

## Ansible : Creating first playbook

1. Go to Ubuntu and install ansible as (sudo apt install ansible)

```
ubuntu@ubuntu-2204:~$ sudo apt install ansible
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ieee-data python-babel-localizeddata python3-argcomplete
```

2. Check ansible version as : (ansible --version)

```
ubuntu@ubuntu-2204:~$ ansible --version
ansible 2.10.8
  config file = None
  configured module search path = ['/home/ubuntu/.ansible/p
  ansible python module location = /usr/lib/python3/dist-pa
  executable location = /usr/bin/ansible
```

3. Create a directory

```
ubuntu@ubuntu-2204:~$ mkdir mca1
ubuntu@ubuntu-2204:~$ cd mca1
ubuntu@ubuntu-2204:~/mca1$ ls
```

4. Create ansible file as:

```
GNU nano 6.2 first.yml
- name: First Ansible Demo
  hosts: localhost
  tasks:
    - name: print hello world
      debug:
        msg: "Hello Ansible"
```

5. Exit from editor by pressing Ctrl+o, Enter and then Ctrl+x
6. You can view the file content using cat command

```
ubuntu@ubuntu-2204:~/mca1$ cat first.yml
- name: First Ansible Demo
  hosts: localhost
  tasks:
    - name: print hello world
      debug:
        msg: "Hello Ansible"
```

7. Update the above file and run it to display Ubuntu details.

```
- name: First Ansible Demo
  hosts: localhost
  tasks:
    - name: print hello world
      debug:
        msg: "Hello Ansible"
    - name: print host name
      debug:
        var: ansible_hostname
    - name: print Ubuntu version
      debug:
        var: ansible_distribution
```

```
ubuntu@ubuntu-2204:~/mca1$ ansible-playbook first.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'
PLAY [First Ansible Demo] *****
TASK [Gathering Facts] *****
ok: [localhost]
TASK [print hello world] *****
ok: [localhost] => {
  "msg": "Hello Ansible"
}
TASK [print host name] *****
ok: [localhost] => {
  "ansible_hostname": "ubuntu-2204"
}
TASK [print Ubuntu version] *****
ok: [localhost] => {
  "ansible_distribution": "Ubuntu"
}
PLAY RECAP *****
localhost                : ok=4   changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

Install and run apache using Playbook as:

1. Creating simple yml for apache

```
ubuntu@ubuntu-2204:~/mca1$ nano second.yml
ubuntu@ubuntu-2204:~/mca1$ cat second.yml
- name: Intall and Start Apache
  hosts: localhost
  become: yes
  tasks:
    - name: Install Apache
      apt:
        name: apache2
        state: present

    - name: Start Apache Service
      service:
        name: apache2
        state: started
        enabled: yes
```

```
ubuntu@ubuntu-2204:~/mca1$ ansible-playbook second.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Intall and Start Apache] *****

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

TASK [Install Apache] *****
changed: [localhost]

TASK [Start Apache Service] *****
ok: [localhost]

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

2. Checking apache details using following command:

```
ubuntu@ubuntu-2204:~/mca1$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2025-05-20 02:38:30 EDT; 4min 0s ago
     Docs: https://httpd.apache.org/docs/2.4/
    Main PID: 5283 (apache2)
      Tasks: 55 (limit: 4583)
    Memory: 4.9M
       CPU: 134ms
    CGroup: /system.slice/apache2.service
            └─5283 /usr/sbin/apache2 -k start
              └─5284 /usr/sbin/apache2 -k start
                └─5285 /usr/sbin/apache2 -k start

May 20 02:38:30 ubuntu-2204 systemd[1]: Starting The Apache HTTP Server...
May 20 02:38:30 ubuntu-2204 systemd[1]: Started The Apache HTTP Server.
```

Playbook for infrastructure as code: (Running HTML file)

```
ubuntu@ubuntu-2204:~/mca1$ cat third.yml
- name: Simple Infrastructure
  hosts: localhost
  become: yes

  tasks:
    - name: Install Apache
      apt:
        name: apache2
        state: present
        update_cache: yes

    - name: Start Apache Service
      service:
        name: apache2
        state: started
        enabled: yes

    - name: Deploy index.html
      copy:
        content: "<h1> Hello Ansible </h1>"
        dest: /var/www/html/index.html
```

```
ubuntu@ubuntu-2204:~/mca1$ ansible-playbook third.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

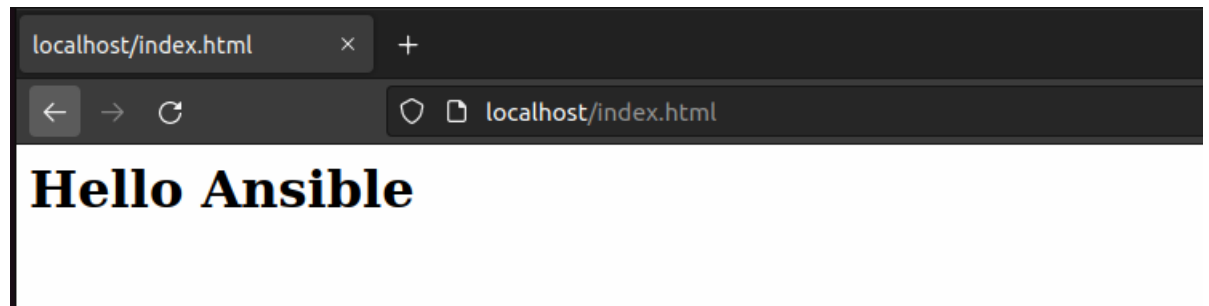
PLAY [Simple Infrastructure] *****
TASK [Gathering Facts] *****
ok: [localhost]

TASK [Install Apache] *****
ok: [localhost]

TASK [Start Apache Service] *****
ok: [localhost]

TASK [Deploy index.html] *****
changed: [localhost]

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



## Playbook for Application Deployment (Running PHP file)

```
ubuntu@ubuntu-2204:~/mca1$ cat fourth.yml
- name: Deploy a PHP Web Application
  hosts: localhost
  become: yes

  tasks:
    - name: Install Apache and PHP
      apt:
        name:
          - apache2
          - php
        state: present

    - name: Deploy a php application
      copy:
        content:
          <?php
          echo "<h1> Hello Ansible and PHP </h1>";
          echo "<body> Demo page </body>";
          ?>
        dest: /var/www/html/index.php

    - name: Restart Apache
      service:
        name: apache2
        state: restarted
```

```
ubuntu@ubuntu-2204:~/mca1$ ansible-playbook fourth.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Deploy a PHP Web Application] *****

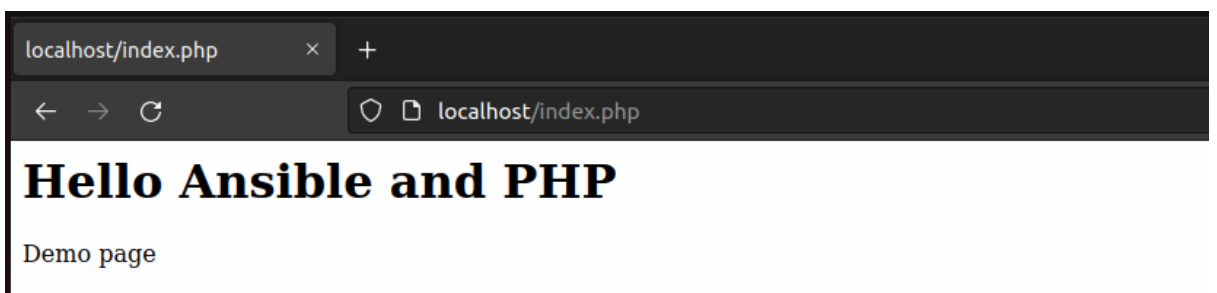
TASK [Gathering Facts] *****
ok: [localhost]

TASK [Install Apache and PHP] *****
ok: [localhost]

TASK [Deploy a php application] *****
changed: [localhost]

TASK [Restart Apache] *****
changed: [localhost]

PLAY RECAP *****
localhost                : ok=4    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```



Playbook for running Java file:

Install jdk and jre by using the following commands:

sudo apt install openjdk-21-jdk-headless

```
ubuntu@ubuntu-2204:~/mca1$ sudo apt install openjdk-21-jdk-headless
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ca-certificates-java java-common openjdk-21-jre-headless
Suggested packages:
  default-jre openjdk-21-demo openjdk-21-source fonts-dejavu-extra fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei | fonts-wqy-zenhei
The following NEW packages will be installed:
  ca-certificates-java java-common openjdk-21-jdk-headless openjdk-21-jre-headless
0 upgraded, 4 newly installed, 0 to remove and 650 not upgraded.
Need to get 129 MB of archives.
After this operation, 299 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu jammy/main amd64 java-common all 0.72build2 [6,782 B]
Get:2 http://us.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 openjdk-21-jre-headless amd64 21.0.7+6-us1-0ubuntu1-22.04 [46.8 MB]
Get:3 http://us.archive.ubuntu.com/ubuntu jammy-updates/main amd64 ca-certificates-java all 20190909ubuntu1.2 [12.1 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 openjdk-21-jdk-headless amd64 21.0.7+6-us1-0ubuntu1-22.04 [82.6 MB]
Fetched 129 MB in 30s (4,336 kB/s)
```

sudo apt install openjdk-21-jre-headless

```
ubuntu@ubuntu-2204:~/mca1$ sudo apt install openjdk-21-jre-headless
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
openjdk-21-jre-headless is already the newest version (21.0.7+6-us1-0ubuntu1-22.04).
```

```
ubuntu@ubuntu-2204:~/mca1$ java -version
openjdk version "21.0.7" 2025-04-15
OpenJDK Runtime Environment (build 21.0.7+6-Ubuntu-0ubuntu122.04)
OpenJDK 64-Bit Server VM (build 21.0.7+6-Ubuntu-0ubuntu122.04, mixed mode, sharing)
ubuntu@ubuntu-2204:~/mca1$ javac -version
javac 21.0.7
ubuntu@ubuntu-2204:~/mca1$
```

Running java Program

```
ubuntu@ubuntu-2204:~/mca1$ cat javaplaybook.yml
- name: Run Java Program using Ansible
  hosts: localhost
  gather_facts: no
  tasks:
    - name: Compile Java Program
      command: javac Helloworld.java
      register: compile_output

    - name: Run Java program
      command: java Helloworld
      register: run_output

    - name: Display Java program output
      debug:
        msg: "{{ run_output.stdout }}"
```

```

ubuntu@ubuntu-2204:~/mcai$ nano javaplaybook.yml
ubuntu@ubuntu-2204:~/mcai$ ansible-playbook javaplaybook.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Run Java Program using Ansible] *****

TASK [Compile Java Program] *****
changed: [localhost]

TASK [Run Java program] *****
changed: [localhost]

TASK [Display Java program output] *****
ok: [localhost] => {
  "msg": "Hello Java"
}

PLAY RECAP *****
localhost                : ok=3    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

```

## Pull Demo

```

ubuntu@ubuntu-2204:~/ansible/hello$ sudo apt-get install git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 271 not upgraded.
Need to get 4,147 kB of archives.
After this operation, 21.0 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu jammy/main amd64 liberror-perl all 0.17029-1 [26.5 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu jammy-updates/main amd64 git-man all 1:2.34.1-1ubuntu1.12 [955 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu jammy-updates/main amd64 git amd64 1:2.34.1-1ubuntu1.12 [3,165 kB]
Fetched 4,147 kB in 17s (251 kB/s)
Selecting previously unselected package liberror-perl.
(Reading database ... 312798 files and directories currently installed.)

```

```

ubuntu@ubuntu-2204:~/ansible/hello/hello$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/ubuntu/ansible/hello/hello/.git/

```

```

Initialized empty Git repository in /home/ubuntu/ansible/hello/hello/.git/
ubuntu@ubuntu-2204:~/ansible/hello/hello$ git clone https://github.com/AquilaShaikh/ansibleDemo
Cloning into 'ansibleDemo'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 6 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (6/6), done.

```

```
ask for privilege escalation password
ERROR! Could not find a playbook to run.
ubuntu@ubuntu-2204:~/ansible$ ansible-pull -U https://github.com/AquilaShaikh/ansibleDemo.git -i inventory.ini dempull.yml
Starting Ansible Pull at 2025-05-21 06:18:50
/usr/bin/ansible-pull -U https://github.com/AquilaShaikh/ansibleDemo.git -i inventory.ini dempull.yml
[WARNING]: Could not match supplied host pattern, ignoring: ubuntu-2204
[WARNING]: Could not match supplied host pattern, ignoring:
ubuntu-2204.linuxvmimages.local
localhost | SUCCESS => {
  "after": "aad4028267cf1b15e6237ca3188f2c015bc528fe",
  "before": "aad4028267cf1b15e6237ca3188f2c015bc528fe",
  "changed": false,
  "remote_url_changed": false
}
[WARNING]: Could not match supplied host pattern, ignoring: ubuntu-2204
[WARNING]: Could not match supplied host pattern, ignoring:
ubuntu-2204.linuxvmimages.local

PLAY [First Demo Pull] *****

TASK [Gathering Facts] *****
fatal: [172.29.96.1]: FAILED! => {"msg": "the connection plugin 'localhost' was not found"}

PLAY RECAP *****
172.29.96.1      : ok=0    changed=0    unreachable=0    failed=1    skipped=0    rescued=0    ignored=0
```