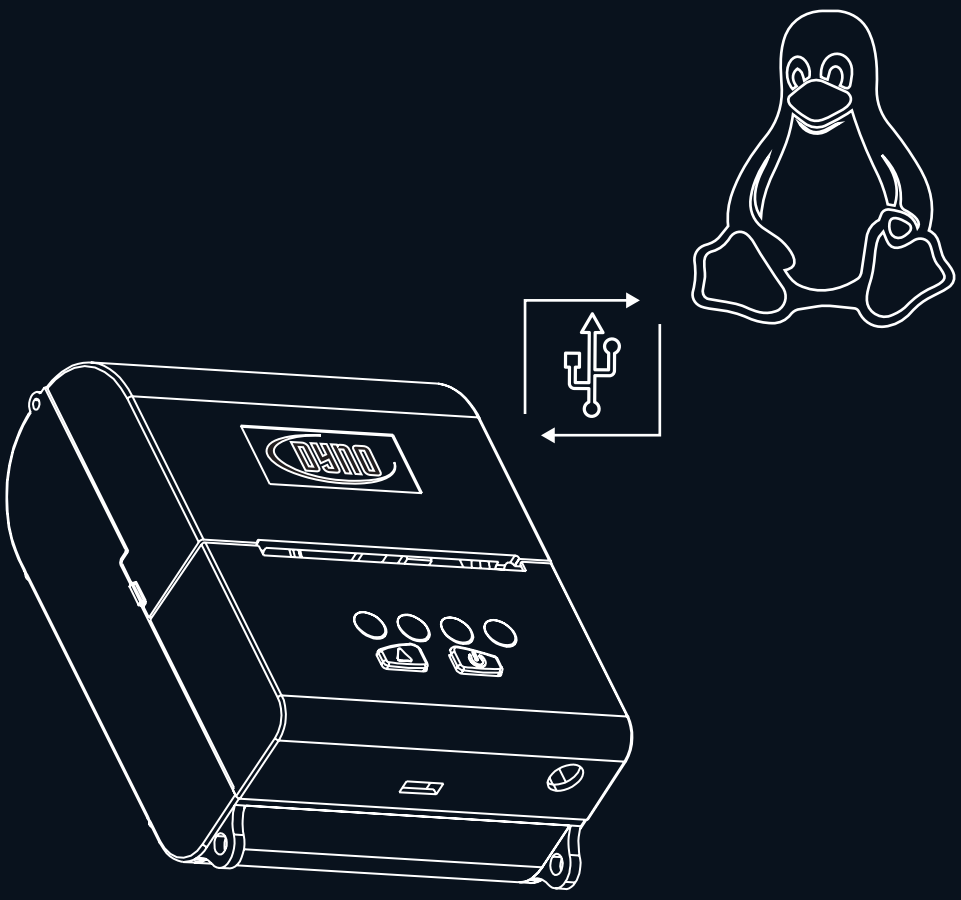
DYNO-SERIES

Portable Thermal Printer



USB COMMUNICATION
DRIVER INSTALLATION GUIDE (Linux)

Models Covered
DYNO-BTUB, DYNO-BTUA, DYNO-UA, DYNO-UB

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Customer Installation Guide
CoiNel Technology Solutions LLP
www.coineltech.com

Document Information

About This Guide

This guide explains how to connect the DYNO Series Portable Thermal Printers using USB. It covers USB connection, basic setup, driver/software requirements, printing, and troubleshooting.

Supported Models :- DYNO-BTUB · DYNO-BTUA · DYNO-UA · DYNO-UB

Note: USB features and software requirements may vary depending on the printer model and host system.

Intended Users

- Printer users
- System operators
- Software developers
- Technical support personnel

Document Information

Item	Details
Product Series	DYNO Series
Guide Type	Linux USB Communication Guide
Operating System	Linux (Ubuntu & compatible distributions)
Interface	USB
Models Covered	DYNO-BTUB, DYNO-BTUA, DYNO-UA, DYNO-UB
Manufacturer	CoiNel Technology Solutions LLP
Website	www.coineltech.com

Important

- Use a compatible USB cable.
- Turn on the printer before connecting it to the Linux system.

USB Connection

1.1 USB Overview

USB provides a wired connection between the DYNO Series Portable Thermal Printer and a Linux computer.

Depending on the printer model, USB connectivity is available through either a Micro-USB connector or a USB Type-C connector.

Supported Models: DYNO-BTUB, DYNO-BTUA, DYNO-UA, DYNO-UB

Note: The USB connector type may vary depending on the DYNO Series model.

1.2 Supported USB Cable Types

USB Cable Type	Usage
Micro-USB Cable	For DYNO models with a
	Micro-USB connector.
USB Type-C Cable	For DYNO models with a
	USB Type-C connector.

Important: Use the USB cable that matches the printer connector.

1.3 What You Need

Before connecting the printer, make sure you have:

- A compatible DYNO Series printer.
- A Micro-USB or USB Type-C cable.
- A Linux computer (Ubuntu or compatible distribution).
- A terminal or printing application.

1.4 USB Connection Procedure

1. Turn ON the DYNO Series printer.
2. Connect the appropriate USB cable to the printer.
3. Connect the other end of the cable to the Linux computer.
4. Wait a few seconds for Linux to detect the printer.
5. Verify that the printer appears as a USB serial device /dev/ttyACM*.

1.5 Connection Check

After connecting the printer, verify that:

- The printer is powered ON.
- The USB cable is securely connected.
- Linux detects the printer as /dev/ttyACM*.
- The printer is ready for communication or test printing.

1.6 USB Connection Precautions

- Use a compatible USB cable.
- Do not force the connector into the printer.
- Do not disconnect the USB cable while printing.
- Keep the USB connector clean and dry.
- Verify that the printer is detected before starting a print job.

2. USB Driver Installation and Device Detection (Linux)

The DYNO Series printer can be connected to a Linux/Ubuntu computer through the USB interface. Depending on the printer model and operating system configuration, Linux may automatically recognize the printer using its built-in USB communication support.

Before connecting the printer, make sure that:

- The correct DYNO Series printer model is identified.
- The printer is connected to the computer using a suitable USB cable.
- The printer is powered ON.
- The Linux/Ubuntu system is running and the user has permission to access USB devices.
- Any required printer software or driver package is available, if applicable to the printer model.

Note: Driver requirements may vary depending on the DYNO Series printer model and the Linux/Ubuntu operating system version.

2.1 Check USB Device Detection (lsusb)

After connecting the DYNO Series printer to the computer using the USB cable, verify that Linux detects the printer as a USB device.

The lsusb command displays the USB devices currently detected by the Linux system.
Procedure

1. Open the Terminal by pressing Ctrl + Alt + T.
2. Run the following command : lsusb
3. Press Enter.
4. Check the command output for the DYNO Series printer.

Example Output
Bus 001 Device 005: ID 0000:0002 CoiNel Technology Solutions LLP CIE USB CDC

If CoiNel Technology Solutions LLP CIE USB CDC appears in the output, the printer has been successfully detected by Linux as a USB device.

```
user@user-desktop:~$ lsusb
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 004: ID 8087:0a2a Intel Corp. CIE USB CDC
Bus 001 Device 003: ID 05e3:0610 Genesys Logic, Inc. 4-port hub
Bus 001 Device 002: ID 04ca:00bd Lite-On Technology Corp. Dell Wireless Device
Bus 001 Device 005: ID 0000:0002 Coinel Technology Solutions LLP CIE USB CDC
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
```

Purpose: This step confirms that Linux recognizes the DYNO Series printer through the USB interface.

Important: The lsusb command confirms USB device detection. It does not, by itself, confirm that a serial communication port has been created. The USB serial communication port should be verified separately in the next step.

2.2 Check USB Serial Port (ttyACM0)

After confirming that the printer is detected as a USB device, verify that Ubuntu has created a USB serial communication port for the printer.

1. Make sure the DYNO Series printer is powered ON and connected to the Ubuntu computer using the USB cable.
2. In the already opened Terminal, enter the following command : **cd /dev**

```
user@user-desktop:~$ cd /dev
user@user-desktop:/dev$
```

This command changes the current directory to **/dev**, where Linux provides device files for connected hardware.

1. Enter the following command to display the available device files : **ls**
2. Check the displayed list for the following device : **ttyACM0**

Example : The following screenshot shows **ttyACM0** in the **/dev** directory.

```
user@user-desktop:~$ cd /dev
user@user-desktop:/dev$ ls

autofs          hidraw0     loop12      port      tty11   tty35   tty59    ttyS22   vcs3
block           hidraw1     loop13      ppp       tty12   tty36   tty6     ttyS23   vcs4
bsg             hpet        loop14      psaux     tty13   tty37   tty60    ttyS24   vcs5
btrfs-control   hugepages   loop15      ptmx      tty14   tty38   tty61    ttyS25   vcs6
bus             hwrng       loop16      pts       tty15   tty39   tty62    ttyS26   vcsa
char            i2c-0       loop17      random    tty16   tty4    tty63    ttyS27   vcsa1
console         i2c-1       loop18      rfkill    tty17   tty40   tty7     ttyS28   vcsa2
core            i2c-10      loop19      rtc       tty18   tty41   tty8     ttyS29   vcsa3
cpu             i2c-2       loop2       rtc0      tty19   tty42   tty9     ttyS30   vcsa4
cpu_dma_latency i2c-3       loop20      sda       tty20   tty43   ttyACM0  ttyS3    vcsa5
cuse            i2c-4       loop3       sda1      tty21   tty44   ttyprintk ttyS31  vcsa6
disk            i2c-5       loop4       sda2      tty22   tty45   ttyS0    ttyS4    vcsu
dm_heap         i2c-6       loop5       serial    tty23   tty46   ttyS1    ttyS5    vcsu1
dm-0            i2c-7       loop6       sg0       tty24   tty47   ttyS10   ttyS6    vcsu2
dm-aux0         i2c-8       loop7       shm       tty25   tty48   ttyS11   ttyS7    vcsu3
dm-aux1         i2c-9       loop8       snapshot  tty26   tty49   ttyS12   ttyS8    vcsu4
dmcryptfs       initctl     loop9       snd       tty27   tty5    ttyS13   ttyS9    vcsu5
fb0             input       loop-control stderr   tty28   tty50   ttyS14   udmabuf  vcsu6
fd              kmsg        mapper      stdin     tty29   tty51   ttyS15   uhid     vfio
full            kvm         mcelog      stdout    tty3    tty52   ttyS16   uinput   vga_arbiter
fuse            lirc0       mei0        tpm0      tty30   tty53   ttyS17   urandom  vhci
gpiochip0       log         mem         tpmrm0    tty31   tty54   ttyS18   usb      vhost-net
gpiochip1       loop0       mqueue      tty       tty32   tty55   ttyS19   userio   vhost-vsock
gpiochip2       loop1       net         tty0      tty33   tty56   ttyS2    vcs      zero
gpiochip3       loop10      null        tty1      tty34   tty57   ttyS20   vcs1     zfs
gpiochip4       loop11      nvram       tty10     tty35   tty58   ttyS21   vcs2
```

If ttyACM0 appears in the list, Ubuntu has created the USB serial communication port for the printer.
Verify the USB COM Port
To confirm that ttyACM0 belongs to the printer:

1. Disconnect the printer's USB cable from the computer.
2. Run : ls
3. Verify that ttyACM0 is no longer listed.
4. Reconnect the printer and run : ls
5. Verify that ttyACM0 appears again.

This confirms that the USB serial device is associated with the printer.

Note: The USB serial port may not always be named ttyACM0. Depending on the Ubuntu system and other connected USB serial devices, it may appear as ttyACM1, ttyACM2, or another ttyACM device.

Purpose: This step confirms that Ubuntu has created the USB serial communication port required for communication between the computer and the DYNOSeries printer.

2.3 Configure CUPS Apparmor Permissions

Ubuntu uses Apparmorto control access to system resources used by applications and services. The CUPS printing service has an Apparmorprofile that controls access to printer devices.

The CUPS Apparmorprofile is located in :
/etc/apparmor.d/usr.sbin.cupsd

Procedure

1. In the Terminal, change to the Apparmorconfiguration directory : **cd /etc/apparmor.d**

```
user@user-desktop:~$ cd /etc/apparmor.d
user@user-desktop:/etc/apparmor.d$
```

2. Enter the following command to list the files in the directory : **ls**
3. Locate the following CUPS Apparmorprofile in the displayed list : **usr.sbin.cupsd**

```
user@user-desktop:/etc/apparmor.d$ ls

abi                     tunables                          usr.lib.libreoffice.program.soffice.bin
abstractions            ubuntu_pro_apt_news               usr.lib.libreoffice.program.xpdfimport
disable                 ubuntu_pro_esm_cache              usr.lib.snapd.snap-confine.real
force-complain          usr.bin.evince                    usr.sbin.cups-browsed
local                   usr.bin.firefox                   usr.sbin.cupsd
lsb_release             usr.bin.man                       usr.sbin.ippusbxd
nvidia_modprobe         usr.lib.libreoffice.program.oosplash  usr.sbin.rsyslogd
sbin.dhclient           usr.lib.libreoffice.program.senddoc   usr.sbin.tcpdump
```

The usr.sbin.cupsd file contains the Apparmorconfiguration used by the CUPS printing service.

4. Open the CUPS Apparmorprofile with administrator privileges by entering: sudo vi /etc/apparmor.d/usr.sbin.cupsd

```
user@user-desktop:~$ cd /etc/apparmor.d
user@user-desktop:/etc/apparmor.d$ sudo vi /etc/apparmor.d/usr.sbin.cupsd
[sudo] password for user:
```

5. Enter the administrator password when prompted.
6. The usr.sbin.cupsd file will open in the vi editor.
7. Locate the section containing the printer device access rules. The section contains entries similar to:

```
/dev/lp* rw,
/deny /dev/tty rw,   # silence noise
/dev/ttyA* rw,
/dev/ttyS* rw,
/dev/ttyUSB* rw,
/dev/usb/lp* rw,
/dev/bus/usb/ r,
/dev/bus/usb/** rw,
```

```
deny signal (send) set=("term") peer=unconfined,

# nasty, but we limit file access pretty tightly, and cups chowns a
# lot of files to 'lp' which it cannot read/write afterwards any
# more
capability dac_override,
capability dac_read_search,

# the bluetooth backend needs this
network bluetooth,

# the dnssd backend uses those
network x25 seqpacket,
network ax25 dgram,
network netrom seqpacket,
network rose dgram,
network ipx dgram,
network appletalk dgram,
network econet dgram,
network ash dgram,

/{usr/,}bin/bash ixr,
/{usr/,}bin/dash ixr,
/{usr/,}bin/hostname ixr,
/dev/lp* rw,
deny /dev/tty rw,  # silence noise
/dev/ttys* rw,
/dev/ttyUSB* rw,
/dev/usb/lp* rw,
/dev/bus/usb/ r,
/dev/bus/usb/** rw,
/dev/parport* rw,
/etc/cups/ rw,
/etc/cups/** rw,
/etc/cups/interfaces/* ixrw,
/etc/foomatic/* r,
/etc/gai.conf r,
```

Edit the Printer Device Access Rule

8. To edit the file, press **ESC i** on the keyboard to enter **Insert Mode** in the vi editor.
9. Add the following device access rule in the printer device access section : /dev/ttyACM rw,

   The section should contain the printer device access rule as shown below:

   /dev/lp* rw,
   /dev/ttyA* rw,
   /dev/ttyACM* rw,
   /dev/ttyS* rw,
   /dev/ttyUSB* rw,
   /dev/usb/lp* rw,
   /dev/bus/usb/ r,
   /dev/bus/usb/** rw,

```
network bluetooth,

# the dnssd backend uses those
network x25 seqpacket,
network ax25 dgram,
network netrom seqpacket,
network rose dgram,
network ipx dgram,
network appletalk dgram,
network econet dgram,
network ash dgram,

/{usr/,}bin/bash ixr,
/{usr/,}bin/dash ixr,
/{usr/,}bin/hostname ixr,
/dev/lp* rw,
/dev/ttyA* rw,  # silence noise
/dev/ttys* rw,
/dev/ttyUSB* rw,
/dev/usb/lp* rw,
/dev/bus/usb/ r,
/dev/bus/usb/** rw,
/dev/parport* rw,
/etc/cups/ rw,
/etc/cups/** rw,
/etc/cups/interfaces/* ixrw,
/etc/foomatic/* r,
/etc/gai.conf r,
/etc/papersize r,
/etc/ppp/ r,
/etc/ppp2ppa.conf r,
/etc/printcap rw,
/etc/ssl/** r,
@{PROC}/net/ r,
@{PROC}/net/** r,
@{PROC}/sys/dev/parport/** r,
@{PROC}/*/net/ r,
@{PROC}/*/net/** r,
```

After adding the rule, press Esc to exit Insert Mode.

10. Save the changes and exit the vi editor by entering :wq Then press Enter.

    Important

    - Do not modify unrelated Apparmorrules.
    - Add the /dev/ttyACM* rw, rule only in the printer device access section.
    - Ensure that the rule ends with a comma, as shown above.
    - The device name may vary on different Ubuntu systems. If the printer is detected as a different ttyACM device, use the actual device name identified during the USB serial port detection step.

    Purpose: This step configures the CUPS Apparmorprofile to allow the CUPS printing service to access the DYNOSeries printer through its USB serial communication port.

2.4 Run the DYNOPrinter Driver Setup Script

After configuring the required CUPS Apparmorpermissions, run the DYNOprinter driver setup script to install and configure the printer driver.
The DYNOdriver package contains the setup script : dynosetup.sh
Procedure

1. Open the Terminal and navigate to the directory containing the DYNOprinter driver files.
2. Enter the following command to display the files in the driver directory: **ls**
3. Verify that the DYNOsetup script is present : **dynosetup.sh**

```
user@user-desktop:~/Printers/Dyno/DYNO_LINUX_16.04LTS_32BIT$ ls
CIE-DYNO_DYNO_PRINTER_USER_MANUAL.pdf  CIE-DYNO.ppd  dynosetup.sh  rastertoCieDYNO
```

4. Run the DYNOprinter driver setup script using the following command: sudo sh dynosetup.sh

```
user@user-desktop:~/Printers/Dyno/DYNO_LINUX_16.04LTS_32BIT$ sudo sh dynosetup.sh
```

5. When prompted for the administrator password, enter the Ubuntu user password.[sudo] password for user:
6. Press Enter to continue.

```
user@user-desktop:~/Printers/Dyno/DYNO_LINUX_16.04LTS_32BIT$ sudo sh dynosetup.sh
[sudo] password for user:
Stopping cups (via systemctl): cups.service.
/home/user/Printers/Dyno/DYNO_LINUX_16.04LTS_32BIT
Starting cups (via systemctl): cups.service.
```

7. The setup script will execute with administrator privileges. During the installation, the CUPS printing service may be stopped and restarted automatically.

The terminal may display messages similar to:

Stopping cups (via systemctl): **cups.service.**
/home/user/Printers/Dyno/DYNO_LINUX_16.04LTS_32BIT
Starting cups (via systemctl): cups.service.

This indicates that the setup script has stopped and restarted the CUPS printing service as part of the printer driver configuration.

Note: The displayed installation path may vary depending on where the DYNOprinter driver package is stored on the Ubuntu system.

Purpose: This step runs the DYNOprinter driver setup script with administrator privileges and configures the required printer components for use with the CUPS printing system.

2.5 Open Printer Settings

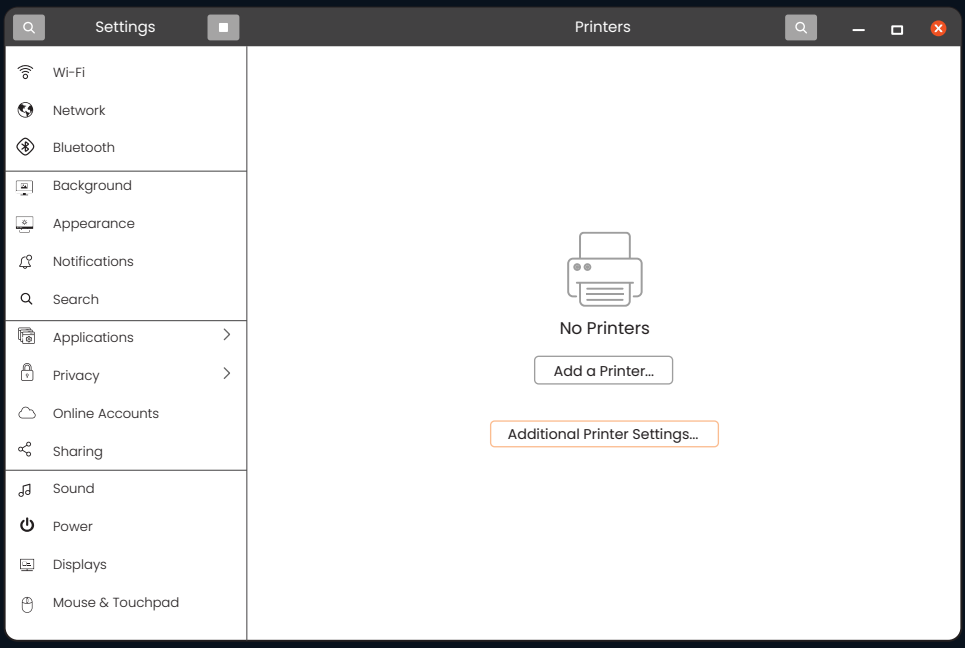
After completing the DYNOprinter driver setup, configure the printer through the Ubuntu printer settings.

Step 1 – Open Settings

- Open Settings from the Ubuntu desktop or the application menu.

Step 2 – Open Printers

- In the left-side navigation panel, select Printers.
- The Printers page displays the printers currently configured on the Ubuntu system

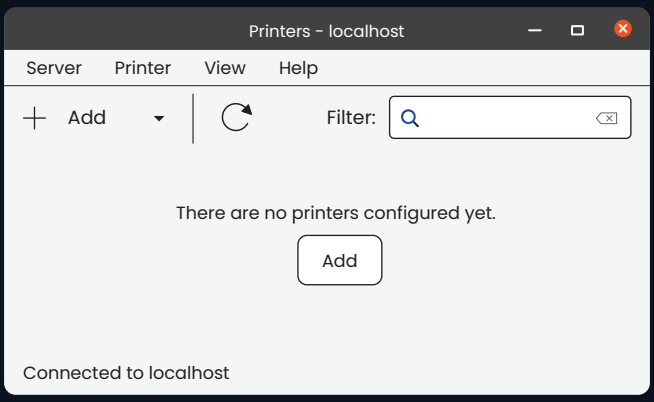


Step 3 – Open Additional Printer Settings

- In the Printers settings window, click Additional Printer Settings...
- This opens the CUPS printer management window.

Step 4 – Add a New Printer

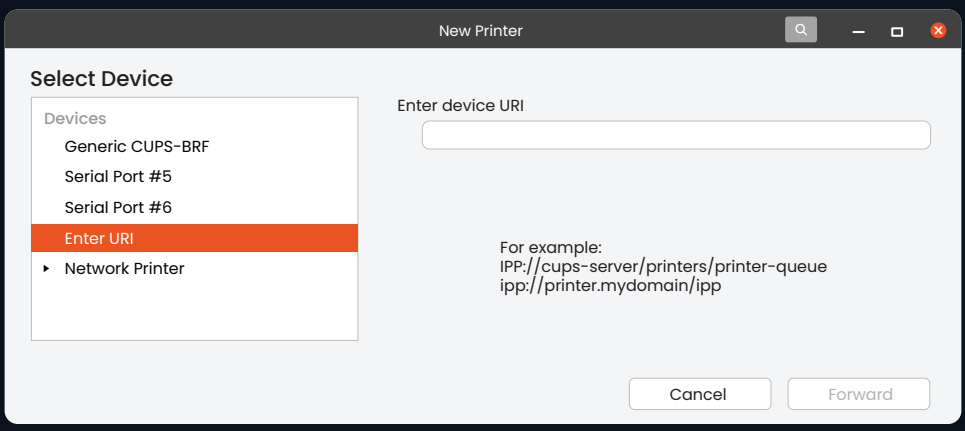
- In the Printers - localhost window, click Add.
- If no printers are configured, the window displays There are no printers configured yet.



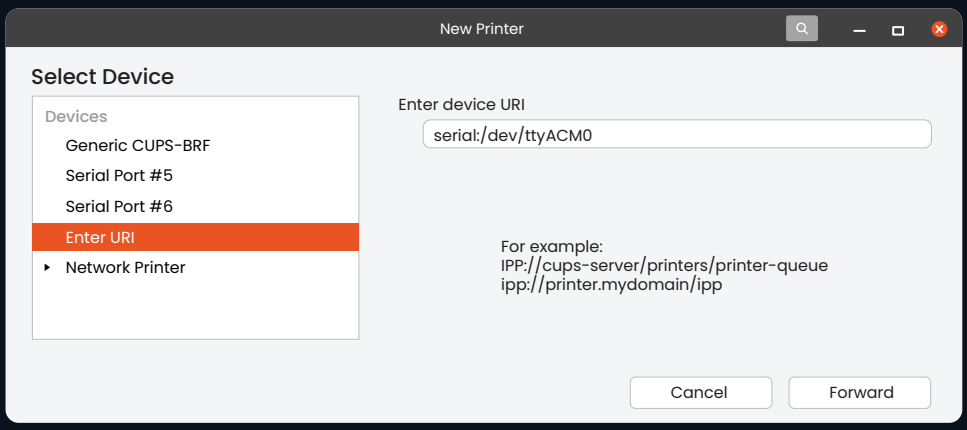
Step 5 – Select Enter URI

In the New Printer window:

1. Select Enter URI from the Select Device list.



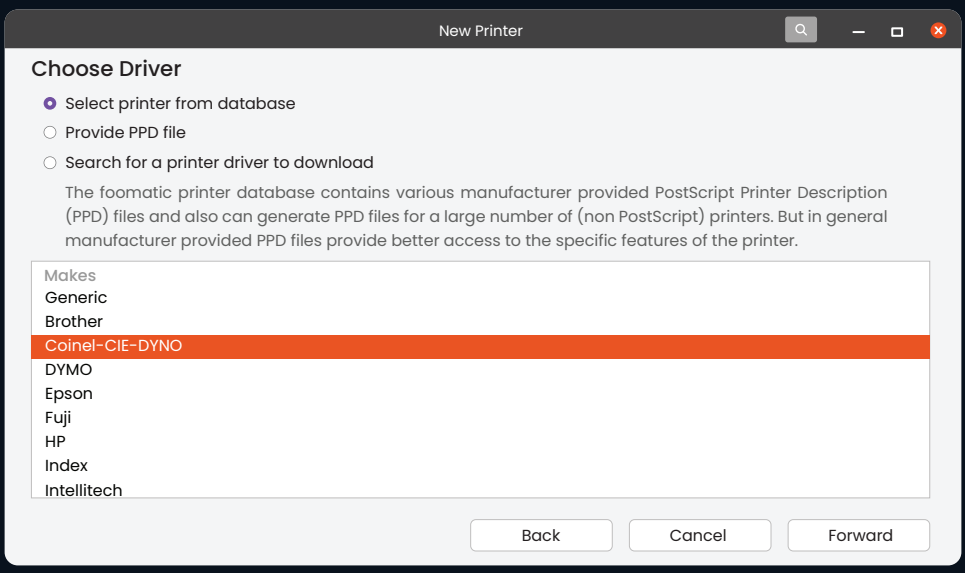
Enter the following device URI : **serial:/dev/ttyACM0**



Note: The device URI must correspond to the USB serial port identified during the USB serial port detection step. If the printer is assigned a different device name, such as ttyACM1, use the actual device name shown on the system.

Step 6 – Select the DYNOPrinter Driver

- The Choose Driver window is displayed.
- Under Makes, select : **CoiNel-CIE-DYNO**

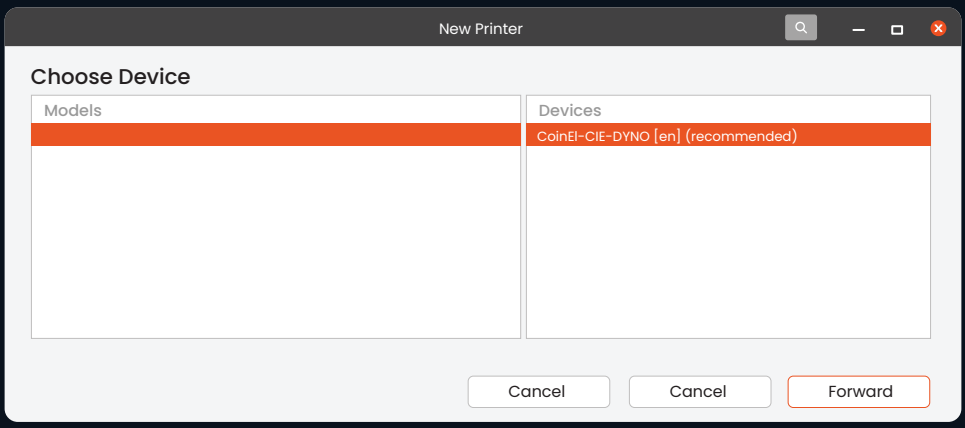


Click **Forward** to continue.

Step 7 – Select the Recommended Driver

In the **Drivers** section, select:

CoiNel-CIE-DYNO[en] (recommended)



Click Forward to continue.

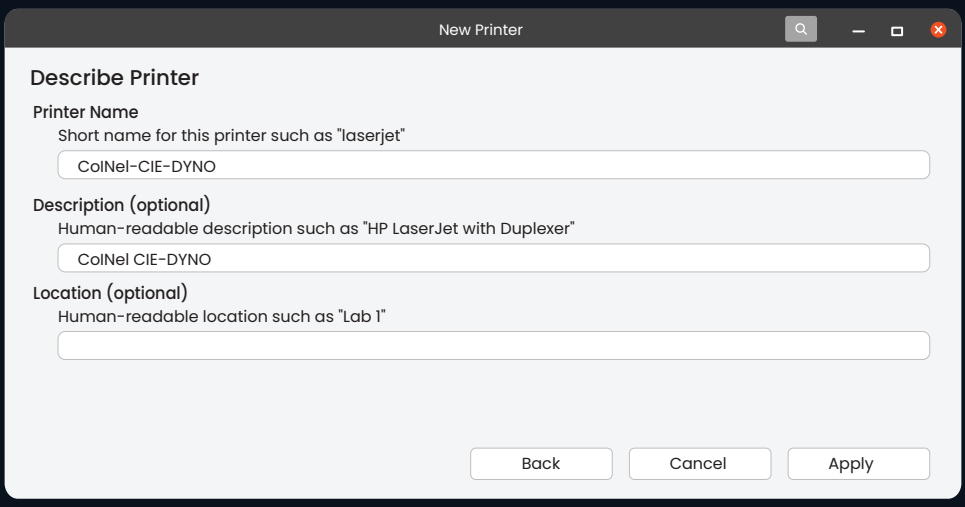
Step 8 – Enter Printer Information

The **Describe Printer** window is displayed.

Enter or verify the following information:

Printer Name : CoiNel-CIE-DYNO
Description : CoiNel CIE-DYNO

The **Location** field is optional and can be left blank unless a specific printer location needs to be recorded.



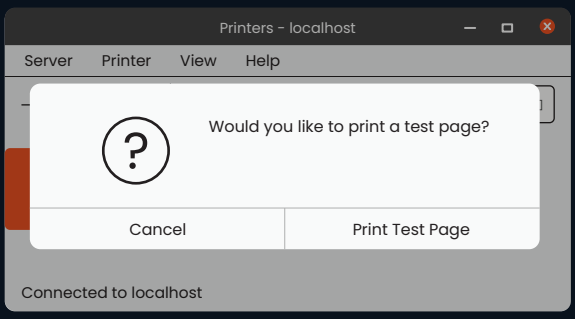
Click Apply to complete the printer configuration.

Step 9 – Print a Test Page

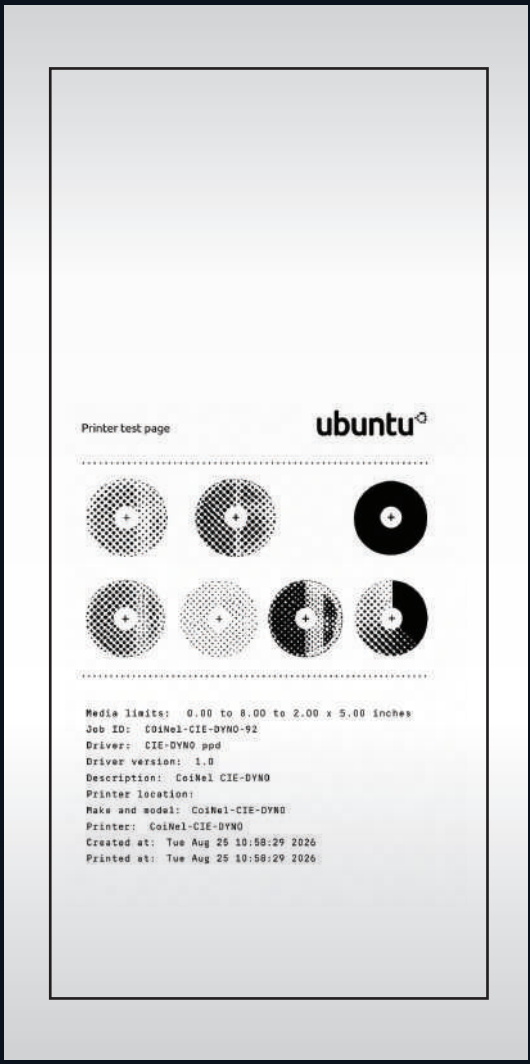
After applying the printer configuration, Ubuntu displays a confirmation dialog asking:

Would you like to print a test page?

Select **Print Test Page** to verify the printer configuration.



If the test page prints successfully, the DYNOprinter has been configured successfully in Ubuntu.



Purpose: This procedure adds the DYNOSeries printer to the Ubuntu CUPS printing system using the USB serial device and the CoiNel DYNOprinter driver. Printing a test page confirms that the printer, device URI, driver, and CUPS configuration are working correctly.

3. Troubleshooting

This section provides solutions to common issues that may occur during USB connection, driver installation, printer configuration, and test printing.

3.1 Printer Is Not Detected by Ubuntu

Question: Why is the DYNOprinter not detected after connecting the USB cable?

Solution:

1. Make sure the printer is powered ON.
2. Check that the USB cable is securely connected to both the printer and the computer.
3. Try disconnecting and reconnecting the USB cable.
4. Try another USB port on the computer.
5. Open the Terminal and run : lsusb
6. Check whether the DYNOprinter appears in the displayed list.

3.2 DYNOPrinter Is Not Displayed in lsusb

Question: What should I do if the DYNOprinter does not appear when running lsusb?

Solution:

1. Make sure the printer is switched ON.
2. Check the USB cable connection.
3. Try a different USB port.
4. If available, try another USB cable.
5. Run the following command again: lsusb
6. Verify that the DYNOprinter USB device is displayed.

3.3 ttyACM0 Is Not Found

Question: What should I do if ttyACM0 is not displayed in /dev?

Solution:

1. Make sure the printer is connected and powered ON.
2. Open the Terminal.
3. Enter: cd /dev
4. Enter : ls
5. Check for a device such as: ttyACM0
6. If ttyACM0 is not available, check whether another device such as ttyACM1 is displayed.
7. Use the actual ttyACM device assigned to the printer when configuring the printer URI.

3.4 Printer Device Changes from ttyACM0 to Another Port

Question: Why does the printer sometimes appear as ttyACM1 instead of ttyACM0?

Solution: Linux may assign a different serial device number depending on the USB devices connected to the computer.

1. Open the Terminal.
2. Run: cd /dev
3. Run: ls
4. Identify the ttyACM device assigned to the printer.
5. Use the detected device in the printer URI.

For example: **serial:/dev/ttyACM1**

instead of : **serial:/dev/ttyACM0**

3.5 usr.sbin.cupsd File Is Not Found

Question: What should I do if the usr.sbin.cupsd file is not found?

Solution:

1. Open the Terminal.
2. Enter: cd /etc/apparmor.d
3. Enter: ls
4. Check for: usr.sbin.cupsd
5. If the file is not available, verify that CUPS is installed correctly on the Ubuntu system.

3.6 Permission Denied When Editing usr.sbin.cupsd

Question: What should I do if permission is denied when editing the CUPS Apparmorfile?

Solution:

Open the file using administrator privileges:
sudo vi /etc/apparmor.d/usr.sbin.cupsd

Enter the administrator password when prompted.

3.7 DYNODriver Setup Script Does Not Run

Question: What should I do if dynosetup.sh cannot be executed?

Solution:

1. Open the directory containing the DYNOdriver files.
2. Enter: ls
3. Verify that the following file is available: dynosetup.sh
4. Run the setup script using: sudo sh dynosetup.sh
5. Enter the administrator password when prompted.

3.8 DYNODriver Is Not Available in the Printer Driver List

Question: Why is CoiNel-CIE-DYNOnot displayed when selecting the printer driver?

Solution:

1. Verify that the DYNOsetup script has been executed successfully.
2. Run: sudo sh dynosetup.sh
3. Allow the setup process to complete.
4. Open the printer configuration again.
5. Check whether CoiNel-CIE-DYNOis available under the printer manufacturers.

3.9 Incorrect Device URI

Question: What should I do if the printer is detected but printing does not work?

Solution:

Verify that the correct device URI is entered during printer configuration.

For a printer detected as ttyACM0, use: serial:/dev/ttyACM0

If the printer is detected as ttyACM1, use: serial:/dev/ttyACM1

The device name in the URI must match the actual ttyACM device detected by Ubuntu.

3.10 Test Page Does Not Print

Question: What should I do if the printer is configured but the test page does not print?

Solution:

1. Check that the printer is powered ON.
2. Check the USB cable connection.
3. Verify the ttyACM device.
4. Verify the printer URI.
5. Verify that **CoiNel-CIE-**DYNO is selected.
6. Verify that **CoiNel-CIE-DYNO[en] (recommended)** is selected.
7. Check the CUPS Apparmorpermissions.
8. Try printing the test page again.

3.11 Printer Does Not Appear in Ubuntu Printer Settings

Question: What should I do if the DYNOprinter does not appear in the Ubuntu printer settings?

Solution:

1. Verify that the printer is powered ON.
2. Verify the USB connection.
3. Run: lsusb
4. Verify that the printer is detected.
5. Check the /dev directory: cd /dev
6. Run: ls
7. Verify that the appropriate ttyACM device is available.
8. Run the DYNOdriver setup script.
9. Open: **Settings → Printers → Additional Printer Settings**
10. Add the printer manually using the correct device URI.

3.12 Printer Is Added but Printing Fails

Question: What should I check if the printer is successfully added but printing does not work?

Solution: Check the following in order:

1. USB cable connection.
2. Printer power status.
3. lsusb device detection.
4. ttyACM device detection.
5. CUPS Apparmorpermissions.
6. DYNOdriver installation.
7. Printer device URI.
8. **CoiNel-CIE-**DYNO driver selection.
9. Print a test page again.

3.13 CUPS Service Is Not Running

Question: What should I do if the CUPS printing service is not running?

Solution: Check the CUPS service status: systemctl status cups

If required, start the CUPS service using: sudo systemctl start cups

Then try adding or printing to the printer again.

Support & Contact

Technical Support

If you experience any issues while installing, configuring, or using the DYNO Series printer on Ubuntu/Linux, please refer to the **Troubleshooting** section of this manual.

If the issue persists, please contact **CoiNel Technical Support** for further assistance.

Before Contacting Support

Please keep the following information available:

- Printer model
- Ubuntu/Linux version
- USB connection details
- lsusb output
- Detected USB serial port (ttyACM0, ttyACM1, etc.)
- Error message or issue description
- Steps already performed

This information will help the support team diagnose the issue more quickly.

CoiNel Technology Solutions LLP

Technical Support
Company: CoiNel Technology Solutions LLP
Product: DYNOSeries Thermal Printer
Operating System: Ubuntu / Linux
For technical assistance: Please contact your authorized CoiNel support representative.

Thank you for choosing CoiNel Technology Solutions LLP.