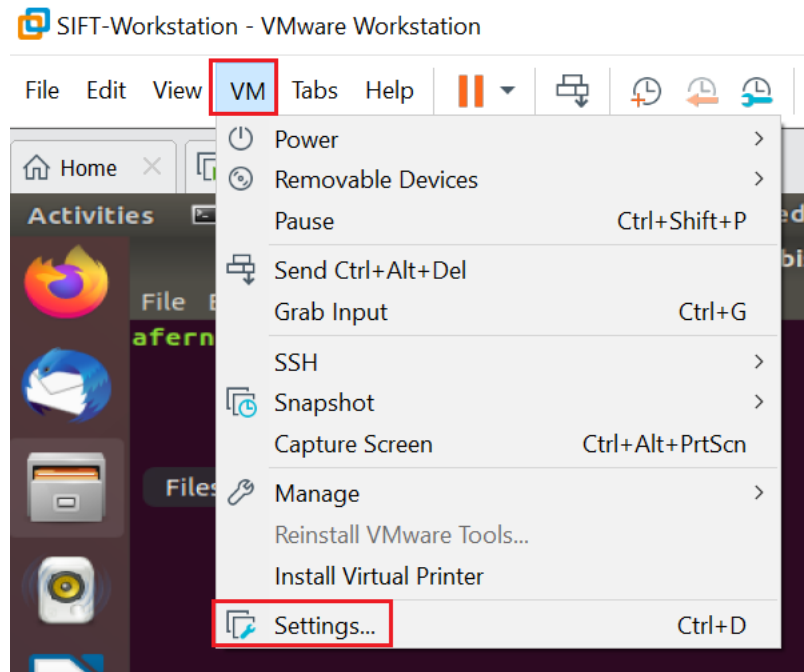# Practica1: Particiones

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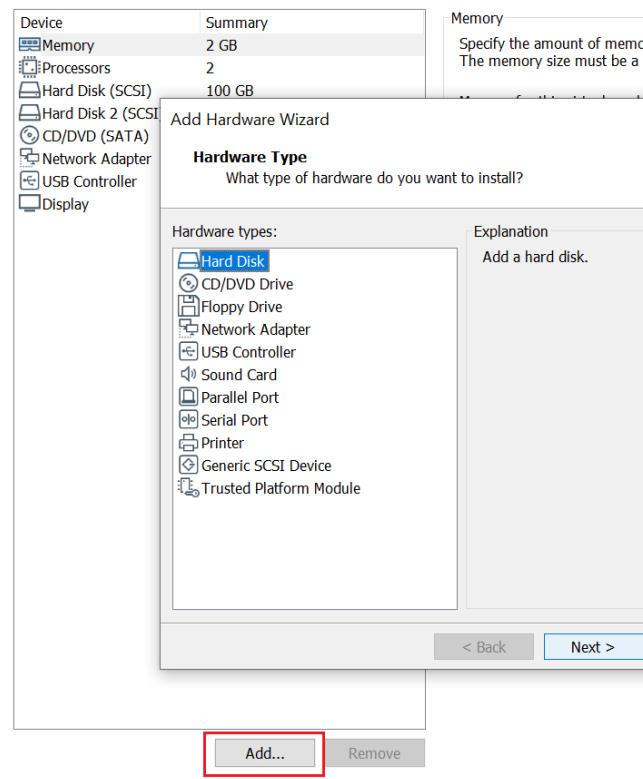
September 2020
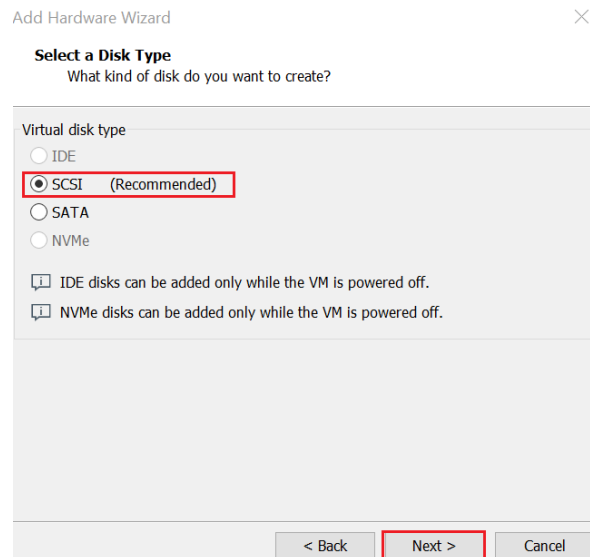
1 Crear el disco duro virtual

1. Entrar al menú de settings de VMware.

2. Añadir un disco

3. Elegir el tipo de disco a crear.

4. Elegir entre creación uso de un disco virtual o usar un disco físico.

5. Definir el tamaño del disco virtual.

6. Especificar el archivo del disco
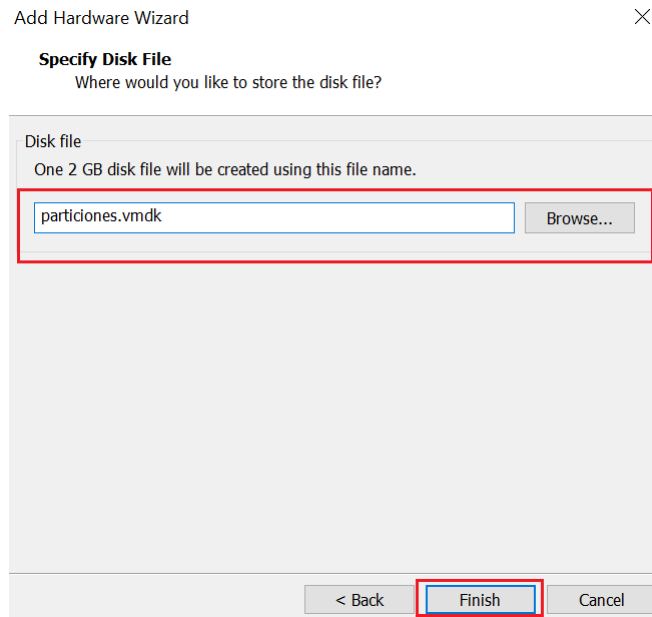
7. Finalmente podemos observar que se ha creado el disco para la VM. Ya solo queda reiniciarla para poder trabajar sobre esta.

2 Particionar

1. Listar los discos para asegurarse que se encuentra el disco creado.

```
Disk /dev/sdc: 2 GiB, 2147483648 bytes, 4194304 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
```

2. Con fdisk seleccionar el disco con el que se trabajará.

```
afernandez@abisinia-fernandez:~$ sudo fdisk /dev/sdc

Welcome to fdisk (util-linux 2.31.1).
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.
Created a new DOS disklabel with disk identifier 0x8692348e.

Command (m for help):
```

2.1 Linux

- Definir el numero de particion, su sector inicial y final. Al listar las particiones se puede observar que una partición de Linux ha sido creada.

```
Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1):
```

```
Partition number (1-4, default 1):
First sector (2048-4194303, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-4194303, default 4194303): +256MB

Created a new partition 1 of type 'Linux' and of size 244 MiB.

Command (m for help): p
Disk /dev/sdc: 2 GiB, 2147483648 bytes, 4194304 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
Disklabel type: dos
Disk identifier: 0x0ea2834d

Device     Boot Start    End Sectors  Size Id Type
/dev/sdc1        2048 501759  499712  244M 83 Linux

Command (m for help):
```

2.2 Swap

1. Se crea una partición Linux.

```
Command (m for help): n
Partition type
   p   primary (1 primary, 0 extended, 3 free)
   e   extended (container for logical partitions)
Select (default p):

Using default response p.
Partition number (2-4, default 2): 2
First sector (501760-4194303, default 501760):
Last sector, +sectors or +size{K,M,G,T,P} (501760-4194303, default 4194303): +512

Created a new partition 2 of type 'Linux' and of size 256.5 KiB.

Command (m for help): p
Disk /dev/sdc: 2 GiB, 2147483648 bytes, 4194304 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
Disklabel type: dos
Disk identifier: 0x0ea2834d

Device     Boot  Start    End Sectors   Size Id Type
/dev/sdc1          2048 501759  499712   244M 83 Linux
/dev/sdc2        501760 502272     513 256.5K 83 Linux

Command (m for help):
```

2. Posterior a esto se cambia el tipo de particion, en este caso eligiendo Linux Swap.

```
Command (m for help): t
Partition number (1,2, default 2): 2
Hex code (type L to list all codes): 82

Changed type of partition 'Linux' to 'Linux swap / Solaris'.

Command (m for help):


Command (m for help): p

Disk /dev/sdc: 2 GiB, 2147483648 bytes, 4194304 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
Disklabel type: dos
Disk identifier: 0x0ea2834d

Device     Boot  Start     End Sectors    Size Id Type
/dev/sdc1          2048 501759  499712    244M 83 Linux
/dev/sdc2        501760 502272     513 256.5K 82 Linux swap / Solaris

Command (m for help):
```

2.3 Windows

1. Se crea una partición Linux.

```
Command (m for help): n
Partition type
   p   primary (2 primary, 0 extended, 2 free)
   e   extended (container for logical partitions)
Select (default p):

Using default response p.
Partition number (3,4, default 3):
First sector (502273-4194303, default 503808): +256
Value out of range.
First sector (502273-4194303, default 503808):
Last sector, +sectors or +size{K,M,G,T,P} (503808-4194303, default 4194303): +256

Created a new partition 3 of type 'Linux' and of size 128.5 KiB.

Command (m for help): p
Disk /dev/sdc: 2 GiB, 2147483648 bytes, 4194304 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
Disklabel type: dos
Disk identifier: 0x0ea2834d

Device     Boot  Start     End Sectors    Size Id Type
/dev/sdc1          2048 501759  499712    244M 83 Linux
/dev/sdc2        501760 502272     513 256.5K 82 Linux swap / Solaris
/dev/sdc3        503808 504064     257 128.5K 83 Linux

Command (m for help):
```

2. Se cambia el tipo de partición a NTFS.

```
Command (m for help): t
Partition number (1-3, default 3):
Hex code (type L to list all codes): 86

Changed type of partition 'Linux' to 'NTFS volume set'.

Command (m for help): p
Disk /dev/sdc: 2 GiB, 2147483648 bytes, 4194304 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
Disklabel type: dos
Disk identifier: 0x0ea2834d

Device     Boot  Start      End Sectors   Size Id Type
/dev/sdc1         2048   501759  499712   244M 83 Linux
/dev/sdc2       501760   502272     513 256.5K 82 Linux swap / Solaris
/dev/sdc3       503808  1503231  999424   488M 86 NTFS volume set

Command (m for help):
```

2.4   Extendida

1. Se crea una nueva particion, pero en este caso se crea extendida.

```
Device     Boot    Start      End Sectors   Size Id Type
/dev/sdc1           2048   501759  499712   244M 83 Linux
/dev/sdc2         501760   502272     513 256.5K 82 Linux swap / Solaris
/dev/sdc3         503808  1503231  999424   488M 86 NTFS volume set
/dev/sdc4        1503232  4194303 2691072   1.3G  5 Extended

Command (m for help):
```

Una vez se han creado todas las perticiones requeridas, se guardan los cambios.

```
Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

afernandez@abisinia-fernandez:~$
```

3   Salida de Hexdump

```
afernandez@abisinia-fernandez:~$ sudo dd if=/dev/sdc count=1 | hd
1+0 records in
1+0 records out
512 bytes copied, 0.00140977 s, 363 kB/s
00000000  00 00 00 00 00 00 00 00  00 00 00 00 00 00 00 00  |................|
*
000001b0  00 00 00 00 00 00 00 00  4d 83 a2 0e 00 00 00 20  |........M...... |
000001c0  21 00 83 3b 1c 1f 00 08  00 00 00 a0 07 00 00 3b  |!..;...........;|
000001d0  1d 1f 82 43 25 1f 00 a8  07 00 01 02 00 00 00 5b  |...C%..........[|
000001e0  3d 1f 86 91 34 5d 00 b0  07 00 00 40 0f 00 00 91  |=...4].....@....|
000001f0  35 5d 05 15 50 05 00 f0  16 00 00 10 29 00 55 aa  |5]..P.......).U.|
00000200
afernandez@abisinia-fernandez:~$
```

☐ Linux   ☐ Windows   ☐ Swap   ☐ Extendida

Byte	Linux	Swap	Windows	Extendida
0: Bandera de particion de arranque	0x00 (no activo)	0x00 (no activo)	0x00 (no activo)	0x00 (no activo)
1: Cabezal donde inicia	0x20	0x3b	0x5b	0x91
2,3: Sector y cilindro donde inicia	0x21, 0x00	0x1d, 0x1f	0x3d, 0x1f	0x35, 0x5d
4: Tipo de partición	83 (Linux)	82 (Linux swap)	86 (NTFS)	05 (Extendida)
5:Cabezal donde finaliza	0x3b	0x43	0x91	0x15
6,7: Sector y cilindro donde finaliza	0x1c, 0x1f	0x25, 0x1f	0x34, 0x5d	0x50, 0x05
8-11: Distancia en sectores.	0x00000800	0x0007a800	0x0007b000	0x0016f000
12-15: Numero de sectores en la particion.	0x0007a000	0x00000201	0x000f4000	0x00291000