

TOSHIBA

TOSHIBA TEC SINGAPORE PTE. LTD.

Confidential***Specification For :*** Linux Driver

TEC CUPS POS Printer Driver

(Product)

TSE Code Name TRST-P1X, TRST-P2X

Revision : 03 : (25-09-2020)

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1. General

1.1. Introduction

The TEC CUPS driver user manual (hereinafter referred to as “this Manual”) is mainly describes the setup steps and specific behavior for Toshiba TEC CUPS Linux driver. For specifications not provided in this Manual, please refer to the CUPS documentation.

The CUPS documentations can found from the following web site:

CUPS Home Page: <https://www.cups.org/>

1.2. Notes

Before reading this Manual, please note the following:

- To use or duplicate a part or whole of this Manual without the permission of Toshiba TEC Corporation is prohibit.
- This Manual is subject to change without prior notice.

1.3. Target Operation System

Operating Systems	32bits	64bits
openSuse 15.2		✓

1.4. Target Devices

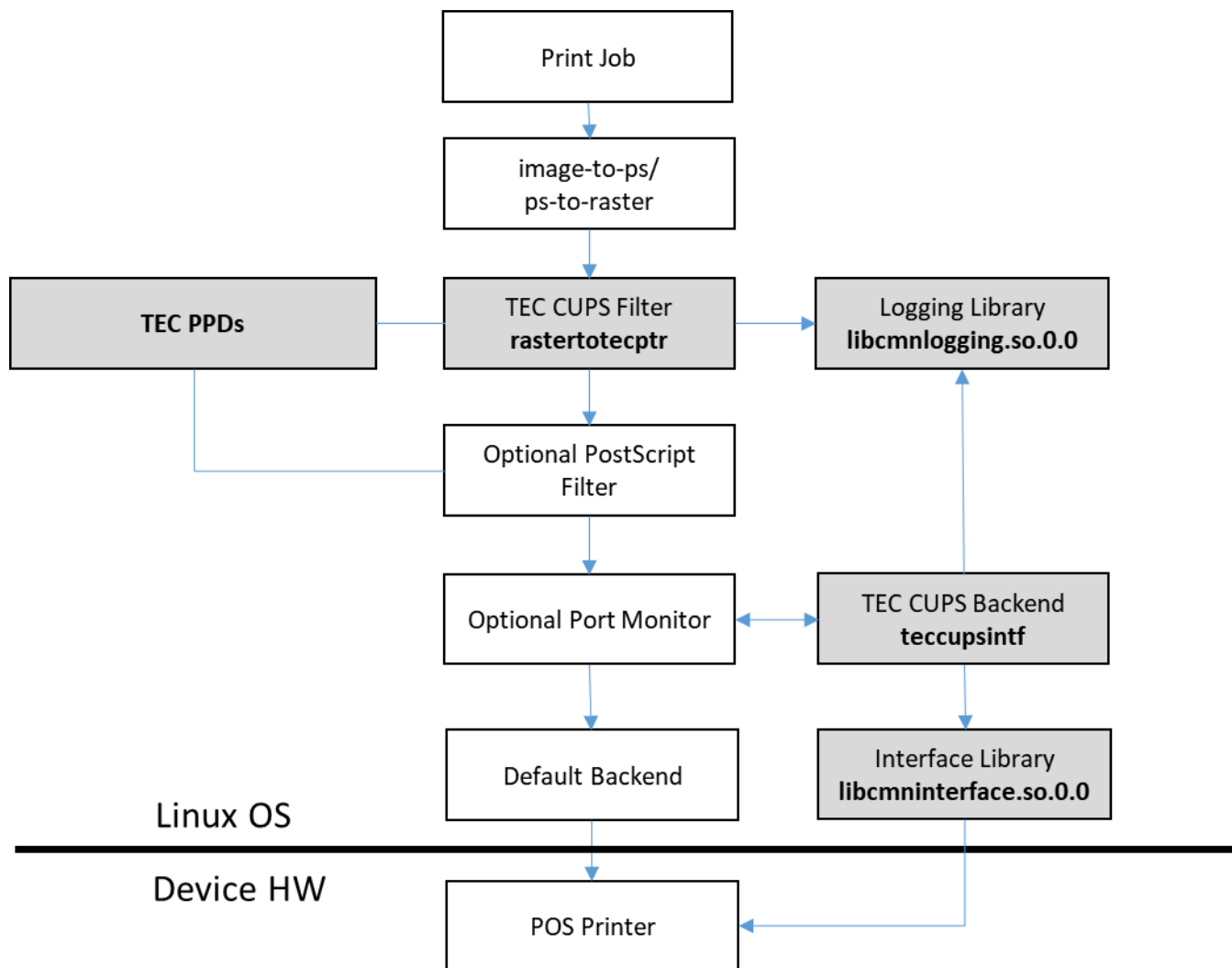
POS Printer: TRST-P1X, TRST-P2X (Simplify as TRST-P*X)


Interface: USB, Serial Port, LAN

2. Architecture Overview

TEC CUPS driver provides POS Printer printing functionality on Linux operating system.

The software components shown below are required for execution environment.



 : The shaded area indicates the TEC CUPS Driver components

3. Setup

3.1. Setup of TEC CUPS Driver

Installation using Install Script

1. After download the driver kit, extract the zip file to local file system.
2. Run “install.sh” as root privilege. TEC CUPS components will install to system.
 - a. When detect TEC share libraries already install on system, following message will appear. It will display the current installed version and release version libraries.
 - b. Key in “y” to continue if the release kit version is newer than the installed version.
 - c. Key in “n” to continue if system install version is newer than the release version.

```

Installed Libraries:
/usr/lib/libcmninterface.so.3.0.0.0      Display on system installed TEC share libraries
/usr/lib/libcmnlogging.so.2.0.0.0       version
Release Kit Libraries:
libcmninterface.so.3.0.0.0              Display current release version
libcmnlogging.so.2.0.0.0
Found TEC Share Libraries installed.
Do you want to overwrite share Libraries (Y/N)? █
  
```

- d. Following message will appear if installing TEC share libraries

```
Installing TEC Share Libraries...
```

3. On Linux, if *.sh file cannot be execute, it will need to add the executable rights to the script. For example, if install.sh cannot be execute:

```
] chmod +x install.sh
```

4. TEC CUPS driver component can be remove by running “uninstall.sh” as root privilege.
 - a. **NOTE:** The uninstallation should run after printer using TEC CUPS driver already delete from system.
 - b. When “Do you wish to continue (Y/N)?” appear, key in “y” to continue uninstallation if the entire printer using TEC driver already delete from CUPS printer list.

```

TEC CUPS Driver Uninstall for Linux system
*NOTE : Make sure printer using TEC CUPS driver already remove by CUPS Administrator page
Do you wish to continue (Y/N)? █
  
```

- c. Following message appear if detect TEC share library install on system.
- Key in “y” to continue if this system have no other TEC software installed and using the share library. Therefore, share libraries will remove.
 - Key in “n” to continue to keep the share library.

```
Installed Libraries:
/usr/lib/libcmninterface.so.3.0.0.0
/usr/lib/libcmnlogging.so.2.0.0.0
Found TEC Share Libraries installed.
Do you want to remove share Libraries (Y/N)?
```

Display on system installed TEC
share libraries version

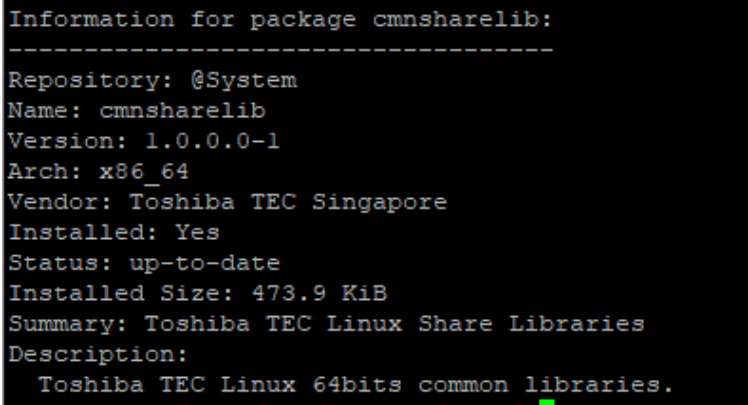
- iii. Following message will be display when uninstalling TEC share libraries

```
Remove TEC Share Libraries...
```


Installation Using RPM

1. TEC CUPS driver is depend on TEC common library package. This can be check using command:

```
] zypper info cmnsharelib
```



```
Information for package cmnsharelib:
-----
Repository: @System
Name: cmnsharelib
Version: 1.0.0.0-1
Arch: x86_64
Vendor: Toshiba TEC Singapore
Installed: Yes
Status: up-to-date
Installed Size: 473.9 KiB
Summary: Toshiba TEC Linux Share Libraries
Description:
  Toshiba TEC Linux 64bits common libraries.
```

2. Using root privilege, perform CUPS driver installation with following command:

```
] rpm -ivh teccups-<version>.<architecture>.rpm
```

For 64bits system, architecture will be x_86_64. For 32bits system, the architecture will be i386.

Please take note if teccups already installed, “-Uvh” should be use instead “-ivh”

3. To uninstall rpm package, run the following command using root privilege:

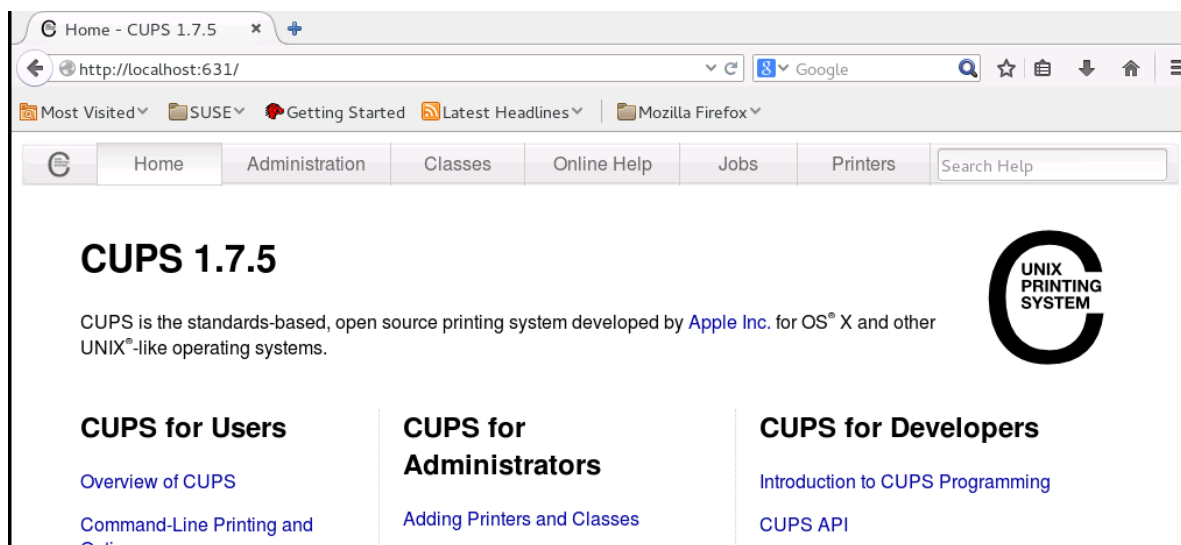
```
] rpm -e teccups
```

3.2. Add Printer

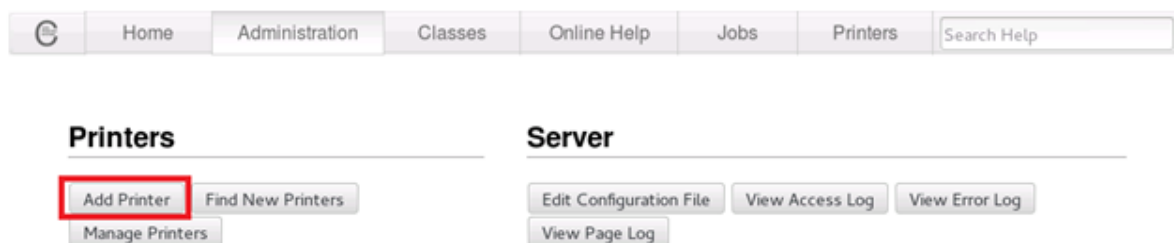
It is require to “Add Printer” before using TEC CUPS driver for printing. Following shows steps to add printer using CUPS Administrator page.

It is require connecting printer before proceed “Add Printer”.

1. Launch any browser, go to CUPS control page with URL “localhost:631”.



2. Select “Administration” → “Add Printer”.
 - a. When dialog appear to request username and password, please key in username with root privilege and correct password.
 - b. On older CUPS system, USB port is not show in next page. However, printer can be detect using “Find New Printers” at this step.



3. Next, setup POS Printer's port interface.

Using Default System Backend

USB Interface

- If printer connected, its USB port will appear under “Local Printers”. Select correct port and press “Continue”.
- If printer connected but is not showing here, the possible reasons include:
 - Printer automatically added by CUPS system when connect. Please check printer list and make sure system add printer using correct driver. If not, it will need to delete printer and add printer again.
 - Older CUPS system is not showing USB interface. Please refer previous step 2.b) for details.

Add Printer

Local Printers:

- ☐ Serial Port #1
- ☐ Serial Port #2
- ☐ Serial Port #3
- ☐ Serial Port #4
- ☐ Serial Port #5
- ☐ Serial Port #6
- ☒ TOSHIBA TEC TRST-P2X (TOSHIBA TEC TRST-P2X)

Discovered Network Printers:

Other Network Printers:

- ☐ Windows Printer via SAMBA
- ☐ Internet Printing Protocol (http)
- ☐ Internet Printing Protocol (ipp)
- ☐ LPD/LPR Host or Printer
- ☐ AppSocket/HP JetDirect
- ☐ Internet Printing Protocol (https)
- ☐ Internet Printing Protocol (ipps)

Serial Port

- First, select correct serial port and press “Continue”. For example, /dev/ttyS0 means “Serial Port #1”.

Add Printer

Local Printers:

- ☒ Serial Port #1
- ☐ Serial Port #2
- ☐ Serial Port #3
- ☐ Serial Port #4
- ☐ Serial Port #5
- ☐ Serial Port #6
- ☐ Forward print job data like a pipe to another command
- ☐ EPSON TM/BA Printer (USB(ESDPRT001) TM-T88IV)

- Second, configure correct serial port settings; setting value must match with printer device’s hardware setting.

After set, press “Continue”.

Add Printer

Connection: serial:/dev/ttyS0?baud=115200

Baud Rate: 19200

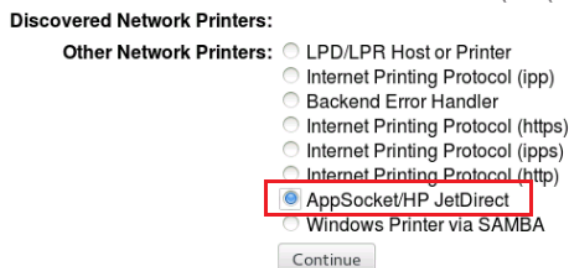
Parity: None

Data Bits: 8

Flow Control: DTR/DSR (Hardware)

LAN interface

- First, select “AppSocket/HP JetDirect” and press “Continue”



- Second, set correct IP address and TCP port value in connection string. Connection string format is “socket://<IP address>:<TCP Port #>”.

For example, for POS Printer’s IP address is 192.168.1.216 and TCP port value is 9100, the connection string will be “socket://192.168.1.216:9100”

Add Printer

Connection:

Examples:

```
http://hostname:631/ipp/
http://hostname:631/ipp/port1

ipp://hostname/ipp/
ipp://hostname/ipp/port1

lpd://hostname/queue

smb://servername/printer
smb://username:password@workgroup/servername/printer

socket://hostname
socket://hostname:9100
```

See "[Network Printers](#)" for the correct URI to use with your printer.

Continue

Using TEC Backend

TEC backend is enable with share port mechanism. By share port mechanism, other TEC driver is able to use the device concurrently with TEC CUPS driver.

USB Interface

- If printer connected, its USB port will appear under “Local Printers”. Select correct port and press “Continue”

Local Printers: ☐ Serial Port #1
☐ Serial Port #2
☐ Serial Port #3
☐ Serial Port #4
☐ Serial Port #5
☐ Serial Port #6
☐ TOSHIBA TEC TRST-P2X (TOSHIBA TEC TRST-P2X)
☒ TOSHIBA POS Printer (TRST-P2X: USB)
☐ TOSHIBA POS Printer (TRST-P1X: 192.168.1.225)
☐ TOSHIBA POS Printer (TRST-P#X: /dev/ttyS0)

- Printer also can add manually by provided correctly connection string by using “AppSocket/HP JetDirect”.

USB connection string format is:

```
] teccupsintf://usb/<vendor ID>/<product ID>
```

For example, to add a TRST-P2X printer with vendor ID is 0x08A6 and product ID is 0xA001:

Add Printer

Connection:

LAN Interface

- If printer connected, its LAN connection will appear under “Local Printers”. The default connection will always use **TCP port 9100 and UDP port 3000**. Select correct port and press “Continue”

Local Printers: ☐ Serial Port #1
☐ Serial Port #2
☐ Serial Port #3
☐ Serial Port #4
☐ Serial Port #5
☐ Serial Port #6
☐ TOSHIBA TEC TRST-P2X (TOSHIBA TEC TRST-P2X)
☐ TOSHIBA POS Printer (TRST-P2X: USB)
☒ TOSHIBA POS Printer (TRST-P1X: 192.168.1.225)
☐ TOSHIBA POS Printer (TRST-P#X: /dev/ttyS0)

- Printer also can add manually by provided correctly connection string by using “AppSocket/HP JetDirect”.

Network connection string format is:

```
] teccupsintf://eth/<IP address>/<TCP Port>/<UDP Port>
```

For example, to add a printer with IP address 192.168.1.99, TCP port 8000, and UDP port 3100:

Add Printer

Connection:

Serial Interface

- If printer is in default setting (Baud Rate: 19200, data bit: 8, Stop bit: 1, Parity: none, Flow Control: DTR/DSR, DSR Signal: Enabled) and it is connected to COM1, select the default connection under “Local Printers” and press “Continue”

Local Printers:

- ☐ Serial Port #1
- ☐ Serial Port #2
- ☐ Serial Port #3
- ☐ Serial Port #4
- ☐ Serial Port #5
- ☐ Serial Port #6
- ☐ TOSHIBA TEC TRST-P2X (TOSHIBA TEC TRST-P2X)
- ☐ TOSHIBA POS Printer (TRST-P2X: USB)
- ☐ TOSHIBA POS Printer (TRST-P1X: 192.168.1.225)
- ☒ TOSHIBA POS Printer (TRST-P#X: /dev/ttyS0)

- For other port or setting, it is require adding the connection string by “AppSocket/HP JetDirect”. Serial port connection string format is:

```
]teccupsintf://serial/<baudrate>/<databit>/<stopbit>/<parity>/<handshaking>/<portname>
```

Parity : none, even, odd

Handshaking : none, dtrdsr, xonxoff

For example, to add printer connect to COM2 and the setting is Baud Rate: 115200, data bit: 8, Stop bit: 1,

Parity: odd, Flow Control: XON/XOFF, DSR Signal: Enabled

Add Printer

Connection:

4. After done setting port interface, next is configure printer name, description and location. Option “Name” is **require**, and it cannot contain ‘/’, ‘#’ and space. Description and Location are optional, and can leaving blank and “Continue”.
 - a. For auto scan printer by CUPS, the information will be automatically fill by CUPS system. However, it can be modify to other value.

Add Printer

Name:
 (May contain any printable characters except "/", "#", and space)

Description:
 (Human-readable description such as "HP LaserJet with Duplexer")

Location:
 (Human-readable location such as "Lab 1")

Connection: usb://TOSHIBA%20TEC/TRST-P2X?serial=%20%20%20%20%20%20%20%20%20%20

Sharing: ☐ Share This Printer

- b. For custom connection string printer, it is require filling in option value manually.
5. Next, select CUPS driver to use. Under “TOSHIBA”, select correct POS Printer’s model.

Sharing: Do Not Share This Printer

Make:
 Epson
 Generic
 HP
 Intellitech
 Oki
 Postscript
 Raw
TOSHIBA
 Zebra

Sharing: Do Not Share This Printer

Make: TOSHIBA

Model:
 TOSHIBA TRSTP2X (en)

Or Provide a PPD File: No file selected.

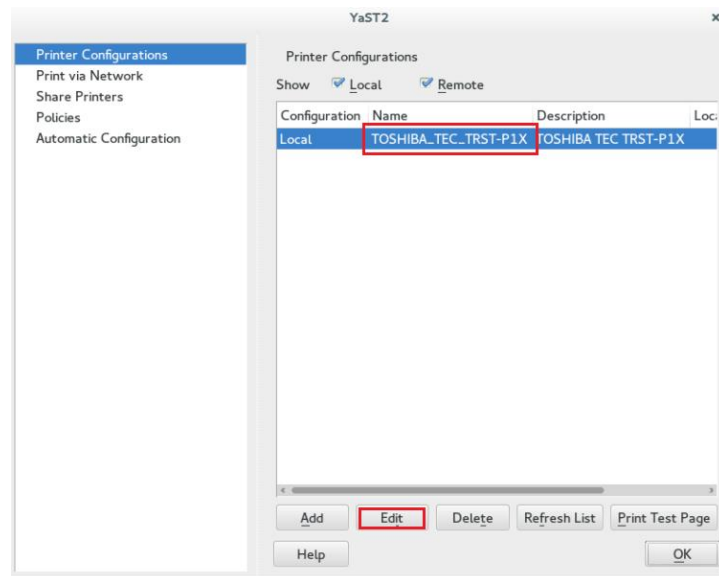
6. Finally, after press “Add Printer” printer now should add to system successfully. The success add printer can be view under:

“Administrator” → “Manage Printers”

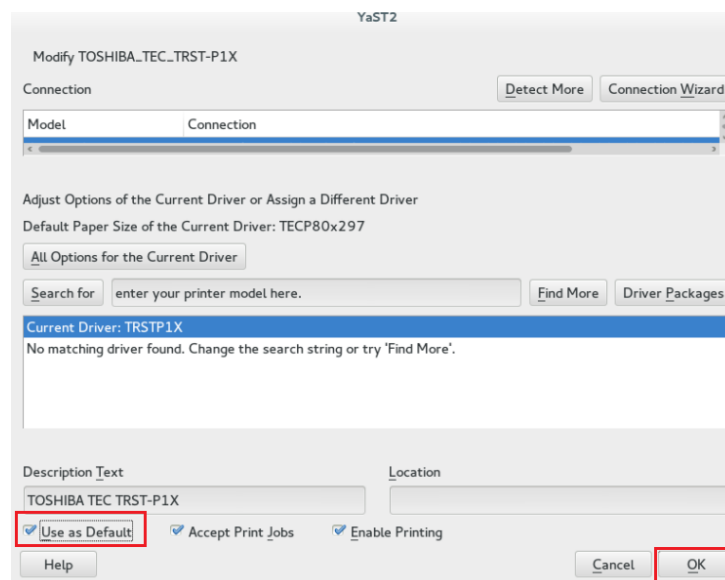
3.3. Set Default Printer

Following show an example to configure “TOSHIBA_TEC_TRST-P1X” as default printer:

1. Open “Printer” under “YaST” (Refer to “**Error! Reference source not found. Error! Reference source not found.**”).
2. After select desire printer, press “Edit” button.



3. When below window appear, check “Use as Default” then press “OK” button.



4. When send print job using command line and getting no system default destination message, the default destination can be set using “lpoptions” command, for example:

```
] lpoptions -d TOSHIBA_TEC_TRST-P1X
```


3.4. Set Default Options

This to configure default options when perform printing for each printer. This setting can be access via CUPS control page.

1. Select printer to configure from printer list.

Search in Printers:

Showing 1 of 1 printer.

Queue Name ▼	Description	Location	Make and Model
TOSHIBA_TEC_TRST-P1X	TOSHIBA TEC TRST-P1X		TRSTP1X

2. After printer's control page display, select "Set Default Options" from Administration drop down list.

TRST-P2X_USB (Idle, Accepting Jobs, Not Shared)

Maintenance ▼ Administration ▼

Description: TRS
Location:
Driver: TRS
Connection: tecc
Defaults: job-
Jobs

Administration
Modify Printer
Delete Printer
Set Default Options
Set As Server Default
Set Allowed Users

Set Default Options

3. The selected printer support options will display. Now user can configure default option to use in printing.

Set Default Options for TRST-P2X_USB

General Cash Drawer Banners Policies

General

Media Size: Paper size 80 * 297 mm ▼

Input Image Format: Black and White ▼

Printer Details: TRST-P2X (203 dpi x 203 dpi) ▼

Bitmap Print Format: Monochrome ▼

Paper Cut: Document[Feed,Cut] ▼

Dither Type (RGB->MONO): Threshold ▼

Paper Conservation: Top and Bottom of Page ▼

Log Level: Disable ▼

Log Count: 10 ▼

Set Default Options

- For options support custom parameter, it is require configuring default option's "Custom" value before use in printing. Please refer to "4 Print Options" for TEC supported options detail.

For example, in order to use custom page size in next printing. First, it needs to set the desire page size in "Set Default Options"

Media Size: Custom ▼

Width:

Height:

Units: Millimeters ▼

After that, when perform printing select "Custom" for "page".

Paper

Page size: Custom ▼

Width: ⬆ ⬇ ⬆ Height: ⬆ ⬇ ⬆

- When print job send using command line, the default options can be check by command:

```
] lpoptions -l
```

```
lpoptions -l
PageSize/Media Size: TECP80x297 TECP58x297 TECP80x3200 TECP58x3200 *Custom.WIDTHxHEIGHT
Duplex/2-Sided Printing: *None
ColorModel/Input Image Format: 0Color *1Gray
Resolution/Resolution: *203x203dpi
PrtDetail/Printer Details: *203name
BmpFormat/Bitmap Print Format: *0MONO 1GRAY
CutSetting/Paper Cut: *0DocFC 1DocF 2DocC 3Doc 4PageFC 5PageF 6PageC
DitherType/Dither Type (RGB->MONO): *0Threshold 1Dispersed 2Clustered 3Diffusion
PaparConservation/Paper Conservation: 0PCNone 1PCBtm 2PCTop *3PCBoth
LogLevel/Log Level: *0LogDis 255LogAll
LogCount/Log Count: *10Files 100Files 1000Files
CDPin/Cash Drawer Pin: *0DRW 1DRW1 2DRW2
CDOpen/Cash Drawer Open: 0Before *1After
CDPulse/Cash Drawer Pulse: 0CDPulse 1CDPulse 2CDPulse *3CDPulse 4CDPulse 5CDPulse 6CDPulse 7CDPulse 8CDPulse 9CDPulse
```

- The default option can be change using command:

```
] lpoptions -o <name>=<support value>
```

For example, to change Paper Cut setting to "Document[NoFeed,Cut]", command is:

```
] lpoptions -o CutSetting=2DocC
```

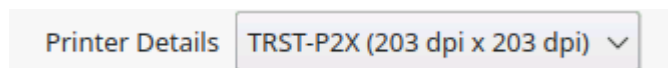
4. Print Options

This chapter describes printing options supported by TEC CUPS driver. It also describe how to control the option in print command line by “-o name=value [... name=value]”. For restriction and cautions, please refer “5.1 Print Options” for more details.

4.1. Printer Details

This option is not mean for controlling. It simply display current PPD supported printer model and resolution information.

Following shows an example printer details for TRST-P2X POS Printer:

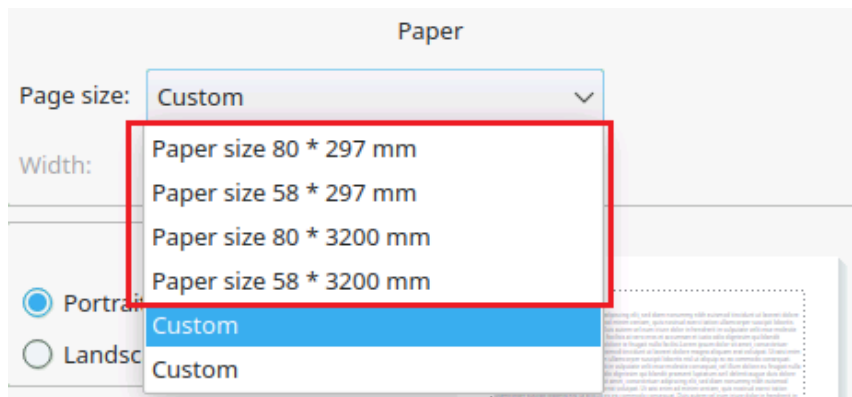


Printer details are as follows:

Name	Model	Resolution
TEC TRST-P1X	TRST-P1X	180.0dpi x 180.0dpi
TEC TRST-P2X	TRST-P2X	203.2 dpi x 203.2dpi

4.2. Media/Paper Options

This option is use to control the size of paper size for printing.



Following shows available define paper size in list:

Name	Command	Description
Paper size 80 * 297 mm [Default]	media=TECP80x297	80 x 297 mm paper size
Paper size 58 * 297 mm	media=TECP58x297	58 x 297 mm paper size
Paper size 80 * 3200 mm	media=TECP80x3200	80 x 3200 mm paper size
Paper size 58 * 3200 mm	media=TECP58x3200	58 x 3200 mm paper size

For CUPS version supports custom paper size, user can define custom paper size in “Set Default Options”. In order to use custom paper size, it is require configuring “Media Size” before “Custom” in “Paper source” can use properly.

Set Default Options for TRST-P2X_USB

[General](#) [Cash Drawer](#) [Banners](#) [Policies](#)

General

Media Size:

Width:

Height:

Units:

The maximum paper size can support is as following. However, the actual value only printable area width. For example, TRST-P1X actual print width is 72.25mm (512 dots) so the width show in paper is 2.83 inch (~71.88 mm) instead of 3.14 inch for paper width 80mm.

Paper

Page size:

Width: Height:

	Minimum		Maximum	
Unit	mm	Points	mm	Points
Width	25.4	72.0	72	204.8
Height	25.4	72.0	3200	9070.9

When print using command line, paper size can be control using “-o media”. Following shows example command line for different paper size:

Example 1) Using define “Paper size 80 * 297 mm”

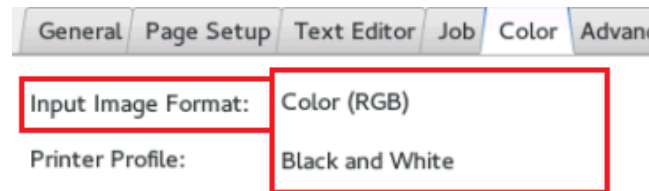
```
l lp -o page-ranges=4-5 -o fit-to-page -o media=TECP80x297 test.pdf
```

Example 2) Using custom paper size with 80 x 100 mm (input width should exclude left/right margin)

```
l lp -o page-ranges=4-5 -o fit-to-page -o media=Custom.72x100mm test.pdf
```

4.3. Input Image Format

This option is use to control input raster format receive by filter from CUPS. “Color (RGB)” supports more bitmap printing control and functionally. “Black and White” is optimize for monochrome print speed, as filter does not require performing color to monochrome conversion. Please refer to “4.4 Print Image Format” and “4.5 Dithering Option” for more details.



Name	Command	Description
Color (RGB)	ColorModel=0Color	Raster graphic with pixel data in 24bits “RGBRGB...” format
Black and White [Default]	ColorModel=1Gray	Raster graphic with pixel data in 1 bit per pixel format.

NOTE: In command line, the exact value string for ColorModel must send in order for setting to take effect. For other options, only the front integer of value will take into process.

4.4. Print Image Format

This option to control print out image on POS Printer, which supports both monochrome and grayscale printing.

Grayscale printing only working if "Input Image Format" is "Color (RGB)", otherwise monochrome will be print even though grayscale option is select. Please refer "4.3 Input Image Format" for more details.



Name	Command	Description
Monochrome [Default]	BmpFormat=0MONO BmpFormat=0	Print using monochrome command. If input format is "Color (RGB)", monochrome conversion will base on dithering option. Please refer "4.5 Dithering Option" for more details.
Grayscale (Only For RGB)	BmpFormat=1GRAY BmpFormat=1	Print using grayscale command



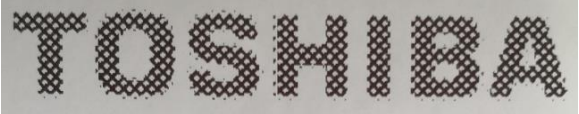

4.5. Dithering Option

This option is to control monochrome print out image on POS Printer. Each option will use different algorithm to perform color to monochrome conversion. This option only works if “Input Image Format” is “Color (RGB)”, otherwise default monochrome raster image convert by CUPS will be print instead. Please refer “4.3 Input Image Format” for more details.

Following shows supported dithering options:

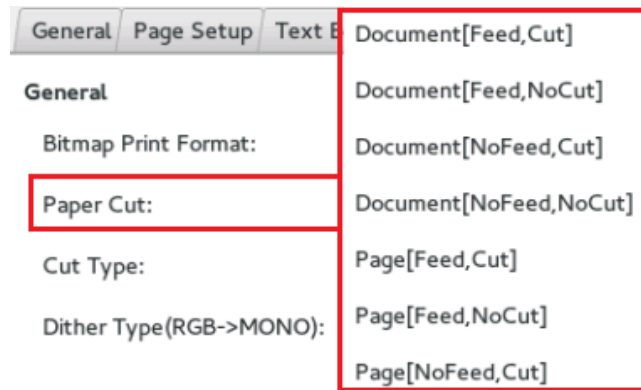
Name	Command	Description
Threshold [Default]	DitherType=0Threshold DitherType=0	Grayscale to monochrome perform base on fix threshold value.
Dispersed Ordered Dither	DitherType=1Dispersed DitherType=1	Grayscale to monochrome perform base on a [4x4] matrix, 16 points sampling.
Clustered Ordered Dither	DitherType=2Clustered DitherType=2	Grayscale to monochrome perform base on a [8x8] matrix, 64 points sampling.
Error Diffusion	DitherType=3Diffusion DitherType=3	Grayscale to monochrome perform base on diffusion value. The diffusion value calculate base on nearby pixel

Following shows sample print out using different options:

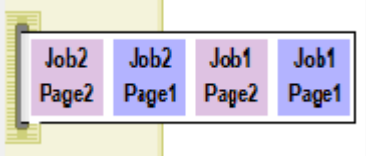
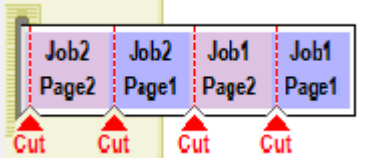
Dithering Type	Sample Printing
Threshold	
Dispersed Ordered Dither	
Clustered Ordered Dither	
Error Diffusion	

4.6. Feed and Cut Option

This option is to control the feed and cut process for page or document level. When selected option contain feed, the paper will feed to cutter position. When selection option contain cut, a paper cut will be perform. Please take note that a paper cut perform without feed the cutting might happen on printing item.



Name	Command	Example
Document [Feed, Cut] [Default]	CutSetting=0DocFC CutSetting=0	
Document [Feed, NoCut]	CutSetting=1DocF CutSetting=1	
Document [NoFeed, Cut]	CutSetting=2DocC CutSetting=2	
Document [NoFeed,NoCut]	CutSetting=3Doc CutSetting=3	
Page [Feed,Cut]	CutSetting=4PageFC CutSetting=4	

Page [Feed,NoCut]	CutSetting=5PageF CutSetting=5	
Page [NoFeed,Cut]	CutSetting=6PageC CutSetting=6	

4.7. Paper Conservation

This option is to control the paper conservation for top and bottom of print page. The white area on top or bottom of page will be remove automatically base on selected option.

Paper Conservation: Top and Bottom of Page ▼

Log Level: None

Log Count: Bottom of Page

Top of Page

Top and Bottom of Page

Set Default

Name	Command	Description
None	PaperConservation=0PCNone PaperConservation=0	No paper conservation will be perform.
Bottom of Page	PaperConservation=1PCBtm PaperConservation=1	Paper conservation will be perform at bottom of page.
Top of Page	PaperConservation= 2PCTop PaperConservation=2	Paper conservation will be perform at top of page.
Top and Bottom of Page [Default]	PaperConservation= 3PCBoth PaperConservation=3	Paper conservation will be perform at top and bottom of page.

4.8. Cash Drawer

TEC POS Printer can connect by 6-pin cash drawer. Three options provide to control cash drawer behavior.

4.8.1. Cash Drawer Pin

This option is to control drawer open or not, and which pin to perform open. When “Do Not Open Drawers” select, this will disable the entire cash drawer process.

Cash Drawer

Cash Drawer Pin:	Do Not Open Drawers
Cash Drawer Open:	Open Drawer 1
Cash Drawer Pulse:	Open Drawer 2

Name	Command	Description
Do Not Open Drawers [Default]	CDPin=0DRW CDPin=0	Disable cash drawer
Open Drawer 1	CDPin=1DRW1 CDPin=1	Open cash drawer at pin 1
Open Drawer 2	CDPin=2DRW2 CDPin=2	Open cash drawer at pin 2

4.8.2. Cash Drawer Open

When cash drawer enable, this option is to control when to perform drawer open.

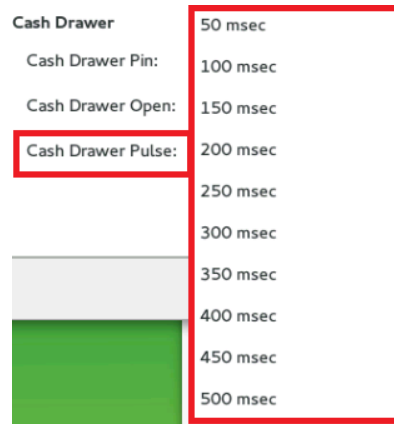
Cash Drawer

Cash Drawer Pin:	Before Printing
Cash Drawer Open:	After Printing
Cash Drawer Pulse:	200 msec

Name	Command	Description
Before Printing	CDOpen=0Before CDOpen=0	Open cash drawer before document print
After Printing [Default]	CDOpen=1After CDOpen=1	Open cash drawer after document print

4.8.3. Cash Drawer Pulse

When cash drawer enable, this option is to control cash drawer pulse.



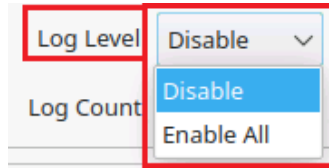
Name	Command	Description
50 msec	CDPulse=0CDPulse CDPulse=0	Pulse ON and OFF time 50 ms
100 msec	CDPulse=1CDPulse CDPulse=1	Pulse ON and OFF time 100 ms
150 msec	CDPulse=2CDPulse CDPulse=2	Pulse ON and OFF time 150 ms
200 msec [Default]	CDPulse=3CDPulse CDPulse=3	Pulse ON and OFF time 200 ms
250 msec	CDPulse=4CDPulse CDPulse=4	Pulse ON and OFF time 250 ms
300 msec	CDPulse=5CDPulse CDPulse=5	Pulse ON and OFF time 300 ms
350 msec	CDPulse=6CDPulse CDPulse=6	Pulse ON and OFF time 350 ms
400 msec	CDPulse=7CDPulse CDPulse=7	Pulse ON and OFF time 400 ms
450 msec	CDPulse=8CDPulse CDPulse=8	Pulse ON and OFF time 450 ms
500 msec	CDPulse=9CDPulse CDPulse=9	Pulse ON and OFF time 500 ms

4.9. Logging

TEC CUPS driver support logging feature. The log files save under directory “**/var/log/cups/teccups/**”.

4.9.1. Log Level

This option is use to control logging message level.



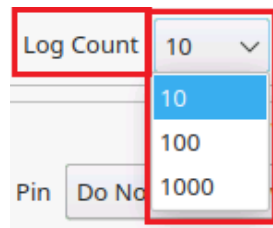
Name	Command	Description
Disable [Default]	LogLevel=0LogDis LogLevel=0	Disable debug log message
Enable All	LogLevel= 255LogAll LogLevel=255	Enable the entire debug log

Following show the value, represent log level:

Value	HEX	Level
0	0x00	Disable all level message
1	0x01	Enable error message
2	0x02	Enable warning message
4	0x04	Enable debug message
8	0x08	Enable trace data message (contain raw data information)
16	0x10	Enable trace message

4.9.2. Log Count

This option is to control maximum number of log file use to save log message.



Name	Command	Description
10 [Default]	LogCount=10Files LogCount=10	Default log count will be 10. When receive invalid value (> 1000), default value 10 will be use.
100	LogCount=100Files LogCount=100	Maximum number of log file is 100.
1000	LogCount=1000Files LogCount=1000	Maximum number of log file is 1000.

4.10. Example CMD Printing

This chapter shows some example of printing using command line.

Example 1) Print a grayscale image at top of page in portrait mode

```
] lp -o BmpFormat=1GRAY -o ColorModel=1Gray -o orientation-requested=6 -o  
position=top -o media=TECP80x297 image.png  
  
] lp -o BmpFormat=1 -o ColorModel=1Gray -o orientation-requested=6 -o position=top  
-o media=TECP80x297 image.png
```

Example 2) Print monochrome image (using CUPS monochrome image)

```
] lp -o ColorModel=0Color -o media=TECP80x297 image.png
```

Example 3) Print monochrome image, using Clustered Ordered Dither

```
] lp -o DitherType=2Clustered -o BmpFormat= 0MONO -o ColorModel=0Color -o  
media=TECP58x297 image.bmp  
  
] lp -o DitherType=2 -o BmpFormat= 0 -o ColorModel=0Color -o media=TECP58x297  
image.bmp
```

Example 4) Open cash drawer pin 1 after document finish printing

```
] lp -o CDPin=1DRW1 -o CDOpen=1After -o media=TECP80x297 tenor.gif  
  
] lp -o CDPin=1 -o CDOpen=1 -o media=TECP80x297 tenor.gif
```

Example 5) Enable message to log file. Maximum log file is 10.

```
] lp -o LogCount=10 -o LogLevel=255 -o orientation-requested=6 -o position=top -o  
media=TECP80x297 image.bmp
```

5. Restrictions and Cautions

5.1. Print Options

For TEC CUPS support option, most of the options can support send only integer value except ColorModel. For ColorModel, the exact value string must send in order for setting to take effect. For other options, only the front integer value will take into process

For example, below command send "-o BmpFormat=1Dummy", where "1Dummy" not really exist in BmpFormat option's value. However, "1" represent "1GRAY", as result the grayscale print format will be use in printing process.

```
] lp -o BmpFormat=1Dummy -o ColorModel=0Color image.bmp
```

When invalid integer value receive, the default value for that option will use in current job printing process.

5.2. Paper Size

Some application will always use certain paper for example "US Letter" as default paper size even though default paper size already configure using "Set Default Options". In this case, it is important to make sure correct paper size is select before sending a print job.

A print job send with paper size (raster image's width) exceed device supportable printable area will cause filter fail to execute. Following shows the supportable graphic printable area for each printer model and paper roll, one pixel will print as one dot on printer print out:

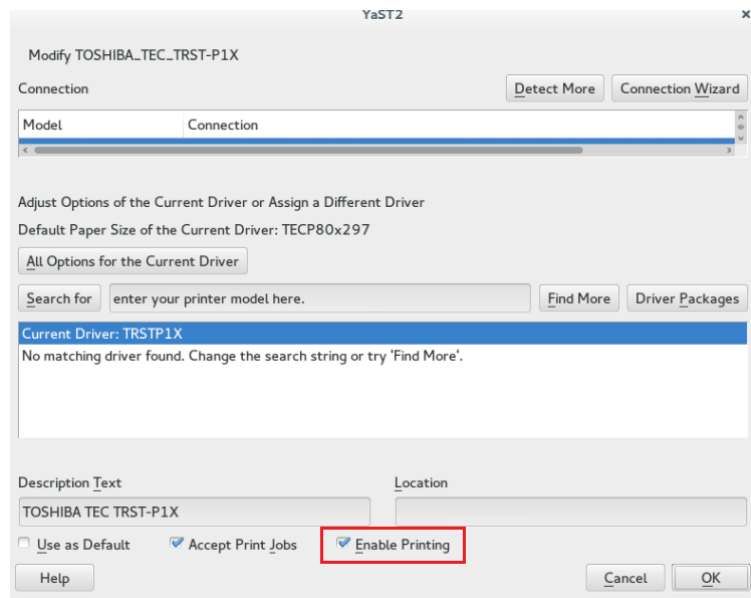
Model	Printable Graphic Width (pixel)	
	58mm	80mm
TRST-P1X	360	512
TRST-P2X	400	576

When setting custom paper size, please be cautious when select unit “points”. CUPS’s “points” is not equivalent to printer device “dots”. On CUPS, the resolution is 72 points per inch. For example, to configure a custom paper length 50.8mm:

Length (mm)	CUPS points	dots on 180.0 dpi Printer
50.8	$(50.8 / 25.4) * 72 = 144$	$(50.8 / 25.4) * 180 = 360$

5.3. Print Job Not Printing

On Linux, if printer in good condition, a valid print job sends but print job is not perform, in this case please make sure printer now is under enable condition. This can check under printer’s control page:



5.4. Printer Status

TEC CUPS driver only update printer status when receive print job. In this case, the printer status will not update in real time without a print job.

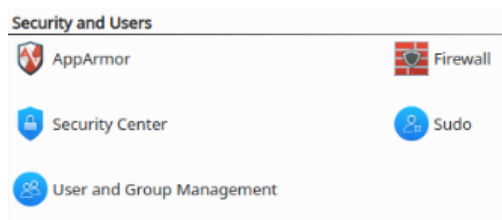
For example, after print job #1 system shows paper empty. After that, a new paper roll is being replace. However, system now will remain paper empty status. After another print job #2 sends to printer, only now the printer status update become paper ok.

5.5. Network Printer Scanning

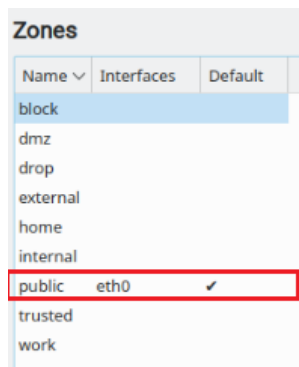
TEC CUPS backend support printer auto scanning. However, system firewall might cause the network scan cannot work properly.

In this case, it is require to allow TEC backend access network in firewall setting. TEC CUPS driver will use UDP port 5000 for listening the incoming data. Following shows the steps to configure firewall on OpenSuse:

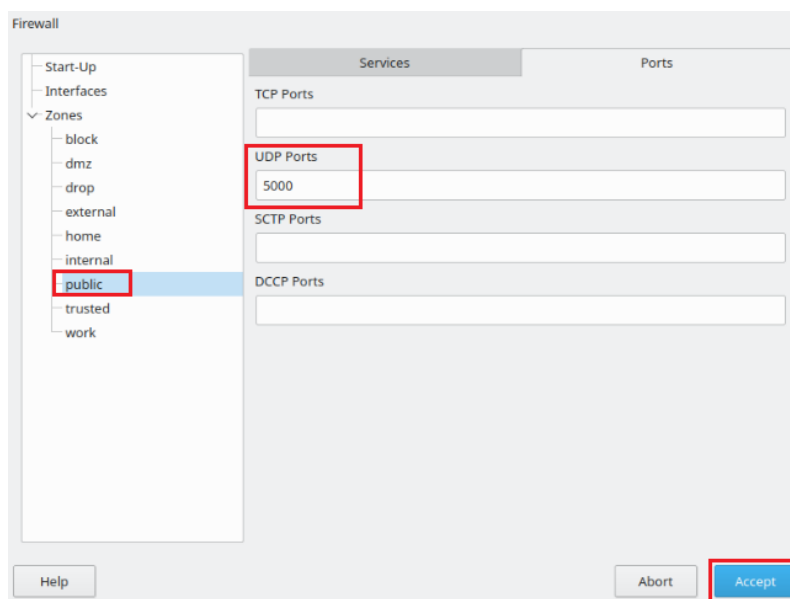
- 1) From menu, select “System Tools” → “YaST”.
- 2) After YaST launch, select “Firewall”.



- 3) Check current interface zones.



- 4) Configure the zones' UDP port to allow 5000 and click “Accept”

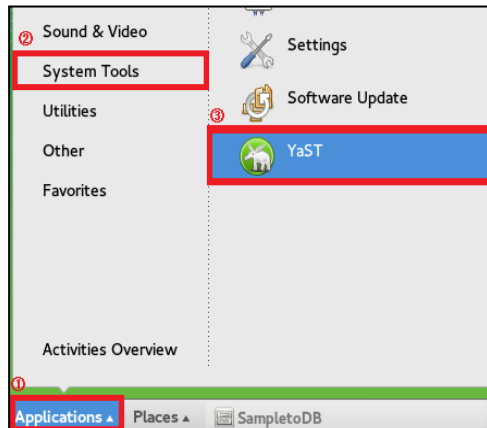


6. References

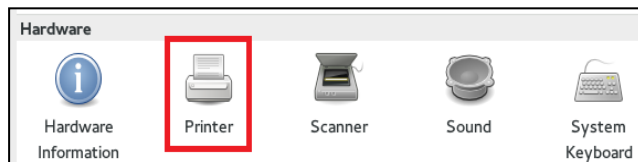
6.1. Enable CUPS Service

It is require enabling CUPS service on Linux system before using TEC CUPS Driver. Following shows example to enable CUPS service on SLES system:

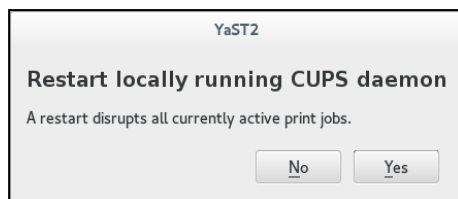
- 1) From menu, select “System Tools” → “YaST”.



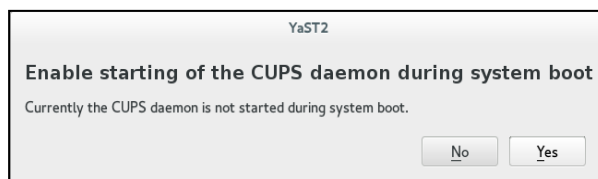
- 2) After YaST launch, select “Printer” from the items.



- 3) If CUPS not enable, following windows will display. Press “Yes” button to proceed.



- 4) When following windows apper, press “Yes” button if user want the CUPS service start automatically when system boot up.



6.2. OpenSuse 13.2 Test Print

On OpenSuse 13.2, the test print will print in two page. This is a known issue on OpenSuse 13.2

https://en.opensuse.org/openSUSE:Most_annoying_bugs_13.2#Printing

Reinstall cups-filters-ghostscript and then restart CUPS service can help for the problem

```
] zypper install --force cups-filters-ghostscript  
]  
] systemctl restart cups
```