



# Native Python

## Astra Automation

NetApp  
July 19, 2022

# Table of Contents

- Native Python ..... 1
  - Before you begin ..... 1
  - List the managed apps ..... 2

# Native Python

## Before you begin

Python is a popular development language especially for datacenter automation. Before using the native features of Python together with several common packages, you need to prepare the environment and the required input files.



In addition to accessing the Astra Control REST API directly using Python, NetApp also provides a toolkit package which abstracts the API and removes some of the complexities. See [NetApp Astra Control Python SDK](#) for more information.

## Prepare the environment

The basic configuration requirements to run the Python scripts are described below.

### Python 3

You need to have the latest version of Python 3 installed.

### Additional libraries

The **Requests** and **urllib3** libraries must be installed. You can use pip or another Python management tool as appropriate for your environment.

### Network access

The workstation where the scripts run must have network access and be able to reach Astra Control. When using Astra Control Service, you must be connected to the internet and be able to connect to the service at <https://astra.netapp.io>.

### Identity information

You need a valid Astra account with the account identifier and API token. See [Get an API token](#) for more information.

## Create the JSON input files

The Python scripts rely on configuration information contained in JSON input files. Sample files are provided below.



You need to update the samples as appropriate for your environment.

### Identity information

The following file contains the API token and Astra account. You need to pass this file to Python scripts using the `-i` (or `--identity`) CLI parameter.

```
{
  "api_token": "kH4CA_uVIa8q9UuPzhJaAHaGlaR7-no901DkkrVjIXk=",
  "account_id": "5131dfdf-03a4-5218-ad4b-fe84442b9786"
}
```

## List the managed apps

You can use the following script to list the managed applications for your Astra account.



See [Before you begin](#) for an example of the required JSON input file.

```
1 #!/usr/bin/env python3
2
```

```

##-----
-----
3 #
4 # Usage: python3 list_man_apps.py -i identity_file.json
5 #
6 # (C) Copyright 2021 NetApp, Inc.
7 #
8 # This sample code is provided AS IS, with no support or warranties of
9 # any kind, including but not limited for warranties of
merchantability
10 # or fitness of any kind, expressed or implied. Permission to use,
11 # reproduce, modify and create derivatives of the sample code is
granted
12 # solely for the purpose of researching, designing, developing and
13 # testing a software application product for use with NetApp products,
14 # provided that the above copyright notice appears in all copies and
15 # that the software application product is distributed pursuant to
terms
16 # no less restrictive than those set forth herein.
17 #
18
##-----
-----
19
20 import argparse
21 import json
22 import requests
23 import urllib3
24 import sys
25
26 # Global variables
27 api_token = ""
28 account_id = ""
29
30 def get_managed_apps():
31     ''' Get and print the list of managed apps '''
32
33     # Global variables
34     global api_token
35     global account_id
36
37     # Create an HTTP session
38     sess1 = requests.Session()
39
40     # Suppress SSL unsigned certificate warning

```

```

41     urllib3.disable_warnings(urllib3.exceptions.
InsecureRequestWarning)
42
43     # Create URL
44     url1 = "https://astra.netapp.io/accounts/" + account_id +
"/k8s/v1/managedApps"
45
46     # Headers and response output
47     req_headers = {}
48     resp_headers = {}
49     resp_data = {}
50
51     # Prepare the request headers
52     req_headers.clear
53     req_headers['Authorization'] = "Bearer " + api_token
54     req_headers['Content-Type'] = "application/astra-managedApp+json"
55     req_headers['Accept'] = "application/astra-managedApp+json"
56
57     # Make the REST call
58     try:
59         resp1 = sess1.request('get', url1, headers=req_headers,
allow_redirects=True, verify=False)
60
61     except requests.exceptions.ConnectionError:
62         print("Connection failed")
63         sys.exit(1)
64
65     # Retrieve the output
66     http_code = resp1.status_code
67     resp_headers = resp1.headers
68
69     # Print the list of managed apps
70     if resp1.ok:
71         resp_data = json.loads(resp1.text)
72         items = resp_data['items']
73         for i in items:
74             print(" ")
75             print("Name: " + i['name'])
76             print("ID: " + i['id'])
77             print("State: " + i['state'])
78     else:
79         print("Failed with HTTP status code: " + str(http_code))
80
81     print(" ")
82
83     # Close the session

```

```

84     sess1.close()
85
86     return
87
88 def read_id_file(idf):
89     ''' Read the identity file and save values '''
90
91     # Global variables
92     global api_token
93     global account_id
94
95     with open(idf) as f:
96         data = json.load(f)
97
98     api_token = data['api_token']
99     account_id = data['account_id']
100
101     return
102
103 def main(args):
104     ''' Main top level function '''
105
106     # Global variables
107     global api_token
108     global account_id
109
110     # Retrieve name of JSON input file
111     identity_file = args.id_file
112
113     # Get token and account
114     read_id_file(identity_file)
115
116     # Issue REST call
117     get_managed_apps()
118
119     return
120
121 def parseArgs():
122     ''' Parse the CLI input parameters '''
123
124     parser = argparse.ArgumentParser(description='Astra REST API -
List the managed apps',
125                                     add_help = True)
126     parser.add_argument("-i", "--identity", action="store", dest
="id_file", default=None,
127                         help='(Req) Name of the identity input

```

```
        file', required=True)
128
129         return parser.parse_args()
130
131 if __name__ == '__main__':
132     ''' Begin here '''
133
134     # Parse input parameters
135     args = parseArgs()
136
137     # Call main function
138     main(args)
```



## 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.