

# What makes an Ansible role?

It's not always easy to choose when to use an Ansible role or an Ansible playbook. This document describes how to choose between a role and a playbook.

## Ansible role

An Ansible role is a set of Ansible tasks, typically written to add a function to a server. Some examples are:

- [java \(https://galaxy.ansible.com/robertdebock/java\)](https://galaxy.ansible.com/robertdebock/java)
- [nfs \(https://galaxy.ansible.com/geerlingguy/nfs\)](https://galaxy.ansible.com/geerlingguy/nfs)
- [redis \(https://galaxy.ansible.com/robertdebock/redis\)](https://galaxy.ansible.com/robertdebock/redis)

The structure of a role:

```
.
├── tasks
│   └── main.yml # A list of tasks.
├── defaults
│   └── main.yml # Contains user settings.
├── handlers
│   └── main.yml # Used for tasks that are called using notify.
├── meta
│   └── main.yml # Galaxy uses metadata to information about display roles.
├── README.md    # Described to a user what this role is,
├── vars
│   └── main.yml # Contains variables, not for user settings.
```

## Ansible playbook

An Ansible playbook is a list of pre\_tasks, roles, tasks and post\_tasks. In playbooks you target specific hosts.

A typical playbook may look like this:

```

---
- name: build database servers
  hosts: databases
  gather_facts: yes
  become: yes

  vars:
    mysql_databases:
      - name: somedatabase
    mysql_users:
      - name: someuser
        password: somepassword
        priv: "somedatabase.*:ALL"

  pre_tasks:
    - name: notify team of start
      slack:
        token: "{{ slack_token }}"
        msg: "starting deployment of {{ inventory_hostname }}"

  roles:
    - robertdebock.bootstrap
    - robertdebock.mysql

  tasks:
    - name: notify team of end
      slack:
        token: "{{ slack_token }}"
        msg: "finished deployment of {{ inventory_hostname }}"

```

## Decide

Create an Ansible role when:

- You are [repeating yourself](https://en.wikipedia.org/wiki/Don%27t_repeat_yourself) ([https://en.wikipedia.org/wiki/Don%27t\\_repeat\\_yourself](https://en.wikipedia.org/wiki/Don%27t_repeat_yourself)) in playbooks.
- You want to publish your role to [GitHub](https://github.com/) (<https://github.com/>) or GitLab.
- Your playbook gets very long and does many tasks. (Move those tasks to a role)
- Dependencies and ordering is becoming relevant.
- You're describing a state that is idempotent.

Create an Ansible playbook when:

- You need to run tasks against a specific host.
  - A task is unique and can't be applied anywhere else.
  - Ordering (orchestration) is important.
  - [Ansible facts](https://docs.ansible.com/ansible/latest/user_guide/playbooks_variables.html#variables-discovered-from-systems-facts) ([https://docs.ansible.com/ansible/latest/user\\_guide/playbooks\\_variables.html#variables-discovered-from-systems-facts](https://docs.ansible.com/ansible/latest/user_guide/playbooks_variables.html#variables-discovered-from-systems-facts)) need to be found on one host and are reused on another host.
  - You're describing an action, like "create report" or "restart service"
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