

Re: Three Linux Operating Systems in One Computer (Is it possible?)

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- *From:* "Tod Merley" <todbot88@xxxxxxxxxx>
 - *Date:* Mon, 18 Sep 2006 02:01:32 -0700
-

On 9/17/06, Sameera Shaakunthala <shaakunthala@xxxxxxxxxx> wrote:

Hello there,

First, I must thank all of you for paying attention for this matter and posting your comments. Please read the following, Hard disk map of my PC is listed below:

Hard Disk 1 19.42GiB IDE
/dev/hda1 Extended-3 / 6.11GiB Primary
Boot
/dev/hda7 Memory swap 1.10GiB Logical
/dev/hda6 Extended-3 /edubuntu 6.11GiB Logical
/dev/hda5 Extended-3 /redhat 6.11GiB Logical

Hard Disk 2 76.69GiB SATA
/dev/sda1 Windows NTFS /media/sda1 14.75GiB Primary Boot
/dev/sda5 Windows NTFS /media/sda5 16.70GiB Logical
/dev/sda6 Windows NTFS /media/sda6 16.70GiB Logical
/dev/sda7 Windows NTFS /media/sda7 16.70GiB Logical
/dev/sda8 Windows NTFS /media/sda8 11.84GiB Logical

The GRUB boot loader is installed on the first hard disk. If the first hard disk is disabled from the CMOS setup, system boots up with the second hard disk. (but no need to disable GRUB takes all)

I use Linux for educational and online purposes of my daily life. Education is the reason for the interest of three Linux operating systems. Although I am new to Linux, I need to learn them all.

I am planning to combine /dev/hda6 with /devhda1 using the Gnome Partition Editor and then 'apt-get' Edubuntu desktop as Felix Miata told.

I have following questions:

1. Am I on the right track?
2. What is the URI for Edubuntu desktop? And how about the download size?
3. Can I install Edubuntu desktop from the Edubuntu CD-ROM?
4. Is it enough only a one swap partition for all Linux operating systems? (shared swap) or may I have to break the swap into two partitions?

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5. If the swap is not fully deactivated when shutting down one Linux operating system (say due to a power failure), would it affect any second Linux OS during the second one's boot?
6. What are the steps I should follow next?
7. After all installations, will I have to edit the GRUB to make Ubuntu default?
8. Would this confuse the existing Ubuntu kernel?

So, what do you think? What are your guesses? Is it a possible way which I am planning?

Thanks.
Regarding,

* Sameera Shaakunthala.
shaakunthala@xxxxxxxxxx
shaakunthala@xxxxxxxxxx

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—
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Hi Sameera Shaakunthala!

Currently I am doing Dapper, FC5, Suse, and Solaris on my box. The first three are on an 80GB IDE, Solaris resides mostly on a 4.3GB wide SCSI but also has it's swap on the 80GB IDE.

I wanted to do Solaris on a second drive since it is about as anti-GRUB as XP. I believe that is a good approach.

Each OS re-wrote the MBR with it's associated /boot/grub directory referenced and of course it's own menu.lst (Dapper, Suse, and I think Solaris) or grub.conf (FC5 with a softlink from menu.list in the grub directory). Ubuntu and Suse were nice enough to include the other OS in its created GRUB menu. FC5 was the last in and had only itself. What I did was to simply cut and paste the boot stanzas from the other grub config files into the FC5 grub.conf. I also added a chainload to Solaris (you end up in it's boot load menu!).

Please understand that bytes 44h to 48h of the MBR point to the second stage boot loader (with GRUB, often stage 1.5). After the Ubuntu install those were "01 00 00 00" which points to sector #2 (the MBR being sector #1). Now, with FC5 being the last in they point to

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the GRUB 1.5 somewhere in the hda4 (hda5 by extension) partition of the disk where the FC5 /boot directory is located and they read "16 63 4f 08"

I noted along the way that the Qparted partition editor which is part of the Ubuntu install program always got the job done (although it would not always do exactly what I wanted it to do). Parted from KNOPPIX, Finnix, and Puppy 2.00 Seamonkey all gave a "partition contains an unsupported feature" error when ever I tried to check or format (probably the indexing method). So, the Ubuntu install partitioning tool is the only one I used to resize partitions and the one in FC5 the only one to create a new partition. Except that the new SCSI (low level formatted through the SCSI card disk utility) drive I did use the Finnix parted to initially partition and place an ext2 file system.

In the poking around I show below hda1=Dapper, hda2=Solaris/Swap, hda3=Suse, hda4 (hda5 by extension) = FC5, sda1=Solaris.

Have a lot of fun!

Tod

BTW, do you really need all of the big drive for XP. What are you doing! Video?

The poking:

```
-----  
tod@tod-desktop:~$ sudo -i  
Password:  
root@tod-desktop:~# fdisk -l
```

```
Disk /dev/hda: 81.9 GB, 81964302336 bytes  
255 heads, 63 sectors/track, 9964 cylinders  
Units = cylinders of 16065 * 512 = 8225280 bytes
```

```
Device Boot Start End Blocks Id System  
/dev/hda1 * 1 6374 51199123+ 83 Linux  
/dev/hda2 9801 9965 1318464 bf Solaris  
/dev/hda3 6375 8087 13759672+ 83 Linux  
/dev/hda4 8088 9800 13759672+ 5 Extended  
/dev/hda5 8088 9800 13759641 83 Linux
```

Partition table entries are not in disk order

```
Disk /dev/sda: 4551 MB, 4551129088 bytes  
70 heads, 28 sectors/track, 4535 cylinders  
Units = cylinders of 1960 * 512 = 1003520 bytes
```

```
Device Boot Start End Blocks Id System  
/dev/sda1 * 3 4535 4442112 bf Solaris
```

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Note, to grub – by proof of "tab autocomplete" hda1=(hd0,0), sda1=(hd1,0). The "autocomplete" "hit the silly TAB key" trick works in the GRUB menu editor as well.

The following shows how to grab and look at your MBR. It is good to keep a backup in a safe place (Suse does this automatically). It is also good to have a "picture" of the first 63 sectors (in below change to "count=63" and add a 63 somewhere in the name).

```
root@tod-desktop:~# dd if=/dev/hda of=hdambr.bin.091720060107
49309+0 records in
49309+0 records out
25246208 bytes (25 MB) copied, 3.52956 seconds, 7.2 MB/s
```

```
root@tod-desktop:~# rm hdambr.bin.091720060107
root@tod-desktop:~# dd if=/dev/hda of=hdambr.bin.091720060107 bs=512 count=1
1+0 records in
1+0 records out
512 bytes (512 B) copied, 0.000259 seconds, 2.0 MB/s
```

```
root@tod-desktop:~# hexdump -C hdambr.bin.091720060107
```

```
00000000 eb 48 90 33 2e 30 fa fc be 00 7c bf 00 06 8c c8 |.H.3.0....|.....|
00000010 8e d0 89 f4 8e c0 8e d8 51 b9 00 01 f3 a5 59 e9 |.....Q.....Y.|
00000020 00 8a fb b4 02 cd 16 24 03 3c 03 75 05 c6 06 61 |.....$.<.u...a|
00000030 07 01 bb be 07 b9 04 00 80 3f 80 74 0e 83 03 02 |.....?.t...|
00000040 80 00 00 80 16 63 4f 08 00 08 fa 90 90 f6 c2 80 |....cO.....|
00000050 75 02 b2 80 ea 59 7c 00 00 31 c0 8e d8 8e d0 bc |u....Y|.1.....|
00000060 00 20 fb a0 40 7c 3c ff 74 02 88 c2 52 be 7f 7d |. ..@|<.t...R..}|
00000070 e8 34 01 f6 c2 80 74 54 b4 41 bb aa 55 cd 13 5a |.4....tT.A..U..Z|
00000080 52 72 49 81 fb 55 aa 75 43 a0 41 7c 84 c0 75 05 |RrL..U.uC.A|.u.|
00000090 83 e1 01 74 37 66 8b 4c 10 be 05 7c c6 44 ff 01 |...t7f.L...|.D..|
000000a0 66 8b 1e 44 7c c7 04 10 00 c7 44 02 01 00 66 89 |f..D|....D...f.|
000000b0 5c 08 c7 44 06 00 70 66 31 c0 89 44 04 66 89 44 |\.D..pf1..D.f.D|
000000c0 0c b4 42 cd 13 72 05 bb 00 70 eb 7d b4 08 cd 13 |..B..r...p.}....|
000000d0 73 0a f6 c2 80 0f 84 ea 00 e9 8d 00 be 05 7c c6 |s.....|.|
000000e0 44 ff 00 66 31 c0 88 f0 40 66 89 44 04 31 d2 88 |D..f1...@xxxxxxx|
000000f0 ca c1 e2 02 88 e8 88 f4 40 89 44 08 31 c0 88 d0 |.....@.D.1...|
00000100 c0 e8 02 66 89 04 66 a1 44 7c 66 31 d2 66 f7 34 |...f..f.D|f1.f.4|
00000110 88 54 0a 66 31 d2 66 f7 74 04 88 54 0b 89 44 0c |.T.f1.f.t..T..D.|
00000120 3b 44 08 7d 3c 8a 54 0d c0 e2 06 8a 4c 0a fe c1 |;D.}<.T.....L...|
00000130 08 d1 8a 6c 0c 5a 8a 74 0b bb 00 70 8e c3 31 db |...1.Z.t...p..1.|
00000140 b8 01 02 cd 13 72 2a 8c c3 8e 06 48 7c 60 1e b9 |....r*....H`..|
00000150 00 01 8e db 31 f6 31 ff fc f3 a5 1f 61 ff 26 42 |....1.1.....a.&B|
00000160 7c be 85 7d e8 40 00 eb 0e be 8a 7d e8 38 00 eb |..}.@.....}.8..|
00000170 06 be 94 7d e8 30 00 be 99 7d e8 2a 00 eb fe 47 |...}.0...}.*...G|
00000180 52 55 42 20 00 47 65 6f 6d 00 48 61 72 64 20 44 |RUB .Geom.Hard D|
00000190 69 73 6b 00 52 65 61 64 00 20 45 72 72 6f 72 00 |isk.Read. Error.|
000001a0 bb 01 00 b4 0e cd 10 ac 3c 00 75 f4 c3 00 00 00 |.....<.u....|
000001b0 00 00 00 00 00 00 00 00 2c 0c 05 00 00 00 80 01 |.....|
000001c0 01 00 83 fe ff ff 3f 00 00 00 27 79 1a 06 00 fe |.....?...?...'y....|
```

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```
000001d0 ff ff bf fe ff ff 40 4e 62 09 80 3c 28 00 00 fe |.....@xxxx<(...|
000001e0 ff ff 83 fe ff ff 66 79 1a 06 71 e9 a3 01 00 fe |.....fy..q.....|
000001f0 ff ff 05 fe ff ff d7 62 be 07 71 e9 a3 01 55 aa |.....b..q...U.|
00000200
root@tod-desktop:~#
```

the grub.conf that makes the long boot menu!!

```
root@tod-desktop:~# cd /boot/grub
root@tod-desktop:/boot/grub# cat grub.conf
cat: grub.conf: No such file or directory
root@tod-desktop:/boot/grub# ls
default device.map e2fs_stage1_5 fat_stage1_5 jfs_stage1_5
menu.lst menu.lst~ minix_stage1_5 reiserfs_stage1_5 stage1 stage2
xfs_stage1_5
root@tod-desktop:/boot/grub# mount -t ext3 /dev/hda5 /media/hda5
mount: mount point /media/hda5 does not exist
root@tod-desktop:/boot/grub# mkdir /media/hda5
root@tod-desktop:/boot/grub# mount -t ext3 /dev/hda5 /media/hda5
root@tod-desktop:/boot/grub# cat /media/hda5/boot/grub/grub.conf
# grub.conf generated by anaconda
#
# Note that you do not have to rerun grub after making changes to this file
# NOTICE: You do not have a /boot partition. This means that
# all kernel and initrd paths are relative to /, eg.
# root (hd0,4)
# kernel /boot/vmlinuz-version ro root=/dev/hda5
# initrd /boot/initrd-version.img
#boot=/dev/hda
default=0
timeout=15
splashimage=(hd0,4)/boot/grub/splash.xpm.gz
# hiddenmenu
#
title Ubuntu, kernel 2.6.15-26-386
root (hd0,0)
kernel /boot/vmlinuz-2.6.15-26-386 root=/dev/hda1 ro quiet splash
initrd /boot/initrd.img-2.6.15-26-386
savedefault
boot
#
title Fedora Core (2.6.15-1.2054_FC5)
root (hd0,4)
kernel /boot/vmlinuz-2.6.15-1.2054_FC5 ro root=LABEL=/ rhgb quiet
initrd /boot/initrd-2.6.15-1.2054_FC5.img
#
###Don't change this comment - YaST2 identifier: Original name: linux###
title SUSE Linux 10.1
root (hd0,2)
kernel /boot/vmlinuz root=/dev/hda3 vga=0x31a resume=/dev/hda5
splash=silent showopts
```

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```
initrd /boot/initrd
#
###Don't change this comment – YaST2 identifier: Original name: xen###
title XEN
root (hd0,2)
kernel /boot/xen.gz
module /boot/vmlinuz-xen root=/dev/hda3 vga=0x31a
resume=/dev/hda5 splash=silent showopts
module /boot/initrd-xen
#
title Ubuntu, kernel 2.6.15-26-386 (recovery mode)
root (hd0,0)
kernel /boot/vmlinuz-2.6.15-26-386 root=/dev/hda1 ro single
initrd /boot/initrd.img-2.6.15-26-386
boot
#
title Ubuntu, memtest86+
root (hd0,0)
kernel /boot/memtest86+.bin
boot
#
###Don't change this comment – YaST2 identifier: Original name: floppy###
title Floppy
chainloader (fd0)+1
#
###Don't change this comment – YaST2 identifier: Original name: failsafe###
title Failsafe -- SUSE Linux 10.1
root (hd0,2)
kernel /boot/vmlinuz root=/dev/hda3 vga=normal showopts ide=nodma
apm=off acpi=off noresume nosmp noapic maxcpus=0 edd=off 3
initrd /boot/initrd
#
###Don't change this comment – YaST2 identifier: Original name: memtest86###
title Memory Test
kernel (hd0,2)/boot/memtest.bin
#
###Boot From SCSI Disk!###
title Sun Solaris 10.1
rootnoverify (hd1,0)
makeactive
chainloader (hd1,0)+1
#
###Boot from Flash Drive!###
title Flash Drive
rootnoverify (hd2,0)
makeactive
chainloader (hd2,0)+1
#

root@tod-desktop:/boot/grub#
```

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note the above "boot from scsi drive" which you could use in concept to boot your XP. The "boot from flash" does not work since, I think, my BIOS does not automount my Flash drives

Have a lot of fun and learn well!!

ubuntu-users mailing list

ubuntu-users@xxxxxxxxxxxxxxxxxxx

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