SysTutorials

How to Make GPT Partition Table and Create Partitions with parted on Linux

By Eric Z Ma | In Linux, Tutorial | Updated on Aug 9, 2017

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My best favorite disk partition table manipulation tools are `cfdisk` / `fdisk` on Linux. However, for large disks, `cfdisk` / `fdisk` (of the versions by this post is written) will just give up with a message suggesting GPT partition table format and using GNU `parted` like

```
WARNING: The size of this disk is 6.0 TB (6001042391040 bytes).
DOS partition table format can not be used on drives for volumes
larger than (2199023255040 bytes) for 512-byte sectors. Use parted(1) and GUID
partition table format (GPT).
```

If you continue using `fdisk` / `cfdisk`, you will only create msdos partition table and use only less than 2TB space.

However, the `parted` 's interface is not that easy to use at the first try. After some struggling with parted, I finally make a partition on the new 6TB RAID 0 storage array. Here is the process.

```
pc ~ # parted /dev/sdc
GNU Parted 2.3
Using /dev/sdc
Welcome to GNU Parted! Type 'help' to view a list of commands.
(parted) mklabel GPT
Warning: The existing disk label on /dev/sdc will be destroyed and all data on
this disk will be lost. Do you want to continue?
Yes/No? Yes
(parted) mkpart primary 2048s 100%
(parted) q
Information: You may need to update /etc/fstab.
```

Why "2048s" is used here? Please check this blog post.

For the command `mkpart primary 2048s 100%`, an alternative command is

```
mkpart PARTITION_LABEL ext4 primary 2048s 100%
```

which makes a partition with label PARTITION_LABEL.

The partition can be easily accessed later at path `/dev/disk/by-partlable/PARTITION_LABEL` which will be useful for writing `fstab` entry or other usages that need to directly use a partition block device.

The new partition `/dev/sdc1` is created:

```
pc ~ # ls /dev/sd*
/dev/sda   /dev/sda1   /dev/sda2   /dev/sda3   /dev/sda4   /dev/sda5   /dev/sdb
/dev/sdb1   /dev/sdc   /dev/sdc1
```

Check the information again:

```
pc ~ # parted /dev/sdc print
Model: ORICO H/ W RAID0 (scsi)
Disk /dev/sdc: 6001GB
Sector size (logical/physical): 512B/4096B
Partition Table: gpt

Number  Start   End     Size    File system  Name     Flags
 1      1049kB  6001GB  6001GB                primary
```

Alternative to `parted`: if you don't want to use `parted`, you may try `cgdisk` which is a curses-based GPT manipulator that feel very similar to `cfdisk`.

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Eric Z Ma

Eric is a father and systems guy. Eric is interested in building high-performance and scalable distributed systems and related technologies. The views or opinions expressed here are solely Eric's own and do not necessarily represent those of any third parties.

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Eric Z Ma says:

Aug 9, 2017 at 6:34 pm

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device.

David says:

May 12, 2018 at 5:14 pm

Number Start End Size File system Name Flags
1 1049kB 6001GB 6001GB primary

There is not file system showing at the end? How do I get something like ext4 or ntfs there?

Admins says:

May 12, 2018 at 10:25 pm

It may appear after you do really make a filesystem that parted can recognize.