How to Attach a Swap Partition to Linux? - GeeksforGeeks

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3-4 minutes

Virtual memory in Linux OS is RAM + swap space. It is used when memory usage of the system exceeds a certain point then swap space is used all the idle processes are shifted to swap and new processes are assigned to RAM. Now how to allocate swap space ideally swap space should be twice RAM size for example if RAM is 64KB then swap should be 128KB. This was the case when RAM sizes were small. For the latest computers, we know the minimum RAM is 2GB so swap space is less than twice of RAM due to a performance issue

According to fedora or Cent OS swap space documentation

Amount of system RAM	Recommended Swap space
2GB or less	Twice the RAM
Between 2GB to 8GB	Same as RAM
Between 8GB to 64GB	0.5 times the RAM
More than 64GB	Workload dependent

We will see an example of how to manage swap space. I am using vagrant and virtual box and using centos7 image instead of a proper Linux OS. (But you should use Linux machine instead of VM as they don’t come with a proper partition table)

Step 1: Open a terminal in your machine and start by typing the command below

lsblk (Used lsblk to show all my block devices attached on the machine)

```
[vagrant@localusers vagrant]$ lsblk
NAME             MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda                8:0    0 39.1G  0 disk
├─sda1             8:1    0    1G  0 part /boot
└─sda2             8:2    0 38.1G  0 part
  ├─vg00-lv_root 253:0    0   35G  0 lvm  /
  └─vg00-lv_swap 253:1    0    3G  0 lvm  [SWAP]
[vagrant@localusers vagrant]$
```

Step 2: We are going to create a new partition of 150 MB swap to demonstrate. Log in as the root user to your system in terminal using sudo su

fdisk -l (Check the memory using fdisk -l to check the existing partition)

```
[root@localusers vagrant]# fdisk -l

Disk /dev/sda: 41.9 GB, 41943040000 bytes, 81920000 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: dos
Disk identifier: 0x000960ad

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048     2099199     1048576   83  Linux
/dev/sda2         2099200    81919999    39910400   8e  Linux LVM

Disk /dev/mapper/vg00-lv_root: 37.6 GB, 37580963840 bytes, 73400320 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes


Disk /dev/mapper/vg00-lv_swap: 3254 MB, 3254779904 bytes, 6356992 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
```

Step 3: Start by first creating a new space using fdisk command

fdisk /dev/<device name> (can be sda1 or sda2)

You will be pushed to interactive mode

press n (Type n to create new space partition)

```
[root@localusers vagrant]# fdisk /dev/sda2
Welcome to fdisk (util-linux 2.23.2).

Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.
```

```
Device does not contain a recognized partition table
Building a new DOS disklabel with disk identifier 0xc7332e8b.

Command (m for help): n
Partition type:
   p   primary (0 primary, 0 extended, 4 free)
   e   extended
```

Choose the size of the partition

first sector: press enter (chooses default value)

last sector:+150M (Choose the size of space in the case 150 MB**)**

```
Adding logical partition 5
First sector (4096-79820799, default 4096):
Using default value 4096
Last sector, +sectors or +size{K,M,G} (4096-79820799, default 79820799): +150M
Partition 5 of type Linux and of size 150 MiB is set
```

Step 4: Choose the type of partition we want to create

press t

Specify partition number you want as swap

Press enter (to select default)

press 82 (82 which is linux swap partition type you can also type L to check all the code)

press w (type w to write new partition to disk)

```
Command (m for help): t
Partition number (2,5, default 5):
Hex code (type L to list all codes): 82
Changed type of partition 'Linux' to 'Linux swap / Solaris'

Command (m for help): w
The partition table has been altered!
```

Step 5: After that, you will exit fdisk interactive user mode will be back in the terminal

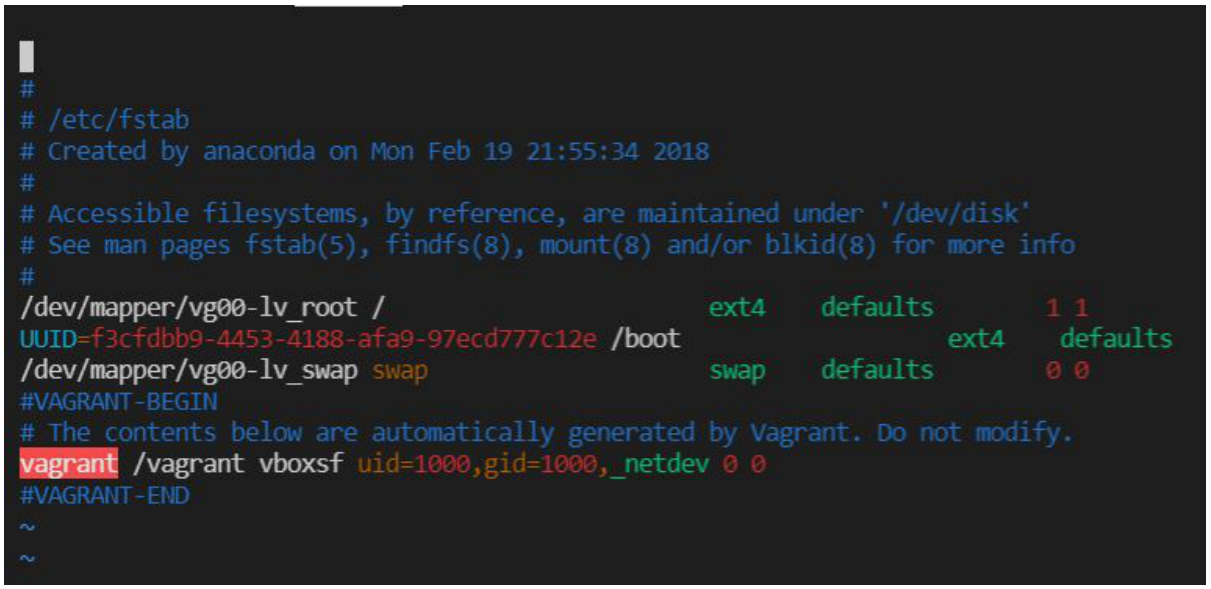
type partprobe (to re-read the partition table and avoid a reboot)

mkswap /dev/sdaX (can be sda1 or sda2) (Define new partition created as swap partition to memory)

swapon /dev/sdaX (can be sda1 or sda2) (makes new swap partition online)

Step 6: It is necessary to edit /**etc**/**fstab** file so that change stays even after reboot and remain permanent

Vim /etc/fstab (I have used vim editor but you can use any editor for this according to your choice)



Add a line to the bottom of the file

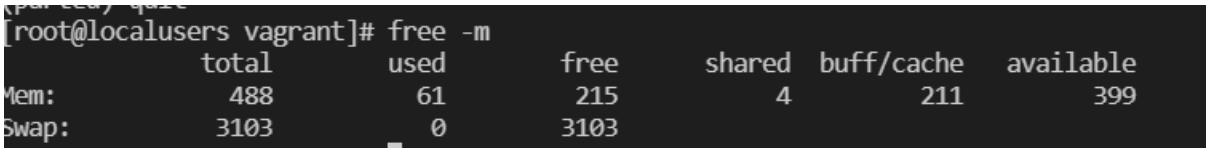
/dev/sdaX swap swap defaults 0 0

And exit and save your changes

(Where X is your partition number)

Reboot your device and open terminal

free -m (Use free -m to check the new swap partition)



Congrats you have created a new swap partition on your device