

BlueXP replication documentation

BlueXP replication

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BlueXP replication documentation

Release notes

What's new

Learn what's new with BlueXP replication.

18 Sept 2022

FSx for ONTAP to Cloud Volumes ONTAP

You can now replicate data from an Amazon FSx for ONTAP file system to Cloud Volumes ONTAP.

Learn how to set up data replication.

31 July 2022

FSx for ONTAP as the data source

You can now replicate data from an Amazon FSx for ONTAP file system to the following destinations:

- Amazon FSx for ONTAP
- On-premises ONTAP cluster

Learn how to set up data replication.

2 September 2021

Support for Amazon FSx for ONTAP

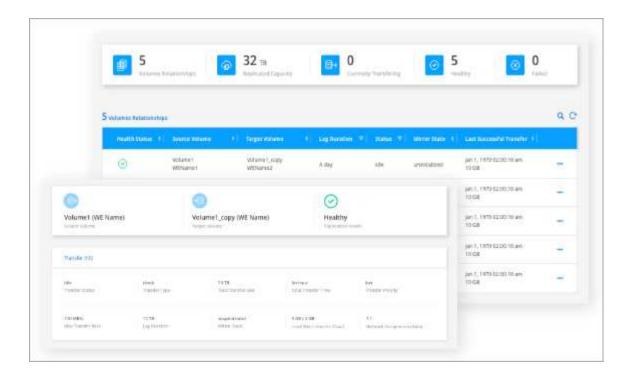
You can now replicate data from a Cloud Volumes ONTAP system or an on-premises ONTAP cluster to an Amazon FSx for ONTAP file system.

Learn how to set up data replication.

5 May 2021

Redesigned interface

We redesigned the replication service for ease of use and to match the current look and feel of the user interface.



Get started

Learn about BlueXP replication

NetApp SnapMirror replicates data at high speeds over LAN or WAN, so you get high data availability and fast data replication in both virtual and traditional environments. When you replicate data to NetApp storage systems and continually update the secondary data, your data is kept current and remains available whenever you need it. No external replication servers are required.

Features

- Replicate data between ONTAP storage systems to support backup and disaster recovery to the cloud or between clouds.
- Ensure the reliability of your DR environment with high availability.
- Efficient block-level replication between ONTAP storage is fast and efficient, with granular recovery points for both DR and backup.

Cost

NetApp doesn't charge you for using BlueXP replication, but you'll need to check your cloud provider for applicable data ingress and egress charges.

Supported working environments

BlueXP enables data replication between the following types of working environments.

Source working environment	Supported target working environments
Cloud Volumes ONTAP	Amazon FSx for ONTAP
	Cloud Volumes ONTAP
	On-prem ONTAP cluster
On-prem ONTAP cluster	Amazon FSx for ONTAP
	Cloud Volumes ONTAP
	On-prem ONTAP cluster
Amazon FSx for ONTAP	Amazon FSx for ONTAP
	Cloud Volumes ONTAP
	On-prem ONTAP cluster

How data replication works

BlueXP simplifies data replication between volumes on separate ONTAP systems using SnapMirror and SnapVault technologies. You simply need to identify the source volume and the destination volume, and then

choose a replication policy and schedule.

For Cloud Volumes ONTAP, BlueXP purchases the required disks, configures relationships, applies the replication policy, and then initiates the baseline transfer between volumes.



The baseline transfer includes a full copy of the source data. Subsequent transfers contain differential copies of the source data.

Supported data protection configurations

BlueXP supports simple, fanout, and cascade data protection configurations:

- In a simple configuration, replication occurs from volume A to volume B.
- In a fanout configuration, replication occurs from volume A to multiple destinations.
- In a cascade configuration, replication occurs from volume A to volume B and from volume B to volume C.

Replicate data using BlueXP backup and recovery

Starting with the BlueXP Connector 3.9.31 release, BlueXP backup and recovery enables you to replicate data between volumes on separate ONTAP systems using SnapMirror and SnapVault technologies. So if you plan to replicate data to other ONTAP systems, and you also want to create backups of the same data to object storage, you may want to use BlueXP backup and recovery so that you can manage your data protection needs with a single service.

Currently, the following functionality is only supported in the BlueXP replication service - not when using the replication feature of BlueXP backup and recovery.

- There is no support for a cascade configuration where replication occurs from volume A to volume B, and then from volume B to volume C.
- There is no support for replicating data to or from FSx for ONTAP systems.
- There is no support for creating a one-time replication of a volume.

So if you require any of this functionality, use BlueXP replication.

Set up data replication

You can replicate data between ONTAP working environments by choosing a one-time data replication for data transfer, or a recurring schedule for disaster recovery or long-term retention. For example, you can set up data replication from an on-prem ONTAP system to Cloud Volumes ONTAP for disaster recovery.

Step 1: Review data replication requirements

Before you can replicate data, you should confirm that specific requirements are met for Cloud Volumes ONTAP, on-prem ONTAP clusters, or Amazon FSx for ONTAP.

Working environments

If you haven't done so already, you need to create the working environments for the source and target in the data replication relationship.

- Create an Amazon FSx for ONTAP working environment
- Create a Cloud Volumes ONTAP working environment
- Add existing Cloud Volumes ONTAP systems
- Discover ONTAP clusters

Version requirements

You should verify that the source and destination volumes are running compatible ONTAP versions before replicating data.

View compatible ONTAP versions for SnapMirror relationships

Requirements specific to Cloud Volumes ONTAP

• The instance's security group must include the required inbound and outbound rules: specifically, rules for ICMP and ports 11104 and 11105.

These rules are included in the predefined security group.

- To replicate data between two Cloud Volumes ONTAP systems in different subnets, the subnets must be routed together (this is the default setting).
- To replicate data between two Cloud Volumes ONTAP systems in different cloud providers, you must have a VPN connection between the virtual networks.

Requirements specific to ONTAP clusters

- An active SnapMirror license must be installed.
- If the cluster is on your premises, you should have a connection from your corporate network to your virtual network in the cloud. This is typically a VPN connection.
- ONTAP clusters must meet additional subnet, port, firewall, and cluster requirements.

View prerequisites for cluster peering in the ONTAP documentation

Requirements specific to Amazon FSx for ONTAP

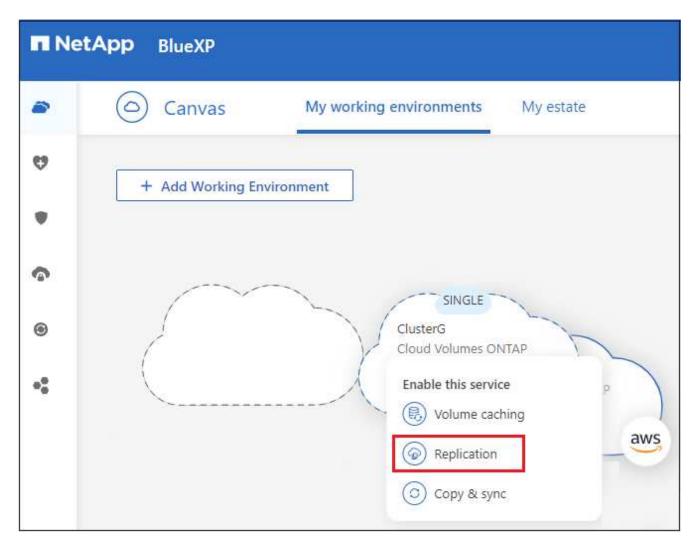
- If Cloud Volumes ONTAP is part of the relationship, ensure connectivity between VPCs by enabling VPC peering or by using a Transit Gateway.
- If an on-prem ONTAP cluster is part of the relationship, ensure connectivity between your on-premises network and the AWS VPC by using a Direct Connect or VPN connection.

Step 2: Replicate data between systems

You can replicate data by choosing a one-time data replication, which can help you move data to and from the cloud, or a recurring schedule, which can help with disaster recovery or long-term retention.

Steps

- 1. From the navigation menu, select **Storage > Canvas**.
- 2. On the Canvas, select the working environment that contains the source volume, drag it to the working environment to which you want to replicate the volume, and then select **Replication**.



The remaining steps provide an example of how to create a sync relationship between Cloud Volumes ONTAP or on-prem ONTAP clusters.

3. **Source and Destination Peering Setup**: If this page appears, select all of the intercluster LIFs for the cluster peer relationship.

The intercluster network should be configured so that cluster peers have *pair-wise full-mesh connectivity*, which means that each pair of clusters in a cluster peer relationship has connectivity among all of their intercluster LIFs.

These pages appear if an ONTAP cluster that has multiple LIFs is the source or destination.

- 4. Source Volume Selection: Select the volume that you want to replicate.
- 5. **Destination Disk Type and Tiering**: If the target is a Cloud Volumes ONTAP system, select the destination disk type and choose whether you want to enable data tiering.
- 6. **Destination Volume Name**: Specify the destination volume name and choose the destination aggregate.

If the destination is an ONTAP cluster, you must also specify the destination storage VM.

7. **Max Transfer Rate**: Specify the maximum rate (in megabytes per second) at which data can be transferred.

You should limit the transfer rate. An unlimited rate might negatively impact the performance of other

applications and it might impact your internet performance.

8. **Replication Policy**: Choose a default policy or select **Additional Policies**, and then select one of the advanced policies.

For help, learn about replication policies.

If you choose a custom backup (SnapVault) policy, the labels associated with the policy must match the labels of the Snapshot copies on the source volume. For more information, learn how backup policies work.

9. **Schedule**: Choose a one-time copy or a recurring schedule.

Several default schedules are available. If you want a different schedule, you must create a new schedule on the *destination* cluster using System Manager.

10. Review: Review your selections and select Go.

Result

BlueXP starts the data replication process. You can view details about the volume relationship from the BlueXP replication service.

Manage data replication

After you set up data replication between two systems, you can manage the data replication schedule and relationship from BlueXP.

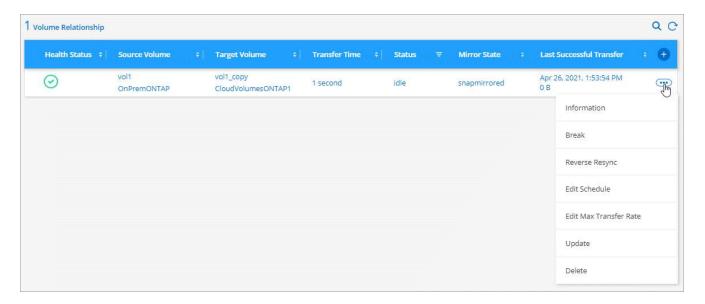
Steps

- 1. From the navigation menu, select **Protection > Replication**.
- 2. Review the status of the data replication relationships to verify that they are healthy.



If the Status of a relationship is idle and the Mirror State is uninitialized, you must initialize the relationship from the destination system for the data replication to occur according to the defined schedule. You can initialize the relationship by using System Manager or the command-line interface (CLI). These states can appear when the destination system fails and then comes back online.

3. Select the action menu for a volume relationship and choose one of the available actions.



The following table describes the available actions:

Action	Description
Information	Shows you details about the volume relationship: transfer information, last transfer information, details about the volume, and information about the protection policy assigned to the relationship.
Break	Breaks the relationship between the source and destination volumes, and activates the destination volume for data access.
	This option is typically used when the source volume cannot serve data due to events such as data corruption, accidental deletion, or an offline state.
	Learn how to configure a destination volume for data access and reactivate a source volume in the ONTAP documentation

Action	Description
Resync	Reestablishes a broken relationship between volumes and resumes data replication according to the defined schedule. When you resynchronize the volumes, the contents on the destination volume are overwritten by the contents on the source volume. Learn how to perform a reverse resync, which resynchronizes the data from the destination volume to the source volume, go to the ONTAP documentation.
Reverse Resync	Reverses the roles of the source and destination volumes. Contents from the original source volume are overwritten by contents of the destination volume. This is helpful when you want to reactivate a source volume that went offline. Any data written to the original source volume between the last data replication and the time that the source volume was disabled is not preserved.
Edit Schedule	Enables you to choose a different schedule for data replication.
Edit Max Transfer Rate	Enables you to edit the maximum rate (in kilobytes per second) at which data can be transferred.
Update	Starts an incremental transfer to update the destination volume.
Delete	Deletes the data protection relationship between the source and destination volumes, which means that data replication no longer occurs between the volumes. This action does not activate the destination volume for data access. This action also deletes the cluster peer relationship and the storage VM (SVM) peer relationship, if there are no other data protection relationships between the systems.

Result

After you select an action, BlueXP updates the relationship or schedule.

Learn more

Learn about replication policies

You might need help choosing a replication policy when you set up data replication in BlueXP. A replication policy defines how the storage system replicates data from a source volume to a destination volume.

What replication policies do

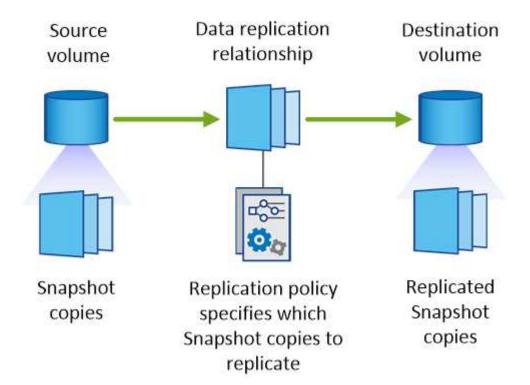
The ONTAP operating system automatically creates backups called Snapshot copies. A Snapshot copy is a read-only image of a volume that captures the state of the file system at a point in time.

When you replicate data between systems, you replicate Snapshot copies from a source volume to a destination volume. A replication policy specifies which Snapshot copies to replicate from the source volume to the destination volume.



Replication policies are also referred to as *protection* policies because they are powered by SnapMirror and SnapVault technologies, which provide disaster recovery protection and disk-to-disk backup and recovery.

The following image shows the relationship between Snapshot copies and replication policies:



Types of replication policies

There are three types of replication policies:

• A Mirror policy replicates newly created Snapshot copies to a destination volume.

You can use these Snapshot copies to protect the source volume in preparation for disaster recovery or for one-time data replication. You can activate the destination volume for data access at any time.

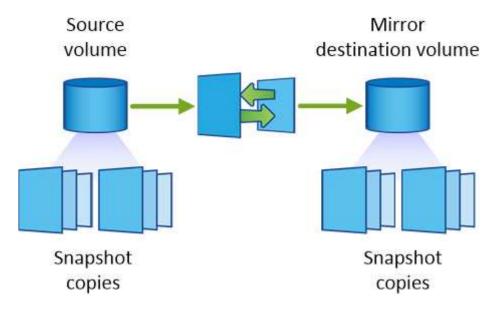
• A *Backup* policy replicates specific Snapshot copies to a destination volume and typically retains them for a longer period of time than you would on the source volume.

You can restore data from these Snapshot copies when data is corrupted or lost, and retain them for standards compliance and other governance-related purposes.

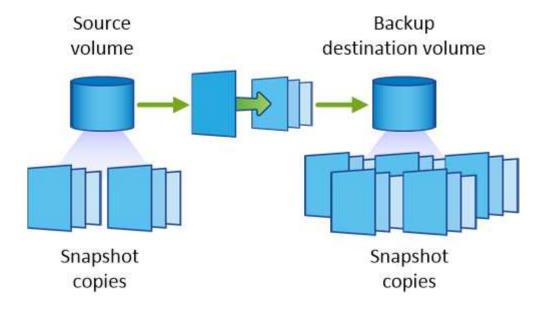
• A Mirror and Backup policy provides both disaster recovery and long-term retention.

Each system includes a default Mirror and Backup policy, which works well for many situations. If you find that you need custom policies, you can create your own using System Manager.

The following images show the difference between the Mirror and Backup policies. A Mirror policy mirrors the Snapshot copies available on the source volume.



A Backup policy typically retains Snapshot copies longer than they are retained on the source volume:



Learn about backup policies

Unlike Mirror policies, Backup (SnapVault) policies replicate specific Snapshot copies to a destination volume. It is important to understand how Backup policies work if you want to use your own policies instead of the default policies.

Understanding the relationship between Snapshot copy labels and Backup policies

A Snapshot policy defines how the system creates Snapshot copies of volumes. The policy specifies when to create the Snapshot copies, how many copies to retain, and how to label them. For example, a system might create one Snapshot copy every day at 12:10 a.m., retain the two most recent copies, and label them "daily".

A Backup policy includes rules that specify which labeled Snapshot copies to replicate to a destination volume and how many copies to retain. The labels defined in a Backup policy must match one or more labels defined in a Snapshot policy. Otherwise, the system cannot replicate any Snapshot copies.

For example, a Backup policy that includes the labels "daily" and "weekly" results in replication of Snapshot copies that include only those labels. No other Snapshot copies are replicated, as shown in the following image:

Default policies and custom policies

The default Snapshot policy creates hourly, daily, and weekly Snapshot copies, retaining six hourly, two daily, and two weekly Snapshot copies.

You can easily use a default Backup policy with the default Snapshot policy. The default Backup policies replicate daily and weekly Snapshot copies, retaining seven daily and 52 weekly Snapshot copies.

If you create custom policies, the labels defined by those policies must match. You can create custom policies using System Manager.

Knowledge and support

Register for support

Support registration is required to receive technical support specific to BlueXP and its storage solutions and services. Support registration is also required to enable key workflows for Cloud Volumes ONTAP systems.

Registering for support does not enable NetApp support for a cloud provider file service. For technical support related to a cloud provider file service, its infrastructure, or any solution using the service, refer to "Getting help" in the BlueXP documentation for that product.

- Amazon FSx for ONTAP
- Azure NetApp Files
- · Cloud Volumes Service for Google Cloud

Support registration overview

There are two forms of registration to activate support entitlement:

 Registering your BlueXP account ID support subscription (your 20 digit 960xxxxxxxxx serial number located on the Support Resources page in BlueXP).

This serves as your single support subscription ID for any service within BlueXP. Each BlueXP account-level support subscription must be registered.

 Registering the Cloud Volumes ONTAP serial numbers associated with a subscription in your cloud provider's marketplace (these are 20 digit 909201xxxxxxxx serial numbers).

These serial numbers are commonly referred to as *PAYGO serial numbers* and get generated by BlueXP at the time of Cloud Volumes ONTAP deployment.

Registering both types of serial numbers enables capabilities like opening support tickets and automatic case generation. Registration is completed by adding NetApp Support Site (NSS) accounts to BlueXP as described below.

Register your BlueXP account for NetApp support

To register for support and activate support entitlement, one user in your BlueXP account must associate a NetApp Support Site account with their BlueXP login. How you register for NetApp support depends on whether you already have a NetApp Support Site (NSS) account.

Existing customer with an NSS account

If you're a NetApp customer with an NSS account, you simply need to register for support through BlueXP.

Steps

- 1. In the upper right of the BlueXP console, select the Settings icon, and select Credentials.
- Select User Credentials.

- 3. Select Add NSS credentials and follow the NetApp Support Site (NSS) Authentication prompt.
- 4. To confirm that the registration process was successful, select the Help icon, and select Support.

The **Resources** page should show that your account is registered for support.



Note that other BlueXP users will not see this same support registration status if they have not associated a NetApp Support Site account with their BlueXP login. However, that doesn't mean that your BlueXP account is not registered for support. As long as one user in the account has followed these steps, then your account has been registered.

Existing customer but no NSS account

If you're an existing NetApp customer with existing licenses and serial numbers but *no* NSS account, you need to create an NSS account and associate it with your BlueXP login.

Steps

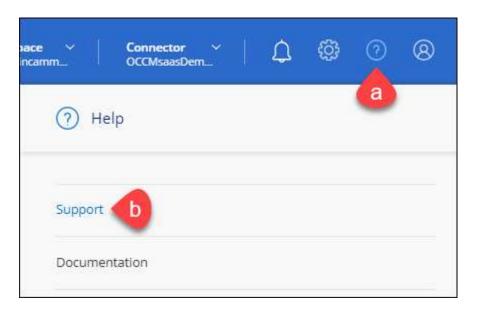
- 1. Create a NetApp Support Site account by completing the NetApp Support Site User Registration form
 - a. Be sure to select the appropriate User Level, which is typically NetApp Customer/End User.
 - b. Be sure to copy the BlueXP account serial number (960xxxx) used above for the serial number field. This will speed up the account processing.
- 2. Associate your new NSS account with your BlueXP login by completing the steps under Existing customer with an NSS account.

Brand new to NetApp

If you are brand new to NetApp and you don't have an NSS account, follow each step below.

Steps

1. In the upper right of the BlueXP console, select the Help icon, and select Support.



2. Locate your account ID serial number from the Support Registration page.



- 3. Navigate to NetApp's support registration site and select I am not a registered NetApp Customer.
- 4. Fill out the mandatory fields (those with red asterisks).
- 5. In the **Product Line** field, select **Cloud Manager** and then select your applicable billing provider.
- 6. Copy your account serial number from step 2 above, complete the security check, and then confirm that you read NetApp's Global Data Privacy Policy.

An email is immediately sent to the mailbox provided to finalize this secure transaction. Be sure to check your spam folders if the validation email doesn't arrive in few minutes.

Confirm the action from within the email.

Confirming submits your request to NetApp and recommends that you create a NetApp Support Site account.

- 8. Create a NetApp Support Site account by completing the NetApp Support Site User Registration form
 - a. Be sure to select the appropriate User Level, which is typically NetApp Customer/End User.
 - b. Be sure to copy the account serial number (960xxxx) used above for the serial number field. This will speed up the account processing.

After you finish

NetApp should reach out to you during this process. This is a one-time onboarding exercise for new users.

Once you have your NetApp Support Site account, associate the account with your BlueXP login by completing the steps under Existing customer with an NSS account.

Associate NSS credentials for Cloud Volumes ONTAP support

Associating NetApp Support Site credentials with your BlueXP account is required to enable the following key workflows for Cloud Volumes ONTAP:

Registering pay-as-you-go Cloud Volumes ONTAP systems for support

Providing your NSS account is required to activate support for your system and to gain access to NetApp technical support resources.

Deploying Cloud Volumes ONTAP when you bring your own license (BYOL)

Providing your NSS account is required so that BlueXP can upload your license key and to enable the subscription for the term that you purchased. This includes automatic updates for term renewals.

Upgrading Cloud Volumes ONTAP software to the latest release

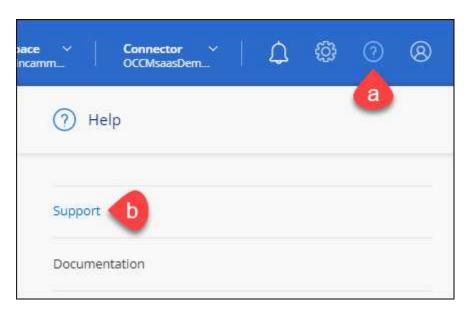
Associating NSS credentials with your BlueXP account is different than the NSS account that is associated with a BlueXP user login.

These NSS credentials are associated with your specific BlueXP account ID. Users who belong to the BlueXP account can access these credentials from **Support > NSS Management**.

- If you have a customer-level account, you can add one or more NSS accounts.
- If you have a partner or reseller account, you can add one or more NSS accounts, but they can't be added alongside customer-level accounts.

Steps

1. In the upper right of the BlueXP console, select the Help icon, and select **Support**.



- 2. Select NSS Management > Add NSS Account.
- 3. When you're prompted, select **Continue** to be redirected to a Microsoft login page.

NetApp uses Microsoft Entra ID as the identity provider for authentication services specific to support and licensing.

4. At the login page, provide your NetApp Support Site registered email address and password to perform the authentication process.

These actions enable BlueXP to use your NSS account for things like license downloads, software upgrade verification, and future support registrations.

Note the following:

- The NSS account must be a customer-level account (not a guest or temp account). You can have multiple customer-level NSS accounts.
- There can be only one NSS account if that account is a partner-level account. If you try to add customer-level NSS accounts and a partner-level account exists, you'll get the following error message:

"The NSS customer type is not allowed for this account as there are already NSS Users of different type."

The same is true if you have pre-existing customer-level NSS accounts and try to add a partner-level account.

• Upon successful login, NetApp will store the NSS user name.

This is a system-generated ID that maps to your email. On the **NSS Management** page, you can display your email from the ••• menu.

 If you ever need to refresh your login credential tokens, there is also an **Update Credentials** option in the ••• menu.

Using this option prompts you to log in again. Note that the token for these accounts expire after 90 days. A notification will be posted to alert you of this.

Get help

NetApp provides support for BlueXP and its cloud services in a variety of ways. Extensive free self-support options are available 24x7, such as knowledgebase (KB) articles and a community forum. Your support registration includes remote technical support via web ticketing.

Get support for a cloud provider file service

For technical support related to a cloud provider file service, its infrastructure, or any solution using the service, refer to "Getting help" in the BlueXP documentation for that product.

- Amazon FSx for ONTAP
- Azure NetApp Files
- · Cloud Volumes Service for Google Cloud

To receive technical support specific to BlueXP and its storage solutions and services, use the support options described below.

Use self-support options

These options are available for free, 24 hours a day, 7 days a week:

Documentation

The BlueXP documentation that you're currently viewing.

Knowledge base

Search through the BlueXP knowledge base to find helpful articles to troubleshoot issues.

Communities

Join the BlueXP community to follow ongoing discussions or create new ones.

Create a case with NetApp support

In addition to the self-support options above, you can work with a NetApp Support specialist to resolve any issues after you activate support.

Before you get started

- To use the **Create a Case** capability, you must first associate your NetApp Support Site credentials with your BlueXP login. Learn how to manage credentials associated with your BlueXP login.
- If you're opening a case for an ONTAP system that has a serial number, then your NSS account must be associated with the serial number for that system.

Steps

- 1. In BlueXP, select **Help > Support**.
- 2. On the **Resources** page, choose one of the available options under Technical Support:
 - a. Select **Call Us** if you'd like to speak with someone on the phone. You'll be directed to a page on netapp.com that lists the phone numbers that you can call.
 - b. Select Create a Case to open a ticket with a NetApp Support specialist:
 - **Service**: Select the service that the issue is associated with. For example, BlueXP when specific to a technical support issue with workflows or functionality within the service.
 - Working Environment: If applicable to storage, select Cloud Volumes ONTAP or On-Prem and then the associated working environment.

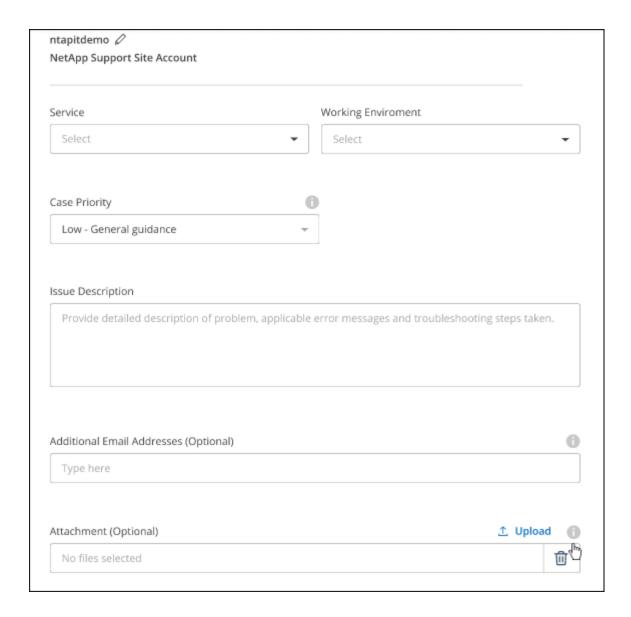
The list of working environments are within scope of the BlueXP account, workspace, and Connector you have selected in the top banner of the service.

• Case Priority: Choose the priority for the case, which can be Low, Medium, High, or Critical.

To learn more details about these priorities, hover your mouse over the information icon next to the field name.

- **Issue Description**: Provide a detailed description of your problem, including any applicable error messages or troubleshooting steps that you performed.
- Additional Email Addresses: Enter additional email addresses if you'd like to make someone else aware of this issue.
- Attachment (Optional): Upload up to five attachments, one at a time.

Attachments are limited to 25 MB per file. The following file extensions are supported: txt, log, pdf, jpg/jpeg, rtf, doc/docx, xls/xlsx, and csv.



After you finish

A pop-up will appear with your support case number. A NetApp Support specialist will review your case and get back to you soon.

For a history of your support cases, you can select **Settings > Timeline** and look for actions named "create support case." A button to the far right lets you expand the action to see details.

It's possible that you might encounter the following error message when trying to create a case:

"You are not authorized to Create a Case against the selected service"

This error could mean that the NSS account and the company of record it's associated with is not the same company of record for the BlueXP account serial number (ie. 960xxxx) or the working environment serial number. You can seek assistance using one of the following options:

- · Use the in-product chat
- Submit a non-technical case at https://mysupport.netapp.com/site/help

Manage your support cases (Preview)

You can view and manage active and resolved support cases directly from BlueXP. You can manage the cases associated with your NSS account and with your company.

Case management is available as a Preview. We plan to refine this experience and add enhancements in upcoming releases. Please send us feedback by using the in-product chat.

Note the following:

- The case management dashboard at the top of the page offers two views:
 - The view on the left shows the total cases opened in the past 3 months by the user NSS account you provided.
 - The view on the right shows the total cases opened in the past 3 months at your company level based on your user NSS account.

The results in the table reflect the cases related to the view that you selected.

 You can add or remove columns of interest and you can filter the contents of columns like Priority and Status. Other columns provide just sorting capabilities.

View the steps below for more details.

 At a per-case level, we offer the ability to update case notes or close a case that is not already in Closed or Pending Closed status.

Steps

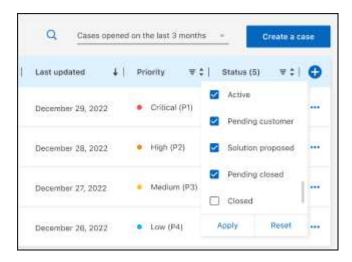
- In BlueXP, select Help > Support.
- Select Case Management and if you're prompted, add your NSS account to BlueXP.

The **Case management** page shows open cases related to the NSS account that is associated with your BlueXP user account. This is the same NSS account that appears at the top of the **NSS management** page.

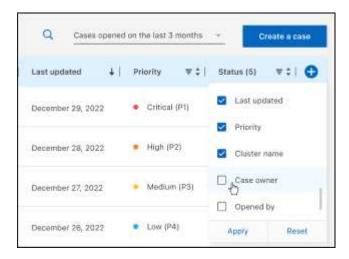
- 3. Optionally modify the information that displays in the table:
 - Under **Organization's cases**, select **View** to view all cases associated with your company.
 - Modify the date range by choosing an exact date range or by choosing a different time frame.



• Filter the contents of the columns.



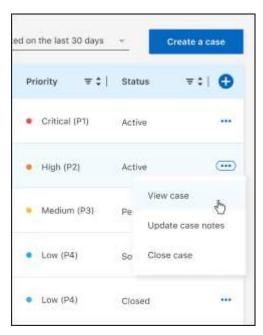
Change the columns that appear in the table by selecting and then choosing the columns that you'd like to display.



- 4. Manage an existing case by selecting ••• and selecting one of the available options:
 - View case: View full details about a specific case.
 - **Update case notes**: Provide additional details about your problem or select **Upload files** to attach up to a maximum of five files.

Attachments are limited to 25 MB per file. The following file extensions are supported: txt, log, pdf, jpg/jpeg, rtf, doc/docx, xls/xlsx, and csv.

• Close case: Provide details about why you're closing the case and select Close case.



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Patents

A current list of NetApp owned patents can be found at:

https://www.netapp.com/pdf.html?item=/media/11887-patentspage.pdf

Privacy policy

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