



## **Get started**

### **ONTAP Automation**

NetApp  
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# Get started

## Understand the ONTAP automation options

There are several options available to automate the deployment and administration of your ONTAP storage systems.

### ONTAP REST API

Beginning with ONTAP 9.6, ONTAP includes an expansive REST API that provides the foundation for automating the deployment and administration of your storage systems. Since then the REST API has continued to expand and mature. It now provides the preferred and strategic option when automating the administration of your ONTAP deployments. There are several considerations when using the ONTAP REST API.

#### Accessing the REST API natively

You can access the ONTAP REST API directly using any programming language that supports a REST client. Popular language choices include Python, PowerShell, and Java.

#### Migrating legacy ONTAPI code to use REST

The ONTAPI API (ZAPI) is the original set of proprietary calls included with the NetApp ONTAP software to support the automation of data storage administration and management tasks. The ONTAPI interface will be disabled in future versions of ONTAP. If you have existing code using the ONTAPI API, you should plan to migrate away from ONTAPI. NetApp provides support for converting your code to use the newer ONTAP REST API. See [Migrate to the REST API](#) for more information.

### Client software toolkits

NetApp provides client toolkits that abstract the ONTAP REST API and make it easier to create automation code. You should choose one appropriate for your development language and environment.

#### Python client library

The Python client library is a package you can use when writing scripts to access the ONTAP REST API. It provides support for several underlying services, including connection management, asynchronous request processing, and exception handling. By using the Python client library, you can quickly develop robust code to support your ONTAP automation goals. See [Python client library](#) for more information.

### Automation frameworks

You can create and deploy automation code using one of several frameworks

#### Ansible

Ansible is an open-source software tool that supports provisioning, configuration management, and application deployment. Since its release and subsequent acquisition by RedHat, it has continued to grow in popularity. NetApp provides Ansible-certified modules that customers can use to automate the administration of their ONTAP storage systems. See [Additional resources](#) for more information.

#### BlueXP automation catalog

The NetApp [BlueXP automation catalog](#) is available through the BlueXP web user interface. The catalog provides access to packaged solutions that can help you to automate the deployment and integration of ONTAP with other products. See [NetApp automation](#) for documentation and more information.

# How to access the ONTAP REST API

You can access the ONTAP REST API in several different ways.

## Network considerations

You can connect to the REST API through the following interfaces:

- Cluster management LIF
- Node management LIF
- SVM management LIF

The LIF you choose to use must be configured to support the HTTPS management protocol. Also, the firewall configuration in your network must allow the HTTPS traffic.



You should always use a cluster management LIF. This will load balance the API requests across all the nodes and avoid nodes that are offline or experiencing connectivity issues. If you have multiple cluster management LIFs configured, they are all equivalent regarding access to the REST API.

## ONTAP API online documentation page

The ONTAP API online documentation page provides an access point when using a web browser. In addition to providing a way to execute individual API calls directly, the page includes a detailed description of the API, including input parameters and other options for each call. The API calls are organized into functional categories. See [Summary of the REST resources](#) for more information.

The format of the URL used to access the documentation page for the most recent version of the API is:

```
https://<cluster_mgmt_ip_address>/docs/api
```

## Custom software and tools

You can access the ONTAP API using any of several different programming languages and tools. Popular choices include Python, Java, Curl, and PowerShell. A program, script, or tool that uses the API acts as a REST web services client. Using a programming language enables a deeper understanding of the API and provides an opportunity to automate the ONTAP administration.

The format of the base URL used to directly access the most recent version of the API is:

```
https://<cluster_mgmt_ip_address>/api
```

To access a specific API version where multiple versions are supported, the format of the URL is:

```
https://<cluster_mgmt_ip_address>/api/v1
```

## Your first API call

You can issue a simple curl command to get started using the ONTAP REST API and confirm its availability.

## Before you begin

In addition to having the curl utility available on your workstation, you need the following:

- IP address or FQDN of the ONTAP cluster management LIF
- ONTAP credentials for an account with authority to access the ONTAP REST API



If your credentials include special characters, you need to format them in a way that is acceptable to curl based on the shell you are using. For example, you can insert a backslash before each special character or wrap the entire credentials string in double quotes.

## Steps

1. At the command line interface of your local workstation, issue the following command:

```
curl --request GET \  
"https://$FQDN_IP/api/cluster?fields=version" \  
--user username:password
```

## Example

```
curl --request GET "https://10.29.186.132/api/cluster?fields=version" --user  
admin:david123
```

## After you finish

The ONTAP version information is displayed in a JSON format.

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