



Get started

BlueXP disaster recovery

NetApp
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Get started

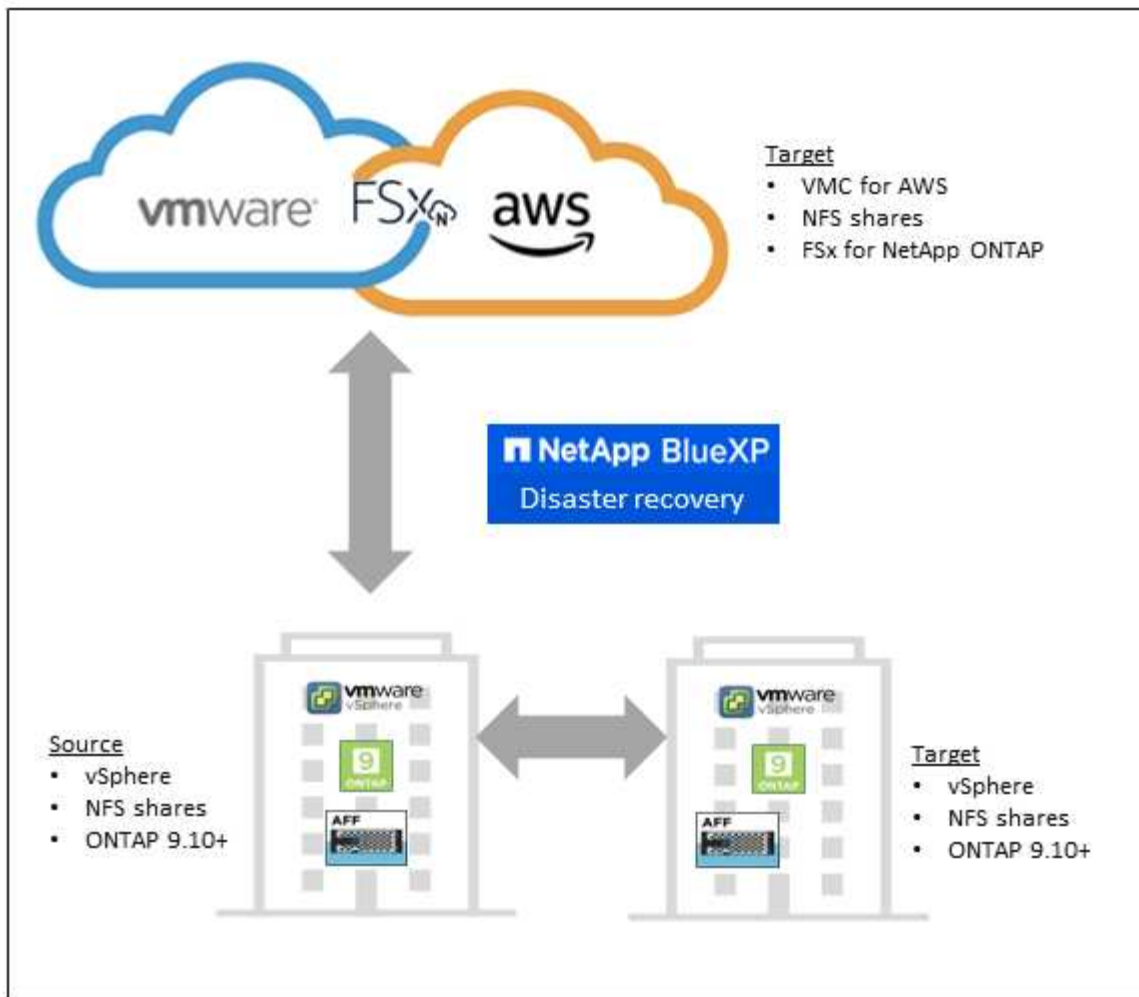
Learn about BlueXP disaster recovery for VMware

Disaster recovery to the cloud is a resilient and cost-effective way of protecting workloads against site outages and data corruption events. With BlueXP disaster recovery for VMware, you can replicate your on-premises VMware workloads running ONTAP storage to a VMware software-defined data center in a public cloud using NetApp cloud storage or to another on-premises VMware environment with ONTAP storage as a disaster recovery site.

BlueXP disaster recovery is a cloud-based disaster recovery service that automates disaster recovery workflows. Initially, with the BlueXP disaster recovery service you can protect your on-premises, NFS-based VMware workloads running NetApp storage to one of the following:

- VMware Cloud (VMC) on AWS with Amazon FSx for NetApp ONTAP or
- Another on-premises, NFS-based VMware environment with ONTAP storage

BlueXP disaster recovery uses ONTAP SnapMirror technology as the replication transport to the disaster recovery site. This enables industry-best storage efficiency (compression and deduplication) on primary and secondary sites.



Benefits of using BlueXP disaster recovery for VMware

BlueXP disaster recovery offers the following benefits:

- Simplified user experience for vCenter discovery and recovery of applications with multiple point-in-time recovery operations
- Lower total cost of ownership with reduced cost of operations and ability to create and adjust disaster recovery plans with minimal resources
- Continuous disaster recovery readiness with virtual failover testing that does not disrupt operations
- Faster time to value with dynamic changes in your IT environment and ability to address it in your disaster recovery plans

What you can do with BlueXP disaster recovery for VMware

BlueXP disaster recovery provides you with full use of several NetApp technologies to accomplish the following goals:

- Replicate VMware apps on your on-premises production site to a disaster recovery remote site in the cloud or on-premises using SnapMirror replication.
- Migrate VMware workloads from your original site to another site.
- In case of disaster, fail over your primary site on demand to the disaster recovery site, which can be

VMware Cloud on AWS with FSx for NetApp ONTAP or an on-premises VMware environment with ONTAP.

- After the disaster has been resolved, fail back on demand from the disaster recovery site to the primary site.



Configuration of vSphere server is done outside of BlueXP disaster recovery in vSphere Server.

Cost

NetApp doesn't charge you for using the trial version of BlueXP disaster recovery.

The full version of BlueXP disaster recovery service can be used with a NetApp license.

Licensing

You can use the following license types:

- Sign up for a 90-day free trial.
- Bring your own license (BYOL), which is a NetApp License File (NLF) that you obtain from your NetApp Sales Rep. You can use the license serial number to get the BYOL activated in BlueXP digital wallet.

Licenses for all BlueXP services are managed by the BlueXP digital wallet service. After you set up your BYOL, you can see an active license for the service in the BlueXP digital wallet.



BlueXP disaster recovery charges are based on provisioned capacity of datastores on the source site when there is at least one VM that has a replication plan. Capacity for a failed over datastore is not included in the capacity allowance. For a BYOL, if the data exceeds the allowed capacity, operations in the service are limited until you obtain an additional capacity license or upgrade the license in BlueXP digital wallet.

For details about setting up licensing for BlueXP disaster recovery, refer to [Set up BlueXP disaster recovery licensing](#).

90-day free trial

You can try out BlueXP disaster recovery by using a 90-day free trial.

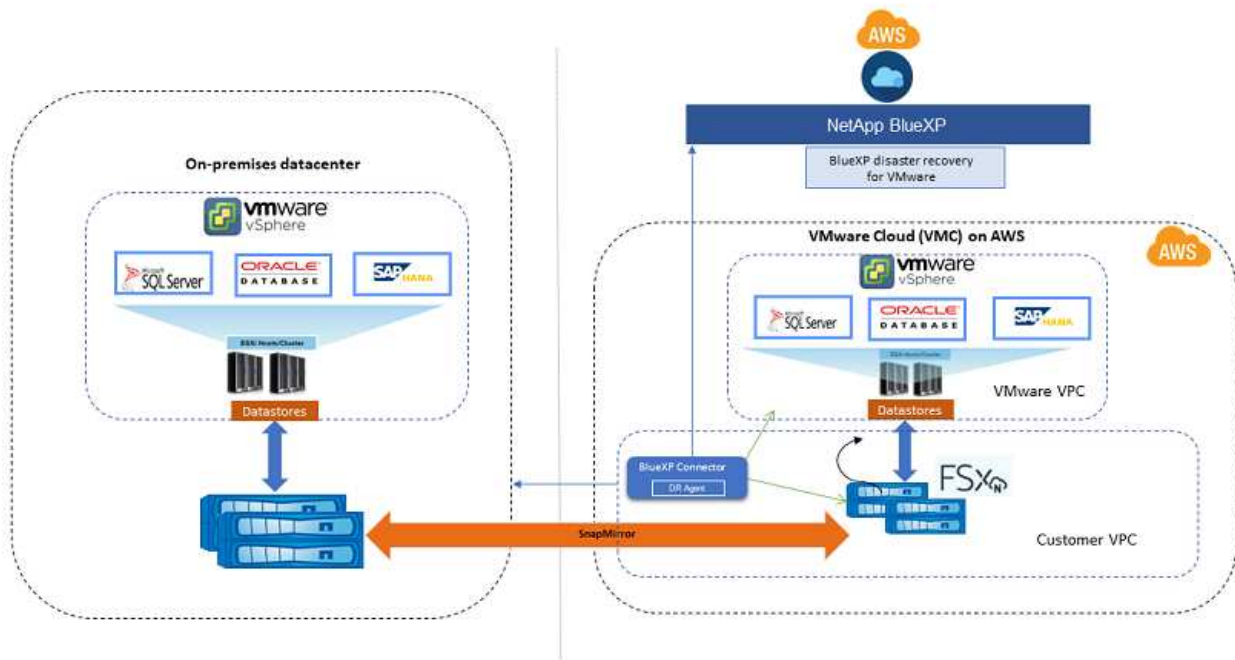
To continue after the 90-day trial, you'll need to purchase a BYOL license from NetApp.

You can purchase a license at any time and you will not be charged until the 90-day trial ends.

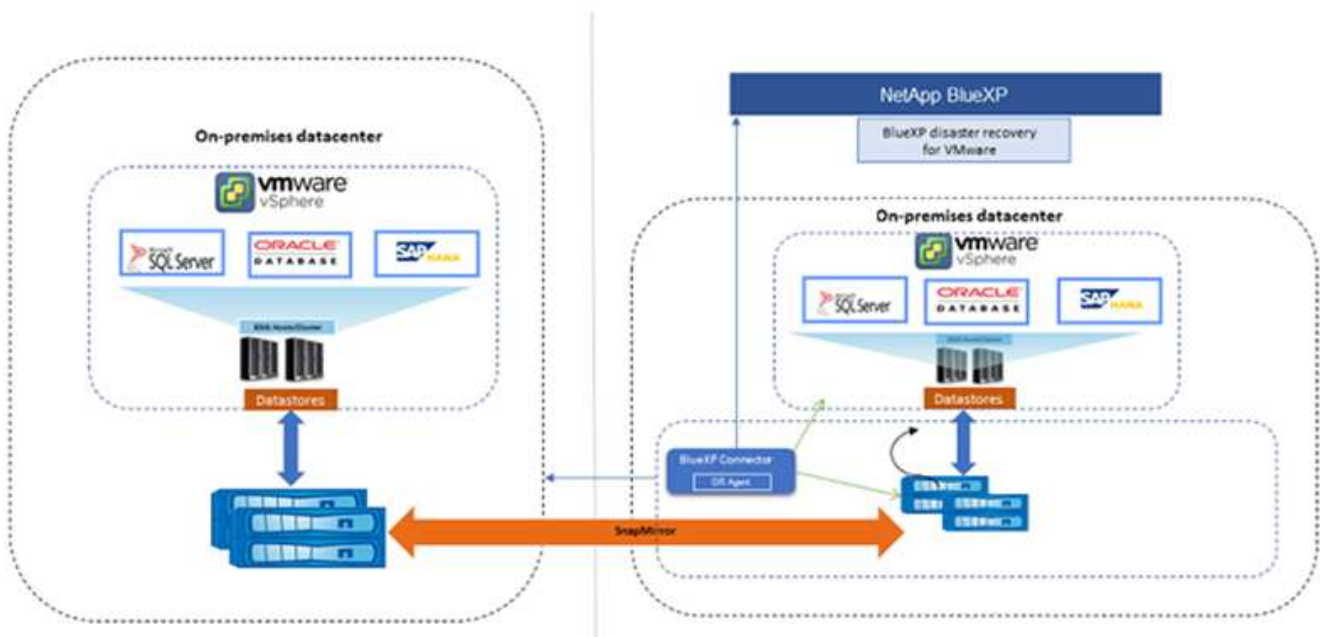
How BlueXP disaster recovery works

BlueXP disaster recovery can recover workloads replicated from an on-premises site to Amazon FSx for ONTAP or to another on-premises site. This service automates the recovery from the SnapMirror level, through virtual machine registration to Virtual Machine Cloud (VMC), and to network mappings directly on the VMware network virtualization and security platform, NSX-T. This feature is included with all Virtual Machine Cloud environments.

BlueXP disaster recovery uses ONTAP SnapMirror technology, which provides highly efficient replication and preserves the ONTAP incremental-forever Snapshot efficiencies. SnapMirror replication ensures that application-consistent Snapshot copies are always in sync and the data is usable immediately after a failover.



The following diagram shows the architecture of on-premises to on-premises disaster recovery plans.



When there is a disaster, this service helps you recover virtual machines in the other on-premises VMware environment or VMC by breaking the SnapMirror relationships and making the destination site active.

- The service also lets you fail back virtual machines to the original source location.
- You can test the disaster recovery failover process without disrupting the original virtual machines. The test recovers virtual machines to an isolated network by creating a FlexClone of the volume.
- For the failover or test failover process, you can choose the latest (default) or selected Snapshot from

which to recover your virtual machine.

BlueXP disaster recovery prerequisites

Get started by verifying the readiness of your operational environment, login, network access, and web browser.

To use BlueXP disaster recovery, you should ensure that your environment meets the following requirements:

- On-premises VMware working environment with NetApp storage
- On AWS:
 - An Amazon FSx for NetApp ONTAP file system. Refer to [Amazon FSx for ONTAP documentation on how to get started](#).
 - A VMware account with a software-defined data center (SDDC) on AWS, also referred to as Virtual Machines Cloud. In the VMware Cloud Console, use the service roles of Administrator and NSX Cloud Administrator. Also use the organization owner for the Organization role. Refer to [Virtual Machines Cloud documentation](#).
 - Link the SDDC with Amazon FSx for NetApp ONTAP. Refer to [VMware Cloud on AWS integration with Amazon FSx for NetApp ONTAP](#).
- In BlueXP:
 - Amazon FSx for ONTAP and AWS credentials added to the BlueXP working environment.
 - The BlueXP Connector needs to be set up in BlueXP. The on-premises and cloud Connector should have connectivity to both the on-premises and VMware Cloud (VMC) vCenter with ESXis. This enables the backup, failover, failback and migration features to work properly with the needed networking and script features.

The BlueXP Connector requires credentials for both the source and target vCenter servers. Refer to the [BlueXP Quick start](#) and [BlueXP networking information](#).

- To ensure that application-consistency processes are successful, ensure the following prerequisites are met:
 - Ensure that VMware tools (or Open VM tools) are running on the VMs that will be protected.
 - For Windows VMs running SQL or Oracle or both, the databases should have their VSS Writers enabled and the databases should be in a stable state.
 - Oracle databases that are running on a Linux operating system should have the operating system user authentication enabled for the Oracle database SYSDBA role.

Quick start for BlueXP disaster recovery

Here's an overview of the steps needed to get started with BlueXP disaster recovery. The links within each step take you to a page that provides more details.



Review prerequisites

[Ensure your environment meets these requirements.](#)

2

Set up the disaster recovery service

[Complete steps to set up the service.](#)

[Complete steps to set up licensing.](#)

3

What's next?

After you set up the service, here's what you might do next.

- [Add vCenter sites.](#)
- [Create a disaster recovery plan.](#)
- [Replicate applications to another site.](#)
- [Fail over applications to a remote site.](#)
- [Fail back applications to the original source site.](#)
- [Manage sites, plans, datastores, and virtual machines information.](#)
- [Monitor disaster recovery operations.](#)

Access BlueXP disaster recovery

You use NetApp BlueXP to log in to the BlueXP disaster recovery service.

To log in to BlueXP, you can use your NetApp Support Site credentials or you can sign up for a NetApp cloud login using your email and a password. [Learn more about logging in.](#)

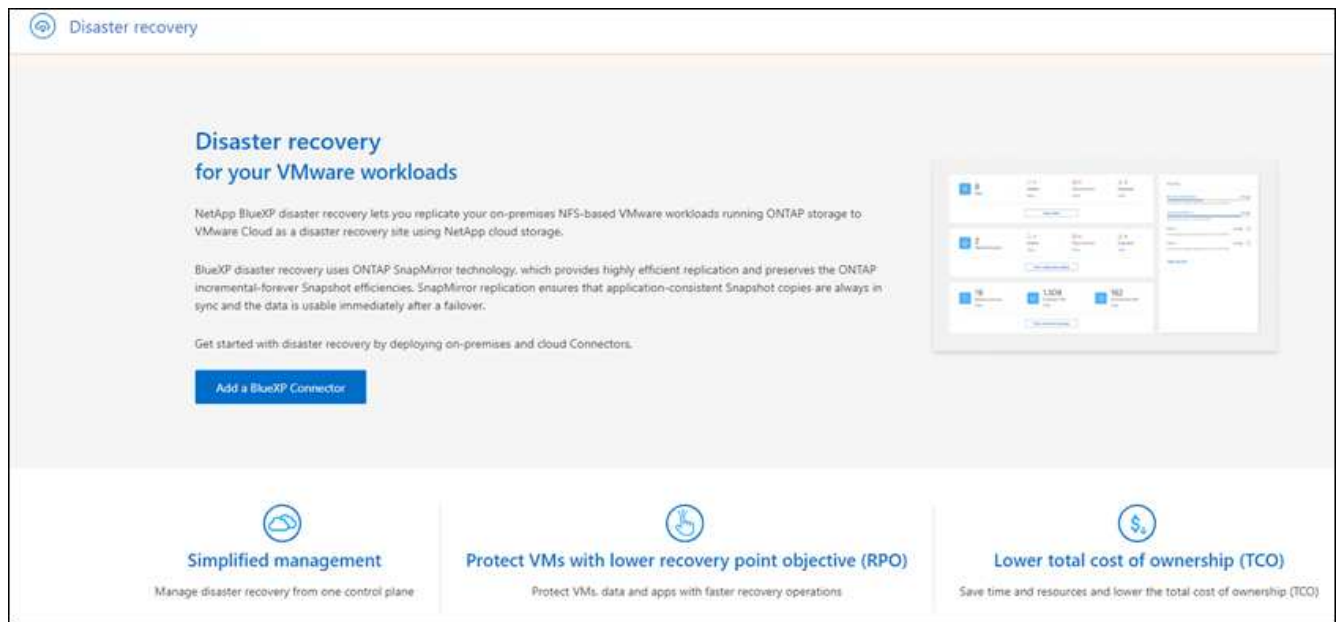
Steps

1. Open a web browser and go to the [BlueXP console](#).

The NetApp BlueXP login page appears.

2. Log in to BlueXP.
3. From the BlueXP left navigation, select **Protection > Disaster recovery**.

If this is your first time logging in to this service, the landing page appears.

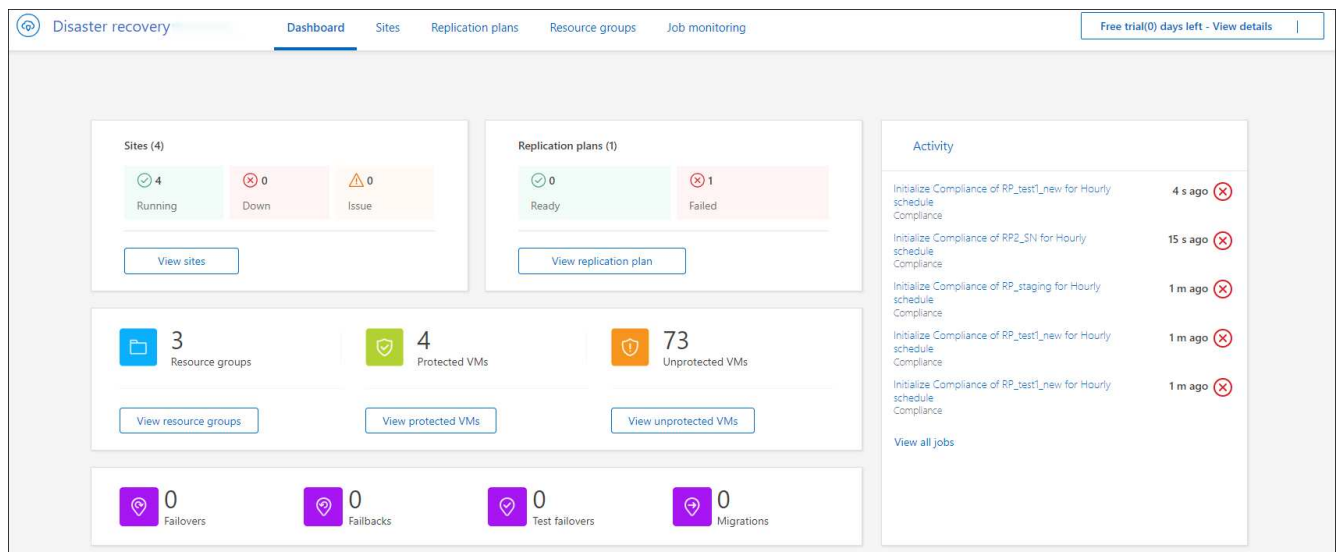


Otherwise, the BlueXP disaster recovery Dashboard appears.

- If you don't have a BlueXP Connector or it's not the one for this service, you might need to contact NetApp Support or follow messages to sign up for this service.

To add a Connector, refer to [Learn about Connectors](#).

- If you are new to BlueXP and haven't used any Connector, when you select "Disaster recovery," a message appears about signing up. Go ahead and submit the form. NetApp will contact you about your request.
- If you are a BlueXP user with an existing Connector, when you select "Disaster recovery," a message appears about signing up.
- If you are already using the service, when you select "Disaster recovery," you can proceed.



Set up BlueXP disaster recovery

To use BlueXP disaster recovery, perform a few steps to set it up both in Amazon Web Services (AWS) and in BlueXP.



Review [prerequisites](#) to ensure that your environment is ready.

Set up AWS

In AWS, you'll need to do the following steps:

- Deploy and configure VMware Cloud on AWS.
- Create an Amazon FSx for ONTAP file system. Provision and configure FSx for ONTAP.
- Use a VMware account and provision the software-defined data center (SDDC). Ensure that the SDDC has connectivity with FSx for ONTAP.

Deploy VMware Cloud

[VMware Cloud on AWS](#) provides a cloud-native experience for VMware-based workloads in the AWS ecosystem. Each VMware software-defined data center (SDDC) runs in an Amazon Virtual Private Cloud (VPC) and provides a full VMware stack (including vCenter Server), NSX-T software-defined networking, vSAN software-defined storage, and one or more ESXi hosts that provide compute and storage resources to the workloads.

To configure a VMC environment on AWS, follow the steps at this [link](#). A pilot-light cluster can also be used for disaster recovery purposes.

Configure Amazon FSx for NetApp ONTAP

Amazon FSx for NetApp ONTAP is a fully managed service that provides highly reliable, scalable, high-performing, and feature-rich file storage built on the popular NetApp ONTAP file system. Follow the steps at this [link](#) to provision and configure FSx for NetApp ONTAP.

Set up BlueXP disaster recovery

The next step is to set up disaster recovery in BlueXP.

- Create a Connector in BlueXP.
- Deploy and configure SnapMirror for Amazon FSx for NetApp ONTAP.
- Add the on-premises ONTAP storage working environment to BlueXP. This is the source ONTAP cluster.
- Add a BlueXP account, add FSxN to the working environment, and add AWS credentials for FSx for ONTAP.

Create a Connector in BlueXP

You need to reach out to your NetApp Sales Rep to try out this service. Then, when you use the BlueXP Connector, it will include the appropriate capabilities for the disaster recovery service.

To create a Connector in BlueXP before using the service, refer to the BlueXP documentation that describes [how to create a connector](#).

Use the BlueXP on-premises Connector or the BlueXP AWS Connector, which has access to the source on-premises vCenter and the destination on-premises vCenter.

Configure SnapMirror for Amazon FSx for NetApp ONTAP

The next step is to set up disaster recovery in BlueXP.

1. In BlueXP, add an account. Refer to the [BlueXP documentation on how to add an account](#).
2. Add Amazon FSx for NetApp ONTAP to the working environment. Ensure that the SnapMirror relationship with the ONTAP cluster is in place and that it has a destination of FSx for NetApp ONTAP. Refer to [how to set up an FSx for ONTAP working environment](#).
3. In BlueXP, deploy SnapMirror to FSx for NetApp ONTAP.
4. In BlueXP, discover the provisioned FSx for NetApp ONTAP on an AWS instance and replicate the specified datastore volumes from an on-premises environment to FSx for NetApp ONTAP with the appropriate frequency and NetApp Snapshot copy retention.

Set up licensing

With BlueXP disaster recovery, you can sign up for a 90-day free trial.

You can Bring Your Own License (BYOL), which is a NetApp License File (NLF).

For details about setting up licensing for BlueXP disaster recovery, refer to [Set up BlueXP disaster recovery licensing](#).

Set up licensing for BlueXP disaster recovery

With BlueXP disaster recovery, you can use the service in a free trial or bring your own license.

You can use the following license types:

- Sign up for a 90-day free trial.
- Bring your own license (BYOL), which is a NetApp License File (NLF) that you obtain from your NetApp Sales Rep. You can use the license serial number to get the BYOL activated in BlueXP digital wallet.



BlueXP disaster recovery charges are based on provisioned capacity of datastores on the source site when there is at least one VM that has a replication plan. Capacity for a failed over datastore is not included in the capacity allowance. For a BYOL, if the data exceeds the allowed capacity, operations in the service are limited until you obtain an additional capacity license or upgrade the license in BlueXP digital wallet.

After you set up your BYOL, you can see the license in the BlueXP digital wallet **Data Service Licenses** tab.

After the free trial ends or the license expires, you can still do the following in the service:

- View any resource, such as a workload or replication plan.
- Delete any resource, such as a workload or replication plan.
- Run all scheduled operations that were created during the trial period or under the license.

Try it out using a 90-day free trial

You can try BlueXP disaster recovery out by using a 90-day free trial.



No capacity limits are enforced during the trial.

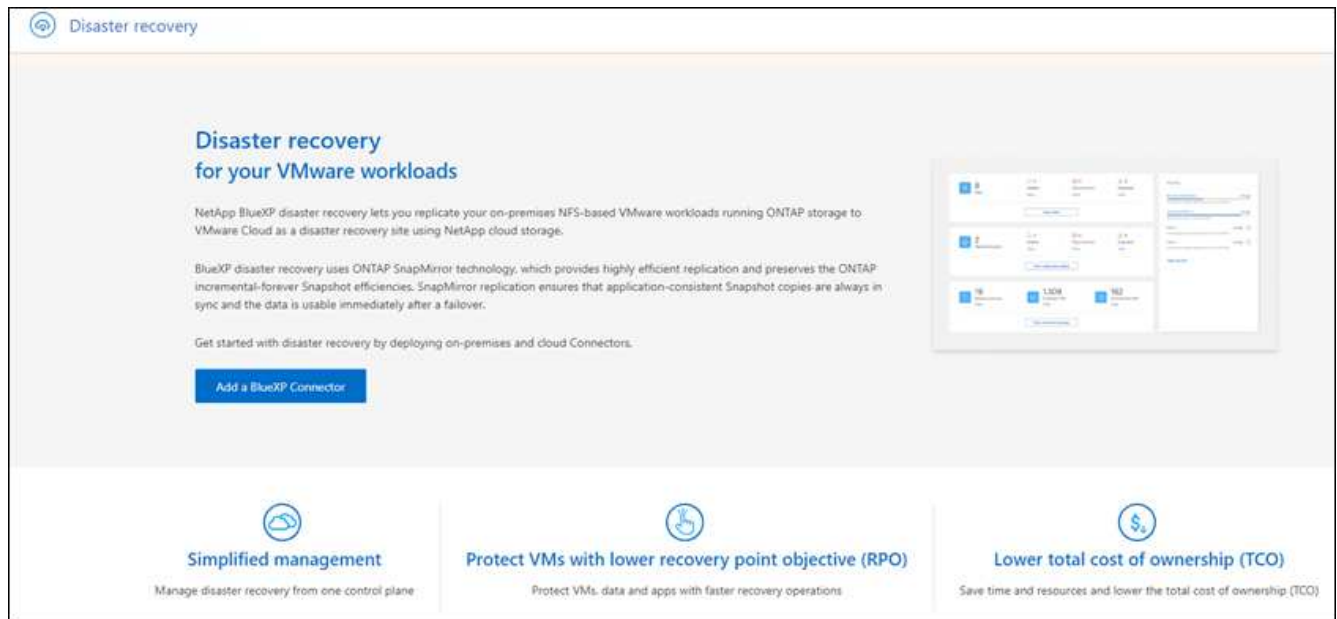
You can get a license at any time and you will not be charged until the 90-day trial ends. To continue after the 90-day trial, you'll need to purchase a BYOL license.

During the trial, you have full functionality.

Steps

1. Access the [BlueXP console](#).
2. Log in to BlueXP.
3. From the BlueXP left navigation, select **Protection > Disaster recovery**.

If this is your first time logging in to this service, the landing page appears.



4. If you haven't already added a Connector for other services, add one.

To add a Connector, refer to [Learn about Connectors](#).

5. After you set up a Connector, in the BlueXP disaster recovery landing page, the button to add a Connector changes to a button for starting a free trial. Select **Start free trial**.
6. Review the free trial information and select **Let's go**.

After the trial ends, purchase a BYOL license through NetApp


After the trial ends, you can purchase a license through your NetApp Sales Rep.


Steps

1. Contact your NetApp Sales Rep to purchase a license.
2. After you obtain the license, return to BlueXP disaster recovery. Select the **View payment methods** option



in the upper right. Or, in the message that the free trial is expiring, select **Subscribe or purchase a license**.

Payment methods


 Free trial active for the account, 89 days left.

To continue using BlueXP disaster recovery, subscribe through a provider or purchase a license from NetApp. Your functionality will be limited after the trial period ends without a subscription or license.
[Learn more](#) 

A subscription or license will be associated with the BlueXP account, **BlueXPDRacc02**.

 NetApp License [NetApp support](#) 

Contact your NetApp sales representative to purchase a license or contact NetApp support. Then, add your license to BlueXP.
[Add license to BlueXP](#)

 Amazon Web Services **Coming soon**

Activate disaster recovery through the marketplace and pay at an hourly rate.

[Close](#)

3. Select **Add license to BlueXP**. You will be directed to BlueXP digital wallet.

Digital Wallet Cloud Volumes ONTAP **Data Services Licenses** Subscriptions Keystone On-Premises ONTAP

License And Capacity Distribution

Total Licenses: 0

Backup and recovery (0) 0 | 0 TiB

Disaster recovery (0) 0 | 0 TiB

Classification (0) 0 | 0 TiB

Tiering (0) 0 | 0 TiB

Service Licenses (0) **Add License**

- In BlueXP digital wallet, from the **Data Services Licenses** tab, select **Add license**.
- In the Add License page, enter the serial number and NetApp Support Site account information.

Add License

A license must be installed with an active subscription. The license enables you to use the Cloud Manager service for a certain period of time and for a maximum amount of space.

Enter Serial Number Upload License File

Serial Number

12345

NetApp Support Site Account

Add License Cancel

- Select **Add License**.

End the free trial

You can stop the free trial at any time or you can wait until it expires.

Steps

1. In BlueXP disaster recovery, at the top right, select **Free trial - View details**.
2. In the drop-down details, select **End free trial**.

End free trial

Are you sure that you want to end your free trial on your account BlueXPDRAcc02? We will delete your data 60 days after you end your trial. If you subscribe or purchase a license within 60 days, we will retain your data. You may also delete your data immediately when you end your trial.

This action is not reversible.

Type "end trial" to end your free trial.

End **Cancel**

3. If you want to delete all data, check **Delete all data when my trial ends**.

This will delete all schedules, replication plans, resource groups, vCenters, and sites. Audit data, operation logs, and jobs history are retained until the end of the life of the product.



If you end the free trial and not asked to delete data and you don't purchase a license or subscription, 60 days after the free trial ends, BlueXP disaster recovery deletes all of your data.

4. Type "end trial" in the text box.
5. Select **End**.

Bring your own license (BYOL)

If you bring your own license (BYOL), the set up includes purchasing the license, getting the NetApp License File (NLF), and adding the license to BlueXP digital wallet.

Purchase a BlueXP disaster recovery license

If you don't have a BlueXP disaster recovery license, contact us to purchase one.

1. Do one of the following:

- Contact NetApp Sales to purchase a license.
- Click the chat icon in the lower-right of BlueXP to request a license.

Obtain your BlueXP disaster recovery license file

After you've purchased your BlueXP disaster recovery license from your NetApp Sales Rep, you activate the license by entering the BlueXP disaster recovery serial number and NetApp Support Site (NSS) account information.

Before you begin

You'll need to have the following information before you start:

- BlueXP disaster recovery serial number

Locate this number from your Sales Order, or contact the account team for this information.

- BlueXP Account ID

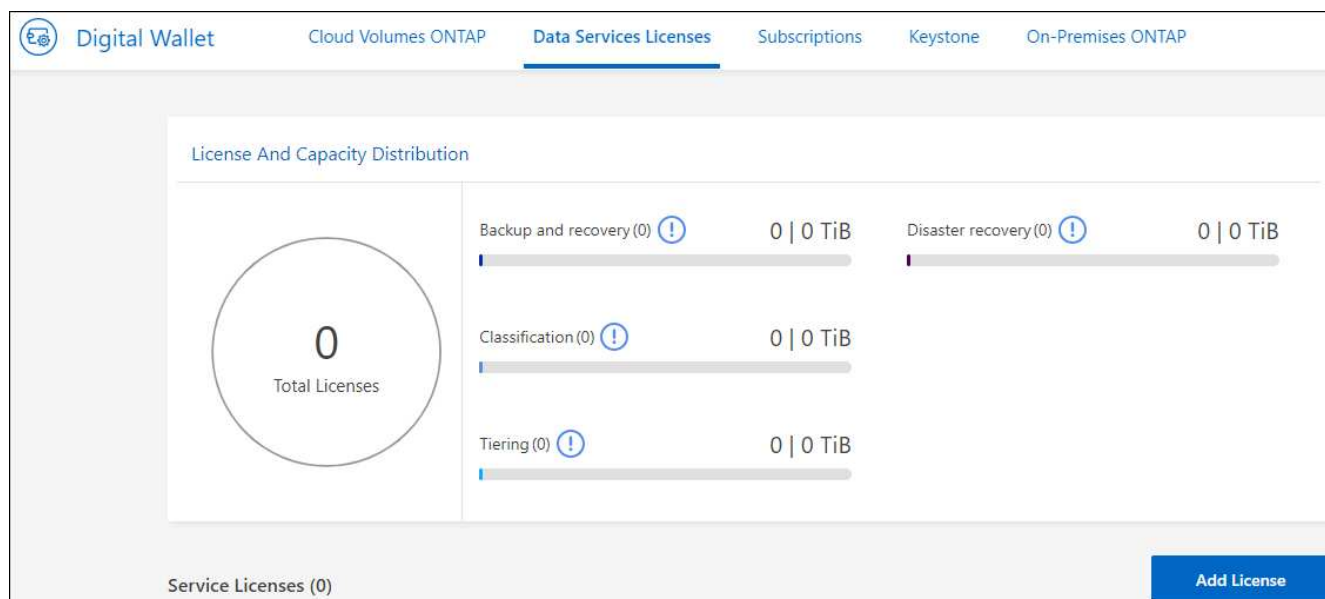
You can find your BlueXP Account ID by selecting the **Account** drop-down from the top of BlueXP, and then selecting **Manage Account** next to your account. Your Account ID is in the Overview tab. For private mode site without internet access, use **account-DARKSITE1**.

Add BlueXP disaster recovery license to BlueXP digital wallet

After you purchase a BlueXP disaster recovery license for your BlueXP account, you need to add the license to the BlueXP digital wallet.

Steps

1. From the BlueXP menu, select **Governance > Digital wallet > Data Services Licenses**.



2. Select **Add License**.

Add License

A license must be installed with an active subscription. The license enables you to use the Cloud Manager service for a certain period of time and for a maximum amount of space.

Enter Serial Number Upload License File

Serial Number

12345

NetApp Support Site Account

[Redacted]

Add License

Cancel

3. In the Add License page, enter the license information and select **Add License**:

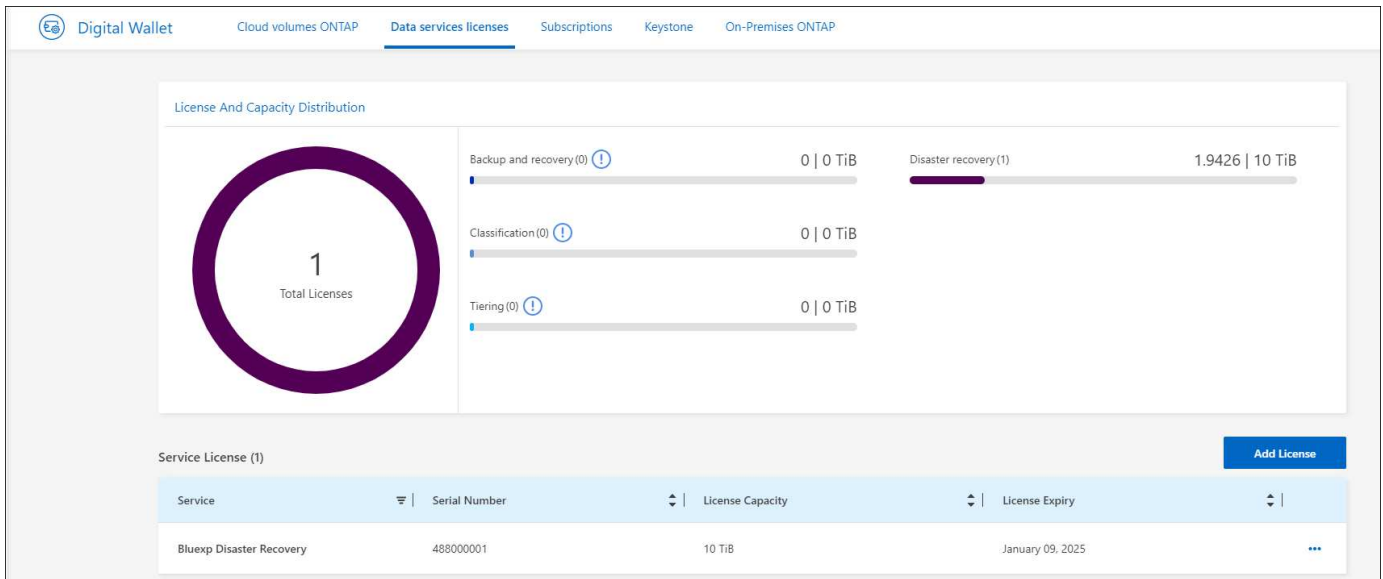
- If you have the BlueXP license serial number and know your NSS account, select the **Enter Serial Number** option and enter that information.

If your NetApp Support Site account isn't available from the drop-down list, [add the NSS account to BlueXP](#).

- If you have the BlueXP license file (required when installed in a dark site), select the **Upload License File** option and follow the prompts to attach the file.

Result

BlueXP digital wallet now shows Disaster recovery with a license.



Update your BlueXP license when it expires

If your licensed term is nearing the expiration date, or if your licensed capacity is reaching the limit, you'll be notified in the BlueXP disaster recovery UI. You can update your BlueXP disaster recovery license before it expires so that there is no interruption in your ability to access your scanned data.



This message also appears in BlueXP digital wallet and in [Notifications](#).

Steps

1. Select the chat icon in the lower-right of BlueXP to request an extension to your term or additional capacity to your license for the particular serial number. You can also send an email to request an update to your license.

After you pay for the license and it is registered with the NetApp Support Site, BlueXP automatically updates the license in the BlueXP digital wallet and the Data Services Licenses page will reflect the change in 5 to 10 minutes.

2. If BlueXP can't automatically update the license (for example, when installed in a dark site), then you'll need to manually upload the license file.
 - a. You can obtain the license file from the NetApp Support Site.
 - b. Access the BlueXP digital wallet.
 - c. Select the **Data Services Licenses** tab, select the **Actions ...** icon for the service serial number you are updating, and select **Update License**.

Frequently asked questions for BlueXP disaster recovery

This FAQ can help if you're just looking for a quick answer to a question.

What's the BlueXP disaster recovery URL?

For the URL, in a browser, enter: <https://console.bluexp.netapp.com/> to access the BlueXP console.

Do you need a license to use BlueXP disaster recovery?

A BlueXP disaster recovery license is required for complete access. However, you can try it out with the free trial.

For details about setting up licensing for BlueXP disaster recovery, refer to [Set up BlueXP disaster recovery licensing](#).

How do you access BlueXP Disaster recovery?

BlueXP disaster recovery does not require any enablement. The disaster recovery option automatically appears on the BlueXP left navigation.

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