

MBR PARTITION TABLE

1- What is a MBR partition table?

A MBR (Master Boot Record) partition table holds information about the partitions of a hard disk. For each partition, a partition table can store information about size, partition type, starting LBA block, ending LBA block sector and flags.

2- Partition types

a) Primary partitions: A primary partition contains one filesystem (*2) and can contain an operating system.

b) Extended partition: A hard disk may contain only one extended partition. The extended partition can be subdivided into multiple logical partitions. An extended partition can not contain one file system or operating system. It really functions as a "container" that holds logical partitions. This structure is used to be able to work with more than 4 partitions.

c) Logical partition: A logical partition contains one file system and can contain an operating system. A logical partition must be contained inside an Extended partition.

3- Bootable (or Active) partition flag

a) Some operating systems require a partition flagged as "boot partition". Only one partition of the disk may have this flag.

b) This flag is used to mark the partition that contains the operating system that should be booted when the computer starts using that disk if you do not install a boot manager (a program to select the operating system on a multi-booting computer).

4- Hidden partition flag

a) Partitions may be either visible or hidden. You can hide a partition if you don't want this partition to be visible under Windows. It can be used to hide data, or to be sure they won't be accidentally removed.

b) Linux partition don't have such a hidden identifier but that's not a real problem since it's possible to simply not mount a partition if you don't want its contents to be visible.

5- Rules for MBR partition tables

The rules that govern partition setup are as follows:

1- A maximum of four partitions (called primary partitions) can be placed on any hard disk.

2- Only one partition may be designated, at any given time, as active. That partition will be used for booting the system and any other primary partitions will be ignored if you do not use a boot manager.

3- One of the four partitions may be designated as an extended partition. This partition may then be subdivided into multiple logical partitions.

4- Combination of partitions:

- | | | |
|---------------------------|---------------------------|---------------------------|
| a) 4 primary + 0 extended | b) 3 primary + 1 extended | c) 3 primary + 0 extended |
| d) 2 primary + 1 extended | e) 1 primary + 0 extended | f) 1 primary + 1 extended |
| g) 0 primary + 1 extended | h) 0 primary + 0 extended | |

6- Features

Maximum size disk: 2TiB

Max. number of primary partitions: 4

BIOS and UEFI support:

- BIOS (old firmware): Yes
- UEFI (modern firmware): No

Backup and Integrity: No

Admitted partitions types: 256

Backward and forward compatibility: No