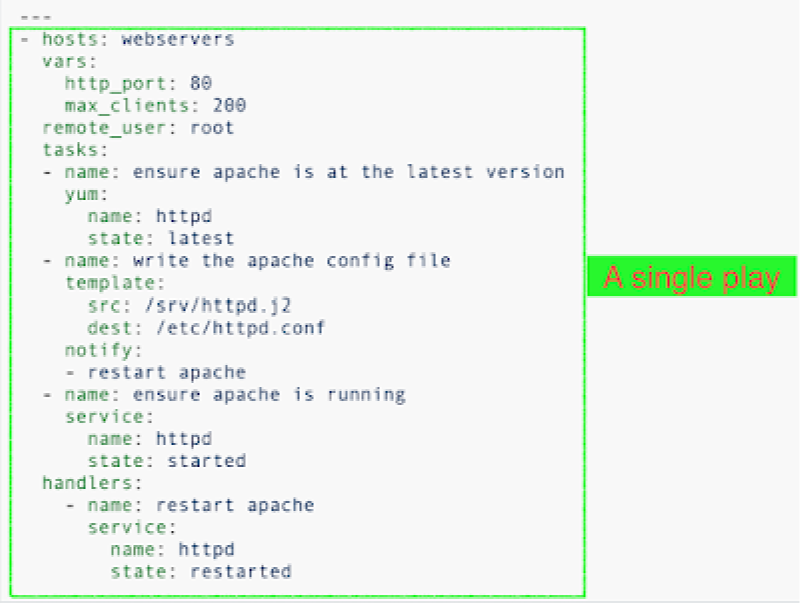
Ansible Playbook & Ansible Modules & Ansible Tasks & Ansible Roles

- Playbooks contain Plays, we sometimes refer to the files that contain plays as playbook, it is also the 'list of plays that currently running.
- Plays map hosts to tasks.
- Tasks perform an action (this action is normally a module).
- A module is a plugin/script that follows certain Ansible input/output specs
- Modules can be written in any language, Ansible only ships with python and PowerShell modules.
- Roles are 'reusable subsets of a play', mainly they group tasks and resources to accomplish a certain goal, they have no host mapping and require being in a play.
- You do not really need to use these to start, they are just a way of organizing, reusing, and sharing.



```
---
- hosts: webservers
  vars:
    http_port: 80
    max_clients: 200
  remote_user: root
  tasks:
  - name: ensure apache is at the latest version
    yum:
      name: httpd
      state: latest
  - name: write the apache config file
    template:
      src: /srv/httpd.j2
      dest: /etc/httpd.conf
    notify:
    - restart apache
  - name: ensure apache is running
    service:
      name: httpd
      state: started
  handlers:
    - name: restart apache
      service:
        name: httpd
        state: restarted
```

Below finds Two plays are in this playbook:

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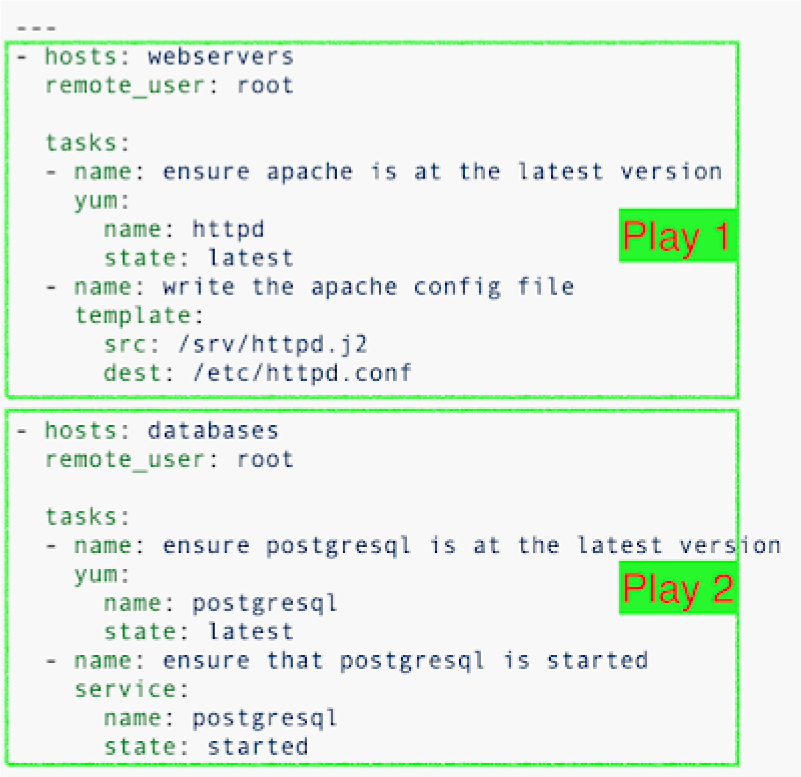

```
---
- hosts: webservers
  remote_user: root

  tasks:
  - name: ensure apache is at the latest version
    yum:
      name: httpd
      state: latest
  - name: write the apache config file
    template:
      src: /srv/httpd.j2
      dest: /etc/httpd.conf
- hosts: databases
  remote_user: root

  tasks:
  - name: ensure postgresql is at the latest version
    yum:
      name: postgresql
      state: latest
  - name: ensure that postgresql is started
    service:
      name: postgresql
      state: started
```

Modules

- A task is a call to an ansible module.
- In Yaml, tasks are started with "-name." Modules are started on the next line.
- The Yaml after the module name are key=value arguments, space delimited. **"yum:", "template:", "service:"** are references to modules which are packages of features you can use with Ansible

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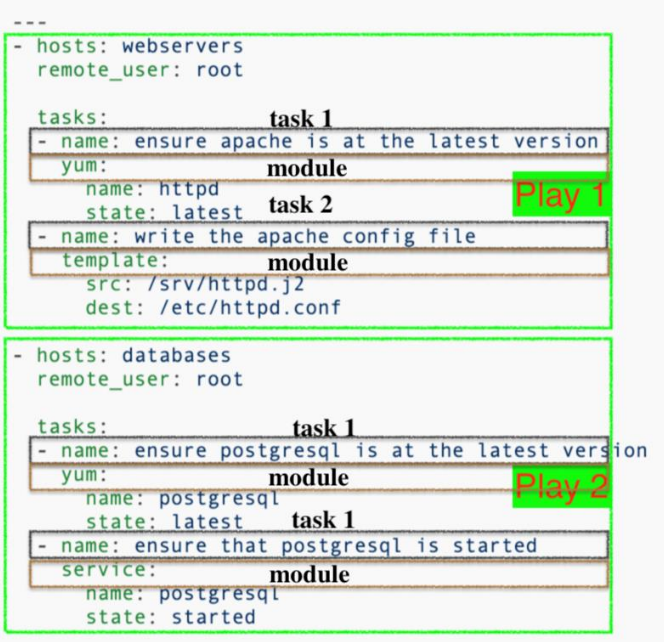

```
---
- hosts: webservers
  remote_user: root

  tasks:
  - name: ensure apache is at the latest version
    yum:
      name: httpd
      state: latest
  - name: write the apache config file
    template:
      src: /srv/httpd.j2
      dest: /etc/httpd.conf

- hosts: databases
  remote_user: root

  tasks:
  - name: ensure postgresql is at the latest version
    yum:
      name: postgresql
      state: latest
  - name: ensure that postgresql is started
    service:
      name: postgresql
      state: started
```

Modules are a way of re-using code in Ansible.

They can also directly be invoked from the ansible command line via "-m":

- $ ansible webservers -m service -a "name=httpd state=started"
- $ ansible webservers -m ping
- $ ansible webservers -m command -a "/sbin/reboot -t now"

The modules used above are: service, ping, and command. Here is a reboot activity done in a playbook:

```
---

- hosts: webservers

- name: reboot the servers

  action: command /sbin/reboot -t now
```

https://www.redhat.com/en/engage/delivery-with-ansible-20170906?sc_cid=7013a000002q2vuAAA&&msclkid=e42bffa4c6711cc8600b9d951cb26cd9&msclkid=e42bffa4c6711cc8600b9d951cb26cd9&gclid=CPf5jMjTyvYCFZ2lswodQm4EeQ