Lab – Create a Network Device Inventory in Python

Objectives

Part 1: Investigate the Network Device Inventory API

Part 2: Modify the Code

Background / Scenario

An important skill for software developers is the ability to obtain, modify, and reuse code that was previously created. Coder communities like GitHub and Stack Overflow, among others, provide support for developers and many people freely share code there. Obtaining and modifying code for a specific need is an import skill for adding efficiency to the software development process.

In this lab, you will modify the code that was created to obtain the inventory of network hosts and repurpose it to obtain an inventory of network devices.

Required Resources

- Access to the APIC-EM in the DevNet sandbox at https://{YOUR-APICEM}.cisco.com
- Postman
- Python 3 with IDLE
- Python **requests** module
- Python **tabulate** module
- The functions file that you have created
- The **print_hosts.py** file that you created or the **print_hosts_sol.py** file
- Access to the Internet

Part 1: Investigate the Network Device Inventory API

In this part of the lab, you will investigate the documentation for the APIC-EM's network device inventory to determine the necessary information you need to create your program.

Step 1: Determine the endpoint URL.

a. Login to the APIC-EM sandbox using the URL and credentials supplied by your instructor and click **API** to access the Swagger API documentation:

b. Under Available APIs, click **Inventory > network-device > GET /network-device**.

c. Click **Try it out!** What is the URL that you will use in the **request.get()** method for this endpoint?

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Step 2: Investigate the response JSON.

a. Copy the JSON in the Response Body and paste it into https://codebeautify.org/jsonviewer.

b. Compare **GET /network-device** JSON to the **GET /host** JSON you viewed in the previous lab. How is the structure of the network device inventory JSON similar to the structure of the host inventory JSON?

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c. How many network devices are included in the inventory?

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d. You want to access and display information for the network devices similar to the information that are displayed for the hosts. However, the keys do not use the names hostType and hostIP. What are the names of similar keys for the network devices?

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e. Look for other cosmetic impacts to the code. For example, there are status and error messages that are displayed to the user. They may require modification.

Part 2: Modify the Code.

a. Open your **print_hosts.py** file and save it as **print_devices.py**.

b. Locate the places that require changes and make the edits.

c. Save and run your code. Investigate errors. If necessary, compare your file to the **print_devices_sol.py** file to discover the source of the errors.

d. Create a function from your code by copying the code into your **my_apic_em_functions.py** file and transforming it into a function called **print_devices()**.

e. Run your function file and test each function to make sure your code is error free.

Reflection

1. What are the advantages of modifying and reusing code in this way?

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2. What are the challenges?

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3. What can developers do to make the process easier?

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