Getting Started with Ansible for Network Automation

Josh VanDeraa

vanderaaj jvanderaa #jvanderaa

Session Overview

At the end of this session you will be able to:

Session Overview

At the end of this session you will be able to:

- Review the playbook management keys and values

Session Overview

At the end of this session you will be able to:

- Review the playbook management keys and values
  - vars:

Session Overview

At the end of this session you will be able to:

- Review the playbook management keys and values
  - vars:
  - connection:

Session Overview

At the end of this session you will be able to:

- Review the playbook management keys and values
  - vars:
  - connection:
  - hosts:

Session Overview

At the end of this session you will be able to:

- Review the playbook management keys and values
  - vars:
  - connection:
  - hosts:
- Update an Ansible config file to manipulate playbook wide settings

Session Overview

At the end of this session you will be able to:

- Review the playbook management keys and values
  - vars:
  - connection:
  - hosts:
- Update an Ansible config file to manipulate playbook wide settings
- Gather data from various devices using command modules
  - IOS
  - NXOS
  - Other network devices

Session Overview

At the end of this session you will be able to:

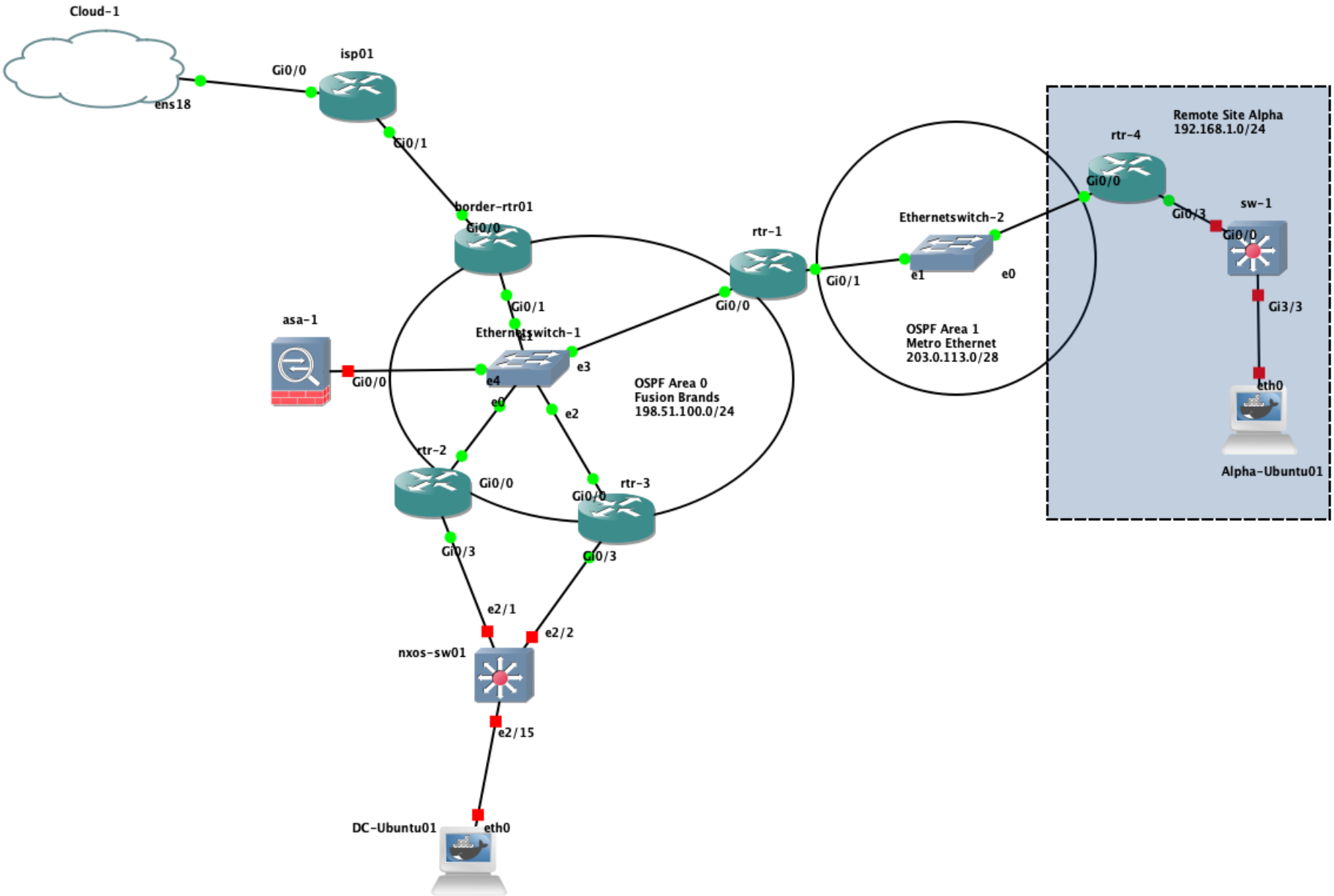
- Review the playbook management keys and values
  - vars:
  - connection:
  - hosts:
- Update an Ansible config file to manipulate playbook wide settings
- Gather data from various devices using command modules
  - IOS
  - NXOS
  - Other network devices
- Know where to find information about Ansible Network Modules

Session Overview

At the end of this session you will be able to:

- Review the playbook management keys and values
  - vars:
  - connection:
  - hosts:
- Update an Ansible config file to manipulate playbook wide settings
- Gather data from various devices using command modules
  - IOS
  - NXOS
  - Other network devices
- Know where to find information about Ansible Network Modules
- How to use ios$_{f}actstogatherIOSspecificfactsfromadevice$

Network Diagram



Playbook Management Key Values

All Ansible playbooks are defined within YAML format, which leverages key/value pair assignments. We will take a look at some common keys used, and what their corresponding value looks like.

```
- name: "PLAY 1: Gather data from router"
  connection: network_cli
  hosts: r1
  become: true
  become_method: enable
```

Ansible Network Modules

Ansible Network Modules

The whole list of Network modules and their corresponding requirements can be found with your favorite search engine on term of "Ansible Network Modules" - which will take you to this link: https://docs.ansible.com/ansible/latest/modules/list_of_network_modules.html This will be included on the notes for this.

Ansible Network Modules Page

Let's take a look at those modules

Gathering Data from Cisco IOS Devices

Today's demo: We are going to take a look at a couple of the modules used for gathering information from Cisco IOS devices.

Gathering Data from Cisco IOS Devices

Today's demo: We are going to take a look at a couple of the modules used for gathering information from Cisco IOS devices.

- **cli_command**

Gathering Data from Cisco IOS Devices

Today's demo: We are going to take a look at a couple of the modules used for gathering information from Cisco IOS devices.

- **cli_command**
- **ios_command**

ios_command

- This is used when working with Cisco IOS devices connecting with SSH

ios_command

- This is used when working with Cisco IOS devices connecting with SSH
- One of the original network modules introduced with Ansible for networking devices

ios_command

- This is used when working with Cisco IOS devices connecting with SSH
- One of the original network modules introduced with Ansible for networking devices
- Has evolved over time, original playbooks you will see a key **provider:** included, this is legacy

DEMO!

Let's take a look!

- cli_command
- ios_command

IOS Facts

Key	Returned	Description
ansible_net_all_ipv4_addresses list	when interfaces is configured	All IPv4 addresses configured on the device
ansible_net_all_ipv6_addresses list	when interfaces is configured	All IPv6 addresses configured on the device
ansible_net_api string	always	The name of the transport
ansible_net_config string	when config is configured	The current active config from the device
ansible_net_filesystems list	when hardware is configured	All file system names available on the device
ansible_net_filesystems_info dictionary	when hardware is configured	A hash of all file systems containing info about each file system (e.g. free and total space)
ansible_net_gather_subset list	always	The list of fact subsets collected from the device
ansible_net_hostname string	always	The configured hostname of the device
ansible_net_image string	always	The image file the device is running
ansible_net_interfaces dictionary	when interfaces is configured	A hash of all interfaces running on the system
ansible_net_iostype string	always	The operating system type (IOS or IOS-XE) running on the remote device
ansible_net_memfree_mb integer	when hardware is configured	The available free memory on the remote device in Mb
ansible_net_memtotal_mb integer	when hardware is configured	The total memory on the remote device in Mb
ansible_net_model string	always	The model name returned from the device
ansible_net_neighbors dictionary	when interfaces is configured	The list of CDP and LLDP neighbors from the remote device. If both, CDP and LLDP neighbor data is present on one port, CDP is preferred.
ansible_net_python_version	always	The Python version Ansible controller is using

Summary

To review what we accomplished today:

- We reviewed the playbook management keys and values

Summary

To review what we accomplished today:

- We reviewed the playbook management keys and values
- Covered how to change settings within the Ansible configs, that are helpful for Network Engineers

Summary

To review what we accomplished today:

- We reviewed the playbook management keys and values
- Covered how to change settings within the Ansible configs, that are helpful for Network Engineers
- Gathered data from IOS and NXOS devices, using multiple methods

Summary

To review what we accomplished today:

- We reviewed the playbook management keys and values
- Covered how to change settings within the Ansible configs, that are helpful for Network Engineers
- Gathered data from IOS and NXOS devices, using multiple methods
- Detailed where to get more information about network modules on the Ansible documentation pages

Summary

To review what we accomplished today:

- We reviewed the playbook management keys and values
- Covered how to change settings within the Ansible configs, that are helpful for Network Engineers
- Gathered data from IOS and NXOS devices, using multiple methods
- Detailed where to get more information about network modules on the Ansible documentation pages
- Used regex to find the number of interfaces on a device

Contact

You can find me and more contacts on the Packet Pushers Slack Channel.

#jvanderaa