

process

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1 Preparation

- Removed `pcie_aspm=off` option from kernel line in `/boot/syslinux/syslinux.cfg`
- Checked contents of `/etc/modprobe.d/` for anything relevant
 - `iwlwifi.conf` contains option `led_mode=1`
 - `modprobe.conf` blacklists `uvcvideo` and `pcspkr`
 - `nouveau.conf` present, but currently using `nvidia`
- Checked [Arch wiki](#) on IPv6 for any potential modifications
 - No option passed to kernel line via `syslinux`
 - Nothing in `/etc/sysctl.d/`
 - Removed comment character from `ipv6` line in `/etc/hosts`
 - Commented out `noipv6rs` line in `/etc/dhcpd.conf`
- Printing related packages checked for:

```
pacman -Q | grep cups
```

```
cups 1.7.1-3  
cups-filters 1.0.44-2  
cups-pdf 2.6.1-2  
libcups 1.7.1-3
```

```
pacman -Q | grep hp
```

```
hplip 3.14.1-1
```

```
pacman -Q | grep foo
```

```
foomatic-db 3:20140121-1  
foomatic-db-engine 3:20140121-1
```

- Cups related configs found; copied to backup dir

```
find / -name cups*.conf 2> /dev/null
```

```
/etc/dbus-1/system.d/cups.conf  
/etc/cups/cupsd.conf  
/etc/cups/cups-browsed.conf  
/etc/cups/cups-files.conf  
/etc/cups/cups-pdf.conf
```

- Remove anything cups related

```
# systemctl stop cups.service  
# systemctl stop cups.path  
# systemctl stop cups.socket
```

```
# systemctl disable cups.service  
# systemctl disable cups.path  
# systemctl disable cups.socket
```

```
# pacman -Rsc cups  
Packages (3): bc-1.06.95-1 cups-pdf-2.6.1-2 cups-1.7.1-3
```

```
# pacman -Rsc cups-filters  
Packages (6): foomatic-db-3:20140121-1 foomatic-db-engine-3:20140121-1 hplip-3.14.1-1  
net-snmp-5.7.2-8 qpdf-5.1.1-1 cups-filters-1.0.44-2
```

- Removed everything related to cups in /var/spool
- Added new user with same groups as my user

```
sudo useradd -m -g users -G lp,wheel,uucp,network,video,audio,optical,storage \\  
-s /bin/bash cupstest
```

- Caught up on migrating all my *.pacnew config files...

- Re-installed cups

```
# pacman -S cups
Packages (4): bc-1.06.95-1 cups-filters-1.0.44-2 qpdf-5.1.1-1 cups-1.7.1-3
```

2 Test with ipv6 enabled

2.1 Default user (successful)

- Login after fresh boot
- Start cups socket and path

```
# systemctl start cups.socket
# systemctl start cups.path
```

```
systemctl status cups.socket
systemctl status cups.path
```

```
cups.socket - CUPS Printing Service Sockets
  Loaded: loaded (/usr/lib/systemd/system/cups.socket; disabled)
  Active: active (listening) since Sat 2014-02-15 14:05:30 CST; 40s ago
  Listen: /run/cups/cups.sock (Stream)
          [::]:631 (Stream)
```

```
Feb 15 14:05:30 bigBang systemd[1]: Starting CUPS Printing Service Sockets.
Feb 15 14:05:30 bigBang systemd[1]: Listening on CUPS Printing Service Sockets.
```

- Go to localhost:631 in chromium

2.2 User cupstest (successful)

- Fresh boot
- Copied .xinitrc and openbox config dir from default user to cupstest, followed by `chown -R cupstest:users [...] for both`
- Login
- Start cups socket and path

```
# systemctl start cups.socket
# systemctl start cups.path
```

3 Test with ipv6 disabled

Simply commented out ipv6 line in /etc/hosts/ prior to rebooting:

```
cat /etc/hosts
```

```
#
# /etc/hosts: static lookup table for host names
#
#<ip-address> <hostname.domain.org> <hostname>
127.0.0.1      localhost.localdomain localhost bigBang
#::1          localhost.localdomain localhost bigBang
# End of file
```

3.1 Default user (unsuccessful)

- Login after fresh boot

```
systemctl status cups.socket
systemctl status cups.path
```

- Go to localhost:631 in chromium; get "Bad Request" message

```
cat /var/log/cups/error_log
```

```
E [15/Feb/2014:14:22:02 -0600] Unable to bind socket for address [v1:::1]:631 - Address already in use.
E [15/Feb/2014:14:22:02 -0600] Unable to bind socket for address 127.0.0.1:631 - Address already in use.
E [15/Feb/2014:14:22:04 -0600] [Client 13] Request from "[v1:::127.0.0.1]" using invalid Host: field "localhost:631"
E [15/Feb/2014:14:22:04 -0600] [Client 14] Request from "[v1:::127.0.0.1]" using invalid Host: field "localhost:631"
E [15/Feb/2014:14:22:04 -0600] [Client 15] Request from "[v1:::127.0.0.1]" using invalid Host: field "localhost:631"
```

```
ss -ltn|grep 631
```

```
tcp    LISTEN      0          128          :::631          :::*          users:(("cupsd",901,4),("systemd",1,44))
```

- Stopped cups.{socket,path,service} and removed comment from /etc/hosts ipv6 line

```
systemctl stop cups.socket
systemctl stop cups.path
systemctl stop cups.service
```

```
cat /etc/hosts
```

```
#
# /etc/hosts: static lookup table for host names
#
#<ip-address> <hostname.domain.org> <hostname>
127.0.0.1      localhost.localdomain localhost bigBang
::1           localhost.localdomain localhost bigBang
# End of file
```

- Retry ss -lpn|grep 631; no results
- Restart cups.{socket,path}

```
systemctl start cups.socket
systemctl start cups.path
```

- Visit localhost:631 in chromium; works
- Check ss output; looks about the same

```
ss -lpn|grep 631
```

```
tcp    LISTEN    0      128             :::631          :::*           users:(("cupsd",5040,4),("systemd",1,39))
```

- Re-commented out ipv6 line in etc/hosts
- Add BindIPv6Only line to cups.socket

```
systemctl stop cups.path
systemctl stop cups.socket
systemctl stop cups.service
```

```
# edit cups.socket
cat /usr/lib/systemd/system/cups.socket

[Unit]
Description=CUPS Printing Service Sockets

[Socket]
ListenStream=/run/cups/cups.sock
ListenStream=631
BindIPv6Only=both

[Install]
WantedBy=sockets.target

systemctl start cups.socket
systemctl start cups.path
```

- Visit localhost:631 in chromium; works again!

```
$ sudo ss -napt |grep 631
TIME-WAIT 0 0 127.0.0.1:37696 127.0.0.1:631
TIME-WAIT 0 0 127.0.0.1:37695 127.0.0.1:631
TIME-WAIT 0 0 127.0.0.1:37697 127.0.0.1:631
TIME-WAIT 0 0 127.0.0.1:37694 127.0.0.1:631
TIME-WAIT 0 0 127.0.0.1:37698 127.0.0.1:631
TIME-WAIT 0 0 127.0.0.1:37693 127.0.0.1:631
LISTEN 0 128 :::631 :::* users:(("cupsd",5359,4),("systemd",1,39))
```

- Stop cups.{path,socket,service}
- Remove BindIPv6Only line from cups.socket
- Start cups.{socket,path}
- Visit localhost:631 in chromium, get "Bad Request"

```
$ sudo ss -napt |grep 631
ESTAB 0 0 127.0.0.1:37702 127.0.0.1:631 users:(("chromium",837,99))
ESTAB 0 0 127.0.0.1:37703 127.0.0.1:631 users:(("chromium",837,101))
ESTAB 0 0 127.0.0.1:37704 127.0.0.1:631 users:(("chromium",837,103))
LISTEN 0 128 :::631 :::* users:(("cupsd",5518,4),("systemd",1,39))
TIME-WAIT 0 0 ::ffff:127.0.0.1:631 ::ffff:127.0.0.1:37699
TIME-WAIT 0 0 ::ffff:127.0.0.1:631 ::ffff:127.0.0.1:37701
TIME-WAIT 0 0 ::ffff:127.0.0.1:631 ::ffff:127.0.0.1:37700
ESTAB 0 0 ::ffff:127.0.0.1:631 ::ffff:127.0.0.1:37703 users:(("cupsd",5518,16))
ESTAB 0 0 ::ffff:127.0.0.1:631 ::ffff:127.0.0.1:37704 users:(("cupsd",5518,17))
ESTAB 0 0 ::ffff:127.0.0.1:631 ::ffff:127.0.0.1:37702 users:(("cupsd",5518,15))
```