

NAME: GABRIEL EMMANUEL OCHE

DEPARTMENT: COMPUTERS SCIENCE (NETWORK TECHNOLOGY AND CYBERSECURITY).

LECTURER: MR ABDULLAHI JAFAR MUSA

ASSIGNMENT

1. Write a bash script to create 5 new users, add them to a group 'devteam', set their password and force them to change password on first login.

```
ubuntu@ip-172-31-44-46: ~  
ubuntu@ip-172-31-44-46:~$ groups emmanuel  
groups: 'emmanuel': no such user  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup emmanuel  
usermod: user 'emmanuel' does not exist  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup emmanuel  
usermod: user 'emmanuel' does not exist  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup emmanuel  
usermod: user 'emmanuel' does not exist  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup jafar  
usermod: user 'jafar' does not exist  
usermod: user 'emmanuel' does not exist  
ubuntu@ip-172-31-44-46:~$ sudo adduser jafar  
Info: Adding user 'jafar' ...  
Info: Selecting UID/GID from range 1000 to 59999 ...  
Info: Adding new group 'jafar' (1002) ...  
Info: Adding new user 'jafar' (1002) with group 'jafar (1002)' ...  
Info: Creating home directory '/home/jafar' ...  
Info: Copying files from '/etc/skel' ...  
New password:  
Retype new password:  
passwd: password updated successfully  
Changing the user information for jafar  
Enter the new value, or press ENTER for the default  
  Full Name []: jafar  
    Room Number []:  
    Work Phone []:  
    Home Phone []:  
    Other []:  
Is the information correct? [Y/n]  
Info: Adding new user 'jafar' to supplemental / extra groups 'users' ...  
Info: Adding user 'jafar' to group 'users' ...  
ubuntu@ip-172-31-44-46:~$ sudo adduser emmanuel  
Info: Adding user 'emmanuel' ...  
Info: Selecting UID/GID from range 1000 to 59999 ...  
Info: Adding new group 'emmanuel' (1003) ...  
Info: Adding new user 'emmanuel' (1003) with group 'emmanuel (1003)' ...  
Info: Creating home directory '/home/emmanuel' ...  
Info: Copying files from '/etc/skel' ...  
New password:  
Retype new password:  
  
Last login: Fri Sep  5 05:26:22 2025 from 102.91.97.3  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
ubuntu@ip-172-31-44-46:~$ sudo mkdir /shared_data  
ubuntu@ip-172-31-44-46:~$ sudo groupadd shared group  
Usage: groupadd [options] GROUP  
  
Options:  
-f, --force                exit successfully if the group already exists,  
                           and cancel -g if the GID is already used  
-g, --gid GID              use GID for the new group  
-h, --help                 display this help message and exit  
-k, --key KEY=VALUE        override /etc/login.defs defaults  
-o, --non-unique            allow to create groups with duplicate  
                           (non-unique) GID  
-p, --password PASSWORD    use this encrypted password for the new group  
-r, --system               create a system account  
-R, --root CHROOT_DIR      directory to chroot into  
-P, --prefix PREFIX_DIR    directory prefix  
-U, --users USERS           list of user members of this group  
   --extrausers             Use the extra users database  
  
ubuntu@ip-172-31-44-46:~$ sudo chown :sharedgroup /shared_data  
chown: invalid group: ':sharedgroup'  
ubuntu@ip-172-31-44-46:~$ sudo groupadd sharedgroup  
ubuntu@ip-172-31-44-46:~$ sudo chown :sharedgroup /shared_data  
ubuntu@ip-172-31-44-46:~$ sudo chmod 1770 /shared_data  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup user1  
usermod: user 'user1' does not exist  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup emmanuel  
usermod: user 'emmanuel' does not exist  
ubuntu@ip-172-31-44-46:~$ groups emmanuel  
groups: 'emmanuel': no such user  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup emmanuel  
usermod: user 'emmanuel' does not exist  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup emmanuel  
usermod: user 'emmanuel' does not exist  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup emmanuel  
usermod: user 'emmanuel' does not exist
```

```
ubuntu@ip-172-31-44-46: ~  
C:\Users\USER>cd dwnloads  
The system cannot find the path specified.  
C:\Users\USER>cd downloads  
C:\Users\USER\Downloads>ssh -i egkeypair.pem ubuntu@35.91.47.60  
The authenticity of host '35.91.47.60 (35.91.47.60)' can't be established.  
ED25519 key fingerprint is SHA256:njk0620He80IV+pxJHn+RqpCZqfX58LXpuCYM901GQ.  
This key is not known by any other names.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added '35.91.47.60' (ED25519) to the list of known hosts.  
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1011-aws x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/pro  
  
System information as of Fri Sep  5 05:26:20 UTC 2025  
  
System load:  0.01      Temperature:   -273.1 C  
Usage of /:   25.6% of 6.71GB   Processes:    115  
Memory usage: 23%      Users logged in: 0  
Swap usage:   0%          IPv4 address for ens5: 172.31.44.46  
  
Expanded Security Maintenance for Applications is not enabled.  
  
0 updates can be applied immediately.  
  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/*copyright.
```

2. Create a shared directory '/shared data' where group members can read/write but not delete others' files. Use ACL to grant read-only access to one extra user outside the group.

```
Running kernel seems to be up-to-date.  
  
No services need to be restarted.  
  
No containers need to be restarted.  
  
No user sessions are running outdated binaries.  
  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-44-46:~$ sudo setfacl -m u:guestuser:rx /shared_data  
setfacl: Option -m: Invalid argument near character 3  
ubuntu@ip-172-31-44-46:~$ getfacl /shared_data  
getfacl: Removing leading '/' from absolute path names  
# file: shared_data  
# owner: root  
# group: sharedgroup  
# flags: --t  
user::rwx  
group::rwx  
other::---
```

```
ubuntu@ip-172-31-44-46:~$  
  
Retype new password:  
passwd: password updated successfully  
Changing the user information for emmanuel  
Enter the new value, or press ENTER for the default  
Full Name []:  
Room Number []:  
Work Phone []:  
Home Phone []:  
Other []:  
Is the information correct? [Y/n]  
info: Adding new user 'emmanuel' to supplemental / extra groups 'users' ...  
info: Adding user 'emmanuel' to group 'users' ...  
ubuntu@ip-172-31-44-46:~$  
ubuntu@ip-172-31-44-46:~$  
ubuntu@ip-172-31-44-46:~$ sudo usermod -aG sharedgroup jafar  
sudo usermod -aG sharedgroup emmanuel  
ubuntu@ip-172-31-44-46:~$ sudo setfacl -m u:guestuser:rx /shared_data  
sudo: setfacl: command not found  
ubuntu@ip-172-31-44-46:~$ sudo setfacl -m u:guestuser:rx /shared_data  
sudo: setfacl: command not found  
ubuntu@ip-172-31-44-46:~$ getfacl /shared_data  
Command 'getfacl' not found, but can be installed with:  
sudo apt install acl  
ubuntu@ip-172-31-44-46:~$ sudo apt install acl  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following NEW packages will be installed:  
acl  
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.  
Need to get 39.4 kB of archives.  
After this operation, 197 kB of additional disk space will be used.  
Get:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu/noble-updates/main amd64 acl amd64 2.3.2-1build1.1 [39.4 kB]  
Fetched 39.4 kB in 0s (2033 kB/s)  
Selecting previously unselected package acl.  
(Reading database ... 71718 files and directories currently installed.)  
Preparing to unpack .../acl.2.3.2-1build1.1_amd64.deb ...  
Unpacking acl (2.3.2-1build1.1) ...  
Setting up acl (2.3.2-1build1.1) ...  
Processing triggers for man-db (2.12.0-4build2) ...  
Scanning processes...
```

3. Configure Apache to host two websites ('site.local', 'site2.local') with separate documents roots and logs.

```
<h1>Welcome to Site 2</h1>
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/apache2/sites-available/site1.local.conf
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/apache2/sites-available/site2.local.conf
ubuntu@ip-172-31-44-46:~$ sudo a2ensite site1.local.conf
sudo a2ensite site2.local.conf
sudo: a2ensite: command not found
sudo: a2ensite: command not found
ubuntu@ip-172-31-44-46:~$ client_loop: send disconnect: Connection reset

C:\Users\USER\Downloads>ssh -i egkeypair.pem ubuntu@35.91.47.60
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1011-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

System information as of Fri Sep  5 07:28:07 UTC 2025

System load:  0.07           Temperature:   -273.1 C
Usage of /:   26.1% of 6.71GB Processes:       121
Memory usage: 27%           Users logged in: 1
Swap usage:   0%            IPv4 address for ens5: 172.31.44.46

 * Ubuntu Pro delivers the most comprehensive open source security and
   compliance features.
   https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Fri Sep  5 07:21:20 2025 from 102.91.101.132
ubuntu@ip-172-31-44-46:~$ sudo a2ensite site1.local.conf
sudo: a2ensite: command not found
ubuntu@ip-172-31-44-46:~$ sudo httpd -v # for CentOS/RHEL/Fedora
apache2 -v # for Debian/Ubuntu

apache2 -v # for Debian/Ubuntu
Command 'httpd' not found, but can be installed with:
sudo apt install mercat
Command 'apache2' not found, but can be installed with:
sudo apt install apache2-bin
ubuntu@ip-172-31-44-46:~$ sudo a2ensite site1.local.conf
sudo a2ensite site2.local.conf
sudo: a2ensite: command not found
sudo: a2ensite: command not found
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/httpd/conf.d/site1.local.conf
sudo nano /etc/httpd/conf.d/site2.local.conf
ubuntu@ip-172-31-44-46:~$ httpd -v
Command 'httpd' not found, but can be installed with:
sudo apt install mercat
ubuntu@ip-172-31-44-46:~$ sudo apt update
Hit:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:6 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:7 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:8 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:9 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:10 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:11 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:12 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1390 kB]
Get:13 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [274 kB]
Get:14 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:15 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [14.9 kB]
Get:16 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1481 kB]
Get:17 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [298 kB]
Get:18 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:19 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.0 kB]
Get:20 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [1791 kB]
Get:21 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [400 kB]
Get:22 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:23 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [33.2 kB]
Get:24 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [6772 B]
Get:25 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:26 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [592 B]
```

```

0% [Waiting for headers]
0% [Waiting for headers]
Ign:39 http://security.ubuntu.com/ubuntu noble-security InRelease
Get:39 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:40 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1118 kB]
Get:41 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [191 kB]
Get:42 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:43 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [8712 B]
Get:44 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [879 kB]
Get:45 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [194 kB]
Get:46 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.2 kB]
Get:47 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [18.9 kB]
Get:48 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [1795 kB]
Get:49 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [382 kB]
Get:50 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:51 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [18.5 kB]
Get:52 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [4288 B]
Get:53 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Get:54 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [380 B]
Fetched 37.0 MB in 1min 28s (421 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
13 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-44-46:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libaprilt64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libaprilt64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 13 not upgraded.
Need to get 2685 kB of archives.
After this operation, 8890 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libaprilt64 amd64 1.7.2-3.1ubuntu0.1 [108 kB]
Get:2 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1t64 amd64 1.6.3-1.1ubuntu7 [91.9 kB]
Get:3 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.3-1.1ubuntu7 [11.2 kB]
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /usr/lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /usr/lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.2-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.5) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-44-46:~$ ^C
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /etc/httpd/conf.d
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/httpd/conf.d/site1.local.conf
sudo nano /etc/httpd/conf.d/site2.local.conf
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/apache2/sites-available/site1.local.conf
ubuntu@ip-172-31-44-46:~$ ^C
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/apache2/sites-available/site2.local.conf
ubuntu@ip-172-31-44-46:~$ sudo a2ensite site1.local.conf
sudo a2ensite site2.local.conf
Enabling site site1.local.
To activate the new configuration, you need to run:
  systemctl reload apache2
Enabling site site2.local.
To activate the new configuration, you need to run:
  systemctl reload apache2
ubuntu@ip-172-31-44-46:~$ |

ubuntu@ip-172-31-44-46:~$ sudo nano /etc/apache2/sites-available/site2.local.conf
ubuntu@ip-172-31-44-46:~$ sudo a2ensite site1.local.conf
sudo a2ensite site2.local.conf
Enabling site site1.local.
To activate the new configuration, you need to run:
  systemctl reload apache2
Enabling site site2.local.
To activate the new configuration, you need to run:
  systemctl reload apache2
ubuntu@ip-172-31-44-46:~$ sudo systemctl reload apache2
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/hosts
ubuntu@ip-172-31-44-46:~$ tail -f /var/log/apache2/site1_access.log
tail -f /var/log/apache2/site2_access.log
client_loop: send disconnect: Connection reset

```

```

Last login: Fri Sep  5 07:28:08 2025 from 102.91.101.132
ubuntu@ip-172-31-44-46:~$ tail -f /var/log/apache2/site1_access.log
tail -f /var/log/apache2/site2_access.log
client_loop: send disconnect: Connection reset

C:\Users\USER\Downloads>ssh -i egkeypair.pem ubuntu@35.91.47.60
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1011-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

System information as of Fri Sep  5 07:52:31 UTC 2025

System load:  0.0           Temperature:    -273.1 C
Usage of /:   29.5% of 6.71GB Processes:        134
Memory usage: 28%          Users logged in: 1
Swap usage:   0%           IPv4 address for ens5: 172.31.44.46

 * Ubuntu Pro delivers the most comprehensive open source security and
  compliance features.

  https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

19 updates can be applied immediately.
17 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Fri Sep  5 07:51:13 2025 from 102.91.101.132
ubuntu@ip-172-31-44-46:~$ tail -f /var/log/apache2/site1_access.log
tail -f /var/log/apache2/site2_access.log
|
Last login: Fri Sep  5 06:34:21 2025 from 102.91.101.132
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /var/www/site1.local/public_html
sudo mkdir -p /var/www/site2.local/public_html
ubuntu@ip-172-31-44-46:~$ client_loop: send disconnect: Connection reset

C:\Users\USER\Downloads>ssh -i egkeypair.pem ubuntu@35.91.47.60
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1011-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

System information as of Fri Sep  5 07:21:19 UTC 2025

System load:  0.0           Temperature:    -273.1 C
Usage of /:   26.1% of 6.71GB Processes:        117
Memory usage: 27%          Users logged in: 1
Swap usage:   0%           IPv4 address for ens5: 172.31.44.46

 * Ubuntu Pro delivers the most comprehensive open source security and
  compliance features.

  https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Fri Sep  5 07:17:51 2025 from 102.91.101.132
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /var/www/site1.local/public_html
sudo mkdir -p /var/www/site2.local/public_html
ubuntu@ip-172-31-44-46:~$ sudo chown -R $USER:$USER /var/www/site1.local/public_html
sudo chown -R $USER:$USER /var/www/site2.local/public_html
ubuntu@ip-172-31-44-46:~$ echo "<h1>Welcome to Site 1</h1>" | sudo tee /var/www/site1.local/public_html/index.html
echo "<h1>Welcome to Site 2</h1>" | sudo tee /var/www/site2.local/public_html/index.html
<h1>Welcome to Site 1</h1>
<h1>Welcome to Site 2</h1>

```

4. Generate a self-signed SSL certificate using ‘openssl’ and enable HTTPS for one of your virtual hosts.

```
GNU nano 7.2 /usr/local/bin/sys_health.sh *
LOGFILE="/var/log/sys_health.log"

touch $LOGFILE

echo "----- $(date) -----" >> $LOGFILE

echo "CPU Usage:" >> $LOGFILE
top -bn1 | grep "Cpu(s)" >> $LOGFILE

echo "Memory Usage:" >> $LOGFILE
free -h >> $LOGFILE

echo "Disk Usage:" >> $LOGFILE
df -h >> $LOGFILE

echo "" >> $LOGFILE
```

```
GNU nano 7.2 /tmp/crontab.3Ny5an/crontab
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h dom mon dow  command
*/5 * * * * /usr/local/bin/sys_health.sh
```

```

ubuntu@ip-172-31-44-46:~$ sudo chmod +x /usr/local/bin/sys_health.sh
ubuntu@ip-172-31-44-46:~$ sudo /usr/local/bin/sys_health.sh
cat /var/log/sys_health.log
----- Fri Sep  5 08:36:24 UTC 2025 -----
CPU Usage:
%cpu(s):  0.0 us,  4.5 sy,  0.0 ni, 95.5 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
Memory Usage:
          total      used      free      shared  buff/cache   available
Mem:    914Mi       402Mi      210Mi        3.2Mi       469Mi       511Mi
Swap:      0B         0B         0B
Disk Usage:
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        6.8G  2.1G  4.7G  32% /
tmpfs            458M   0  458M   0% /dev/shm
tmpfs            183M  944K  182M   1% /run
tmpfs            5.0M   0   5.0M   0% /run/lock
efivarfs         128K  3.6K  120K   3% /sys/firmware/efi/efivars
/dev/nvme0n1p16  881M   87M  733M  11% /boot
/dev/nvme0n1p15  105M   6.2M   99M   6% /boot/efi
tmpfs            92M   12K   92M   1% /run/user/1000

ubuntu@ip-172-31-44-46:~$ sudo crontab -e
no crontab for root - using an empty one

Select an editor.  To change later, run 'select-editor'.
 1. /bin/nano        <---- easiest
 2. /usr/bin/vim.basic
 3. /usr/bin/vim.tiny
 4. /bin/ed

Choose 1-4 [1]:

crontab: installing new crontab
ubuntu@ip-172-31-44-46:~$ |

After this operation, 61.7 MB of additional disk space will be used.
Get:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 mysql-client-core-8.0 amd64 8.0.43-0ubuntu0.24.04.1 [2740 kB]
Fetched 2740 kB in 0s (35.4 MB/s)
Selecting previously unselected package mysql-client-core-8.0.
(Reading database ... 72618 files and directories currently installed.)
Preparing to unpack .../mysql-client-core-8.0_8.0.43-0ubuntu0.24.04.1_amd64.deb ...
Unpacking mysql-client-core-8.0 (8.0.43-0ubuntu0.24.04.1) ...
Setting up mysql-client-core-8.0 (8.0.43-0ubuntu0.24.04.1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf
ubuntu@ip-172-31-44-46:~$ mysql --help | grep -A 1 "Default options"
mysql: [ERROR] Found option without preceding group in config file /etc/my.cnf at line 1.
mysql: [ERROR] Fatal error in defaults handling. Program aborted!
ubuntu@ip-172-31-44-46:~$ mysql --verbose --help | grep -A 1 "Default options"
error: Found option without preceding group in config file: /etc/my.cnf at line: 1
Fatal error in defaults handling. Program aborted
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/my.cnf
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart mysql
Failed to restart mysql.service: Unit mysql.service not found.
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/mysql/mariadb.conf.d/50-server.cnf
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart mysql
Failed to restart mysql.service: Unit mysql.service not found.
ubuntu@ip-172-31-44-46:~$ |

```

5. Configure MYSQL to allow secure remote connections, create a database and user with least privilege for remote access.


```

; You are currently testing what happens when an mDNS query is leaked to DNS
; -->HEADER<-- opcode: QUERY, status: NOERROR, id: 35356
; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 44138553d0957e220100000068baa546403b9c3c60e7cddf (good)
; QUESTION SECTION:
; www.myuniversity.local.                IN      A

; ANSWER SECTION:
; www.myuniversity.local. 604800 IN      A      192.168.1.20

; Query time: 1 msec
; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
; WHEN: Fri Sep 05 08:54:30 UTC 2025
; MSG SIZE rcvd: 95

<<>> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <<>> @127.0.0.1 google.com
(1 server found)
; global options: +cmd
; Got answer:
; -->HEADER<-- opcode: QUERY, status: NOERROR, id: 29005
; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 8e08fddb2ab4a80a0100000068baa5468a6f22eebdad9405 (good)
; QUESTION SECTION:
; google.com.                        IN      A

; ANSWER SECTION:
; google.com.                68      IN      A      142.250.73.78

; Query time: 28 msec
; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
; WHEN: Fri Sep 05 08:54:30 UTC 2025
; MSG SIZE rcvd: 83

```

```

ubuntu@ip-172-31-44-46:~$ |
ubuntu@ip-172-31-44-46:~$ sudo logrotate -f /etc/logrotate.d/myapp
ubuntu@ip-172-31-44-46:~$ ls -lh /var/log/myapp/
ls: cannot access '/var/log/myapp/': No such file or directory
ubuntu@ip-172-31-44-46:~$ sudo mkdir
mkdir: missing operand
Try 'mkdir --help' for more information.
ubuntu@ip-172-31-44-46:~$ sudo mkdir /var/log/myapp/app.log
mkdir: cannot create directory '/var/log/myapp/app.log': No such file or directory
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /var/log/myapp
ubuntu@ip-172-31-44-46:~$ sudo touch /var/log/myapp/app.log
ubuntu@ip-172-31-44-46:~$ sudo chown root:root /var/log/myapp/app.log
sudo chmod 0640 /var/log/myapp/app.log
ubuntu@ip-172-31-44-46:~$ sudo logrotate -d /etc/logrotate.d/myapp
warning: logrotate in debug mode does nothing except printing debug messages! Consider using verbose mode (-v) instead if this is not what you want.

reading config file /etc/logrotate.d/myapp
Reading state from file: /var/lib/logrotate/status
Allocating hash table for state file, size 64 entries
Creating new state

Handling 1 logs

rotating pattern: /var/log/myapp/app.log after 1 days (7 rotations)
empty log files are not rotated, old logs are removed
considering log /var/log/myapp/app.log
Now: 2025-09-05 08:42
Last rotated at 2025-09-05 08:00
log does not need rotating (log has already been rotated)
ubuntu@ip-172-31-44-46:~$ sudo logrotate -f /etc/logrotate.d/myapp
total 0
-rw-r----- 1 root root 0 Sep  5 08:41 app.log
ubuntu@ip-172-31-44-46:~$ |

```

6. Configure 'ufw' or 'iptables' to allow only HTTP(80), HTTPS(443), SSH(22), and MySQL(3306) from a specific IP range.
7. Write a script to log CPU, Memory, and Disk usage every 5 minutes into '/var/log/sys_health.log' and set as a cron job


```
GNU nano 7.2 /usr/local/bin/sys_health.sh *
LOGFILE="/var/log/sys_health.log"
touch $LOGFILE
echo "----- $(date) -----" >> $LOGFILE
echo "CPU Usage:" >> $LOGFILE
top -bn1 | grep "Cpu(s)" >> $LOGFILE
echo "Memory Usage:" >> $LOGFILE
free -h >> $LOGFILE
echo "Disk Usage:" >> $LOGFILE
df -h >> $LOGFILE
echo "" >> $LOGFILE
```

8. Configure 'logrotate' for a custom application log to rotate daily, compress old logs and keep only 7 days.

```
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 35356
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
```

```
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 44138553d0957e220100000068baa546403b9c3c60e7cddf (good)
;; QUESTION SECTION:
www.myuniversity.local.          IN      A
```

```
;; ANSWER SECTION:
www.myuniversity.local. 604800  IN      A      192.168.1.20
```

```
;; Query time: 1 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Fri Sep 05 08:54:30 UTC 2025
;; MSG SIZE rcvd: 95
```

```
<<>> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <<>> @127.0.0.1 google.com
(1 server found)
;; global options: +cmd
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 29005
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
```

```
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
; COOKIE: 8e08fddb2ab4a80a0100000068baa5468a6f22eebdad9405 (good)
;; QUESTION SECTION:
google.com.                IN      A
```

```
;; ANSWER SECTION:
google.com.                68      IN      A      142.250.73.78
```

```
;; Query time: 28 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Fri Sep 05 08:54:30 UTC 2025
;; MSG SIZE rcvd: 83
```

```
ubuntu@ip-172-31-44-46:~$ |
```

```
ubuntu@ip-172-31-44-46:~$ sudo logrotate -f /etc/logrotate.d/myapp
```

```
ubuntu@ip-172-31-44-46:~$ ls -lh /var/log/myapp/
```

```
ls: cannot access '/var/log/myapp/': No such file or directory
```

```
ubuntu@ip-172-31-44-46:~$ sudo mkdir
```

```
mkdir: missing operand
```

```
Try 'mkdir --help' for more information.
```

```
ubuntu@ip-172-31-44-46:~$ sudo mkdir /var/log/myapp/app.log
```

```
mkdir: cannot create directory '/var/log/myapp/app.log': No such file or directory
```

```
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /var/log/myapp
```

```
ubuntu@ip-172-31-44-46:~$ sudo touch /var/log/myapp/app.log
```

```
ubuntu@ip-172-31-44-46:~$ sudo chown root:root /var/log/myapp/app.log
```

```
sudo chmod 0640 /var/log/myapp/app.log
```

```
ubuntu@ip-172-31-44-46:~$ sudo logrotate -d /etc/logrotate.d/myapp
```

```
warning: logrotate in debug mode does nothing except printing debug messages! Consider using verbose mode (-v) instead if this is not what you want.
```

```
reading config file /etc/logrotate.d/myapp
```

```
Reading state from file: /var/lib/logrotate/status
```

```
Allocating hash table for state file, size 64 entries
```

```
Creating new state
```

```
Handling 1 logs
```

```
rotating pattern: /var/log/myapp/app.log after 1 days (7 rotations)
```

```
empty log files are not rotated, old logs are removed
```

```
considering log /var/log/myapp/app.log
```

```
Now: 2025-09-05 08:42
```

```
Last rotated at 2025-09-05 08:00
```

```
log does not need rotating (log has already been rotated)
```

```
ubuntu@ip-172-31-44-46:~$ sudo logrotate -f /etc/logrotate.d/myapp
```

```
ubuntu@ip-172-31-44-46:~$ ls -lh /var/log/myapp/
```

```
total 0
```

```
-rw-r----- 1 root root 0 Sep 5 08:41 app.log
```

```
ubuntu@ip-172-31-44-46:~$ |
```

```
wrote key file "/etc/bind/rndc.key"
named-resolvconf.service is a disabled or a static unit, not starting it.
Created symlink /etc/systemd/system/bind9.service → /usr/lib/systemd/system/named.service.
Created symlink /etc/systemd/system/multi-user.target.wants/named.service → /usr/lib/systemd/system/named.service.
Setting up bind9utils (1:9.18.30-0ubuntu0.24.04.2) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for ufw (0.36.2-6) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/bind/named.conf.options
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/bind/named.conf.local
ubuntu@ip-172-31-44-46:~$ sudo cp /etc/bind/db.local /etc/bind/db.myuniversity.local
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/bind/db.myuniversity.local
ubuntu@ip-172-31-44-46:~$ sudo named-checkconf
sudo named-checkzone myuniversity.local /etc/bind/db.myuniversity.local
zone myuniversity.local/IN: loaded serial 2
OK
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart bind9
sudo systemctl enable bind9
Failed to enable unit: Refusing to operate on alias name or linked unit file: bind9.service
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/resolv.conf
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/resolv.conf
ubuntu@ip-172-31-44-46:~$ dig @127.0.0.1 www.myuniversity.local
dig 127.0.0.1 google.com

; <>> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <>> @127.0.0.1 www.myuniversity.local
; (1 server found)
; global options: +cmd
; Got answer:
; WARNING: .local is reserved for Multicast DNS
; You are currently testing what happens when an mDNS query is leaked to DNS
```

9. Install and configure 'bind9' as a local caching DNS server with a custom zone for 'myuniversity,local'.

```
wrote key file "/etc/bind/rndc.key"
named-resolvconf.service is a disabled or a static unit, not starting it.
Created symlink /etc/systemd/system/bind9.service → /usr/lib/systemd/system/named.service.
Created symlink /etc/systemd/system/multi-user.target.wants/named.service → /usr/lib/systemd/system/named.service.
Setting up bind9utils (1:9.18.30-0ubuntu0.24.04.2) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for ufw (0.36.2-6) ...
Scanning processes...
Scanning Linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/bind/named.conf.options
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/bind/named.conf.local
ubuntu@ip-172-31-44-46:~$ sudo cp /etc/bind/db.local /etc/bind/db.myuniversity.local
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/bind/db.myuniversity.local
ubuntu@ip-172-31-44-46:~$ sudo named-checkconf
sudo named-checkzone myuniversity.local /etc/bind/db.myuniversity.local
zone myuniversity.local/IN: loaded serial 2
OK
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart bind9
sudo systemctl enable bind9
Failed to enable unit: Refusing to operate on alias name or linked unit file: bind9.service
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/resolv.conf
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/resolv.conf
ubuntu@ip-172-31-44-46:~$ dig @127.0.0.1 www.myuniversity.local
dig @127.0.0.1 google.com

; <<>> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <<>> @127.0.0.1 www.myuniversity.local
; (1 server found)
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
```

10. Configure SSH key-based login, disable password authentication, and disable root login in 'sshd_config'.

```
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0      0  27.6M  1 loop /snap/amazon-ssm-agent/11797
loop1        7:1      0  73.9M  1 loop /snap/core22/2045
loop2        7:2      0  49.3M  1 loop /snap/snapd/24792
nvme0n1      259:0    0    8G  0 disk
├─nvme0n1p1  259:1    0    7G  0 part /
├─nvme0n1p4  259:2    0    4M  0 part
├─nvme0n1p5  259:3    0  106M  0 part /boot/efi
├─nvme0n1p6  259:4    0  913M  0 part /boot
ubuntu@ip-172-31-44-46:~$ sudo mkfs.ext4 /dev/sdb1
mke2fs 1.47.0 (5-Feb-2023)
The file /dev/sdb1 does not exist and no size was specified.
ubuntu@ip-172-31-44-46:~$ sudo e2label /dev/sdb1 data_disk
e2label: No such file or directory while trying to open /dev/sdb1
Couldn't find valid filesystem superblock.
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /mnt/data
ubuntu@ip-172-31-44-46:~$ sudo blkid /dev/sdb1
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/fstab
ubuntu@ip-172-31-44-46:~$ sudo mount -a
mount: /mnt/data: can't find UUID=alb2c3d4-5678-90ef-1234-56789abcdef0.
mount: (hint) your fstab has been modified, but systemd still uses
the old version; use 'systemctl daemon-reload' to reload.
ubuntu@ip-172-31-44-46:~$ df -h | grep /mnt/data
lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0      0  27.6M  1 loop /snap/amazon-ssm-agent/11797
loop1        7:1      0  73.9M  1 loop /snap/core22/2045
loop2        7:2      0  49.3M  1 loop /snap/snapd/24792
nvme0n1      259:0    0    8G  0 disk
├─nvme0n1p1  259:1    0    7G  0 part /
├─nvme0n1p4  259:2    0    4M  0 part
├─nvme0n1p5  259:3    0  106M  0 part /boot/efi
├─nvme0n1p6  259:4    0  913M  0 part /boot
ubuntu@ip-172-31-44-46:~$ sudo reboot

Broadcast message from root@ip-172-31-44-46 on pts/0 (Fri 2025-09-05 09:11:33 UTC):

The system will reboot now!

ubuntu@ip-172-31-44-46:~$ Connection to 35.91.47.60 closed by remote host.
Connection to 35.91.47.60 closed.
```

```

;; Query time: 28 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Fri Sep 05 08:54:30 UTC 2025
;; MSG SIZE rcvd: 83

ubuntu@ip-172-31-44-46:~$ ssh-copy-id egkeypair@ubuntu_35.91.47.60
/usr/bin/ssh-copy-id: ERROR: No identities found
ubuntu@ip-172-31-44-46:~$ cat ~/.ssh/id_rsa.pub | ssh username@server_ip "mkdir -p ~/.ssh && cat >> ~/.ssh/authorized_keys && chmod 600 ~/.ssh/authorized_keys && chmod 700 ~/.ssh"
cat: /home/ubuntu/.ssh/id_rsa.pub: No such file or directory
ssh: Could not resolve hostname server_ip: Name or service not known
ubuntu@ip-172-31-44-46:~$ ssh egkeypair@ubuntu 35.91.47.60
ssh: Could not resolve hostname ubuntu: Name or service not known
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/ssh/sshd_config
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart ssh
ubuntu@ip-172-31-44-46:~$ sudo nano /usr/local/bin/my_startup_script.sh
ubuntu@ip-172-31-44-46:~$ sudo chmod +x /usr/local/bin/my_startup_script.sh
ubuntu@ip-172-31-44-46:~$ ^C
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/systemd/system/my_startup.service
ubuntu@ip-172-31-44-46:~$ sudo systemctl daemon-reload
ubuntu@ip-172-31-44-46:~$ sudo systemctl enable my_startup.service
Created symlink /etc/systemd/system/multi-user.target.wants/my_startup.service → /etc/systemd/system/my_startup.service.
ubuntu@ip-172-31-44-46:~$ sudo systemctl start my_startup.service
ubuntu@ip-172-31-44-46:~$ sudo systemctl status my_startup.service
● my_startup.service - My Startup Script
   Loaded: loaded (/etc/systemd/system/my_startup.service; enabled; prese>
   Active: active (exited) since Fri 2025-09-05 09:04:41 UTC; 10s ago
     Process: 6323 ExecStart=/usr/local/bin/my_startup_script.sh (code=exite>
    Main PID: 6323 (code=exited, status=0/SUCCESS)
       CPU: 7ms

Sep 05 09:04:41 ip-172-31-44-46 systemd[1]: Starting my_startup.service - M>
Sep 05 09:04:41 ip-172-31-44-46 systemd[1]: Finished my_startup.service - M>

ubuntu@ip-172-31-44-46:~$ cat /var/log/startup.log
System booted at: Fri Sep 5 09:04:41 UTC 2025
ubuntu@ip-172-31-44-46:~$ |

;; ANSWER SECTION:
www.myuniversity.local. 604800 IN A 192.168.1.20

;; Query time: 1 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Fri Sep 05 08:54:30 UTC 2025
;; MSG SIZE rcvd: 95

; <<>> DiG 9.18.38-0ubuntu0.24.04.2-Ubuntu <<>> @127.0.0.1 google.com
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 29005
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:;, udp: 1232
;; COOKIE: 8e08fddb2ab4a80a0100000068baa5468a6f22eebdad9405 (good)
;; QUESTION SECTION:
;google.com. IN A

;; ANSWER SECTION:
google.com. 68 IN A 142.250.73.78

;; Query time: 28 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Fri Sep 05 08:54:30 UTC 2025
;; MSG SIZE rcvd: 83

ubuntu@ip-172-31-44-46:~$ ssh-copy-id egkeypair@ubuntu_35.91.47.60
/usr/bin/ssh-copy-id: ERROR: No identities found
ubuntu@ip-172-31-44-46:~$ cat ~/.ssh/id_rsa.pub | ssh username@server_ip "mkdir -p ~/.ssh && cat >> ~/.ssh/authorized_keys && chmod 600 ~/.ssh/authorized_ke
ys && chmod 700 ~/.ssh"
cat: /home/ubuntu/.ssh/id_rsa.pub: No such file or directory
ssh: Could not resolve hostname server_ip: Name or service not known
ubuntu@ip-172-31-44-46:~$ ssh egkeypair@ubuntu 35.91.47.60
ssh: Could not resolve hostname ubuntu: Name or service not known
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/ssh/sshd_config
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart ssh
ubuntu@ip-172-31-44-46:~$ |

```

11. Write a simple script and create a ‘systemd’ service to run it automatically at boot.

```
echo "Boot at: $(date)" >> /var/log/boot_time.log
```

```
2 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

*** System restart required ***
Last login: Sun Sep  7 00:57:15 2025 from 35.91.47.60
ubuntu@ip-172-31-44-46:~$ ssh-keygen -t rsa -b 4096 -C "gabriel.o.emma003@gmail.com"
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_rsa):
/home/ubuntu/.ssh/id_rsa already exists.
Overwrite (y/n)? y
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ubuntu/.ssh/id_rsa
Your public key has been saved in /home/ubuntu/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:vnEJWapS505XBVc2Ry+K/LOSPkMQ3E1UQ2cVHt1P6FY gabriel.o.emma003@gmail.com
The key's randomart image is:
+---[RSA 4096]-----+
|  . . ++o=B&|
|    o . .oo=E|
| .. .o+o|
+-----+
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart sshd
Failed to restart sshd.service: Unit sshd.service not found.
ubuntu@ip-172-31-44-46:~$ systemctl list-units --type=service | grep ssh
ssh.service                                loaded active running OpenBSD Secure Shell server |
+-----[SHA256]-----+
ubuntu@ip-172-31-44-46:~$ ssh-copy-id ubuntu@35.91.47.60
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ubuntu/.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
ubuntu@35.91.47.60: Permission denied (publickey).
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart ssh.service
ubuntu@ip-172-31-44-46:~$ ssh ubuntu@35.91.47.60
ubuntu@35.91.47.60: Permission denied (publickey).
ubuntu@ip-172-31-44-46:~$
```

12. Create a new partition, format as ext4, mount it permanently using '/etc/fstab', and test reboot persistence.

```

NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0    0  27.6M 1 loop /snap/amazon-ssm-agent/11797
loop1        7:1    0  73.9M 1 loop /snap/core22/2045
loop2        7:2    0  49.3M 1 loop /snap/snapd/24792
nvme0n1      259:0    0    8G  0 disk
├─nvme0n1p1  259:1    0    7G  0 part /
├─nvme0n1p14 259:2    0    4M  0 part
├─nvme0n1p15 259:3    0  106M  0 part /boot/efi
└─nvme0n1p16 259:4    0   913M  0 part /boot
ubuntu@ip-172-31-44-46:~$ sudo mkfs.ext4 /dev/sdb1
mkfs2fs 1.47.0 (5-Feb-2023)
The file /dev/sdb1 does not exist and no size was specified.
ubuntu@ip-172-31-44-46:~$ sudo e2label /dev/sdb1 data_disk
e2label: No such file or directory while trying to open /dev/sdb1
Couldn't find valid filesystem superblock.
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /mnt/data
ubuntu@ip-172-31-44-46:~$ sudo blkid /dev/sdb1
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/fstab
ubuntu@ip-172-31-44-46:~$ sudo mount -a
mount: /mnt/data: can't find UUID=a1b2c3d4-5678-90ef-1234-56789abcdef0.
mount: (hint) your fstab has been modified, but systemd still uses
the old version; use 'systemctl daemon-reload' to reload.
ubuntu@ip-172-31-44-46:~$ df -h | grep /mnt/data
lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0        7:0    0  27.6M 1 loop /snap/amazon-ssm-agent/11797
loop1        7:1    0  73.9M 1 loop /snap/core22/2045
loop2        7:2    0  49.3M 1 loop /snap/snapd/24792
nvme0n1      259:0    0    8G  0 disk
├─nvme0n1p1  259:1    0    7G  0 part /
├─nvme0n1p14 259:2    0    4M  0 part
├─nvme0n1p15 259:3    0  106M  0 part /boot/efi
└─nvme0n1p16 259:4    0   913M  0 part /boot
ubuntu@ip-172-31-44-46:~$ sudo reboot

Broadcast message from root@ip-172-31-44-46 on pts/0 (Fri 2025-09-05 09:11:33 UTC):

The system will reboot now!

ubuntu@ip-172-31-44-46:~$ Connection to 35.91.47.60 closed by remote host.
Connection to 35.91.47.60 closed.

```

```

tes can be applied immediately.
these additional updates run: apt list --upgradable

ESM Apps to receive additional future security updates.
tps://ubuntu.com/esm or run: sudo pro status

stem restart required ***
ogin: Sun Sep  7 13:04:56 2025 from 102.91.93.215
@ip-172-31-44-46:~$ sudo mkdir /dev/sda
@ip-172-31-44-46:~$ sudo fdisk /dev/sda

e to fdisk (util-linux 2.39.3).
s will remain in memory only, until you decide to write them.
eful before using the write command.

cannot open /dev/sda: Is a directory
@ip-172-31-44-46:~$ sudo mkdir -p /mnt/mydata
@ip-172-31-44-46:~$ sudo blkid /dev/sda2
@ip-172-31-44-46:~$ sudo nano /etc/fstab
@ip-172-31-44-46:~$ sudo mount -a
/mnt/data: can't find UUID=a1b2c3d4-5678-90ef-1234-56789abcdef0.
(hint) your fstab has been modified, but systemd still uses
the old version; use 'systemctl daemon-reload' to reload.
/mnt/mydata: can't find UUID=abcd-1234-efgh-5678.
@ip-172-31-44-46:~$ df -h

```

Filesystem	Size	Used	Avail	Use%	Mounted on
root	6.8G	3.5G	3.3G	52%	/
dev	458M	0	458M	0%	/dev/shm
run	183M	928K	182M	1%	/run
lock	5.0M	0	5.0M	0%	/run/lock
fs	128K	3.8K	120K	4%	/sys/firmware/efi/efivars
nvme0n1p16	881M	151M	669M	19%	/boot
nvme0n1p15	105M	6.2M	99M	6%	/boot/efi
run/user/1000	92M	12K	92M	1%	/run/user/1000

```

@ip-172-31-44-46:~$ sudo reboot

ast message from root@ip-172-31-44-46 on pts/4 (Sun 2025-09-07 13:15:14 UTC):
stem will reboot now!

```



```
pts: Select Nodes command prompt

Expanded Security Maintenance for Applications is not enabled.

2 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

*** System restart required ***
Last login: Sun Sep  7 13:04:56 2025 from 102.91.93.215
ubuntu@ip-172-31-44-46:~$ sudo mkdir /dev/sda
ubuntu@ip-172-31-44-46:~$ sudo fdisk /dev/sda

Welcome to fdisk (util-linux 2.39.3).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

fdisk: cannot open /dev/sda: Is a directory
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /mnt/mydata
ubuntu@ip-172-31-44-46:~$ sudo blkid /dev/sda2
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/fstab
ubuntu@ip-172-31-44-46:~$ sudo mount -a
mount: /mnt/data: can't find UUID=a1b2c3d4-5678-90ef-1234-56789abcdef0.
mount: (hint) your fstab has been modified, but systemd still uses
the old version; use 'systemctl daemon-reload' to reload.
mount: /mnt/mydata: can't find UUID=abcd-1234-efgh-5678.
ubuntu@ip-172-31-44-46:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/root        6.8G  3.5G  3.3G  52% /
tmpfs            458M   0  458M   0% /dev/shm
tmpfs           183M  928K  182M   1% /run
tmpfs            5.0M   0   5.0M   0% /run/lock
efivarfs         128K  3.8K  120K   4% /sys/firmware/efi/efivars
/dev/nvme0n1p16  881M  151M  669M  19% /boot
/dev/nvme0n1p15  185M  6.2M   99M   6% /boot/efi
tmpfs            92M   12K   92M   1% /run/user/1000
ubuntu@ip-172-31-44-46:~$ sudo reboot

Broadcast message from root@ip-172-31-44-46 on pts/4 (Sun 2025-09-07 13:15:14 UTC):
The system will reboot now!
```

13. Install and configure postfix for local mail delivery and send a test mail between users.

```
user sessions are running outdated binaries.

VM guests are running outdated hypervisor (qemu) binaries on this
ost.
untu@ip-172-31-26-0:~$ sudo nano /etc/postfix/main.cf
untu@ip-172-31-26-0:~$ sudo systemctl restart postfix
untu@ip-172-31-26-0:~$ sudo nano /etc/postfix/main.cf
untu@ip-172-31-26-0:~$ sudo systemctl status postfix
postfix.service - Postfix Mail Transport Agent
   Loaded: loaded (/usr/lib/systemd/system/postfix.service; enabled; >
   Active: active (exited) since Tue 2025-09-09 12:16:04 UTC; 49s ago
     Docs: man:postfix(1)
   Process: 148279 ExecStart=/bin/true (code=exited, status=0/SUCCESS)
  Main PID: 148279 (code=exited, status=0/SUCCESS)
     CPU: 2ms

p 09 12:16:04 ip-172-31-26-0 systemd[1]: Starting postfix.service - P>
p 09 12:16:04 ip-172-31-26-0 systemd[1]: Finished postfix.service - P>

untu@ip-172-31-26-0:~$ sudo adduser simon
do adduser jafar
fo: Adding user 'simon' ...
fo: Selecting UID/GID from range 1000 to 59999 ...
fo: Adding new group 'simon' (1012) ...
fo: Adding new user 'simon' (1012) with group 'simon (1012)' ...
fo: Creating home directory '/home/simon' ...
fo: Copying files from '/etc/skel' ...
w password:
type new password:
password has been supplied.
w password:
type new password:
password has been supplied.
w password:
type new password:
```

```
simon@ip-172-31-26-0: ~
info: Adding new group 'jafar' (1013) ...
info: Adding new user 'jafar' (1013) with group 'jafar (1013)' ...
info: Creating home directory '/home/jafar' ...
info: Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for jafar
Enter the new value, or press ENTER for the default
   Full Name []: Zipporah
   Room Number []: 20
   Work Phone []: 07049051719
   Home Phone []: 08135320033
   Other []: nil
Is the information correct? [Y/n] y
info: Adding new user 'jafar' to supplemental / extra groups 'users' ...
info: Adding user 'jafar' to group 'users' ...
ubuntu@ip-172-31-26-0:~$ sudo su - simon
simon@ip-172-31-26-0:~$ echo "Hello jafar, this is a test email." | mail
-s "Test Email" jafar
simon@ip-172-31-26-0:~$ sudo su - jafar
[sudo] password for simon:
simon is not in the sudoers file.
This incident has been reported to the administrator.
simon@ip-172-31-26-0:~$ mail
Cannot open mailbox /var/mail/simon: No such file or directory
No mail for simon
simon@ip-172-31-26-0:~$ sudo su - simon
[sudo] password for simon:
simon is not in the sudoers file.
This incident has been reported to the administrator.
simon@ip-172-31-26-0:~$ mail
Cannot open mailbox /var/mail/simon: No such file or directory
No mail for simon
simon@ip-172-31-26-0:~$ sudo tail -f /var/log/mail.log
```

Snipping Tool

Screenshot copied to clipboard
Automatically saved to screenshots folder.

Markup and share

```

*** System restart required ***
Last login: Fri Sep  5 09:21:31 2025 from 197.211.63.137
ubuntu@ip-172-31-26-0:~$ sudo apt update
Hit:1 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1390 kB]
Get:6 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [274 kB]
Get:7 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:8 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [14.9 kB]
Get:9 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:10 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:11 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:12 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7056 B]
Get:13 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [19.2 kB]
Get:14 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:15 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:16 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.6 kB]
Get:17 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.2 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:19 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Fetched 2711 kB in 1s (2925 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
6 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-26-0:~$ sudo apt install postfix mailutils -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  nginx-common

```

14. Write a script to back up '/var/www/html' to '/backup/' with a timestamp and test restoring.

5 updates can be applied immediately.
To see these additional updates run: `apt list --upgradable`

1 additional security update can be applied with ESM Apps.
Learn more about enabling ESM Apps service at <https://ubuntu.com/esm>

*** System restart required ***

Last login: Tue Sep 9 13:17:20 2025 from 102.91.96.238

`ubuntu@ip-172-31-26-0:~$ sudo nano restore_www.sh`

`ubuntu@ip-172-31-26-0:~$ sudo chmod +x restore_www.sh`

`ubuntu@ip-172-31-26-0:~$ sudo ./restore_www.sh`

Restoring /backup/html_backup_20250909_132352.tar.gz to /var/www/html_test...

Restore completed successfully. Files are in /var/www/html_test

`ubuntu@ip-172-31-26-0:~$`

```
ubuntu@ip-172-31-26-0:~$ sudo ./restore_www.sh
Restoring /backup/html_backup_20250909_132352.tar.gz to /var/www/html_test...
Restore completed successfully. Files are in /var/www/html_test
ubuntu@ip-172-31-26-0:~$ sudo ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? n
Aborted
ubuntu@ip-172-31-26-0:~$ sudo ufw allow from 192.168.1.0/24 to any port 22 proto tcp
sudo ufw allow from 192.168.1.0/24 to any port 80 proto tcp
sudo ufw allow from 192.168.1.0/24 to any port 443 proto tcp
sudo ufw allow from 192.168.1.0/24 to any port 3306 proto tcp
Rules updated
Rules updated
Rules updated
Rules updated
ubuntu@ip-172-31-26-0:~$ sudo ufw status verbose
Status: inactive
ubuntu@ip-172-31-26-0:~$ sudo ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
ubuntu@ip-172-31-26-0:~$ sudo ufw status verbose
Status: active
Logging: on (low)
Default: deny (incoming), allow (outgoing), deny (routed)
New profiles: skip

To Action From
--
22/tcp ALLOW IN 192.168.1.0/24
80/tcp ALLOW IN 192.168.1.0/24
443/tcp ALLOW IN 192.168.1.0/24
3306/tcp ALLOW IN 192.168.1.0/24

ubuntu@ip-172-31-26-0:~$ sudo ufw disable
Firewall stopped and disabled on system startup
ubuntu@ip-172-31-26-0:~$
```

1 additional security update can be applied with ESM Apps.
Learn more about enabling ESM Apps service at <https://ubuntu.com/esm>

*** System restart required ***

Last login: Tue Sep 9 12:33:43 2025 from 102.91.92.32

`ubuntu@ip-172-31-26-0:~$ bash backup_www.sh`

`bash: backup_www.sh: No such file or directory`

`ubuntu@ip-172-31-26-0:~$ sudo nano backup_www.sh`

`ubuntu@ip-172-31-26-0:~$ sudo chmod +x backup_www.sh`

`ubuntu@ip-172-31-26-0:~$ cat backup_www.sh`

`#!/bin/bash`

`# Variables`

15. Install docker/podman, create a container running Nginx, map it to port 8080, and verify s

```
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
loop0 7:0 0 27.6M 1 loop /snap/amazon-ssm-agent/11797
loop1 7:1 0 73.9M 1 loop /snap/core22/2045
loop2 7:2 0 49.3M 1 loop /snap/snapd/24792
nvme0n1 259:0 0 8G 0 disk
├─nvme0n1p1 259:1 0 7G 0 part /
├─nvme0n1p14 259:2 0 4M 0 part
├─nvme0n1p15 259:3 0 106M 0 part /boot/efi
└─nvme0n1p16 259:4 0 913M 0 part /boot
ubuntu@ip-172-31-44-46:~$ sudo mkfs.ext4 /dev/sdb1
mkfs2fs 1.47.0 (5-Feb-2023)
The file /dev/sdb1 does not exist and no size was specified.
ubuntu@ip-172-31-44-46:~$ sudo e2label /dev/sdb1 data.disk
e2label: No such file or directory while trying to open /dev/sdb1
Couldn't find valid filesystem superblock.
ubuntu@ip-172-31-44-46:~$ sudo mkdir -p /mnt/data
ubuntu@ip-172-31-44-46:~$ sudo blkid /dev/sdb1
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/fstab
ubuntu@ip-172-31-44-46:~$ sudo mount -a
mount: /mnt/data: can't find UUID=alb2c3d4-5678-90ef-1234-56789abcdef0.
mount: (hint) your fstab has been modified, but systemd still uses
the old version; use 'systemctl daemon-reload' to reload.
ubuntu@ip-172-31-44-46:~$ df -h | grep /mnt/data
lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINTS
loop0 7:0 0 27.6M 1 loop /snap/amazon-ssm-agent/11797
loop1 7:1 0 73.9M 1 loop /snap/core22/2045
loop2 7:2 0 49.3M 1 loop /snap/snapd/24792
nvme0n1 259:0 0 8G 0 disk
├─nvme0n1p1 259:1 0 7G 0 part /
├─nvme0n1p14 259:2 0 4M 0 part
├─nvme0n1p15 259:3 0 106M 0 part /boot/efi
└─nvme0n1p16 259:4 0 913M 0 part /boot
ubuntu@ip-172-31-44-46:~$ sudo reboot

Broadcast message from root@ip-172-31-44-46 on pts/0 (Fri 2025-09-05 09:11:33 UTC):

The system will reboot now!

ubuntu@ip-172-31-44-46:~$ Connection to 35.91.47.60 closed by remote host.
Connection to 35.91.47.60 closed.

;; ANSWER SECTION:
www.myuniversity.local. 604800 IN A 192.168.1.20

;; Query time: 1 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Fri Sep 05 08:54:30 UTC 2025
;; MSG SIZE rcvd: 95

; <<>> DiG 9.18.30-ubuntu0.24.04.2-Ubuntu <<>> @127.0.0.1 google.com
(1 server found)
;; global options: +cmd
;; Got answer:
;; -->HEADER<-- opcode: QUERY, status: NOERROR, id: 29005
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags: udp: 1232
; COOKIE: 8e08fddb2ab4a80a0100000068baa5468a6f22eebdad9405 (good)
;; QUESTION SECTION:
;google.com. IN A

;; ANSWER SECTION:
google.com. 68 IN A 142.250.73.78

;; Query time: 28 msec
;; SERVER: 127.0.0.1#53(127.0.0.1) (UDP)
;; WHEN: Fri Sep 05 08:54:30 UTC 2025
;; MSG SIZE rcvd: 83

ubuntu@ip-172-31-44-46:~$ ssh-copy-id egkeypair@ubuntu_35.91.47.60
/usr/bin/ssh-copy-id: ERROR: No identities found
ubuntu@ip-172-31-44-46:~$ cat ~/.ssh/id_rsa.pub | ssh username@server_ip "mkdir -p ~/.ssh && cat >> ~/.ssh/authorized_keys && chmod 600 ~/.ssh/authorized_ke
ys && chmod 700 ~/.ssh"
cat: /home/ubuntu/.ssh/id_rsa.pub: No such file or directory
ssh: Could not resolve hostname server_ip: Name or service not known
ubuntu@ip-172-31-44-46:~$ ssh egkeypair@ubuntu_35.91.47.60
ssh: Could not resolve hostname ubuntu: Name or service not known
ubuntu@ip-172-31-44-46:~$ sudo nano /etc/ssh/sshd_config
ubuntu@ip-172-31-44-46:~$ sudo systemctl restart ssh
ubuntu@ip-172-31-44-46:~$ |
```

ervice.