

LVM: Unmirror/Mirror "rootvg" Volume Group

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Tested on AIX 5.3

```
# UN-MIRRORING "rootvg"
```

```
# -----  
-----
```

```
# We are un-mirroring a "rootvg" VG distributed on "hdisk0" &  
"hdisk1" disks like this one  
# (we'll take "hdisk1" out of the mirror for whatever reason):
```

```
lspv | grep rootvg
```

```
    hdisk0          0039c23db037da0b  
rootvg            active  
    hdisk1          0039c23db037dae6  
rootvg            active
```

```
lsvg -l rootvg
```

```
    rootvg:  
    LV NAME          TYPE      LPs      PPs      PVs      LV STATE  
MOUNT POINT  
    hd5              boot      1         2         2        closed/syncd  
N/A  
    hd6              paging    128      256      2        open/syncd  
N/A  
    hd8              jfslog   1         2         2        open/syncd  
N/A  
    hd4              jfs      1         2         2        open/syncd  
/
```

```

    hd2          jfs      14      28      2      open/syncd
/usr
    hd9var       jfs      8       16      2      open/syncd
/var
    hd3          jfs      8       16      2      open/syncd
/tmp
    lv_dump2     sysdump  32      32      1      open/syncd
N/A
    hd10opt      jfs      8       16      2      open/syncd
/opt
    loglv00      jfs2log  1       2       2      open/syncd
N/A
    localoptlv   jfs2     309     618     2      open/stale
/local/opt
    lv_dump1     sysdump  32      32      1      open/syncd
N/A
    fslv00       jfs2     8       16      2      open/stale
/local/home

```

```
lspv -l hdisk0
```

```

    hdisk0:
    LV NAME          LPs      PPs      DISTRIBUTION          MOUNT
POINT
    hd10opt          8         8         00..00..01..00..07  /opt
    hd3              8         8         00..00..08..00..00  /tmp
    hd9var           8         8         00..00..08..00..00  /var
    hd2             14        14        00..00..11..01..02  /usr
    hd4              1         1         00..00..01..00..00  /
    hd8              1         1         00..00..01..00..00  N/A
    hd6             128       128       00..101..27..00..00  N/A
    hd5              1         1         01..00..00..00..00  N/A
    fslv00           8         8         00..00..01..07..00
/local/home
    lv_dump1         32        32        00..00..32..00..00  N/A
    localoptlv       309       309       108..08..19..101..73
/local/opt
    loglv00          1         1         01..00..00..00..00  N/A

```

```
lspv -l hdisk1
```

```
hdisk1:
```

LV NAME	LPs	PPs	DISTRIBUTION	MOUNT
POINT				
hd10opt	8	8	00..00..08..00..00	/opt
lv_dump2	32	32	00..00..00..00..32	N/A
hd3	8	8	00..00..08..00..00	/tmp
hd9var	8	8	00..00..08..00..00	/var
hd2	14	14	00..00..14..00..00	/usr
hd4	1	1	00..00..01..00..00	/
hd8	1	1	00..00..01..00..00	N/A
hd6	128	128	00..109..19..00..00	N/A
hd5	1	1	01..00..00..00..00	N/A
fslv00	8	8	00..00..00..00..08	
/local/home				
localoptlv	309	309	108..00..50..109..42	
/local/opt				
loglv00	1	1	01..00..00..00..00	N/A

```
# First of all verify if there are any volumes belonging to "hdisk1"
acting as dump device;
# if this is the cas, we'll free them up:
```

```
sysdumpdev -l
```

primary	/dev/lv_dump1	
secondary	/dev/lv_dump2	<---
copy directory	/var/adm/ras	
forced copy flag	TRUE	
always allow dump	FALSE	
dump compression	ON	

```
sysdumpdev -s /dev/sysdumpnull
```

```
primary          /dev/lv_dump1
secondary        /dev/sysdumpnull    <---
copy directory   /var/adm/ras
forced copy flag TRUE
always allow dump FALSE
dump compression ON
```

```
# Let's remove "/dev/lv_dump2" from "hdisk1"
```

```
rmlv lv_dump2
```

```
# ... and, finally, completely un-mirror rootvg (take out "hdisk1"):
```

```
reducevg rootvg hdisk1
```

```
# RE-MIRRORING "rootvg"
```

```
# -----  
-----
```

```
# We are re-constructing mirror that was split on previous step or  
just mirroring "rootvg"
```

```
# in order to have a redundancy in case of problems with one of the  
boot disks
```

```
# Verify that the disk where we are creating the mirror, "hdisk1", is  
not in use - It
```

```
# doesn't belong to any VG ("None") -
```

```
lspv
```

```

    hdisk0          0039c23db037da0b
rootvg             active
    hdisk1          0039c23db037dae6          None
[...]
```

Just for info, check Logical Volume distribution on both disks

```
lspv -l hdisk0
```

```

    hdisk0:
    LV NAME          LPs      PPs      DISTRIBUTION      MOUNT
POINT
    hd10opt          8         8         00..00..01..00..07  /opt
    hd3              8         8         00..00..08..00..00  /tmp
    hd9var           8         8         00..00..08..00..00  /var
    hd2              14        14        00..00..11..01..02  /usr
    hd4              1         1         00..00..01..00..00  /
    hd8              1         1         00..00..01..00..00  N/A
    hd6              128       128       00..101..27..00..00 N/A
    hd5              1         1         01..00..00..00..00  N/A
    fslv00           8         8         00..00..01..07..00
/local/home
    lv_dump1         32        32        00..00..32..00..00  N/A
    localoptlv       309       309       108..08..19..101..73
/local/opt
    loglv00          1         1         01..00..00..00..00  N/A
```

```
lspv -l hdisk1
```

```

    0516-320 : Physical volume 0039c23db037dae60000000000000000 is not
assigned to
        a volume group.
```

Extend "rootvg" with the new disk (it system detects that there is any information on

```
# disk belonging to an old VG it may be necessary to use -f option,
like here)
```

```
extendvg rootvg hdisk1
```

```
0516-1398 extendvg: The physical volume hdisk1, appears to belong
to
```

```
another volume group. Use the force option to add this physical
volume
```

```
to a volume group.
```

```
0516-792 extendvg: Unable to extend volume group.
```

```
extendvg -f rootvg hdisk1
```

```
lspv
```

```
hdisk0          0039c23db037da0b
```

```
rootvg          active
```

```
hdisk1          0039c23db037dae6
```

```
rootvg          active
```

```
[...]
```

```
# Mirror all "rootvg" volumes on "hdisk1". For the moment we won't
synchronize data, that
```

```
# will be done on a further step
```

```
mirrorvg -s rootvg hdisk1
```

```
0516-1804 chvg: The quorum change takes effect immediately.
```

```
0516-1126 mirrorvg: rootvg successfully mirrored, user should
perform
```

```
bosboot of system to initialize boot records. Then, user
must modify
```

```
bootlist to include: hdisk0 hdisk1.
```

```
# -s Disable Sync
```

```
# Returns the mirrorvg command immediately without performing any
type of mirror
# synchronization. If this option is used, the mirror may exist for
a logical volume
# but is not used by the operating system until it has been
synchronized with the
# syncvg command.
```

```
# Check number of copies (PVs) of each volume. Note that for lv_dump1
there is only
# one copy. This is because system has detected that lv_dump1
corresponds to a
# dump device that shouldn't be mirrored. We'll create manually
another copy of dump
# device on a new volume on mirror disk...
```

```
lsvg -l rootvg
```

```
    rootvg:
    LV NAME          TYPE      LPs    PPs    PVs  LV STATE
MOUNT POINT
    hd5              boot      1      2      2    closed/stale
N/A
    hd6              paging    128    256    2    open/stale
N/A
    hd8              jfslog    1      2      2    open/stale
N/A
    hd4              jfs       1      2      2    open/stale
/
    hd2              jfs       14     28     2    open/stale
/usr
    hd9var           jfs       8      16     2    open/stale
/var
    hd3              jfs       8      16     2    open/stale
/tmp
    hd10opt          jfs       8      16     2    open/stale
/opt
```

```

    loglv00          jfs2log    1      2      2      open/stale
N/A
    localoptlv      jfs2      309    618    2      open/stale
/local/opt
    lv_dump1        sysdump   32     32     1      open/syncd
N/A          <----
    fslv00          jfs2      8      16     2      open/stale
/local/home

```

```

mklv -t sysdump -y lv_dump2 rootvg 32 hdisk1
    lv_dump2

```

```

lsvg -l rootvg

```

```

    rootvg:
    LV NAME          TYPE      LPs      PPs      PVs      LV STATE
MOUNT POINT
    hd5              boot      1        2        2        closed/stale
N/A
    hd6              paging    128     256     2        open/stale
N/A
    hd8              jfslog    1        2        2        open/stale
N/A
    hd4              jfs       1        2        2        open/stale
/
    hd2              jfs       14       28     2        open/stale
/usr
    hd9var           jfs       8        16     2        open/stale
/var
    hd3              jfs       8        16     2        open/stale
/tmp
    lv_dump2        sysdump   32     32     1        closed/syncd
N/A          <----
    hd10opt         jfs       8        16     2        open/stale
/opt
    loglv00         jfs2log    1        2        2        open/stale
N/A

```



```

    localoptlv          jfs2          309      618      2      open/stale
/local/opt
    lv_dump1            sysdump      32       32       1      open/syncd
N/A          <---
    fslv00              jfs2          8        16       2      open/stale
/local/home

```

```

# ...and configure dump device correctly (as it was before un-
mirroring "rootvg")

```

```

sysdumpdev -l
    primary              /dev/lv_dump1
    secondary            /dev/sysdumpnull    <---
    copy directory      /var/adm/ras
    forced copy flag    TRUE
    always allow dump   FALSE
    dump compression    ON

```

```

sysdumpdev -s /dev/lv_dump2
    primary              /dev/lv_dump1
    secondary            /dev/lv_dump2      <---
    copy directory      /var/adm/ras
    forced copy flag    TRUE
    always allow dump   FALSE
    dump compression    ON

```

```

# Check list of boot devices and add "hdisk1"

```

```

bootlist -m normal -o
    hdisk0 blv=hd5
    hdisk1

```

```

bosboot -ad hdisk1
    bosboot: Boot image is 44765 512 byte blocks.

```

```
bootlist -m normal -o
  hdisk0 blv=hd5
  hdisk1 blv=alt_hd5 <--- It will remain like that until disk
data
                                is synchronized between disks in
"rootvg"
```

```
# And, finally, synchronize data on "rootvg" volumes
```

```
varyonvg rootvg
```

```
# Alternatively, we can use following command:
```

```
# syncvg -v rootvg
```

```
# Check status of Volume Group
```

```
lsvg rootvg
  VOLUME GROUP:          rootvg          VG IDENTIFIER:
0039c23d00004c000000011a95b978c9
  VG STATE:              active          PP SIZE:          128
megabyte(s)
  VG PERMISSION:        read/write      TOTAL PPs:        1092
(139776 megabytes)
  MAX LVs:               256            FREE PPs:         54
(6912 megabytes)
  LVs:                   13             USED PPs:         1038
(132864 megabytes)
  OPEN LVs:              12             QUORUM:           1
(Disabled)
  TOTAL PVs:             2              VG DESCRIPTORS:  3
  STALE PVs:             1              STALE PPs:        486
  ACTIVE PVs:            2              AUTO ON:          yes
```

```
MAX PPs per VG:      32512
MAX PPs per PV:      1016
LTG size (Dynamic): 256 kilobyte(s)
HOT SPARE:           no
MAX PVs:              32
AUTO SYNC:           no
BB POLICY:
```

relocatable

Synchronization progress can be monitored like this:

```
lsvg rootvg | grep -i stale
  STALE PVs:          1
  STALE PPs:          484
```

```
lsvg rootvg | grep -i stale
  STALE PVs:          1
  STALE PPs:          478
```

Finally, check list of boot devices

```
bootlist -m normal -o
  hdisk0 blv=hd5
  hdisk1 blv=hd5
```

source: <https://sites.google.com/site/syscookbook/aix/lvm-rootvg-unmirror-mirror>

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