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[Knowledgebase](#) > [ESET PROTECT On-prem](#) > [Expand harddisk in ESET Protect Virtual Appliance](#)

Expand harddisk in ESET Protect Virtual Appliance

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1. Expand the disk of your ESET Protect Virtual Appliance in your hypervisor platform.
2. It is advisable to create a snapshot before proceeding.
3. Power on your ESET Protect Virtual Appliance
4. Login via SSH or the VM Console (and exit to terminal)
5. Extend the partition by using the command `fdisk /dev/sda`
Enter `p` to print your initial partition table.
Enter `d` (delete) followed by `2` to delete the existing partition definition (partition 1 is usually `/boot` and partition 2 is usually the root partition).
Enter `n` (new) followed by `p` (primary) followed by `2` to re-create partition number 2 and enter to accept the start block and enter again to accept the end block which is defaulted to the end of the disk.

```
[root@protect ~]# fdisk /dev/sda
Welcome to fdisk (util-linux 2.23.2).

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): p

Disk /dev/sda: 75.2 GB, 75161927680 bytes, 146800640 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x0007fed1

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1  *        2048       1026047       512000    83   Linux
/dev/sda2                1026048    134217227    66595840    8e   Linux LVM

Command (m for help): d
Partition number (1,2, default 2): 2
Partition 2 is deleted

Command (m for help): n
Partition type:
   p   primary (1 primary, 0 extended, 3 free)
   e   extended
Select (default p): p
Partition number (2-4, default 2): 2
First sector (1026048-146800639, default 1026048):
Using default value 1026048
Last sector, +sectors or +size(K,M,G) (1026048-146800639, default 146800639):
Using default value 146800639
Partition 2 of type Linux and of size 69.5 GiB is set
```

Enter `t` (type) then `2` then `8e` to change the new partition type to "Linux LVM".

```
Command (m for help): t
Partition number (1,2, default 2): 2
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'
```

Enter `p` to print your new partition table and make sure the start block matches what was in the initial partition table printed above.

Device	Boot	Start	End	Blocks	Id	System
/dev/sda1	*	2048	1026047	512000	83	Linux
/dev/sda2		1026048	146800639	72887296	8e	Linux LVM

Enter w to write the partition table to disk. You will see an error about Device or resource busy which you can ignore.

```
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 16: Device or resource busy.
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.
```

6. Reboot the ESET Protect Virtual Appliance.
7. Resize the physical volume: `pvresize /dev/sda2`

```
[root@protect ~]# pvresize /dev/sda2
Physical volume "/dev/sda2" changed
1 physical volume(s) resized or updated / 0 physical volume(s) not resized
```

8. Expand the logical volume: `lvextend -l +100%FREE /dev/centos_ba-eraappl-v/root`

```
[root@protect ~]# lvextend -l +100%FREE /dev/centos_ba-eraappl-v/root
Size of logical volume centos_ba-eraappl-v/root changed from <40.03 GiB (10247 extents) to <46.09 GiB (11799 extents).
Logical volume centos_ba-eraappl-v/root successfully resized.
```

9. Expand the file system: `xfs_growfs /`

```
[root@protect ~]# xfs_growfs /
meta-data=/dev/mapper/centos_ba--eraappl--v-root isize=256    agcount=4, agsize=2623232 blks
        =                       sectsz=512   attr=2, projid32bit=1
        =                       crc=0        finobt=0 spinodes=0
data     =                       bsize=4096   blocks=10492928, imaxpct=25
        =                       sunit=0      swidth=0 blks
naming   =version 2             bsize=4096   ascii-ci=0 ftype=0
log      =internal             bsize=4096   blocks=5123, version=2
        =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                 extsz=4096   blocks=0, rtextents=0
data blocks changed from 10492928 to 12082176
```

10. You have now successfully expanded the harddisk of your ESET Protect Virtual Appliance:

```
[root@protect ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        908M   0 908M   0% /dev
tmpfs           920M   0 920M   0% /dev/shm
tmpfs           920M  8.8M 911M   1% /run
tmpfs           920M   0 920M   0% /sys/fs/cgroup
/dev/mapper/centos_ba--eraappl--v-root 41G  5.0G  36G  13% /
/dev/mapper/centos_ba--eraappl--v-home 20G   33M  20G   1% /home
/dev/sda1       497M  124M  374M  25% /boot
tmpfs          184M   0 184M   0% /run/user/0
```

Before

```
[root@protect ~]# xfs_growfs /
meta-data=/dev/mapper/centos_ba--eraappl--v-root isize=256    agcount=4, agsize=2623232 blks
        =                       sectsz=512   attr=2, projid32bit=1
        =                       crc=0        finobt=0 spinodes=0
data     =                       bsize=4096   blocks=10492928, imaxpct=25
        =                       sunit=0      swidth=0 blks
naming   =version 2             bsize=4096   ascii-ci=0 ftype=0
log      =internal             bsize=4096   blocks=5123, version=2
        =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                 extsz=4096   blocks=0, rtextents=0
data blocks changed from 10492928 to 12082176
```

```
[root@protect ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        908M   0 908M   0% /dev
tmpfs           920M   0 920M   0% /dev/shm
tmpfs           920M  8.8M 911M   1% /run
tmpfs           920M   0 920M   0% /sys/fs/cgroup
/dev/mapper/centos_ba--eraappl--v-root 47G  5.0G  42G  11% /
/dev/mapper/centos_ba--eraappl--v-home 20G   33M  20G   1% /home
/dev/sda1       497M  124M  374M  25% /boot
tmpfs          184M   0 184M   0% /run/user/0
```

After