System Administration
Assignment 4
Due: 26th October 2016

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1. Windows boot loader does not detect previous OS in the system and thus overwrites them. This messes up the Master Boot Loader and GRUB which does not allow us to boot into Linux. Thus, it is recommended that Windows is installed before Linux so that when Linux is installed, it can detect the presence of windows and not affect the MBR.

2. Command used : lsmod
   Partial Output:

```
Module                  Size  Used by
ipt_MASQUERADE          16384  1
nf_nat_masquerade_ipv4   16384  1 ipt_MASQUERADE
xfrm_user               32768  1
xfrm_algo               16384  1 xfrm_user
iptable_nat             16384  1
nf_conntrack_ipv4       16384  2
nf_defrag_ipv4          16384  1 nf_conntrack_ipv4
nf_nat_ipv4             16384  1 iptable_nat
xt_addrtype             16384  2
iptable_filter          16384  1
ip_tables               24576  2 iptable_filter,iptable_nat
rfcomm                  69632  2
xt_conntrack            16384  1
x_tables                36864  5
ip_tables,ipt_MASQUERADE,xt_conntrack,iptable_filter,xt_addrtype
nf_nat                  24576  2 nf_nat_ipv4,nf_nat_masquerade_ipv4
nf_conntrack            106496  5
nf_nat,nf_nat_ipv4,xt_conntrack,nf_nat_masquerade_ipv4,nf_conntrack_ipv4
br_netfilter            24576  0
bridge                  126976  1 br_netfilter
stp                     16384  1 bridge
llc                     16384  2 stp,bridge
aufs                    217088  0
drbg                    32768  1
ansi_cprng              16384  0
ctr                     16384  1
ccm                     20480  1
bnep                    20480  2
```

```
binfmt_misc          20480  1
nls_iso8859_1        16384  1
intel_rapl           20480  0
x86_pkg_temp_thermal 16384  0
intel_powerclamp     16384  0
arc4                 16384  2
uvcvideo             90112  0
iwlmvm               311296 0
snd_hda_codec_hdmi   53248  1
coretemp             16384  0
videobuf2_vmalloc    16384  1 uvcvideo
videobuf2_memops     16384  1 videobuf2_vmalloc
videobuf2_v4l2       28672  1 uvcvideo
videobuf2_core       36864  2 uvcvideo,videobuf2_v4l2
snd_hda_codec_realtek 86016 1
v4l2_common          16384  1 videobuf2_v4l2
kvm                  540672 0
videodev             176128 4
uvcvideo,v4l2_common,videobuf2_core,videobuf2_v4l2
snd_hda_codec_generic 77824 1 snd_hda_codec_realtek
mac80211             737280 1 iwlmvm
snd_hda_intel        36864  10
hp_wmi               16384  0
irqbypass            16384  1 kvm
snd_hda_codec        135168 4
snd_hda_codec_realtek,snd_hda_codec_hdmi,snd_hda_codec_generic,snd_hda_intel
snd_hda_core         73728  5
snd_hda_codec_realtek,snd_hda_codec_hdmi,snd_hda_codec_generic,snd_hda_codec,sn
d_hda_intel
sparse_keymap        16384  1 hp_wmi
crct10dif_pclmul     16384  0
media                24576  2 uvcvideo,videodev
snd_hwdep            16384  1 snd_hda_codec
snd_pcm              106496 4
snd_hda_codec_hdmi,snd_hda_codec,snd_hda_intel,snd_hda_core
snd_seq_midi         16384  0
crc32_pclmul         16384  0
snd_seq_midi_event   16384  1 snd_seq_midi
snd_rawmidi          32768  1 snd_seq_midi
iwlwifi              200704 1 iwlmvm
snd_seq              69632  2 snd_seq_midi_event,snd_seq_midi
snd_seq_device       16384  3 snd_seq,snd_rawmidi,snd_seq_midi
aesni_intel          167936 2
snd_timer            32768  2 snd_pcm,snd_seq
aes_x86_64           20480  1 aesni_intel
btusb                45056  0
lrw                  16384  1 aesni_intel
btrtl                16384  1 btusb
btbcm                16384  1 btusb
btintel              16384  1 btusb
```

3. Linux kernel file : config-4.4.0-38-generic
   Linux kernel versoin:
   > Command used : uname -r
   > Output : 4.4.0-38-generic

4. t ensures that only the owner of the file within that directory, owner of the directory or the root user to delete or rename the file. No other user has these privileges even though they have the permission to read, write and execute the file. This is a security measure to prevent the deletion of critical files. And thus, /tmp also has the sticky bit t in its permission.

5. Command used : ls /etc/rc5.d
   Output :

```
S02cgroupfs-mount  S02speech-dispatcher  S04cups
S01apport          S02cron               S02sysstat       S04cups-browsed
S01binfmt-support  S02dbus               S02thermald      S04saned
S01rsyslog         S02irqbalance         S02whoopsie      S05grub-common
S01uuidd           S02kerneloops         S03avahi-daemon  S05ondemand
S02acpid           S02postgresql         S03bluetooth     S05plymouth
S02anacron         S02rsync              S03docker        S05rc.local
```