

UUID Information

Be aware of UUID

UUID stands for Universally Unique Identifier of a partition. This ID is used in few different places to identify the partition. Most commonly this would be `/etc/fstab`.

UUID vs PARTUUID

- **UUID** is a *filesystem-level* UUID, which is retrieved from the filesystem metadata inside the partition. It can only be read if the filesystem type is known and readable.
- **PARTUUID** is a *partition-table-level* UUID for the partition, a standard feature for all partitions on GPT-partitioned disks.

You can get a few hints about the difference between UUID and PARTUUID by specifying the `-p` option.

```
blkid -p /dev/sda1
```

UUIDs are not hardware-specific but stored in the partition's filesystem. That means cloning a disk or partition with `dd` will result in the same UUID. However recreating the partitions manually on the new disk (e.g. smaller disk), will result in new UUID. This could result in problems when booting the new disk uses UUID in `fstab`.

```
cat /etc/fstab
# /etc/fstab: static file system information.
# <file system> <mount point> <type> <options>          <dump> <pass>
# / was on /dev/sda3 during installation
UUID=b2fa29ee-670f-4d44-becc-d9ec368d4a41 /                ext4
noatime,nodiratime,errors=remount-ro 0                    1
```

This can be solved by either changing the entries in `fstab` to the old style: `/dev/dbX`, Or by getting the new UUID and update `fstab` accordingly:

```
# blkid /dev/sdb1
/dev/sdb1: UUID="34628ffd-58e6-4a58-9b4d-533719305931" TYPE="ext4"
PARTUUID="fa64ccff-01"
```

Assign UUID to partition using `tune2fs`.

```
$ sudo tune2fs /dev/sdb1 -U 39ea80c4-e748-47eb-835c-64025de53e26 tune2fs 1.44.6 (5-Mar-2019)
Setting the UUID on this filesystem could take some time. Proceed anyway (or wait 5 seconds to
proceed) ? (y,N) y
```

Check if UUID is properly assigned to the partition.

```
$ sudo blkid /dev/sdb1 /dev/sdb1: UUID="39ea80c4-e748-47eb-835c-64025de53e26" TYPE="ext4"
```

PARTUUID="2c6a7a3a-01"

Check current UUID of the filesystem

To find of the current UUID of the filesystem you can use either of the below commands.

```
# blkid /dev/sdc1
/dev/sdc1: UUID="94ddf54e-53f7-4a1a-bd2f-d0a01ee448d1" TYPE="ext4"
```

```
# dumpe2fs /dev/sdc1 | grep UUID
dumpe2fs 1.42.9 (28-Dec-2013)
Filesystem UUID:          94ddf54e-53f7-4a1a-bd2f-d0a01ee448d1
```

You can also view the UUID in the file `/etc/fstab`, if there is an entry done manually for the filesystem.

```
# grep data /etc/fstab
UUID="94ddf54e-53f7-4a1a-bd2f-d0a01ee448d1"          /data      ext4      defaults
0 2
```

Change UUID of Filesystems

To do this, we are going to use `tune2fs`. The partition has to be unmounted prior apply the new UUID:

```
# umount /dev/sdb1

# tune2fs -U "94ddf54e-53f7-4a1a-bd2f-d0a01ee448d1" /dev/sdb1
# tune2fs -U random /dev/sdb1  // for random generated UUID
```

Change PARTUUID in partition table

You can change the PARTUUID of a partition with `gdisk`. I'd recommend to read `man gdisk` first. In the following example I show how I changed the PARTUUID of the second partition on my first drive (`sda`):

```
$ sudo gdisk /dev/sda
[sudo] password for mook:
GPT fdisk (gdisk) version 1.0.5
```

Partition table scan:

```
  MBR: protective
  BSD: not present
  APM: not present
  GPT: present
```

Found valid GPT with protective MBR; using GPT.

Command (? for help): x change to experts menu	# enter x to
Expert command (? for help): c change PARTUUID	# enter c to
Partition number (1-2): 2 number of the partition you want to change	# enter the
Enter the partition's new unique GUID ('R' to randomize): r New GUID is 76349364-D66C-4C19-B422-237A0D2DB9F5	
Expert command (? for help): m go back to main menu	# enter m to
Command (? for help): w write the change to disk	# enter w to
Command (? for help): q exit gdisk \$	# enter q to

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