Do I choose Ansible, DNA Center or both?

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Experience

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Share your automation story

#ANSIBLEFEST2019

1. How did you get started with Ansible?

2. How long have you been using it?

3. What's your favorite thing to do when you Ansible?
Agenda

• The Challenge
• Why DNA Center?
• Why Ansible?
• Ansible + DNA Center
• Demo
The Challenge

#SiliconValleyInSTL
Controllers, Controllers Everywhere...

Technical Domains

Campus

Wireless

Data Center

Virtualization

Storage

Security
Key Points

• Many Controllers
• Narrow Focus
• Binary Mindset
• Lost at Sea
Why DNA Center?
What is DNA Center?

**Network Infrastructure**

**Automation**
- Simplify
- Abstract
- Intent Defined

**Assurance**
- Ingest Telemetry
- Correlate
- Actionable Insights
Workflow based Configuration

Design
What does the network look like?

Policy
How should the network behave?

Provision
Configure the network.

Assurance
Maintain and Troubleshoot
DNAC Automation Strengths

- Abstracted from CLI
- Global Settings
- Network Discovery
- Software Image Management
- Network Plug-n-Play
- Application Policy (QoS)
- Wireless Automation
- SD Access Fabric
Why Ansible?
Building bridges
Technical Domains

- Campus
- Wireless
- Data Center
- Virtualization
- Storage
- Security

Ansible/Ansible Tower
Ansible as the Glue

Service Now

DIY

APIC

aws

Azure

f5
Key Points

• Normalize Automation Approach Across Domains
• Shared / Common Skillset
• Fill the gaps
• Tower for API
Ansible + DNA Center
DNA Center as a Platform

- Intent APIs
- RESTful
- Released in 1.2.5 Late 2018
- Curated/Well-Documented
- Headless Automation Capability*
Ansible Modules for DNA Center

DNA-C Modules
- Site Hierarchy
- Common Settings
- Global Credentials
- Credential Assignments
- *Wireless SSID
- Discovery
- IP Pools
- Role Assignments
- Site Assignments
- *Wireless Profile
- *Provision Wireless

DNA Center as a Platform

Network Infrastructure
DNA Center Inventory Plugin

- DNAC Network Discovery
- DNAC as a Source of Truth
- Extend Automation Capability
Key Points

- DNACaaP Provides RESTful API
- DNAC Functions Exposed as Modules
- Extend with Ansible and Inventory Plugin
Demo

#SiliconValleyInSTL
Automation Through DNA Center
Using DNAC Modules

Run Playbook

Provision

NetOps

- name: wireless profile
dnac_wireless_profile:
  host: "{{ hostname }}"
  port: '443'
  username: "{{ username }}"
  password: "{{ password }}"
  state: absent
#
  name: WP-ATC56-DNAC-DEV
  sites:
    - "Global/Bldg56/DNAC-Dev"
  ssid_name: DNA3_DNAC
  ssid_type: Enterprise
  flexconnect: true
  flexconnect_vlan: '10'
  fabric_enabled: false
  interface: ""
Automate Devices Using DNAC Inventory

DNAC as an Inventory Source

- name: Manage VLANs
  ios_vlan:
    state: "{{ desired_state }}"
    purge: yes
    aggregate: "{{ vlans | list }}"
  when:
    - os is defined
    - os == 'IOS-XE'

Run Playbook

Ansible Inventory Plugin

Inventory

Executed Based on OS Type

Executed

Pulls and compares config

If Changes, push config
Demo Steps

1. Create Site Hierarchy
2. Discover Network Devices
3. Configure Network Settings
4. Site Role Assignments
5. Add VLANs to Switches
6. Add SVIs to Switches
7. Configure AP Port
8. Create Dummy Wireless Profile
9. Provision WLC
10. Provision AP
11. Create SSID
12. Create New Wireless Profile
13. Add Wireless Interface
14. Provision WLC

DNA Center Modules
Inventory Plugin

--- Manual --- No API Yet
DNA Center Modules
DNA Center Modules
DNA Center Modules
DNA Center Modules
DNA Center Modules
Where do I get the content?

- **WWT ATC Lab**

- **Github Repo**

Stop by the WWT Lounge to Meet the team!
Wrapping it Up

<table>
<thead>
<tr>
<th>DNA Center</th>
<th>Ansible/Ansible Tower</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Day Zero (Plug and Play)</td>
<td>✓ Multi-Vendor</td>
</tr>
<tr>
<td>✓ Network Discovery</td>
<td>✓ Multi-Domain</td>
</tr>
<tr>
<td>✓ Software Defined Access</td>
<td>✓ Glue it all together</td>
</tr>
<tr>
<td>✓ Software Image Management</td>
<td>✓ Anything Not to the Left</td>
</tr>
<tr>
<td>✓ Application Policy</td>
<td></td>
</tr>
</tbody>
</table>
https://github.com/CiscoDevNet/ansible-dnac