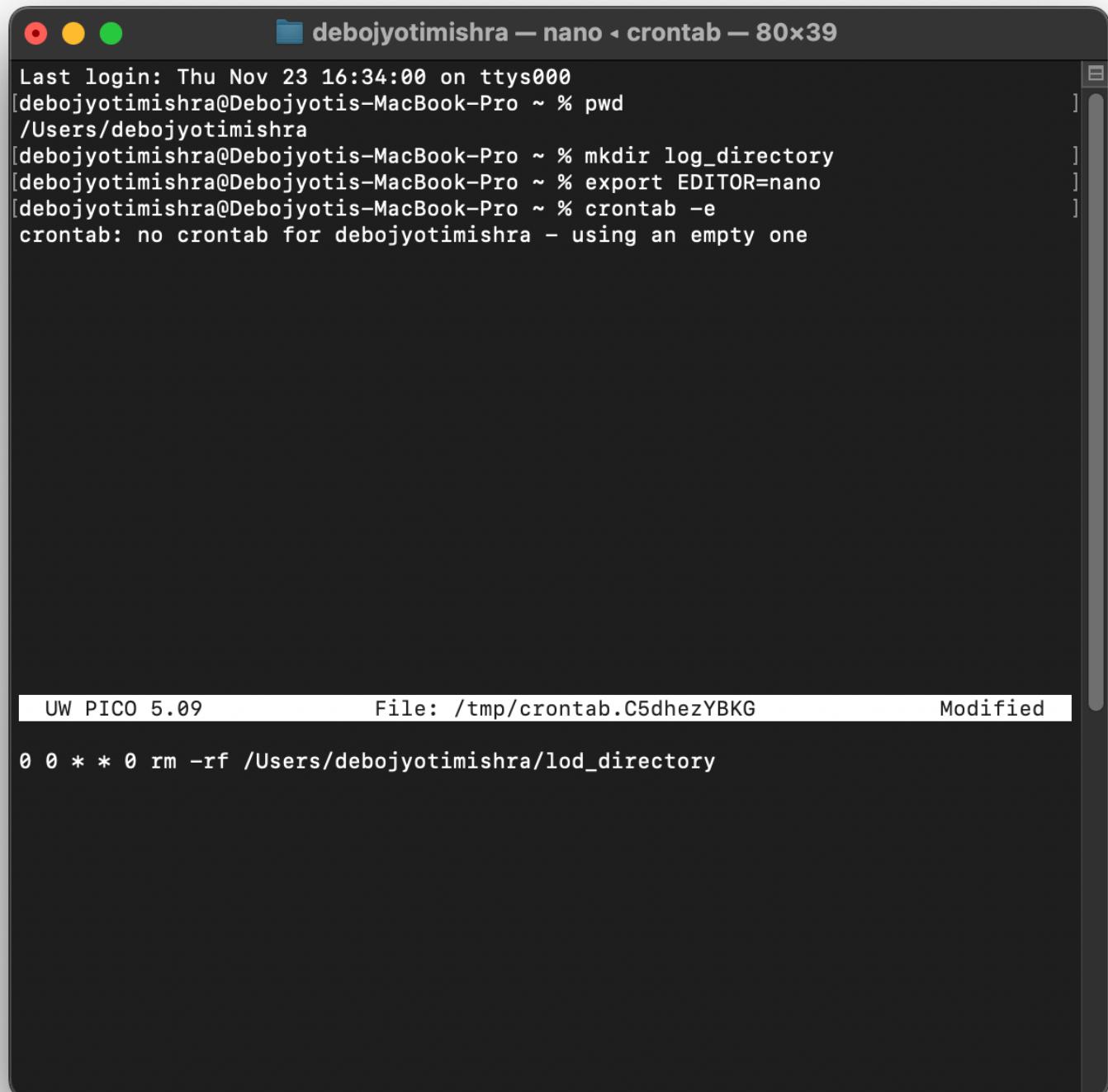


Linux Assignment

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Exercise 1.1



The screenshot shows a terminal window titled "debojyotimishra — nano - crontab — 80x39". The terminal history is as follows:

```
Last login: Thu Nov 23 16:34:00 on ttys000
[debojyotimishra@Debojyotis-MacBook-Pro ~ % pwd
/Users/debojyotimishra
[debojyotimishra@Debojyotis-MacBook-Pro ~ % mkdir log_directory
[debojyotimishra@Debojyotis-MacBook-Pro ~ % export EDITOR=nano
[debojyotimishra@Debojyotis-MacBook-Pro ~ % crontab -e
crontab: no crontab for debojyotimishra - using an empty one
```

The bottom status bar indicates the terminal is running on "UW PICO 5.09" and the file is located at "/tmp/crontab.C5dhezYBKG". The status bar also shows "Modified".

The user has added the following cron entry:

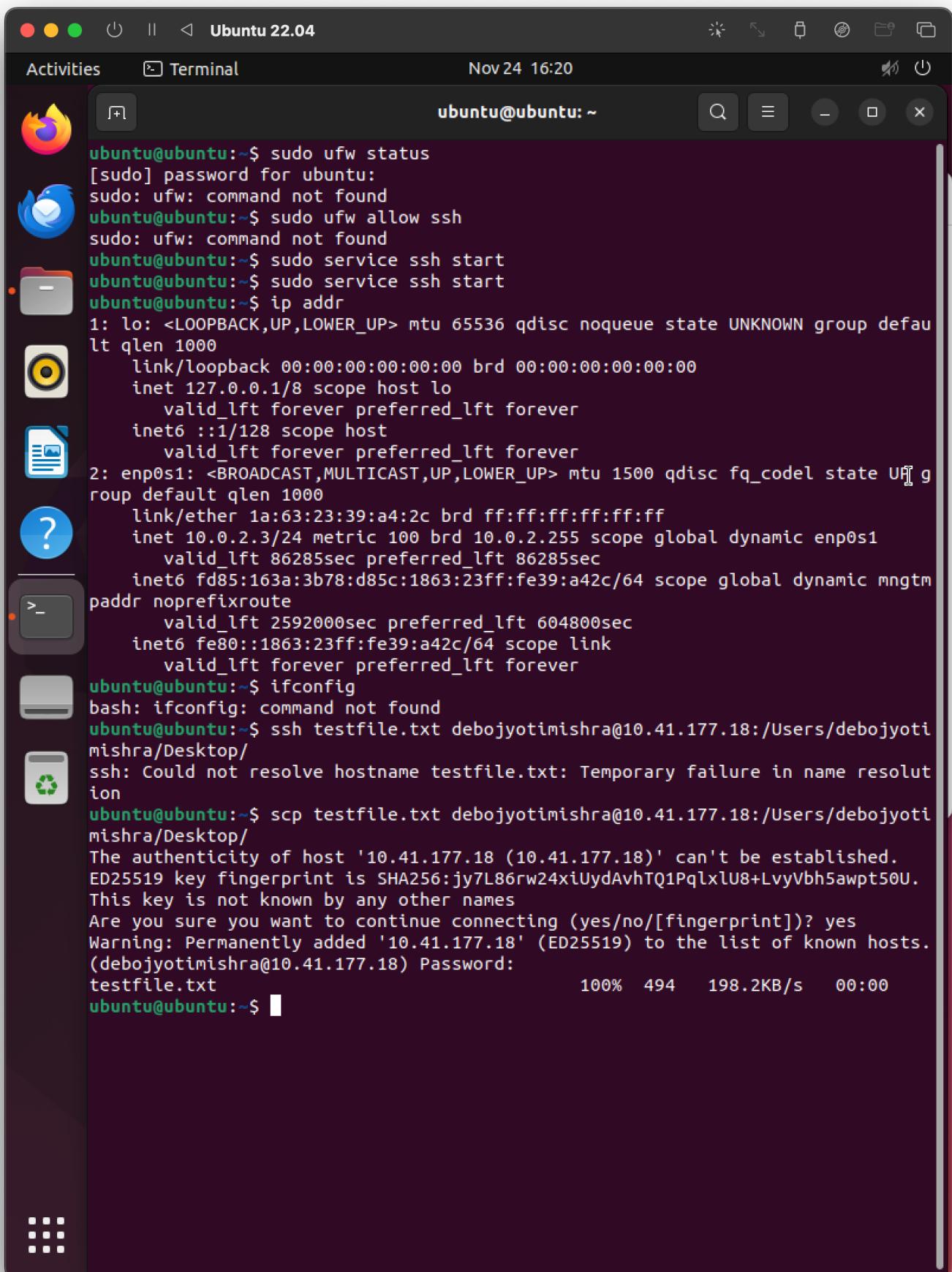
```
0 0 * * 0 rm -rf /Users/debojyotimishra/log_directory
```

Exercise 1.2

```
Last login: Thu Nov 23 16:36:40 on ttys000
[debojyotimishra@Debojyotis-MacBook-Pro ~ % mkdir file_states
[debojyotimishra@Debojyotis-MacBook-Pro ~ % export EDITOR=nano
[debojyotimishra@Debojyotis-MacBook-Pro ~ % crontab -e
crontab: no crontab for debojyotimishra - using an empty one

UW PICO 5.09          File: /tmp/crontab.9AJQBIDJ8J      Modified
0 2 * * * ps aux /Users/debojyotimishra/file_states
```

Exercise 2.1



The image shows a screenshot of an Ubuntu 22.04 desktop environment. A terminal window is open in the center, titled "Terminal". The terminal window has a dark purple background and displays a command-line session. The session starts with the user running "sudo ufw status", which fails because "ufw" is not found. The user then runs "sudo service ssh start" twice, which succeeds. The user then runs "ip addr" to check network interfaces, showing details for "lo" (loopback) and "enp0s1" (ethernet). Finally, the user runs "scp testfile.txt debojyotimishra@10.41.177.18:/Users/debojyoti/mishra/Desktop/", which fails due to a temporary name resolution issue. The user then runs "ssh testfile.txt debojyotimishra@10.41.177.18:/Users/debojyoti/mishra/Desktop/" and is prompted for a password, which they enter as "testfile.txt". The terminal window also shows the date and time as "Nov 24 16:20".

```
ubuntu@ubuntu:~$ sudo ufw status
[sudo] password for ubuntu:
sudo: ufw: command not found
ubuntu@ubuntu:~$ sudo ufw allow ssh
sudo: ufw: command not found
ubuntu@ubuntu:~$ sudo service ssh start
ubuntu@ubuntu:~$ sudo service ssh start
ubuntu@ubuntu:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
            inet6 ::1/128 scope host
                valid_lft forever preferred_lft forever
2: enp0s1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 1a:63:23:39:a4:2c brd ff:ff:ff:ff:ff:ff
        inet 10.0.2.3/24 metric 100 brd 10.0.2.255 scope global dynamic enp0s1
            valid_lft 86285sec preferred_lft 86285sec
            inet6 fd85:163a:3b78:d85c:1863:23ff:fe39:a42c/64 scope global dynamic mngtmpadd
                valid_lft 2592000sec preferred_lft 604800sec
            inet6 fe80::1863:23ff:fe39:a42c/64 scope link
                valid_lft forever preferred_lft forever
ubuntu@ubuntu:~$ ifconfig
bash: ifconfig: command not found
ubuntu@ubuntu:~$ ssh testfile.txt debojyotimishra@10.41.177.18:/Users/debojyoti/mishra/Desktop/
ssh: Could not resolve hostname testfile.txt: Temporary failure in name resolution
ubuntu@ubuntu:~$ scp testfile.txt debojyotimishra@10.41.177.18:/Users/debojyoti/mishra/Desktop/
The authenticity of host '10.41.177.18 (10.41.177.18)' can't be established.
ED25519 key fingerprint is SHA256:jy7L86rw24xiUydAvhTQ1Pqlxlu8+LvyVbh5awpt50U.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.41.177.18' (ED25519) to the list of known hosts.
(debojyotimishra@10.41.177.18) Password:
testfile.txt                                         100%   494    198.2KB/s   00:00
ubuntu@ubuntu:~$
```

debojyotimishra — ubuntu@ubuntu: ~ — ssh ubuntu@10.0.2.3 — 89x65

```
Last login: Fri Nov 24 13:14:00 on ttys000
[debojyotimishra@Debojyotis-MacBook-Pro ~ % ssh ubuntu@10.0.2.2
ssh: connect to host 10.0.2.2 port 22: Operation timed out
[debojyotimishra@Debojyotis-MacBook-Pro ~ % ssh ubuntu@10.0.2.3/24
ssh: Could not resolve hostname 10.0.2.3/24: nodename nor servname provided, or not known
debojyotimishra@Debojyotis-MacBook-Pro ~ % ssh ubuntu@10.0.2.3
[The authenticity of host '10.0.2.3 (10.0.2.3)' can't be established.
ED25519 key fingerprint is SHA256:fXNkve/CIj3Vn5dlvt4cFB2b9YB+Qx7gH1yDovAjqtM.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.0.2.3' (ED25519) to the list of known hosts.
ubuntu@10.0.2.3's password:
[Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-87-generic aarch64)

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

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

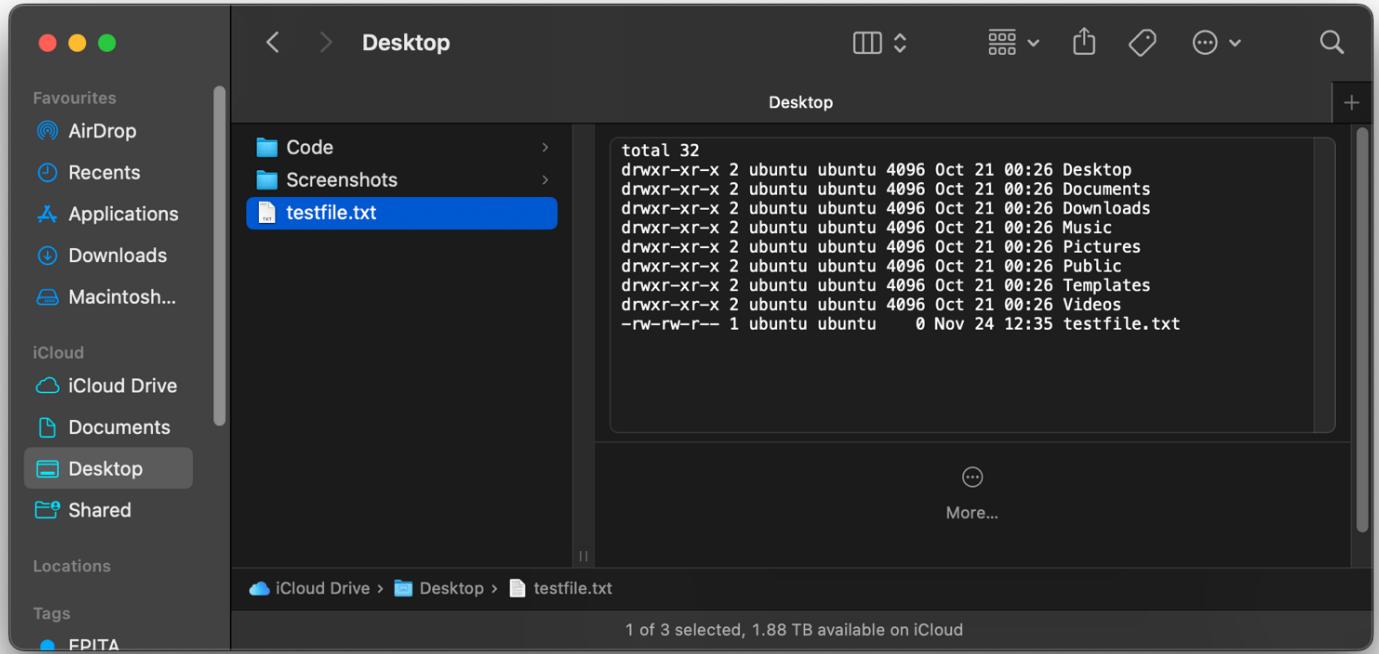
To restore this content, you can run the 'unminimize' command.

Expanded Security Maintenance for Applications is not enabled.

17 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

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
Last login: Sat Oct 21 00:06:27 2023
ubuntu@ubuntu:~$ ls -l
[total 32
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Desktop
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Documents
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Downloads
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Music
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Pictures
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Public
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Templates
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Videos
ubuntu@ubuntu:~$ ls -l >> testfile.txt
ubuntu@ubuntu:~$ ls -l
[total 36
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Desktop
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Documents
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Downloads
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Music
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Pictures
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Public
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Templates
drwxr-xr-x 2 ubuntu ubuntu 4096 Oct 21 00:26 Videos
-rw-rw-r-- 1 ubuntu ubuntu 494 Nov 24 12:35 testfile.txt
ubuntu@ubuntu:~$ scp testfile.txt debojyotimishra@10.41.177.18:/Users/debojyotimishra/Des
[ktop
ubuntu@ubuntu:~$ sscp testfile.txt debojyotimishra@10.41.177.18:/Users/debojyotimishra/De
[sktop
-bash: sscp: command not found
ubuntu@ubuntu:~$ scp testfile.txt debojyotimishra@10.41.177.18:/Users/debojyotimishra/Des
[ktop
```



Exercise 2.2

```
debojyotimishra — ubuntu@ubuntu: ~ — ssh ubuntu@10.0.2.3 — 80x49
Last login: Fri Nov 24 13:37:47 on ttys001
[debojyotimishra@Debojyotis-MacBook-Pro ~ % ssh-keygen -t rsa

Generating public/private rsa key pair.
Enter file in which to save the key (/Users/debojyotimishra/.ssh/id_rsa): /Users
/debojyotimishra/.ssh/id_rsa
[Enter passphrase (empty for no passphrase):
[Enter same passphrase again:
Your identification has been saved in /Users/debojyotimishra/.ssh/id_rsa
Your public key has been saved in /Users/debojyotimishra/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:IZ1cvnW2L/+ySli960nvxaT7er8RN3WEYMcUbyn+icE debojyotimishra@Debojyotis-Ma
cBook-Pro.local
The key's randomart image is:
+---[RSA 3072]---+
|          o.o. ...
|         o *o ..
|        . = +...o o
|
|
|
|       ..o..B+
|       .oBO@
+---[SHA256]---+
[debojyotimishra@Debojyotis-MacBook-Pro ~ % ssh-copy-id debojyotimishra@10.41.177]
.18

/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/Users/debojyotim
ishra/.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: ERROR: ssh: connect to host 10.41.177.18 port 22: Connecti
on refused

[debojyotimishra@Debojyotis-MacBook-Pro ~ % ssh-copy-id ubuntu@10.0.2.3
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/Users/debojyotim
ishra/.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 prompt
ed now it is to install the new keys
[ubuntu@10.0.2.3's password:
Permission denied, please try again.
[ubuntu@10.0.2.3's password:
Permission denied, please try again.
[ubuntu@10.0.2.3's password:
```

debojyotimishra — ubuntu@ubuntu: ~ — ssh ubuntu@10.0.2.3 — 80x49

```
/usr/bin/ssh-copy-id: ERROR: ssh: connect to host 10.41.177.18 port 22: Connection refused

[debojyotimishra@Debojyotis-MacBook-Pro ~ % ssh-copy-id ubuntu@10.0.2.3
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/Users/debojyotimishra/.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@10.0.2.3's password:
Permission denied, please try again.
[ubuntu@10.0.2.3's password:
Permission denied, please try again.
[ubuntu@10.0.2.3's password:
```

Number of key(s) added: 1

Now try logging into the machine, with: "ssh 'ubuntu@10.0.2.3'" and check to make sure that only the key(s) you wanted were added.

```
[debojyotimishra@Debojyotis-MacBook-Pro ~ % ssh ubuntu@10.0.2.3
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-87-generic aarch64)
```

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

This system has been minimized by removing packages and content that are not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

Expanded Security Maintenance for Applications is not enabled.

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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

Failed to connect to <https://changelogs.ubuntu.com/meta-release-lts>. Check your Internet connection or proxy settings

```
Last login: Fri Nov 24 12:34:19 2023 from 10.0.2.1
ubuntu@ubuntu:~$ |
```