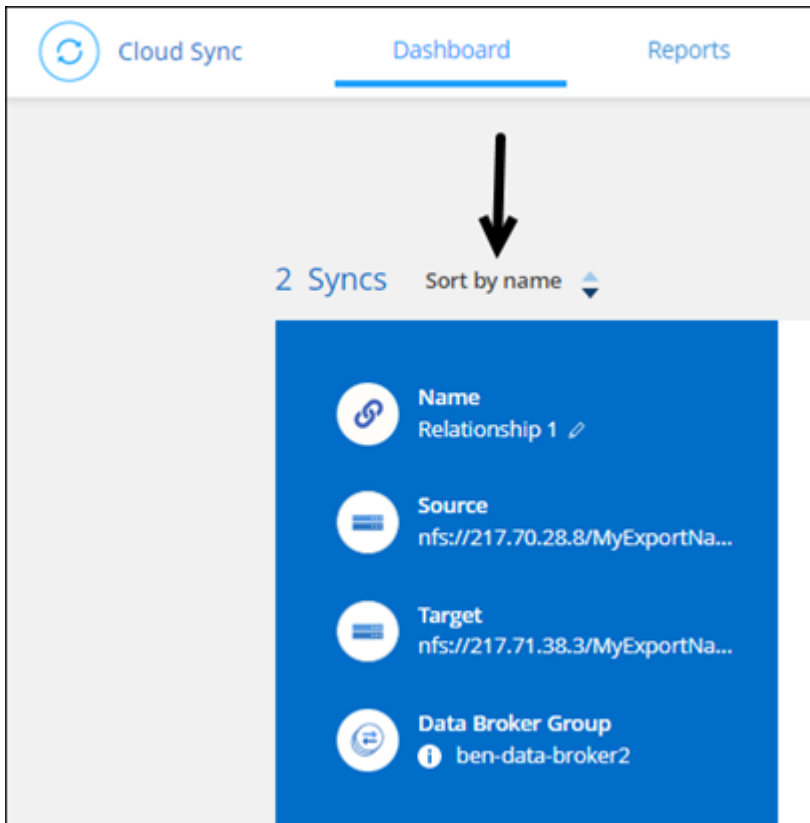
You can now filter the contents of the Sync Dashboard to more easily find sync relationships that match a certain status. For example, you can filter on sync relationships that have a failed status



3 March 2022

## Sorting in the dashboard

You now sort the dashboard by sync relationship name.



## Enhancement to Data Sense integration

In the previous release, we introduced Cloud Sync integration with Cloud Data Sense. In this update, we enhanced the integration by making it easier to create the sync relationship. After you initiate a data sync from Cloud Data Sense, all of the source information is contained in a single step and only requires you to enter a few key details.

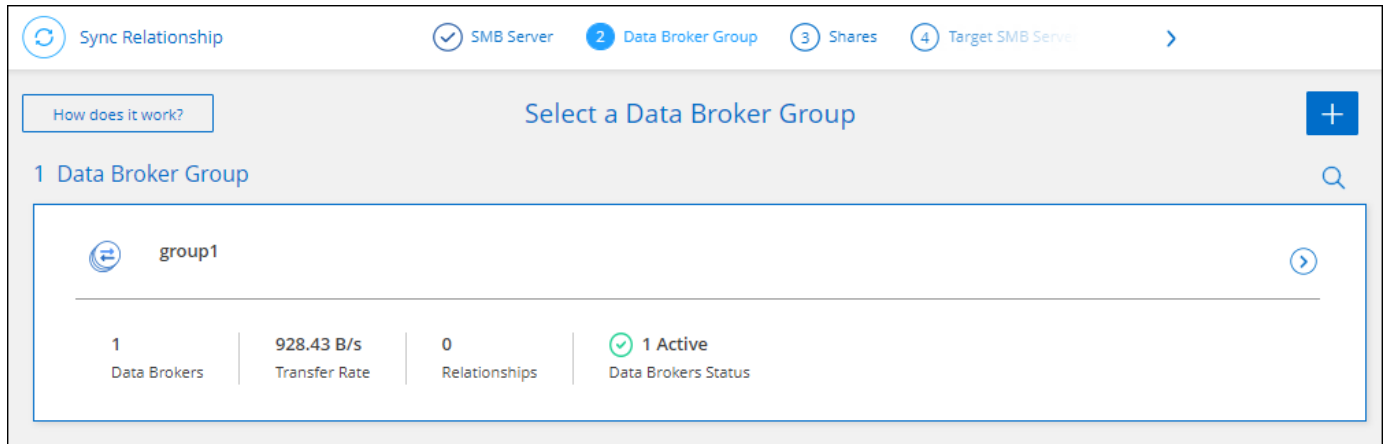
A screenshot of the 'Sync Relationship' setup screen. At the top, there are four steps: '1 Data Sense Integration' (active), '2 Data Broker Group', '3 NFS Server', and '4 Directory'. Below the steps, there's a section titled 'Selected Data Sense Source' with a 'How does it work?' link. The source information is displayed in a table: 'Azure NetApp Files', '/cifs1 Source', '1.1.1.1 Host', 'cifs Working Environment', and '\\1.1.1.1\\cifs1 Volume'. Below this, there's a section titled 'A few more things before we continue' with a 'Define SMB Credentials:' label. There are three input fields: 'User Name', 'Password', and 'Domain (Optional)'.

6 February 2022

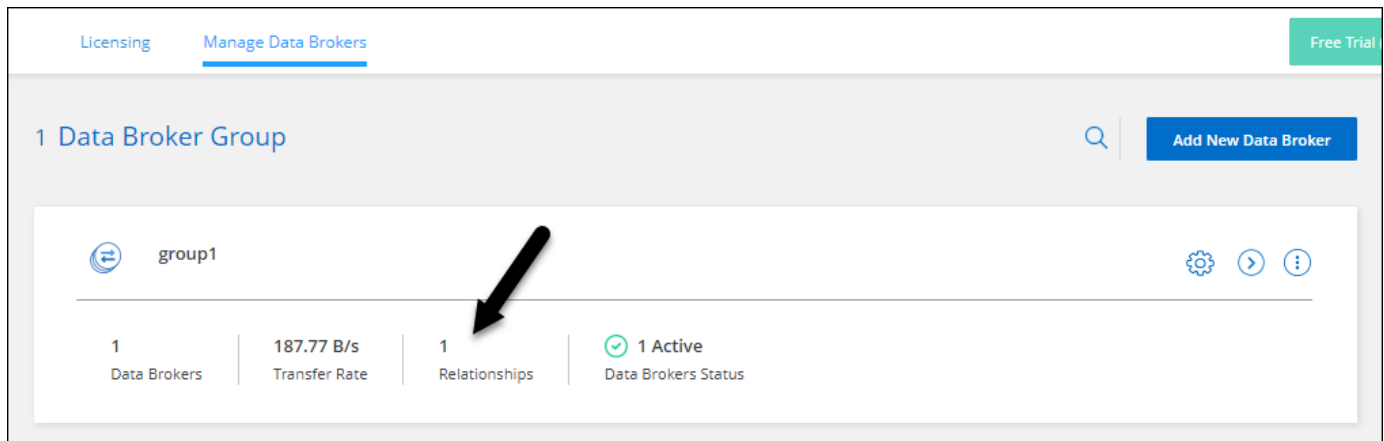
### Enhancement to data broker groups

We changed how you interact with data brokers by emphasizing data broker *groups*.

For example, when you create a new sync relationship, you select the data broker *group* to use with the relationship, rather than a specific data broker.



In the **Manage Data Brokers** tab, we also show the number of sync relationships that a data broker group is managing.



### Download PDF reports

You can now download a PDF of a report.

[Learn more about reports.](#)

## Cloud Tiering

4 April 2022

### Amazon S3 Glacier Instant Retrieval storage class is now available.

When setting up Cloud Tiering, now you can configure a lifecycle rule so your inactive data transitions from the *Standard* storage class to *Glacier Instant Retrieval* after a certain number of days. This will help reduce your

AWS infrastructure costs.

## 2 September 2021

### Cloud Tiering BYOL license replaces FabricPool license.

A new **Cloud Tiering** license is now available for tiering configurations that are supported within Cloud Manager using the Cloud Tiering service. It is a floating license that you can use across multiple on-premises ONTAP clusters. The **FabricPool** license that you may have used in the past is retained only for configurations that aren't supported within Cloud Manager.

[Learn more about the new Cloud Tiering license.](#)

### Tier inactive data from on-prem ONTAP clusters to S3-compatible object storage.

Now you can tier inactive data to any Object Storage service which uses the Simple Storage Service (S3) protocol. [See how to tier data to S3-compatible object storage.](#)

## 7 July 2021

### The Connector can be running on premises when tiering data to Azure Blob storage.

You are no longer required to use a Connector installed in an Azure VNet. Your Connector can be running on a host in your premises when tiering data to Azure Blob storage.

## Cloud Volumes ONTAP

## 3 April 2022

### Charging for WORM storage

Now that the introductory special rate has expired, you will now be charged for using WORM storage. Charging is hourly, according to the total provisioned capacity of volumes. This applies to new and existing Cloud Volumes ONTAP systems.

[Learn about pricing for WORM storage.](#)

## 27 February 2022 (Connector 3.9.16)

### Redesigned volume wizard

The create new volume wizard that we recently introduced is now available when creating a volume on a specific aggregate from the **Advanced allocation** option.

[Learn how to create volumes on a specific aggregate.](#)

## 9 February 2022

### Marketplace updates

- The Essentials package and Professional package are now available in the AWS and Google Cloud Marketplaces.

These by-capacity charging methods enable you to pay by the hour or to purchase an annual contract directly from your cloud provider. You still have the option to purchase a by-capacity license directly from NetApp.

If you have an existing subscription in a cloud marketplace, you're automatically subscribed to these new offerings as well. You can choose by-capacity charging when you deploy a new Cloud Volumes ONTAP working environment.

If you're a new customer, Cloud Manager will prompt you to subscribe when you create a new working environment.

- By-node licensing via the AWS and Google Cloud Marketplaces is deprecated and no longer available for new subscribers. This includes annual contracts and hourly subscriptions (Explore, Standard, and Premium).

This charging method is still available for existing customers who have an active subscription.

[Learn more about the licensing options for Cloud Volumes ONTAP.](#)

## 6 February 2022

### Exchange unassigned licenses

If you have an unassigned node-based license for Cloud Volumes ONTAP that you haven't used, you can now exchange the license by converting it to a Cloud Backup license, Cloud Data Sense license, or Cloud Tiering license.

This action revokes the Cloud Volumes ONTAP license and creates a dollar-equivalent license for the service with the same expiry date.

[Learn how to exchange unassigned node-based licenses.](#)

## Cloud Volumes Service for GCP

### 9 September 2020

#### Support for Cloud Volumes Service for Google Cloud

You can now manage Cloud Volumes Service for Google Cloud directly from Cloud Manager:

- Set up and create a working environment
- Create and manage NFSv3 and NFSv4.1 volumes for Linux and UNIX clients
- Create and manage SMB 3.x volumes for Windows clients
- Create, delete, and restore volume snapshots

## Compute

### 7 December 2020

## Navigation between Cloud Manager and Spot

It's now easier to navigate between Cloud Manager and Spot.

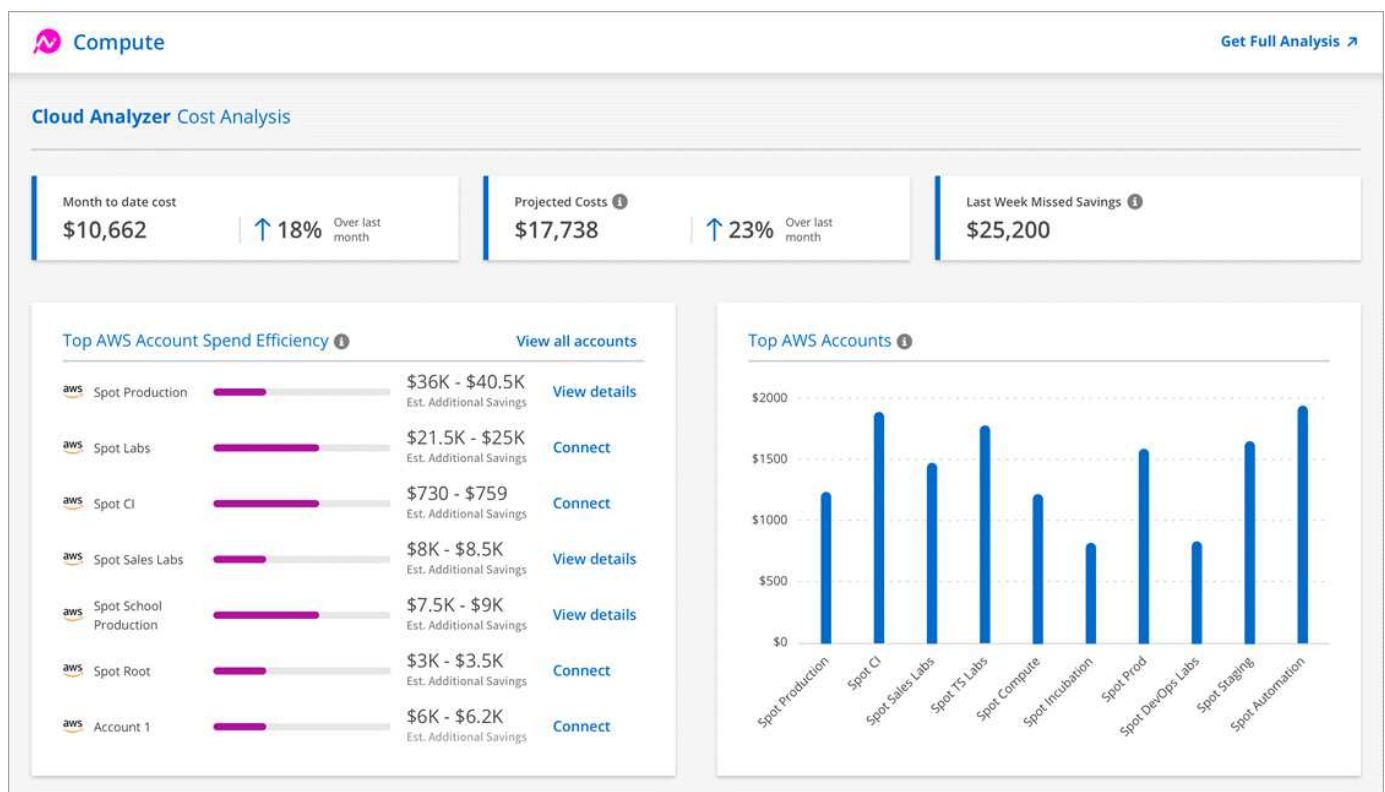
A new **Storage Operations** section in Spot enables you to navigate directly to Cloud Manager. After you're done, you can get back to Spot from the **Compute** tab in Cloud Manager.

**18 October 2020**

### Introducing the Compute service

By leveraging [Spot's Cloud Analyzer](#), Cloud Manager can now provide a high-level cost analysis of your cloud compute spending and identify potential savings. This information is available from the **Compute** service in Cloud Manager.

[Learn more about the Compute service.](#)



## Global File Cache

**17 December 2021 (version 1.2.0)**

**The OpenSSL module has been upgraded to version 1.1.1l.**

This is the latest version and it is more secure. This module is used for secure communication between GFC Edge and GFC Core.

**The logging infrastructure has been enhanced.**



## 9 June 2021 (version 1.1.0)

### **The "Edge Synchronization" feature has been added.**

This feature keeps multiple Edges at a remote office in sync and the data is always cached/warm. When a file is flushed/fetched at one Edge, then the same file on all Edges participating in Edge Sync is updated and cached. See section 8.4 in the [NetApp Global File Cache User Guide](#) for details.

### **The OpenSSL module has been upgraded to version 1.1.1k.**

This is the latest version and it is more secure. This module is used for secure communication between GFC Edge and GFC Core.

### **Updated License Registration Page.**

The GFC License Registration Page now displays the number of licenses when activated through a NetApp subscription.

## 21 March 2021 (version 1.0.3)

### **Software installer updates to automatically exclude GFC process from Windows Defender.**

The Global File Cache software installer now excludes all GFC processes from Windows Defender software on-demand scanning.

### **A new Policy Configuration tab has been added to the Configuration Console.**

This configuration tab enables you to add pre-population jobs from the GFC Core.

### **Enhanced the software to use less memory while increasing performance and stability.**

# Kubernetes

## 4 April 2022

### **Manage Kubernetes clusters using the Cloud Manager resource page**

Kubernetes cluster management now has enhanced integration directly from the cluster working environment. A new [Quick start](#) gets you up and running quickly.

You can now take the following actions from the cluster resource page.

- [Install Astra Trident](#)
- [Add storage classes](#)
- [View persistent volumes](#)
- [Remove clusters](#)
- [Enable data services](#)

## 27 February 2022

### Support for Kubernetes clusters in Google Cloud

You can now add and manage managed Google Kubernetes Engine (GKE) clusters and self-managed Kubernetes clusters in Google Cloud using Cloud Manager.

[Learn how to get started with Kubernetes clusters in Google Cloud.](#)

## 11 January 2022

### Support for Kubernetes clusters in Azure

You can now add and manage managed Azure Kubernetes clusters (AKS) and self-managed Kubernetes clusters in Azure using Cloud Manager.

[Getting started with Kubernetes clusters in Azure](#)

## Monitoring

### 1 August 2021

#### Change to Acquisition Unit name

We changed the default name of the Acquisition Unit instance to `CloudInsights-AU-UUID` so that the name is more descriptive (the UUID is a generated hash).

Cloud Manager deploys this instance when you enable the Monitoring service on a Cloud Volumes ONTAP working environment.

### 5 May 2021

#### Support for existing tenants

You can now enable the Monitoring service on a Cloud Volumes ONTAP working environment even if you have an existing Cloud Insights tenant.

#### Free Trial transition

When you enable the Monitoring service, Cloud Manager sets up a free trial of Cloud Insights. On the 29th day, your plan now automatically transitions from the Trial Version to the [Basic Edition](#).

### 9 February 2021

#### Support in Azure

The Monitoring service is now supported with Cloud Volumes ONTAP for Azure.

#### Support in Government regions

The Monitoring service is also supported in Government regions in AWS and Azure.

# On-prem ONTAP clusters

**27 February 2022**

**An "On-Premises ONTAP" tab is available in the Digital Wallet.**

Now you can view an inventory of your on-prem ONTAP clusters along with their hardware and service contracts expiration dates. Additional details about the clusters are also available.

[See how to view this important on-prem cluster information.](#) You'll need to have a NetApp Support Site account (NSS) for the clusters, and the NSS credentials will need to be attached to your Cloud Manager account.

**11 January 2022**

**Tags that you add to volumes on on-prem ONTAP clusters can be use with the Tagging service.**

Tags that you add to a volume are now associated with the tagging feature of the Application Templates service, which can help you organize and simplify the management of your resources.

**28 November 2021**

**Create volume wizard for on-prem ONTAP clusters has been simplified**

We redesigned the create volume wizard for ease of use and you can now choose a custom export policy.

# Ransomware Protection

**15 March 2022**

**New panel to track the permissions status of your business critical data**

A new panel "Business critical data permissions analysis" shows the permissions status of data that is critical for your business. That way you can quickly assess how well you are protecting your business-critical data. [Go here for details.](#)

**Open Permissions area now includes OneDrive and SharePoint accounts**

The Open Permissions area in the Ransomware Protection Dashboard now includes the permissions that exist for files that are being scanned in OneDrive accounts and SharePoint accounts.

**9 February 2022**

**New Ransomware Protection service**

The new Ransomware Protection service enables you to view relevant information about cybersecurity and assess how resilient your data is to a cyber attack. It also provides you with a list of alerts and remediations for making your data more secure.

[Learn more about this new service.](#)

# Replication

2 September 2021

## Support for Amazon FSx for ONTAP

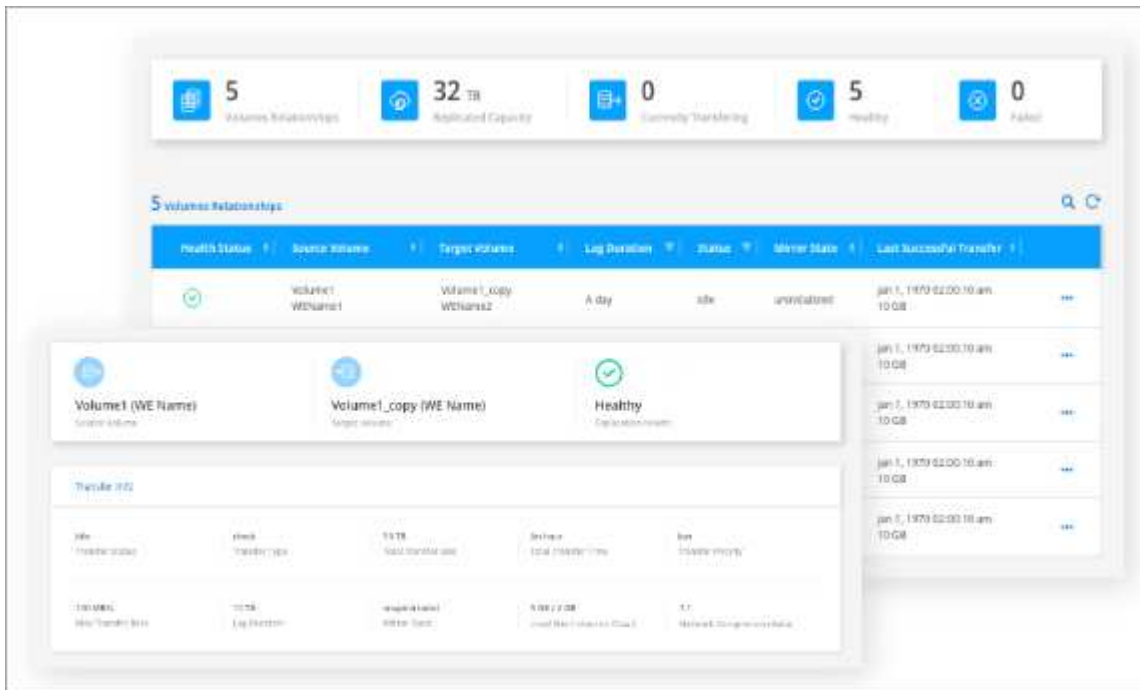
You can now replicate data from a Cloud Volumes ONTAP system or an on-premises ONTAP cluster to an Amazon FSx for ONTAP file system.

[Learn how to set up data replication.](#)

5 May 2021

## Redesigned interface

We redesigned the Replication tab for ease of use and to match the current look and feel of the Cloud Manager user interface.



# SnapCenter Service

21 Dec 2021

## Fixes for Apache Log4j vulnerabilities

SnapCenter Service 1.0.1 upgrades Apache Log4j from version 2.9.1 to 2.17 to address the following vulnerabilities: CVE-2021-44228, CVE-2021-4104, and CVE-2021-45105.

The SnapCenter Service cluster should auto-update to the latest version. You should ensure that the version in the SnapCenter Service UI shows that the cluster is 1.0.1.1251 or later.

# Release notes index

View the full set of release notes for each individual service.

## Storage

- [Azure NetApp Files](#)
- [Amazon FSx for ONTAP](#)
- [Cloud Volumes ONTAP](#)
  - [Release notes for Cloud Volumes ONTAP](#)
  - [Release notes for Cloud Volumes ONTAP management in Cloud Manager](#)
- [Cloud Volumes Service for Google Cloud](#)
- [Kubernetes clusters](#)
- [On-prem ONTAP clusters](#)

## Data services

- [AppTemplate](#)
- [Cloud Backup](#)
- [Cloud Data Sense](#)
- [Cloud Sync](#)
- [Cloud Tiering](#)
- [Compute](#)
- [Global File Cache](#)
- [Monitoring](#)
- [Ransomware](#)
- [Replication](#)
- [SnapCenter Service](#)

## Administration

- [Set up and administration](#)

## 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.