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Ansible Playbook Codes:

File: main.yaml

```
---
- import_playbook: ./ubuntu_playbook.yaml
  when: ansible_os_family=='Debian'

- import_playbook: ./centos_playbook.yaml
  when: ansible_os_family=='RedHat'
```

File: centos_playbook_v2.yaml

```
---
- name: Setup LAMP stack
  # hosts: centos
  become: yes

  vars:
    pkg_list:
      - httpd
      - php
      - php-mysql
      - mysql-server

    srvc_list:
      - name: httpd
        state: started
        enabled: yes
      - name: mysqld
        state: started
        enabled: yes

    server_address: 192.168.56.107

  tasks:
```

```
- name: Download MySQL Community Repo
  get_url:
    url:
http://repo.mysql.com/mysql-community-release-el7-7.noarch.rpm
    dest: /tmp

- name: Install MySQL Community Repo
  yum:
    name: /tmp/mysql-community-release-el7-7.noarch.rpm
    state: present

- name: Install Apache, PHP & MySQL
  yum:
    name: "{{pkg_list}}"
    state: present

- name: Start and Enable Apache and MySQL
  service:
    name: "{{item.name}}"
    state: "{{item.state}}"
    enabled: "{{item.enabled}}"
  with_items: "{{srvc_list}}"

- name: Restart Apache service
  service:
    name: httpd
    state: restarted

- name: Apply Jinja Template
  template:
    src: /home/ansible/playbooks/home_cfg.conf.j2
    dest: /etc/httpd/conf.d/home_cfg.conf

- name: Copy HTML files
  copy:
    src: /home/ansible/playbooks/templates/index.php
    dest: /var/www/html/index.php

- name: Start firewalld
```

```
service:
  name: firewalld
  state: started
  enabled: yes

- name: Set Firewall rule
  firewalld:
    port: 80/tcp
    permanent: true
    state: enabled
    immediate: yes
```

File: ubuntu_playbook_v2.yaml

```
---
- name: Install LAMP on Ubuntu
  # hosts: ubuntu
  become: true

  vars:
    pkg_list:
      - mysql-server
      - nginx
      - software-properties-common
      - php7.4
      - php7.4-mysql
      - php7.4-curl
      - php7.4-json
      - php7.4-cgi
      - php7.4-xsl
      - php7.4-cgi
      - php7.4-gd
      - php7.4-mbstring
      - php7.4-zip
      - php7.4-xmlrpc
      - php7.4-soap
      - php7.4-intl
      - libapache2-mod-php
```

```
tasks:

- name: "Repo PHP 7.4"
  apt_repository:
    repo="ppa:ondrej/php"

- name: "Updating the repo"
  apt: update_cache=yes

- name: Installing packages
  apt:
    name: "{{item}}"
    state: present
  with_items: "{{pkg_list}}"

- name: Start and Enable mysql.service
  service:
    name: mysql.service
    state: started
    enabled: yes

- name: Allow incoming connections on port 80
  ufw:
    rule: allow
    port: '80'

- name: Copy Nginx sites-available file
  copy:
    src: /home/ansible/playbooks/default
    dest: /etc/nginx/sites-available/default
    owner: root
    group: root
    mode: "0644"
  notify:
    - Restart Nginx

- name: Copy web files to /var/www/html
  copy:
    src: /home/ansible/playbooks/templates/index.php
    dest: /var/www/html/index.php
```

```
owner: root
group: root
mode: "0755"
```

Apache VirtualHost setup using jinja template:

On master:

```
<VirtualHost *:80>
    DocumentRoot "/var/www/html/"
    ServerName {{server_address}}
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
    # Other directives here
</VirtualHost>

<VirtualHost *:80>
    DocumentRoot "/var/www/example.com/public_html"
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

On client:

```
<VirtualHost *:80>
    DocumentRoot "/var/www/html/"
    ServerName 192.168.56.107
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
    # Other directives here
</VirtualHost>
```

On client:

WebPage generation using jinja template:

```
<html>
<head>
<title>{{ansible_os_family}} Application</title>
</head>
<body>
<br>
<a href=http://{{ ansible_default_ipv4.address }}/index.html>Homepage</a>
</br>
<?php
print "Hello, {{ansible_os_family}}"
?>
</body>
</html>
```

ubuntu-client:~\$ php -v

```
PHP 8.2.3 (cli) (built: May 12 2023 06:23:41) (TS)
Zend Engine v4.2.6, Copyright (c) Zend Technologies
with OPcache v8.2.6, Copyright (c), by Zend Technologies
```

ubuntu-client:~\$ systemctl status mysql.service

```
mysql.service - MySQL Community Server
Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
Active: active (running) since Wed 2023-05-17 02:41:53 UTC; 2h 8min ago
Main PID: 774 (mysqld)
Status: "Server is operational"
```

Playbook Run:

```
[root@ansible-master playbooks]# ansible-playbook main.yaml
PLAY [Install LAMP] *****
TASK [Gathering Facts] *****
ok: [192.168.56.107]
ok: [192.168.56.108]
dest: /var/www/html/index.php
PLAY [Install LAMP on Ubuntu] *****
TASK [Gathering Facts] *****
ok: [192.168.56.108]:root
TASK [Repo: PHP-7.4] *****
ok: [192.168.56.108]
TASK [Updating the repo] *****
changed: [192.168.56.108]
TASK [Installing packages] *****
ok: [192.168.56.108]
TASK [Start and Enable mysql.service] *****
ok: [192.168.56.108]
TASK [Allow incoming connections on port 80] *****
ok: [192.168.56.108]
TASK [Copy Nginx sites-enabled file] *****
changed: [192.168.56.108]
TASK [Copy Nginx sites-available file] *****
changed: [192.168.56.108]
TASK [Copy web files to /var/www/html] *****
changed: [192.168.56.108]
RUNNING HANDLER [Restart Nginx] *****

RUNNING HANDLER [Restart Nginx] *****
changed: [192.168.56.108]

PLAY [Setup LAMP stack] *****
TASK [Gathering Facts] *****
ok: [192.168.56.107]
TASK [Download MySQL Community Repo] *****
ok: [192.168.56.107]
TASK [Install MySQL Community Repo] *****
ok: [192.168.56.107]
TASK [Install Apache, PHP & MySQL] *****
ok: [192.168.56.107]
TASK [Start and Enable Apache and MySQL] *****
ok: [192.168.56.107] => (item={u'state': u'started', u'enabled': True, u'name': u'httpd'})
ok: [192.168.56.107] => (item={u'state': u'started', u'enabled': True, u'name': u'mysqld'})
TASK [Restart Apache service] *****
changed: [192.168.56.107]
TASK [Apply Jinja Template] *****
ok: [192.168.56.107]
TASK [Copy HTML files] *****
ok: [192.168.56.107]
TASK [Start firewallld] *****
ok: [192.168.56.107]
TASK [Set Firewall rule] *****
ok: [192.168.56.107]
PLAY RECAP *****

PLAY RECAP *****
192.168.56.107 : ok=11 changed=1 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
192.168.56.108 : ok=11 changed=5 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

[root@ansible-master playbooks]#
```

Centos services:

```
[samin@centos-client ~]$ php -v
PHP 5.4.16 (cli) (built: Apr 1 2020 04:07:17)
Copyright (c) 1997-2013 The PHP Group
Zend Engine v2.4.0, Copyright (c) 1998-2013 Zend Technologies
```

```
[samin@centos-client ~]$ systemctl status mysqld
● mysqld.service - MySQL Community Server
   Loaded: loaded (/usr/lib/systemd/system/mysqld.service; enabled; vendor preset: disabled)
   Active: active (running) since Tue 2023-05-16 21:57:25 EDT; 2h 50min ago
     Process: 1141 ExecStartPost=/usr/bin/mysql-systemd-start post (code=exited, status=0/SUCCESS)
     Process: 1072 ExecStartPre=/usr/bin/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
    Main PID: 1138 (mysqld_safe)
      CGroup: /system.slice/mysqld.service
              └─1138 /bin/sh /usr/bin/mysqld_safe --basedir=/usr
                  └─1469 /usr/sbin/mysqld --basedir=/usr --datadir=/var/lib/mysql --plugin-dir=/usr/lib64/mysql/plugin

May 16 21:57:21 centos-client.localdomain systemd[1]: Starting MySQL Community Server...
May 16 21:57:22 centos-client.localdomain mysqld_safe[1138]: 230516 21:57:22 mysqld_safe Logging to '/var/log/my
May 16 21:57:23 centos-client.localdomain mysqld_safe[1138]: 230516 21:57:23 mysqld_safe Starting mysqld daemon
May 16 21:57:25 centos-client.localdomain systemd[1]: Started MySQL Community Server.
[samin@centos-client ~]$
```

```
[samin@centos-client ~]$ systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Wed 2023-05-17 00:31:09 EDT; 18min ago
     Docs: man:httpd(8)
           man:apachectl(8)
     Process: 10958 ExecStop=/bin/kill -WINTCH ${MAINPID} (code=exited, status=0/SUCCESS)
    Main PID: 10964 (httpd)
     Status: "Total requests: 4; Current requests/sec: 0; Current traffic: 0 B/sec"
      CGroup: /system.slice/httpd.service
              └─10964 /usr/sbin/httpd -DFOREGROUND
                  └─10965 /usr/sbin/httpd -DFOREGROUND
                      └─10966 /usr/sbin/httpd -DFOREGROUND
                          └─10967 /usr/sbin/httpd -DFOREGROUND
                              └─10968 /usr/sbin/httpd -DFOREGROUND
                                  └─10969 /usr/sbin/httpd -DFOREGROUND
                                      └─11338 /usr/sbin/httpd -DFOREGROUND

May 17 00:31:09 centos-client.localdomain systemd[1]: Starting The Apache HTTP Server...
May 17 00:31:09 centos-client.localdomain httpd[10964]: AH00558: httpd: Could not reliably determine the server's sage
May 17 00:31:09 centos-client.localdomain systemd[1]: Started The Apache HTTP Server.
Hint: Some lines were ellipsized, use -l to show in full.
```




Not secure |

192.168.56.107

[Homepage](#)

Hello, RedHat

Ubuntu Services:

```
samin@ubuntu-client:~$ php -v
PHP 8.2.6 (cli) (built: May 12 2023 06:23:43) (NTS)
Copyright (c) The PHP Group
Zend Engine v4.2.6, Copyright (c) Zend Technologies
with Zend OPcache v8.2.6, Copyright (c), by Zend Technologies
```

```
samin@ubuntu-client:~$ systemctl status mysql.service
● mysql.service - MySQL Community Server
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2023-05-17 02:41:53 UTC; 2h 8min ago
     Main PID: 774 (mysqld)
    Status: "Server is operational"
       Tasks: 37 (limit: 4609)
      Memory: 429.2M
    CGroup: /system.slice/mysql.service
            └─774 /usr/sbin/mysqld

May 17 02:41:48 ubuntu-client.localdomain systemd[1]: Starting MySQL Community Server...
May 17 02:41:53 ubuntu-client.localdomain systemd[1]: Started MySQL Community Server.
samin@ubuntu-client:~$
```

```
samin@ubuntu-client:~$ systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2023-05-17 04:30:56 UTC; 20min ago
     Docs: man:nginx(8)
   Process: 12164 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Process: 12180 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Main PID: 12186 (nginx)
      Tasks: 3 (limit: 4609)
     Memory: 3.7M
    CGroup: /system.slice/nginx.service
            └─12186 nginx: master process /usr/sbin/nginx -g daemon on; master_process on;
               └─12187 nginx: worker process
                 └─12188 nginx: worker process

May 17 04:30:56 ubuntu-client.localdomain systemd[1]: Starting A high performance web server and a reverse proxy server: nginx.
May 17 04:30:56 ubuntu-client.localdomain systemd[1]: Started A high performance web server and a reverse proxy server: nginx.
samin@ubuntu-client:~$
```



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Hello, Debian