

# Ubuntu - Extend Your Default LVM Space

```
$ df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
tmpfs	791M	1.2M	790M	1%	/run
/dev/mapper/ubuntu--vg-ubuntu--lv	98G	7.0G	86G	8%	/
tmpfs	3.9G	0	3.9G	0%	/dev/shm
tmpfs	5.0M	0	5.0M	0%	/run/lock
/dev/sda2	2.0G	130M	1.7G	8%	/boot
tmpfs	791M	4.0K	791M	1%	/run/user/1000

```
user@svr1:~$ sudo vgdisplay
```

```
[sudo] password for user:
```

```
--- Volume group ---
VG Name          ubuntu-vg
System ID
Format           lvm2
Metadata Areas   1
Metadata Sequence No 2
VG Access        read/write
VG Status        resizable
MAX LV           0
Cur LV          1
Open LV          1
Max PV           0
Cur PV          1
Act PV           1
VG Size          <929.00 GiB
PE Size          4.00 MiB
Total PE         237823
Alloc PE / Size 25600 / 100.00 GiB
Free PE / Size  212223 / <829.00 GiB
VG UUID          rF3fw2-13h2-kAiL-aeWA-KyDZ-5HQU-GwvKDe
```

```
user@svr1:~$ sudo lvdisplay
```

```
--- Logical volume ---
LV Path          /dev/ubuntu-vg/ubuntu-lv
LV Name          ubuntu-lv
VG Name          ubuntu-vg
LV UUID          xUUIxr-wnDl-7Znk-EQpK-gAwb-Wug0-a7JSTb
LV Write Access  read/write
LV Creation host, time ubuntu-server, 2023-06-28 23:21:26 +0000
LV Status        available
# open           1
LV Size          100.00 GiB
```

```
Current LE          25600
Segments           1
Allocation          inherit
Read ahead sectors auto
- currently set to 256
Block device        253:0
```

```
user@svr1:~$ sudo su
root@svr1:/home/user# cd
root@svr1:~#
```

```
root@svr1:~# lvextend -l +100%FREE /dev/ubuntu-vg/ubuntu-lv
```

```
Size of logical volume ubuntu-vg/ubuntu-lv changed from 100.00 GiB (25600
extents) to <929.00 GiB (237823 extents).
Logical volume ubuntu-vg/ubuntu-lv successfully resized.
root@svr1:~#
```

Run `lvdisplay` once more to verify that that the logical volume was successfully resized.

```
root@svr1:~# lvdisplay
--- Logical volume ---
LV Path                /dev/ubuntu-vg/ubuntu-lv
LV Name                 ubuntu-lv
VG Name                 ubuntu-vg
LV UUID                 xUUIxr-wnDl-7Znk-EQpK-gAwb-Wug0-a7JSTb
LV Write Access         read/write
LV Creation host, time ubuntu-server, 2023-06-28 23:21:26 +0000
LV Status                available
# open                  1
LV Size                 <929.00 GiB
Current LE              237823
Segments                1
Allocation              inherit
Read ahead sectors     auto
- currently set to     256
Block device            253:0

root@svr1:~#
```

At this point you have increased the size of the block volume where your root filesystem resides, but you still need to extend the filesystem on top of it.

First, run `df -h` to verify your (almost full) root file system, then run `resize2fs /dev/mapper/ubuntu-vg-ubuntu-lv` to extend your filesystem, and run `df -h` one more time to make sure you're successful.

Note: The following operations and output involves a 2TB physical drive instead of 1TB. Sorry, but this is a different server where the entire job was properly finished by extending the file system on top of the block volume that you just extended.

Here are the new readings for 'svr3' (using a pair of 2TB Drives on a hardware RAID-1 Array - which matters not.)

```
Logical volume ubuntu-vg/ubuntu-lv successfully resized.
root@svr3:~# lvsdisplay
--- Logical volume ---
LV Path                /dev/ubuntu-vg/ubuntu-lv
LV Name                ubuntu-lv
VG Name                ubuntu-vg
LV UUID                0FjNEm-jrLm-tYWv-AzHT-TZmm-l9bx-aVWpyR
LV Write Access        read/write
LV Creation host, time ubuntu-server, 2023-06-18 18:42:52 +0000
LV Status               available
# open                 1
LV Size                <1.82 TiB
Current LE             476287
Segments               1
Allocation              inherit
Read ahead sectors     auto
- currently set to    256
Block device           253:0
```

```
root@svr3:~# df -h
Filesystem                Size      Used Avail Use% Mounted on
tmpfs                     1.6G      1.2M  1.6G   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv  98G       12G   82G  13% /
tmpfs                     7.8G       0   7.8G   0% /dev/shm
tmpfs                     5.0M       0   5.0M   0% /run/lock
/dev/sda2                 2.0G     253M  1.6G  14% /boot
tmpfs                     1.6G       4.0K  1.6G   1% /run/user/1000
```

Now, run the following command to extend your filesystem.

```
root@nc3:~# resize2fs /dev/mapper/ubuntu--vg-ubuntu--lv
```

Results

```
resize2fs 1.46.5 (30-Dec-2021)
Filesystem at /dev/mapper/ubuntu--vg-ubuntu--lv is mounted on /; on-line
resizing required
old_desc_blocks = 13, new_desc_blocks = 233
The filesystem on /dev/mapper/ubuntu--vg-ubuntu--lv is now 487717888 (4k)
blocks long.
```

Run df -h again.

```
root@nc3:~# df -h
Filesystem                Size      Used Avail Use% Mounted on
tmpfs                     1.6G      1.2M  1.6G   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv  1.8T       12G  1.8T   1% /
```

```
tmpfs          7.8G    0  7.8G    0% /dev/shm
tmpfs          5.0M    0  5.0M    0% /run/lock
/dev/sda2      2.0G   253M   1.6G   14% /boot
tmpfs          1.6G   4.0K   1.6G    1% /run/user/1000
root@nc3:~#
```

Run vgdisplay again

```
root@nsvr3:~# vgdisplay
--- Volume group ---
VG Name          ubuntu-vg
System ID
Format           lvm2
Metadata Areas   1
Metadata Sequence No 3
VG Access        read/write
VG Status        resizable
MAX LV           0
Cur LV          1
Open LV          1
Max PV           0
Cur PV          1
Act PV           1
VG Size          <1.82 TiB
PE Size          4.00 MiB
Total PE         476287
Alloc PE / Size  476287 / <1.82 TiB
Free PE / Size   0 / 0
VG UUID          bK42QC-L9pu-bEiA-ndU0-j3v7-3XWU-tA06R5
```

Run lvdisplay again

```
root@svr3:~# lvdisplay
--- Logical volume ---
LV Path          /dev/ubuntu-vg/ubuntu-lv
LV Name          ubuntu-lv
VG Name          ubuntu-vg
LV UUID          0FjNEm-jrLm-tYWv-AzHT-TZmm-l9bx-aVWpyR
LV Write Access  read/write
LV Creation host, time ubuntu-server, 2023-06-18 18:42:52 +0000
LV Status        available
# open          1
LV Size          <1.82 TiB
Current LE       476287
Segments        1
Allocation       inherit
Read ahead sectors auto
- currently set to 256
Block device     253:0
```

```
root@svr3:~#
```

VG Size and LV Size are both <1.82 TiB

I believe we're done here.

From:

<https://www.installconfig.com/> - **Install Config Wiki**

Permanent link:

[https://www.installconfig.com/doku.php?id=ubuntu\\_extend\\_default\\_lvm\\_space&rev=1688065645](https://www.installconfig.com/doku.php?id=ubuntu_extend_default_lvm_space&rev=1688065645)

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