Code Camp

Lab 2: Ansible

Prep

- Download Vagrant and install - https://www.vagrantup.com/downloads.html
- Download Virtualbox and install https://www.virtualbox.org/wiki/Downloads

Prep 2

- Downoad the repo by GIT or Zip file - top right button of the repo

https://github.com/jasonbarbee/TekLinksCodeCamp-Jan-2017

- Unzip and cd to the vagrant-code-camp folder
- issue command `vagrant up` - give it 10 minutes.
- Then run `vagrant ssh` to open a SSH to the machine
- Change to the lab directory - `cd /vagrant/Ansible`

Cloud Routers

Using VyOS - Vyatta - open source free router similar to Cisco.

Running a single instance in AWS EC2 instance for this lab.

Playbooks pre-built

All the playbooks you need are pre-built

- aws-facts.yml - Collects Data from AWS.
- security-alert.yml - Security Alert Code to push to hook.io
- vyos-scan.yml - Show version, if VyOS Then Security Alert
- vyos-config.yml - Changes Hostname and backups config file.
- vyos-spark.yml - Show version and pops a Spark Message

Learning Ansible Syntax

Ansible Playbook Header

```
---
- name: VyOS Gather Facts
  hosts: all
  connection: local

  vars:
    version: ""
    ansible_net_version: ""
    cli:
      host: "{{ inventory_hostname }}"
      username: "{{ username }}"
      password: "{{ password }}"
      transport: cli
```

Add a Task to gather all router facts

```
tasks:
  - name: collect all facts from the device
    vyos_facts:
      gather_subset: all
      provider: "{{ cli }}"
    register: result

  - name: debug stuff
    debug:
      var: result.ansible_facts
```

The first task collects the data, the second task dumps the data variable.
The second debug prints the array of data that the first task gathered.

Basic Ansible Fact Gathering

```
ansible-playbook -i inventory vyos-facts.yml
```

You should get ansible output from a test Vyatta router running in AWS EC2 Instance.

The data is broken out inso JSON format, which you can parse out using other tools.

Next - simple show version

Add a task to the bottom to show version.

```
- name: Show version
  vyos_command:
    commands:
      - show version
    provider: "{{ cli }}"
```

Running Show Version

Run it and see what the data looks like

```
ansible-playbook -i inventory vyos-facts.yml
```

Send a message to Cisco Spark!

Update your inventory file with your Spark Auth Token and your Customer Name.
And Your Spark Room ID. You can find that by going to https://web.ciscospark.com and signing in. Click on the Room you want to use.
The RoomID will be the string at the end of the URL - like this https://web.ciscospark.com/rooms/9f464a80-de51-11e6-a2af-2134341234/
Only grab the numbers - not the entire URL.

Ansible Spark module

```
- name: Cisco Spark - Text Message to a Room
  cisco_spark:
    recipient_type: roomId
    recipient_id: "{{ roomid }}"
    message_type: text
    personal_token: "{{ bottoken }}"
    message: "Your Name : Found Device - {{ result.ansible_facts.ansible_net_hostname  }}"
```

- Notice that we are using variables
- This module is pending final commit to the next version, but I have loaded it on the Code Camp box.

Try the Spark module

```
ansible-playbook -i inventory vyos-spark.yml
```

Backup configs and make a change

Example Task

```
- name: backup and load config commands from vyos.cfg
  vyos_config:
    src: vyos.cfg
    backup: yes
    provider: "{{ cli }}"

- name: configure the remote device with example CLI
  vyos_config:
    backup: yes
    lines:
      - set system host-name AWS-CodeCamp-{yourname}
    provider: "{{ cli }}"
```

Run the Configure/backup Script

```
ansible-playbook -i inventory vyos-config.yml
```

Ansible can play with AWS too...

AWS - Basic EC2 Inventory List

Here's example model for EC2

```
- name: Gather EC2 facts
      ec2_remote_facts:
        aws_access_key: "{{ AWS_ACCESS_KEY_ID }}"
        aws_secret_key: "{{ AWS_SECRET_ACCESS_KEY }}"
        region: "{{ EC2_REGION }}"
      register: ec2_facts

    - name: Debug
      debug:
        msg: "{{ ec2_facts }}"
```

Ansible EC2 Inventory List

- I have included credentials for this excersize in my aws-facts.yml file.
- To try this out run

```
ansible-playbook -i inventory aws-facts.yml
```

to see my AWS inventory running for this Lab.

Followup Resources

Great resources to read up on
Network To Code Ansible Plugin
https://github.com/networktocode/ntc-ansible

Python for Network Engineers
https://pynet.twb-tech.com/

NAPALM for Ansible
https://pynet.twb-tech.com/blog/automation/napalm-ios.html