

CENTOS 7.7 INSTALLATION GUIDE	TB000110	REV. B
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Purpose:

This installation guide goes through the steps to integrate CentOS onto an Elo computer. It contains the instructions to install, set-up, and test CentOS for a faultless compatibility with Elo computers.

Note:

*Elo strongly recommends using this or a later version of CentOS to ensure full hardware support. *

For all terminal su commands in Terminal, the computer will ask for your password, enter your password in order to process the command

For all terminal commands, be aware of the spacing or the lack thereof in-between words and be aware of using the correct capitalization

The appendix sections are for testing purposes only

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Downloads Required (download files below before starting the next step):

- CentOS 7 iso:
 - To download CentOS 7's iso, go to CentOS's website and download the DVD iso (This instruction is written using CentOS 7): <u>https://www.centos.org/download/</u>. Clicking on the orange button will bring you to a list of distributors. Pick any mirror close to your region. Make sure to download an iso that contains the whole DVD or are marking with "everything".

CentOS GETCENTOS ABOUT- COMMUNITY- DOCUMENTATION- HELP	
Download CentOS	
You now have two ways to consume the CentOS platform, CentOS Linux and CentOS Stream. CentOS Linux is a rebuild of the freely available sources for Red Hat Enterprise Linux (RHEL). CentOS Stream is a midstream distribution that provides a cleared-path for participation in creating the next version of RHEL. Read more in the CentOS Stream release notes.	
CentOS Linux DVD ISO CentOS Stream DVD ISO	
	iso iso
	CentOS-7-
Need a Cloud or Container Image? Amazon Web Services Docker registry	x86_64-Eve ovthing-190
	ă Alexandre

- Rawrite32 (download this only if you are using a Windows computer to create the bootable flash drive).
 - We will be using Rawrite32 to create a CentOS 7 bootable USB drive. Alternatives to Rawrite32 are Fedora Media Writer and Win32 Disk Imager. You may use those instead of Rawrite32 is unavailable to you.
 - To download, go to NetBSD: <u>https://www.netbsd.org/~martin/rawrite32/download.html</u> and download the setup program.

Net BSD Rawrite32	
image writing tool	Home Help License » Download
If you've found the license accept	table, you can download the program and/or it's source code here:
rw32-setup-1.0.7.0.exe	The win32 setup program.
	This is the easiest and shrink-wrapped solution. Run the installer, and it will create all needed start menu entries, register with the system for deinstallation etc.
rawrite-1.0.7.0.zip	The win32 binary (.exe) and documentation.
	Unrip anywhere you like and just run the exe file. Since there is absolutely no magic involved in the setup, this is just as simple if you do not need start memu entries and full grown uninstall support.
rawriteexe-1.0.7.0.zip	The raw binary (.exe) file (zipped).
	Just unpack and run. The only difference between the full packages (above) and this minimal version is the lack of offline-help, the exe will point you at the online help on the rawrite32 web site instead. There is no functional drawback in using this variant.
rawrite32-arc-1.0.7.0.zip	The source code.
	It has only been compiled with Microsoft Visual Studio 2015 and 2017. This is interesting only if you want to contribute, look at how it is done, or create variants of the tool.

- Serial port, Cashdrawer and Printer Drivers:
 - To download the driver packages, go to Elo's website:



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Creating an Installation USB Media:

* Warning: to create an installation USB drive, we will need to wipe out an USB drive. When choosing the disk to write to, make sure that you are choosing the correct disk, and that there are no files you want to preserve on the drive. *

1. Creating a CentOS bootable flash-drive in Windows:

If you are using Linux to create the bootable flash-drive, skip to step 2.

- Launch Rawrite32 and plug in an USB thumb drive.
- In Rawrite32, select your thumb drive under Target's drop-down menu. Then, click on "Open" under the Filesystem image, change the file type to "All files", and choose the CentOS iso that you've downloaded

V Last month (2)				
📴 drawerCtl.tar	10/2	2/2019 3:18 PM	gz Archive	49 KB
CentOS_7.6	10/2	8/2019 5:01 PM	File folder	
 ✓ Earlier this year (5) 				
SPFDisk	9/17	/2019 1:27 PM	File folder	
Translated UM	9/13	/2019 1:33 AM	File folder	
platform-tools	7/25	/2019 10:46 AM	File folder	
EloMultiTouch_6.9.2	2.2_beta2 7/25	/2019 10:46 AM	File folder	
📙 desktop background	7/25	/2019 9:50 AM	File folder	
ame:			~	(Compressed) fs images (*.gz, * ~
]	(Compressed) fs images (*.gz, *.bz2, *.a Binary images (*.bin)

When the program is done preparing the image, click on "Write to Disk".

Filesystem i	image: vy.Chung\Downloads\Cent0S-7-x86_64-Everything-1908.iso Op	en 🎗	: ?
Program m	essages:		•
File sy Everyth	stem image C:\Users\Ivy.Chung\Downloads\CentOS-7-x ing-1908.iso (10.27 GByte)	86_64-	
MD5 SHA1 SHA256 SHA512	12be96dcd544fb46a01cad5e856cb1cf f82375e4a3dfe3615cffc41b4dbf167f70d68a53 bd5e6ca18386e8a8e0b5a9e906297b5610095e375e4d02342 2afce4e92a05f0d937c360fa98e53eeff037a6d5eda37bf74 cbc4f197e16943fd7afb80e6751c6dd4717447da93a5d2e34	f07f32022b1 433840da16d 29ed05ff3b5	.3acf 14648 50515
 Target: [D: Generic Flash Disk [3.86 GByte]	Write to	disk

- 2. Creating a CentOS bootable flash-drive in Linux:
 - 1. Insert an USB thumb drive into an USB slot on your Elo computer. Launch terminal.
 - Log in as root by running command \$ su
 - Run Isblk command to check the assignment device of your USB:
 # Isblk -So NAME,SIZE,TRAN
 In my case, the assigned USB device is sdb1.



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4. Now, we can format the USB drive using the dd command:
dd if=CentOS_your_version.iso of=your_usb_device_path
Fill in the full name of the iso file that you downloaded and your usb device path.
Make sure to put the whole device instead of just a partition of the decice. In my case, it would be sbd instead of sbd1.

Installing CentOS onto the Elo Computer:

- 1. Plug the bootable USB installation device into the Elo computer.
- 2. Turn on or restart the computer. Go to the BBS Menu. This can be done by clicking on the BBS button on the top right corner during computer start-up.



3. Now, select your thumb drive.



4. Follow the installation process. Set the location.



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5. Add development tools option. Go to "SOFTWARE SELECTION", choose "GNOME Desktop" and "Development tools".

SOFTWARE SELECTION	CENTOS 7 INSTALLATION
Base Environment	Add-Ons for Selected Environment
 Minimal Install Basic functionality. Compute Node Installation for performing computation and processing. Infrastructure Server Server for operating network infrastructure services. File and Print Server File, print, and storage server for enterprises. Basic Web Server Server for serving static and dynamic internet content. Virtualization Host Minimal virtualization host. Server with GUI 	Backup Client Client tools for connecting to a backup server and doing backups. GNOME Applications A set of commonly used GNOME Applications. Internet Applications Email, chat, and video conferencing software. Legacy X Window System Compatibility Compatibility programs for migration from or working with legacy X Window System environments. Office Suite and Productivity A full-purpose office suite, and other productivity tools. Smart Card Support Support for using smart card authentication.
Server for operating network infrastructure services, with a GUI. GNOME Desktop GNOME is a highly intuitive and user friendly desktop environment.	Compatibility Libraries Compatibility libraries for applications built on previous versions of CentOS Linux.
 KDE Plasma Workspaces The KDE Plasma Workspaces, a highly-configurable graphical user interface which includes a panel, desktop, system icons and desktop widgets, and many powerful KDE applications. Development and Creative Workstation Workstation for software, hardware, graphics, or content development. 	Development Tools A basic developmingt environment. Security Tools Security tools for integrity and trust verification. System Administration Tools Utilities useful in system administration.

- 6. Set root password.
- 7. Set the user name and password. Choose "Make this user administrator" and "Require a password to use this account". Our demonstration is to use "elo" as the user name and password is "elo1234".

CREATE USER		CENTOS 7 IN	STALLATION
Done		🖽 us	Help!
Full name	elo		
User name	elo		
	Tip: Keep your user name shorter than 32 characters and do not use spaces. ✓ Make this user administrator ✓ Require a password to use this account		
Password	•••••		
	Weak		
Confirm password			
	Advanced		

8. The CentOS Installation is now completed.

Note: The current kernel for CentOS 7.x does not support G-sensor (auto rotation) on EloPOS or I-Series for Windows products.



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Appendix A: Testing Serial Port Functionality

In this section, we will test the functionality of the serial ports.

1. Check if your CentOS version have Exar's USB serial driver installed. Perform this check by running command:

\$ Is /dev/ttyXRUSB*. If you see the serial ports listed in a format like the one shown below, skip to step 6.

```
[root@localhost ~]# ls /dev/ttyXRUSB*
/dev/ttyXRUSB1
```

- Prepare xr_usb_serial_drv and script. Download Exar's USB serial driver at Elo's website. Copy xr_usb_serial_drv folder to /usr/elo. Now, you need to use command "su" to change the privilege to be the root. Please do not use "sudo -i" to change user to be the root. It does not get the root privilege.
 - (1) Change to the root privilege

Ş su	
Enter your root password.	
[elo@localhost ~]\$ su	
Password:	
[root@localhost elo]#	pwd
/home/elo	

(2) Copy and untar xr_usb_serial_drv.tar.gz

```
# mkdir -p /usr/elo
# cd /usr/elo
# tar zxvf xr_usb_serial_drv.tar.gz
```

(3) Check /usr/elo/xr_usb_serial_drv/

# cd xr_usb_se # ls	rial_drv/		
[root@localhost	xr usb serial drv]# ls		
build.sh	startup.sh	xr usb serial common.o	
built-in.o	xr usb serial common.c	xr usb serial common.o.ur-safe	
Makefile	xr_usb_serial_common.h	xr_usb_serial_hal.c	
modules.order	xr_usb_serial_common.ko	<pre>xr_usb_serial_ioctl.h</pre>	
Module.symvers	<pre>xr usb serial common.mod.c</pre>		L
README.txt	<pre>xr_usb_serial_common.mod.o</pre>		L
[root@localhost	<pre>xr_usb_serial_drv]#</pre>		

(4) Change.ko files mode.

chmod 666 xr *

(5) Edit startup.sh script, put your password to the script. If the xr_usb_serial_drv path is not /usr/elo/xr usb serial drv/, please modify the relevant path.

```
# gedit /usr/elo/xr_usb_serial_drv/startup.sh
```

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Open 👻 🖭	startup.sh /usr/elo/xr_usb_serial_drv	Save = _	•	×
sleep 2				
echo 'elo1234' su	<pre>_udo -S rmmod xr_usb_serial_common.ko</pre>			
echo 'elo1234' si	udo -S rmmod cdc-acm			
#echo 'elo1234' !	sudo -S modprobe -r usbserial			
#echo 'elo1234' !	sudo -S modprobe usbserial			
echo 'elo1234' s	<pre>_udo -S insmod /usr/elo/xr usb serial drv/xr usb serial</pre>	common.ko		
sleep 0.2		—		
echo 'elo1234' si	udo -S chmod 666 /dev/ttyXRUSB0			
echo initial finis	1			



- 3. Add root permissions to the user, it needs to use the root privilege.
 - (1) Modify sudoers



(2) Add the following content:



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elo@localhost:~	-		×
File Edit View Search Terminal Help			
## which machines (the sudoers file can be shared between multiple ## systems). ## Syntax: ##			
## user MACHINE=COMMANDS			- 1
## The COMMANDS section may have other options added to it. ##			
<pre>## Allow root to run any commands anywhere root ALL=(ALL) ALL elo ALL=(ALL) ALL ## Allows members of the 'sys' group to run networking, software,</pre>			
<pre>## service management apps and more. # %sys ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PRO ATE, DRIVERS</pre>	CESSE	s, L	.oc
## Allows people in group wheel to run all commands %wheel ALL=(ALL) ALL			
## Same thing without a password # %wheel ALL=(ALL) NOPASSWD: ALL			
## Allows members of the users group to mount and unmount the 102,1		91	%

(3) Use :wq! to save and exit.

- 4. Set the startup procedure, it does not need the root privilege. Please use your user account instead.
 - (1) Exit the root privilege



\$ gedit ~/.bash_profile

(3) Edit bash_profile like the following picture. Add content at the end:

echo 'yourpassword' | sudo -S gnome-terminal -e /usr/elo/xr_usb_serial_drv/startup.sh > /home/elo/Templates/elobuildxr.log 2>> /home/elo/Templates/elobuildxr.log



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Open 🕶 🖪	.bash_profile	Save =	-	•	×		
# .bash_profile							
# Get the aliases and f if [-f ~/.bashrc]; th . ~/.bashrc fi	unctions en						
# User specific environment and startup programs							
PATH=\$PATH:\$HOME/.local/bin:\$HOME/bin							
export PATH							
echo 'elo1234' sudo -S gnome-terminal -e /usr/elo/xr_usb_serial_drv/startup.sh > /home/elo/ Templates/elobuildxr.log 2>> /home/elo/Templates/elobuildxr.log							

NOTE. 'elo1234' => should change to your password

(4) Launch the startup task manager



(5) At Startup Programs => choose "Add"

Edit Startup Program					
Name:	gnome-terminal				
Command:	lo/xr_usb_serial_drv/startup.sh Brow	se			
Comment:	Comment: /usr/elo/xr_usb_serial_drv/startup.sh				
	Cancel S	ave			

Name : gnome- terminal

Command: /usr/elo/xr_usb_serial_drv/startup.sh Comment: /usr/elo/xr_usb_serial_drv/startup.sh Click Save.





Close.

5. Reboot and check that USB UART is detected by the system by using the command: \$ Ismod, and check device nodes by using the command: \$ Is /dev/ttyXRUSB*. You should see the serial ports listed in a format like the one shown below. [root@localhost ~]# ls /dev/ttyXRUSB*

/dev/ttyXRUSB0 /dev/ttyXRUSB1

- 6. Seeing the port names printed means that the Elo computer registers the serial ports. Now, to test the functionality of the serial ports, we will check the output and input function of the ports by using the cat and echo commands.
- 7. Connect a cable to a serial port on the Elo Computer and a serial loopback connector to the other end of the cable.



- 8. Launch two terminal windows and enter su mode for both by using the command \$ su in both terminal windows.
- 9. In one of the windows, we will run echo commands and in the other window we will test cat commands. We will call these two windows "cat terminal window" and "echo



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terminal window" for easy identification. The messages we output from the echo terminal window should show up in the cat terminal window. This will test the output and input functionality of the serial port.

- 10. To prevent infinite loops of the echo message, in the cat terminal window, run command # stty -F /dev/ttyXRUSB0 -echo
- 11. In the cat terminal window, run command # cat /dev/ttyXRUSB0. This terminal will now print out all the input messages that the serial port receives.
- In the echo terminal window, run command # echo "insert_your_test_message"> /dev/ttyXRUSB0.
- 13. You should see the message printed out in the cat terminal window. If you don't see the message, try plugging in your serial cable along with the loopback connector into another serial port and repeat step 11.

```
root@localhost:~
                                                                             ×
File Edit View Search Terminal Help
[elo@localhost tmx-cups]$ sudo -i
[root@localhost ~]# echo "test"> /dev/ttyXRUSB0
[root@localhost ~]#
                                   root@localhost:~
                                                                             ×
File Edit View Search Terminal Help
[elo@localhost tmx-cups]$ sudo -i
[root@localhost ~]# stty -F /dev/ttyXRUSB0 -echo
[root@localhost ~]# cat
          catchsegv catman
cat
[root@localhost ~]# cat /dev/ttyXRUSB0
test
test
test
test
```

14. Once you've successfully tested the serial port, revert the echo setting by typing in the command:

stty -F /dev/ttyXRUSB0 echo

15. Repeat steps 6-13 on all serial ports.

Appendix B: Testing Cashdrawer Functionality

1. To test the cashdrawer functionality, first download the cashdrawer file from the Elo website onto the Elo computer. Once all files are downloaded, copy all serial port driver files from the last step into the cashdrawer folder.



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 Launch terminal and change to root user by running the command \$ su. Go to the downloaded cashdrawer directory using the cd command. For our computer, the command is # cd /home/elo/Downloads/cashDrawer.

[root@localhost ~]# cd /home/elo/Downloads/cashDrawer/

- Change the permissions of the drawer script by running the commands:
 # chmod 777./drawer
- 4. Run command:

./drawer init

- 5. Now you should be able to open the drawer(s) using the commands # ./drawer cda and # ./drawer cdb (to open cash drawer a and b).
- You should also be able to read drawer status by running the command # ./drawer state.

```
[root@localhost cashDrawer]# ./drawer state
Channel control mode.
Cash drawer is close.
reg value:0x1f1, state:0x0
[root@localhost cashDrawer]# ./drawer state
Channel control mode.
Cash drawer is open.
```

Appendix C: Testing Printer Functionality (USB)

For NCR Printer:

1. To test the NCR Printer functionality, first download the NCR_Printer file from the Elo website onto the Elo computer and make sure extract it in Linux system.



	CENTOS 7.7		GUIDE	TB000110	RE	V. B
< > 4	e Downloads NC	CR_printer >		۹ :: = -		×
⊘ Recent						
Documents	async	print.txt				
DownloadsMusic		·				
 Pictures Videos 						
圖 Trash						
NEW VO 🔺						
+ Other Locations						

- Launch terminal and change to root user by running the command \$ su. Go to the downloaded NCR_Printer directory using the cd command. For our computer, the command is # cd /home/elo/Downloads/NCR_Printer.
 - [root@localhost ~]# cd /home/elo/Downloads/NCR_printer/

3. Unplug and plugin printer cable. Check device node by running the command # ls /dev/ttyUSB* [root@localhost NCR_printer]# ls /dev/ttyUSB* /dev/ttyUSB0 Check USB device by running the command # lsusb

```
[root@localhost NCR_printer]# lsusb
Bus 002 Device 003: ID 0424:5807 Standard Microsystems Corp. Hub
Bus 002 Device 002: ID 0bda:0411 Realtek Semiconductor Corp.
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 007: ID 8087:0025 Intel Corp.
Bus 001 Device 009: ID 04e2:1422 Exar Corp.
Bus 001 Device 010: ID 0404:0311 NCR Corp. 7167 Printer, Receipt/Slip
```

9. Print by running the command

./async 0 print.txt true 5 false

[root@localhost NCR printer]# ./async 0 print.txt true 5 false Command format: # ./async [port] [message_path] [cut] [lines] [beep] [port]: device node, get from #ls /dev/ttyUSB* [message_path]: print content file [cut]: true or false, true: cut paper after print, false: not cut [lines]: int, blank lines [beep]: true or false, true: beep after print

For Epson TM20II Printer:

1. Driver download : <u>https://download.epson-</u>



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biz.com/modules/pos/index.php?page=single_soft&cid=5012&scat=32&pcat=52

- and make sure extract it in Linux system. Or it can be found in Elo driver pack.
- Launch terminal and change to root user by running the command \$ su. Go to the downloaded tmx-cups directory using the cd command. For our computer, the command is # cd /home/elo/Downloads/tmx-cups
 - [root@localhost ~]# cd /home/elo/Downloads/tmx-cups/
- 3. Install the driver by running the command #./install.sh and #./install-sc.sh [root@localhost tmx-cups]# ./install.sh [root@localhost tmx-cups]# ./install-sc.sh
- 4. Go to Setting => Device => Printer => TM-T20II => setting icon => Printer Details => Unlock.

< Devices			Printers	Q 🔒 Unlock	-	•	×
Displays							
🖽 Keyboard		TM-T2011		No Active Jobs	ø		
🖨 Mouse & Touchpad	Model	Ready EPSON TM Slip (rastertotmu)			T		
륨 Printers							
Removable Media							
 Thunderbolt 							
🖄 Wacom Tablet							
🔒 Color							

5. Go to Setting => Device => Printer => TM-T20II => setting icon => Printer Details => Install PPD File => select PPD file (tm-slip-rastertotmu.ppd.gz)

TM-T20II Details				
Name	TM-T201		7	
Location				
Address	localhost			
Driver	EPSON TM Slip (rastertotmu)			
	Search for Drivers			
	Select from Database			
	Install PPD File			

6. Go to Activities => LibreOffice Write and type any wording for testing. Then select the printer TM-T20II and print it out as below:



	Print				
	3.38 in	General LibreOffice Writer Page Layout Options			
	and the second sec	Printer	_		
		Print to File TM-T20II			
	.드	Details	perties		
=> 💻 =>	10.66	Range and Copies			

Reference document: TM/BA Series Printer Driver for Linux Driver Manual

https://download.delfi.com/SupportDL/Epson/Manuals/TM-T20/Drivers/Linux/tmxcups/manual/TmxDriverManual.en.html

Appendix D: Testing Printer Functionality (Serial)

For Epson TV88VI Printer:

1. Launch Terminal and change to the root by running the command \$ su

Ensure that you have the following packages pre-installed. cmake, gcc, gcc-c++, cups-devel. The following commands can check and install the latest packages.

- # yum install cmake
- # yum install gcc
- # yum install gcc-c++
- # yum install cups-devel

Ensure that Exar's USB serial driver installed in Appendix A: step1. If not, please follow Appendix A: step2 to step5.

2. Driver download : <u>https://download.epson-</u> biz.com/modules/pos/index.php?page=single_soft&cid=6408&pcat=3&pid=4983_

Driver file: tmx-cups-src-ThermalReceipt-3.0.0.0.tar.gz and make sure extract it in Linux system. Or it can be found in Elo driver pack.

Go to your Downloads folder and untar the driver package by the following command.

cd/home/elo/Downloads/ # tar zxvf tmx-cups-src-ThermalReceipt-3.0.0.0.tar.gz

Go to "Thermal Receipt" directory.



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Install the driver by running the command # ./build.sh and # ./install.sh

Register a printer by running the command # lpadmin -p TM-T88VI -v serial:/dev/ttyXRUSB1 -E Note: Use either ttyXRUSB0 or 1 depending on the port that you connect to.

ttyXRUSB1 ttyXRUSB0

Type commend # usermod -a -G sys elo

3. Open Firefox and go to http://localhost:631 or <a href="http:

Go to Printers \rightarrow TM-T88VI \rightarrow Administration \rightarrow Modify Printer.



Select "serial:/dev/ttyXRUSB1" and hit "Continue"



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Modify Printer - CUPS 1.6.3 - Mozilla Firefox							-	۰	×	
€ Modify Printer -	CUPS 1.6. ×	+								
← → ♂ ŵ	0	localhost:631/a	dmin/			⊠ ☆	111\		۲	≡
е но	me Ad	dministration	Classes	Online Help	Jobs	Printers	Search Help			
Modify	/ TM-T88	BVI							_	
	Current Con	nection: 💿 👡	rial:/dev/ttvXBL9	SB1						

Schulzdevityxhoobh
HP LaserJet M402n (117077) (Hewlett-Packard HP LaserJet M402n)
Internet Printing Protocol (http)
 Internet Printing Protocol (https)
Internet Printing Protocol (ipp)
Internet Printing Protocol (ipps)
AppSocket/HP JetDirect
LPD/LPR Host or Printer
Windows Printer via SAMBA
Continue

Change Baud Rate to 9600 and hit "Continue".

		Modify Print	ter - CUPS 1.6.3 - Mo	zilla Firefox			-	•	×
Modify Printer - CUPS 1.	6.× +								
← → ♂ ŵ	i localhost:631/a	dmin			ເ ☆) III\	5	٢	≡
Home	Administration	Classes	Online Help	Jobs	Printers	Search Help			
Modify TM-	T88VI								

Connection:	serial:/dev/ttyXF	USB1
Baud Rate:	9600 🗸	
Parity:	None 🗸	
Data Bits:	8 ~	
Flow Control:	None	~
	Continue	

Enter the Location and select you want to share this printer or not

Modify Printer - CUPS 1.6.3 - Mozilla Firefox									
C Modify	Printer - CU	PS 1.6. ×	+						
	C 🕜	0	localhost:631/	'admin					
e	Home	Adr	ministration	Classes	Online Help	Jobs	P		

Modify TM-T88VI

Description:	TM-T88VI
	(Human-readable description such as "HP LaserJet with Duplexer")
Location:	
	(Human-readable location such as "Lab 1")
Connection:	serial:/dev/ttyXRUSB1?baud=9600+bits=8+parity=none+flow=none
Sharing:	Share This Printer
	Continue

Click "Or Provide a PPD File" → "Browse"



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Modify Printer - CUPS 1.6.3 - Mozilla Firefox							-	•	×	
Modify F	rinter - CUPS 1	L.6. × +								
\rightarrow (ሮ ሰ	i localhost:631/a	admin			🛛 1	לא ווו\	1	۲	Ξ
6	Home	Administration	Classes	Online Help	Jobs	Printers	Search Help			
M	odify TM	-T88VI								
	Descr	iption: TM-T88VI								
	Loc	cation:	PUSB1							
	Sh	aring: Share This Pr	inter							
		Make: Apollo Apple Brother Canon Citizen Compaq DEC DNP Dymo Epson								
		Continue								
Or	Provide a PP	D File: Browse	No file selecte	d.						
		Modify Prin	o file selected							

Choose /usr/share/cups/model/EPSON/tm-ba-thermal-rastertotmtr-180.ppd

Cancel	File Upload						
⊘ Recent	Image:						
✿ Home	Name 👻	Size	Modified				
Documents	tm-ba-thermal-rastertotmtr-180.ppd	4.5 kB	14:35				
Downloads	tm-ba-thermal-rastertotmtr-203.ppd	4.5 kB	14:35				
A Music							
Pictures							
Videos							
🔳 3.9 GB V 🔺							
+ Other Locations							

Click "Modify Printer".

You can use the command: echo "ABCDE" > /dev/ttyXRUSB1 to test your serial printer.