

What is BIOS?

BIOS is an acronym for Basic Input / Output System. It is the boot firmware program on a PC, and controls the computer from the time you start it up until the operating system takes over. When you turn on a PC, the BIOS first conducts a basic hardware check, called a Power-On Self Test (POST), to determine whether all of the attachments are present and working. Then it loads the operating system into your computer's random access memory, or RAM.

The BIOS also manages data flow between the computer's operating system and attached devices such as the hard disk, video card, keyboard, mouse, and printer.

The BIOS stores the date, the time, and your system configuration information in a battery-powered, non-volatile memory chip, called a CMOS (Complementary Metal Oxide Semiconductor) after its manufacturing process.

Although the BIOS is standardized and should rarely require updating, some older BIOS chips may not accommodate new hardware devices. Before the early 1990s, you couldn't update the BIOS without removing and replacing its ROM chip. Contemporary BIOS resides on memory chips such as flash chips or EEPROM (Electrically Erasable Programmable Read-Only Memory), so that you can update the BIOS yourself if necessary.

How To Access BIOS:

The BIOS is accessed and configured through the BIOS Setup Utility. The BIOS Setup Utility is, for all reasonable purposes, the BIOS itself. All available options in BIOS are configurable via the BIOS Setup Utility.

The BIOS Setup Utility is accessed in various ways depending on your computer or motherboard make and model.

How To Use BIOS:

BIOS contain a number of hardware configuration options that can be changed through the setup utility. Saving these changes and restarting the computer applies the changes to the BIOS and alters the way BIOS instructs the hardware to function.

Here are some common things you can do in most BIOS systems:

- [Change the Boot Order](#)
- Load BIOS Setup Defaults
- Remove a BIOS Password
- Create a BIOS Password
- Change the Date and Time
- Change Floppy Drive Settings
- Change Hard Drive Settings
- Change CD/DVD/BD Drive Settings
- View Amount of Memory Installed

- Change the Boot Up NumLock Status
- Enable or Disable the Computer Logo
- Enable or Disable the Quick Power On Self Test (POST)
- Enable or Disable the CPU Internal Cache
- Enable or Disable the Caching of BIOS
- Change CPU Settings
- Change Memory Settings
- Change System Voltages
- Enable or Disable RAID
- Enable or Disable Onboard USB
- Enable or Disable Onboard IEEE1394
- Enable or Disable Onboard Audio
- Enable or Disable Onboard Floppy Controller
- Enable or Disable Onboard Serial/Parallel Ports
- Enable or Disable ACPI
- Change the ACPI Suspend Type
- Change the Power Button Function
- Change Power-on Settings
- Change Which Display is Initialized First on Multi-Display Setups
- Reset Extended System Configuration Data (ESCD)
- Enable or Disable BIOS Control of System Resources
- Change Fan Speed Settings
- View CPU and System Temperatures
- View Fan Speeds
- View System Voltages

POST

Power-On Self-Test (POST) refers to routines which run immediately after many digital electronic devices are powered on. The routines are part of a device's **pre-boot sequence**. Once POST completes successfully, bootstrap loader code is invoked. If the computer passes the POST the computer will often return a single beep and if unsuccessful will create a **beep code** that indicates the error.

POST includes routines to set an initial value for internal and output signals and to execute internal tests, as determined by the device manufacturer. These initial conditions are also referred to as the device's **state**. They may be stored in firmware or included as hardware, either as part of the design itself, or they may be part of semiconductor substrate either by virtue of being part of a device mask, or after being burned into a device.

Test results may either be displayed on a panel that is part of the device, or output via bus to an external device. They may also be stored internally, or may exist only until the next power-down. POST protects the bootstrapped code from being interrupted by faulty hardware. The POST will determine if the computer's RAM, disk drives, peripheral devices and other hardware components are properly working. If the diagnostic determines that everything is in working order, the computer will continue to boot.