

Automate the setup of Linux, Apache, MySQL, and PHP on multiple servers

1)create all directories and files

```
master@master-vm:~/Desktop$ mkdir -p ~/lamp-ansible-project/inventory
mkdir -p ~/lamp-ansible-project/roles/{apache,mysql,php,firewall}/tasks
mkdir -p ~/lamp-ansible-project/roles/php/files
cd ~/lamp-ansible-project
master@master-vm:~/lamp-ansible-project$ ls
inventory  roles
master@master-vm:~/lamp-ansible-project$ nano inventory/hosts.ini
master@master-vm:~/lamp-ansible-project$ nano site.yml
master@master-vm:~/lamp-ansible-project$ nano roles/apache/tasks/main.yml
master@master-vm:~/lamp-ansible-project$ nano roles/mysql/tasks/main.yml
master@master-vm:~/lamp-ansible-project$ nano roles/php/tasks/main.yml
master@master-vm:~/lamp-ansible-project$ nano roles/php/files/index.php
master@master-vm:~/lamp-ansible-project$ nano roles/firewall/tasks/main.yml
master@master-vm:~/lamp-ansible-project$ cd ~/lamp-ansible-project
```

2)check for the ping

```
master@master-vm:~/lamp-ansible-project$ ansible -i inventory/hosts.ini all -m ping
[WARNING]: Platform linux on host 192.168.153.133 is using the discovered Python interpreter at /usr/bin/python3.10, but future
installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
192.168.153.133 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3.10"
  },
  "changed": false,
  "ping": "pong"
}
[WARNING]: Platform linux on host 192.168.153.131 is using the discovered Python interpreter at /usr/bin/python3.10, but future
installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
192.168.153.131 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3.10"
  },
  "changed": false,
  "ping": "pong"
}
```

3)Now run the site.yml file

```
Activities Workstation master@master-vm: ~/lamp-ansible-project
master@master-vm:~/lamp-ansible-project$ ansible-playbook -i inventory/hosts.ini site.yml --ask-pass --ask-become-pass
SSH password:
BECOME password[defaults to SSH password]:
PLAY [Install LAMP stack on web servers] *****
TASK [Gathering Facts] *****
[WARNING]: Platform linux on host 192.168.153.131 is using the discovered Python interpreter at /usr/bin/python3.10, but future
installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.153.131]
[WARNING]: Platform linux on host 192.168.153.133 is using the discovered Python interpreter at /usr/bin/python3.10, but future
installation of another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
ok: [192.168.153.133]
TASK [apache : Install Apache] *****
ok: [192.168.153.133]
ok: [192.168.153.131]
TASK [apache : Start and Enable Apache Service] *****
ok: [192.168.153.133]
ok: [192.168.153.131]
TASK [mysql : Install MySQL Server] *****
changed: [192.168.153.133]
changed: [192.168.153.131]
TASK [mysql : Start and Enable MySQL Service] *****
ok: [192.168.153.131]
ok: [192.168.153.133]
TASK [php : Install PHP and required extensions] *****
changed: [192.168.153.131]
changed: [192.168.153.133]
```

```
Activities Workstation [Master] [Worker1] [Worker2] [W. X]
master@master-vm: ~/lamp-ansible-project

TASK [apache : Start and Enable Apache Service] *****
ok: [192.168.153.133]
ok: [192.168.153.131]

TASK [mysql : Install MySQL Server] *****
changed: [192.168.153.133]
changed: [192.168.153.131]

TASK [mysql : Start and Enable MySQL Service] *****
ok: [192.168.153.131]
ok: [192.168.153.133]

TASK [php : Install PHP and required extensions] *****
changed: [192.168.153.131]
changed: [192.168.153.133]

TASK [php : Deploy test PHP file] *****
changed: [192.168.153.133]
changed: [192.168.153.131]

TASK [firewall : Allow HTTP and HTTPS traffic] *****
changed: [192.168.153.131] => (item=80)
changed: [192.168.153.133] => (item=80)
changed: [192.168.153.131] => (item=443)
changed: [192.168.153.133] => (item=443)

TASK [firewall : Enable UFW] *****
changed: [192.168.153.131]
changed: [192.168.153.133]

PLAY RECAP *****
192.168.153.131      : ok=9    changed=5    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
192.168.153.133      : ok=9    changed=5    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

master@master-vm: ~/lamp-ansible-project$
```

Output


Activities Workstation [Master] [Worker1] [Worker2] [W. X]

PHP 8.1.2-1ubuntu2.20 - php x PHP 8.1.2-1ubuntu2.20 - php x PHP 8.1.2-1ubuntu2.20 - php x PHP 8.1.2-1ubuntu2.20 - php x +

192.168.153.131/index.php

Import bookmarks...

PHP Version 8.1.2-1ubuntu2.20



System	Linux worker1-vm 6.8.0-52-generic #53~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Wed Jan 15 19:18:46 UTC 2 x86_64
Build Date	Dec 3 2024 20:14:35
Build System	Linux
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.1/apache2
Loaded Configuration File	/etc/php/8.1/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.1/apache2/conf.d
Additional .ini files parsed	/etc/php/8.1/apache2/conf.d/10-mysqlnd.ini, /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gd.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-mysqli.ini, /etc/php/8.1/apache2/conf.d/20-pdo_mysql.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini
PHP API	20210902
PHP Extension	20210902
Zend Extension	420210902
Zend Extension Build	API420210902.NTS


Activities Workstation

PHP 8.1.2-1ubuntu2.20 - php × PHP 8.1.2-1ubuntu2.20 - php × PHP 8.1.2-1ubuntu2.20 - php × PHP 8.1.2-1ubuntu2.20 - php × +

192.168.153.133/index.php

Import bookmarks...

PHP Version 8.1.2-1ubuntu2.20



System	Linux worker2-vm 6.8.0-52-generic #53~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Wed Jan 15 19:18:46 UTC 2 x86_64
Build Date	Dec 3 2024 20:14:35
Build System	Linux
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.1/apache2
Loaded Configuration File	/etc/php/8.1/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.1/apache2/conf.d
Additional .ini files parsed	/etc/php/8.1/apache2/conf.d/10-mysqlnd.ini, /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-mysqli.ini, /etc/php/8.1/apache2/conf.d/20-pdo_mysql.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini
PHP API	20210902
PHP Extension	20210902
Zend Extension	420210902
Zend Extension Build	API420210902.NTS

```
master@master-vm:~/lamp-ansible-project$ curl -I http://192.168.153.131
HTTP/1.1 200 OK
Date: Fri, 28 Mar 2025 13:16:54 GMT
Server: Apache/2.4.52 (Ubuntu)
Last-Modified: Fri, 28 Mar 2025 06:33:57 GMT
ETag: "29af-63161414f2224"
Accept-Ranges: bytes
Content-Length: 10671
Vary: Accept-Encoding
Content-Type: text/html
```

```
master@master-vm:~/lamp-ansible-project$ curl -I http://192.168.153.133
HTTP/1.1 200 OK
Date: Fri, 28 Mar 2025 13:17:01 GMT
Server: Apache/2.4.52 (Ubuntu)
Last-Modified: Fri, 28 Mar 2025 06:34:02 GMT
ETag: "29af-6316141a13dd9"
Accept-Ranges: bytes
Content-Length: 10671
Vary: Accept-Encoding
Content-Type: text/html
```