**Sample Code**

The following code samples demonstrate how to query the NCM REST API.

**Sample Code in Python**

The following Python code sample shows how to access the "routers" endpoint of the NCM REST API using the Python "requests" module with paging. It makes use of the NCM and CP credential headers to authenticate and access the device data. The data is returned as a JSON encoded object.

import json

import requests

url = 'https://www.cradlepointecm.com/api/v2/routers/'

headers = {

'X-CP-API-ID': '…',

'X-CP-API-KEY': '…',

'X-ECM-API-ID': '…',

'X-ECM-API-KEY': '…',

'Content-Type': 'application/json'

}

# Get routers

while url:

req = requests.get(url, headers=headers)

routers\_resp = req.json()

# Get URL for next set of resources

url = routers\_resp['meta']['next']

**Net device usage and signal samples**

The following Python code extends the previous example and can be used to efficiently export the account's net device usage and signal information. It minimizes API requests by using the maximum API\_OBJ\_REQUEST\_SIZE and API\_OBJ\_RESPONSE\_SIZE values.

import json

import requests

API\_OBJ\_REQUEST\_SIZE = 100

API\_OBJ\_RESPONSE\_SIZE = 500

START\_DATE = '2017-10-19'

END\_DATE = '2017-10-20'

# Chunk lists into blocks

def chunker(seq, size):

return (seq[pos:pos + size] for pos in range(0, len(seq), size))

# Get the next url, at completion return None

def next\_url(resp):

if resp['meta']['next']:

url = resp['meta']['next']

else:

url = None

return url

# Fill in your API keys here

headers = {

'X-CP-API-ID': '...',

'X-CP-API-KEY': '...',

'X-ECM-API-ID': '...',

'X-ECM-API-KEY': '...',

'Content-Type': 'application/json'

}

# Get net\_devices

net\_device\_ids = set()

url = 'https://www.cradlepointecm.com/api/v2/net\_devices/?limit={}'. \

format(API\_OBJ\_RESPONSE\_SIZE)

while url:

req = requests.get(url, headers=headers)

resp = req.json()

for net\_device in resp['data']:

net\_device\_ids.add(int(net\_device['id']))

url = next\_url(resp)

# Get usage samples

print('bytes\_in,bytes\_out,created\_at,created\_at\_timeuuid,'

'net\_device,period,uptime')

for net\_devices in chunker(sorted(net\_device\_ids), API\_OBJ\_REQUEST\_SIZE):

url = 'https://www.cradlepointecm.com/api/v2/net\_device\_usage\_samples/' \

'?limit={}'.format(API\_OBJ\_RESPONSE\_SIZE)

url += '&net\_device\_\_in={}'.format(','.join(map(str, net\_devices)))

url += '&created\_at\_\_gt={}&created\_at\_\_lt={}'.format(START\_DATE, END\_DATE)

url += '&order\_by=created\_at\_timeuuid'

while url:

req = requests.get(url, headers=headers)

resp = req.json()

if (len(resp['data']) > 0):

for net\_device in resp['data']:

print('{},{},{},{},{},{},{}'.format(

net\_device['bytes\_in'],

net\_device['bytes\_out'],

net\_device['created\_at'],

net\_device['created\_at\_timeuuid'],

net\_device['net\_device'],

net\_device['period'],

net\_device['uptime']))

url = next\_url(resp)

# Get signal samples

print('created\_at,created\_at\_timeuuid,ecio,net\_device,rssi,'

'signal\_percent,sinr,uptime')

for net\_devices in chunker(sorted(net\_device\_ids), API\_OBJ\_REQUEST\_SIZE):

url = 'https://www.cradlepointecm.com/api/v2/net\_device\_signal\_samples/' \

'?limit={}'.format(API\_OBJ\_RESPONSE\_SIZE)

url += '&net\_device\_\_in={}'.format(','.join(map(str, net\_devices)))

url += '&created\_at\_\_gt={}&created\_at\_\_lt={}'.format(START\_DATE, END\_DATE)

url += '&order\_by=created\_at\_timeuuid'

while url:

req = requests.get(url, headers=headers)

resp = req.json()

if (len(resp['data']) > 0):

for net\_device in resp['data']:

print('{},{},{},{},{},{},{},{}'.format(

net\_device['created\_at'],

net\_device['created\_at\_timeuuid'],

net\_device['ecio'],

net\_device['net\_device'],

net\_device['rssi'],

net\_device['signal\_percent'],

net\_device['sinr'],

net\_device['uptime']))

url = next\_url(resp)

**Sample Code in Shell Script**

The shell script below shows how to access the NCM REST API to view account data. It makes use of Environment variables to set the NCM and CP credentials and uses the CURL program to access the NCM "accounts" REST endpoint.

Note that the "-L" option, shown below in the example, **must** be used with all curl requests to Cradlepoint's API. This allows your curl request to follow any redirects put in place by Cradlepoint.

ECM\_API\_ID="<ECM-API-ID HERE>"

ECM\_API\_KEY="<ECM-API-KEY HERE>"

CP\_API\_ID="<CP-API-ID HERE>"

CP\_API\_KEY="<CP-API-KEY HERE>"

URL="https://www.cradlepointecm.com/api/v2/accounts/"

curl -H "X-ECM-API-ID: $ECM\_API\_ID" -H "X-ECM-API-KEY: $ECM\_API\_KEY"

-H "X-CP-API-ID: $CP\_API\_ID" -H "X-CP-API-KEY: $CP\_API\_KEY"

-H "Content-Type: application/json" -L $URL

**Sample Code in JAVA**

import java.util.\*;

import java.io.BufferedReader;

import java.io.DataOutputStream;

import java.io.InputStreamReader;

import java.net.HttpURLConnection;

import java.net.URL;

import javax.net.ssl.HttpsURLConnection;

public class HttpURLConnectionExample {

public static void main(String[] args) throws Exception {

HttpURLConnectionExample http = new HttpURLConnectionExample();

http.sendGet();

}

// HTTP GET request

private void sendGet() throws Exception {

String url = "https://www.cradlepointecm.com/api/v2/accounts/";

URL obj = new URL(url);

HttpURLConnection con = (HttpURLConnection) obj.openConnection();

// optional default is GET

con.setRequestMethod("GET");

//add request header

HttpURLConnectionExample http = new HttpURLConnectionExample();

http.set\_headers(con);

int responseCode = con.getResponseCode();

System.out.println("\nSending 'GET' request to URL : " + url);

System.out.println("Response Code : " + responseCode);

Scanner s = new Scanner(con.getInputStream());

System.out.println("Response : " + s.useDelimiter("\0").next());

}

public HttpURLConnection set\_headers(HttpURLConnection con)

{

con.setRequestProperty("x-ecm-api-id", "...");

con.setRequestProperty("x-ecm-api-key", "...");

con.setRequestProperty("x-cp-api-id", "...");

con.setRequestProperty("x-cp-api-key", "...");

con.setRequestProperty("Accept", "\*/\*");

return con;

}

}

**Sample Code in PHP**

<?php

$url = 'https://www.cradlepointecm.com/api/v2/routers/';

$headers = array(

'X-CP-API-ID: ...',

'X-CP-API-KEY: ...',

'X-ECM-API-ID: ...',

'X-ECM-API-KEY: ...',

'Content-Type: application/json'

);

$req = curl\_init();

curl\_setopt\_array($req, array(

CURLOPT\_URL => $url,

CURLOPT\_HTTPHEADER => $headers,

));

$result = curl\_exec($req);

$res\_info = curl\_getinfo($req);

echo $res\_info['http\_code'];

curl\_close($req);

?>