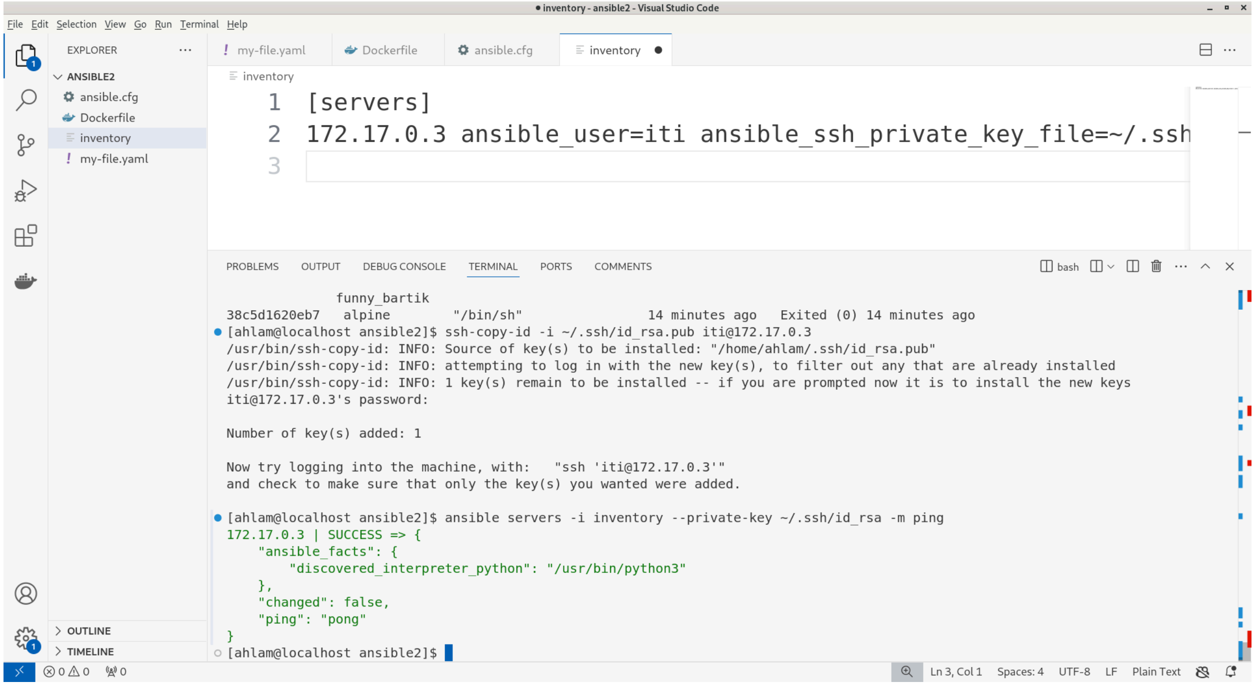
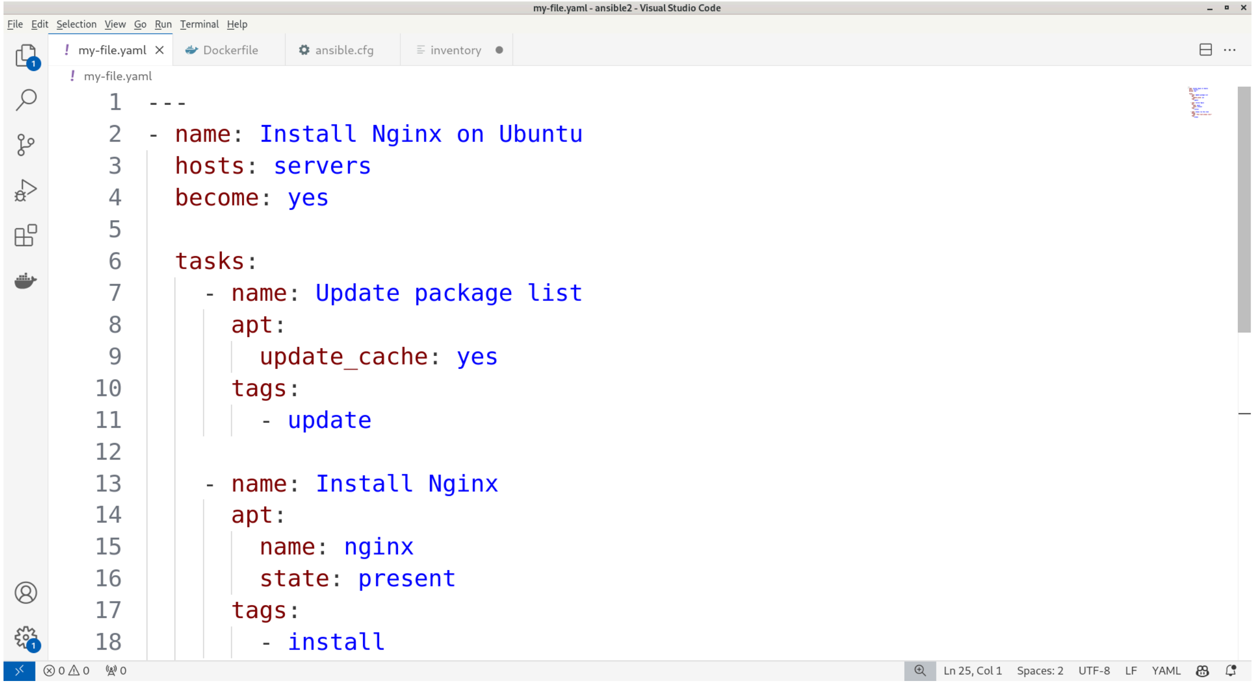
Write simple playbook file Add two tasks (apt update – apt install nginx) Add tags to first task: update Add tags to second task: install Run only the (apt update) task Example: ansible-playbook my-playbook.yml --tags update Add one task with “tags: always” and run the previous command again



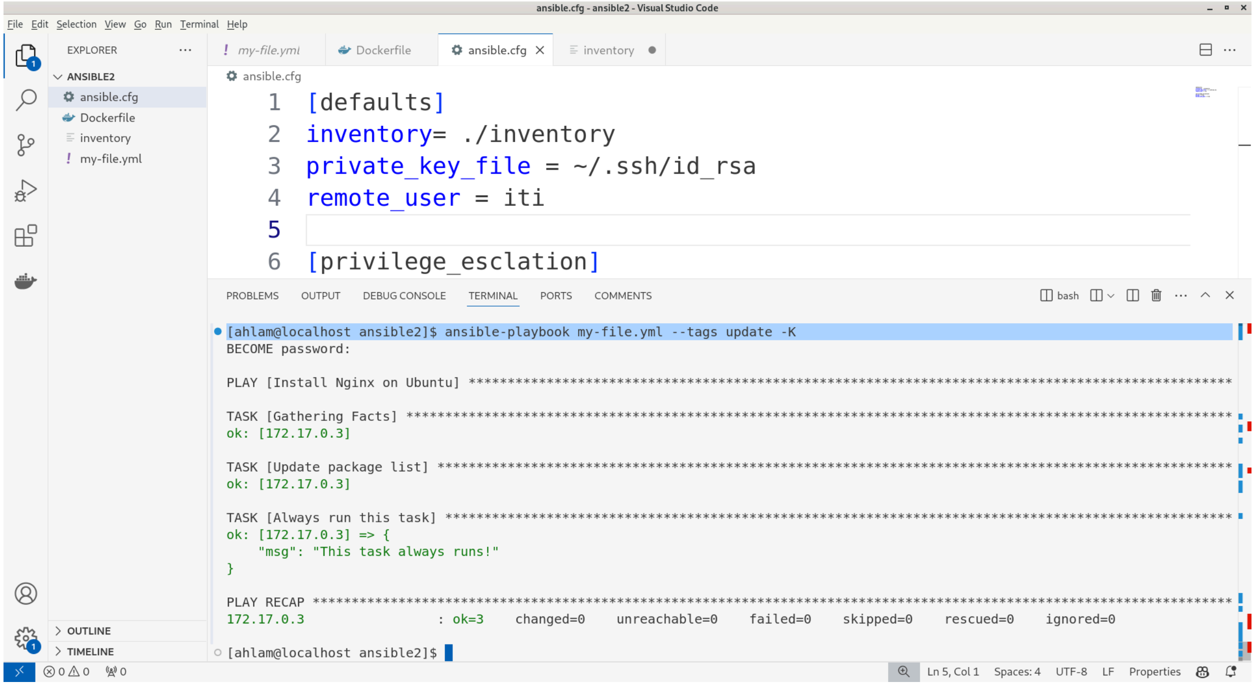
```
[servers]
172.17.0.3 ansible_user=iti ansible_ssh_private_key_file=~/.ssh

```

```
              funny_bartik
38c5d1620eb7   alpine        "/bin/sh"                14 minutes ago   Exited (0) 14 minutes ago
[ahlam@localhost ansible2]$ ssh-copy-id -i ~/.ssh/id_rsa.pub iti@172.17.0.3
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ahlam/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
iti@172.17.0.3's password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'iti@172.17.0.3'"
and check to make sure that only the key(s) you wanted were added.

[ahlam@localhost ansible2]$ ansible servers -i inventory --private-key ~/.ssh/id_rsa -m ping
172.17.0.3 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
[ahlam@localhost ansible2]$
```


my-file.yaml - ansible2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
my-file.yaml
Dockerfile
ansible.cfg
inventory
Ln 25, Col 1 Spaces: 2 UTF-8 LF YAML

```yaml
---
- name: Install Nginx on Ubuntu
  hosts: servers
  become: yes

  tasks:
    - name: Update package list
      apt:
        update_cache: yes
      tags:
        - update

    - name: Install Nginx
      apt:
        name: nginx
        state: present
      tags:
        - install
```

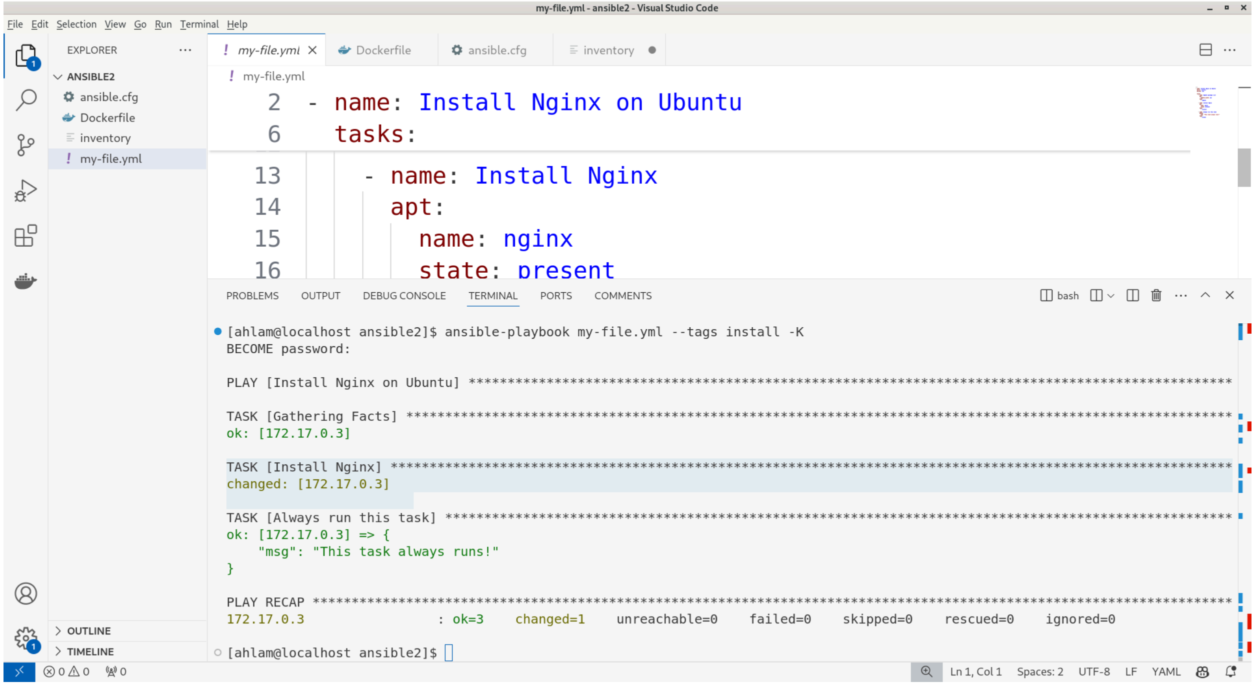
Update tag


ansible.cfg - ansible2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
ANSIBLE2
ansible.cfg
Dockerfile
inventory
my-file.yml
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
bash
Ln 5, Col 1 Spaces: 4 UTF-8 LF Properties

```ini
[defaults]
inventory= ./inventory
private_key_file = ~/.ssh/id_rsa
remote_user = iti

[privilege_esclation]
```

```
[ahlam@localhost ansible2]$ ansible-playbook my-file.yml --tags update -K
BECOME password:

PLAY [Install Nginx on Ubuntu] *************************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************
ok: [172.17.0.3]

TASK [Update package list] *****************************************************************************************************
ok: [172.17.0.3]

TASK [Always run this task] ****************************************************************************************************
ok: [172.17.0.3] => {
    "msg": "This task always runs!"
}

PLAY RECAP *********************************************************************************************************************
172.17.0.3                 : ok=3    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahlam@localhost ansible2]$
```

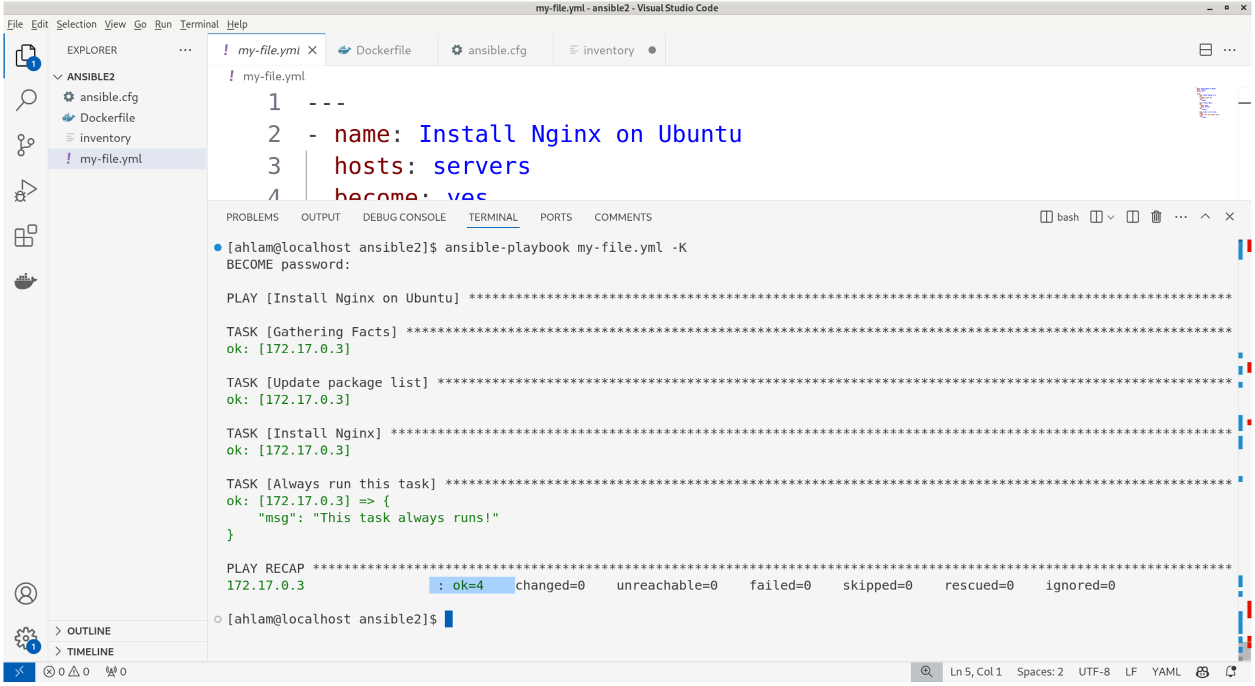
Install nginx tag


my-file.yml - ansible2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
ANSIBLE2
ansible.cfg
Dockerfile
inventory
my-file.yml
OUTLINE
TIMELINE
my-file.yml
Dockerfile
ansible.cfg
inventory
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
bash
Ln 1, Col 1 Spaces: 2 UTF-8 LF YAML

```yaml
- name: Install Nginx on Ubuntu
  tasks:
    - name: Install Nginx
      apt:
        name: nginx
        state: present
```

```
[ahlam@localhost ansible2]$ ansible-playbook my-file.yml --tags install -K
BECOME password:

PLAY [Install Nginx on Ubuntu] ******************************************************************************************

TASK [Gathering Facts] **************************************************************************************************
ok: [172.17.0.3]

TASK [Install Nginx] ****************************************************************************************************
changed: [172.17.0.3]

TASK [Always run this task] *********************************************************************************************
ok: [172.17.0.3] => {
    "msg": "This task always runs!"
}

PLAY RECAP **************************************************************************************************************
172.17.0.3                 : ok=3    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahlam@localhost ansible2]$
```

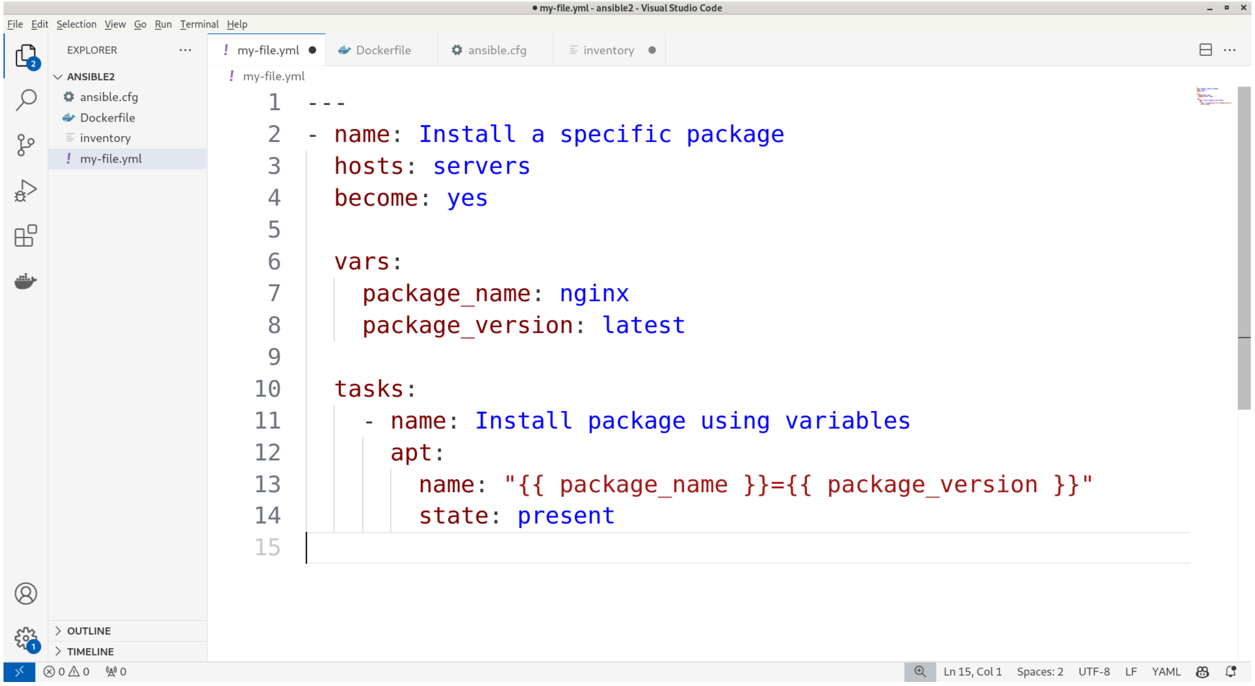
All tasks


my-file.yml - ansible2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
ANSIBLE2
ansible.cfg
Dockerfile
inventory
my-file.yml
OUTLINE
TIMELINE
my-file.yml
Dockerfile
ansible.cfg
inventory
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
bash
Ln 5, Col 1 Spaces: 2 UTF-8 LF YAML

```yaml
---
- name: Install Nginx on Ubuntu
  hosts: servers
  become: yes
```

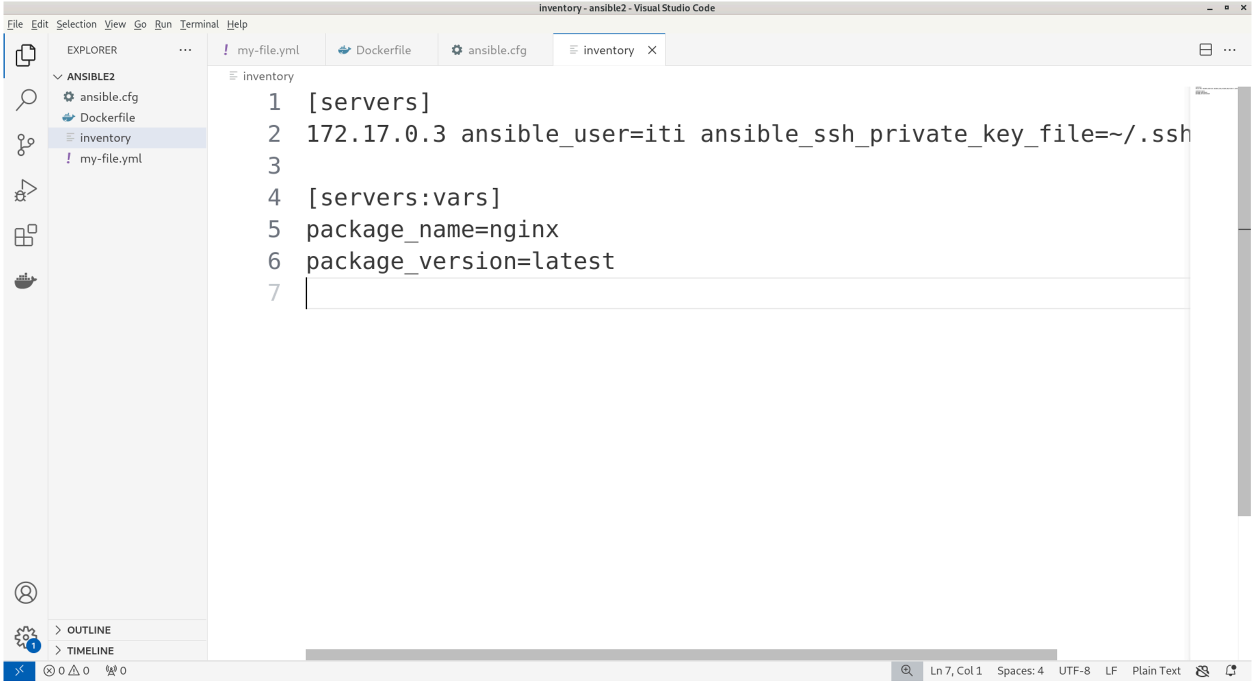
```
[ahlam@localhost ansible2]$ ansible-playbook my-file.yml -K
BECOME password:

PLAY [Install Nginx on Ubuntu] ******************************************************************************************

TASK [Gathering Facts] **************************************************************************************************
ok: [172.17.0.3]

TASK [Update package list] **********************************************************************************************
ok: [172.17.0.3]

TASK [Install Nginx] ****************************************************************************************************
ok: [172.17.0.3]

TASK [Always run this task] *********************************************************************************************
ok: [172.17.0.3] => {
    "msg": "This task always runs!"
}

PLAY RECAP **************************************************************************************************************
172.17.0.3                 : ok=4    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahlam@localhost ansible2]$
```

Define these variables (package_name, package_version)
on playbook level
on inventory level
on command line level
Use apt module with the package name and version from your variables
Vars in playbook level


● my-file.yml - ansible2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
ANSIBLE2
ansible.cfg
Dockerfile
inventory
my-file.yml
OUTLINE
TIMELINE
Ln 15, Col 1 Spaces: 2 UTF-8 LF YAML

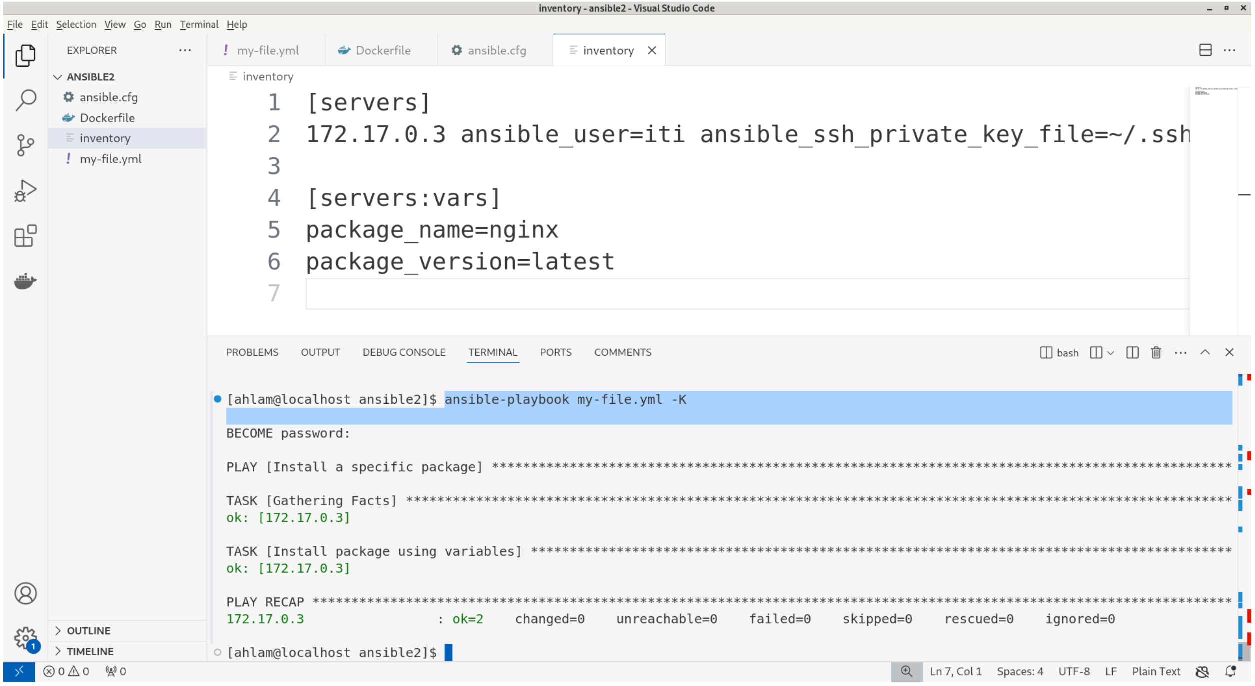
```yaml
---
- name: Install a specific package
  hosts: servers
  become: yes

  vars:
    package_name: nginx
    package_version: latest

  tasks:
    - name: Install package using variables
      apt:
        name: "{{ package_name }}={{ package_version }}"
        state: present

```

Vars on inventory level


inventory - ansible2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
ANSIBLE2
ansible.cfg
Dockerfile
inventory
my-file.yml
my-file.yml
Dockerfile
ansible.cfg
inventory
OUTLINE
TIMELINE
Ln 7, Col 1 Spaces: 4 UTF-8 LF Plain Text

```
[servers]
172.17.0.3 ansible_user=iti ansible_ssh_private_key_file=~/.ssh

[servers:vars]
package_name=nginx
package_version=latest

```

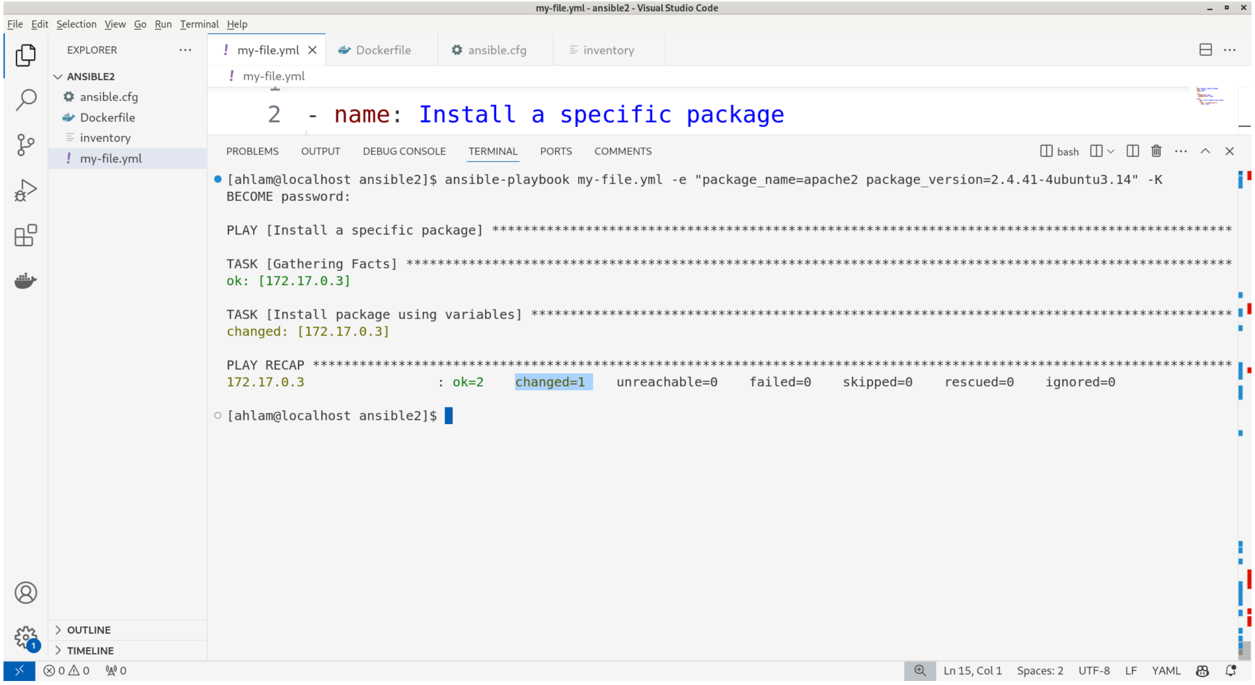
Took vars from inventory level



```
[servers]
172.17.0.3 ansible_user=iti ansible_ssh_private_key_file=~/.ssh

[servers:vars]
package_name=nginx
package_version=latest

```

```
[ahlam@localhost ansible2]$ ansible-playbook my-file.yml -K
BECOME password:

PLAY [Install a specific package] **********************************************************************************************

TASK [Gathering Facts] *********************************************************************************************************
ok: [172.17.0.3]

TASK [Install package using variables] *****************************************************************************************
ok: [172.17.0.3]

PLAY RECAP *********************************************************************************************************************
172.17.0.3                 : ok=2    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahlam@localhost ansible2]$
```

Override vars usng cmd

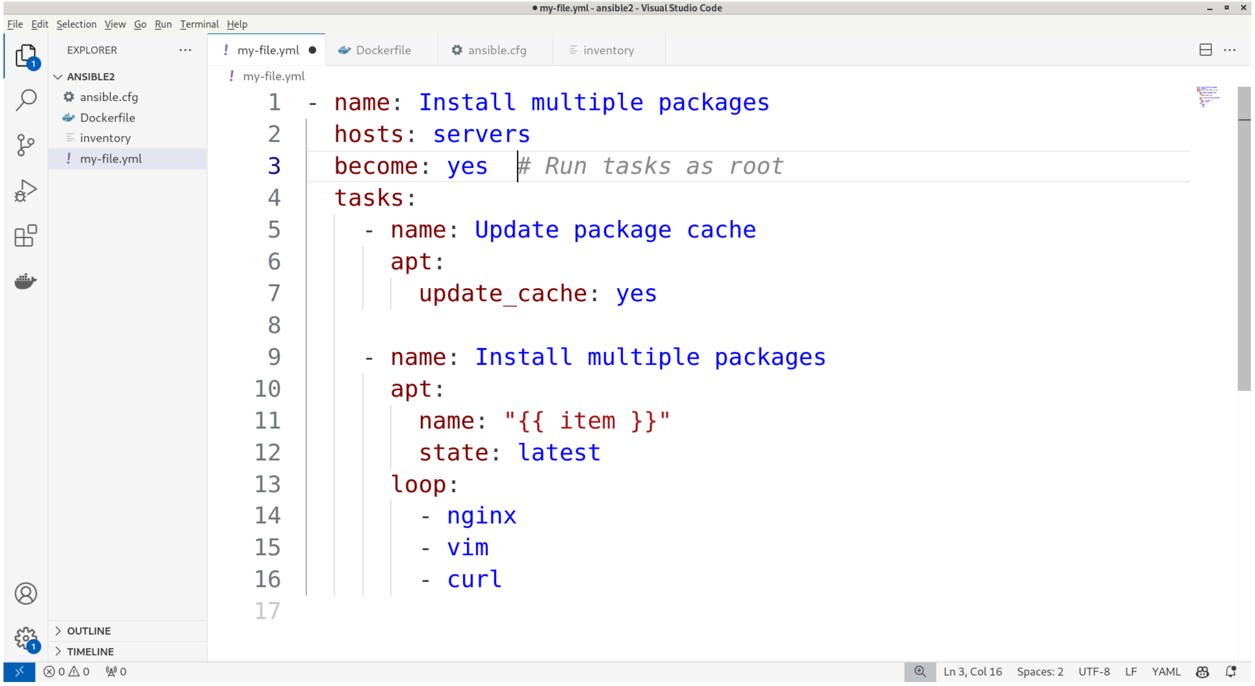

my-file.yml - ansible2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
ANSIBLE2
ansible.cfg
Dockerfile
inventory
my-file.yml
OUTLINE
TIMELINE
my-file.yml
Dockerfile
ansible.cfg
inventory
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
bash
Ln 15, Col 1 Spaces: 2 UTF-8 LF YAML

```
2  - name: Install a specific package
```

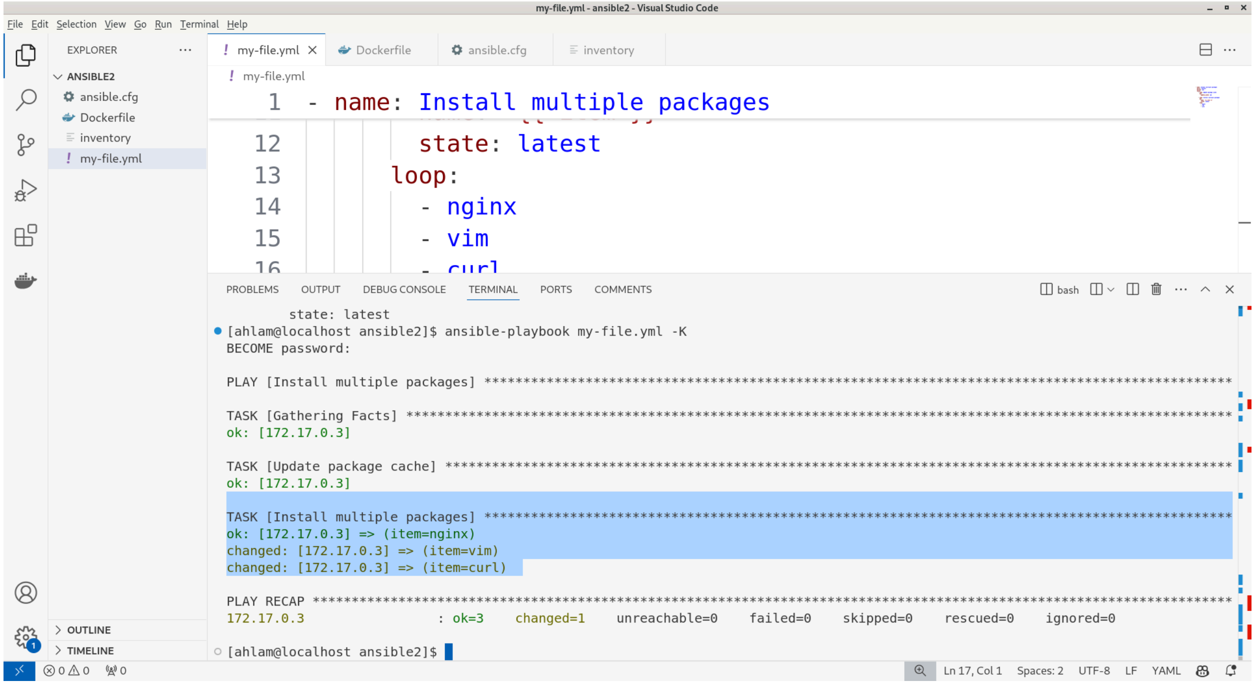
```
[ahlam@localhost ansible2]$ ansible-playbook my-file.yml -e "package_name=apache2 package_version=2.4.41-4ubuntu3.14" -K
BECOME password:

PLAY [Install a specific package] ***********************************************************************************************************

TASK [Gathering Facts] ***********************************************************************************************************************
ok: [172.17.0.3]

TASK [Install package using variables] *******************************************************************************************************
changed: [172.17.0.3]

PLAY RECAP ***********************************************************************************************************************************
172.17.0.3                 : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahlam@localhost ansible2]$ 
```

Installed apache instead of nginx

Loop over a list of packages and install latest versions.



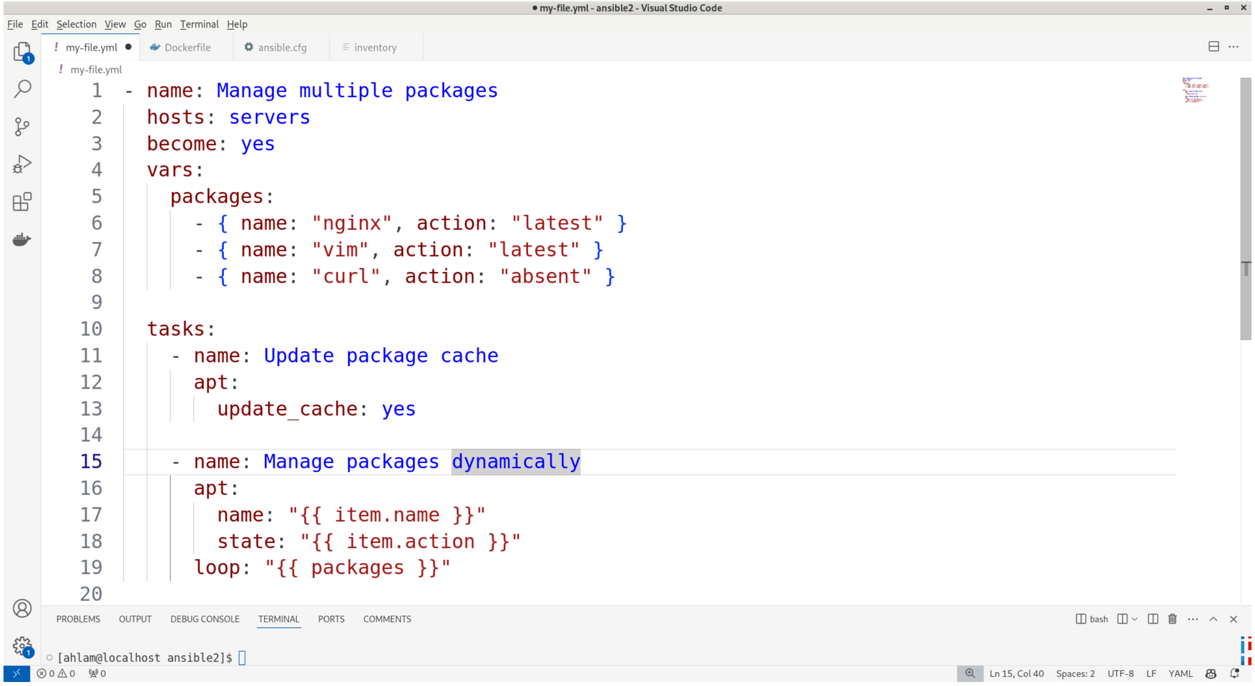
```yaml
- name: Install multiple packages
  hosts: servers
  become: yes  # Run tasks as root
  tasks:
    - name: Update package cache
      apt:
        update_cache: yes

    - name: Install multiple packages
      apt:
        name: "{{ item }}"
        state: latest
      loop:
        - nginx
        - vim
        - curl
```



```yaml
- name: Install multiple packages
      state: latest
    loop:
      - nginx
      - vim
      - curl
```

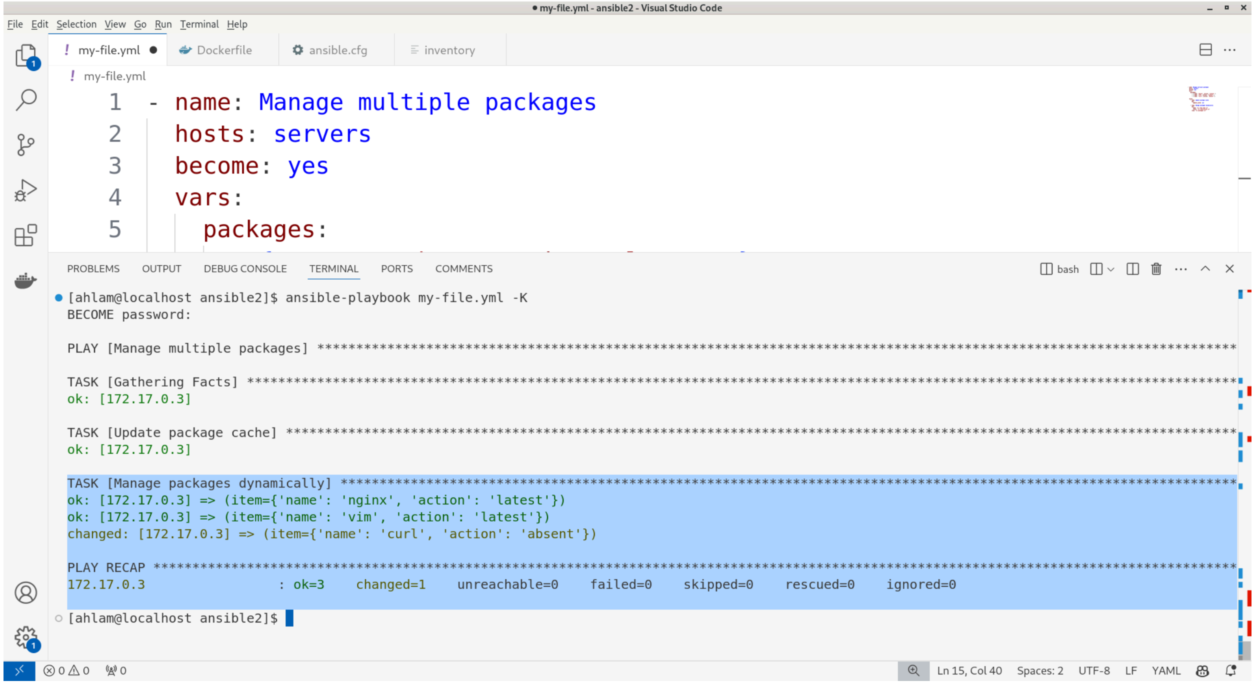
```
        state: latest
[ahlam@localhost ansible2]$ ansible-playbook my-file.yml -K
BECOME password:

PLAY [Install multiple packages] ******************************************************************************************

TASK [Gathering Facts] ****************************************************************************************************
ok: [172.17.0.3]

TASK [Update package cache] ***********************************************************************************************
ok: [172.17.0.3]

TASK [Install multiple packages] ******************************************************************************************
ok: [172.17.0.3] => (item=nginx)
changed: [172.17.0.3] => (item=vim)
changed: [172.17.0.3] => (item=curl)

PLAY RECAP ****************************************************************************************************************
172.17.0.3                 : ok=3    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahlam@localhost ansible2]$
```

Loop over a list of packages and perform different actions as per input.



```yaml
- name: Manage multiple packages
  hosts: servers
  become: yes
  vars:
    packages:
      - { name: "nginx", action: "latest" }
      - { name: "vim", action: "latest" }
      - { name: "curl", action: "absent" }

  tasks:
    - name: Update package cache
      apt:
        update_cache: yes

    - name: Manage packages dynamically
      apt:
        name: "{{ item.name }}"
        state: "{{ item.action }}"
      loop: "{{ packages }}"

```

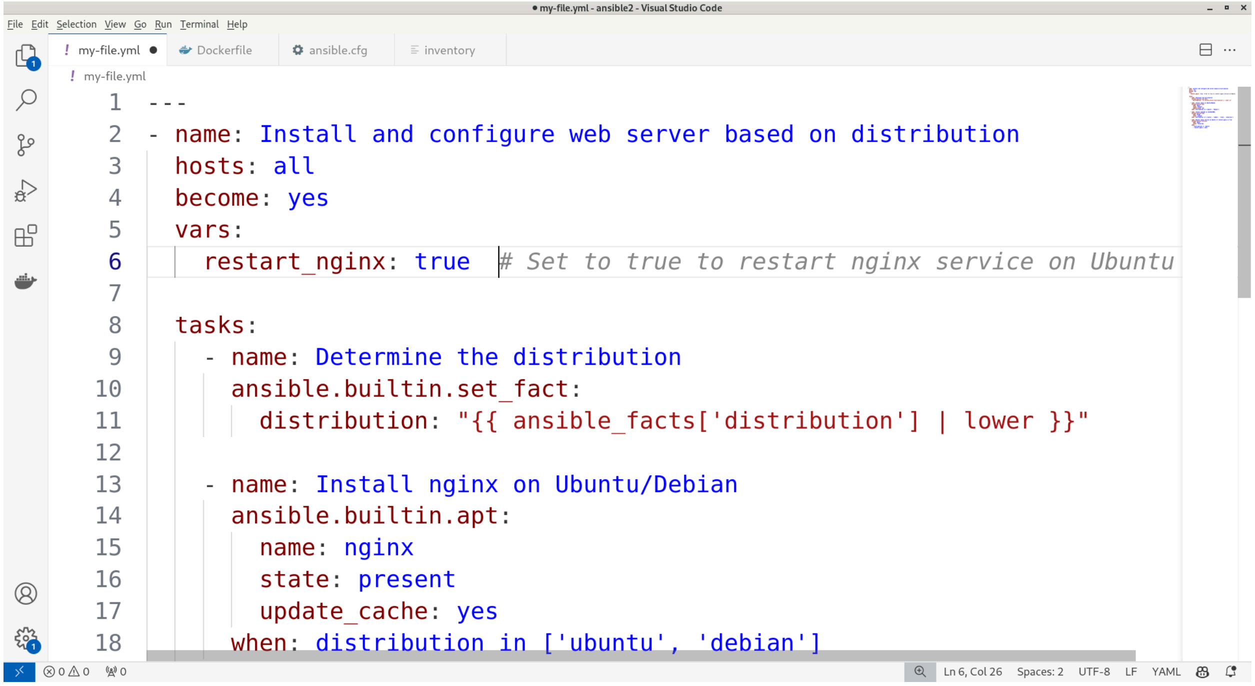
```
[ahlam@localhost ansible2]$
```



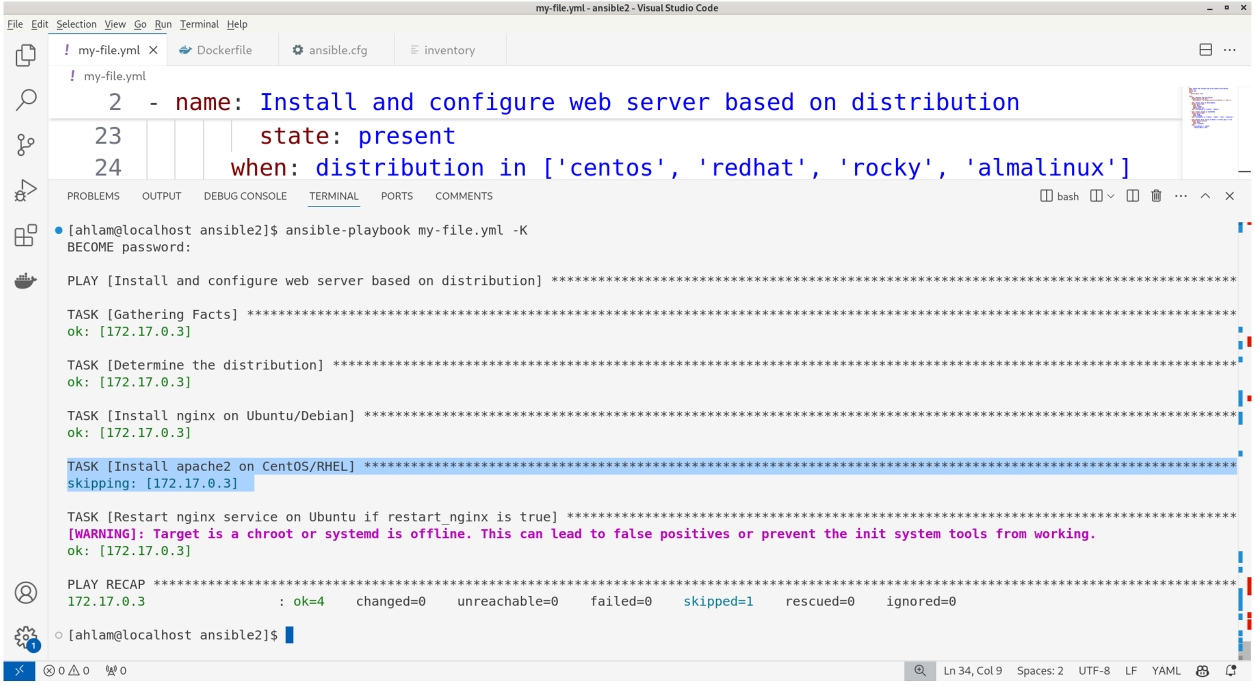
```yaml
- name: Manage multiple packages
  hosts: servers
  become: yes
  vars:
    packages:
```

```
● [ahlam@localhost ansible2]$ ansible-playbook my-file.yml -K
BECOME password:

PLAY [Manage multiple packages] ****************************************************************************************************

TASK [Gathering Facts] *************************************************************************************************************
ok: [172.17.0.3]

TASK [Update package cache] ********************************************************************************************************
ok: [172.17.0.3]

TASK [Manage packages dynamically] *************************************************************************************************
ok: [172.17.0.3] => (item={'name': 'nginx', 'action': 'latest'})
ok: [172.17.0.3] => (item={'name': 'vim', 'action': 'latest'})
changed: [172.17.0.3] => (item={'name': 'curl', 'action': 'absent'})

PLAY RECAP *************************************************************************************************************************
172.17.0.3                 : ok=3    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

○ [ahlam@localhost ansible2]$
```

Install nginx or apache2 depending on distribution
Restart nginx service if distribution is ubuntu and variable value is true



```yaml
---
- name: Install and configure web server based on distribution
  hosts: all
  become: yes
  vars:
    restart_nginx: true  # Set to true to restart nginx service on Ubuntu

  tasks:
    - name: Determine the distribution
      ansible.builtin.set_fact:
        distribution: "{{ ansible_facts['distribution'] | lower }}"

    - name: Install nginx on Ubuntu/Debian
      ansible.builtin.apt:
        name: nginx
        state: present
        update_cache: yes
      when: distribution in ['ubuntu', 'debian']
```



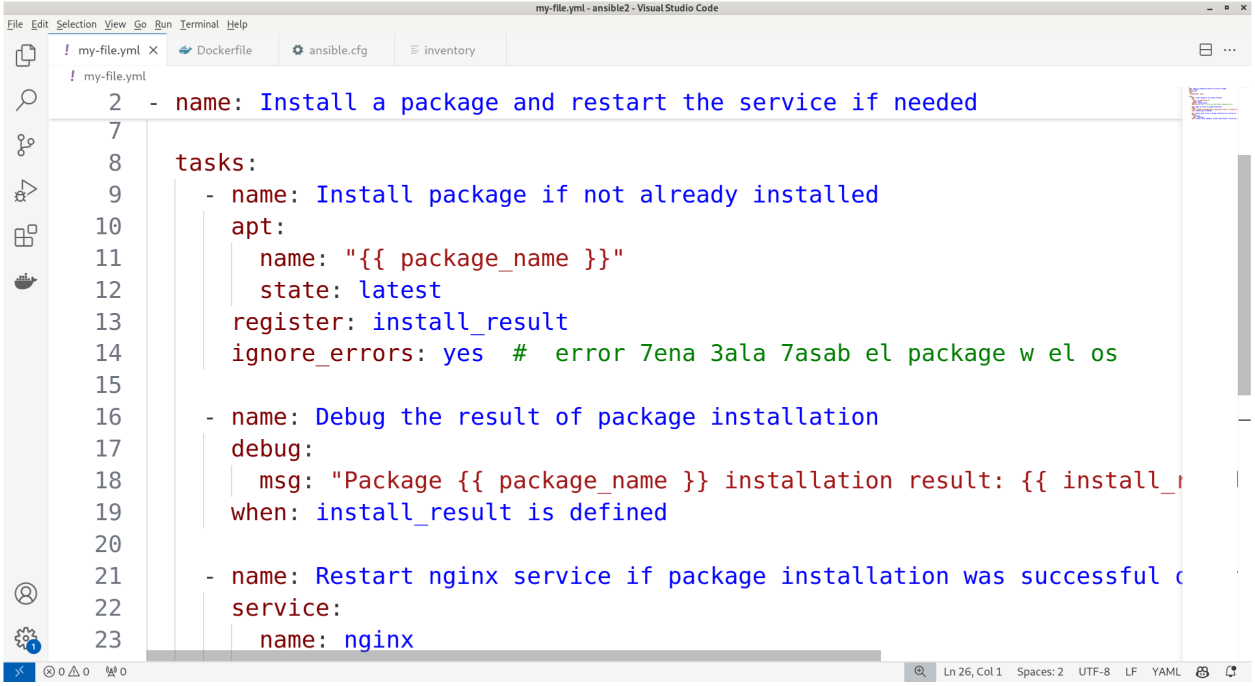
```yaml
- name: Install and configure web server based on distribution
      state: present
    when: distribution in ['centos', 'redhat', 'rocky', 'almalinux']
```

```
[ahlam@localhost ansible2]$ ansible-playbook my-file.yml -K
BECOME password:

PLAY [Install and configure web server based on distribution] ***************************************************************************

TASK [Gathering Facts] ***************************************************************************************************************************
ok: [172.17.0.3]

TASK [Determine the distribution] ******************************************************************************************************************
ok: [172.17.0.3]

TASK [Install nginx on Ubuntu/Debian] ***************************************************************************************************************
ok: [172.17.0.3]

TASK [Install apache2 on CentOS/RHEL] ***************************************************************************************************************
skipping: [172.17.0.3]

TASK [Restart nginx service on Ubuntu if restart_nginx is true] ***************************************************************************************
[WARNING]: Target is a chroot or systemd is offline. This can lead to false positives or prevent the init system tools from working.
ok: [172.17.0.3]

PLAY RECAP *********************************************************************************************************************************************
172.17.0.3                 : ok=4    changed=0    unreachable=0    failed=0    skipped=1    rescued=0    ignored=0

[ahlam@localhost ansible2]$
```

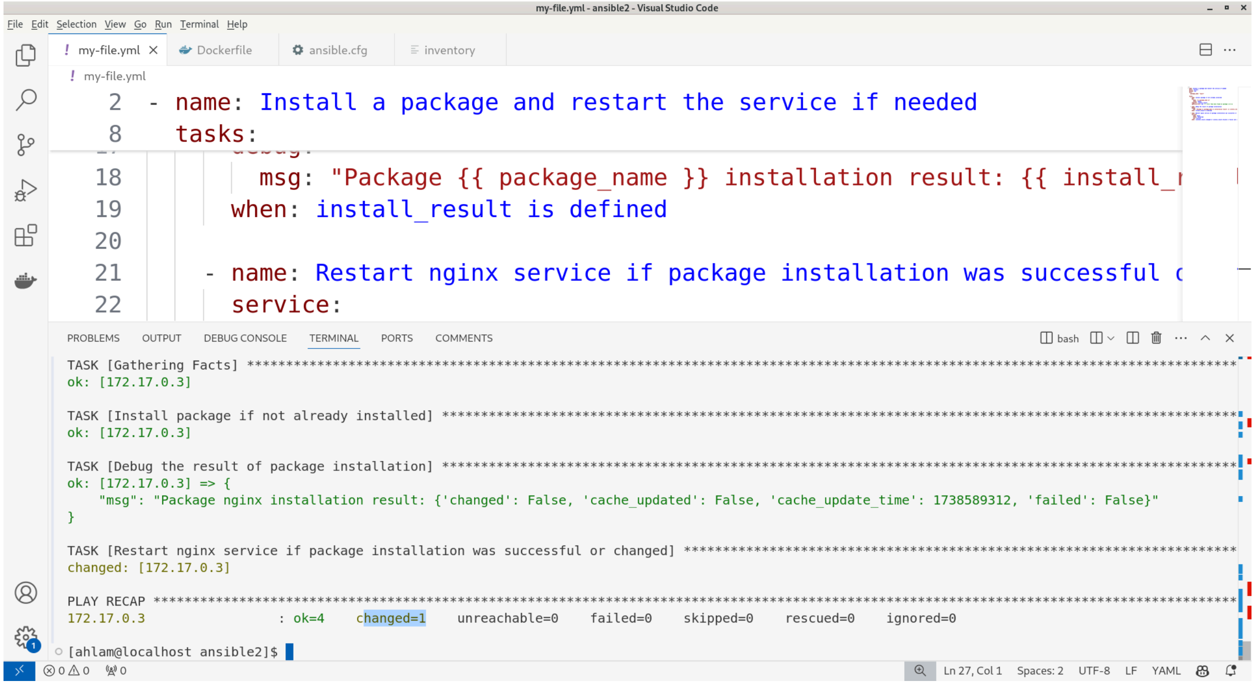
REGISTER & WHEN

View the value of your register variable using debug module

Restart service if the installation task was changed or was not failed


my-file.yml - ansible2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
my-file.yml
Dockerfile
ansible.cfg
inventory
my-file.yml
Ln 26, Col 1
Spaces: 2
UTF-8
LF
YAML

```
- name: Install a package and restart the service if needed

  tasks:
    - name: Install package if not already installed
      apt:
        name: "{{ package_name }}"
        state: latest
      register: install_result
      ignore_errors: yes  #  error 7ena 3ala 7asab el package w el os

    - name: Debug the result of package installation
      debug:
        msg: "Package {{ package_name }} installation result: {{ install_r
      when: install_result is defined

    - name: Restart nginx service if package installation was successful c
      service:
        name: nginx
```



```yaml
- name: Install a package and restart the service if needed
  tasks:
      debug:
        msg: "Package {{ package_name }} installation result: {{ install_r
      when: install_result is defined

    - name: Restart nginx service if package installation was successful o
      service:
```

```
TASK [Gathering Facts] *******************************************************************************************************************
ok: [172.17.0.3]

TASK [Install package if not already installed] ******************************************************************************************
ok: [172.17.0.3]

TASK [Debug the result of package installation] ******************************************************************************************
ok: [172.17.0.3] => {
    "msg": "Package nginx installation result: {'changed': False, 'cache_updated': False, 'cache_update_time': 1738589312, 'failed': False}"
}

TASK [Restart nginx service if package installation was successful or changed] ***********************************************************
changed: [172.17.0.3]

PLAY RECAP *******************************************************************************************************************************
172.17.0.3                 : ok=4    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[ahlam@localhost ansible2]$ 
```