

Kali Resize Hard Disk

This presentation shows increasing the size of the M State Moorhead Kali image hard disk. The presentation will extend the partition to a second newly create virtual disk.

Hardware/Software Used in Presentation

Kali version 2016.2

OpenVAS version 8.0 later updated to 9.0

VMware Player 12.5.5



The first step is starting and login to Kali.

- Player ▾
- File >
- Power >
- Removable Devices >
- Send Ctrl+Alt+Del
- Manage >
- Full Screen Ctrl+Alt+Enter
- Unity
- Help >
- Exit

- Install VMware Tools...
- Message Log
- Virtual Machine Settings... Ctrl+D

The presentation selects "Virtual Machine Settings" from the VMware Player menu.



- \$ _
- Folder icon
- M icon
- Avatar icon
- Lightning bolt icon
- Eye icon
- F icon
- Menu icon
- Calendar icon
- App drawer icon

Fri 12:16

System tray icons including volume, network, and power controls.

Virtual Machine Settings

Hardware Options

Device	Summary
Memory	2 GB
Processors	2
Hard Disk (SCSI)	30 GB
CD/DVD (IDE)	Auto detect
Network Adapter	NAT
USB Controller	Present
Sound Card	Auto detect
Display	Auto detect

Memory

Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.

Memory for this virtual machine: 2048 MB

64 GB -
32 GB -
16 GB -
8 GB -
4 GB -
2 GB -
1 GB -
512 MB -
256 MB -
128 MB -
64 MB -
32 MB -
16 MB -
8 MB -
4 MB -

- Maximum recommended memory (Memory swapping may occur beyond this size.) 13744 MB
- Recommended memory 768 MB
- Guest OS recommended minimum 32 MB

⚠ Changes to the amount of memory will not take effect until the virtual machine is powered off.

Add... Remove

OK Cancel Help

The presentation selects "Add" button.

Virtual Machine Settings

Hardware Options

Device	Summary
Memory	2 GB
Processors	2
Hard Disk (SCSI)	
CD/DVD (IDE)	
Network Adapter	
USB Controller	
Sound Card	
Display	

Memory: Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.

Memory: 2048 MB

Recommended memory: 2048 MB (depending on the size of the virtual machine.)

Recommended minimum: 1024 MB

Will not take effect if the virtual machine is powered on.

OK Cancel Help

Add Hardware Wizard

Hardware Type

What type of hardware do you want to install?

Hardware types:

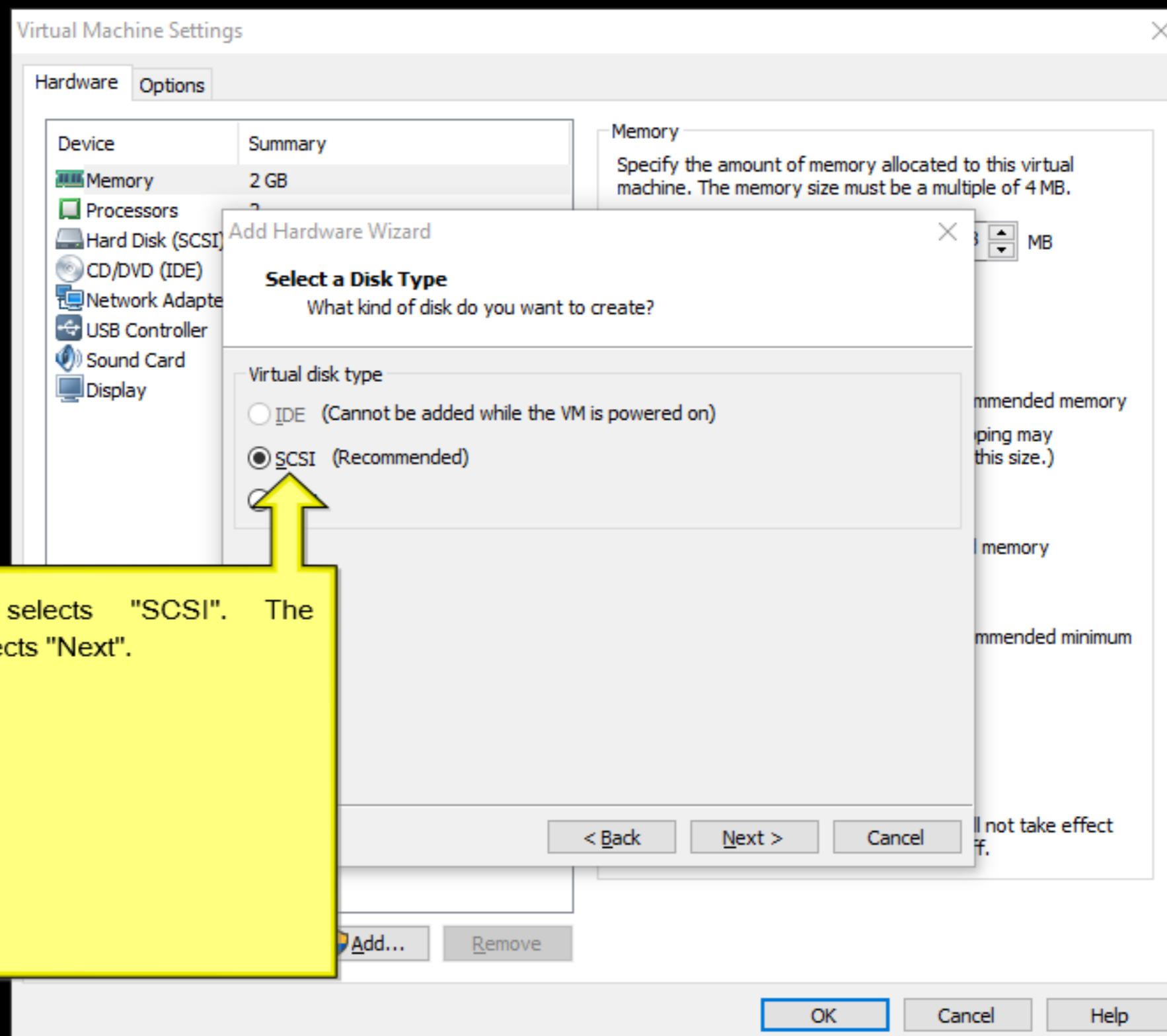
- Hard Disk
- CD/DVD Drive
- Floppy Drive
- Network Adapter
- USB Controller
- Sound Card
- Display

Explanation: Add a hard disk.

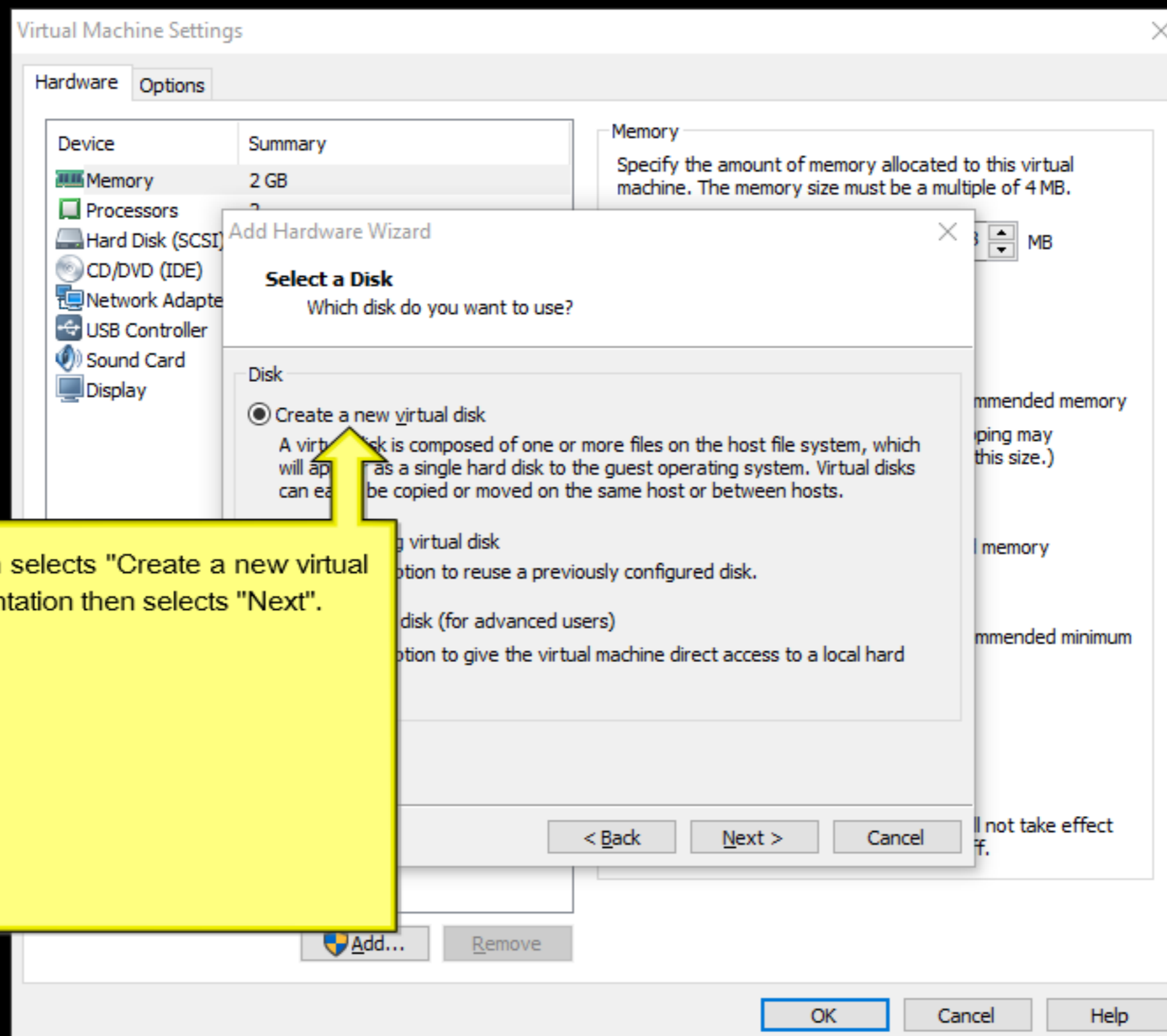
< Back Next > Cancel

Add... Remove

The presentation selects "Hard Disk". Then the presentation selects "Next".



The presentation selects "SCSI". The presentation then selects "Next".



The presentation selects "Create a new virtual disk". The presentation then selects "Next".

Virtual Machine Settings

Hardware Options

Device	Summary
Memory	2 GB
Processors	2
Hard Disk (SCSI)	10.1 GB
CD/DVD (IDE)	
Network Adapter	
USB Controller	
Sound Card	
Display	

Memory: Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.

Add Hardware Wizard

Specify Disk Capacity
How large do you want this disk to be?

Maximum disk size (GB): 10.1

Recommended size for Other Linux kernel 64-bit: 8 GB

Store virtual disk as a single file

Store virtual disk into multiple files

Splitting the disk makes it easier to move the virtual machine to another host but may reduce performance with very large disks.

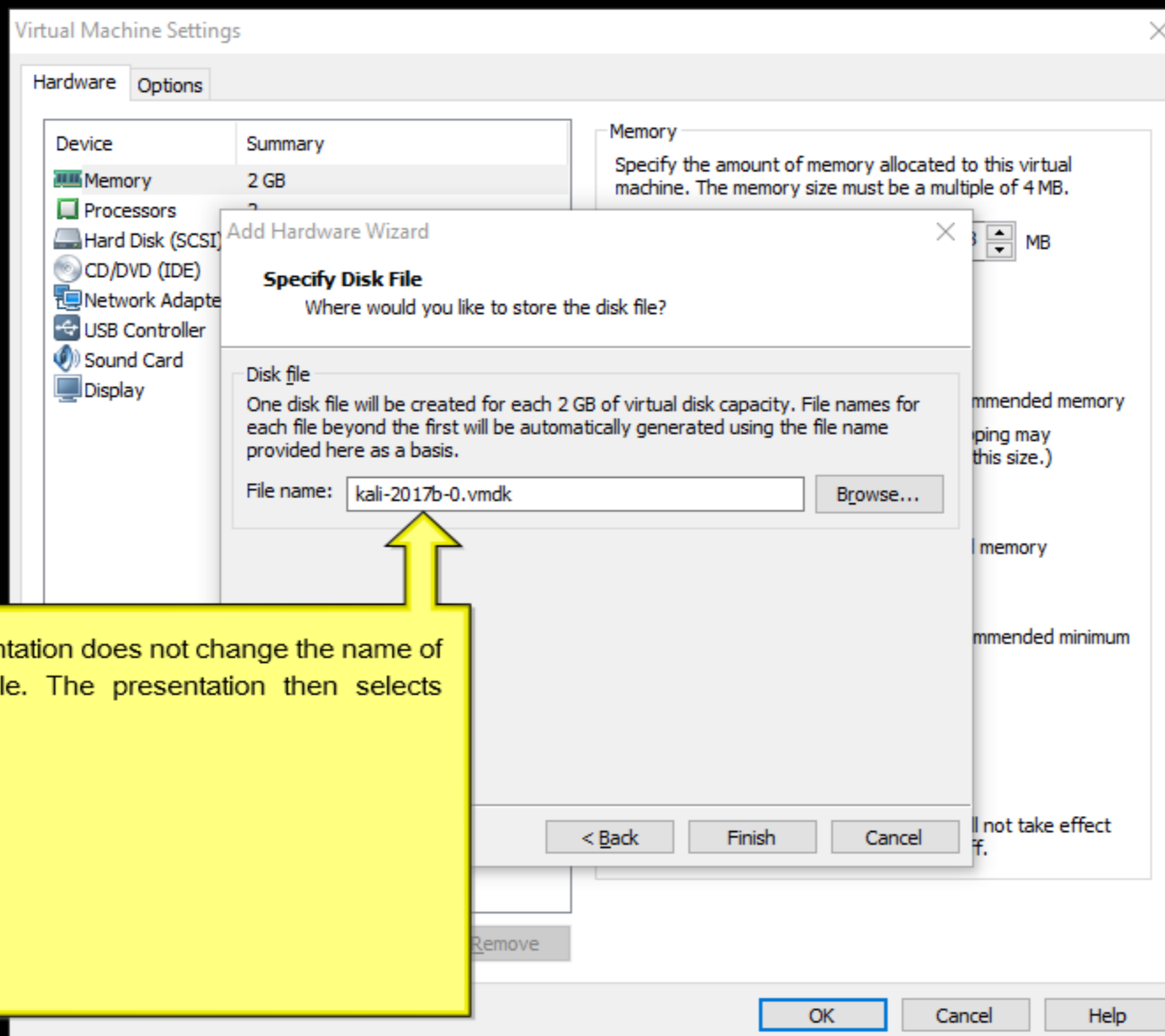
< Back Next > Cancel

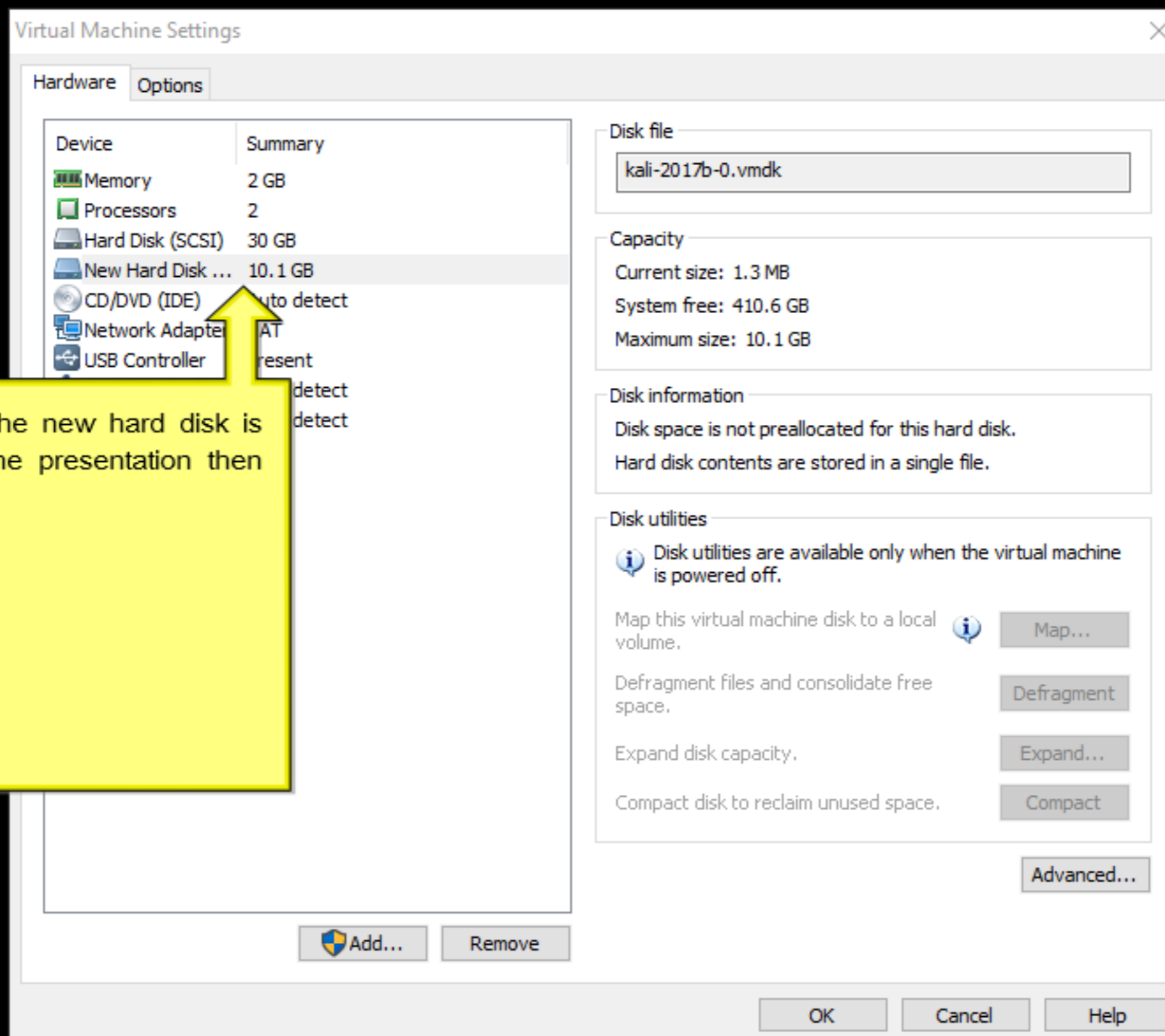
OK Cancel Help

The presentation enters "10.1" for the disk size. You may select a different size, if you document the change.

The presentation does recommend .1 GB larger size than you desire.

The presentation selects "Store virtual disk as a single file". The presentation then selects "Next".





The presentation sees the new hard disk is ready to be created. The presentation then selects "OK".



root@kali-s2017b: ~

File Edit View Search Terminal Help

```
root@kali-s2017b:~# reboot
```

The presentation issues the "reboot" command to restart the virtual machine.

```
root@kali-s2017b: ~
File Edit View Search Terminal Help
root@kali-s2017b:~# lvscan
ACTIVE          '/dev/kali-s2017b-vg/root' [27.76 GiB] inherit
ACTIVE          '/dev/kali-s2017b-vg/swap_1' [2.00 GiB] inherit
root@kali-s2017b:~#
```

The presentation issues the "lvscan" command to view the logical volumes.


```
root@kali-s2017b: ~  
File Edit View Search Terminal Help  
/dev/kali-s2017b-vg/root: ***** WARNING: Filesystem still has errors *****  
****  
  
565818 inodes used (31.09%, out of 1819680)  
179 non-contiguous files (0.0%)  
764 non-contiguous directories (0.1%)  
# of inodes with ind/dind/tind blocks: 0/0/0  
Extent depth histogram: 523576/97  
3938978 blocks used (54.13%, out of 7276544)  
0 bad blocks  
1 large file  
  
487053 regular files  
34002 directories  
6 character device files  
0 block device files  
0 fifos  
28 links  
44751 symbolic links (42134 fast symbolic links)  
9 sockets  
  
-----  
565849 files  
root@kali-s2017b:~#
```

The presentation sees the fsck command is done. The presentation continues with the expansion.

```
root@kali-s2017b: ~  
File Edit View Search Terminal Help  
root@kali-s2017b:~# pvcreate /dev/sdb  
Physical volume "/dev/sdb" successfully created.  
root@kali-s2017b:~#
```

The presentation issues the "pvcreate" to create a physical volume as shown.

Note the new virtual volume is /dev/sdb.

```
root@kali-s2017b: ~
File Edit View Search Terminal Help
root@kali-s2017b:~# lvscan
ACTIVE          '/dev/kali-s2017b-vg/root' [27.76 GiB] inherit
ACTIVE          '/dev/kali-s2017b-vg/swap_1' [2.00 GiB] inherit
root@kali-s2017b:~# vgextend /dev/kali-s2017b-vg /dev/sdb
```

The presentation uses the "vgextend" to extend the logical volume to the new drive.



```
root@kali-s2017b: ~
File Edit View Search Terminal Help
root@kali-s2017b:~# lvscan
ACTIVE          '/dev/kali-s2017b-vg/root' [27.76 GiB] inherit
ACTIVE          '/dev/kali-s2017b-vg/swap_1' [2.00 GiB] inherit
root@kali-s2017b:~# vgextend /dev/kali-s2017b-vg /dev/sdb
Physical volume '/dev/sdb' is already in volume group 'kali-s2017b-vg'
Unable to add physical volume '/dev/sdb' to volume group 'kali-s2017b-vg'
root@kali-s2017b:~#
```

The presentation ran the "vgextend" twice. This is the result of the second running.

Tweak Tool

```
root@kali-s2017b: ~  
File Edit View Search Terminal Help  
root@kali-s2017b:~# lvscan  
ACTIVE          '/dev/kali-s2017b-vg/root' [27.76 GiB] inherit  
ACTIVE          '/dev/kali-s2017b-vg/swap_1' [2.00 GiB] inherit  
root@kali-s2017b:~# lvextend -L +10G /dev/kali-s2017b-vg/root
```

The presentation issues the "lvextend" to increase the logical volume size by 10 GB.



```
root@kali-s2017b: ~
File Edit View Search Terminal Help
root@kali-s2017b:~# lvscan
ACTIVE          '/dev/kali-s2017b-vg/root' [27.76 GiB] inherit
ACTIVE          '/dev/kali-s2017b-vg/swap_1' [2.00 GiB] inherit
root@kali-s2017b:~# lvextend -L +10G /dev/kali-s2017b-vg/root
Size of logical volume kali-s2017b-vg/root changed from 27.76 GiB (7106 extent
s) to 37.76 GiB (9666 extents).
Logical volume kali-s2017b-vg/root successfully resized.
root@kali-s2017b:~#
```

The presentation sees the "lvextend" is successful.

Show Applications

```
root@kali-s2017b: ~  
File Edit View Search Terminal Help  
root@kali-s2017b:~# lvscan  
ACTIVE          '/dev/kali-s2017b-vg/root' [37.76 GiB] inherit  
ACTIVE          '/dev/kali-s2017b-vg/swap_1' [2.00 GiB] inherit  
root@kali-s2017b:~# resize2fs /dev/kali-s2017b-vg/root
```

The presentation issues the "resize2fs" to extend the file system.

```
root@kali-s2017b: ~  
File Edit View Search Terminal Help  
root@kali-s2017b:~# lvscan  
ACTIVE          '/dev/kali-s2017b-vg/root' [37.76 GiB] inherit  
ACTIVE          '/dev/kali-s2017b-vg/swap_1' [2.00 GiB] inherit  
root@kali-s2017b:~# resize2fs /dev/kali-s2017b-vg/root  
resize2fs 1.43.4 (31-Jan-2017)  
Filesystem at /dev/kali-s2017b-vg/root is mounted on /; on-line resizing require  
d  
old_desc_blocks = 4, new_desc_blocks = 5  
The filesystem on /dev/kali-s2017b-vg/root is now 9897984 (4k) blocks long.  
root@kali-s2017b:~#
```

The presentation sees the "resize2fs" command is successful.



```
root@kali-s2017b: ~  
File Edit View Search Terminal Help  
root@kali-s2017b:~# df -h  
Filesystem      Size  Used Avail Use% Mounted on  
udev            980M   0 980M   0% /dev  
tmpfs           199M   7.1M 192M   4% /run  
/dev/mapper/kali--s2017b--vg-root 38G   15G   21G  42% /  
tmpfs           994M   0 994M   0% /dev/shm  
tmpfs           5.0M   0 5.0M   0% /run/lock  
tmpfs           994M   0 994M   0% /sys/fs/cgroup  
/dev/sda1       236M  108M  116M  49% /boot  
tmpfs           199M   32K 199M   1% /run/user/132  
tmpfs           199M   20K 199M   1% /run/user/0  
root@kali-s2017b:~#
```

The presentation issues "df -h" to see the disk size is increased by 10 GB.