The following notes were collected while creating a new 1.5 TB virtual disk for a CentOS virtual machine.

**Initial state of virtual machine**

[975 efg localhost 2015-02-13 16:23:17 /home/efg]

runlevel

N 5

**[976 efg localhost 2015-02-13 16:23:19 /home/efg]**

cd /sys/class/scsi\_host

**[977 efg localhost 2015-02-13 16:23:48 /sys/class/scsi\_host]**

ll

total 0

lrwxrwxrwx. 1 root root 0 Feb 13 16:22 host0 -> ../../devices/pci0000:00/0000:00:10.0/host0/scsi\_host/host0/

lrwxrwxrwx. 1 root root 0 Feb 13 16:22 host1 -> ../../devices/pci0000:00/0000:00:07.1/host1/scsi\_host/host1/

lrwxrwxrwx. 1 root root 0 Feb 13 16:22 host2 -> ../../devices/pci0000:00/0000:00:07.1/host2/scsi\_host/host2/

<http://www.thegeekstuff.com/2010/09/linux-fdisk/>   
Linux fdisk Command Examples to Manage Hard Disk Partition

**[983 efg localhost 2015-02-13 16:31:37 /home/efg]**

sudo fdisk -l

Disk /dev/sda: 137.4 GB, 137438953472 bytes

255 heads, 63 sectors/track, 16709 cylinders

Units = cylinders of 16065 \* 512 = 8225280 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk identifier: 0x0007f1ee

Device Boot Start End Blocks Id System

/dev/sda1 \* 1 39 307200 83 Linux

Partition 1 does not end on cylinder boundary.

/dev/sda2 39 549 4096000 82 Linux swap / Solaris

Partition 2 does not end on cylinder boundary.

/dev/sda3 549 16710 129813504 83 Linux

Disk /dev/sdb: 429.5 GB, 429496729600 bytes

171 heads, 50 sectors/track, 98112 cylinders

Units = cylinders of 8550 \* 512 = 4377600 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

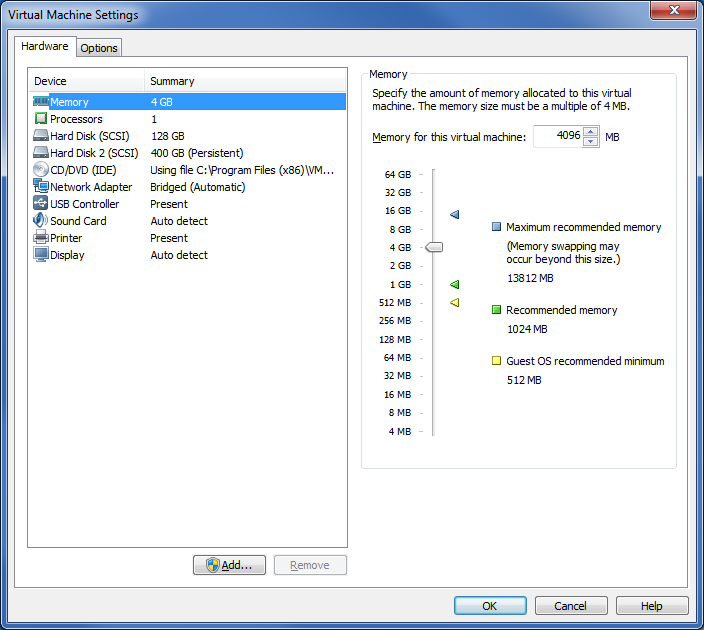
Disk identifier: 0x1673ec5b

Device Boot Start End Blocks Id System

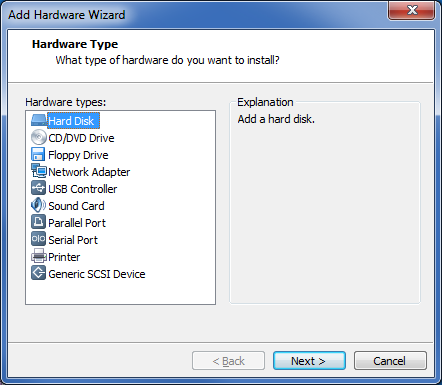
/dev/sdb1 1 98113 419429376 83 Linux

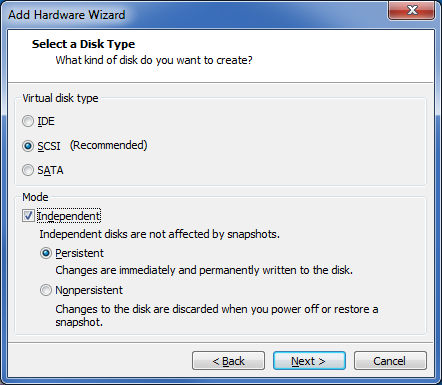
**Shutdown**

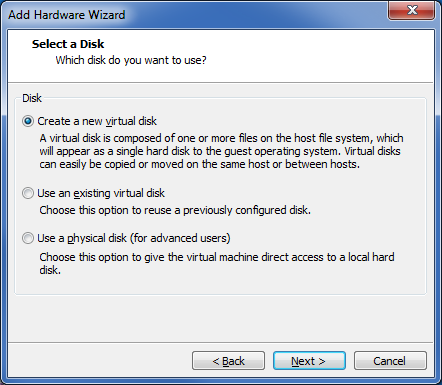
**Add new virtual disk**

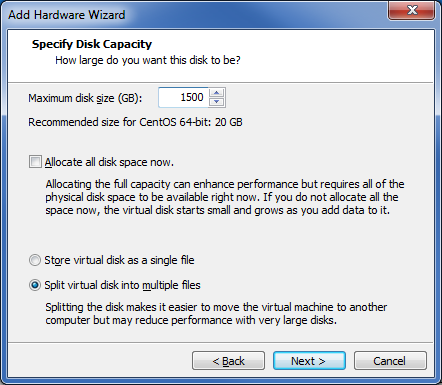


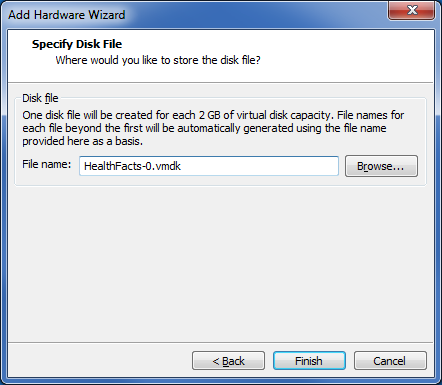












**Start virtual machine**

[986 efg localhost 2015-02-13 16:51:03 /home/efg]

sudo fdisk -l

Disk /dev/sda: 137.4 GB, 137438953472 bytes

255 heads, 63 sectors/track, 16709 cylinders

Units = cylinders of 16065 \* 512 = 8225280 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk identifier: 0x0007f1ee

Device Boot Start End Blocks Id System

/dev/sda1 \* 1 39 307200 83 Linux

Partition 1 does not end on cylinder boundary.

/dev/sda2 39 549 4096000 82 Linux swap / Solaris

Partition 2 does not end on cylinder boundary.

/dev/sda3 549 16710 129813504 83 Linux

Disk /dev/sdb: 1610.6 GB, 1610612736000 bytes

255 heads, 63 sectors/track, 195812 cylinders

Units = cylinders of 16065 \* 512 = 8225280 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk identifier: 0x00000000

Disk /dev/sdc: 429.5 GB, 429496729600 bytes

171 heads, 50 sectors/track, 98112 cylinders

Units = cylinders of 8550 \* 512 = 4377600 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk identifier: 0x1673ec5b

Device Boot Start End Blocks Id System

/dev/sdc1 1 98113 419429376 83 Linux

Create new partition

From <http://www.thegeekstuff.com/2010/09/linux-fdisk/>

<http://askubuntu.com/questions/154180/how-to-mount-a-new-drive-on-startup>

<http://www.thegeekstuff.com/2011/05/ext2-ext3-ext4/>

**[987 efg localhost 2015-02-13 16:53:00 /home/efg]**

sudo fdisk -c -u /dev/sdb

Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel

Building a new DOS disklabel with disk identifier 0xd0fe7423.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

Command (m for help): o

Building a new DOS disklabel with disk identifier 0xb4ea0422.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

Command (m for help): n

Command action

e extended

p primary partition (1-4)

p

Partition number (1-4): 1

First sector (2048-3145727999, default 2048):

Using default value 2048

Last sector, +sectors or +size{K,M,G} (2048-3145727999, default 3145727999):

Using default value 3145727999

Command (m for help): w

The partition table has been altered!

Calling ioctl() to re-read partition table.

Syncing disks.

**[988 efg localhost 2015-02-13 16:54:00 /home/efg]**

sudo mkfs.ext4 /dev/sdb1

mke2fs 1.41.12 (17-May-2010)

Filesystem label=

OS type: Linux

Block size=4096 (log=2)

Fragment size=4096 (log=2)

Stride=0 blocks, Stripe width=0 blocks

98304000 inodes, 393215744 blocks

19660787 blocks (5.00%) reserved for the super user

First data block=0

Maximum filesystem blocks=4294967296

12000 block groups

32768 blocks per group, 32768 fragments per group

8192 inodes per group

Superblock backups stored on blocks:

32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,

4096000, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968,

102400000, 214990848

Writing inode tables: done

Creating journal (32768 blocks): done

Writing superblocks and filesystem accounting information: done

This filesystem will be automatically checked every 20 mounts or

180 days, whichever comes first. Use tune2fs -c or -i to override.

[990 efg localhost 2015-02-13 16:57:18 /home/efg]

sudo fdisk /dev/sdb1

Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel

Building a new DOS disklabel with disk identifier 0x013e7f3e.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to

switch off the mode (command 'c') and change display units to

sectors (command 'u').

Command (m for help): x

Expert command (m for help): i

New disk identifier (current 0x013e7f3e): w

Expert command (m for help): m

Command action

b move beginning of data in a partition

c change number of cylinders

d print the raw data in the partition table

e list extended partitions

f fix partition order

g create an IRIX (SGI) partition table

h change number of heads

i change the disk identifier

m print this menu

p print the partition table

q quit without saving changes

r return to main menu

s change number of sectors/track

v verify the partition table

w write table to disk and exit

Expert command (m for help): w

The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 22: Invalid argument.

The kernel still uses the old table. The new table will be used at

the next reboot or after you run partprobe(8) or kpartx(8)

Syncing disks.

[464 efg localhost 2015-01-26 17:11:07 /home/efg]

sudo vi /etc/fstab

# /etc/fstab

# Created by anaconda on Mon Dec 22 02:31:32 2014

#

# Accessible filesystems, by reference, are maintained under '/dev/disk'

# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info

#

UUID=083da226-2ca1-4678-86c4-1c5ac746c6ce / ext4 defaults 1 1

UUID=849faf00-ee9f-4a93-acf2-d77299f3f601 /boot ext4 defaults 1 2

UUID=47ced98d-fc75-4a77-b84f-4ba667de733e swap swap defaults 0 0

tmpfs /dev/shm tmpfs defaults 0 0

devpts /dev/pts devpts gid=5,mode=620 0 0

sysfs /sys sysfs defaults 0 0

proc /proc proc defaults 0 0

/dev/sdb1 /healthfacts ext4 defaults 0 0

/dev/sdc1 /cernertransfer ext4 defaults 0 0

**[994 efg localhost 2015-02-13 17:01:55 /home/efg]**

cd /

**[995 efg localhost 2015-02-13 17:02:18 /]**

ll

total 110

...

drwxr-xr-x. 2 root root 4096 Feb 13 11:56 cernertransfer/

drwxr-xr-x. 2 root root 4096 Jan 26 17:16 healthfacts/

**After reboot**

[996 efg localhost 2015-02-13 17:05:03 /home/efg]

df

Filesystem 1K-blocks Used Available Use% Mounted on

/dev/sda3 127644396 13053100 108100624 11% /

tmpfs 1958504 148 1958356 1% /dev/shm

/dev/sda1 289293 63538 210395 24% /boot

/dev/sdb1 1548052684 70704 1469338832 1% /healthfacts

/dev/sdc1 412717232 322097652 69648112 83% /cernertransfer

.host:/ 943794652 789306080 154488572 84% /mnt/hgfs