VMware

NSX Automation Workshop

June 14 -15 2022

Lab 4 Manual

LAB 4: Python

In this lab we will use Python and Visual Studio Code to perform automation on our NSX environment. The following tasks will use basic authentication to NSX Manager with additional parameters:

API Call Prefix: https://nsxapp-01a
Authorization: Basic Auth | Username: admin | Password: VMware1!VMware1!

Task 1: Create a Simple List and Dictionary

1a) Open Visual Studio Code
1b) Select File | Open Folder and Browse to 'C:\Users\Administrator\Desktop\Student Lab Files\Lab4-Python
1c) create a new file called py1.py
1d) Copy/Paste the following into py1.py

```
my_dict = {1:'apples', 2:'banana', 3:'kiwi'}
my_list = [my_dict[1], my_dict[2], my_dict[3], 'orange',
'lime', 'strawberry']
print(my_list)
print(my_list[0])
```

Save and run the file (To run the file, click the arrow in the top right hand corner)

1e) Print the type of objects by adding the below code to py1.py:

```
print(type(my_list))
print(type(my_dict))
```

Save and run the file (To run the file, click the arrow in the top right hand corner)

Task 2: Iterate over a list and print each element

2a) Copy/Paste the following below the Task1 code

```
n = 0
for i in my_list:
    print('The fruit at index', n, 'is', i)
    n +=1
```

Save and run the file (To run the file, click the arrow in the top right hand corner)

Task 3: Pull out the key/value pairs of the dictionary

3a) Copy/Paste the following below the Task2 code

```
for k,v in my_dict.items():
print('Dictionary element', k, 'has a value of: ',v)
```

Save and run the file (To run the file, click the arrow in the top right hand corner)

3b) Review the code in py1.py and note the syntax of the brackets for lists and dictionaries

Task4: Check the output from an NSX API call

4a) Using Postman, run the api call '/policy/api/v1/segments'
4b) Open firefox and go to: https://jsonformatter.org/json-editor
4c) Copy/paste the output from 4a into the left hand window of the JSON editor
4d) Click the Right arrow key

What is the object type of 'results'?

What is the object type of each element (index number) in 'results'?

What is the connectivity path of the third object in 'results' ?

Task5: Walkthrough of lab4-segments.py

Follow instructor for walkthrough of script

Task6: Walkthrough of lab4-ipset.py

6a) Using Postman, create group called 'My-IP-Set' and add IP addresses to it. Use the following code:

```
{
    "description": "My-IP-Set",
    "display_name": "My-IP-Set",
    "expression": [
      {
        "ip_addresses": [
          "10.110.9.21",
          "10.112.9.22"
        ],
      "resource_type": "IPAddressExpression",
      "id" : "exp1"
      }
    ]
}
```

6b) Check in NSX Manager UI the existence of the 'My-IP-Set' group

6c) Follow instructor for walkthrough of script