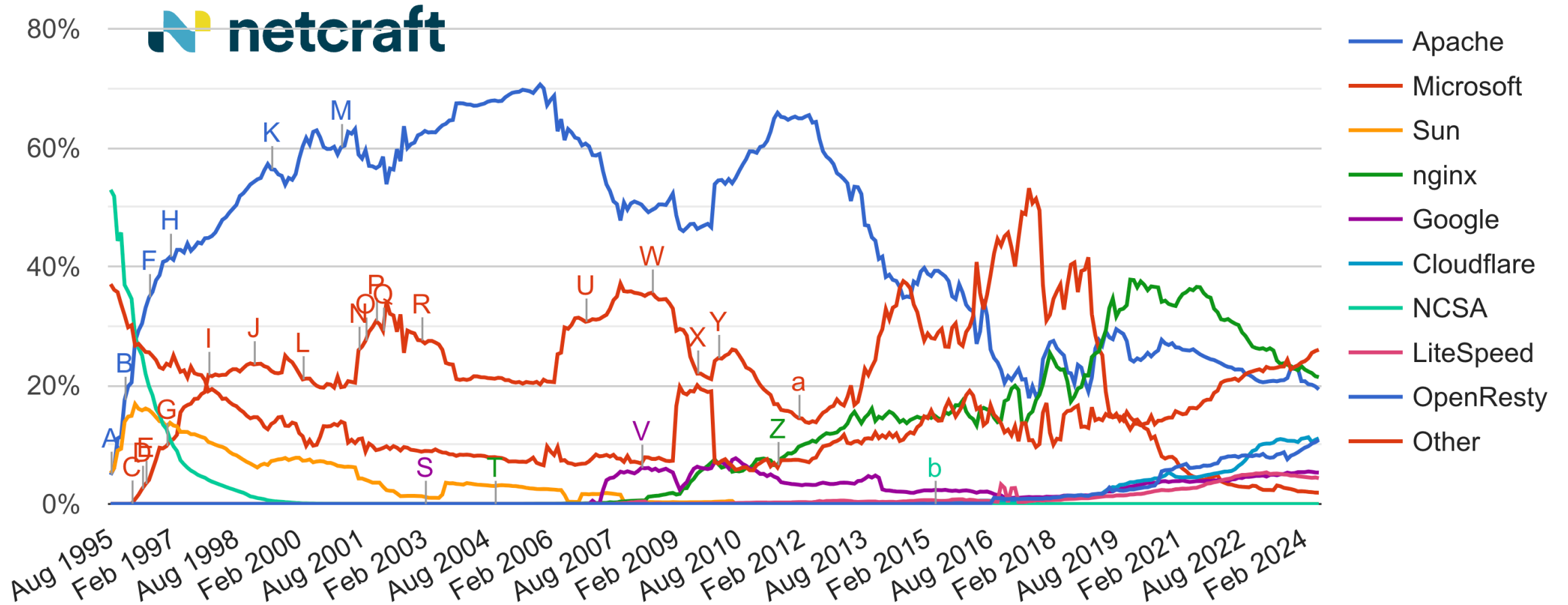**F5 NGINX**

NGINX: Better with Ansible
(Or: How to Provision NGINX in Your Environment)

Alessandro Fael Garcia (@alessfg – a.faelgarcia@f5.com)

Senior Solutions Engineer – Community & Alliances

NGINX
Part of F5

What is NGINX?

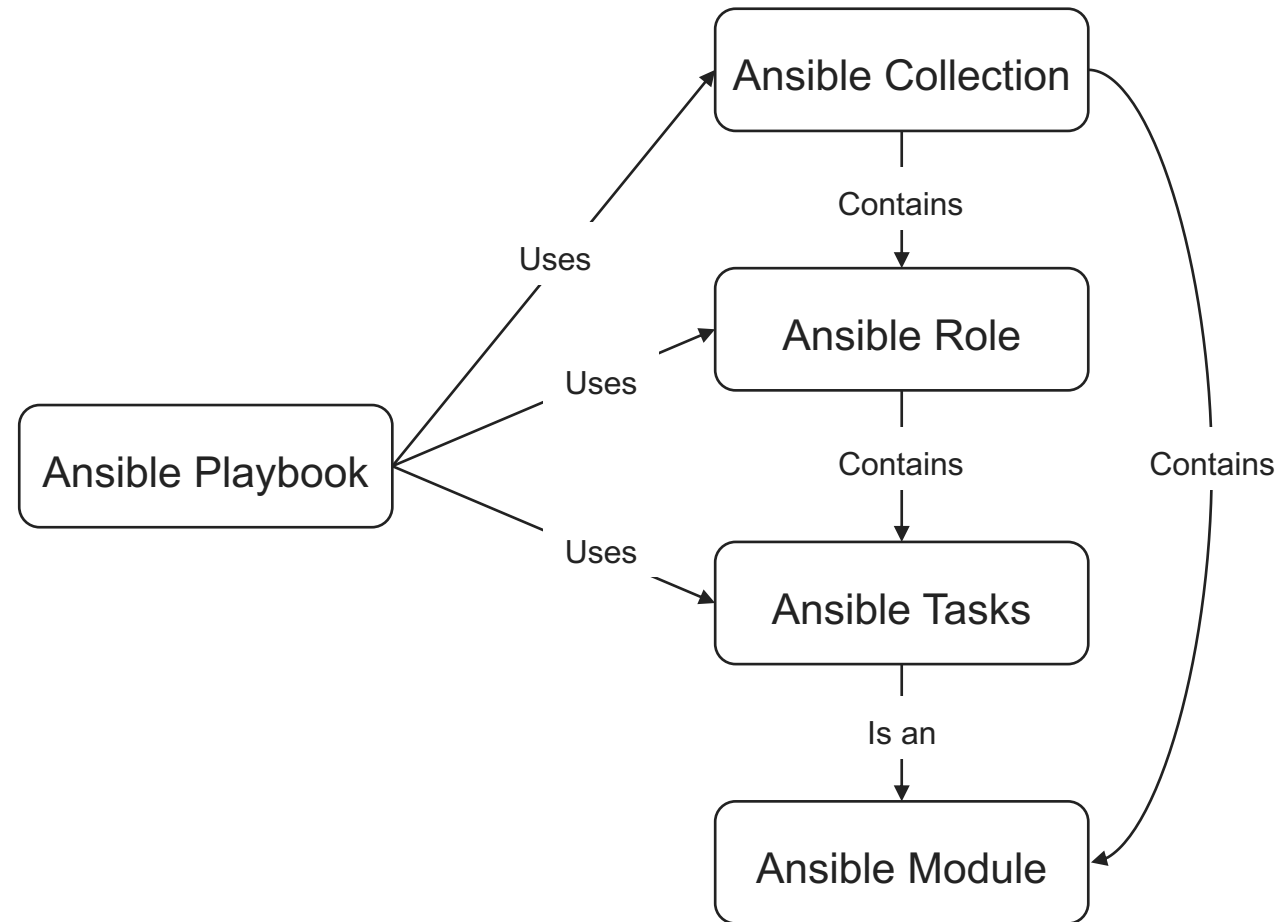Web server developers: Market share of all sites

What is Ansible?

- Open-Source Software tool for provisioning and configuration management in any environment (eg AWS)

- Agentless (does require Python on the target host)

- Describe target host state using YAML

- Includes wide array of modules (written in Python) and roles/collections (written in YAML) covering multiple use cases

- Ansible playbook -> Ansible collection -> Ansible roles -> Ansible tasks -> Ansible modules

- **$ ansible-playbook <--private-key key.pem> <-i inventory.yml> playbook.yml**

```yaml
---
- name: Deploy NGINX Plus
  hosts: aws_ec2
  become: true
  remote_user: "{{ hostvars[inventory_hostname]['tags']['user'] }}"
  collections:
    - nginxinc.nginx_core
  roles:
    - role: nginx
      vars:
        nginx_type: plus
        nginx_license:
          certificate: <path/to/cert>
          key: <path/to/key>
        nginx_remove_license: false
```

playbook.yml

©2024 F5

What is Ansible?

```
                                    ┌─────────────────────┐
                              ┌────▶│  Ansible Collection │────┐
                         Uses │     └─────────────────────┘    │
                              │              │ Contains        │
                              │              ▼                 │
                              │     ┌─────────────────────┐    │
┌─────────────────────┐  Uses │ ┌─▶│    Ansible Role     │    │ Contains
│  Ansible Playbook   │◀──────┤ │  └─────────────────────┘    │
└─────────────────────┘       │ │           │ Contains        │
                         Uses │ │           ▼                 │
                              │ │  ┌─────────────────────┐    │
                              └─┼─▶│    Ansible Tasks    │    │
                                │  └─────────────────────┘    │
                                │           │ Is an           │
                                │           ▼                 │
                                │  ┌─────────────────────┐    │
                                └─▶│   Ansible Module    │◀───┘
                                   └─────────────────────┘
```

What is Ansible?

ansible-role-nginx > tasks > keys > setup-keys.yml

```yaml
---
- name: (Alpine Linux) Set up signing key
  when: ansible_facts['os_family'] == 'Alpine'
  block:
    - name: (Alpine Linux) Set up NGINX signing key URL
      ansible.builtin.set_fact:
        keysite: "{{ nginx_signing_key | default(nginx_default_signing_key_rsa_pub) }}"

    - name: (Alpine Linux) Download NGINX signing key
      ansible.builtin.get_url:
        url: "{{ keysite }}"
        dest: /etc/apk/keys/nginx_signing.rsa.pub
        mode: "0400"

- name: (Debian/Red Hat/SLES OSs) Set up NGINX signing key URL
  ansible.builtin.set_fact:
    keysite: "{{ nginx_signing_key | default(nginx_default_signing_key_pgp) }}"
  when: ansible_facts['os_family'] != 'Alpine'

- name: (Debian/Ubuntu) Add NGINX signing key
  ansible.builtin.apt_key:
    id: 8540A6F18833A80E9C1653A42FD21310B49F6B46
    keyring: /usr/share/keyrings/nginx-archive-keyring.gpg
    url: "{{ keysite }}"
  when: ansible_facts['os_family'] == 'Debian'

- name: (Red Hat/SLES OSs) Add NGINX signing key
  ansible.builtin.rpm_key:
    fingerprint: 8540A6F18833A80E9C1653A42FD21310B49F6B46
    key: "{{ keysite }}"
  when: ansible_facts['os_family'] in ['RedHat', 'Suse']
```

OPEN EDITORS
- setup-keys.yml ansib...

ANSIBLE (WORKSPACE)
- ansible-role-nginx
  - .github
  - .vscode
  - defaults
  - files
  - handlers
  - meta
  - molecule
  - tasks
    - agent
    - amplify
    - config
    - keys
      - setup-keys.yml
    - modules
    - opensource
    - plus
    - prerequisites
    - validate
    - main.yml
  - templates
  - vars
  - .ansible-lint
  - .gitignore
  - CHANGELOG.md
  - CODE_OF_CONDUCT.md
  - CONTRIBUTING.md
  - LICENSE
  - README.md
  - SECURITY.md
  - SUPPORT.md

Ansible Marketplaces

Ansible Galaxy

- Free Open-Source Marketplace

- Contains Roles & Collections

- 100% Community Supported

https://galaxy.ansible.com/

Ansible Automation Platform / Hub

- Free Enterprise Marketplace

- Contains Certified Collections

- Both Red Hat and Community Supported

https://console.redhat.com/ansible/automation-hub

NGINX Ansible Roles

Three (five?) roles to rule them all

- NGINX

- NGINX Config

- NGINX App Protect (might split into distinct WAF/DoS roles)

- **Coming soon:** NGINX Agent (currently part of NGINX role)

NGINX Certified Collection

Get all roles in a centralized package

NGINX Core Collection

wraps all the

<u>NGINX Ansible roles</u>

Available on Ansible Galaxy and Ansible Automation Hub (Soon)

©2024 F5

Why use Ansible to provision NGINX?
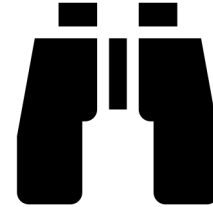
NGINX: Better with Ansible

Interested in Ansible

Install and configure NGINX across multiple targets
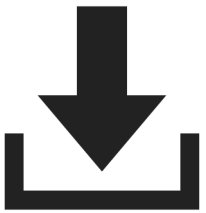
Centralized insight into your NGINX deployments

Certified and supported by Red Hat

Demo Time

Let's check out the NGINX collection!

1	2	3	4
Install NGINX	Configure NGINX to serve a simple web app and act as a reverse proxy	Set up NGINX App Protect WAF to protect NGINX	Use NGINX Agent to report telemetry back to NGINX One

Demo available at https://github.com/alessfg/nginx-ansible-demo

©2024 F5

Join the NGINX Community Slack!

https://community.nginx.org/joinslack

©2024 F5

Thank you!

Get secure, scalable, and resilient application delivery with NGINX and Ansible

f5.com/partners/technology-alliances/red-hat

twitter.com/nginx

youtube.com/user/nginxinc

linkedin.com/company/nginx