Ansible

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Simple IT Automation



github.com/jedrzejserwa/hacktoberfest2019

Agenda

- What is Ansible
- Ansible building blocks
- Demo

What is Ansible

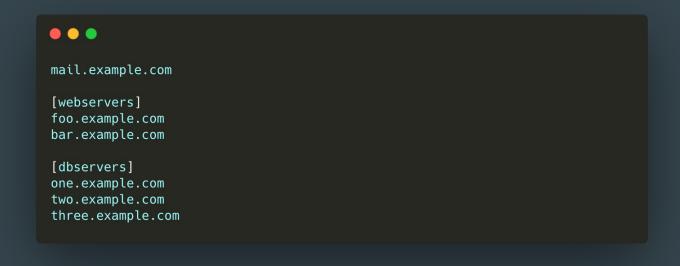
- Automation tool
 - Configuration management tool
 - Application deployment tool
 - Software provisioning tool
 - Cloud provisioning tool*
- Runs on many UNIX systems
- Can configure both UNIX and Windows based systems
- Uses no agent
- Owned by RedHat
- Written in Python and open-sourced via GNU 3.0

Ansible building blocks

Ansible Inventory

- Definition of groups and hosts for Ansible executions
- Two types
 - Static inventory
 - Dynamic inventory
- Supports ini and yaml formats for static inventory

Ansible Inventory example



Ansible Variables

- Similar to variable concept in any programming language
- Used to parametrize your automations
- Uses Jinja2 templating engine

Ansible Variables example

```
base_path: 188.165.23.19

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- hosts: app_servers
vars:
    app_path: "{{ base_path | default('localhost:8080') }}/22"
```

Ansible Modules

- Set of ready-2-go libraries
- Used in playbook tasks or via ansible commands
- Categorized by the functionality
 - System
 - Commands
 - o Files
 - o Database
 - Cloud
 - And many others
- Possible to write your own custom module

Ansible Modules example

```
$ ansible atlanta -m copy -a "src=/etc/hosts dest=/tmp/hosts"
```

Ansible Playbook

- Configuration file written in yaml format
- Definition of what we want to achieve with the desired state
- Idempotency as a good practice
- Playbook building blocks:
 - Plays Set of Tasks to be run on the host
 - Task an action to be performed on the host

Ansible Playbook example

```
hosts webservers
  vars
   http_port 80
  remote user: root
   name: ensure apache is at the latest version
     name httpd
     state: latest
   name: write the apache config file
    template:
     src: /srv/httpd.j2
     dest: /etc/httpd.conf

    restart apache

   name: ensure apache is running
    service
     name: httpd
     state started
  handlers:
     name: restart apache
     service
       name: httpd
       state restarted
```

Ansible Roles

- Allows you to better organize your playbooks
- Allows you to easily reuse written automation
- Structurized view

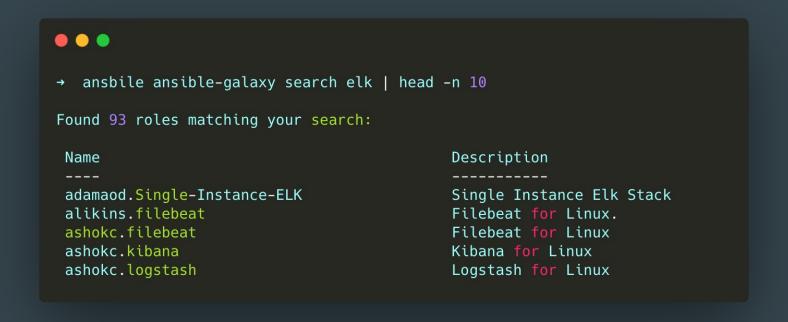
Ansible Roles example

```
→ mysql_db tree
   README.md
   defaults
    └─ main.yml
    files
    handlers
    └─ main.yml
    └─ main.yml
    tasks
    └─ main.yml
    templates
    tests
     — inventory
     test.yml
   vars
    └─ main.yml
8 directories, 8 files
```

Ansible Galaxy

- Set of ready-2-go Ansible roles
- Developed and open-sourced by Ansible Community
- Over 22k available roles to download
- Roles available via Ansible Galaxy website or ansible-galaxy CLI

Ansible Galaxy example



Ansible Vault

- Allows to encrypt sensitive data, even binary files
- Uses AES256 specifiaction
- Available via ansible-vault CLI

Demo

Sources

https://docs.ansible.com https://jinja.palletsprojects.com/en/2.10.x/

Q&A

Thanks!