perplexity

deep explained linux parted mkpart for gpt

The `parted` command in Linux is used for creating and manipulating partition tables[1]. The `mkpart` subcommand is used to create partitions on a disk[2]. The syntax and options for `mkpart` vary based on the partition table type (e.g., GPT or MBR)[1].

GPT Partitioning with `parted`

- **Basic Syntax:** `mkpart [part-type name fs-type] start end`[3]
  - `name` is a name for the partition, and it is required for GPT partition tables[3] [4].
  - `fs-type` is the file system type[3]. While the `parted` documentation indicates `fs-type` is required for data partitions, some users have found that the command works without specifying it[3].
  - `start` and `end` define the partition's beginning and end[3]. Different units are allowed for these parameters[2].

Common Issues and Solutions

- **Names with spaces:** Enclose the name and double quotes in single quotes[3]. For example: `sudo parted /dev/sdb mkpart 'Name of the partition' 0% 100%`.
- **Unallocated space:** The `parted` command may leave a small amount of unallocated space[3]. This can be avoided by using `gdisk` instead[3].
- **File system prompts:** When using `parted` in interactive mode, it may prompt for a file system type[3].
- **Incorrect alignment:** The warning "The resulting partition is not properly aligned for best performance" may appear[5] [6]. `Parted` attempts to satisfy alignment constraints, but may not if the requested values deviate too much[6].

Example `parted` commands:

The following example creates multiple primary partitions on /dev/sdb[2]:

```
parted -s /dev/sdb mklabel gpt
parted -s /dev/sdb mkpart primary fat32 0% 512MiB
parted -s /dev/sdb mkpart primary linux-swap 1048576s 16GiB
parted -s /dev/sdb mkpart primary ext4 16GiB 40%
parted -s /dev/sdb mkpart primary ext4 40% 60%
parted -s /dev/sdb mkpart primary ext4 60% 100%
parted -s /dev/sdb name 1 EFI-Boot
parted -s /dev/sdb name 2 Swap
parted -s /dev/sdb name 3 root
```

```
parted -s /dev/sdb name 4 /opt
parted -s /dev/sdb name 5 /home
```

Note: Many online tutorials use `mkpart primary` for GPT, which is incorrect and sets "primary" as the partition label[1].

⁂

1. https://wiki.archlinux.org/title/Parted
2. https://www.baeldung.com/linux/partitioning-disks
3. https://superuser.com/questions/1521808/how-to-specify-a-gpt-name-containing-spaces-with-parted
4. https://www.baeldung.com/linux/fdisk-vs-parted
5. https://access.redhat.com/sites/default/files/attachments/parted_0.pdf
6. https://unix.stackexchange.com/questions/38164/create-partition-aligned-using-parted