



# Deploy with tridentctl

## Astra Trident

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# Deploy with `tridentctl`

You can deploy Astra Trident by using `tridentctl`.



If you have not already familiarized yourself with the [basic concepts](#), now is a great time to do that.



To customize your deployment, see [here](#).

## What you'll need

To deploy Astra Trident, the following prerequisites should be met:

- You have full privileges to a supported Kubernetes cluster.
- You have access to a supported NetApp storage system.
- You have the capability to mount volumes from all of the Kubernetes worker nodes.
- You have a Linux host with `kubectl` (or `oc`, if you are using OpenShift) installed and configured to manage the Kubernetes cluster that you want to use.
- You have set the `KUBECONFIG` environment variable to point to your Kubernetes cluster configuration.
- You have enabled the [feature gates required by Astra Trident](#).
- If you are using Kubernetes with Docker Enterprise, [follow their steps to enable CLI access](#).

Got all that? Great! Let's get started.



For information about customizing your deployment, see [here](#).

## Step 1: Qualify your Kubernetes cluster

The first thing you need to do is log into the Linux host and verify that it is managing a *working, supported Kubernetes cluster* that you have the necessary privileges to.



With OpenShift, you use `oc` instead of `kubectl` in all of the examples that follow, and you should log in as **system:admin** first by running `oc login -u system:admin` or `oc login -u kube-admin`.

To check your Kubernetes version, run the following command:

```
kubectl version
```

To see if you have Kubernetes cluster administrator privileges, run the following command:

```
kubectl auth can-i '*' '*' --all-namespaces
```

To verify if you can launch a pod that uses an image from Docker Hub and reach your storage system over the pod network, run the following command:

```
kubectl run -i --tty ping --image=busybox --restart=Never --rm -- \
ping <management IP>
```

Identify your Kubernetes server version. You will use it when you install Astra Trident.

## Step 2: Download and extract the installer



The Trident installer creates a Trident pod, configures the CRD objects that are used to maintain its state, and initializes the CSI sidecars that perform actions, such as provisioning and attaching volumes to the cluster hosts.

You can download the latest version of the [Trident installer bundle](#) from the *Downloads* section, and extract it.

For example, if the latest version is 21.07.1:

```
wget https://github.com/NetApp/trident/releases/download/v21.07.1/trident-
installer-21.07.1.tar.gz
tar -xf trident-installer-21.07.1.tar.gz
cd trident-installer
```

## Step 3: Install Astra Trident

Install Astra Trident in the desired namespace by executing the `tridentctl install` command.

```
$ ./tridentctl install -n trident
....
INFO Starting Trident installation.                namespace=trident
INFO Created service account.
INFO Created cluster role.
INFO Created cluster role binding.
INFO Added finalizers to custom resource definitions.
INFO Created Trident service.
INFO Created Trident secret.
INFO Created Trident deployment.
INFO Created Trident daemonset.
INFO Waiting for Trident pod to start.
INFO Trident pod started.                        namespace=trident
pod=trident-csi-679648bd45-cv2mx
INFO Waiting for Trident REST interface.
INFO Trident REST interface is up.                version=21.07.1
INFO Trident installation succeeded.
....
```

It will look like this when the installer is complete. Depending on the number of nodes in your Kubernetes cluster, you might observe more pods:

```
$ kubectl get pod -n trident
NAME                                READY   STATUS    RESTARTS   AGE
trident-csi-679648bd45-cv2mx       4/4    Running   0          5m29s
trident-csi-vgc8n                   2/2    Running   0          5m29s

$ ./tridentctl -n trident version
+-----+-----+
| SERVER VERSION | CLIENT VERSION |
+-----+-----+
| 21.07.1       | 21.07.1       |
+-----+-----+
```

If you see output similar to the above example, you've completed this step, but Astra Trident is not yet fully configured. Go ahead and continue to the next step. See [post-deployment tasks](#).

However, if the installer does not complete successfully or you don't see a **Running** `trident-csi-  
<generated id>`, the platform was not installed.



For troubleshooting issues during deployment, see the [troubleshooting](#) section.

## Customize `tridentctl` deployment

Trident installer enables you to customize attributes. For example, if you have copied the Trident image to a private repository, you can specify the image name by using `--trident-image`. If you have copied the Trident image as well as the needed CSI sidecar images to a private repository, it might be preferable to specify the location of that repository by using the `--image-registry` switch, which takes the form `<registry FQDN>[:port]`.

To have Astra Trident automatically configure worker nodes for you, use `--enable-node-prep`. For more details on how it works, see [here](#).



Automatic worker node preparation is a **beta feature** meant to be used in non-production environments only.

If you are using a distribution of Kubernetes, where `kubelet` keeps its data on a path other than the usual `/var/lib/kubelet`, you can specify the alternate path by using `--kubelet-dir`.

If you need to customize the installation beyond what the installer's arguments allow, you can also customize the deployment files. Using the `--generate-custom-yaml` parameter creates the following YAML files in the installer's `setup` directory:

- `trident-clusterrolebinding.yaml`
- `trident-deployment.yaml`
- `trident-crds.yaml`

- trident-clusterrole.yaml
- trident-daemonset.yaml
- trident-service.yaml
- trident-namespace.yaml
- trident-serviceaccount.yaml

After you have generated these files, you can modify them according to your needs and then use `--use -custom-yaml` to install your custom deployment.

```
./tridentctl install -n trident --use-custom-yaml
```

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