What is a Volume Boot Code?

The Volume Boot Code is required by the Master Boot Code and is used to boot the boot manager, which begins the actual loading process of the operating system.

Volume Boot Code and Disk Parameter Block are the two main parts that make up the Volume Boot Record / Sector. The Volume Boot Code is required by the Master Boot Code and is used to boot the boot manager, which begins the actual loading process of the operating system.

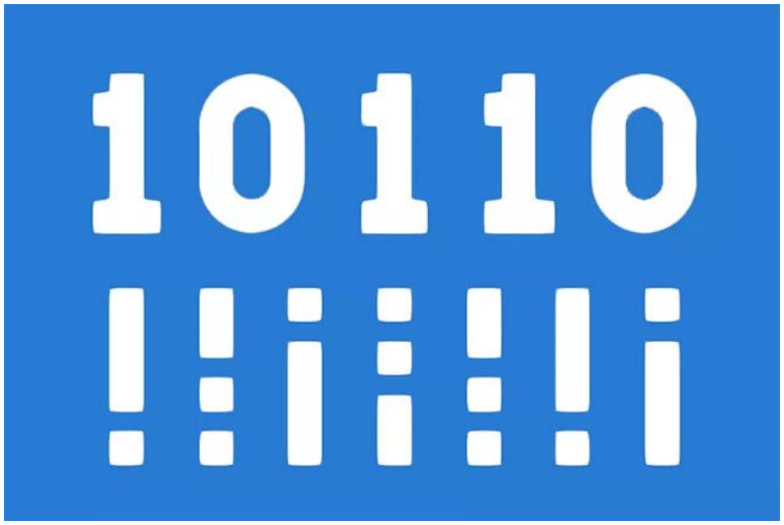
The Volume Boot Code exists on every partition with a Volume Boot Record (that is, every partition formatted). However, it is only required by the Master Boot Code for the primary partition to be active. On the other hand, for inactive partitions, the Volume Boot Code remains unused.

The Volume Boot Code is specific to the operating system on that particular partition. For example, the Volume Boot Code for Windows 10 may work differently than the code for the Linux version, or even another Windows version like Windows XP or Windows 7.

Note : Volume Boot Code is sometimes called by the abbreviation VBC.

What does the Volume Boot Code do?

The Master Boot Record searches for a device that can boot in any boot order / order set by the BIOS.



The Volume Boot Code is responsible for loading the appropriate operating system boot files

When it finds a relevant device, such as a hard drive, the Volume Boot Code is responsible for loading the appropriate operating system boot files. For Windows 10, Windows 8, Windows 7 and Windows Vista, it's Windows Boot Manager (BOOTMGR).

For older versions of Windows, like Windows XP, it's the NT Loader (NTLDR) that Volume Boot Code uses to boot the operating system.

You can see the Volume Boot Code is used in a typical process in which the operating system is loaded from the hard drive:

1. POST is run to check hardware function.

2. The BIOS loads and executes the code from the Master Boot Record located on the first sector of the hard drive.

3. Master Boot Code looks through the main partition table to find the bootable partition on that hard drive.

4. An attempt is made to boot the primary, active partition.

5. The Volume Boot Sector of the partition is loaded into memory so that it can use the code and Disk Parameter Block.

6. The Volume Boot Code in the boot sector is given control over the rest of the booting process, in which it ensures that the file system structure is operating.

7. When the Volume Boot Code confirms the file system, BOOTMGR or NTLDR is executed.

8. Like mentioned above, BOOTMGR or NTLDR are loaded into memory. Control actions are transferred to them so that the appropriate operating system files can be executed and Windows can boot normally.

Error Volume Boot Code

As you can see above, there are many components that make up the entire process, in which the final operating system can be loaded. This means errors can occur in many cases. Various problems may cause specific error messages.

Corrupted Volume Boot Code often leads to hal.dll errors like:

```
 "Cannot find WindowsSystem32hal.dll"
```

Or:

```
"Windows could not start because the following file is missing or corrupt: C:Win
```

These types of Volume Boot Code errors can be fixed with the bootsect command, one of the many Command Prompt commands available in Windows.

In step 4 above, if the attempt to find the active partition fails, you may see an error like *"No boot device"* . Obviously at the time of the error, the cause was not the Volume Boot Code.

There may not be a properly formatted partition on that hard drive or the BIOS is looking at the wrong device. In that case, you can change the boot order to the correct device such as the hard drive (instead of disk or external hard drive).

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