



# Prerequisites for cloud services on NetApp HCI

## HCI

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# Prerequisites for cloud services on NetApp HCI

## Prerequisites overview

Before you begin with cloud services on NetApp HCI, you should review the following items:

- [Review your NetApp Cloud Central account](#) information or sign up, if you don't already have an account.
- [Review requirements](#) for your system, port, networking, and browser.
- Check out [licensing](#) requirements.
- Get a [NetApp Kubernetes Service API token](#).

## Find more information

- [NetApp Cloud Central](#)
- [NetApp Cloud Documentation](#)

## Cloud Central accounts

Each NetApp HCI system that has cloud services enabled is associated with a NetApp Cloud Central account. A Cloud Central account is the *workspace* in which you deploy cloud services on NetApp HCI.

The account is maintained in Cloud Central, so any changes that you make to it are available to other NetApp cloud data services.

A Cloud Central account enables multi-tenancy:

- A single Cloud Central account can include multiple NetApp HCI systems that serve different business needs. Because users are associated with the Cloud Central account, there's no need to configure users for each individual NetApp HCI system.
- Within each NetApp HCI system, multiple users can deploy and manage NetApp HCI systems in isolated environments called *workspaces*. These workspaces are invisible to other users, unless they are shared.

When you deploy NetApp HCI and enable cloud services, you select the Cloud Central account to associate with the system. Account admins can then modify the settings for this account by managing users, workspaces, and service connectors.

Using Cloud Central, you can set up accounts as individual accounts or as Federated accounts:

- You can make a new account with name, email, and password and then you are logged in. This is the simplest type of account.
- If you are part of a Cloud Central Federated organization, you enter your email and are then routed to the organization login.

## Find more information

- [NetApp Cloud Central](#)
- [NetApp Cloud Documentation](#)

## Sign up for a Cloud Central account

Before you enable cloud services on NetApp HCI, you must have a Cloud Central account.

### Steps

1. Go to [NetApp Cloud Central](#).
2. Click **Sign Up**.
3. Enter a valid business email address and choose a password.
4. Enter your company name and your full name.
5. Accept the terms and conditions and click **Sign Up**.

## Find more information

- [NetApp Cloud Central](#)
- [NetApp Cloud Documentation](#)

## Requirements before you begin with cloud services

Before you use cloud services on NetApp HCI, you should have completed networking and other requirements.

### System requirements

- A NetApp HCI 1.6 or later system deployed by the NetApp Deployment Engine (NDE)
- Upgraded NetApp HCI management services. See management services information in the [NetApp Element User Guide](#).

- NetApp Hybrid Cloud Control available on the management node of your system
- NetApp HCI management node 2.2 or later (requires updates from the 2.0 version)
- Your version of VMware vCenter supported by the NetApp HCI Deployment Engine
- All nodes must have IP addresses assigned to them by Dynamic DHCP. A DHCP server must be able to run on all NKS networks.
- The “NetApp-HCI-Datastore-02” datastore must exist in vSphere. It is a requirement for enabling NKS. If the datastore does not exist, the cloud services installation will not be successful. Before enabling cloud services, check vSphere to see that the datastore is there. If you are creating the datastore, it must meet the following conditions: 2 TiB in size, formatted as a VMware Virtual Machine File System (VMFS), shared with all compute hosts, and with the default QoS (or higher).
- Ports must be opened in the firewall as specified in NKS information. <https://docs.netapp.com/us-en/kubernetes-service/whitelist-ports-and-ip-addresses.html>



Running NKS services through a proxy server is not supported.

## Networking requirements

- You must have already configured the required vSphere distributed switches (VDS). VMware standard switches (VSS) are not supported.
- You must have already configured the recommended vSphere distributed switch (VDS) port groups:
  - NetApp HCI VDS 01-HCI\_Internal\_NKS\_Management
  - NetApp HCI VDS 01-HCI\_Internal\_NKS\_Workload
  - NetApp HCI VDS 01-HCI\_Internal\_NKS\_Data
- Using VDS requires a vSphere Enterprise Plus license. You must have this license.

## System size requirements

- 2x4 systems are not supported for production use. However, you can use these for demo work.
- 3x4 systems are the minimum production system size we support.
- 4x4 systems are the recommended minimum size.

## NetApp Kubernetes Service requirements

- A NetApp Kubernetes Service (NKS) account
- A NetApp Kubernetes Service API token, which authorizes the installer to access the NKS organization. You can create this before or during the process of enabling cloud services on NetApp HCI.

## Requirements for Cloud Volumes on NetApp HCI and NetApp Fabric Orchestrator

- An NKS account. NetApp HCI installs the service cluster on NKS, which in turn installs the Kubernetes pods, which is a set of one or more containers used for Cloud Volumes on NetApp HCI.
- All requirements needed for NKS, such as the NKS API token, which authorizes the installer to access the NKS organization.
- Access to the NKS storage system
- A Cloud Central account

### Browser requirements

- Any modern browser

### Find more information

- [NetApp Cloud Central](#)
- [NetApp Cloud Documentation](#)
- [NetApp HCI Documentation Center](#)

## Licensing requirements

Before you begin using Cloud Volumes on NetApp HCI, you will need to obtain licenses. You can obtain the licenses before or during the use of the Cloud Services wizard.

The Cloud Services wizard provides a link to obtain the licenses; however, you will need your software license serial numbers. You can get the serial numbers from the NetApp Support Site at [mysupport.netapp.com](https://mysupport.netapp.com).

### Licensing requirements for Cloud Volumes on NetApp HCI

Because Cloud Volumes on NetApp HCI is supported by NetApp ONTAP HA clusters and each requires a license, Cloud Volumes on NetApp HCI requires two “ONTAP Select Premium” licenses.

The NetApp licensing files use the following format:

NLF<serialnumber>.txt



Fabric Orchestrator is in Preview mode. When you enable Cloud Volumes on NetApp HCI, you automatically have access to the Preview environment.

## Licensing requirements for NetApp Kubernetes Service

NetApp Kubernetes Service does not require an additional license.

NetApp Kubernetes Service is metered and billed by the number of worker nodes in the managed Kubernetes clusters. While these Kubernetes worker nodes are virtual machines that are running on a cluster and NetApp HCI compute nodes, the number of physical compute nodes in the NetApp HCI environment are an unrelated entity for metering and billing purposes.

### Find more information

- [NetApp Cloud Central](#)
- [NetApp Cloud Documentation](#)

## Get a NetApp Kubernetes Service API token

Enabling cloud services for NetApp HCI requires a NetApp Kubernetes Service API token that is associated with your NetApp Cloud Central account.

You can complete these steps before enabling cloud services or during the process, when a wizard displays a link to get the API token.

### Steps

1. Open a web browser and browse to NetApp Cloud Central for NetApp Kubernetes Service.  
<https://nks.netapp.io>
2. Log in by providing the NetApp HCI storage cluster administrator credentials.

If you do not have an account, click **Sign Up** and provide the account information.

3. Click **Go to Cloud Data Services** and select **NetApp HCI**.
4. Click the user icon at the top right of the screen and select **Edit Profile**.
5. In the API Tokens section, click **Add Token**, enter a token name, and click **Create**.
6. Copy the token and save it in a file so that you can later paste it when needed.

### Find more information

- [NetApp Cloud Central](#)
- [NetApp Cloud Documentation](#)
- [NetApp Kubernetes Service](#)
- [NetApp Kubernetes Service Documentation](#)

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