FAQ

ONTAP REST APIs

ONTAP 9.8

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December 2020

Abstract

This technical FAQ covers common questions about NetApp® ONTAP® REST APIs. For answers to any questions not covered in this document, email us at ng-ontap-restapi-queries@netapp.com.

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About ONTAP REST APIs

What is REST?

Answer: REpresentation State Transfer (REST) is an architectural style for distributed web services that has become very popular for implementing APIs. With REST, data that is produced and consumed by the API is separate from the technologies that facilitate the API framework.

Which version of ONTAP includes REST APIs support?

Answer: Starting with version 9.6, ONTAP includes a REST APIs that you can use to programmatically deploy and administer ONTAP storage resources.

How do ONTAP REST APIs help end users?

Answer: ONTAP REST APIs support the vast majority of ONTAP configuration activities with REST API endpoints and will be expanded further in upcoming ONTAP releases to help users to automate their storage environment at level of the cluster to facilitate initial setup, cluster upgrade, data provisioning and configuration, and data protection.

What do ONTAP REST APIs cost?

Answer: ONTAP REST APIs are free of charge.

What are the benefits of ONTAP REST APIs relative to ONTAPI?

Answer: ONTAP REST APIs provides the following benefits over ONTAP API (ZAPI):

- APIs based on industry standards
- Integration with any third-party tools that can consume REST APIs
- A simplified method to automate ONTAP storage management

Which programming languages can be used with ONTAP REST APIs?

Answer: Any programming language that understands REST can be used. Popular choices include Python, Java, and PowerShell. Curl can be used as a testing tool as well.

How can I access ONTAP REST APIs?

Answer: You can connect to REST APIs through the following interfaces: the cluster management LIF, and the SVM management LIF.

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

Does NetApp have a client library to adopt REST APIs?

Answer: NetApp provides a Python Client Library (PCL) to help with application development. The PCL is a package for writing scripts to access the ONTAP REST API.

How can I download and install the Python Client Library?

Answer: First visit the download site and then perform a pip install netapp-ontap in the command line to install the PCL.

What are the benefits of using the Python Client Library?

Answer: The PCL provides support for several underlying services, including connection management, asynchronous request processing, and exception handling. By using the PCL, you can quickly develop robust code to support the automation of your ONTAP deployments.

What are the various performance metrics provided by ONTAP REST APIs?

Answer: ONTAP collects performance metrics about selected SVM storage objects and protocols and reports this information through the REST API. You can use this data to monitor the performance of an ONTAP system. See Table 1 for more information (R = Read, W = Write, O = Others, and T = Total).

Table 1) Performance Metrics of ONTAP REST APIs.

Storage Object or Protocol	IOPS	Latency	Throughput	NetApp ONTAP Release
Cloud volume	RWOT	RWOT	NA	9.7
LUN	RWOT	RWOT	RWOT	9.7
Aggregate	RWOT	RWOT	RWOT	9.7
SVM NFS protocol	RWOT	RWOT	RWT	9.7
SVM CIFS protocol	RWOT	RWOT	RWT	9.7
SVM FCP protocol	RWOT	RWOT	RWT	9.7
SVM iSCSI protocol	RWOT	RWOT	RWT	9.7
SVM NVMe protocol	RWOT	RWOT	RWT	9.7
Cluster	RWOT	RWOT	RWOT	9.6
Volume	RWOT	RWOT	RWOT	9.6
Ethernet Port	NA	NA	RWT	9.8
FC Port	RWOT	RWOT	RWT	9.8
IP interface	NA	NA	RWT	9.8
FC Interface	RWOT	RWOT	RWT	9.8
NVMe Namespace	RWOT	RWOT	RWOT	9.8
Qtree Statistics	Raw RWOT	NA	Raw RWOT	9.8
Volume Flexcache	RWOT	RWOT	RWT	9.8
Node – Processor utilization	Processor utilization as a numerical value			

How do I execute CLI commands with REST APIs?

Answer: To assist CLI and ONTAPI API users in their transition to ONTAP REST APIs, ONTAP provides a REST endpoint to access the CLI. You can use this passthrough feature to execute any CLI command. The base resource path for CLI access is `/api/private/cli`.

Refer to the ONTAP API online documentation page for details about accessing the CLI with REST APIs.

Is there an offline copy of the Python Client Library?

Answer: After installing the netapp_ontap Python package, view the offline copy under the folder path in local system:

```
<python_environment>/lib/<python_version>/site_packages/netapp_ontap/docs.
```

What type of authentication is supported in ONTAP REST APIs?

Answer: ONTAP REST APIs support basic authentication (passwords can be local or remote via domain/nsswitch) and certificate-based authentication.

What are the HTTP methods supported in ONTAP REST APIs?

Answer: The ONTAP REST API supports the following common HTTP methods.

- **GET.** Retrieves object properties on a resource instance or collection.
- **POST.** Creates a new resource instance based on the supplied input.
- **PATCH.** Updates an existing resource instance based on the supplied input.
- **DELETE.** Deletes an existing resource instance.
- **HEAD.** Same as GET, but only returns the HTTP headers.
- **OPTIONS.** Determine what HTTP methods are supported at a specific endpoint.

Can Active IQ Unified Manager REST APIs leverage ONTAP REST APIs?

Answer: Yes, Active IQ Unified Manager has its own REST APIs for data center-scoped administration that can pass through gateway APIs to execute ONTAP REST APIs endpoints. For more information, visit the online documentation.

Where to find additional information

To learn more about the information that is described in this document, review the following documents and/or websites:

- Devnet Site
  https://devnet.netapp.com/restapi
- NetApp Product Documentation
  https://docs.netapp.com

Version history

Version	Date	Document Version History
Version 1.0	December 2020	For ONTAP 9.8, initial FAQ version.

Refer to the Interoperability Matrix Tool (IMT) on the NetApp Support site to validate that the exact product and feature versions described in this document are supported for your specific environment. The NetApp IMT defines the product components and versions that can be used to construct configurations that are supported by NetApp. Specific results depend on each customer's installation in accordance with published specifications.

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