



Get started

ONTAP Automation

NetApp
June 23, 2022

Table of Contents

- Getting started with the REST API 1
 - Understand the ONTAP automation options 1
 - Prepare to use the ONTAP REST API 2
 - Retrieving the cluster software version 2
 - Hello world 3

Getting started with the REST API

You can quickly get started using the ONTAP REST API and other automation technologies. After preparing and understanding a basic request-response flow, you can issue a simple API call using curl. This preparation provides the introduction and perspective needed before using more complex workflows on a live system.

Understand the ONTAP automation options

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. You can access the REST API directly or through the NetApp Python client library. In addition, NetApp supports ONTAP automation using Ansible as well as other high-level software abstractions.



The ONTAPI API, also known as the Network Manageability SDK or ZAPI, is the legacy technology for programmatically accessing and administering ONTAP storage systems. The ONTAP REST API is now the strategic technology and should be selected where possible.

Accessing the ONTAP 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. You should begin by reviewing all the documentation at this site.

Adapt legacy ONTAPI code to use REST

If you have existing code using the ONTAPI API, NetApp provides support for converting your code to use the newer ONTAP REST API. See [ONTAPI to REST API mapping information](#) for information about mapping the ONTAPI calls to the equivalent REST API calls.

Using the NetApp 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. You should begin by reviewing the documentation at this site, including [Python client library](#).

Using 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. You should begin by reviewing the documentation at this site, including [ONTAP and Ansible automation](#).

Prepare to use the ONTAP REST API

There are several steps you should take to prepare to use the ONTAP REST API.

Experience with ONTAP 9

You should have experience with ONTAP 9. This includes understanding the basic concepts and terminology as well as some experience with system administration. See [ONTAP 9 Concepts](#) to get started.

Review REST concepts and implementation

Make sure to review [ONTAP REST API](#) for information about REST concepts and details regarding how the ONTAP REST API is designed.

Software development background

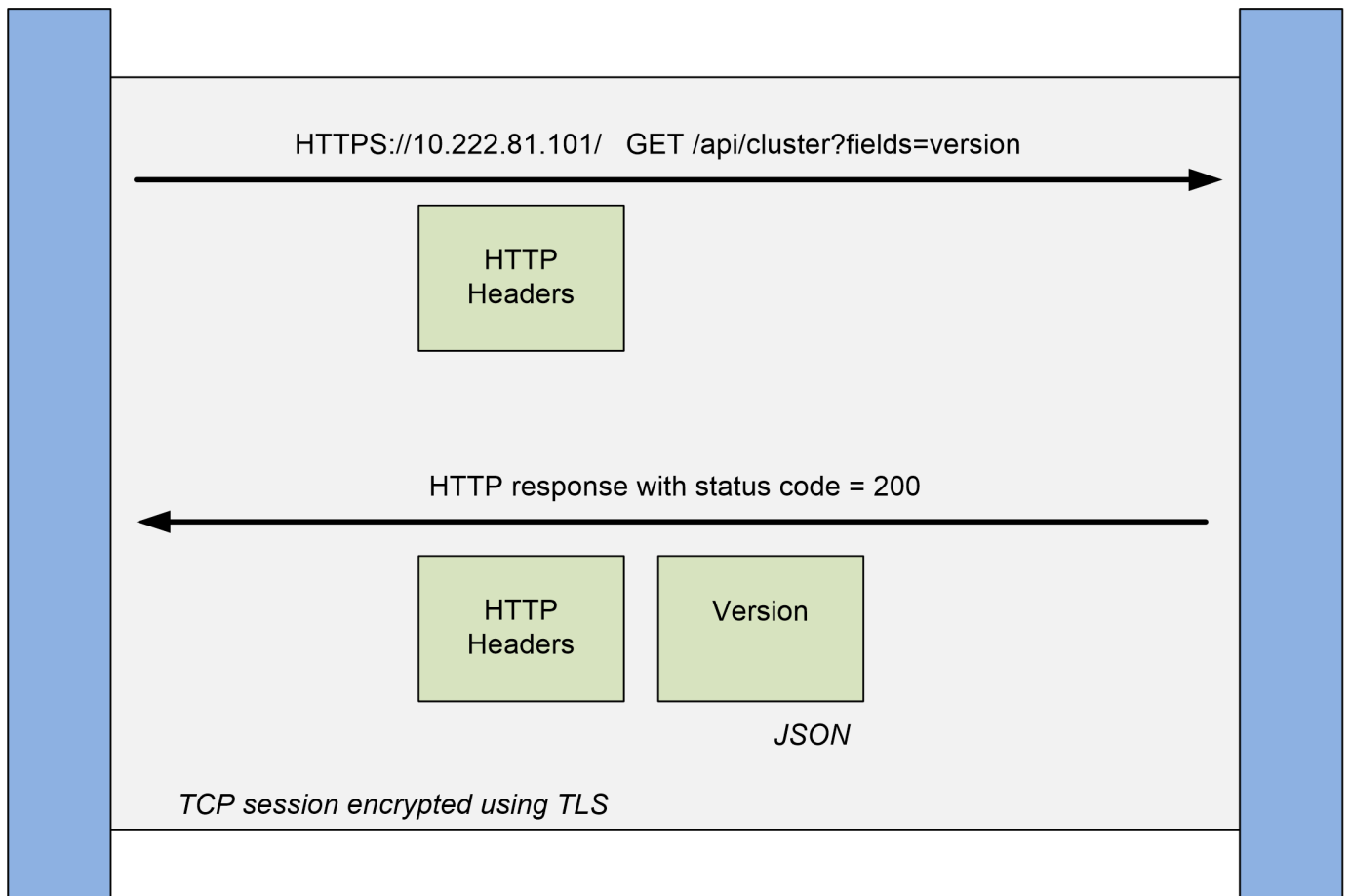
It is helpful to have some experience with software development technologies and processes, including one or more programming languages as well as common utilities such as curl.

Get more information

You should be aware of the additional information resources as suggested in [Get more information](#).

Retrieving the cluster software version

Each API transaction consists of an HTTP request and the associated response. This illustration shows how to retrieve the version of the ONTAP software used by the cluster.



Client

ONTAP

HTTP request

The request sent from the client to the server consists of the following:

- GET verb
- URL path for the cluster
- Query parameter (fields)
- Request headers, including authorization

HTTP response

The response sent from the server to the client consists of the following:

- Status code 200
- Response headers
- Response body containing the cluster software version

Hello world

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

Before you begin

The curl utility must be available on your workstation. In addition, you must have the following:

- IP address or host name of the ONTAP cluster management LIF
- User name and password for an account with authority to access the ONTAP REST API (cluster resource).



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 `username:password` string in single quotes.

Steps

1. At the command line interface of your local workstation, retrieve the version of the ONTAP software:

```
curl -X GET -u username:password -k  
"https://<ip_address>/api/cluster?fields=version"
```

Example

```
curl -X GET -u admin:password -k  
"'https://10.222.81.101/api/cluster?fields=version'"
```

After you finish

The ONTAP version information is displayed in a JSON format.

Copyright Information

Copyright © 2022 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system-without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.