

Azure NetApp Files documentation

Azure NetApp Files

NetApp April 23, 2024

This PDF was generated from https://docs.netapp.com/us-en/bluexp-azure-netapp-files/index.html on April 23, 2024. Always check docs.netapp.com for the latest.

Table of Contents

Azure NetApp Files documentation	. 1
Release notes	2
What's new	2
Get started	4
Learn about Azure NetApp Files	4
Getting started workflow	5
Set up a Microsoft Entra application	5
Create an Azure NetApp Files working environment	9
Use Azure NetApp Files	11
Create and mount volumes	11
Manage existing volumes	13
Remove Azure NetApp Files	14
Knowledge and support	15
Register for support	15
Get help	19
Legal notices	25
Copyright	25
Trademarks	25
Patents	25
Privacy policy	25
Open source	25

Azure NetApp Files documentation

Release notes

What's new

Learn what's new with Azure NetApp Files in BlueXP.

22 April 2024

Volume templates no longer supported

You can no longer create a volume from a template. This action was associated with the BlueXP remediation service, which is no longer available.

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.

5 April 2020

Data migration to Azure NetApp Files

You can now migrate NFS or SMB data to Azure NetApp Files directly from Cloud Manager. Data syncs are powered by BlueXP copy and sync.

Get started

Learn about Azure NetApp Files

Azure NetApp Files enables enterprises to migrate and run their performance-intensive and latency-sensitive core, business-critical applications in Azure with no need to refactor for the cloud

Features

- Support for multiple protocols enables "lift & shift" of both Linux & Windows applications to run seamlessly in Azure.
- Multiple performance tiers allow for close alignment with workload performance requirements.
- Leading certifications including SAP HANA, GDPR, and HIPAA enables migration of the most demanding workloads to Azure.

Additional features in BlueXP

 Migrate NFS or SMB data to Azure NetApp Files directly from BlueXP. Data migrations are powered by BlueXP copy and sync.

Learn more about BlueXP copy and sync

 Using Artificial Intelligence (AI) driven technology, BlueXP classification can help you understand data context and identify sensitive data that resides in your Azure NetApp Files accounts.

Learn more about BlueXP classification

Cost

View Azure NetApp Files pricing

Note that your subscription and charging are maintained by the Azure NetApp Files service and not by BlueXP.

Supported regions

View supported Azure regions

Getting help

For technical support issues associated with Azure NetApp Files, use the Azure portal to log a support request to Microsoft. Select your associated Microsoft subscription and select the **Azure NetApp Files** service name under **Storage**. Provide the remaining information required to create your Microsoft support request.

Related links

- NetApp BlueXP website: Azure NetApp Files
- Azure NetApp Files documentation
- BlueXP copy and sync documentation

Getting started workflow

Get started with Azure NetApp Files by setting up a Microsoft Entra application and by creating a working environment.



Set up a Microsoft Entra application

From Azure, grant permissions to a Microsoft Entra application and copy the application (client) ID, the directory (tenant) ID, and the value of a client secret.



Create an Azure NetApp Files working environment

From BlueXP, click **Add Working Environment > Microsoft Azure > Azure NetApp Files** and then provide details about the AD application.

Set up a Microsoft Entra application

BlueXP needs permissions to set up and manage Azure NetApp Files. You can grant the required permissions to an Azure account by creating and setting up a Microsoft Entra application and by obtaining the Azure credentials that BlueXP needs.

Step 1: Create the application

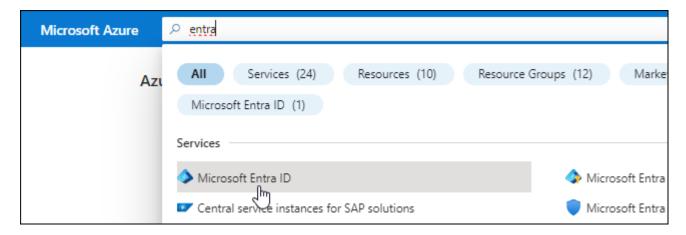
Create a Microsoft Entra application and service principal that BlueXP can use for role-based access control.

Before you begin

You must have the right permissions in Azure to create an Active Directory application and to assign the application to a role. For details, refer to Microsoft Azure Documentation: Required permissions.

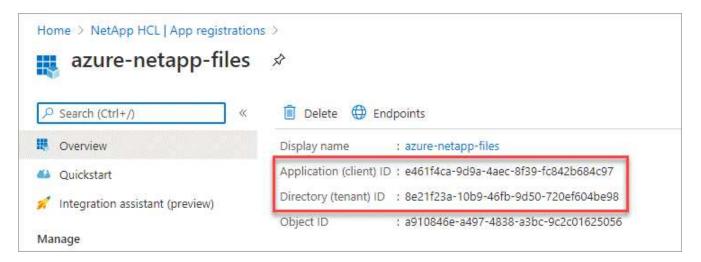
Steps

1. From the Azure portal, open the **Microsoft Entra ID** service.



- 2. In the menu, click App registrations.
- 3. Create the application:
 - a. Click New registration.

- b. Specify details about the application:
 - Name: Enter a name for the application.
 - Account type: Select an account type (any will work with BlueXP).
 - Redirect URI: You can leave this blank.
- c. Click Register.
- 4. Copy the Application (client) ID and the Directory (tenant) ID.



When you create the Azure NetApp Files working environment in BlueXP, you need to provide the application (client) ID and the directory (tenant) ID for the application. BlueXP uses the IDs to programmatically sign in.

- 5. Create a client secret for the application so BlueXP can use it to authenticate with Microsoft Entra ID:
 - a. Click Certificates & secrets > New client secret.
 - b. Provide a description of the secret and a duration.
 - c. Click Add.
 - d. Copy the value of the client secret.



Result

Your AD application is now setup and you should have copied the application (client) ID, the directory (tenant) ID, and the value of the client secret. You need to enter this information in BlueXP when you add an Azure NetApp Files working environment.

Step 2: Assign the app to a role

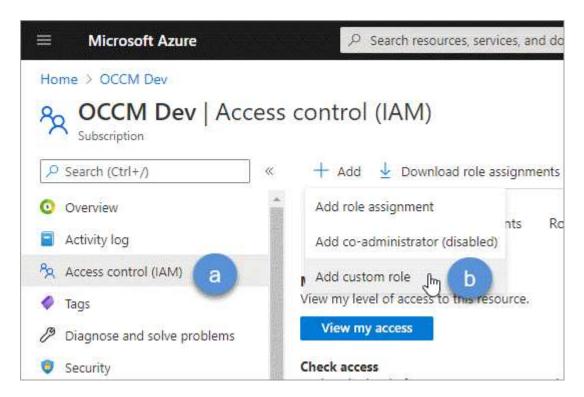
You must bind the service principal to your Azure subscription and assign it a custom role that has the required permissions.

Steps

1. Create a custom role in Azure.

The following steps describe how to create the role from the Azure portal.

- a. Open the subscription and click Access control (IAM).
- b. Click Add > Add custom role.

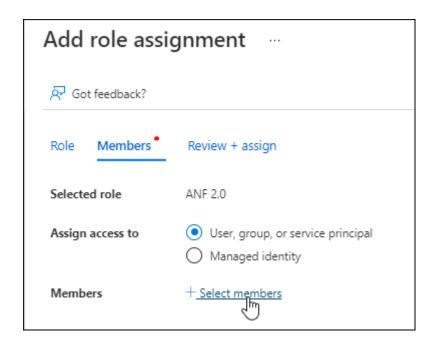


- c. In the **Basics** tab, enter a name and description for the role.
- d. Click **JSON** and click **Edit** which appears at the top right of the JSON format.
- e. Add the following permissions under actions:

```
"actions": [
    "Microsoft.NetApp/*",
    "Microsoft.Resources/resources/read",
    "Microsoft.Resources/subscriptions/resourceGroups/read",

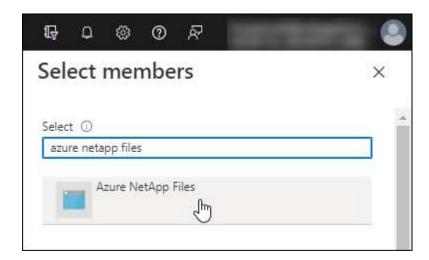
"Microsoft.Resources/subscriptions/resourcegroups/resources/read",
    "Microsoft.Resources/subscriptions/resourceGroups/write",
    "Microsoft.Network/virtualNetworks/read",
    "Microsoft.Insights/Metrics/Read"
],
```

- f. Click Save, click Next, and then click Create.
- 2. Now assign the application to the role that you just created:
 - a. From the Azure portal, open the **Subscriptions** service.
 - b. Select the subscription.
 - c. Click Access control (IAM) > Add > Add role assignment.
 - d. In the Role tab, select the custom role that you created and click Next.
 - e. In the **Members** tab, complete the following steps:
 - Keep User, group, or service principal selected.
 - Click Select members.



Search for the name of the application.

Here's an example:



- Select the application and click Select.
- Click Next.

f. Click Review + assign.

The service principal for BlueXP now has the required Azure permissions for that subscription.

Step 3: Add the credentials to BlueXP

When you create the Azure NetApp Files working environment, you're prompted to select the credentials associated with the service principal. You need to add these credentials to BlueXP before you create the working environment.

Steps

1. In the upper right of the BlueXP console, click the Settings icon, and select Credentials.



- 2. Click **Add Credentials** and follow the steps in the wizard.
 - a. Credentials Location: Select Microsoft Azure > BlueXP.
 - b. **Define Credentials**: Enter information about the Microsoft Entra service principal that grants the required permissions:
 - Client Secret
 - Application (client) ID
 - Directory (tenant) ID

You should have captured this information when you created the AD application.

c. Review: Confirm the details about the new credentials and click Add.

Create an Azure NetApp Files working environment

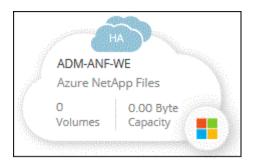
After you set up a Microsoft Entra application and add the credentials to BlueXP, create an Azure NetApp Files working environment so that you can start creating the volumes that you need.

Steps

- 1. From the Canvas page, click Add Working Environment.
- 2. Select Microsoft Azure.
- 3. Next to Azure NetApp Files, select **Discover**.
- 4. On the Details page, enter a working environment name and select the credentials that you previously set up.
- 5. Click Continue.

Result

You should now have an Azure NetApp Files working environment.



What's next?

Start creating and managing volumes.

Use Azure NetApp Files

Create and mount volumes

After you set up your working environment, you can create Azure NetApp Files accounts, capacity pools, and volumes.

Create volumes

You can create NFS or SMB volumes in a new or existing Azure NetApp Files account.

Before you begin

- If you want to use SMB, you must have set up DNS and Active Directory.
- When planning to create an SMB volume, you must have a Windows Active Directory server available to which you can connect. You will enter this information when creating the volume.

Steps

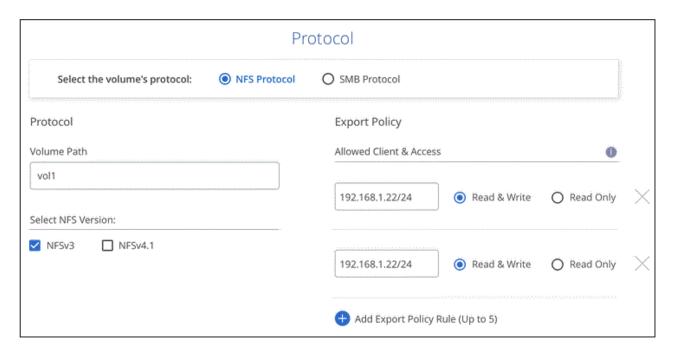
- 1. Open the Azure NetApp Files working environment.
- 2. Click Add New Volume.
- 3. Provide the required information on each page:
 - Azure NetApp Files Account: Choose an existing Azure NetApp Files account or create a new
 account. When creating a new account you can also choose the Resource Group that you want to use.
 - Capacity Pool: Select an existing capacity pool or create a new capacity pool.

If you create a new capacity pool, you need to specify a size and select a service level.

The minimum size for the capacity pool is 4 TB. You can specify a size in multiples of 4 TB.

- **Details & Tags**: Enter a volume name and size, the VNet and subnet where the volume should reside, and optionally specify tags for the volume.
- **Protocol**: Choose the NFS or SMB protocol and enter the required information.

Here's an example of details for NFS.



Here's an example of details for SMB. You'll need to provide Active Directory information on the next page when you set up your first SMB volume.



- 4. If you want this volume to be created based on a snapshot of an existing volume, select the snapshot from the Snapshot Name drop-down list.
- 5. Click Add Volume.

Result

The new volume is added to the working environment.

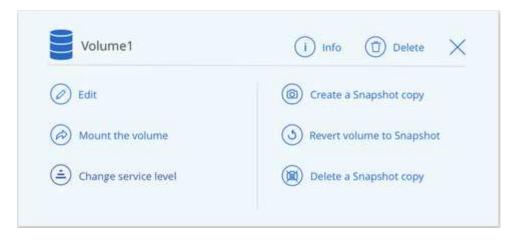
Continue with mounting the cloud volume.

Mount volumes

Access mounting instructions from within BlueXP so you can mount the volume to a host.

Steps

- 1. Open the working environment.
- 2. Hover over the volume and select **Mount the volume**.



Follow the instructions to mount the volume.

Manage existing volumes

You can manage existing volumes as your storage needs change. You can edit volumes, change a volume's service level, manage Snapshot copies, and delete volumes.

Edit a volume's size and tags

After you create a volume, you can modify its size and tags at any time.

Steps

- 1. Open the working environment.
- 2. Hover over the volume and select Edit.
- 3. Modify the size and tags as needed.
- 4. Click Apply.

Change the volume's service level

After you create a volume, you can change the service level at any time as long as the destination capacity pool already exists.

Steps

- Open the working environment.
- 2. Hover over the volume and select Change service level.
- Select the capacity pool that provides the service level that you want.
- 4. Click Change.

Result

The volume is moved to the other capacity pool with no impact to the volume.

Manage Snapshot copies

Snapshot copies provide a point-in-time copy of your volume. Create Snapshot copies, restore the data to a new volume, and delete Snapshot copies.

Steps

- 1. Open the working environment.
- 2. Hover over the volume and choose one of the available options to manage Snapshot copies:
 - Create a Snapshot copy
 - Revert volume to Snapshot
 - Delete a Snapshot copy
- 3. Follow the prompts to complete the selected action.

Delete volumes

Delete the volumes that you no longer need.

Steps

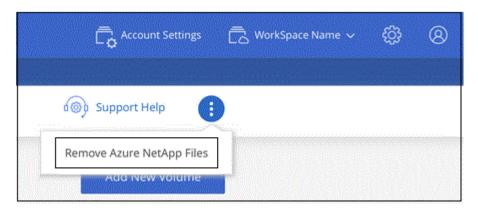
- 1. Open the working environment.
- 2. Hover over the volume and click Delete.
- 3. Confirm that you want to delete the volume.

Remove Azure NetApp Files

This action removes Azure NetApp Files from BlueXP. It doesn't delete your Azure NetApp Files account or volumes. You can add Azure NetApp Files back to BlueXP at any time.

Steps

- 1. Open the Azure NetApp Files working environment.
- 2. At the top right of the page, select the actions menu and click Remove Azure NetApp Files.



Click Remove to confirm.

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.

7. 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

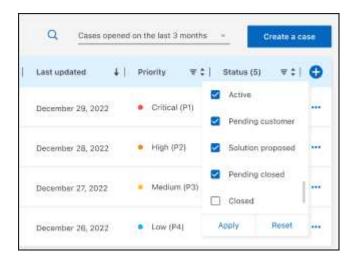
- In BlueXP, select Help > Support.
- Select Case Management and if you're prompted, add your NSS account to BlueXP.

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.



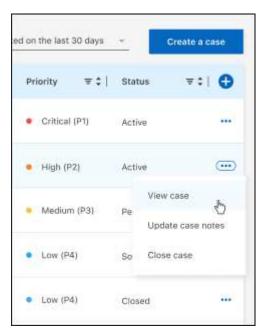
Change the columns that appear in the table by selecting <table-cell-rows> and then choosing the columns that you'd like to display.



- 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.



Legal notices

Legal notices provide access to copyright statements, trademarks, patents, and more.

Copyright

https://www.netapp.com/company/legal/copyright/

Trademarks

NETAPP, the NETAPP logo, and the marks listed on the NetApp Trademarks page are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.

https://www.netapp.com/company/legal/trademarks/

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

https://www.netapp.com/company/legal/privacy-policy/

Open source

Notice files provide information about third-party copyright and licenses used in NetApp software.

Notice for BlueXP

Copyright information

Copyright © 2024 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.