

Creating SWAP partition using FDISK & FALLOCATE commands

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Swap-partition holds the memory which is used in case the physical memory (RAM) is full . When RAM capacity has been utilized to maximum , Linux machine moves inactive pages from memory to swap-space which are then used by the system. Though it gets the

work done, it should not be considered as a replacement to physical memory/RAM.

In most cases, it is advised to keep SWAP-memory equal to size of physical memory at minimum & double the size of physical memory at maximum. So if you have 8 GB RAM on your system, Swap should be between 8-16 GB.

If a swap-partition has not been configured in your Linux system, your system might start killing off the running process/applications & might cause your system to crash. In this tutorial, we will learn to add swap-partition to Linux system & we will be discussing two methods for creating swap partition

- **Using fdisk command**
- **Using fallocate command**

(Recommended Read: [How to create SWAP SPACE in Linux system](#))

(Also Read: [Useful Linux Commands that you should know](#))

Creating swap Using Fdisk command

Normally, first hdd of the system is named */dev/sda* & partitions for it are named */dev/sda1* , */dev/sda2*. For this tutorial we will using a HDD that have 2 primary partitions on system i.e. */dev/sda1*, */dev/sda2* & *SWAP* will be */dev/sda3*.

Firstly we will create a partition,

```
$ fdisk /dev/sda
```

to create a new partition type 'n' . You will now be asked to enter the first cylinder value, just hit enter key to use default value & then you will asked to enter last cylinder value, here we will enter the size of swap partition (we will be using 1000MB). Enter the value in last

cylinder as *+1000M*.

```
root@server ~]# fdisk /dev/sda

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to
switch off the mode (command 'c') and change display units to
sectors (command 'u').

Command (m for help): n
First cylinder (1241-1567, default 1241):
Using default value 1241
Last cylinder, +cylinders or +size{K,M,G} (1241-1567, default 1567):+1000M
Command (m for help): _
```

We have now created a partition of size *1000MB* but we have not assigned it any partition type, so to assign a partition type, press “**t**” & press enter.

Now you will be first asked to enter partition number, which is **3** for our partition & then we will be asked to enter partition id which for swap it's **82** (to see list of all available partition types, press “**l**”) & then press “**w**” to save the partition table.

```
Command (m for help): t
Partition number (1-3): 3
Hex code (type L to list codes): 82
Changed system type of partition 3 to 82 (Linux swap / Solaris)

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

Calling ioctl() to re-read partition table.
```

Next we will format our swap partition using `mkswap` command

```
$ mkswap /dev/sda3
```



& will then activate our newly created swap

```
$ swapon /dev/sda3
```

But our swap will not be mounted automatically after every reboot. To mount it permanently in our system, we need to append */etc/fstab* file. Open */etc/fstab* file & make an entry of the following line

```
$ vi /etc/fstab
```

```
/dev/sda3 swap swap default 0 0
```

Save & close the file. Our swap now will even work after a reboot.

Creating swap using fallocate command

I prefer this method as this is easiest & fastest way to create swap. Fallocate is one of the most underestimated & very less used command. Fallocate is used to pre-allocate blocks/size to a files.

To create a swap using fallocate, we will firstly create a file named *swap_space* in */*. Next we will allocate *2GB* to our file *swap_space* ,

```
$ fallocate -l 2G /swap_space
```

We will then verify the size of the file by running

```
ls-lh /swap_space.
```

Next, we will make our */swap_space* more secure by changing the file permissions

```
$ chmod 600 /swap_space
```

Now only root will be able to read, write on this file. We will now format the swap partition,

```
$ mkswap /swap_space
```

& then will turn on our swap

```
$ swapon -s
```

This swap partition will need to be remounted after every reboot. So to make it permanent, edit the */etc/fstab*, as we did above & enter the following line

```
/swap_space swap swap sw 0 0
```

Save & exit the file. Our swap will now be permanently mounted.

We can check if your swap is working or not by running “**free -m**” on your terminal after rebooting the system.

This completes our tutorial on how to create swap using Fallocate and fdisk command, I hope it was simple enough to understand & learn. If you are having any issues or have have any queries, please mention them in the comment box below.

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