Handy Linux Commands

Contributed by Michael
Tuesday, 06 May 2008
Last Updated Sunday, 08 March 2009

Here are some commands in Linux that I've found handy.
I'll continue to post more commands as I find them.

First off,
man
This command can be prefixed infront of another command to give you details on its use.
i.e. >man df
Will tell you what the df command is and how to use it.
Depending on your operating system, you might need to press : followed by q to exit the man command.

df
Displays free disk space on all currently mounted files systems, including mounted nfs shares.
I use it with the -h option which gives human readable sizes, eg 400G instead of 429496729600

ls
Displays a directory listing, similar to the dir command in ms-dos.
I use it with the following options, -ltr and sometimes -ltrh
l list in long format
t sorts on date
r reverses the sort order

Many more soon to come.

top

free

ps

cp

mdadm

I use this command to check the health of my array
mdadm -D /dev/md0
-D meaning to display Details.
and /dev/md0 is the name of my raid array.

This returns the following:

```
/dev/md0:
 Version : 00.90.03
 Creation Time : Mon Nov 12 21:56:27 2007
 Raid Level : raid5
 Array Size : 976767744 (931.52 GiB 1000.21 GB)
 Used Dev Size : 488383872 (465.76 GiB 500.11 GB)
 Raid Devices : 3
 Total Devices : 3
 Preferred Minor : 0
 Persistence : Superblock is persistent

 Update Time : Sun Mar  8 14:32:06 2009
   State : clean, degraded, recovering
   Active Devices : 2
   Working Devices : 3
   Failed Devices : 0
   Spare Devices : 1
```

```
Layout : left-symmetric
  Chunk Size : 128K

Rebuild Status : 5% complete

UUID : 90631e50:4e99bd4b:1f24cd7c:4c4a7d9f
  Events : 0.16880349

Number   Major   Minor   RaidDevice State
  0      8       17      0       active sync   /dev/sdb1
  3      8       33      1       spare rebuilding   /dev/sdc1
  2      8       49      2       active sync   /dev/sdd1
```

From this you can see my array is in the process of being re-built.
This is because I found that a power connector had slipped off one of the SATA drives.
After locating the drive and re-connecting the cable, I just needed to add the drive back in to the array using the following command.

```
mdadm /dev/md0 --add /dev/sdc1
```

I could see that it was sdc1 that needed to be added back in as when I first ran mdadm with the -D option it reported the following at the bottom.

```
0    0      8      17      0       active sync   /dev/sdb1
1    1      0       0      1      faulty removed
2    2      8      49      2       active sync   /dev/sdd1
3    3      8      33      3       spare   /dev/sdc1
```

My assumption was that the drive sdc1 was placed as spare due to to power lead coming loose, and then re-connecting (I must fix them in place with a small amount of silicon). I still haven't worked out how to pysically identify which drive, so I re-seated the connections on all drives. My guess is that sda1 = sata connection 1 on the motherboard, sdb1 = sata connection 2 etc etc.

Now if I run this:

```
watch cat /proc/mdstat
```

I can see the progress of the array rebuild.

```
Personalities : [raid5] [raid4]
md0 : active raid5 sdc1[3] sdb1[0] sdd1[2]
976767744 blocks level 5, 128k chunk, algorithm 2 [3/2] [U_U]
[=====>.............]  recovery = 28.1% (137507200/488383872) finish=84.1min speed=69512K/sec

unused devices: <none>
```

I also found this, to speed up the rebuild.which I'm not sure if it is making a noticable difference.

```
echo 50000 > /proc/sys/dev/raid/speed_limit_min
```

It appears to raise the lower speed limit on the raid array.