NetApp

Get started

Astra

NetApp
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Get started

Set up Microsoft Azure

A few steps are required to prepare your Microsoft Azure subscription before you can manage Azure Kubernetes Service clusters with Astra.

Quick start for setting up Azure

Get started quickly by following these steps or scroll down to the remaining sections for full details.

① Review Astra requirements for Azure Kubernetes Service

Ensure that clusters are healthy and running Kubernetes version 1.17 or later, that worker nodes are online and running **Ubuntu**, and more. Learn more about this step.

② Register for Azure NetApp Files

Request access to the Azure NetApp Files service and then register the NetApp Resource Provider. Learn more about this step.

③ Create a NetApp account

In the Azure portal, go to Azure NetApp Files and create a NetApp account. Learn more about this step.

④ Set up capacity pools

Set up one or more capacity pools for your persistent volumes. Learn more about this step.

⑤ Delegate a subnet to Azure NetApp Files

Delegate a subnet to Azure NetApp Files so that Astra can create persistent volumes in that subnet. Learn more about this step.

⑥ Create an Azure service principal

Create an Azure service principal that has the Contributor role. Read step-by-step instructions.

AKS cluster requirements

A Kubernetes cluster must meet the following requirements so you can discover and manage it from Astra.

Kubernetes version

Clusters must be running Kubernetes version 1.17 or later.

Image type

The image type for each worker node must be Ubuntu.

Cluster state

Clusters must be running in a healthy state and have at least one online worker node with no worker nodes in a failed state.

Azure region

Clusters must reside in a region where Azure NetApp Files is available. View Azure products by region.

Subscription

Clusters must reside in a subscription where Azure NetApp Files is enabled. You'll choose a subscription when you register for Azure NetApp Files.

VNet

- Clusters must reside in a VNet that has direct access to an Azure NetApp Files delegated subnet. Learn how to set up a delegated subnet.

- If your Kubernetes clusters are in a VNet that's peered to the Azure NetApp Files delegated subnet that's in another VNet, then both sides of the peering connection must be online.

- Be aware that the default limit for the number of IPs used in a VNet (including immediately peered VNets) with Azure NetApp Files is 1,000. View Azure NetApp Files resource limits.

  If you're close to the limit, you have two options:

  ◦ When creating a new AKS cluster, specify a new network for the cluster. Once the new network is created, provision a new subnet and delegate the subnet to Azure NetApp Files.

  ◦ You can submit a request for a limit increase. Contact your NetApp representative if you need help.

Private networking

Private networking must not be enabled on a cluster.

External volume snapshot controller

Clusters must have a CSI volume snapshot controller installed. This controller is installed by default starting with K8s version 1.20, but you'll need to check on clusters running versions 1.17, 1.18, or 1.19. Learn more about an external snapshot controller for on-demand volume snapshots.

Register for Azure NetApp Files

Get access to Azure NetApp Files by submitting a waitlist request. After you're approved, you'll need to register the NetApp Resource Provider.

Steps

1. Submit a waitlist request to access Azure NetApp Files.

2. Wait for a confirmation email from the Azure NetApp Files team.

3. Follow Azure NetApp Files documentation to register the NetApp Resource Provider.

Create a NetApp account

After you've been granted access, create a NetApp account in Azure NetApp Files.

Step

1. [Follow Azure NetApp Files documentation to create a NetApp account from the Azure portal](#).

Set up a capacity pool

One or more capacity pools are required so that Astra can provision persistent volumes in a capacity pool. Astra doesn't create capacity pools for you.

Take the following into consideration as you set up capacity pools for your Kubernetes apps:

- A capacity pool can have an Ultra, Premium, or Standard service level. Each of these service levels are designed for different performance needs. Astra supports all three.

  You need to set up a capacity pool for each service level that you want to use with your Kubernetes clusters.

  [Learn more about service levels for Azure NetApp Files](#).

- Before you create a capacity pool for the apps that you intend to protect with Astra, choose the required performance and capacity for those apps.

  Provisioning the right amount of capacity ensures that users can create persistent volumes as they are needed. If capacity isn't available, then the persistent volumes can't be provisioned.

- An Azure NetApp Files capacity pool can use the manual or auto QoS type. Astra supports auto QoS capacity pools. Manual QoS capacity pools aren't supported.

Step

1. [Follow Azure NetApp Files documentation to set up an auto QoS capacity pool](#).

Delegate a subnet to Azure NetApp Files

You need to delegate a subnet to Azure NetApp Files so that Astra can create persistent volumes in that subnet. Note that Azure NetApp Files enables you to have only one delegated subnet in a VNet.

If you're using peered VNets, then both sides of the peering connection must be online: the VNet where your Kubernetes clusters reside and the VNet that has the Azure NetApp Files delegated subnet.

Step

1. [Follow the Azure NetApp Files documentation to delegate a subnet to Azure NetApp Files](#).

Create an Azure service principal

Astra requires a Azure service principal that is assigned the Contributor role. Astra uses this service principal to facilitate Kubernetes application data management on your behalf.

A service principal is an identity created specifically for use with applications, services, and tools. Assigning a role to the service principal restricts access to specific Azure resources.

Follow the steps below to create a service principal using the Azure CLI. You'll need to save the output in a

JSON file and provide it to Astra later on. [Refer to Azure documentation for more details about using the CLI](#).

The following steps assume that you have permission to create a service principal and that you have the Microsoft Azure SDK (az command) installed on your machine.

Requirements

- The service principal must use regular authentication. Certificates aren't supported.
- The service principal must be granted Contributor or Owner access to your Azure subscription.
- The Azure subscription must contain the AKS clusters and your Azure NetApp Files account.

Steps

1. Identify the subscription and tenant ID where your AKS clusters reside (these are the clusters that you want to manage in Astra).

   ```
   az configure --list-defaults
   az account list --output table
   ```

2. Create the service principal, assign the Contributor role, and specify the scope to the entire subscription where the clusters reside.

   ```
   az ad sp create-for-rbac --name http://sp-astra-service-principal --role
   contributor --scopes /subscriptions/SUBSCRIPTION-ID
   ```

3. Store the resulting Azure CLI output as a JSON file.

   You'll need to provide this file to Astra so that Astra can discover your AKS clusters and manage Kubernetes data management operations. [Learn about managing credentials in Astra](#).

4. Optional: Add the subscription ID to the JSON file so that Astra automatically populates the ID when you select the file.

   Otherwise, you'll need to enter the subscription ID in Astra when prompted.

   Example

   ```
   {
     "appId": "0db3929a-bfb0-4c93-baee-aaf8",
     "displayName": "sp-example-dev-sandbox",
     "name": "http://sp-example-dev-sandbox",
     "password": "mypassword",
     "tenant": "011cdf6c-7512-4805-aaf8-7721afd8ca37",
     "subscriptionId": "99ce999a-8c99-99d9-a9d9-99cce99f99ad"
   }
   ```

5. Optional: Test your service principal.

```
az login --service-principal --username APP-ID-SERVICEPRINCIPAL
--password PASSWORD --tenant TENANT-ID
az group list --subscription SUBSCRIPTION-ID
az aks list --subscription SUBSCRIPTION-ID
az storage container list --subscription SUBSCRIPTION-ID
```

Register for an Astra account

Sign up to NetApp Cloud Central and then complete the registration process to obtain an Astra account.

Sign up to Cloud Central

Astra is integrated within NetApp Cloud Central's authentication service. Sign up to Cloud Central so you can access Astra and NetApp's other cloud services.

> You can use single sign-on to log in to Cloud Central using credentials from your corporate directory (federated identity). To learn more, go to the Cloud Central Help Center and then click **Cloud Central sign-in options**.

Steps

1. Open your web browser and go to NetApp Cloud Central.

2. In the top right, click **Sign up**.

3. Fill out the form and click **Sign up**.

> The email address that you enter in this form is for your NetApp Cloud Central user ID. Use this Cloud Central user ID when you sign up for a new Astra account, or when an Astra admin invites you to an existing Astra account.

4. Wait for an email from NetApp Cloud Central.

5. Click the link in the email to verify your email address.

Result

You now have an active Cloud Central user login.

Register for an account

Before you can log in to Astra, you need to complete a registration process to obtain an Astra account.

When you use Astra, you'll manage your apps from within an account. An account includes users who can view and manage the apps within the account, as well as your billing details.

Steps

1. Go to the Astra page on Cloud Central.

2. Click **Sign up for the Free Plan**.

3. Provide the required information in the form.

   A few important things to note as you fill out the form:

- Your business name and address must be accurate because we verify them to meet the requirements of Global Trade Compliance.

- The **Astra Account Name** is the name of your business's Astra account. You'll see this name in the Astra user interface. Note that you can create additional accounts (up to 5), if that's required for your needs.

4. Click **Submit**.

   If you're logged in to Cloud Central already, you'll see a registration status and then you'll be redirected to the Astra Dashboard. Otherwise, you'll be prompted to log in first.

   Now that you're registered, you can access Astra directly from https://astra.netapp.io.

Start managing Kubernetes compute from Astra

After you set up your environment, you're ready to create a Kubernetes cluster and then add it to Astra.

Create a Kubernetes cluster

If you don't have a cluster yet, create one that meets Astra requirements for Azure Kubernetes Service (AKS).

Start managing Kubernetes compute

After you log in to Astra, your first step is to start managing compute.

What you'll need

For AKS, you should have the JSON file that contains the output from the Azure CLI when you created the service principal. Learn how to set up a service principal.

You'll also need your Azure subscription ID, if you didn't add it to the JSON file.

Steps

1. On the Dashboard, click **Manage Kubernetes compute**.

   Follow the prompts to add the compute.

2. **Provider**: Select your cloud provider and then provide the required credentials.

   a. **Microsoft Azure**: Provide Astra with details about your Azure service principal by uploading a JSON file or by pasting the contents of that JSON file from your clipboard.

      The JSON file should contain the output from the Azure CLI when you created the service principal. It can also include your subscription ID so it's automatically added to Astra. Otherwise, you need to manually enter the ID after providing the JSON.
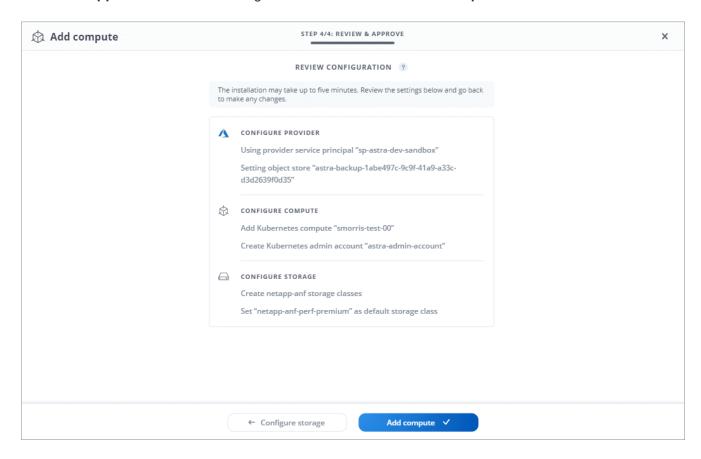
3. **Compute**: Select the compute that you'd like to add.

   Pay careful attention to the Eligible tab. If a warning appears, hover over the warning to determine if there's an issue with the compute. For example, it might identify that the cluster doesn't have a worker node.

4. **Storage**: Select the storage class that you'd like Kubernetes applications deployed to this compute to use by default.

Each storage class utilizes Azure NetApp Files.

- Learn about storage classes for AKS clusters.

5. **Review & Approve**: Review the configuration details and click **Add compute**.

Result

Astra creates an object store for application backups, creates an admin account on the cluster, and sets the default storage class that you specified. This process can take up to 5 minutes.

What's next?

Now that you've logged in and added compute to Astra, you're ready to start using Astra's application data management features.

- Start managing apps
- Protect apps
- Clone apps
- Set up billing
- Invite and manage users
- Manage cloud provider credentials
- Manage notifications