

# TRAINING

## Configuring Swap Partitions

## Overview

A computer has only a fixed amount of memory. When the memory fills up with data from running applications and services, the operating system uses hard disk space to store low priority data. Data is swapped from memory to disk, and back to memory again if an application needs it. The area on disk where this data is stored is called a swap partition.

Conventional wisdom held that swap partitions should be between 1.5 and 2 times the size of the computer's memory. The installers that ship with some distributions (Ubuntu, CentOS, etc) add 500MB to the amount of memory if the default partition layout is used. Ultimately, the purpose of the system will determine whether you need more than that.

## Key Ideas

**Partition:** Hard disks are partitioned before use. A partition can include a part of a disk, or the whole disk.

**fdisk:** A utility for creating and managing disk partitions, limited to disks of up to 2TB. Works with MBR disks.

**parted:** A utility for creating and managing disk partitions, can handle disks of any size. Works with MBR and GPT disks. Has two modes: command line and interactive.

**mkswap:** The mkswap command designates a partition for swapping. **swapon:** The swapon command tells the operating system to begin using a specified swap partition.

## Example Scenario

Practice configuring swap partitions by setting one up. This exercise requires you to create a swap partition if you don't already have one. Creating partitions is covered elsewhere in this material.

## Now Do It

1. Create a partition using parted or fdisk. This is just for practice, so doesn't need to be very large. Remember to designate the partition as a swap partition.
2. Take note of how the partition is named (i.e. /dev/sdc1). You can find this information using the lsblk command, fdisk -l, or by using print all from within the parted prompt.
3. Use the mkswap command on your swap partition to prepare it for use.
4. Use the swapon command to tell the operating system to begin using the swap partition.

5. Use the `swapon` command with the `-s` parameter to show the active swap partitions.

### If you remember nothing else...

A partition must be designated for swap usage when it is created. Swap partitions on personal computers are usually a bit larger than the system memory so that it's contents can be written to disk entirely when the system hibernates.

## Answer Key

1. Create a partition.

```
# parted /dev/sdd
(parted) mkpart
Partition name? []? swap
File system type? [ext2]? linux-swap
Start? 0
End? 4
```

2. Find out how the operating system has named the device.

```
# lsblk
NAME                MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINT
sda                  8:0    0   8G  0 disk
|--sda1              8:1    0 500M  0 part  /boot
|--sda2              8:2    0 7.5G  0 part
    |--centos-swap 253:0    0 820M  0 lvm    [SWAP]
    |--centos-root 253:1    0 6.7G  0 lvm    /
sdd                  8:48    0   4M  0 disk
|--sdd1              8:49    0   4M  0 part
```

3. Make the partition you just created into a swap partition.

```
# mkswap /dev/PARTITION
Setting up swapspace version 1, size = 4056 KiB
no label, UUID=70f3a2d2-d76f-41a6-a775-36175ac14934
```

4. Enable swapping to that partition

```
# swapon /dev/PARTITION
```

5. Confirm that the partition is in use for swapping:

```
# swapon -s
Filename            Type      Size  Used  Priority
/dev/dm-0            partition 839676  0    -1
/dev/sdd1            partition 4056   0    -2
```



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