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

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… 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

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… that needed to be solved…

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

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... by

ANSIBLE

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

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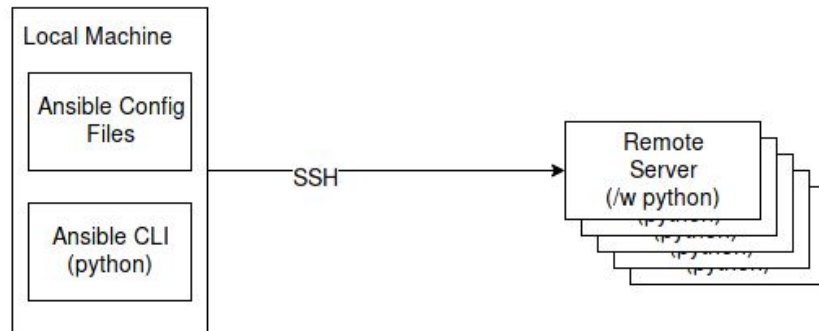| ⭐	🍴	📅
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How does it work?

Key concepts

- **Inventory:** list of servers

- **Playbook:** describe how to set up servers

- **Modules:** the tools using which help you execute tasks

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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: dbadmin
            nginx:
            ansible_host: 192.168.123.124
            ansible_user: appadmin
```

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Playbooks and modules
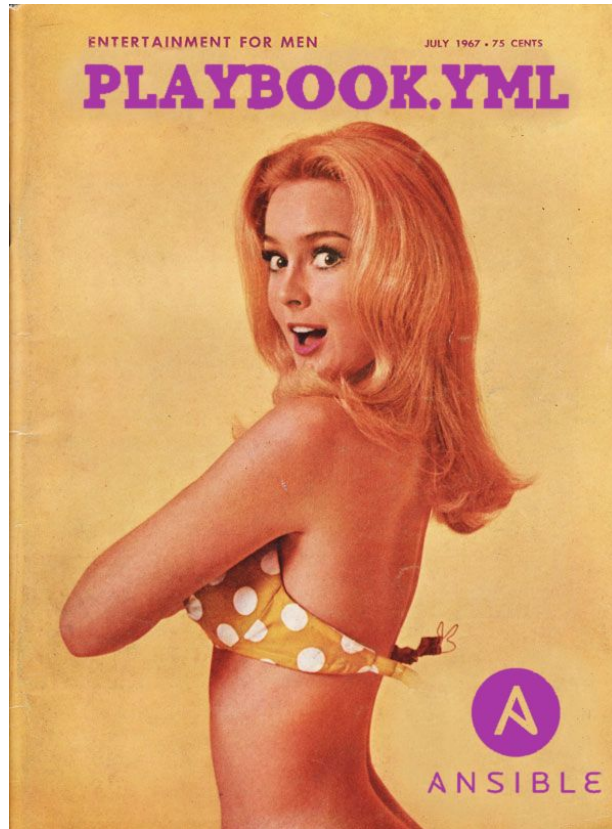
Playbooks and modules

```
---

- 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
```

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Running a playbook against an inventory

```
user@local $> ansible-playbook \
  --inventory=inventory.yml \
  some_playbook.yml
```

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

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Variables, basic loops

```yaml
---

- 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
```

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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"
```

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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
```

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Organizing: Roles

DEMO

https://github.com/justrocket/ansible-presentation
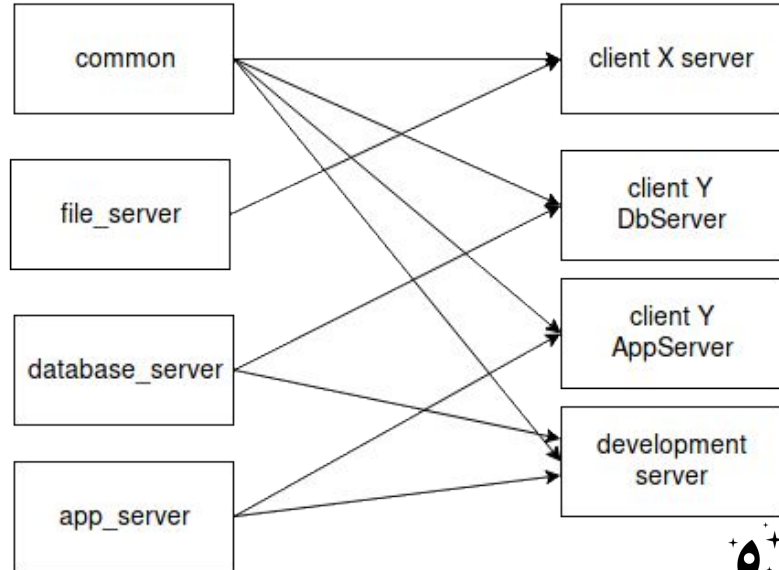
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Going Enterprise with Tower or AWX

Questions.

?
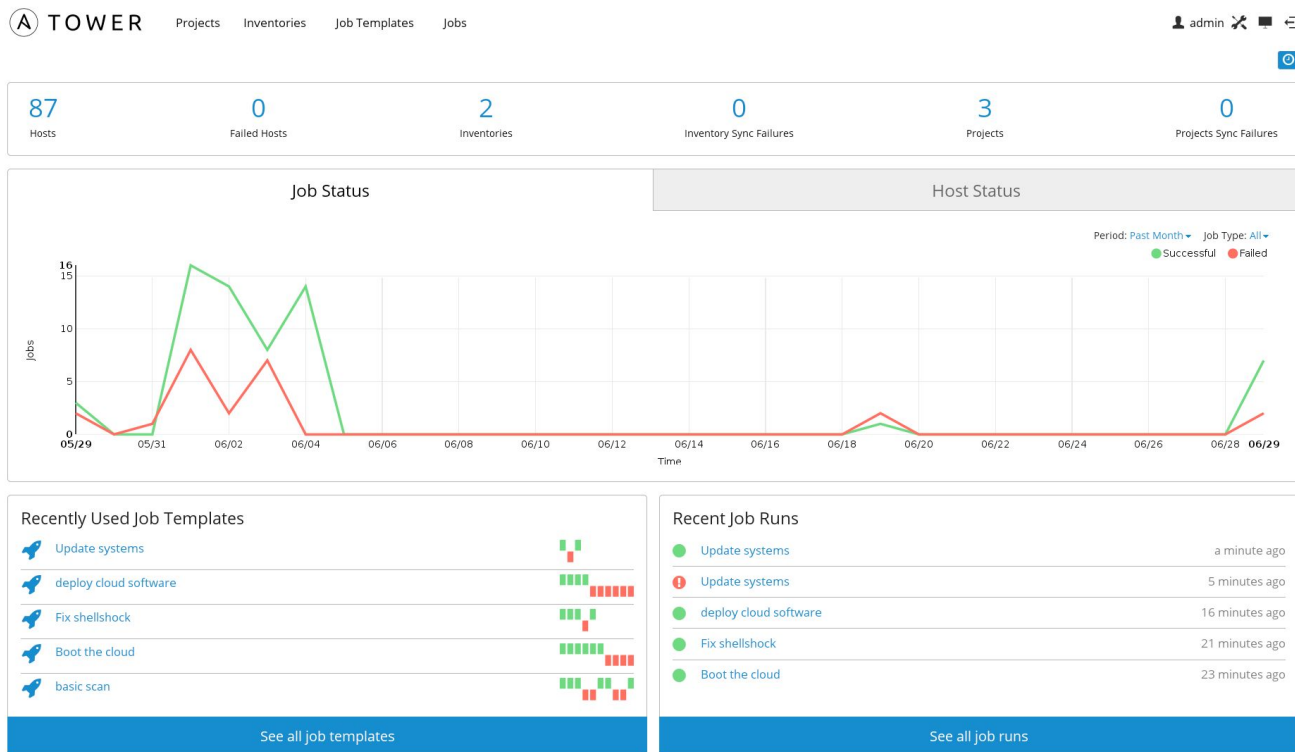
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Thank you

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