



Native Python

Astra Automation

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Native Python

Before you begin

Python is a popular development language 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 apps

You can use the following script to list the 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 2022 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
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10 # or fitness of any kind, expressed or implied. Permission to use,
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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 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/v2/apps"
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-app+json"
55     req_headers['Accept'] = "application/astra-app+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 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 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)
```


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