

LVM: Move allocated PE between Physical Volumes

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LVM: Move allocated PE between Physical Volumes

```
# Tested on RHEL 5.2

# I need to free up and remove /dev/sdc disk from my system. As it
# makes part of "datavg"
# Volume Group, and since it is not 100% free, I'll need to move the
# data from to another
# disk first.
# For that, I've added a new disk, /dev/sdd, to transfer all the
# allocated extents from
# /dev/sdc

pvs
  PV          VG          Fmt  Attr  PSize  PFree
  /dev/sda2  rootvg      lvm2  a-    11.72G 864.00M
  /dev/sdb   datavg      lvm2  a-    30.00G 0
  /dev/sdc   datavg      lvm2  a-    5.00G  2.97G  <----
In use
  /dev/sdd   datavg      lvm2  a-    15.00G 15.00G  <----
Free

# 'pvdiskdisplay' command used with '-m' option shows the mapping of
# physical extents to logical
# volumes that are spread across my disk. These are the physical
# extents that I will transfer
```

```
# to the new disk
```

```
pvdisplay -m /dev/sdc
```

```
--- Physical volume ---
```

```
PV Name          /dev/sdc
VG Name          datavg
PV Size          5.00 GB / not usable 3.81 MB
Allocatable     yes
PE Size (KByte) 4096
Total PE        1279
Free PE         761
Allocated PE    518
PV UUID         8JS7oV-6SYK-dQX9-1X24-oxG6-GBEO-Zh9Gce
```

```
--- Physical Segments ---
```

```
Physical extent 0 to 286:
```

```
Logical volume  /dev/datavg/lvData
Logical extents 4703 to 4989
```

```
Physical extent 287 to 517:
```

```
Logical volume  /dev/datavg/lvApp
Logical extents 762 to 992
```

```
Physical extent 518 to 1278:
```

```
FREE
```

```
# If there is sufficient space in destination disk, it will be enough  
to run 'pvmove'
```

```
# command indicating both origin and destination disk like this:
```

```
# ('-i' reports the progress of the move at five second intervals)
```

```
pvmove -i5 /dev/sdc /dev/sdd
```

```
/dev/sdc: Moved: 10.4%
```

```
/dev/sdc: Moved: 21.4%
```

```
/dev/sdc: Moved: 32.6%
```

```
/dev/sdc: Moved: 43.6%
```

```
/dev/sdc: Moved: 44.6%
```

```
/dev/sdc: Moved: 54.2%
```

```
/dev/sdc: Moved: 64.1%
```

```
/dev/sdc: Moved: 73.9%
/dev/sdc: Moved: 84.0%
/dev/sdc: Moved: 93.8%
/dev/sdc: Moved: 100.0%
```

```
# Once operation done, we can see that /dev/sdc is 100% free and that
the number of PFree
# on /dev/sdd has been reduced
```

```
pvs
```

PV	VG	Fmt	Attr	PSize	PFree	
/dev/sda2	rootvg	lvm2	a-	11.72G	864.00M	
/dev/sdb	datavg	lvm2	a-	30.00G	0	
/dev/sdc	datavg	lvm2	a-	5.00G	5.00G	<-----

```
Free
```

/dev/sdd	datavg	lvm2	a-	15.00G	12.97G	<-----
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```
In use
```

```
# Now all the Physical Extents of /dev/sdc are free. The allocated
ones have been
# transferred to /dev/sdd
```

```
pvdisplay -m /dev/sdc
```

```
--- Physical volume ---
```

```
PV Name          /dev/sdc
VG Name          datavg
PV Size          5.00 GB / not usable 3.81 MB
Allocatable      yes
PE Size (KByte)  4096
Total PE         1279
Free PE          1279
Allocated PE     0
PV UUID          8JS7oV-6SYK-dQX9-1XMO-oxG6-GBEO-Zh9Gce
```

```
--- Physical Segments ---
```

```
Physical extent 0 to 1278:
```

FREE

pvdisplay -m /dev/sdd

--- Physical volume ---

PV Name	/dev/sdd
VG Name	datavg
PV Size	15.00 GB / not usable 4.00 MB
Allocatable	yes
PE Size (KByte)	4096
Total PE	3839
Free PE	3321
Allocated PE	518
PV UUID	9Rsa40-n4I2-l3m5-sEH4-VDNX-AqYl-Gj9euZ

--- Physical Segments ---

Physical extent 0 to 230:

Logical volume	/dev/datavg/lvApp
Logical extents	762 to 992

Physical extent 231 to 517:

Logical volume	/dev/datavg/lvData
Logical extents	4703 to 4989

Physical extent 518 to 3838:

FREE

Everything is ready for removing the disk ('vgreduce', 'pvremove', etc,..)

'pvmove' supports also following options:

No destination disk specified: Move all allocated space off the physical volume to other

```
# free physical volumes in the volume group, if any:

pvmove /dev/sdc

# Move just the extents of the specified logical volume (See
'pvdisplay -m' here before) to
# other free physical volumes in the volume group:

pvmove -n lvData /dev/sdc

# Run the command in the background, '-b':

pvmove -b /dev/sdc /dev/sdd
```

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