

GPT

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GPT stands for GUID Partition Table. It obsoletes MBR partitioning.

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Layout

LBA 0	Protective Master Boot Record (PMBR). Holds a partition pointing to GPT to avoid accidental overwrite by old programs.
LBA 1	partition header, can be identified by 8 bytes magic "EFI PART" (45h 46h 49h 20h 50h 41h 52h 54h)
LBA 2..33	partition table entries
...data on disk...	
LBA -33..-2	mirror of partition table
LBA -1	mirror of partition header on last addressable sector

Utilities

The following utilities can handle GPT:

- parted (<http://www.gnu.org/software/parted/manual/parted.html>) , gparted (<http://linux.die.net/man/8/gparted>) , gdisk (<http://www.rodsbooks.com/gdisk/>) on Linux
- diskutil (<http://developer.apple.com/library/mac/#documentation/Darwin/Reference/ManPages/man8/diskutil.8>) on MacOSX
- diskpart (<http://technet.microsoft.com/en-us/library/bb490893.aspx>) on Windows (Vista and upwards)
- gpt (<http://www.freebsd.org/cgi/man.cgi?query=gpt&manpath=FreeBSD+7.1-RELEASE>) on MacOSX and BSDs.

Boot loaders

EFI firmware is capable of booting from a specific GPT partition, EFI System Partition which is basically a FAT32 partition. It should contain a slightly modified PE-executable, like ELILO (<http://elilo.sourceforge.net>) . On old machines with legacy BIOS only you can use GRUB, or you can write a custom boot code.

See Also

Wikipedia Links

- GUID Partition Table (http://en.wikipedia.org/wiki/GUID_Partition_Table) very detailed description
- BIOS Boot partition (http://en.wikipedia.org/wiki/BIOS_Boot_partition) a way to boot from GPT on non-UEFI machines

External Links

- EFI specifications et al. (<http://www.intel.com/technology/efi/%7CIntel>)
- GPT on MSDN (<http://msdn.microsoft.com/en-us/windows/hardware/gg463524.aspx>)
- GPT on Apple Developer (http://developer.apple.com/library/mac/#technotes/tn2166/_index.html)
- GPT on IBM developerWorks (<http://www.ibm.com/developerworks/linux/library/l-gpt/>)

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- This page was last modified on 6 March 2012, at 14:22.
 - This page has been accessed 3,427 times.