

Docker + Ansible

Automate the staging of a WLC

Jamie Jackson

@techiejames

why-phy.comtechie.net



First
of
all...

Disclaimers

- ▶ Designed for Cisco WLC - AireOS based
- ▶ Not inventing anything new
 - ▶ Autoinstall and configuration generation tools have been around forever
 - ▶ Just wanted to learn Docker and Ansible
- ▶ I'm not a SME on Docker/Ansible/Python
 - ▶ I may say something incorrect - I do accept feedback!
- ▶ Upcoming blog post(s) will do a deeper dive for those interested
 - ▶ why-phy.comptechie.net

All your container are belong to us

▶ Docker

- ▶ Like VM's but for individual applications/services
- ▶ Create an image that has the app/service and dependencies
 - ▶ Can then be deployed to multiple hosts (different OS/platform/etc)
 - ▶ Containers can easily be created as needed - allows for scaling up quickly



Docker Recipe for Success

- ▶ Ubuntu 18.04 Base Image
- ▶ DHCP server
 - ▶ isc-dhcp-server
 - ▶ Used to provide IP address and option 150 (tftp server) to the WLC at start
- ▶ TFTP server
 - ▶ tfptd-hpa
 - ▶ Hosts the base config file used to stage a factory reset WLC
- ▶ Ansible
 - ▶ Includes associated dependencies (e.g. Python)
 - ▶ Builds configuration snippets based on provided input

Host configuration

- ▶ Physical
 - ▶ MacBook Pro
 - ▶ USB-C ethernet adapter
- ▶ Virtual
 - ▶ Ubuntu VM running in Virtualbox
 - ▶ 2 NICs configured
 - ▶ 1 w/ NAT tied to my wifi adapter for internet access
 - ▶ 1 w/ bridging tied to the physical ethernet adapter that will be connected to WLC service port
 - ▶ Bridged virtual nic configured with static IP in my DHCP range

Ansible

- ▶ Uses playbooks to perform tasks on a list of hosts
- ▶ Snippet of a task in my playbook:
- ▶ - name: add wlan_wpa2
- ▶ aireos_config:
- ▶ provider: "{{provider}}"
- ▶ lines:
- ▶ - wlan create {{item.wlan_id}} {{item.profile}} {{item.ssid}}
- ▶ - wlan interface {{item.wlan_id}} {{item.iface}}
- ▶ - wlan security wpa wpa2 ciphers aes enable {{item.wlan_id}}
- ▶ - wlan security wpa akm 802.1x disable {{item.wlan_id}}
- ▶ - wlan security wpa akm psk enable {{item.wlan_id}}
- ▶ - wlan security wpa akm psk set-key ascii {{item.psk}} {{item.wlan_id}}
- ▶ - wlan enable {{item.wlan_id}}
- ▶ with_items: "{{wpa2_wlans}}"

Docker and Ansible Demo