Red Hat
Ansible Automation
Platform

Multi-vendor network automation with Ansible Automation Platform

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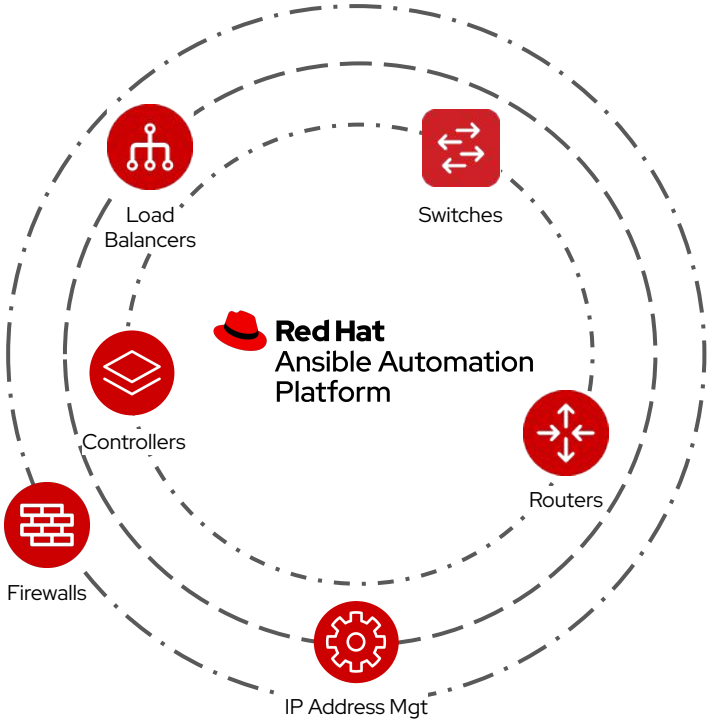
Agenda

- What is Ansible Network Automation?
- What does it do?
- Use case discussion/demonstration
- Where to go next & questions

What is Ansible Network Automation?



Ansible network automation is our content domain focused on networking use cases. The goal is to provide network teams with the tools and an operational framework to implement next-generation network operations, manage network infrastructure-as-code, and better support digital transformation by connecting teams across the IT organization.

Ansible network automation is a set of Certified Content Collections designed to streamline and operationalize network operations across multiple platforms and vendors.

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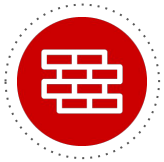
Ansible Network Ecosystem

SWITCHES

ROUTERS



ENTERPRISE FIREWALLS

LOAD BALANCERS

CONTROLLERS

IP ADDRESS MGMT

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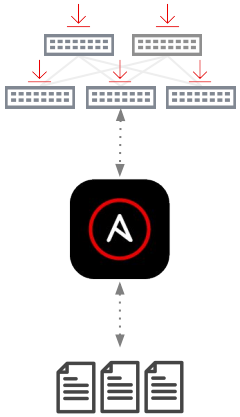
Start Small

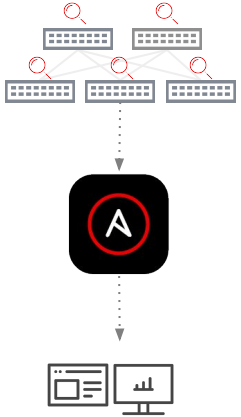
Quick automation victories for network engineers



Config Backup and Restore

Ubiquitous first touch use case

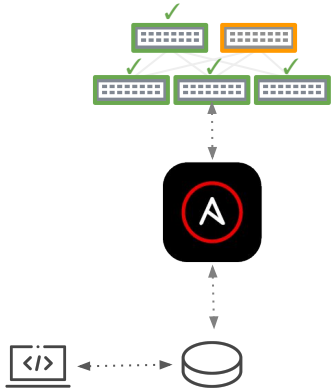
- Gain confidence in automation quickly
- First steps towards network as code
- Quickly recover network steady state



Dynamic Documentation

Use Ansible facts to gain information

- Read-only, no production config change
- Dynamic Documentation and reporting
- Understand your network



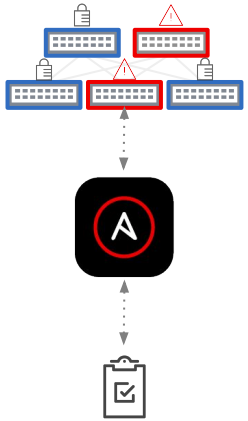
Scoped Config Management

Focus on high yield victories

- Automate VLANs, ACLs and SNMP config
- Introduce source of truth concepts
- Enforce Configuration policy

Think Big

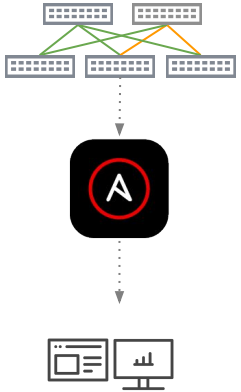
Institutionalizing automation into your organization



Network Compliance

Respond quickly and consistently

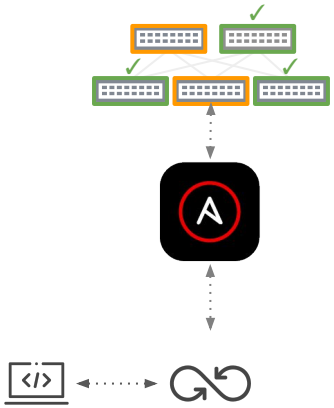
- Security and config compliance for network
- Remove human error from security responses
- Enforce Configuration policies and hardening



Operational State Validation

Going beyond config management

- Parsing operational state to structured values
- Schema validation and verification
- Enhance operational workflows



Automated NetOps

Infrastructure as code

- Data centric automation
- Deploy configuration pipelines
- GitOps for Network Automation

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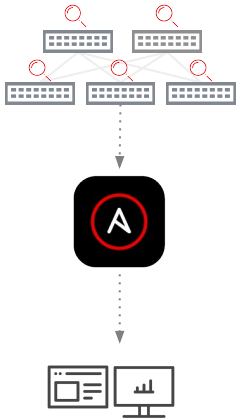
Infrastructure Awareness



Why is it important?

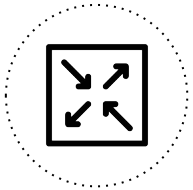
- Read-only, no changing of production configs
- Normalizes configs into structured data
- Dynamic Documentation and reporting

Why Ansible Automation Platform?

- Huge ecosystem of tools
- Standard data models across multiple platforms
- Constantly expanding fact capabilities

Ansible Automation Platform facts

Network automation begins and ends with **facts**



Network native configuration

Convert to structured data

```
"ansible_facts": {
  "ansible_net_iostype": "IOS-XE",
  "ansible_net_version": "16.09.02",
  "ansible_net_serialnum": "9L8KQ482JFZ",
  "ansible_net_model": "CSR1000V",

<<rest of output removed for brevity>>
```

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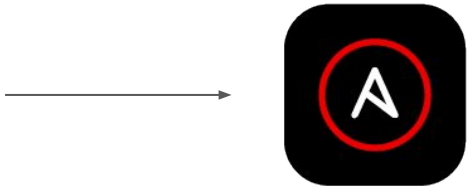
Data output is flexible

Create customized network reports

```
ansible_facts:
  ansible_net_api: cliconf
  ansible_net_fqdn: rtr2
  ansible_net_gather_network_resources:
  - interfaces
  ansible_net_gather_subset:
  - default
  ansible_net_hostname: rtr2
  ansible_net_image: flash:EOS.swi
  ansible_net_model: vEOS
  ansible_net_python_version: 2.7.5
  ansible_net_serialnum:
D00E130991A37B49F970714D8CCF7FCB
  ansible_net_system: eos
  ansible_net_version: 4.22.0F
  ansible_network_resources:
    interfaces:
    - enabled: true
      name: Ethernet1
    - enabled: true
      name: Loopback0
<<rest of output removed for slide
```



Ansible Automation Platform

Customized Report

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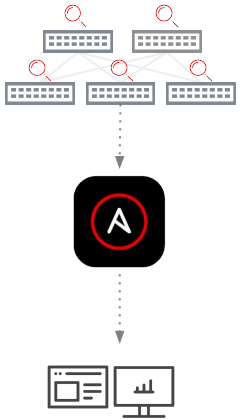
Demo | Infrastructure Awareness

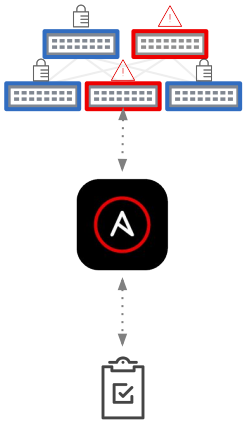


You will see:

- ServiceNow CMDB used as dynamic inventory
- Network Fact Gathering
- ServiceNow CMDB data population

Code can be found at: https://github.com/zjpeterson/ansible-net-facts

Network Compliance



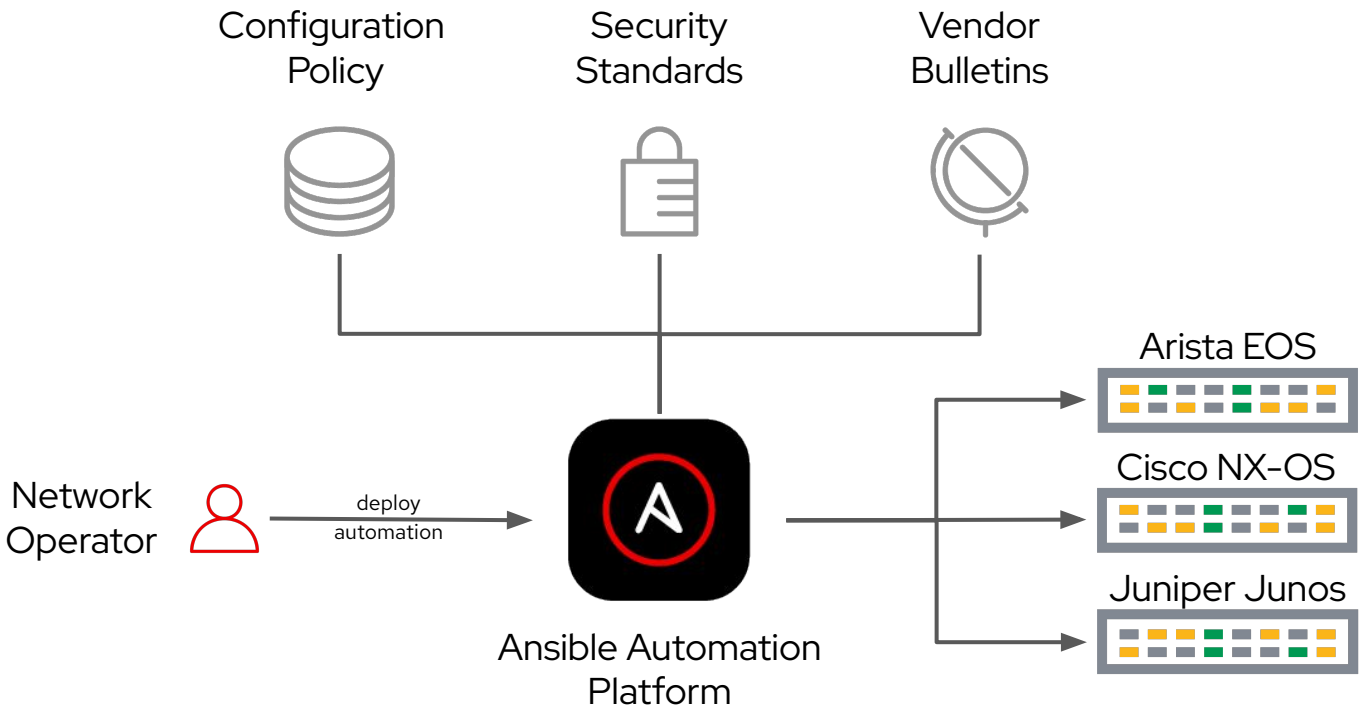
Why is it important?

- Patch networks in minutes not days
- Remove human error from a widely scoped activity
- Enforce Configuration policies and hardening

Why Ansible Automation Platform?

- Make the same changes across a multi-vendor environment
- Integration with any policy source
- Flexibility to add, replace, or remove situationally

Network Compliance



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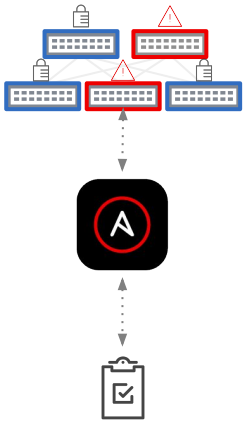
Demo | Network Compliance

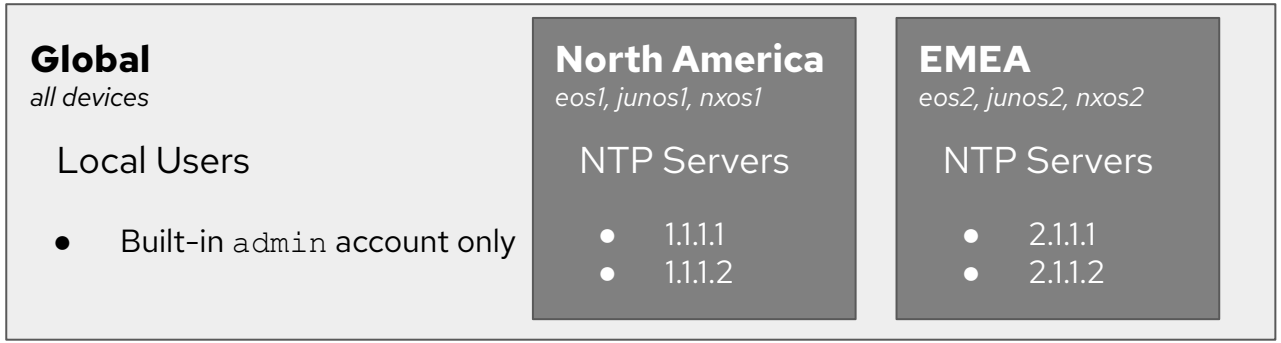


You will see:

- Vendor-agnostic compliance checking
- Vendor-agnostic compliance enforcement
- Dynamic reporting via ChatOps
- Automatic recording of change activity

Code can be found at: https://github.com/zjpeterson/ansible-net-compliance

Lab Configuration



Learning resources

Continue your automation journey with Red Hat® Ansible® Network Automation

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Networking workshop

https://aap2.demoredhat.com

E-Books

Part 1: Modernize Your Network with Red Hat
red.ht/network-book1
Part 2: Automate Your Network with Red Hat
red.ht/network-book2

Red Hat Certification
Ansible for Network Automation (DO457)

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