AUTOMATING INFRASTRUCTURE

with ANSIBLE

Hands on presentation by

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In the beginning...

- Manual server setup
- Manual installation and configuration
- Heap of shell scripts

… there were problems...

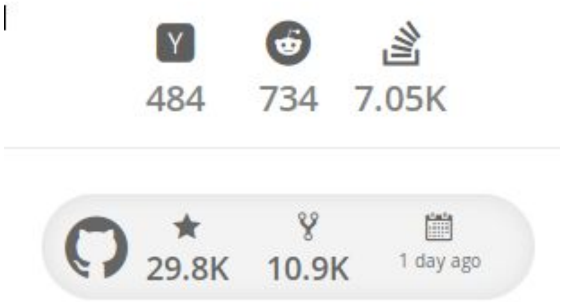
- What is actually on the machine?
- Keeping track of installed versions & configurations
- Setting up new machines
- Everybody had his / her own way of doing things

… that needed to be solved...

- Structured Infrastructure managment
- Documented versioning
- Replayability of configurations
- Testability of installations
- Small learning curve

… by ANSIBLE

- Straightforward setup
- Easy to learn
- Scalable
- Large team features
- Enterprise backing & support ($)
- Large & active community



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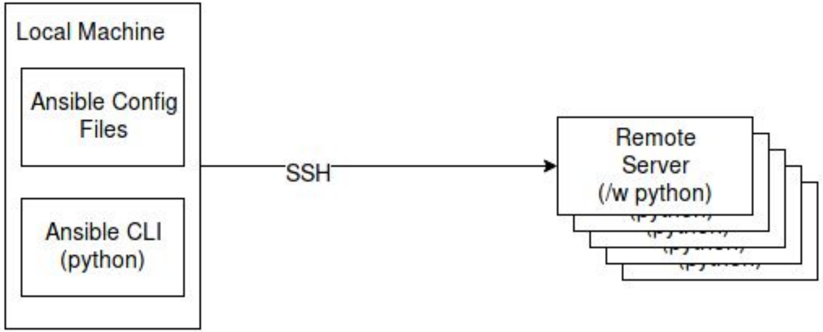
How does it work?



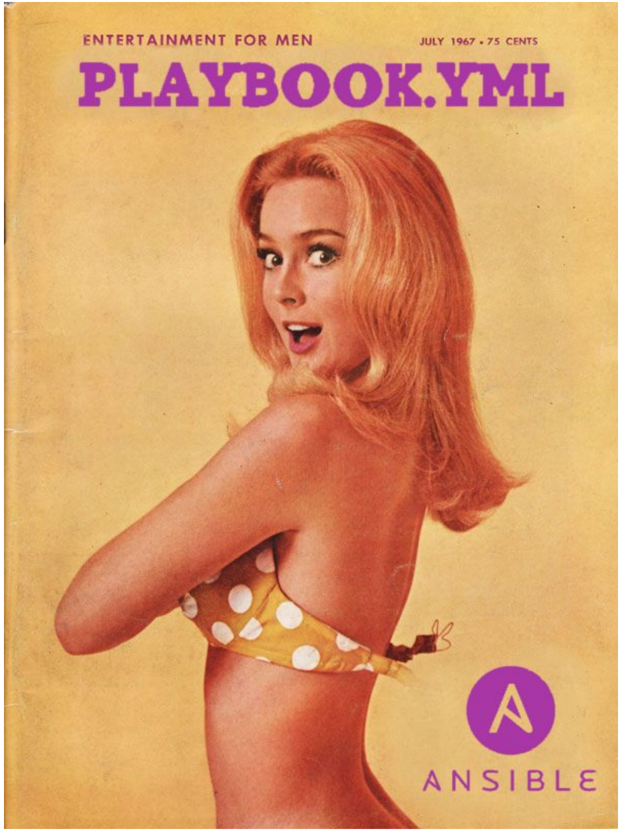
Key concepts

- **Inventory:** list of servers
- **Playbook:** describe how to set up servers
- **Modules:** the tools using which you may do setup

Inventory

```
all:
  hosts:
      backup:
         ansible_host: 192.168.123.123
         ansible_user: root
  children:
      production_servers:
            hosts:
                  mariadb:
                  ansible_host: 192.168.123.123
                  ansible_user: root
                  nginx:
                  ansible_host: 192.168.123.124
                  ansible_user: root
```

Playbooks and modules



Playbooks and modules

```
---

- name: User friendly description of play
  hosts: all
  tasks:
      - name: Install a file manager
      apt:
        package: mc
        state: present
      - name: Check out a project
      git:
        repo: git@gitlab.com:justrocket/dev
        accept_hostkey: yes
        dest: /opt/dev
```

Core Modules

Cloud / Clustering / Commands / Crypto

Database / Files / Identity / Inventory

Messaging / Monitoring / Net Tools / Network

Notification / Packaging / Remote Management

Source Control / Storage / System / Utilities

Web Infrastructure / Windows

Variables, basic loops

```
---

- name: Backup data
  hosts: mariadb_server
  variables:
    - label: "important_dump"
  tasks:
     - name: Create database dumps
     mysql_db:
       state: dump
       name: {{ item }}
       target: /tmp/{{ inventory_hostname }}_{{item}}_{{label}}.sql
       with_items:
         - app_db_X
         - app_db_Y
         - app_db_Z
```

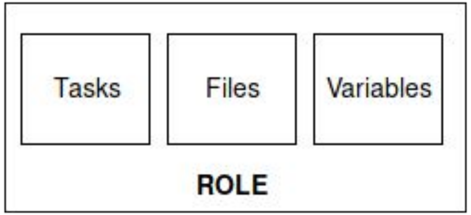
Shell module

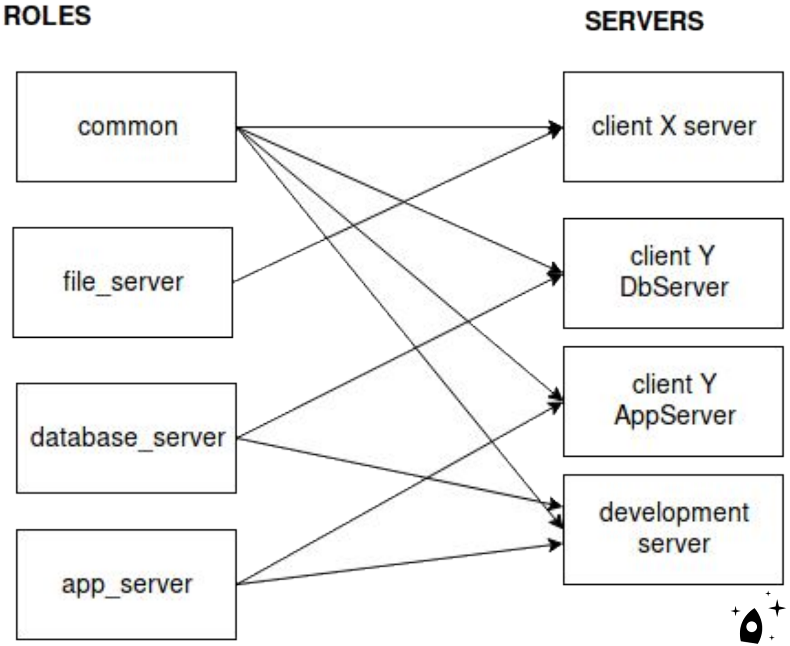
```
---

- name: Init db cluster
  hosts: mariadb_server
  tasks:
      - name: Copy script to server
      file:
        src: files/cluster_init_script.sh
        dest: /opt/scripts/cluster_init_script.sh
      - name: Run init script
      shell: "/opt/scripts/cluster_init_script.sh"
```

Organizing: Tags

```
---

- name: Backup data
  hosts: mariadb_server
  tasks:
      - name: Create database dumps
      tags: backup, weekly
      mysql_db:
        state: dump
        name: {{ item }}
        target: /tmp/{{ inventory_hostname }}_{{item}}.sql
        with_items:
          - app_db_X
          - app_db_Y
          - app_db_Z
```

Organizing: Roles





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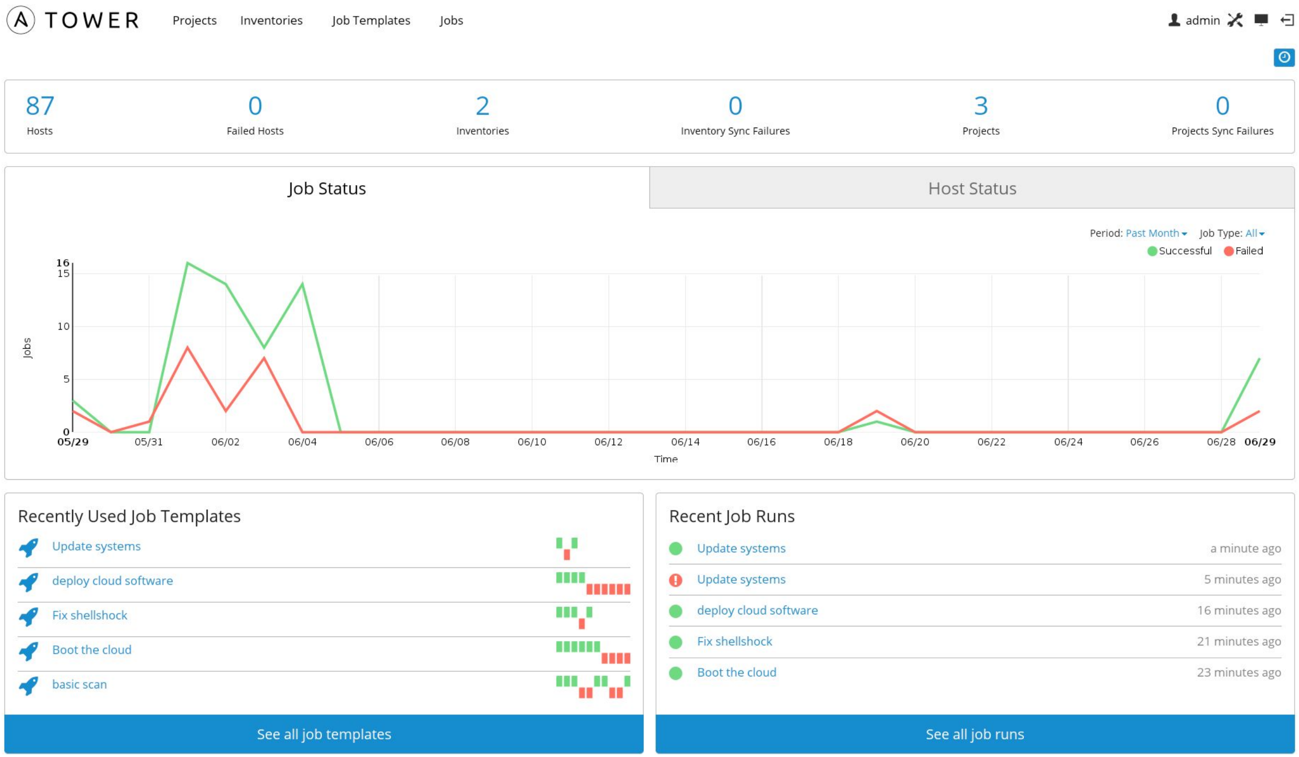
DEMO

https://github.com/justrocket/ansible-presentation

Going Enterprise with Tower or AWX



87	0	2	0	3	0
Hosts	Failed Hosts	Inventories	Inventory Sync Failures	Projects	Projects Sync Failures

Recently Used Job Templates

- Update systems
- deploy cloud software
- Fix shellshock
- Boot the cloud
- basic scan

Recent Job Runs

●	Update systems	a minute ago
!	Update systems	5 minutes ago
●	deploy cloud software	16 minutes ago
●	Fix shellshock	21 minutes ago
●	Boot the cloud	23 minutes ago

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Questions.

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Thank you

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presentation:
git@github.com:justrocket/ansible-presentation.git