

# ***Software Manual***

## ***Linux***

### ***Supported Models***

- ***TUP900 Series***
- ***TUP500 Series***

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## Introduction

This manual explains how to operate the CUPS printer driver using Fedora 9 as an example. Images provided are different for other versions of Fedora or other distributions, but the same procedures can be used.

The printer's IP address must be set in advance to use a printer that supports LAN using this driver. If your LAN environment does not allow acquisition of an IP address from a DHCP server, set the IP address to the printer in advance. See 3. Guidelines for Using an Ethernet Environment for details on how to set the IP address for the printer.

# 1. Installation/Uninstallation Procedures

## 1.1 Installing Printer Driver

To install the driver, proceed as follows.

**Caution** : Before installing the driver, connect the interface cable to the printer and turn on the power. See the hardware manual for details on how to connect the interface cable. The new version sometimes cannot be installed if an older version remains installed on your system. In such cases, see section 1.3 to uninstall the old version before installing a new version.

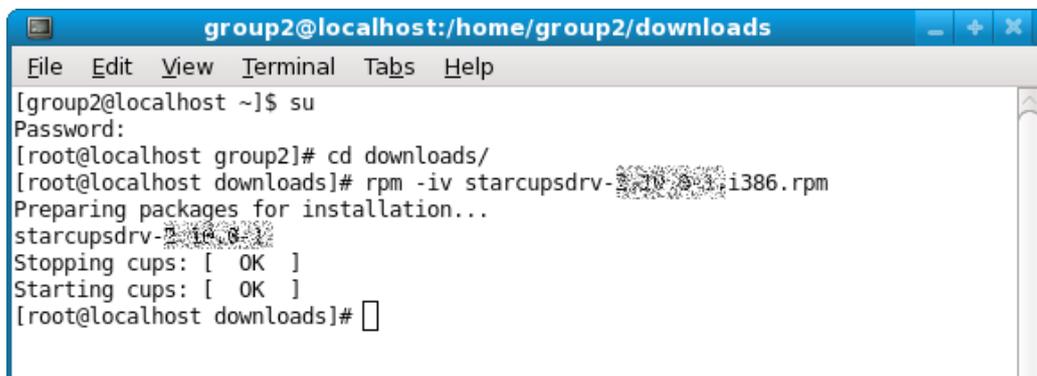
1. Startup the terminal.
2. Use the "su" command to enable root account privileges.  
    \$ su
3. Expand the starcupsdrv-x.xx.x\_linux\_yyyymmdd.tar.gz file.
4. Navigate to the directory where the rpm file "starcupsdrv-x.x.x-x.i386.rpm" is located.

Note: The x.x.x-x is module version.

    The yyyymmdd is the 8 digit date on which the package was release.

5. Run the rpm command using the 'i' and 'v' switches and the name of the RPM file.  
    rpm -iv starcupsdrv-x.x.x-x.i386.rpm

The RPM has been installed.



## Note: Debian GNU/Linux, ubuntu installation procedures

It is necessary to install from the source code.

Necessary package

- "gcc"
- "libcupsys2-dev"
- "libcupsimage2-dev"

After making sure that your PC is connected to the internet, perform the following operation to install the three packages above.

```
$ su -
```

(Use the "su" command to enable root account privileges.)

```
# apt-get update
```

```
# apt-get install gcc
```

```
# apt-get install libcupsys2-dev
```

```
# apt-get install libcupsimage2-dev
```

It is not possible to attain administrator rights using su on ubuntu, so instead enter the sudo command at the top of the command.

Ex.)

```
$ sudo apt-get install gcc
```

Copy the starcupsdrv-x.xx.x\_linux\_yyyymmdd.tar.gz file to your PC and perform the following operation.

```
# tar xzvf starcupsdrv-x.xx.x_linux_yyyymmdd.tar.gz
```

```
# cd starcupsdrv-x.xx.x_linux
```

```
# cd SourceCode
```

```
# tar xzvf starcupsdrv-src-x.xx.x.tar.gz
```

```
# cd starcupsdrv
```

```
# make
```

```
# make install
```

Note: The x.x.x-x is module version.

The yyyymmdd is the 8 digit date on which the package was release.

Next, enter the CUPS management screen (<http://localhost:631/admin>).

(Refer to section 1.2. Registering the Printer for details.)

## 1.2 Registering the Printer

Procedures for registering the printer differ according to the type of interface you use. See the page relating to your environment.

### 1.2.1 When Using an Interface other than Ethernet.

1. Open your favorite web browser and navigate to "http://localhost:631/admin".



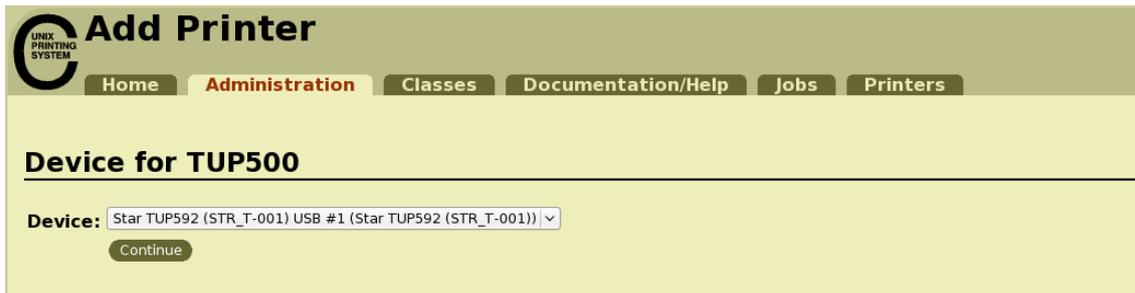
2. Click on the "Add Printer" button.

Note: When a dialog box is displayed requesting certification, enter the root password and press [Yes].

3. In the Add Printer screen, enter the printer name, location and description. Then click on the "Continue" button.

Location, and Description can be left blank.

4. Select the device(interface) to which the printer is connected. Then click on the “Continue” button.

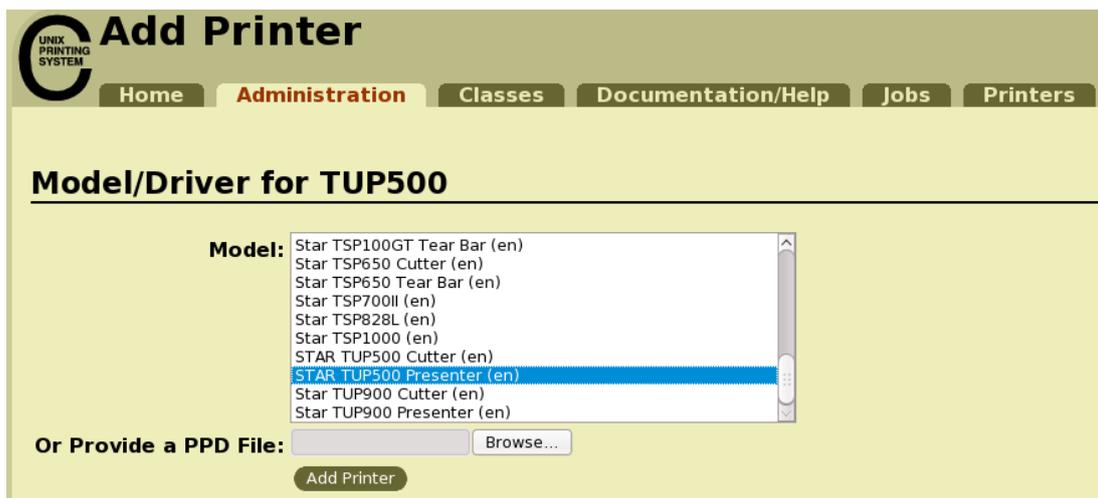


**Caution :** In the case of parallel interface, Star Model Name is not displayed in the Device pull-down menu.

In such cases, perform the following.

- 1) Select the "LPT #1 (Unknown)" as the Device, then click on the “Continue” button.
- 2) Click on the “Add Printer” on the Model/Driver screen.
- 3) Select "STAR" as the Make, then click on the “Continue” button.

5. Select the printer model/driver. Then click on the “Add Printer” button.

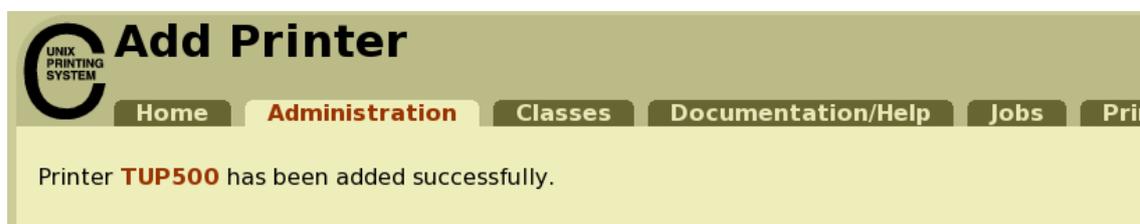


**Caution :** In some versions of CUPS, Star model name is not displayed in the model/driver pull-down menu.

In such cases, after performing the following, return to the previous page and reregister the printer.

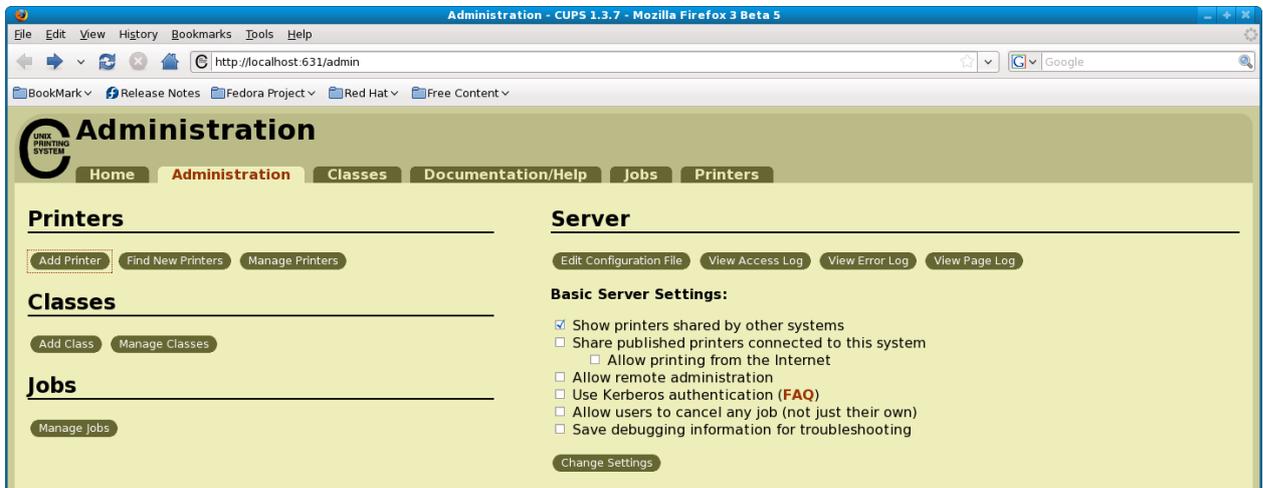
```
$ su  
# cp -fr /usr/share/cups/model/star /usr/share/ppd/star
```

This completes printer installation and registration.

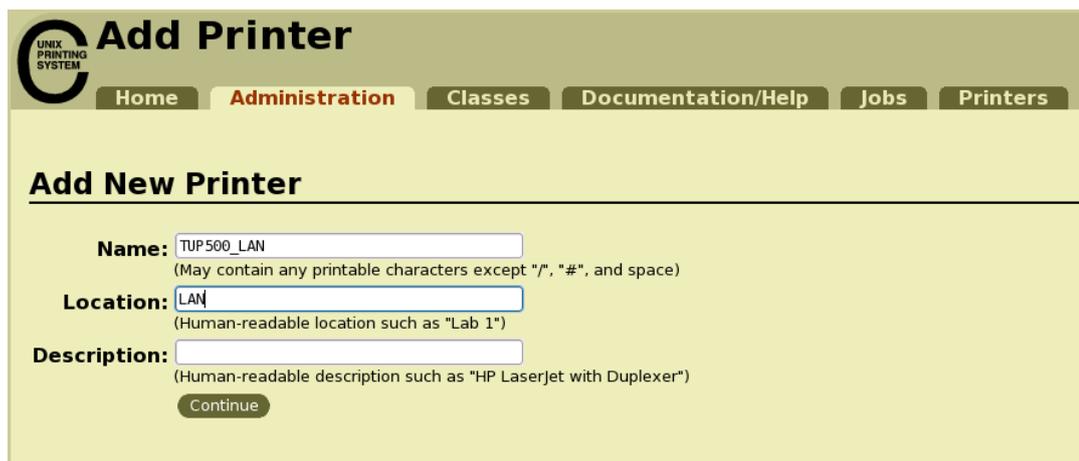


## 1.2.2 When using a Ethernet Interface

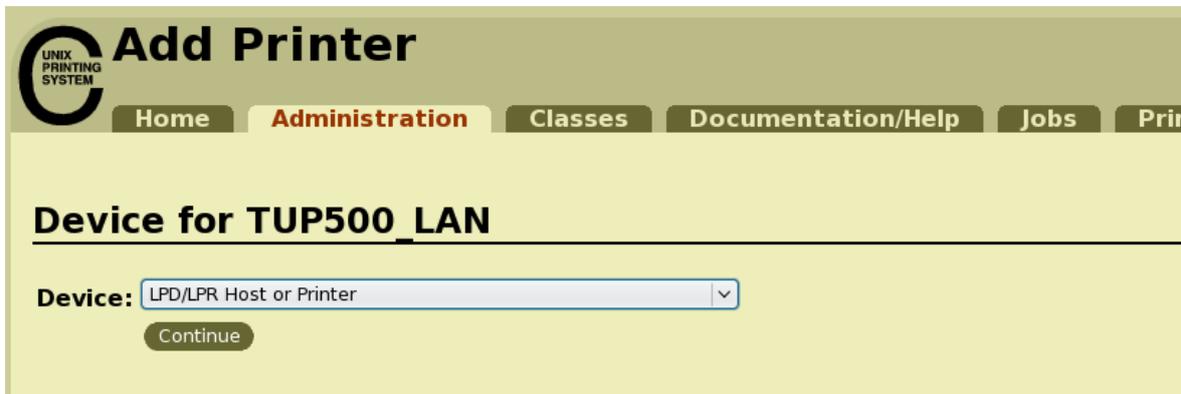
1. Open your favorite web browser and navigate to "http://localhost:631/admin".



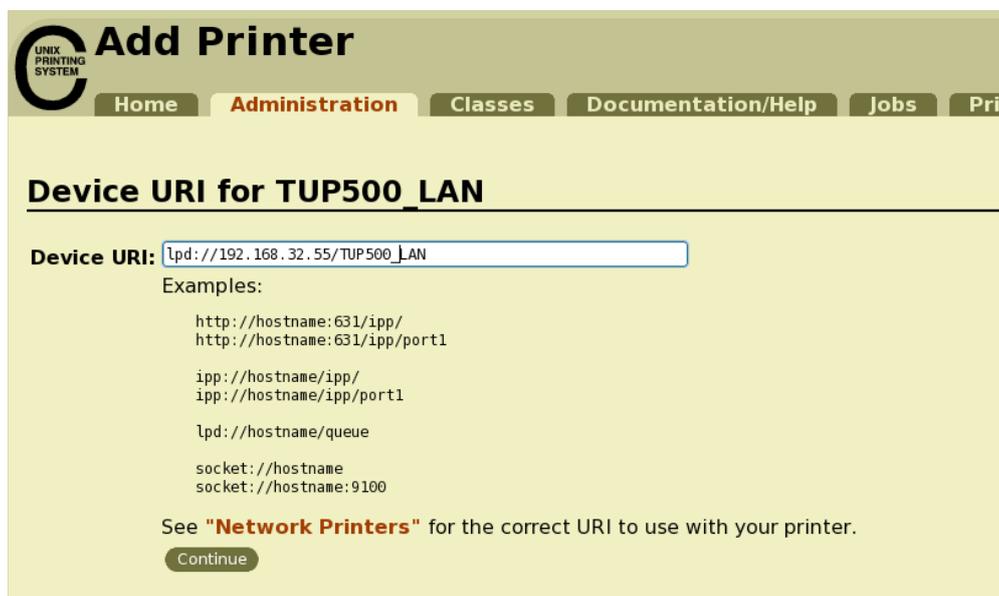
2. Click on the "Add Printer" button.  
Note: When a dialog box is displayed requesting certification, enter the root password and press [Yes].
3. In the Add Printer screen, enter the printer name, location and description. Then click on the "Continue" button.  
Location, and Description can be left blank.



4. Select the device (LPD/LPR HOST or Printer) to which the printer is connected. Then click on the "Continue" button.



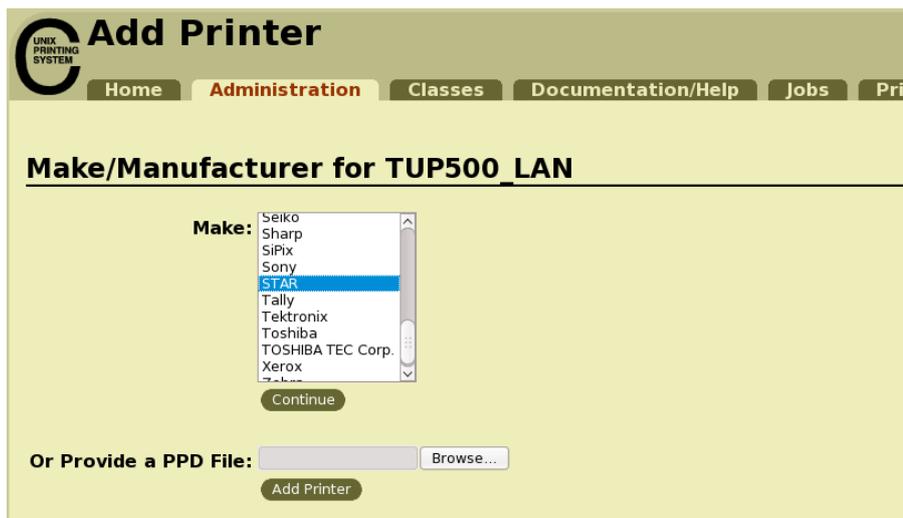
5. Specify the printer device on the URI.  
Specify the following URI for LPD protocols.  
lpd://<host name>/<queue-name>  
Host name is the IP address of the printer to set. (Check using self-print.)  
After entering, click on the "Add Printer" button.



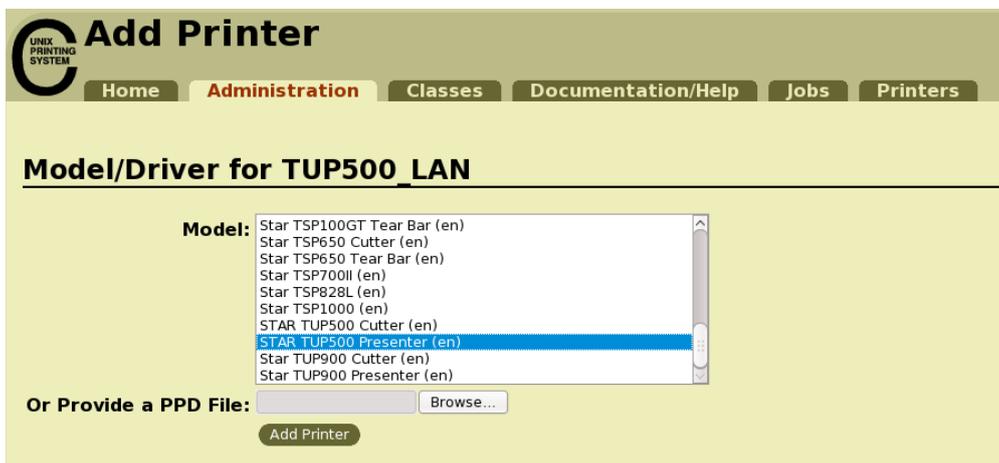
**Note** When using port 9100, set the following.

Device: AppSocket/HP Jet Direct  
Device URI: [ IP address of printer being set ] : 9100  
For example: socket://192.168.32.228 : 9100

6. Select "STAR" as the Make. Then click on the "Continue" button.



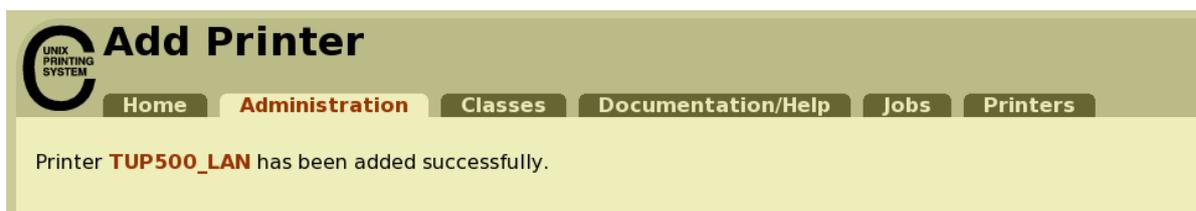
7. Select the printer model/driver. Then click on the "Add Printer" button.



**Caution:** In some versions of CUPS, Star model name is not displayed in the model/driver pull-down menu. In such cases, after performing the following, return to the previous page and reregister the printer.

```
$ su  
# cp -fr /usr/share/cups/model/star /usr/share/ppd/star
```

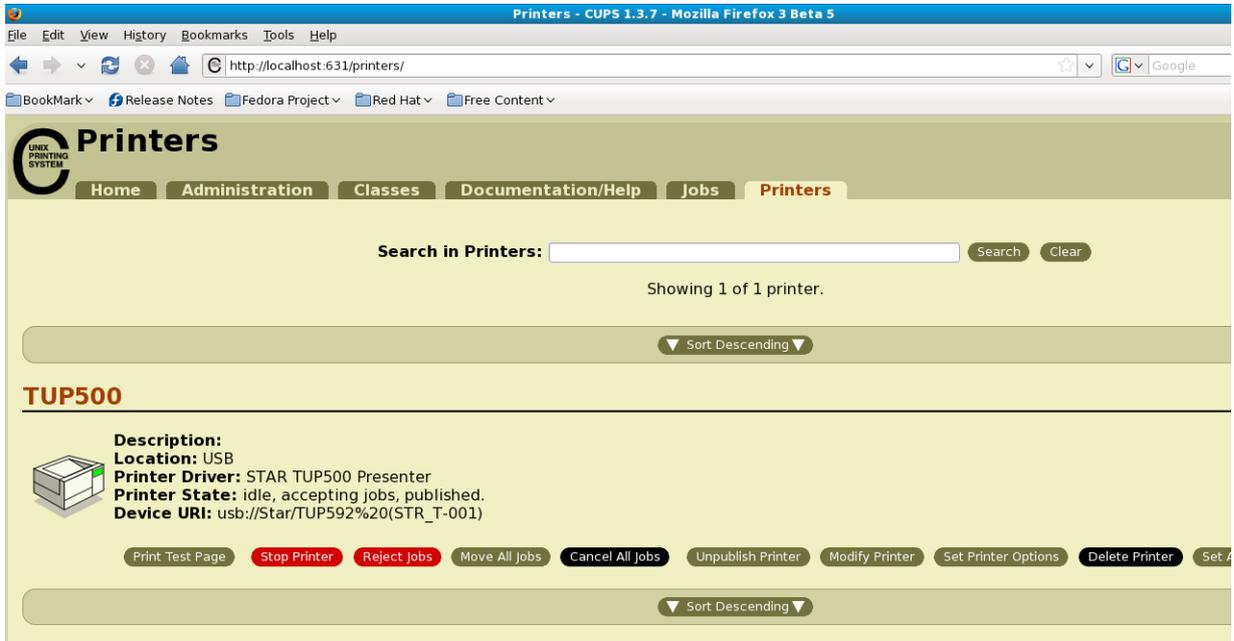
This completes printer installation and registration.



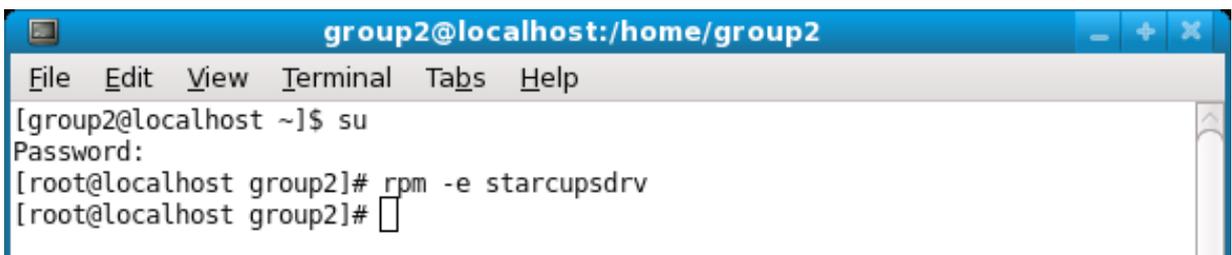
### 1.3. Uninstallation Procedures

To uninstall the driver, proceed as follows.

1. Open your favorite web browser and navigate to "http://localhost:631/printers". Click on the "Delete Printer" button to delete the registered printers.



2. Startup the terminal.
3. Use the "su" command to enable root account privileges.  
\$ su
4. Run the rpm command using the "e" switches.  
rpm -e starcupsdrv



#### Note: Debian GNU/Linux, ubuntu uninstalling procedures

- \$ cd "Source code highest level directory path"
- \$ su -
- # make remove

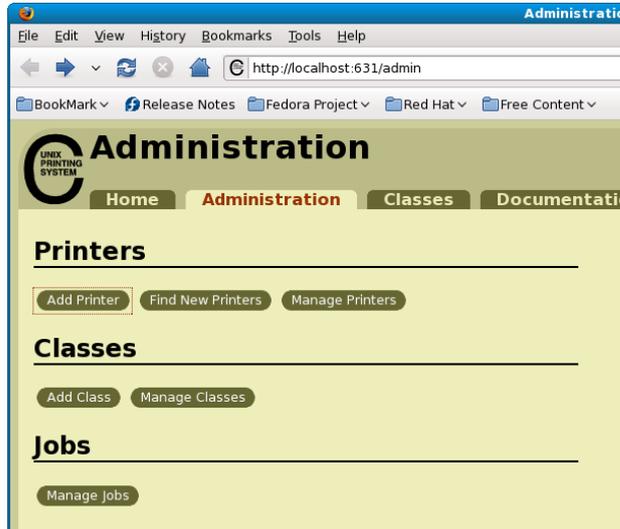
Enter the following if work in the notes on page 4 or 7 was performed.

- # rm -fr /usr/share/ppd/star

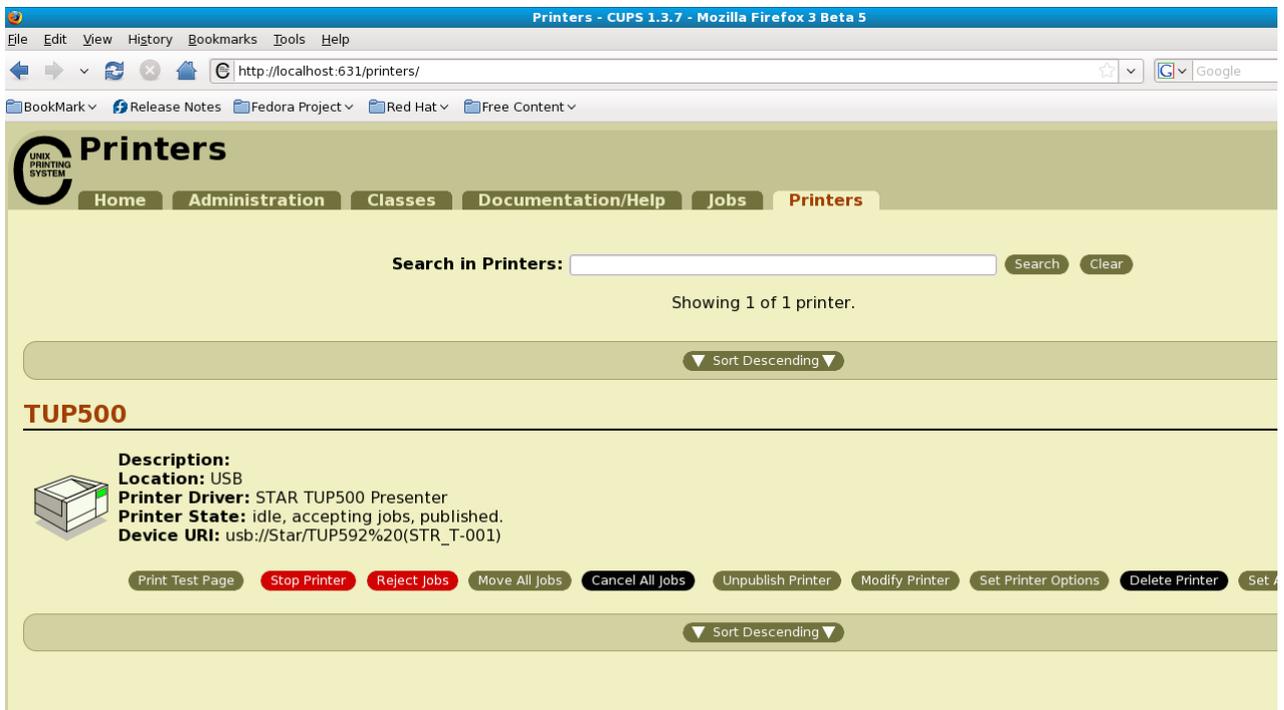
## 2. Setting the Printer Functions

Setting the printer functions is done on the Web browser CUPS management screen.

1. Access the CUPS management screen (<http://localhost:631/admin>) using the web browser. Click on the "Manage Printers" button.



2. An earlier printer driver is registered, so to change the setting, click on the "Set Printer Options" button.



**Set Printer Options**

Home Administration Classes Documentation/Help Jobs Printers

---

### TUP500: General

Media Size: A4

---

### TUP500: Output Options

1. Print Speed: Standard   
2. Page Type: Variable Length   
3. Top Search: Disable

---

### TUP500: Cut Options

1. Document Cut Type: Full Cut All Pages

---

### TUP500: Presenter Control

1. Presenter Action: Loop - Hold - Retract   
2. Presenter Timeout: Do Not Timeout

---

### TUP500: Snout Group

1. Snout Control: Disable   
2. Snout LED Green Interval: Default (100 millisc)   
3. Snout LED Red Interval: Default (100 millisc)

## 2.1 Function List

Depending on the printer that you select, the functions that are displayed may differ, and only the ones displayed can be set.

### ■ General

1. Media Size: (paper size)  
The next page shows the paper sizes.

**Note** When a paper size is selected that exceeds the maximum printing width, the print is shrunk to fit the maximum printing width.

The following paper sizes are available and can be set.

Paper Size	Supporting Models			
	TUP942	TUP992	TUP542	TUP592
51 * 30mm			○	
51 * 40mm			○	
51 * 50mm			○	
51 * 60mm			○	
51 * 70mm			○	
51 * 75mm			○	○
51 * 80mm			○	○
51 * 90mm			○	○
51 * 100mm			○	○
51 * 110mm			○	○
51 * 120mm			○	○
51 * 130mm			○	○
51 * 140mm			○	○
51 * 150mm			○	○
51 * 160mm			○	○
51 * 170mm			○	○
51 * 180mm			○	○
51 * 190mm			○	○
51 * 200mm			○	○
51 * 300mm			○	○
51 * 2000mm			○	
56 * 30mm	○	○		
56 * 40mm	○	○		
56 * 50mm	○	○		
56 * 60mm	○	○		
56 * 70mm	○	○		
56 * 75mm	○	○		
56 * 80mm	○	○		
56 * 90mm	○	○		
56 * 100mm	○	○		
56 * 110mm	○	○		
56 * 120mm	○	○		
56 * 130mm	○	○		
56 * 140mm	○	○		
56 * 150mm	○	○		
56 * 160mm	○	○		
56 * 170mm	○	○		
56 * 180mm	○	○		
56 * 190mm	○	○		
56 * 200mm	○	○		
56 * 300mm	○	○		
56 * 2000mm	○	○		
68 * 30mm			○	
68 * 40mm			○	
68 * 50mm			○	
68 * 60mm			○	
68 * 70mm			○	
68 * 75mm			○	○
68 * 80mm			○	○
68 * 90mm			○	○
68 * 100mm			○	○
68 * 110mm			○	○
68 * 120mm			○	○
68 * 130mm			○	○
68 * 140mm			○	○
68 * 150mm			○	○
68 * 160mm			○	○
68 * 170mm			○	○
68 * 180mm			○	○
68 * 190mm			○	○
68 * 200mm			○	○
68 * 300mm			○	○
68 * 2000mm			○	

Paper Size	Supporting Models			
	TUP942	TUP992	TUP542	TUP592
72 * 30mm	○	○	○	
72 * 40mm	○	○	○	
72 * 50mm	○	○	○	
72 * 60mm	○	○	○	
72 * 70mm	○	○	○	
72 * 75mm	○	○	○	○
72 * 80mm	○	○	○	○
72 * 90mm	○	○	○	○
72 * 100mm	○	○	○	○
72 * 110mm	○	○	○	○
72 * 120mm	○	○	○	○
72 * 130mm	○	○	○	○
72 * 140mm	○	○	○	○
72 * 150mm	○	○	○	○
72 * 160mm	○	○	○	○
72 * 170mm	○	○	○	○
72 * 180mm	○	○	○	○
72 * 190mm	○	○	○	○
72 * 200mm	○	○	○	○
72 * 300mm	○	○	○	○
72 * 2000mm	○	○	○	
80 * 30mm	○	○	○	
80 * 40mm	○	○	○	
80 * 50mm	○	○	○	
80 * 60mm	○	○	○	
80 * 70mm	○	○	○	
80 * 75mm	○	○	○	○
80 * 80mm	○	○	○	○
80 * 90mm	○	○	○	○
80 * 100mm	○	○	○	○
80 * 110mm	○	○	○	○
80 * 120mm	○	○	○	○
80 * 130mm	○	○	○	○
80 * 140mm	○	○	○	○
80 * 150mm	○	○	○	○
80 * 160mm	○	○	○	○
80 * 170mm	○	○	○	○
80 * 180mm	○	○	○	○
80 * 190mm	○	○	○	○
80 * 200mm	○	○	●	●
80 * 300mm	○	○	○	○
80 * 2000mm	○	○	○	
104 * 30mm	○	○		
104 * 40mm	○	○		
104 * 50mm	○	○		
104 * 60mm	○	○		
104 * 70mm	○	○		
104 * 75mm	○	○		
104 * 80mm	○	○		
104 * 90mm	○	○		
104 * 100mm	○	○		
104 * 110mm	○	○		
104 * 120mm	○	○		
104 * 130mm	○	○		
104 * 140mm	○	○		
104 * 150mm	○	○		
104 * 160mm	○	○		
104 * 170mm	○	○		
104 * 180mm	○	○		
104 * 190mm	○	○		
104 * 200mm	●	●		
104 * 300mm	○	○		
104 * 2000mm	○	○		
A4	○	○	○	○
Letter	○	○	○	○
Legal	○	○	○	○

\* ● is the default setting value.

In some cases, they won't function depending on the application being used

**■ Output Options**

**Print Speed:**

Sets the print speed. Note that the setting also affects the print quality.

Setting	Default	Details
Standard	<input type="radio"/>	Priority is given to print speed over print quality.
Middle		Sets print quality and print speed to intermediate level.
Low		Provides the highest print quality but lowers print speed.
High *		Gives maximum priority to print speed. Speed is limited by paper width and by diameter of paper roll.

\* TUP500 series only.

**Note :** Available speed settings may vary according to paper width, roll diameter, and paper type. For more information, refer to the Product Specifications Manual (issued separately).

**Page Type:**

This sets the page type.

Setting	Default	Details
Variable Length	<input type="radio"/>	Does not output blank data until the bottom of the page. Receipt ends after final data is printed.
Fixed Length		Outputs blank data as a blank until the bottom of the page. Receipt ends after printing the length specified by paper size.

**Top Search:**

Selects whether the printer executes a reverse-feed before print.

Setting	Default	Details
Disable	<input type="radio"/>	No reverse-feed before print.
Enable		Executes reverse-feed before print.

## ■ Cut Options ( Model Without the Presenter )

### Page Cut Type:

This sets the cutting method for the end of all pages, excluding the last page.

Setting	Default	Details
No Cut	○	Does not perform a cut and page feed.
Partial Cut *1		Feeds paper to cutting position, then cuts the paper, leaving one uncut point in center of paper.
Full Cut		Paper is fed to cutting position, then a full cut is applied.

\*1 Not supported by model.

### Document Cut Type:

This sets the cutting method for the last page.

Setting	Default	Details
No Cut		Does not perform a cut and page feed.
Partial Cut * 1	○ ( TUP942 )	Feeds paper to cutting position, then cuts the paper, leaving one uncut point in center of paper.
Full Cut	○ ( TUP542 )	Paper is fed to cutting position, then a full cut is applied.
Tear Bar *1		Paper is fed to the tear bar. (cutting position)

\*1 Not supported by model.

## ■ Cut Options ( Presenter Model )

### Document Cut Type:

This sets the cutting method.

Setting	Default	Details
Full Cut All Pages	○	Cuts all pages.(Feeds each page to the cut position, then cuts it.)
Full Cut Last Pages		Cuts last page of document when that page reaches the cut position. (Does not cut each page.)

■ **Presenter Control ( Presenter Model )**

**Presenter Action:**

Sets the presenter operation.

Setting	Default	Details
Loop - Hold - Retract	○	After printing is completed, presents (outputs and holds) the printed paper and waits for it to be removed. Retracts the paper if it is not removed within the specified retraction time.
Loop - Hold - Eject		After printing is completed, presents (outputs and holds) the printed paper and waits for it to be removed. Ejects the paper if it is not removed within the specified retraction time.
No Loop - Hold - Retract		Begins outputting the paper while printing is in progress, then holds it and waits for its removal. Retracts the paper if it is not removed within the specified retraction time.
No Loop - Hold - Eject		Begins outputting the paper while printing is in progress, then holds it and waits for its removal. Ejects the paper if it is not removed within the specified retraction time.
No Loop - No Hold - Eject		Outputs the paper while printing is in progress, and then ejects it. Does not hold the paper.

**Presenter Timeout:**

Sets amount of time the "Presenter Action".

Setting	Default	Details
Do Not Timeout	○	Holds paper until it is removed.
10 - 120 seconds		Sets amount of time the presenter will hold out the printed paper before either retracting or ejecting it. Can be set in 10-second increments.

**Note:** If the Presenter Action is set to "NoLoop - NoHold - Eject", the Presenter Timeout setting is meaningless and the presenter will eject the paper without holding it.

■ Snout ( TUP500 Presenter Model )

**Snout Control:**

Sets the snout LED operation.

Setting	Default	Details
Disable	○	Snout not used.
Snout LED GREEN Enable		Green LED blinks during printing.
Snout LED RED Enable		Red LED blinks when error occurs. (paper out, etc.)
Snout LED GREEN and RED Enable		Green LED blinks during printing, and red LED blink when error occur. (paper out, etc.)

**Note :** Snout LEDs are optional devices.

**Snout LED GREEN Interval:**

Sets the blink interval for the green LED.

Setting	Default	Details
Default (100 milliseconds)	○	Blink every 0.1 seconds.
200 milliseconds		Blink every 0.2 seconds.
500 milliseconds		Blink every 0.5 seconds.
1000 milliseconds		Blink once per second.

**Snout LED Red Interval:**

Sets the blink interval for the red LED.

Setting	Default	Details
Default (100 milliseconds)	○	Blink every 0.1 seconds.
200 milliseconds		Blink every 0.2 seconds.
500 milliseconds		Blink every 0.5 seconds.
1000 milliseconds		Blink once per second.

### 3. Guidelines for Using an Ethernet Environment

The printer's IP address must be set in advance to use a printer that supports LAN using this driver. If your LAN environment does not allow acquisition of an IP address from a DHCP server, set the IP address to the printer in advance.

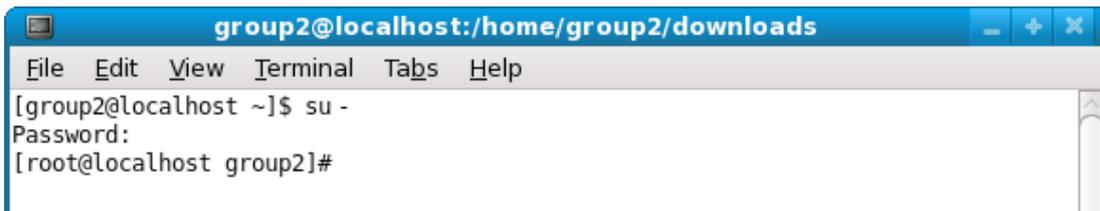
#### 3.1 Setting a Temporary IP Address

Use the following procedures to set a temporary IP address to the printer. By setting a temporary IP address, it is possible to connect to a printer that has not been set with an IP address.

**Caution :** Printer settings should be done by a user with administrator rights.

**Note** A MAC address of the printer to be set is necessary for the temporary IP address. Confirm the MAC address in a self-print from the printer. See the Hardware Manual for details on running a self-print.

1. Startup the terminal.
2. Use the "su" command to enable root account privileges.



3. Execute the following command in the terminal to set a temporary IP address to the printer.

1. arp -d [Printer temporary IP address]
2. arp -s [Printer temporary IP address] [Printer MAC address]
3. ping -c 4 [Printer temporary IP address]
4. arp -d [Printer temporary IP address]

*Example of temporary IP address (192.168.32.228)*

```
arp -d 192.168.32.228
arp -s 192.168.32.228 00:11:62:04:83:98
ping -c 4 192.168.32.228
arp -d 192.168.32.228
```

**Note:** When you use Ubuntu, do not input "su -" command and input "sudo arp" command instead of "arp" command.  
The temporary IP address set here is erased when the printer power is turned off.  
Continue by setting the IP address.

Use "exit" command to exit super user status.

### 3.2 Setting the IP Address (TELNET Utility)

The Telnet command connects directly to the printer to make settings.

1. Startup the terminal.
2. Use the Telnet command to connect to the printer to set.

Ex. >telnet 192.168.32.228 (The IP address of the printer to be set.)

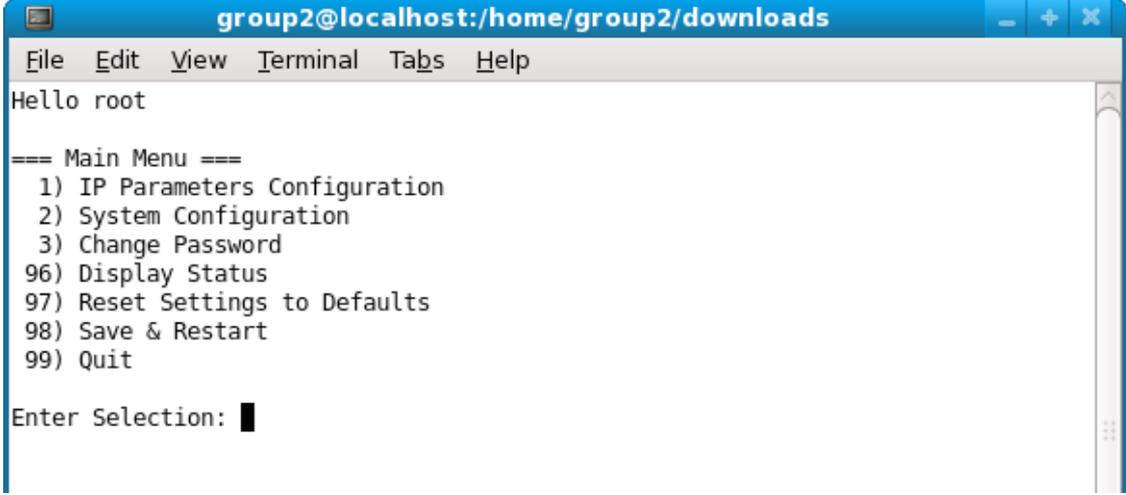
**Note:** You cannot connect to a printer that does not have an IP address. See section 3.1 Setting a Temporary IP Address for details on setting such an address on the printer in advance.

3. Log-in to the printer to be set as a "root" user.  
The default password is "public."  
To change the password, input the changed password.



4. The following menu is displayed.
  - 1) IP Parameters Configuration
  - 2) System Configuration
  - 3) Change Password
  - 96) Display Status
  - 97) Reset Settings to Defaults
  - 98) Save and Restart
  - 99) QuitEnter Selection

Input the number that corresponds to your selection.

A screenshot of a terminal window titled "group2@localhost:/home/group2/downloads". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a greeting "Hello root" followed by a menu titled "=== Main Menu ===". The menu items are: "1) IP Parameters Configuration", "2) System Configuration", "3) Change Password", "96) Display Status", "97) Reset Settings to Defaults", "98) Save & Restart", and "99) Quit". Below the menu, the prompt "Enter Selection:" is followed by a cursor.

```
group2@localhost:/home/group2/downloads
File Edit View Terminal Tabs Help
Hello root

=== Main Menu ===
 1) IP Parameters Configuration
 2) System Configuration
 3) Change Password
96) Display Status
97) Reset Settings to Defaults
98) Save & Restart
99) Quit

Enter Selection: █
```

5. When all settings are completed, save the changes using "98( Save and Restart)" - "1(Save & Restart device & Configuration printing)", or "2 (Save & Restart device)". The settings of the printer will be saved. Reset the printer.

## 4. Guidelines for Using the lpr Command

When printing using the lpr command from the command line, you can specify options with the following format.

```
$lpr -o [option]=[value] -o [option]=[value] ... [Filename]
```

In [option] and [value], specify the name shown in the command "specify name" in section 4.1 List of Supported Functions".

Also for options not specified, print using the default driver settings.

**Point!** Use the printer name confirmed using the "lpstat -p" command, when specifying the printer name using the option "-P".

### Use Example 1

```
Printer Name : TUP542_STR_T_001_  
File Name : sample1.txt  
Paper Size * : 80 * 200mm  
Margin(top) * : 0mm  
Margin(bottom) * : 0mm  
Margin(left) * : 0mm  
Margin(right) * : 0mm
```

\* This option is not a printer driver option, but an OS standard option.

```
$ lpr -P TUP542_STR_T_001_ -o media="X80MMY200MM"  
-o page-top=0 -o page-bottom=0 -o page-left=0  
-o page-right=0 sample1.txt
```

### Use Example 2

```
File Name : sample2.txt  
Print Speed : Low
```

```
$ lpr -o PrintSpeed=2Low sample2.txt
```

### Use Example 3

```
File Name : sample3.txt  
Document Cut Type : No Cut
```

```
$ lpr -o DocCutType=0NoCutDoc sample3.txt
```

## 4.1 Function List

See section 2.1 Function List for the details on the functions.

	Model Name ( Driver Display )		Command Specification Name		Supporting Models				
	option	value	[ option ]	[ value ]	TUP 942	TUP 992	TUP 542	TUP 592	
Output Option	Print Speed	High	PrintSpeed	0High	●	●			
		Middle		1Middle	○	○			
		Low		2Low	○	○			
	Print Speed	Standard	PrintSpeed	0Standard			●	●	
		Middle		1Middle			○	○	
		Low		2Low			○	○	
		High		3High			○	○	
	Page Type	Variable Length	PageType	0Variable	●	●	●	●	
		Fixed Length		1Fixed	○	○	○	○	
	Top Search	Disable	TopSearch	0Disable	●	●	●	●	
Enable		1Enable		○	○	○	○		
Cut Options ( Cutter )	Page Cut Type	No Cut	PageCutType	0NoCutPage	●		●		
		Partial Cut		1PartialCutPage	○				
		Full Cut		2FullCutPage	○		○		
	Document Cut Type	No Cut	DocCutType	0NoCutDoc	○		○		
		Partial Cut		1PartialCutDoc	●				
		Full cut		2FullCutDoc	○		●		
		Tear Bar		3TearBarDoc	○				
Cut Options ( Presenter )	Document Cut Type	Full Cut All Pages	DocCutType	4FullCutAllPages		●		●	
		Full Cut Last Page		5FullCutLastPage		○		○	
Presenter Control ( Presenter )	Presenter Action	Loop - Hold - Retract	PresenterAction	0LoopHoldRetract		●		●	
		Loop - Hold - Eject		1LoopHoldEject		○		○	
		No Loop - Hold - Retract		2NoLoopHoldRetract		○		○	
		No Loop - Hold - Eject		3NoLoopHoldEject		○		○	
		No Loop - No Hold - Eject		4NoLoopNoHoldEject		○		○	
	Presenter Timeout	Do Not Timeout	10 Seconds	PresenterTimeout	0DoNotTimeout		●		●
			20 Seconds		1Timeout10Sec		○		○
			30 Seconds		2Timeout20Sec		○		○
			40 Seconds		3Timeout30Sec		○		○
			50 Seconds		4Timeout40Sec		○		○
			60 Seconds		5Timeout50Sec		○		○
			70 Seconds		6Timeout60Sec		○		○
			80 Seconds		7Timeout70Sec		○		○
			90 Seconds		8Timeout80Sec		○		○
			100 Seconds		9Timeout90Sec		○		○
			110 Seconds		10Timeout100Sec		○		○
			120 Seconds		11Timeout110Sec		○		○
			12Timeout120Sec		○		○		

Model Name ( Driver Display )		Command Specification Name		Supporting Models			
				TUP 942	TUP 992	TUP 542	TUP 592
option	value	[ option ]	[ value ]				
Snout	Snout Control	SnoutControl	0Disable				●
			1Snout1Enable				○
			2Snout2Enable				○
			3Snout1and2Enable				○
	Snout LED Green Interval	Snout1Interval	0Snout1Default				●
			1Snout1200milliseconds				○
			2Snout1500milliseconds				○
			3Snout11000milliseconds				○
	Snout LED Red Interval	Snout2Interval	0Snout2Default				●
			1Snout2200milliseconds				○
			2Snout2500milliseconds				○
			3Snout21000milliseconds				○

\* ● is the default setting value.  
 In some cases, they won't function depending on the application being used.

## 5. Confirmed Operating Environments

Distribution	Version
Red Hat Enterprise Linux	5.3
CentOS	5.2
openSUSE	10.3
Fedora	9
ubuntu	8.04





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