# Remove disk from volumegroup in AIX

Article Number: 545 | Rating: 5/5 from 1 votes | Last Updated: Tue, Apr 16, 2019 5:44 PM

Sometimes in a migration project you need to temporary add extra disks to volume group. As a storage admin you like get
the disks back when your colleagues are finished migrating the application. I tried to create a clear procedure to get this done.

Used commands:
- df
- lspv
- chfs
- cfgmgr
- vgextend
- migratepv
- reducevg
- rmdev

In this example we have a "vgexports" volumegroup which is 2TB and you only use 17%. You like to reduce the size to 600GB. First
you need to create the new disks on your storage system and map the host to the volumes. We create 3 disks of 200GB to create the
wanted 600GB. It is best practice to create multiple physical volumes in a volume group to be more flexible with in- and decreasing
a volume group.

```
root@lpar001:~:>df -g |grep exports
Filesystem  GB blocks  Free  %Used  Iused  %Iused  Mounted on
/dev/exportsfs  2000.00  1660.30  17%  2730  1%  /exports
```

In this case we have 2 disks of 1TB in this volume group.

```
root@lpar001:~:>lspv |grep vgexports
hdisk0  00f90383de4344a5  vgexports  active
hdisk1  00f90383e758cfcb  vgexports  active
```

We want to remove these disks and replace them for 3 200GB disks to reduce the filesystem with 1.4TB.

First we kan reduce the filesystemsize to 600GB with the command chfs. This can take a while, depending on the size of the filesystem.

```
root@lpar001:~:>chfs -a size=600G /dev/exportsfs
Filesystem size changed to 1258291200
```

```
root@lpar001:~:>df -g |grep exports
Filesystem  GB blocks Free  %Used  Iused  %Iused  Mounted on
/dev/exportsfs  600.00  260.51  57%  2730  1%  /exports
```

Before we can remove the disks, we need to add additional smaller disks to which which we can migrate the partitions to. After you created and mapped the physical disks to this lpar from your storage device, you have to detect them with the cfgmgr command.

```
root@lpar001:~:>cfgmgr
(no output)
```

If the disks are recognized, you should "see" them with the lspv command.

```
root@lpdd002:~:>lspv
hdisk0  00f90383cdb8533f  rootvg  active
hdisk1  00f90383de4344a5  vgexports  active
hdisk2  00f90383e758cfcb  vgexports  active
hdisk3  none  None
hdisk4  none  None
hdisk5  none  None
```

The 3 new disks are shown with volumegroup "None". Now you have to add them to the volumegroup "vgexports". You can add them to the vgexports with the extendvg command.

extendvg vgexports hdisk3 hdisk4 hdisk5

After this the lspv shows this output.

```
root@lpar001:~:>lspv | grep export
hdisk0  00f90383cdb8533f  rootvg  active
hdisk1  00f90383de4344a5  vgexports  active
hdisk2  00f90383e758cfcb  vgexports  active
hdisk3  00fad72c95e94950  vgexports  active
hdisk4  00fad72c95e976a5  vgexports  active
hdisk5  00fad72c95e981ce  vgexports  active
```

So hdisk1 and hdisk2 are the 1TB disks and hdisk3, hdisk4 and hdisk5 are the 200GB disks.

Now we can empty the 1TB disks, which we like to remove from the volumegroup, with the command migratepv. This can take a while, depending on the size of the partitions.

```
root@lpar001:~:>migratepv hdisk1 hdisk2
(no output)
```

After migration of the partitions, you should be able to remove the disks from the volume group with the reducevg command.

```
root@lpar001:~:>reducevg vgexports hdisk1
root@lpar001:~:>lspv
hdisk0  00f90383cdb8533f  rootvg  active
hdisk1  00f90383de4344a5  None
hdisk2  00f90383e758cfcb  vgexports  active
hdisk3  00fad72c95e94950  vgexports  active
hdisk4  00fad72c95e976a5  vgexports  active
hdisk5  00fad72c95e981ce  vgexports  active
```

Note. If you try to remove a disk which still has partitions after the migratepv procedure, you will receive an error message.

```
root@lpar001:~:>reducevg vgexports hdisk2
0516-016 ldeletepv: Cannot delete physical volume with allocated
```

partitions. Use either migratepv to move the partitions or
reducevg with the -d option to delete the partitions.
0516-884 reducevg: Unable to remove physical volume hdisk3.

In this case you need to decrease the filesystem size again (a few GB should be enough).
after decreasing the filesystem, you need to use the migratepv command (migratepv hdisk2) again on this disk to migrate the leftover partition from this disk. When this is finished you will be able to use reducevg (reducevg vgexports hdisk2) to remove the last harddisk from the volume group.

If both disks are removed from the volume group, you can remove the disks from the OS with the rmdev command.

root@lpar001:~:>rmdev -dRl hdisk1
hdisk1 deleted

root@lpar001:~:>rmdev -dRl hdisk2
hdisk2 deleted

If the disks are removed from the OS, you can remove the disks from the storage device and you're done.