NetApp

Amazon FSx for NetApp ONTAP management using BlueXP

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NetApp
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What's new with Amazon FSx for NetApp ONTAP

Learn what's new in FSx for ONTAP.

11 November 2024

FSx for ONTAP integrates with Storage in BlueXP workload factory

FSx for ONTAP file system management tasks such as adding volumes, expanding file system capacity, and managing storage VMs are now managed in BlueXP workload factory, a new service offered by NetApp and Amazon FSx for NetApp ONTAP. You can use your existing credentials and permissions just as before. The difference is that you can now do more from BlueXP workload factory to manage your file systems. When you open an FSx for ONTAP working environment from the BlueXP canvas, you will go directly to BlueXP workload factory.

[Learn about FSx for ONTAP features in BlueXP workload factory](#)

If you're looking for the *advanced view* option, which enables you to manage an FSx for ONTAP file system using ONTAP System Manager, you can now find that option from the BlueXP canvas after you select the working environment.
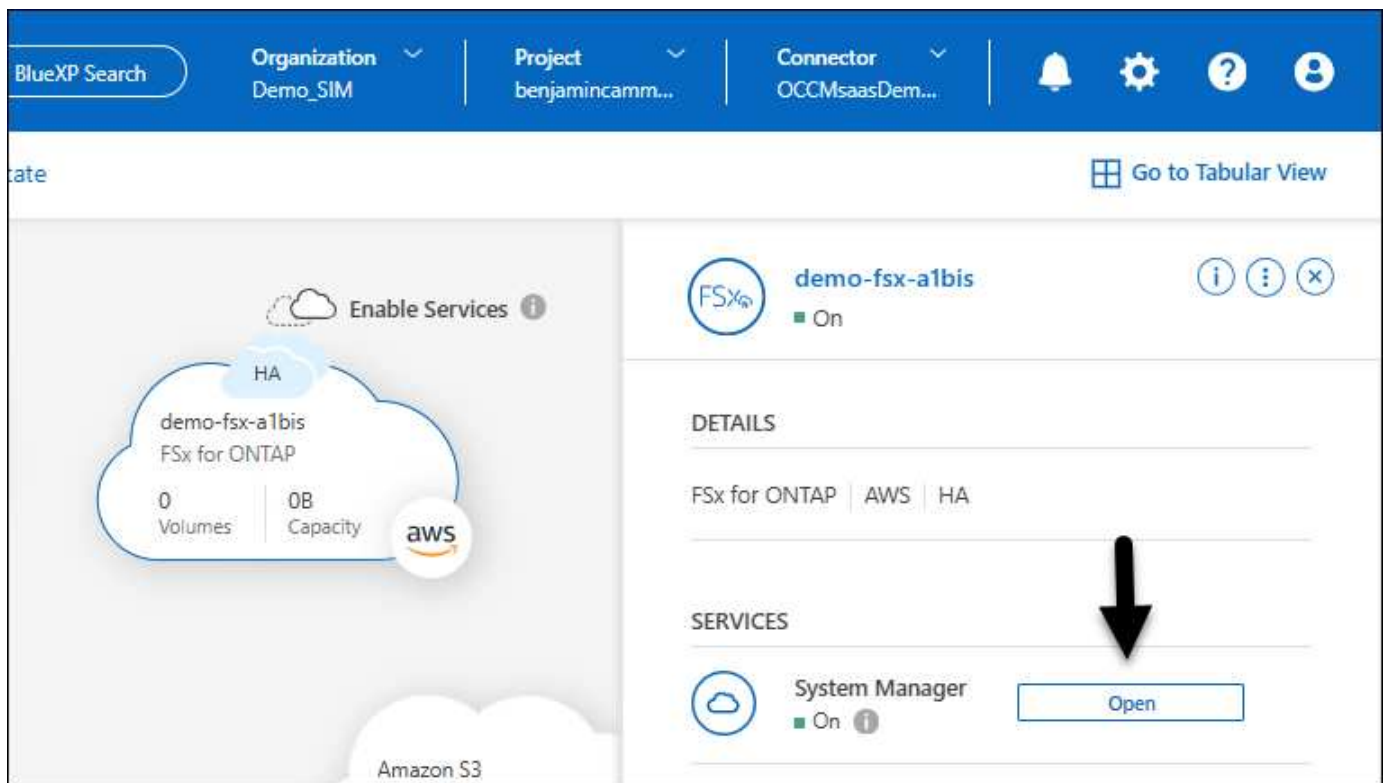
30 July 2023

Support for three additional regions

Customers can now create Amazon FSx for NetApp ONTAP file systems in three new AWS Regions: Europe (Zurich), Europe (Spain), and Asia Pacific (Hyderabad).

Refer to [Amazon FSx for NetApp ONTAP is now available in three additional regions](#) for full details.

02 July 2023

Add a storage VM

You can now add a storage VM to the Amazon FSx for NetApp ONTAP file system using BlueXP.

My Opportunities tab is now My estate

The **My Opportunities** tab is now **My estate**. The documentation is updated to reflect the new name.

04 June 2023

Maintenance window start time

When [creating a working environment](#), you can specify the start time for the weekly 30-minute maintenance window to ensure maintenance does not conflict with critical business activities.

Distribute volume data using FlexGroups

When creating a volume, you can enable data optimization by creating a FlexGroup to distribute data across volumes.

04 June 2023

Maintenance window start time

When [creating a working environment](#), you can specify the start time for the weekly 30-minute maintenance window to ensure maintenance does not conflict with critical business activities.

Distribute volume data using FlexGroups

When creating a volume, you can enable data optimization by creating a FlexGroup to distribute data across volumes.

07 May 2023

Generate a security group

When creating a working environment, you can now have BlueXP [generate a security group](#) that allows traffic within the selected VPC only. This feature [requires additional permissions](#).

Add or modify tags

You can optionally add and modify tags to categorize volumes.

02 April 2023

Increase in IOPS limit

The IOPS limit is increased to allow manual or automatic provisioning up to 160,000.

05 March 2023

User interface enhanced

User interface improvements have been made and screenshots have been updated in the documentation.

01 January 2023

Automatic capacity management

You can now choose to enable automatic capacity management to add incremental storage based on demand. Automatic capacity management polls the cluster at regular intervals to assess demand and automatically increases storage capacity in increments of 10% up to 80% of the cluster's maximum capacity.

18 September 2022

Change storage capacity and IOPS

You can now change the storage capacity and IOPS at any time after you create the FSx for ONTAP working environment.

31 July 2022

My estate feature

If you previously provided your AWS credentials to Cloud Manager, the new **My estate** feature can automatically discover and suggest FSx for ONTAP file systems to add and manage using Cloud Manager. You can also review available data services through the **My estate** tab.

Discover FSx for ONTAP using My estate

Change throughput capacity

You can now change throughput capacity at any time after you create the FSx for ONTAP working environment.

Replicate and sync data

You can now replicate and sync data to on-premises and other FSx for ONTAP systems using FSx for ONTAP as the source.

Create iSCSI volume

You can now create iSCSI volumes in FSx for ONTAP using Cloud Manager.

3 July 2022

Support for single or multiple Availability Zon

You can now select a single or multiple Availability Zone HA deployment model.

Create an FSx for ONTAP working environment

Support for GovCloud account authentication

AWS GovCloud account authentication is now supported in Cloud Manager.

Set up the IAM role

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 elect 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.

2 September 2021

Support for Amazon FSx for NetApp ONTAP

- Amazon FSx for NetApp ONTAP is a fully managed service allowing customers to launch and run file systems powered by NetApp's ONTAP storage operating system. FSx for ONTAP provides the same features, performance, and administrative capabilities NetApp customers use on premises, with the simplicity, agility, security, and scalability of a native AWS service.

  Learn about Amazon FSx for NetApp ONTAP.

- You can configure an FSx for ONTAP working environment in Cloud Manager.

  Create an Amazon FSx for NetApp ONTAP working environment.

- Using a Connector in AWS and Cloud Manager, you can create and manage volumes, replicate data, and integrate FSx for ONTAP with NetApp cloud services, such as Data Sense and Cloud Sync.

  Get started with Cloud Data Sense for Amazon FSx for NetApp ONTAP.

Get started

Learn about Amazon FSx for NetApp ONTAP

Amazon FSx for NetApp ONTAP is a fully managed service allowing customers to launch and run file systems powered by the NetApp ONTAP storage operating system. FSx for ONTAP provides the same features, performance, and administrative capabilities NetApp customers use on premises, with the simplicity, agility, security, and scalability of a native AWS service.

Using FSx for ONTAP in BlueXP

From the BlueXP canvas, you can create and discover FSx for ONTAP working environments and use System Manager and other BlueXP services. If you want to manage FSx for ONTAP working environments and workloads running on Amazon FSx for NetApp ONTAP, use BlueXP workload factory.

Learn how to create and discover FSx for ONTAP working environments in BlueXP.

Features

- No need to configure or manage storage devices, software, or backups.
- Support for CIFS, iSCSI, NFSv3, NFSv4.x, S3, and SMB v2.0 - v3.1.1 protocols.
- Low cost, virtually unlimited data storage capacity using available Infrequently Accessed (IA) storage tier.
- Certified to run on latency-sensitive applications including Oracle RAC.
- Choice of bundled and pay-as-you-go pricing.

Additional features in BlueXP

- FSx for ONTAP is supported when using BlueXP in *standard* mode, which leverages the BlueXP SaaS layer to provide full functionality. *Restricted* mode and *private* mode are not supported.

    Refer to BlueXP deployment modes for more information.

- Using BlueXP and a Connector in AWS, you can create and manage volumes, replicate data, and integrate FSx for ONTAP with NetApp cloud services, such as BlueXP classification and 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 FSx for ONTAP accounts. Learn more.
- Using BlueXP copy and sync, you can automate data migration to any target in the cloud or on premises. Learn more

Connectors and links unlock all FSx for ONTAP features

Connectors and links enable connectivity and trust relationships between BlueXP and Amazon FSx for NetApp ONTAP working environments. A BlueXP Connector is NetApp software that runs in your cloud or on-premises network, and a link uses AWS Lambda to execute NetApp code. You don't need a Connector or link to get started with BlueXP or create FSx for ONTAP working environments, but you do need to use a Connector or link to make full use of FSx for ONTAP features.

You need a Connector or link to use the following features:

- Display the version of ONTAP that is installed on an FSx for ONTAP file system
- Manage iSCSI volumes on the system
- Enable and disable the autogrow feature for volumes
- Create and manage snapshot policies
- Configure replication relationships and replicate volumes between file systems
- Configure backup relationships and back up volume data to cloud storage
- Clone volumes within a file system
- Display additional metrics directly from ONTAP (default metrics are collected by Amazon CloudWatch)
- Management of NFS export policies

Learn more about Connectors and links and when you should use them:

- Learn more about Connectors.
- Learn more about links.

Cost

Your FSx for ONTAP account is maintained by AWS and not by BlueXP. Refer to Amazon FSx for NetApp ONTAP getting started guide.

There is an additional cost associated with using the Connector in AWS and the optional data services such as BlueXP copy and sync and BlueXP classification.

Supported regions

View supported Amazon regions.

Getting help

Amazon FSx for NetApp ONTAP is an AWS first-party solution. For questions or technical support issues associated with your FSx for ONTAP file system, infrastructure, or any solution using this service, use the Support Center in your AWS Management Console to open a support case with AWS. Select the "FSx for ONTAP" service and appropriate category. Provide the remaining information required to create your AWS support case.

For general questions about BlueXP or BlueXP storage solutions and services, you can start with the in-line BlueXP chat.

For technical support issues specific to BlueXP or BlueXP storage solutions and services, you can open a NetApp support ticket using your BlueXP organization level serial number. You will need to register your BlueXP organization to activate support.

Quick start for Amazon FSx for NetApp ONTAP

Get started with Amazon FSx for NetApp ONTAP in BlueXP by adding credentials, creating a Connector or link, and by creating or discovering an FSx for ONTAP file system.

1 **Add credentials and permissions**

Adding AWS credentials is required to provide BlueXP the permissions needed to create and manage FSx for ONTAP file systems. You can choose between *automate permissions* and *read permissions*.

2 **Optional: Create a Connector or a link**

To perform some management tasks from BlueXP, you either need a BlueXP Connector or a BlueXP workload factory link. A *Connector* is a virtual machine that you deploy in your VPC to manage your FSx for ONTAP file systems. A *link* leverages AWS Lambda to create a trust relationship and connectivity to your FSx for ONTAP file systems.

- Learn when a Connector or link is required for FSx for ONTAP management
- Learn how to create a Connector in AWS
- Learn how to create a Connector on-premises
- Learn how to create a link

3 **Create or discover an FSx for ONTAP working environment**

Create your FSx for ONTAP file system directly from BlueXP or discover a file system that you've already created in your AWS environment.

Set up permissions for FSx for ONTAP

To create or manage an FSx for ONTAP working environment, you need to add AWS credentials to BlueXP by providing the ARN of an IAM role that gives BlueXP the permissions needed to create an FSx for ONTAP working environment.

Why AWS credentials are required

AWS credentials are required to create and manage FSx for ONTAP working environments in BlueXP. You can create new AWS credentials or add AWS credentials to an existing BlueXP organization. Credentials provide BlueXP with the permissions needed to manage resources and processes within your AWS cloud environment.

Credentials and permissions are managed via BlueXP workload factory. BlueXP workload factory is a life-cycle management platform designed to help users optimize workloads using Amazon FSx for NetApp ONTAP file systems. BlueXP uses the same set of AWS credentials and permissions as BlueXP workload factory.

The workload factory interface provides BlueXP users with options to enable workload capabilities like Storage, VMware, Databases, and GenAI, and to select permissions for the workloads. *Storage* is the storage management capability in workload factory and it is the only capability you need to enable and add credentials for to create and manage your FSx for ONTAP file systems.

About this task

When adding new credentials for FSx for ONTAP from Storage in BlueXP workload factory, you'll need to decide which level of permissions, or *operational mode*, you'd like to operate in. To discover and deploy AWS resources like FSx for ONTAP file systems, you'll need *read* or *automate* permissions. BlueXP FSx for ONTAP will operate in *basic* mode unless you select *read* mode or *automate* mode. Learn more about operational

.

New and existing AWS credentials are viewable from BlueXP settings > **Credentials** page.

You can add credentials using two methods:

- **Manually**: You create the IAM policy and the IAM role in your AWS account while adding credentials in workload factory.
- **Automatically**: You capture a minimal amount of information about permissions and then use a CloudFormation stack to create the IAM policies and role for your credentials.

Add credentials to an account manually

You can add AWS credentials to BlueXP manually to give your account the permissions needed to manage the AWS resources that you'll use to run your unique workloads. Each set of credentials that you add will include one or more IAM policies based on the workload capabilities you want to use, and an IAM role that is assigned to your account.

There are three parts to creating the credentials:

- Select the services and permissions level that you would like to use and then create IAM policies from the AWS Management Console.
- Create an IAM role from the AWS Management Console.
- From workloads in BlueXP, enter a name and add the credentials.

To create or manage an FSx for ONTAP working environment, you need to add AWS credentials to BlueXP by providing the ARN of an IAM role that gives BlueXP the permissions needed to create an FSx for ONTAP working environment.

Before you begin

You'll need to have credentials to log in to your AWS account.

Steps
1. In the BlueXP console, select the **Settings** icon, and select **Credentials**.
2. Select **Add credentials**.
3. Select **Amazon Web Services**, then **FSx for ONTAP**, and then **Next**.

   You're now on the **Add Credentials** page in BlueXP workload factory.

4. Select **Add manually** and then follow the steps below to fill out the three sections under *Permissions configuration*.
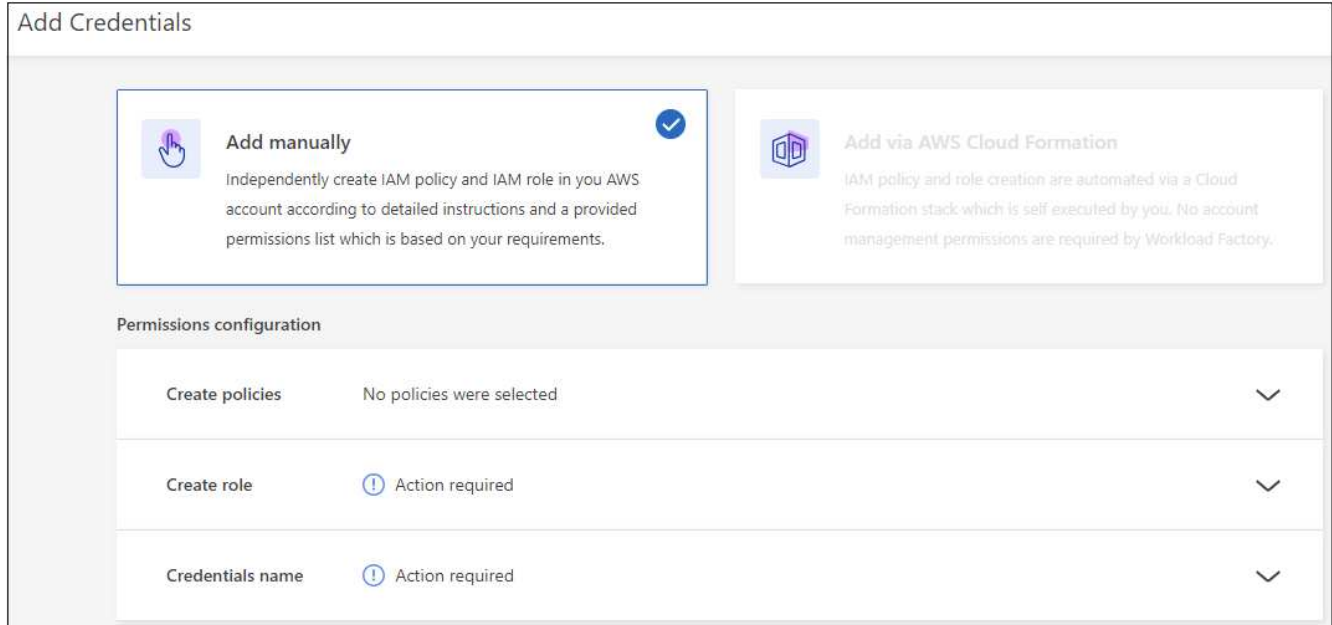
Step 1: Select the workload capabilities and create the IAM policies

In this section you'll choose which types of workload capabilities will be manageable as part of these credentials, and the permissions enabled for each workload. You'll need to copy the policy permissions for each selected workload from the Codebox and add them into the AWS Management Console within your AWS account to create the policies.
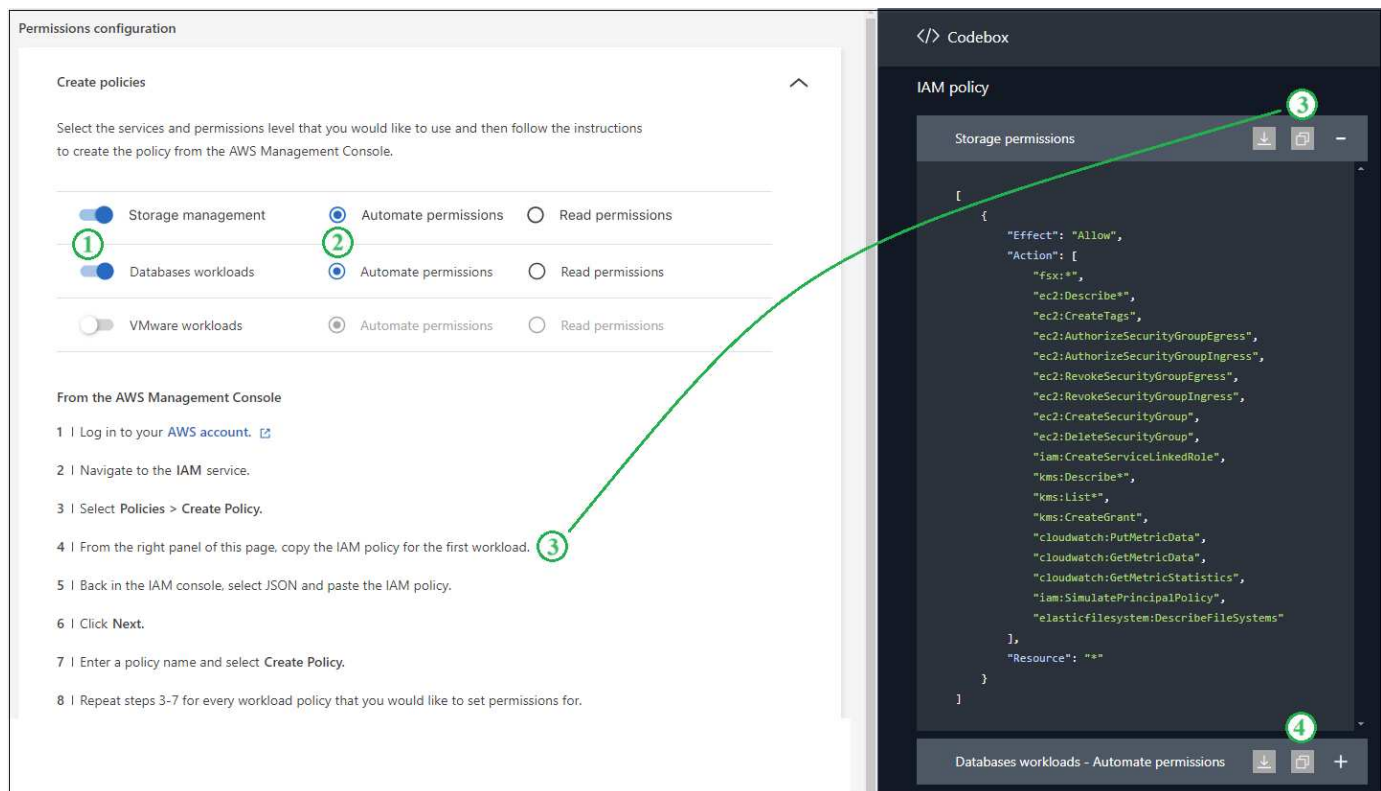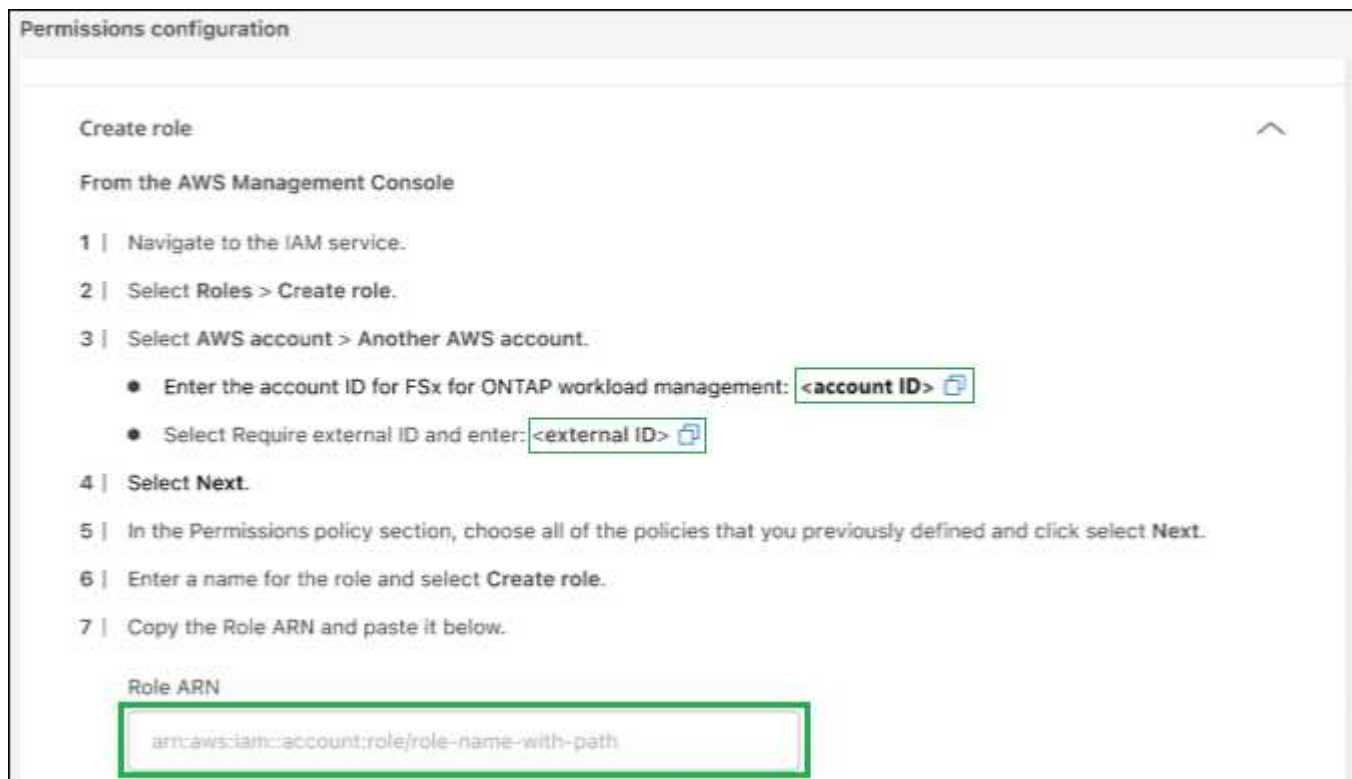

Steps

1. From the **Create policies** section, enable each of the workload capabilities that you want to include in these credentials. Enable **Storage** to create and manage file systems.

You can add additional capabilities later, so just select the workloads that you currently want to deploy and manage.

2. For those workload capabilities that offer a choice of permission levels (automate or read), select the type of permissions that will be available with these credentials. Learn about the permissions, also known as operational modes.

3. In the Codebox window, copy the permissions for the first IAM policy.

4. Open another browser window and log in to your AWS account in the AWS Management Console.

5. Open the IAM service, and then select **Policies** > **Create Policy**.

6. Select JSON as the file type, paste the permissions you copied in step 3, and select **Next**.

7. Enter the name for the policy and select **Create Policy**.

8. If you've selected multiple workload capabilities in step 1, repeat these steps to create a policy for each set of workload permissions.

Step 2: Create the IAM role that uses the policies

In this section you'll set up an IAM role that Workload Factory will assume that includes the permissions and policies that you just created.

Permissions configuration

Create role

From the AWS Management Console

1 | Navigate to the IAM service.

2 | Select Roles > Create role.

3 | Select AWS account > Another AWS account.

- Enter the account ID for FSx for ONTAP workload management: `<account ID>`
- Select Require external ID and enter: `<external ID>`

4 | Select Next.

5 | In the Permissions policy section, choose all of the policies that you previously defined and click select Next.

6 | Enter a name for the role and select Create role.

7 | Copy the Role ARN and paste it below.

Role ARN

arn:aws:iam::account:role/role-name-with-path

Steps

1. In the AWS Management Console, select **Roles > Create Role**.

2. Under **Trusted entity type**, select **AWS account**.
    a. Select **Another AWS account** and copy and paste the account ID for FSx for ONTAP workload management from the BlueXP workload factory user interface.
    b. Select **Required external ID** and copy and paste the external ID from the BlueXP workloads user interface.

3. Select **Next**.

4. In the Permissions policy section, choose all the policies that you defined previously and select **Next**.

5. Enter a name for the role and select **Create role**.

6. Copy the Role ARN.

7. Return to BlueXP workloads Add credentials page, expand the **Create role** section, and paste the ARN in the *Role ARN* field.

Step 3: Enter a name and add the credentials

The final step is to enter a name for the credentials in BlueXP workload factory.

Steps

1. From BlueXP workloads Add credentials page, expand **Credentials name**.

2. Enter the name that you want to use for these credentials.

3. Select **Add** to create the credentials.

Result

The credentials are created and viewable on the Credentials page. You can now use the credentials when creating an FSx for ONTAP working environment.

Add credentials to an account using CloudFormation

You can add AWS credentials to BlueXP workloads using an AWS CloudFormation stack by selecting the workload capabilities that you want to use, and then launching the AWS CloudFormation stack in your AWS account. CloudFormation will create the IAM policies and IAM role based on the workload capabilities you selected.

Before you begin

• You'll need to have credentials to log in to your AWS account.

• You'll need to have the following permissions in your AWS account when adding credentials using a CloudFormation stack:

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": [
                "cloudformation:CreateStack",
                "cloudformation:UpdateStack",
                "cloudformation:DeleteStack",
                "cloudformation:DescribeStacks",
                "cloudformation:DescribeStackEvents",
                "cloudformation:DescribeChangeSet",
                "cloudformation:ExecuteChangeSet",
                "cloudformation:ListStacks",
                "cloudformation:ListStackResources",
                "cloudformation:GetTemplate",
                "cloudformation:ValidateTemplate",
                "lambda:InvokeFunction",
                "iam:PassRole",
                "iam:CreateRole",
                "iam:UpdateAssumeRolePolicy",
                "iam:AttachRolePolicy",
                "iam:CreateServiceLinkedRole"
            ],
            "Resource": "*"
        }
    ]
}
```
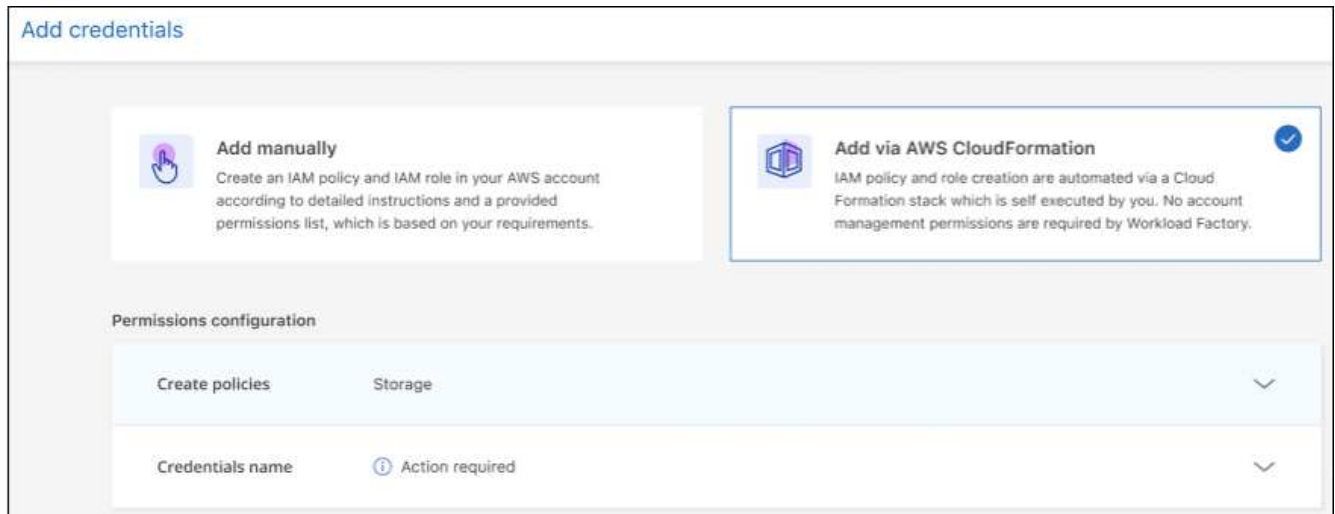
Steps

1. In the BlueXP console, select the **Settings** icon, and select **Credentials**.

2. Select **Add credentials**.

3. Select **Amazon Web Services**, then **FSx for ONTAP**, and then **Next**.
   You're now on the **Add Credentials** page in BlueXP workload factory.

4. Select **Add via AWS CloudFormation**.

5. Under **Create policies**, enable each of the workload capabilities that you want to include in these credentials and choose a permission level for each workload.

   You can add additional capabilities later, so just select the workloads that you currently want to deploy and manage.

6. Under **Credentials name**, enter the name that you want to use for these credentials.

7. Add the credentials from AWS CloudFormation:

   a. Select **Add** (or select **Redirect to CloudFormation**) and the Redirect to CloudFormation page is displayed.
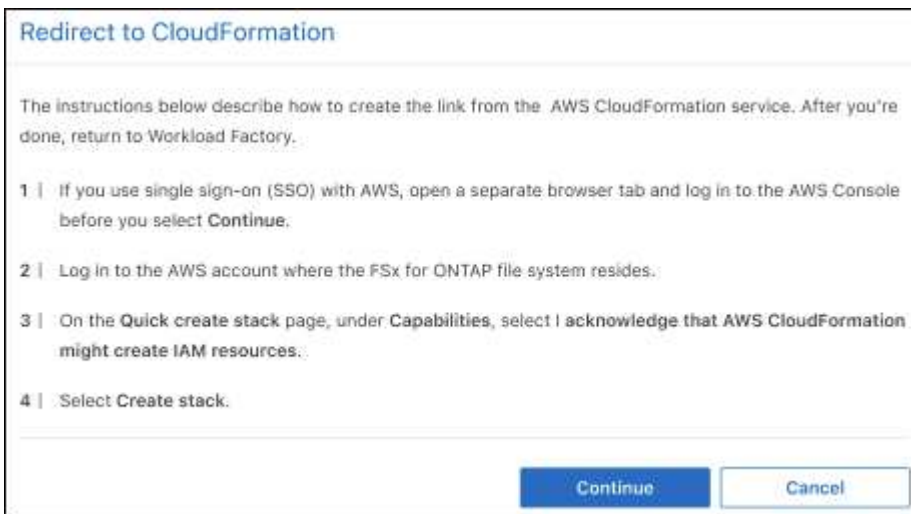
   b. If you use single sign-on (SSO) with AWS, open a separate browser tab and log in to the AWS Console before you select **Continue**.

      You should log in to the AWS account where the FSx for ONTAP file system resides.

   c. Select **Continue** from the Redirect to CloudFormation page.

   d. On the Quick create stack page, under Capabilities, select **I acknowledge that AWS CloudFormation might create IAM resources**.

   e. Select **Create stack**.

f. Return to BlueXP workload factory and open the Credentials page from the menu icon to verify that the new credentials are in progress, or that they have been added.

Result

The credentials are created and viewable on the Credentials page. You can now use the credentials when creating an FSx for ONTAP working environment.

Create or discover an FSx for ONTAP working environment

Using BlueXP you can create or discover an FSx for ONTAP working environment to add and manage volumes and additional data services.

Create an FSx for ONTAP working environment

The first step is to create an FSx for ONTAP working environment, or file system. If you already created an FSx for ONTAP file system in the AWS Management Console, you can discover it using BlueXP.

About this task

A storage VM is created when you create a file system.

Before you begin

Before creating your FSx for ONTAP file system, you will need:

* The ARN of an IAM role that gives Workload Factory the permissions needed to create an FSx for ONTAP file system. Learn how to grant permissions to an AWS account.
* The region and VPC information for where you will create the FSx for ONTAP instance.

Create an FSx for ONTAP file system

You can create an FSx for ONTAP file system using *Quick create* or *Advanced create*. You can also use the following tools available in the Codebox: REST API, CloudFormation, and Terraform. Learn how to use Codebox for automation.

> ⓘ When using Terraform from Codebox, the code you copy or download hides `fsxadmin` and `vsadmin` passwords. You'll need to re-enter the passwords when you run the code.

Quick create

Quick create enables you to use a recommended best-practice configuration. You can change most settings after you create an FSx for ONTAP file system.

Steps

1. In BlueXP, add a new Working Environment, select **Amazon Web Services**, and select **Add new** for Amazon FSx for NetApp ONTAP.

2. On the Create FSx for ONTAP page, select **Quick create**.

   You can also load a saved configuration.

3. Under File system general configuration, provide the following:

   a. **AWS credentials**: Select to add AWS credentials or continue without credentials. Without credentials, you can copy and download the partially complete code from the Codebox. The code can be used like a template where you can fill in missing information (for example, credentials) or customize certain data before running the code.

   b. **File system name**: Enter a name for the file system.

   c. **Deployment topology**: Select a deployment topology.

      - Scale-up topology is where one file system is used for data distribution and can increase in size to accommodate data growth.

      - Scale-out topology is where more than one file system is used for data distribution.

   d. **HA pairs**: Enter the number of HA pairs.

      - For scale-up deployments, you can only have one HA pair.

      - For scale-out deployments, you can have between two and twelve HA pairs.

   e. **Deployment type**: Select a deployment type.

      - Single Availability Zone (Single-AZ) deployment: ensures availability by monitoring for hardware failures and automatically replacing infrastructure components in the event of a failure. Achieves high durability by automatically replicating your data within an Availability Zone to protect it from component failure.

      - Multiple Availability Zones (Multi-AZ) deployment: provides continuous availability to data even when an Availability Zone is unavailable. Multi-AZ file systems support all the availability and durability features of Single-AZ file systems. A Multi-AZ file system is designed for business-critical production workloads that require high availability to shared ONTAP file data and need storage with built-in replication across Availability Zones.

   f. **Tags**: Optionally, you can add up to 50 tags.

4. Under **Network & security**, in the **Region & VPC** field, select the region and VPC for the file system.

5. Under **File system details**, provide the following:

   a. **SSD storage capacity**: Enter the storage capacity and select the storage capacity unit.

   b. **ONTAP credentials**: Enter your ONTAP user name and password.

   c. **SMB/CIFS setup**: Optional. If you plan to use SMB/CIFS protocol to access volumes, you must configure the Active Directory for the storage VM during file system creation. Provide the following details for the storage VM that is created for this file system.

      i. **Active Directory domain to join**: Enter the fully qualified domain name (FQDN) for the Active Directory.

ii. **DNS IP addresses**: Enter up to three DNS IP addresses separated by commas.

iii. **SMB server NetBIOS name**: Enter the SMB server NetBIOS name of the Active Directory computer object to create for your storage VM. This is the name of this storage VM in the Active Directory.

iv. **User name**: Enter the user name of the service account in your existing Active Directory.

Do not include a domain prefix or suffix. For `EXAMPLE\ADMIN`, use `ADMIN`.

v. **Password**: Enter the password for the service account.

vi. **Organization unit**: Optionally, enter the name of the Organizational Unit where you intend to create the computer account for FSx for ONTAP. The OU is the distinguished path name of the organizational unit to which you want to join the file system.

vii. **Delegated administrators group**: Optionally, enter the name of the group in your Active Directory that can administer your file system.

If you are using AWS Managed Microsoft AD, you must specify a group such as AWS Delegated FSx Administrators, AWS Delegated Administrators, or a custom group with delegated permissions to the OU.

If you are joining to a self-managed AD, use the name of the group in your AD. The default group is `Domain Admins`.

6. Open the **Summary** to review the configuration that you defined. If needed, you can change any setting at this time before saving or creating the file system.

7. Save or create the file system.

Result

If you created the file system, BlueXP displays your FSx for ONTAP configuration on the Canvas. You can now add volumes to your FSx for ONTAP working environment using BlueXP workload factory.

Advanced create

With Advanced create, you set all of the configuration options, including availability, security, backups, and maintenance.

Steps

1. In BlueXP, add a new Working Environment, select **Amazon Web Services**, and select **Add new** for Amazon FSx for NetApp ONTAP.

2. On the Create FSx for ONTAP page, select **Advanced create**.

You can also load a saved configuration.

3. Under File system general configuration, provide the following:

   a. **AWS credentials**: Select to add AWS credentials in Workload Factory or continue without credentials.

   b. **File system name**: Enter a name for the file system.

   c. **Deployment topology**: Select a deployment topology.

   - Scale-up topology is where one file system is used for data distribution and can increase in size to accommodate data growth.

   - Scale-out topology is where more than one file system is used for data distribution.

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   ▪ For scale-up deployments, you can only have one HA pair.

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   ▪ Multiple Availability Zones (Multi-AZ) deployment: provides continuous availability to data even when an Availability Zone is unavailable. Multi-AZ file systems support all the availability and durability features of Single-AZ file systems. A Multi-AZ file system is designed for business-critical production workloads that require high availability to shared ONTAP file data and need storage with built-in replication across Availability Zones.

f. **Tags**: Optionally, you can add up to 50 tags.

4. Under Network & security, provide the following:

   a. **Region & VPC**: Select the region and VPC for the file system.

   b. **Security group**: Create or use an existing security group.

   c. **Availability Zones**: Select availability zones and subnets.

      ▪ For Cluster configuration node 1: Select an availability zone and subnet.

      ▪ For Cluster configuration node 2: Select an availability zone and subnet.

   d. **VPC route tables**: Select the VPC route table to enable client access to volumes.

   e. **Endpoint IP address range**: Select **Floating IP address range outside your VPC** or **Enter an IP address range** and enter an IP address range.

   f. **Encryption**: Select the encryption key name from the dropdown.

5. Under File system details, provide the following:

   a. **SSD storage capacity**: Enter the storage capacity and select the storage capacity unit.

   b. **Provisioned IOPS**: Select **Automatic** or **User-provisioned**.

   c. **Throughput capacity per HA pair**: Select throughput capacity per HA pair.

   d. **ONTAP credentials**: Enter your ONTAP user name and password.

   e. **Storage VM Credentials**: Enter your user name. Password can be specific to this file system or you case use the same password entered for ONTAP credentials.

   f. **SMB/CIFS setup**: Optional. If you plan to use SMB/CIFS protocol to access volumes, you must configure the Active Directory for the storage VM during file system creation. Provide the following details for the storage VM that is created for this file system.

      i. **Active Directory domain to join**: Enter the fully qualified domain name (FQDN) for the Active Directory.

      ii. **DNS IP addresses**: Enter up to three DNS IP addresses separated by commas.

      iii. **SMB server NetBIOS name**: Enter the SMB server NetBIOS name of the Active Directory computer object to create for your storage VM. This is the name of this storage VM in the Active Directory.

      iv. **User name**: Enter the user name of the service account in your existing Active Directory.

Do not include a domain prefix or suffix. For `EXAMPLE\ADMIN`, use `ADMIN`.

     v. **Password**: Enter the password for the service account.

    vi. **Organization unit**: Optionally, enter the name of the Organizational Unit where you intend to create the computer account for FSx for ONTAP. The OU is the distinguished path name of the organizational unit to which you want to join the file system.

   vii. **Delegated administrators group**: Optionally, enter the name of the group in your Active Directory that can administer your file system.

If you are using AWS Managed Microsoft AD, you must specify a group such as AWS Delegated FSx Administrators, AWS Delegated Administrators, or a custom group with delegated permissions to the OU.

If you are joining to a self-managed AD, use the name of the group in your AD. The default group is `Domain Admins`.

6. Under Backup and maintenance, provide the following:

   a. **FSx for ONTAP Backup**: Daily automatic backups are enabled by default. Disable if desired.

     i. **Automatic backup retention period**: Enter the number of days to retain automatic backups.

    ii. **Daily automatic backup window**: Select either **No preference** (a daily backup start time is selected for you) or **Select start time for daily backups** and specify a start time.

    iii. **Weekly maintenance window**: Select either **No preference** (a weekly maintenance window start time is selected for you) or **Select start time for 30-minute weekly maintenance window** and specify a start time.

7. Save or create the file system.

Result

If you created the file system, BlueXP displays your FSx for ONTAP configuration on the Canvas. You can now add volumes to your FSx for ONTAP working environment using BlueXP workload factory.

Discover an existing FSx for ONTAP file system

If you previously provided your AWS credentials to BlueXP, **My estate** can automatically discover and suggest FSx for ONTAP file systems to add and manage using BlueXP. You can also review available data services.

About this task

You can discover FSx for ONTAP file systems when you Create an FSx for ONTAP working environment or by using the **My estate** page.

Discover via adding a working environment

Steps

1. In BlueXP, add a new Working Environment, select **Amazon Web Services**, and select **Discover Existing** for Amazon FSx for NetApp ONTAP.

2. Select the credentials and region to display existing file systems.

3. Select one or more file systems and select **Discover** to add them to the Canvas.

Discover by using the My estate page

Steps

1. In BlueXP, select the **My estate** tab.

2. The count of discovered FSx for ONTAP file systems displays. Select **Discover**.
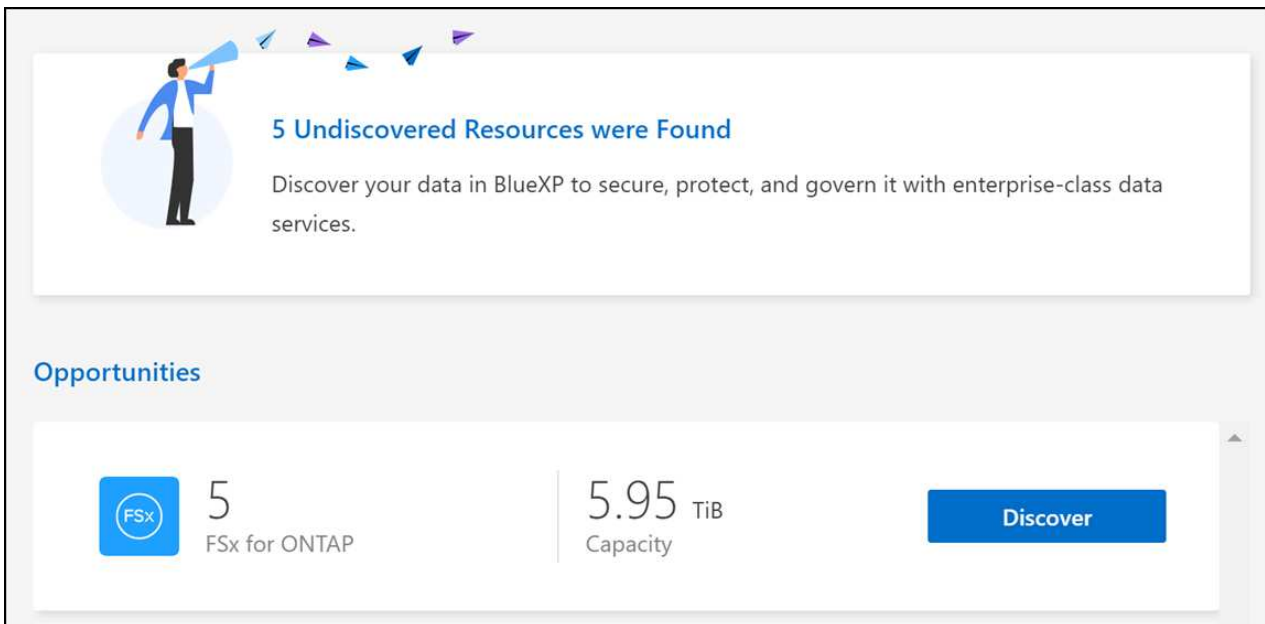
3. Select one or more file systems and select **Discover** to add them to the Canvas.

> ⓘ
> - If you select an un-named cluster, you will receive a prompt to enter a name for the cluster.
> - If you select a cluster that doesn't have the credentials required to allow BlueXP to manage the FSx for ONTAP file system, you'll receive a prompt to select credentials with the required permissions.

Result

BlueXP displays your discovered FSx for ONTAP file system on the Canvas. You can now add volumes to your FSx for ONTAP working environment and manage your FSx for ONTAP file system via Storage in BlueXP workloads.

myfsxenvironment
FSx for ONTAP

0
Volumes

0 B
Capacity

aws

Manage an FSx for ONTAP file system

After you create or discover an FSx for ONTAP working environment in BlueXP, you can manage the file system by creating volumes, managing storage VMs, protecting data, and administering the file system. BlueXP also enables you to use data services that provide capabilities like backup and recovery, data classification, data synchronization, and more.

Manage a file system using BlueXP workload factory

When you open an FSx for ONTAP working environment from the BlueXP canvas, you're brought to BlueXP workload factory. Workload factory is an intelligent optimization and automation service that uses industry best practices to design, set up, and operate key workloads using Amazon FSx for NetApp ONTAP.

Learn how to manage a file system using BlueXP workload factory

Manage a file system using ONTAP System Manager

You can manage an FSx for ONTAP file system directly from BlueXP by using the ONTAP System Manager interface. A Connector is required to use System Manager.
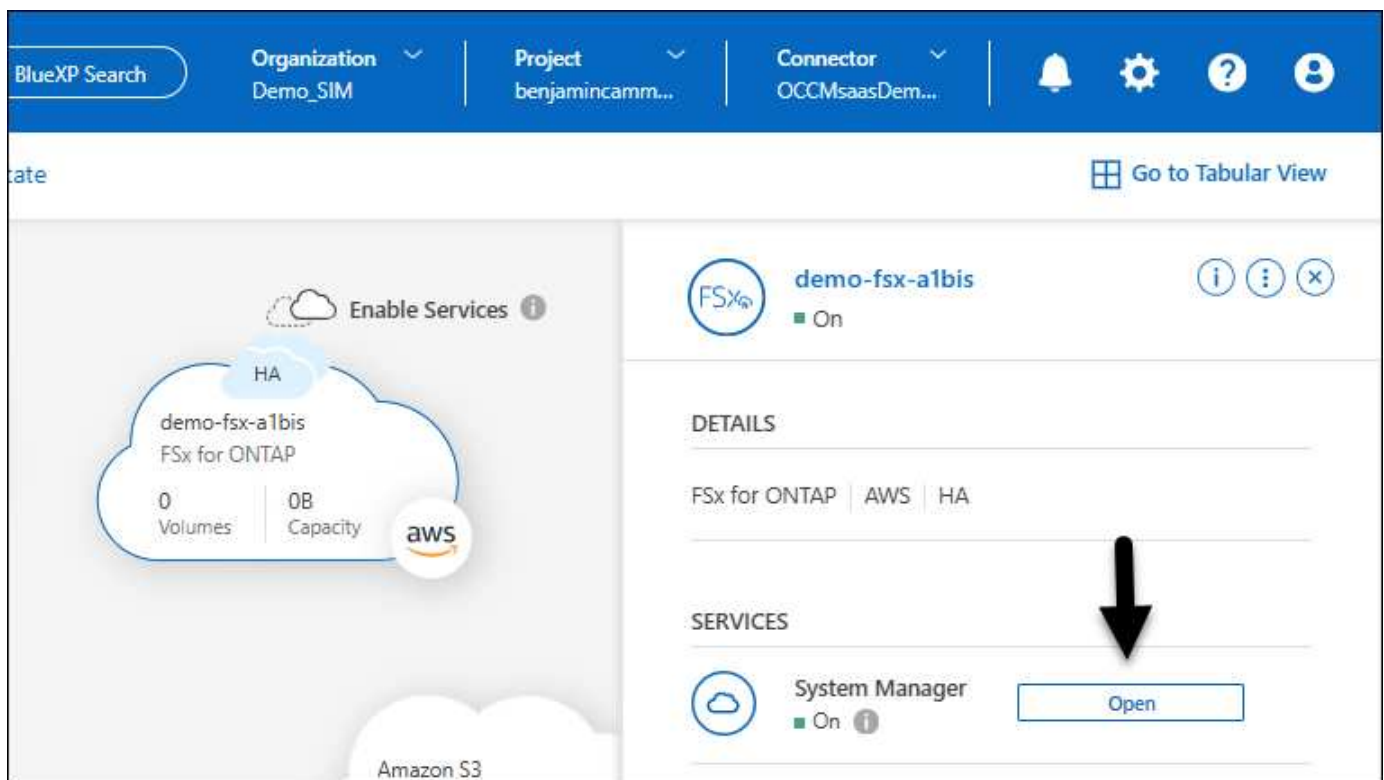
Use BlueXP data services with a file system

Use BlueXP data services with your FSx for ONTAP file systems to back up and recover your data, transfer and synchronize data, scan and classify your data, replicate data, and speed up access or offload traffic.

Back up and recover your data

The BlueXP backup and recovery service provides efficient, secure, and cost-effective data protection for NetApp ONTAP data, databases, and virtual machines, both on-premises and in the cloud.

Get started with BlueXP backup and recovery

Transfer and synchronize data

BlueXP copy and sync is a cloud replication and synchronization service for transferring NAS data between on-premises and cloud object stores.

Get started with BlueXP copy and sync

Scan and classify your data

BlueXP classification enables you to scan and classify data across your organization's hybrid multicloud.

Get started with BlueXP classification

Replicate data

BlueXP replication enables you to replicate data between ONTAP storage systems to support backup and disaster recovery to the cloud or between clouds.

Get started with BlueXP replication

Speed up access or offload traffic

BlueXP volume caching provides a persistent, writable volume in a remote place. You can use BlueXP volume caching to speed up access to data or to offload traffic from heavily accessed volumes.

Get started with BlueXP volume caching

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 serial number (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 909201xxxxxxxxx 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 BlueXP for NetApp support

To register for support and activate support entitlement, one user in your BlueXP organization (or 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**.
2. 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 BlueXP organization is registered for support.
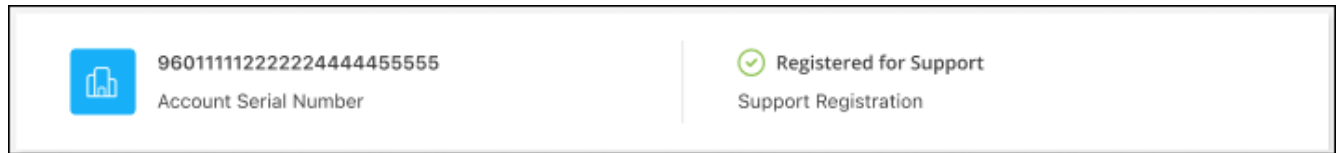
   Note that other BlueXP users will not see this same support registration status if they have not associated a NetApp Support Site account with their BlueXP login. However, that doesn't mean that your BlueXP organization is not registered for support. As long as one user in the organization has followed these steps, then your organization 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**.
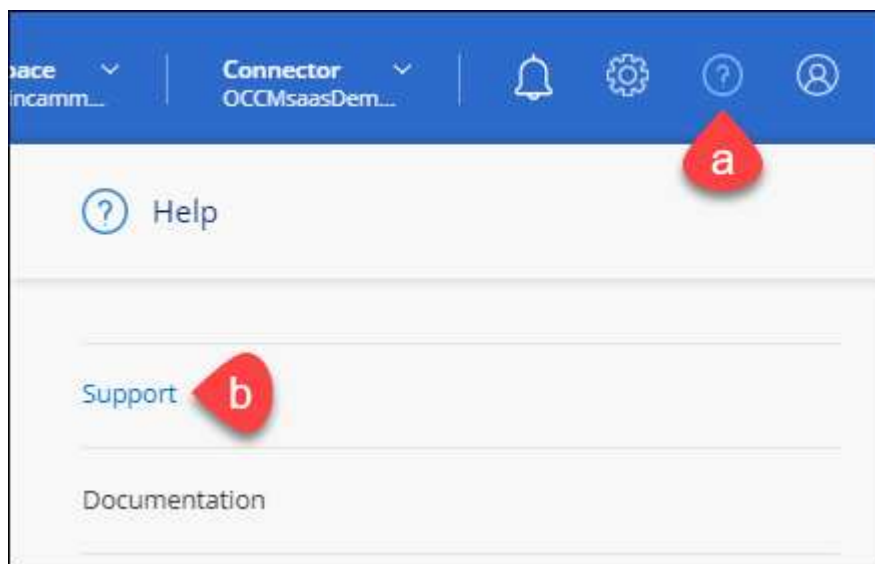
2. Locate your account ID serial number from the Support Registration page.
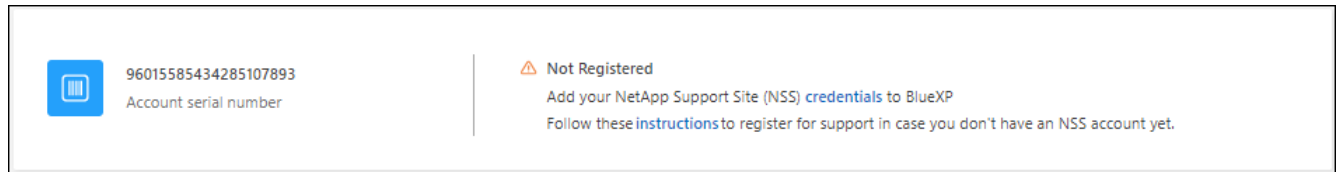
3. Navigate to NetApp's support registration site and select **I am not a registered NetApp Customer**.

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 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 organization 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 organization is different than the NSS account that is associated with a BlueXP user login.

These NSS credentials are associated with your specific BlueXP organization ID. Users who belong to the BlueXP organization 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**.
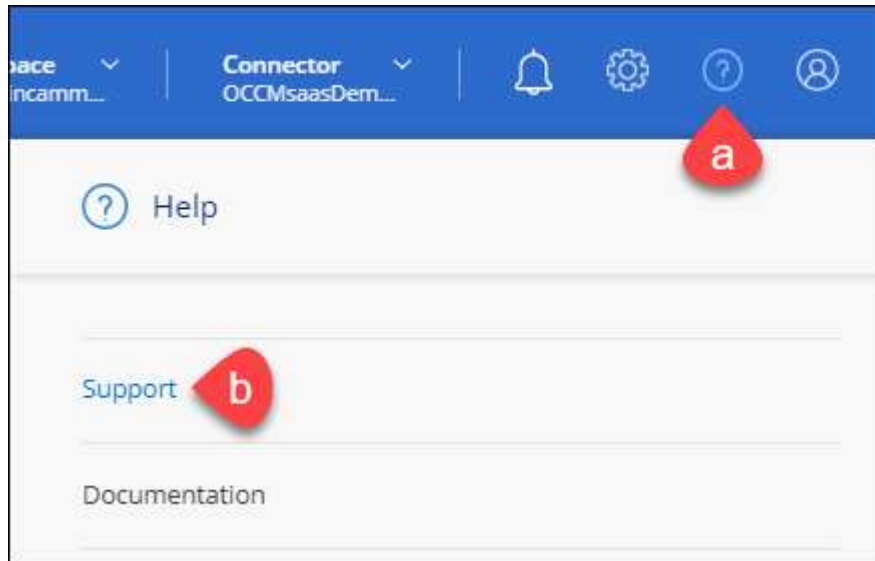
2. Select **NSS Management > Add NSS Account**.

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 organization (or account), project (or 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

1. In BlueXP, select **Help > Support**.
2. 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.
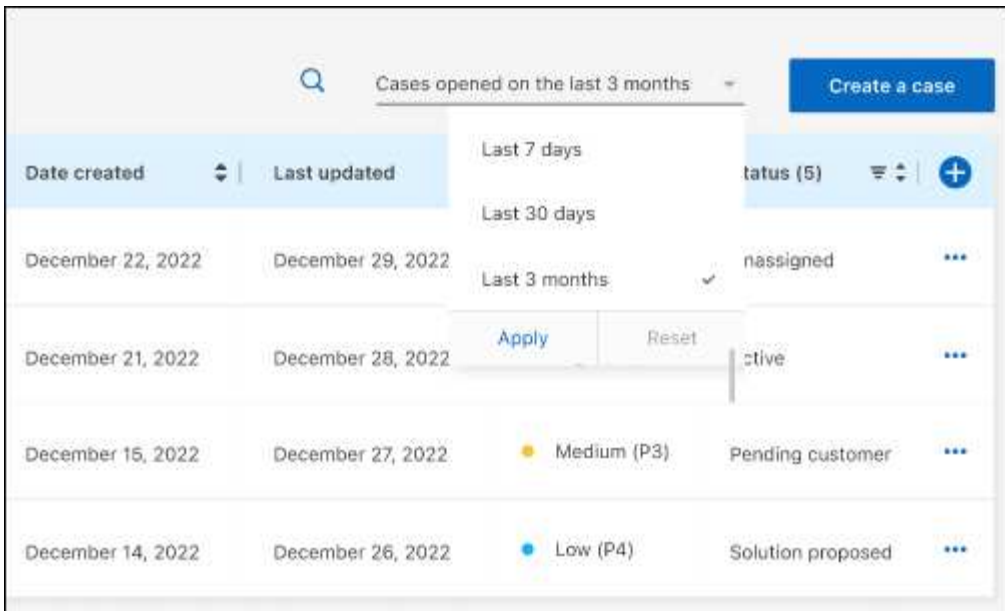
◦ Filter the contents of the columns.
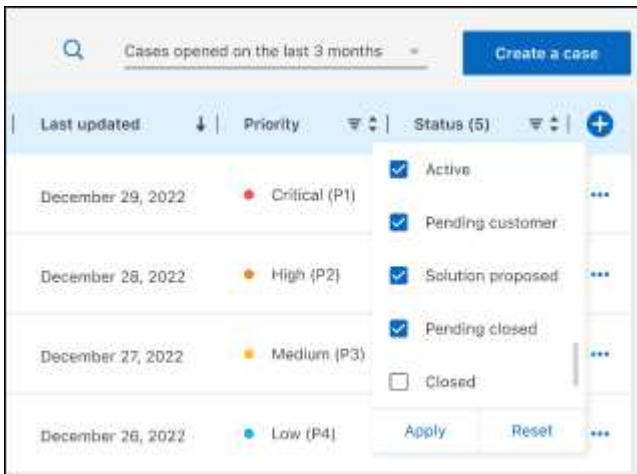
◦
Change the columns that appear in the table by selecting ⊕ and then choosing the columns that you'd like to display.
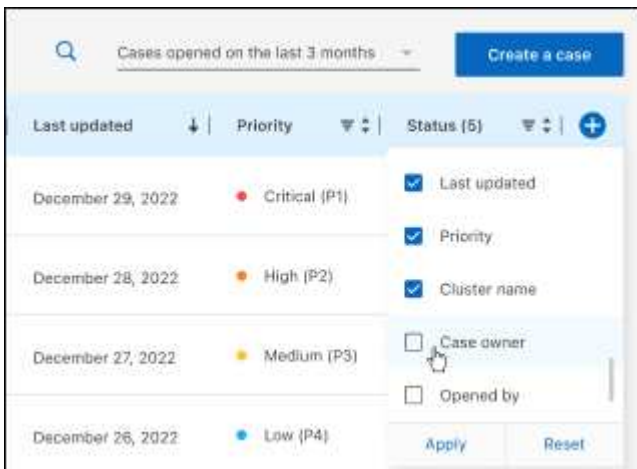
4. Manage an existing case by selecting ••• and selecting one of the available options:

   ◦ **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**.
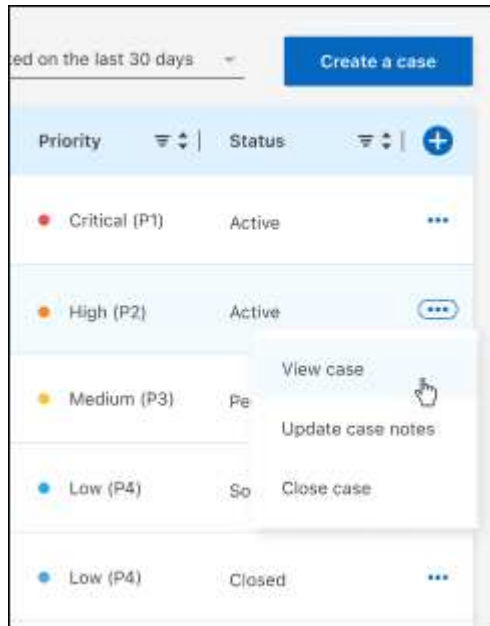
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