CUPS

Step 1. First, make sure that all your system packages are up-to-date by running the following apt commands in the terminal.

sudo apt update
sudo apt upgrade

Step 2. Installing CUPS Printer Server on Ubuntu 20.04.

CUPS is installed by default in the Ubuntu Desktop. To Install CUPS on the Ubuntu server enter the following command below:

sudo apt install cups

```
user@user-VirtualBox:~$ sudo apt install cups
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
cups is already the newest version (2.4.1op1-1ubuntu4.1).
0 upgraded, 0 newly installed, 0 to remove and 7 not upgraded.
```

After installing the CUPS print server, start the CUPS print service in the following command:

sudo systemctl start cups
sudo systemctl enable cups
sudo systemctl status cups

```
user@user-VirtualBox:~$ sudo systemctl start cups
user@user-VirtualBox:~$ sudo systemctl enable cups
Synchronizing state of cups.service with SysV service script with /lib/systemd
Executing: /lib/systemd/systemd-sysv-install enable cups
user@user-VirtualBox:~$ sudo systemctl status cups
● cups.service - CUPS Scheduler
     Loaded: loaded (/lib/systemd/system/cups.service; enabled; vendor preset
     Active: active (running) since Mon 2023-05-22 08:47:22 NZST; 35min ago
TriggeredBy: ● cups.socket
             ● cups.path
       Docs: man:cupsd(8)
   Main PID: 911 (cupsd)
     Status: "Scheduler is running..."
      Tasks: 1 (limit: 9446)
     Memory: 19.2M
        CPU: 2.493s
     CGroup: /system.slice/cups.service
             └─911 /usr/sbin/cupsd -l

May 22 08:47:22 user-VirtualBox systemd[1]: Starting CUPS Scheduler...
May 22 08:47:22 user-VirtualBox systemd[1]: Started CUPS Scheduler.
user@user-VirtualBox:~$
```

Step 3. Configure CUPS on Ubuntu.

Now we edit the CUPS main configuration file:

sudo vi /etc/cups/cupsd.conf

```
#
# Configuration file for the CUPS scheduler.  See "man cupsd.conf" for a
# complete description of this file.
#

# Log general information in error_log - change "warn" to "debug"
# for troubleshooting...
LogLevel warn
PageLogFormat

# Specifies the maximum size of the log files before they are rotated.  The va
MaxLogSize 0

# Default error policy for printers
ErrorPolicy retry-job

# Only listen for connections from the local machine.
Listen localhost:631
```

First look for the line:

Browsing No

Change that line to:

Browsing Yes

Next, find the “Only listen for connections from the local machine” section. Here, there will be an entry titled, “Listen localhost:631.” Change this to “Port 631,”:

```
#Listen localhost:631
Port 631
```

We also need to make sure that CUPS is listening on all interfaces. To do that, look for the section:

```
<Location />
  Order allow,deny
</Location>
```

Change the above section to:

```
<Location />
  Order allow,deny
  Allow @LOCAL
</Location>
```

Also, add it for the /admin directory to allow remote administration from the local network:

```
<Location /admin>
  Order allow,deny
</Location>
```

Change that section to:

```
<Location /admin>
  AuthType Default
  Require valid-user
  Order allow,deny
  Allow @LOCAL
</Location>
```

Save and close the file. Then restart CUPS for the changes to take effect:

```
sudo systemctl restart cups
```

Once configure CUPS, Now we’re going to make sure the printer is shared out to your network using the Bonjour and IPP protocols. First, we need to install the avahi-daemon with the command below:

```
sudo apt install avahi-daemon
```

```
user@user-VirtualBox:~$ sudo apt install avahi-daemon
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
avahi-daemon is already the newest version (0.8-5ubuntu5).
avahi-daemon set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 7 not upgraded.
user@user-VirtualBox:~$
```

After installing the Avahi-daemon, start, and auto boot time using the following command:

sudo systemctl start avahi-daemon
sudo systemctl enable avahi-daemon

```
user@user-VirtualBox:~$ sudo systemctl start avahi-daemon
user@user-VirtualBox:~$ sudo systemctl enable avahi-daemon
Synchronizing state of avahi-daemon.service with SysV service script with /li
Executing: /lib/systemd/systemd-sysv-install enable avahi-daemon
user@user-VirtualBox:~$
```

Check Status

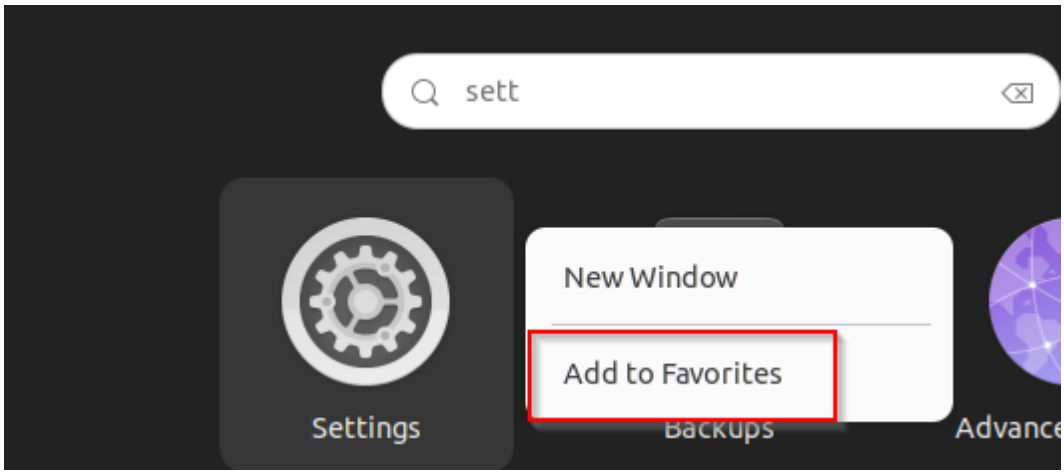
sudo systemctl status avahi-daemon

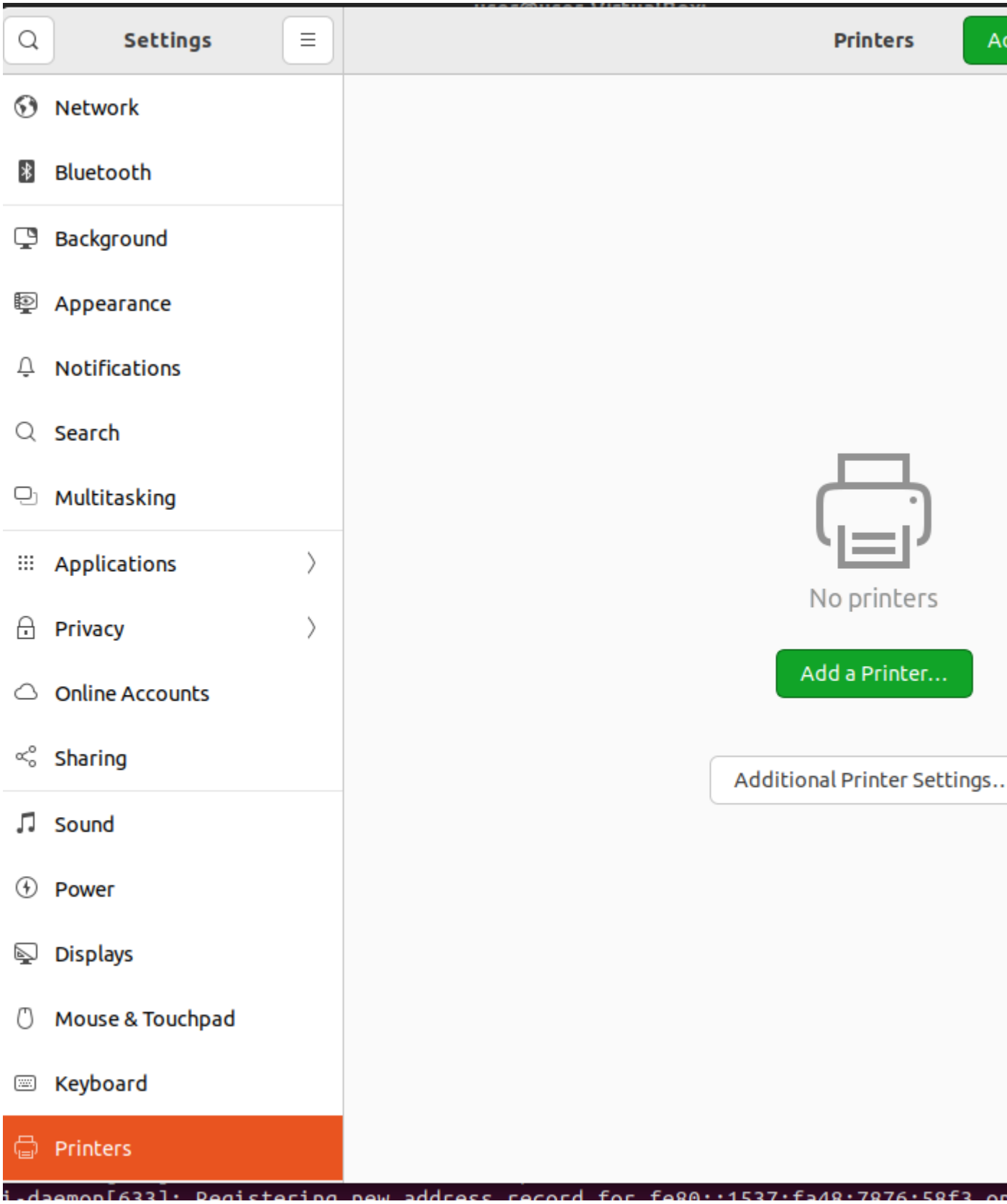
```
user@user-VirtualBox:~$ sudo systemctl status avahi-daemon
● avahi-daemon.service - Avahi mDNS/DNS-SD Stack
     Loaded: loaded (/lib/systemd/system/avahi-daemon.service; enabled; vendo
     Active: active (running) since Mon 2023-05-22 08:47:21 NZST; 1h 3min ago
TriggeredBy: ● avahi-daemon.socket
   Main PID: 633 (avahi-daemon)
     Status: "avahi-daemon 0.8 starting up."
      Tasks: 2 (limit: 9446)
     Memory: 1.9M
        CPU: 103ms
     CGroup: /system.slice/avahi-daemon.service
             ├─633 "avahi-daemon: running [user-VirtualBox.local]"
             └─719 "avahi-daemon: chroot helper"

May 22 08:47:22 user-VirtualBox avahi-daemon[633]: Registering new address re
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: Joining mDNS multicast grou
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: New relevant interface enp
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: Registering new address re
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: Joining mDNS multicast grou
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: New relevant interface enp
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: Registering new address re
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: Joining mDNS multicast grou
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: New relevant interface enp
May 22 08:47:22 user-VirtualBox avahi-daemon[633]: Registering new address re
user@user-VirtualBox:~$
```

Step 5. Connect to the Printer.

Settings:

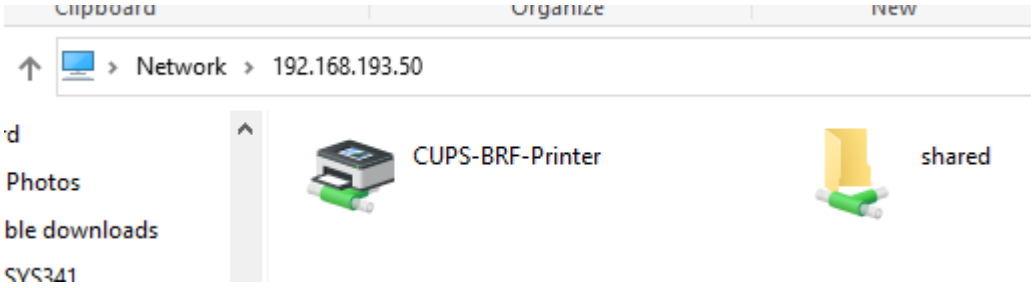




Add printer works automatically

Check using windows

192.168.193.50



Add the gutenprint printer drivers:

sudo apt install printer-driver-gutenprint

```
user@user-VirtualBox:~$ sudo apt install printer-driver-gutenprint
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libgutenprint-common libgutenprint9
Suggested packages:
  gutenprint-locales gutenprint-doc
The following NEW packages will be installed:
  libgutenprint-common libgutenprint9 printer-driver-gutenprint
0 upgraded, 3 newly installed, 0 to remove and 7 not upgraded.
Need to get 1,646 kB of archives.
After this operation, 9,949 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

Add the Cups PDF driver

sudo apt install printer-driver-cups-pdf

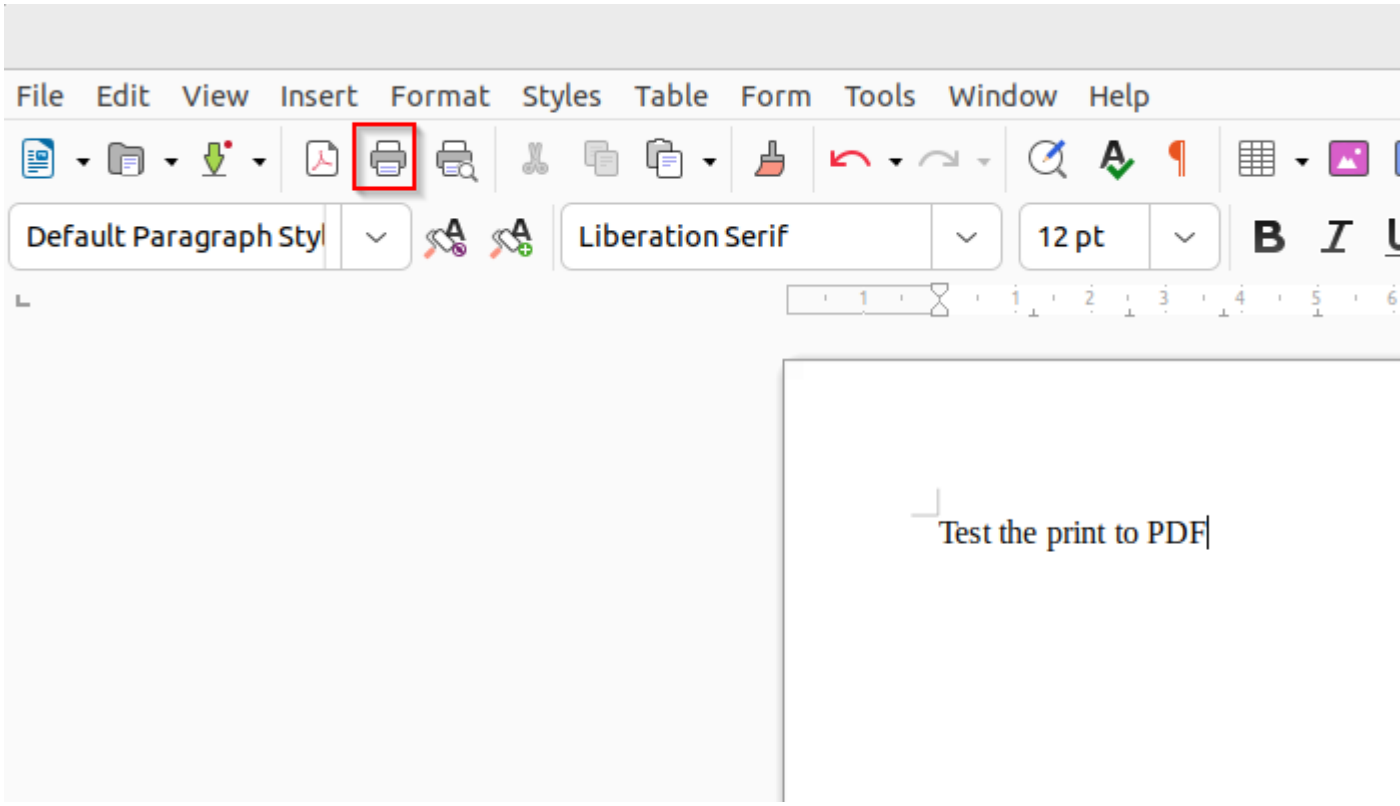
The process will ask for your root password a couple of times.

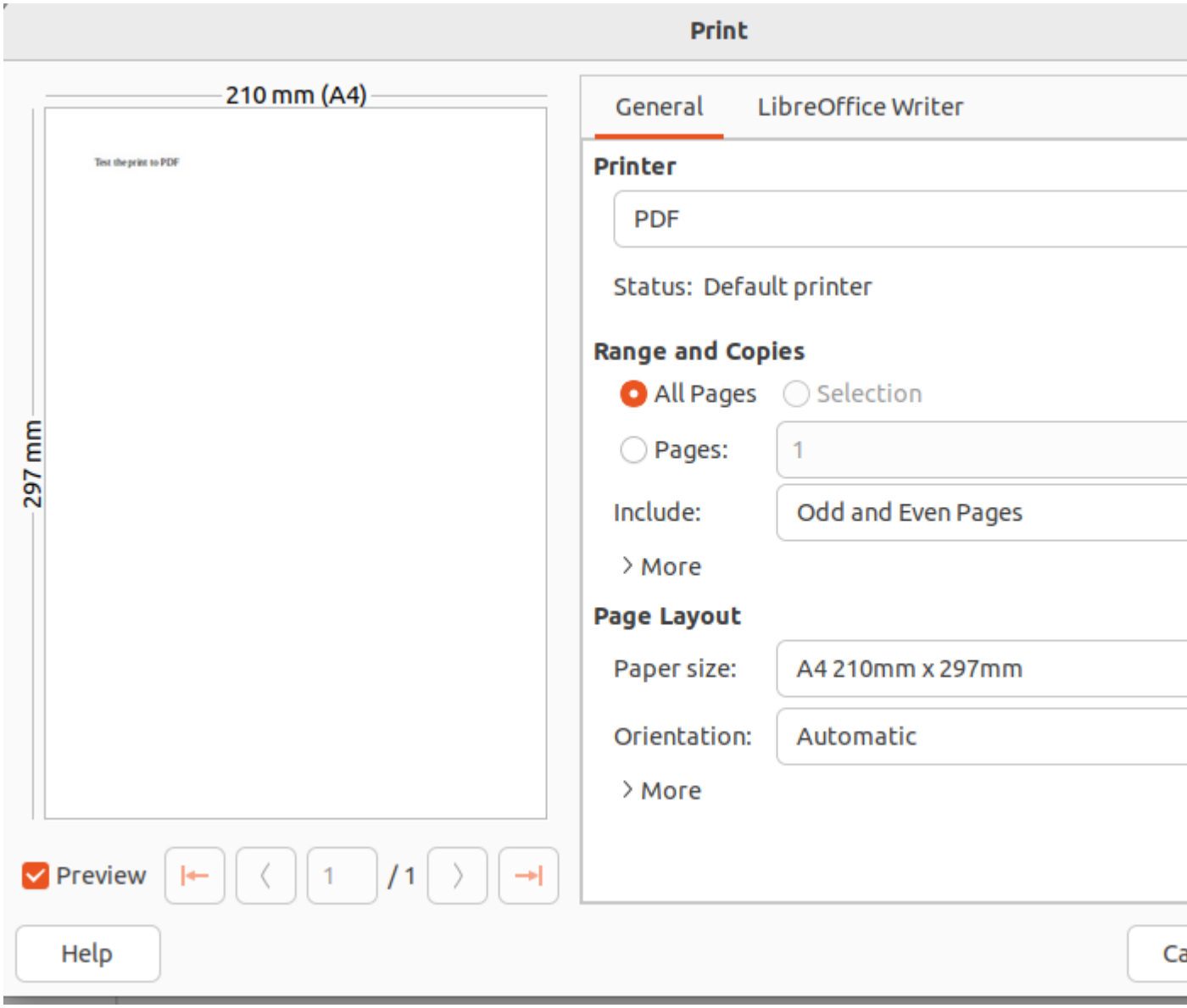
Make sure that you have set a root password with:

sudo passwd root before installing this driver.

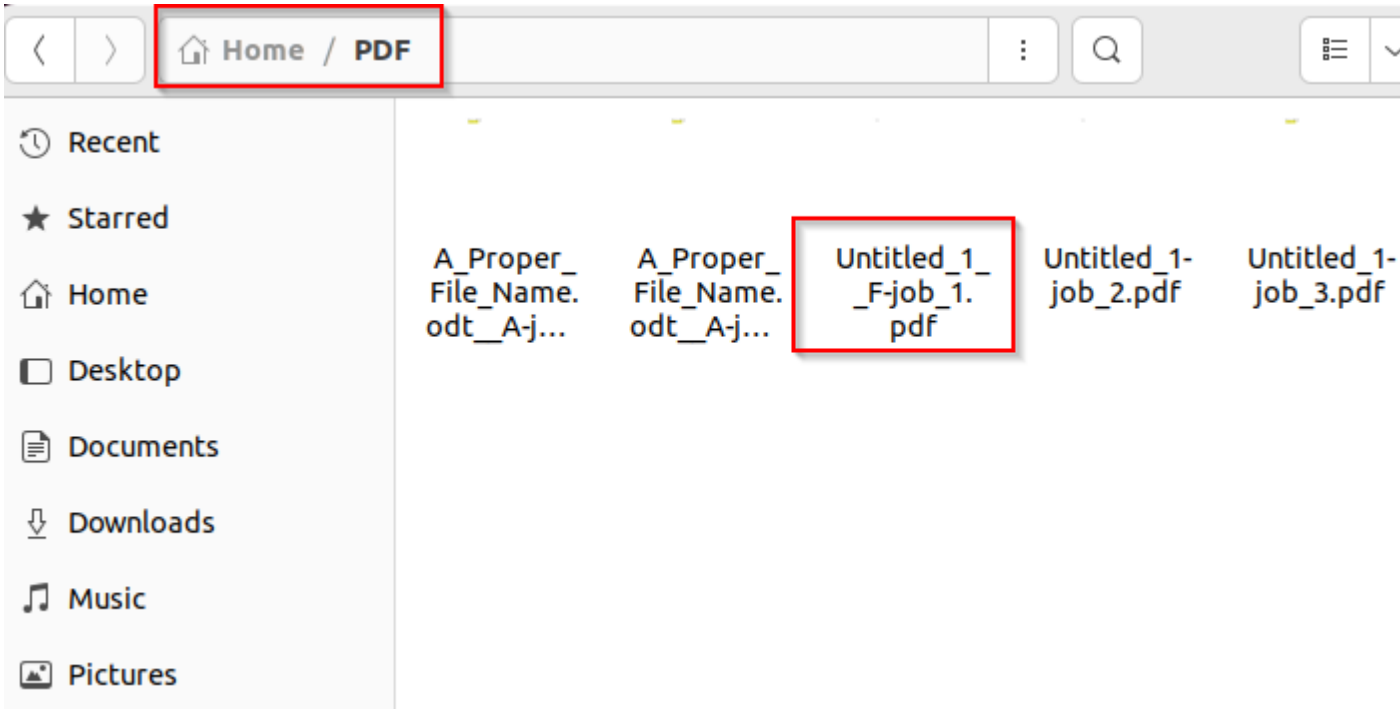
```
user@user-VirtualBox:~$ sudo apt install printer-driver-cups-pdf
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  printer-driver-cups-pdf
0 upgraded, 1 newly installed, 0 to remove and 7 not upgraded.
Need to get 26.2 kB of archives.
After this operation, 251 kB of additional disk space will be used.
Get:1 http://nz.archive.ubuntu.com/ubuntu jammy/universe amd64 printer-driver
Fetched 26.2 kB in 0s (108 kB/s)
Selecting previously unselected package printer-driver-cups-pdf.
(Reading database ... 213770 files and directories currently installed.)
Preparing to unpack .../printer-driver-cups-pdf_3.0.1-14_amd64.deb ...
Unpacking printer-driver-cups-pdf (3.0.1-14) ...
Setting up printer-driver-cups-pdf (3.0.1-14) ...
Password for root on localhost?  ********
Password for root on localhost?  ********
Password for root on localhost?  ********
Password for root on localhost?  ********
Processing triggers for cups (2.4.1op1-1ubuntu4.1) ...
Updating PPD files for cups-pdf ...
PPD for printer PDF updated
```

Open Libre office and send a test document to the PDF print driver:



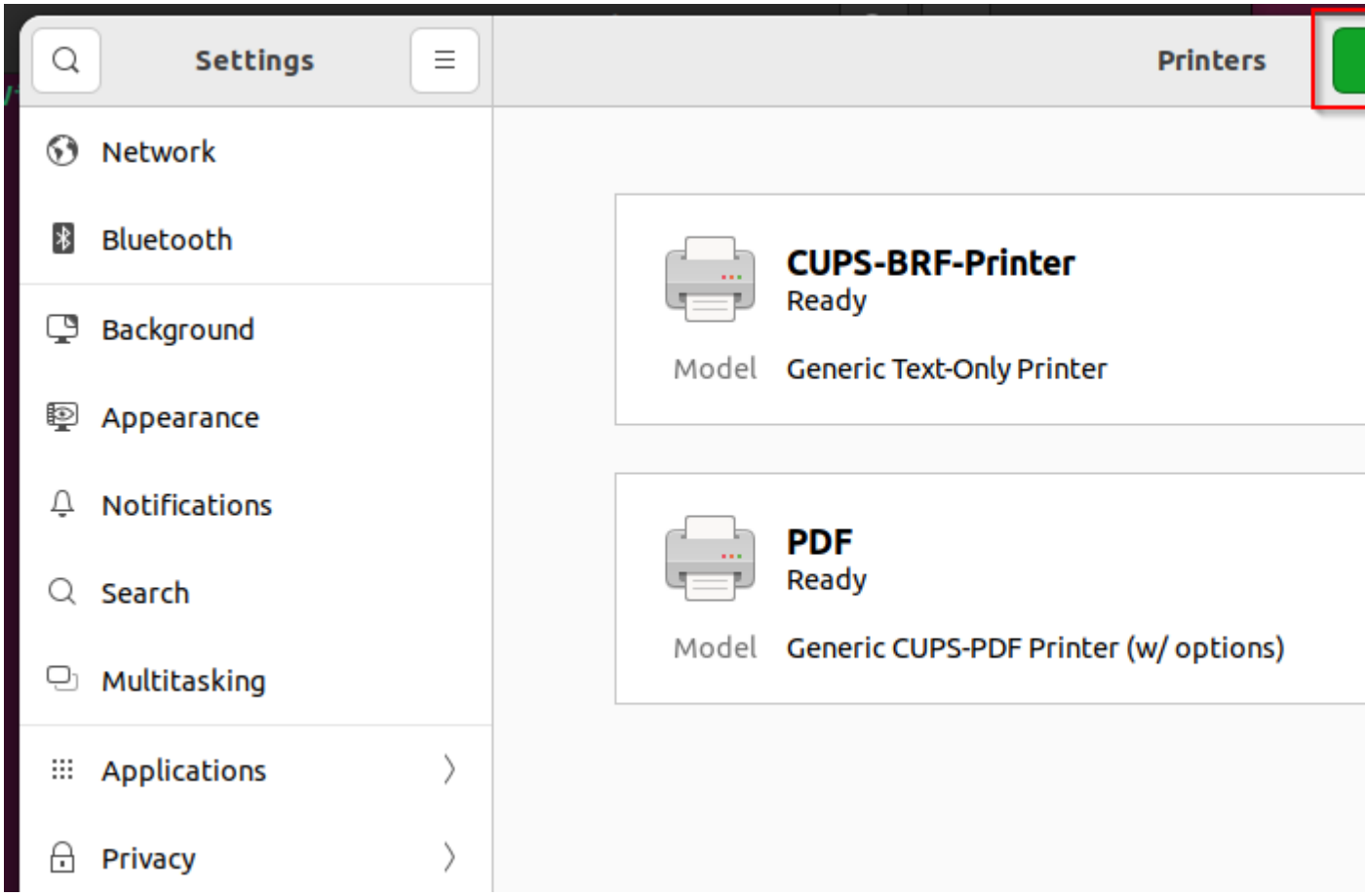


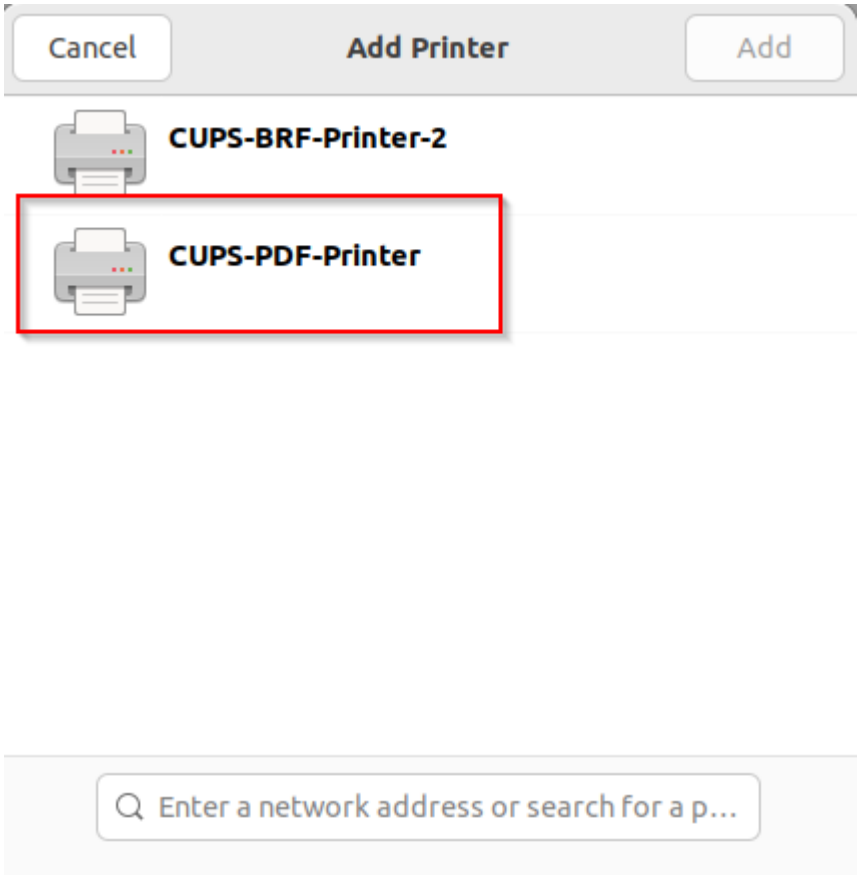
In your home directory you will have a new folder called PDF, which will contain your PDF output



Let's try Network Printing

Add another printer in Settings (Ubuntu Client)


Settings
Printers
Network
Bluetooth
Background
Appearance
Notifications
Search
Multitasking
Applications
Privacy
CUPS-BRF-Printer
Ready
Model
Generic Text-Only Printer
PDF
Ready
Model
Generic CUPS-PDF Printer (w/ options)



Then go to windows and add the printer you have just created.

Exam Tuesday 20th 1-4pm