



# Ansible

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# AGENDA

1. What is Ansible?
2. Why Ansible?
3. Supporting all infrastructure
4. When is Ansible used?
5. How Ansible works?
6. Ansible Playbooks
7. Ansible vs alternatives Tools
8. Next ?





# What is Ansible?

Ansible is an IT automation tool. It can configure systems, deploy software, and orchestrate more advanced IT tasks such as continuous deployments or zero downtime rolling updates.



# Why Ansible?



**To perform repetitive tasks:**

- Update
- Back Ups
- System Reboots
- Create User
- Assign Groups
- Assign Permissions

# Why Ansible?



More Efficient



Less Time Consuming



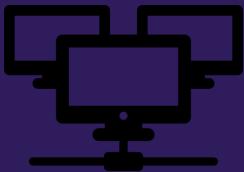
Less Likely for  
Errors





# Supporting all infrastructure

From operating systems..



Application deployment



Creating and managing DBs



Cloud provisioning

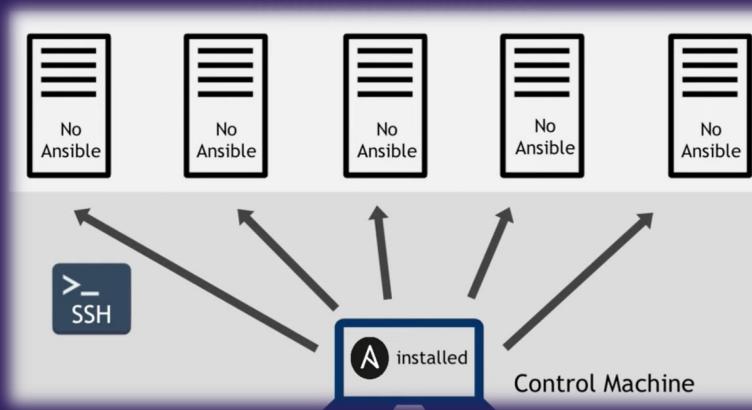


OS level updates

..to cloud Provider

# When is Ansible used?

Its an agentless tool once installed on a machine, it can manage other servers remotely. So you don't need any deployment effort in beginning and no effort for upgrade.





# How Ansible work?

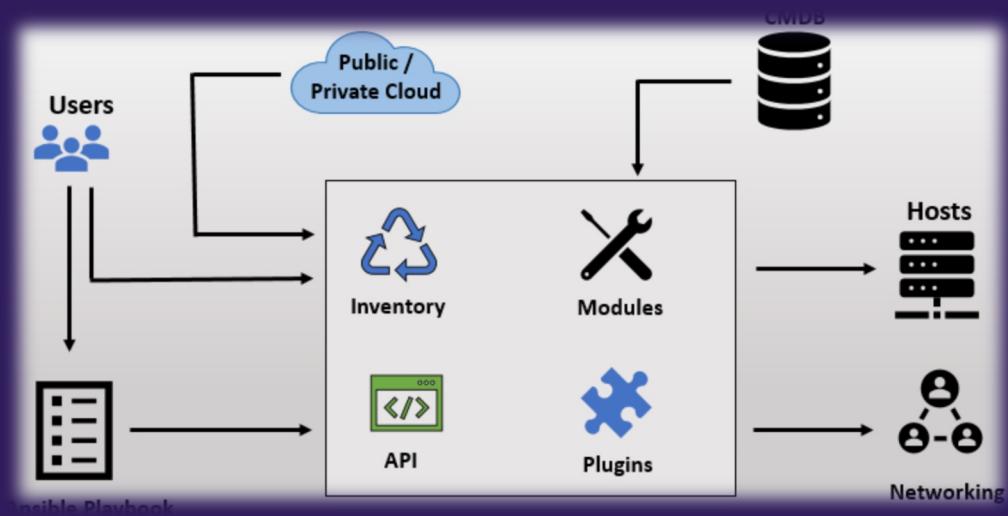
## Modules

Module = one small specific task.

Get pushed to the target server.

Do their work and get removed.

Ansible uses YAML.





# Example module usages

## Jenkins Module

Creating a job

deleting a job

```
# Create a jenkins job using basic authentication
- jenkins_job:
    config: "{{ lookup('file', 'templates/test.xml') }}"
    name: test
    password: admin
    url: http://localhost:8080
    user: admin

# Delete a jenkins job using the token
- jenkins_job:
    name: test
    token: asdfasfasfasdfasdfafafasfasdfasdfc
    state: absent
    url: http://localhost:8080
    user: admin
```

## Docker Module

- Create container.
- Start container
- Apply config

```
- name: Create a data container
  docker_container:
    name: mydata
    image: busybox
    volumes:
      - /data

- name: Start a container with a command
  docker_container:
    name: sleepy
    image: ubuntu:14.04
    command: ["sleep", "infinity"]

- name: Add container to networks
  docker_container:
    name: sleepy
    networks:
      - name: TestingNet
        ipv4_address: 172.1.1.18
        links:
          - sleeper
      - name: TestingNet2
        ipv4_address: 172.1.10.20
```



# Ansible Playbooks

```
tasks:  
  - name: Rename table foo to bar  
    postgresql_table:  
      table: foo  
      rename: bar  
  
  - name: Set owner to someuser  
    postgresql_table:  
      name: foo  
      owner: someuser  
  
  - name: Truncate table foo  
    postgresql_table:  
      name: foo  
      truncate: yes
```

1 Task = action to be performed

tasks



# Ansible Playbooks

```
tasks:
  - name: Rename table foo to bar
    postgresql_table:
      table: foo
      rename: bar

  - name: Set owner to someuser
    postgresql_table:
      name: foo
      owner: someuser

  - name: Truncate table foo
    postgresql_table:
      name: foo
      truncate: yes
```

Module name

Arguments

Description of task



# Ansible Playbooks

```
tasks:  
  - name: Rename table foo to bar  
    postgresql_table:  
      table: foo  
      rename: bar  
  
  - name: Set owner to someuser  
    postgresql_table:  
      name: foo  
      owner: someuser  
  
  - name: Truncate table foo  
    postgresql_table:  
      name: foo  
      truncate: yes
```

Rename table

Set Owner

Truncate table



# Ansible Playbooks

Execute multiple modules in a sequence:

```
tasks:
  - name: create directory for nginx
    file:
      path: /path/to/nginx/dir
      state: directory

  - name: install nginx latest version
    yum:
      name: nginx
      state: latest

  - name: start nginx
    service:
      name: nginx
      state: started
```

Module name

Arguments

1 configuration



# Ansible Playbooks

```
- hosts: databases
  remote_user: root

  tasks:
    - name: Rename table foo to bar
      postgresql_table:
        table: foo
        rename: bar

    - name: Set owner to someuser
      postgresql_table:
        name: foo
        owner: someuser

    - name: Truncate table foo
      postgresql_table:
        name: foo
        truncate: yes
```

Where should these tasks execute?

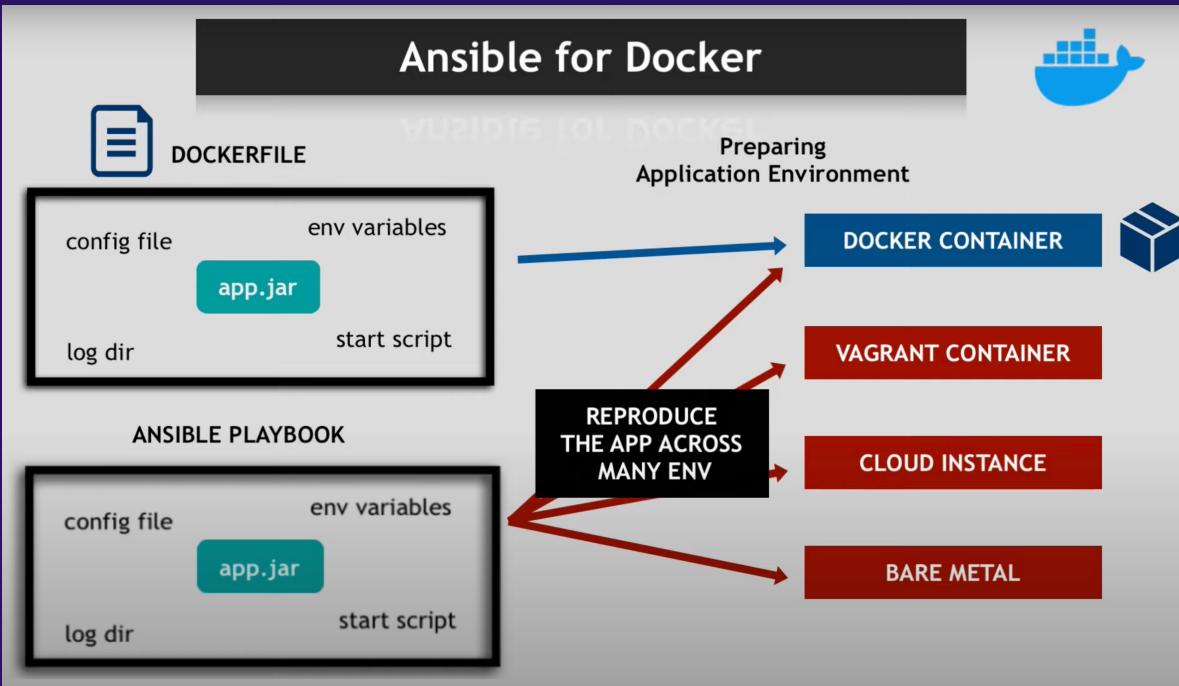
HOSTS

With which user should the tasks execute?

REMOTE\_USER

Strict indentation!

# Ansible usage.



# Ansible vs alternative Tools



## Ansible

### Pros:

- Free
- Simple YAML
- Agentless
- Powerful
- Efficient

### Cons:

- Backward compatibility
- Bloated

## Kubernetes

### Pros:

- Rapid integration
- Isolation
- Open source
- Testability

### Cons:

- Broken features
- Unreliable networking
- Moves quickly

## Docker Swarm

### Pros:

- Simple and Powerful
- Open source
- Backed by google
- Leading docker

### Cons

- Poor workflow
- Steep learning curves
- Orchestrates only infras

# Next ?



Quiz:  
<https://quizizz.com/join>

# Question ?

A





# Source

<https://docs.ansible.com/ansible-core-devel/index.html>

<https://www.logicmonitor.com/blog/ansible-key-terms-getting-started>

[https://www.youtube.com/watch?v=1id6ERvfozo&t=831s&ab\\_channel=TechWorldwithNana](https://www.youtube.com/watch?v=1id6ERvfozo&t=831s&ab_channel=TechWorldwithNana)

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<https://reviewnprep.com/blog/devops-tool-comparison-docker-vs-kubernetes-vs-ansible/>