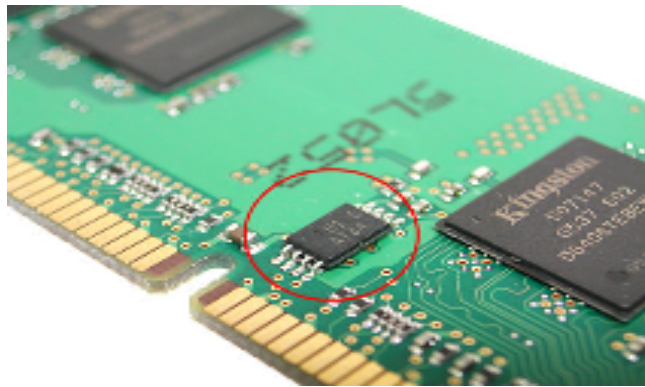


Team 46

Computer Firmware and Their Functions

computer firmware

- A combination of software and hardware.
- Chips that have data/programs recorded on them are firmware.

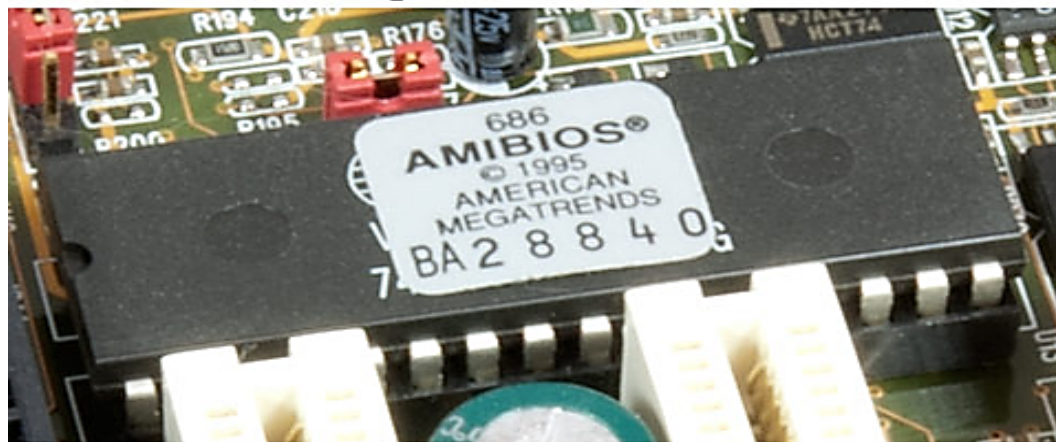


ROM-Read only memory is a firmware chip.

BIOS

- Short for Basic Input/Output System
- Chip located on all motherboards
- Contains instructions and setup for how your system should boot and how it operates

Computer BIOS



<http://www.computerhope.com>

Major Functions

1. POST

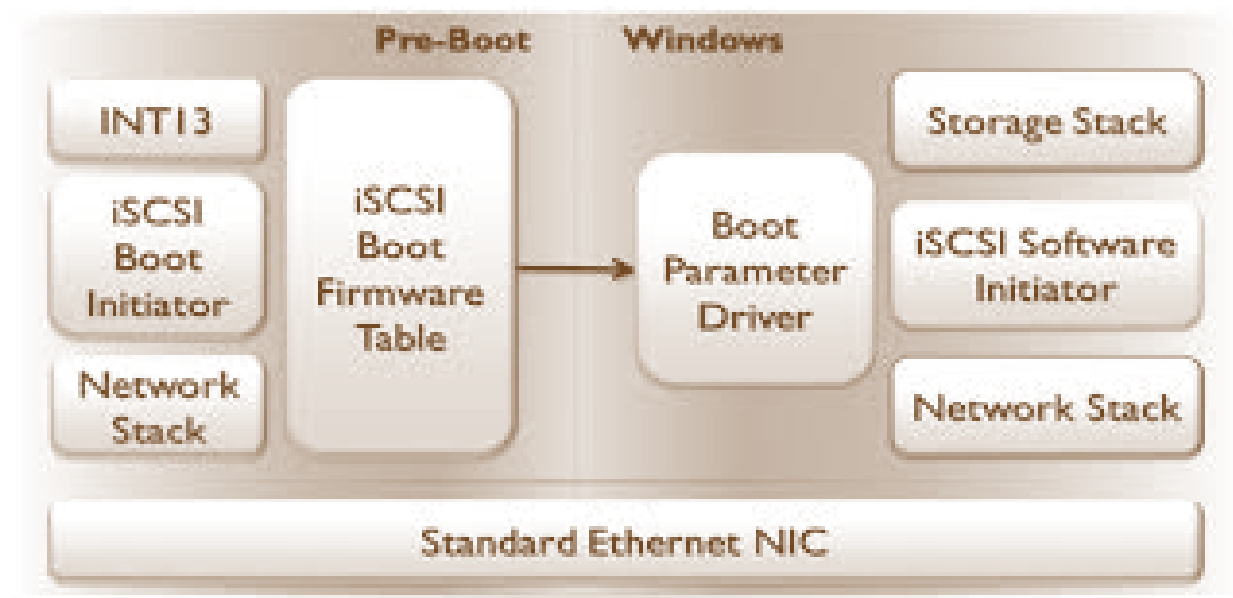
- ✓ Used to test for presence of computer hardware and functionality – hardware recognition.
- ✓ Set of beep codes if any error exists



Major Functions

2. Bootstrap Loader

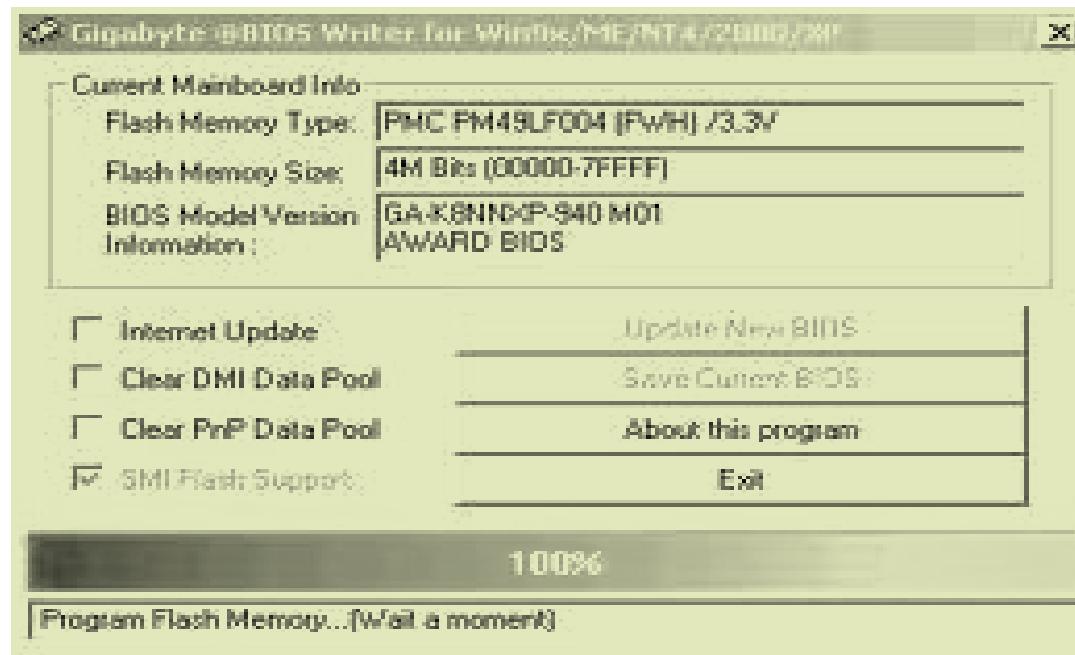
- ✓ Helps to locate the operating system
- ✓ If a capable system is located, the BIOS will pass control to it



Major Functions

3. BIOS Drivers

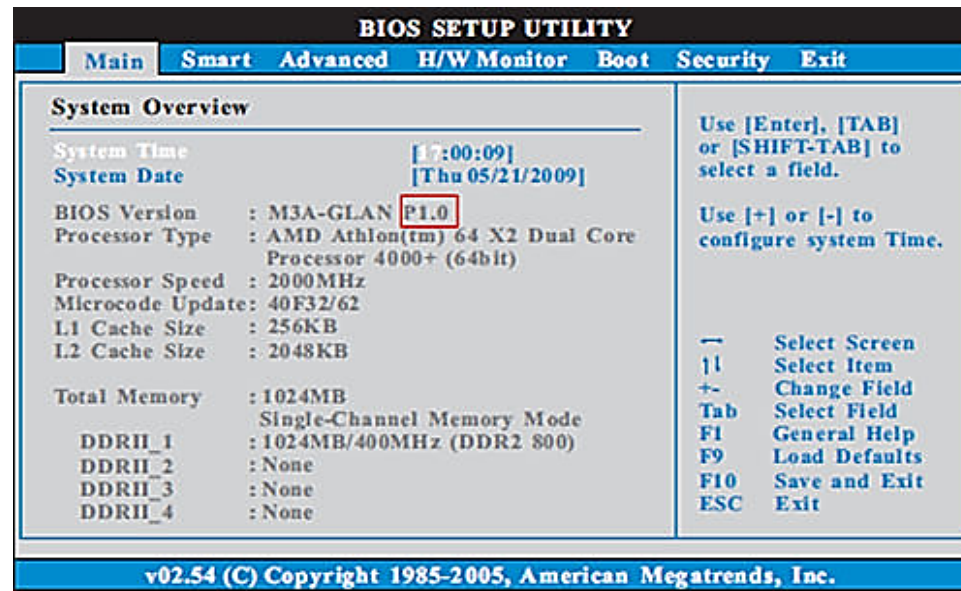
- ✓ Low level drivers that give the computer basic operational control over your computer's hardware



Major Functions

4. BIOS or CMOS Setup

- ✓ Configuration program that allows to configure hardware settings
- ✓ Includes system settings such as computer passwords, time, boot sequence, and date.



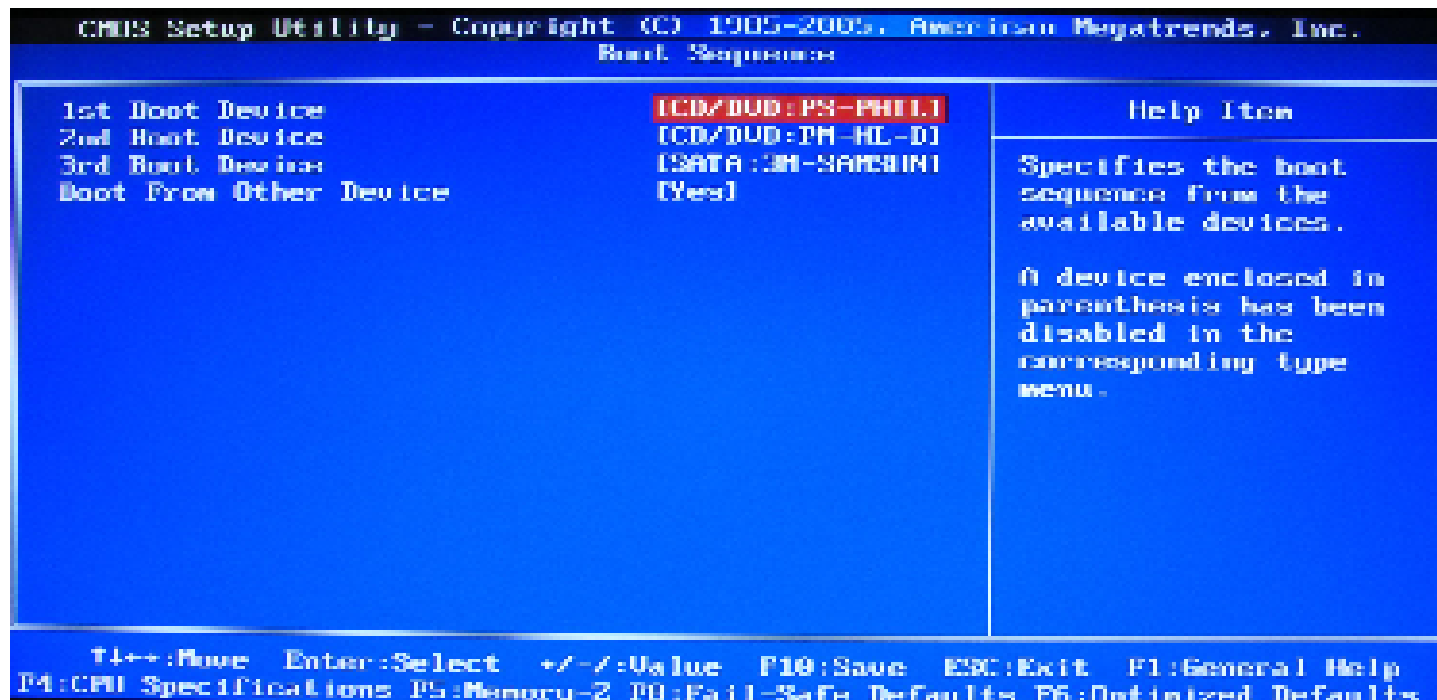
CMOS

- Short for Complementary Metal Oxide Semiconductor
- The CMOS is also a computer chip on the motherboard, but more specifically, it is a RAM chip.
- Stores information about the computer components, as well as various settings for those components and other BIOS variables.
- Always powered by the CMOS battery



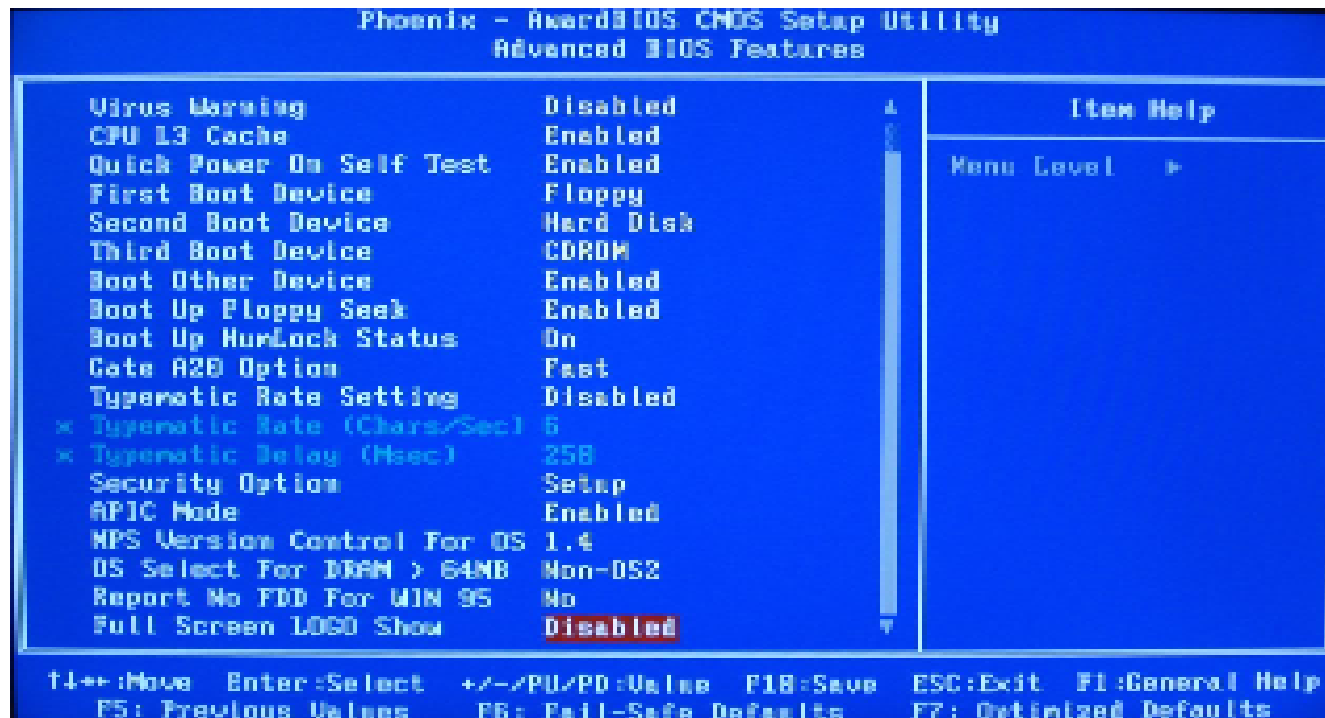
Boot Sequence

- A part of BIOS setup
- Allows for the sequencing of activities/checks
- User guided – can be used to install an operating system



PNP OS – Plug and Play

- Can be accessed through CMOS setup
- Allows for hardware configuration and resource allocation



Port settings

- A parallel or serial port has to be enabled in the BIOS before it can function properly
- If the listings next to Base I/O Address and Interrupt Request (IRQ) for Serial Port A is the same as the listing for Serial Port B, then the Base I/O Address number can be changed to a different number.
- The default numbers for most computers are 3F8H/IRQ 4 for serial port A and 2F8H/IRQ 3.

Power Management

ACPI Suspend to RAM :

- ACPI stands for Advanced Configuration and Power Interface. The Suspend to RAM feature, sometimes referred to as S3/STR, lets the PC save more power when in Standby mode, but all devices within or attached to the computer must be ACPI-compliant.

Video Off Method :

- The DPMS (Display Power Management System) option allows the BIOS to control the video display card if it supports the DPMS feature.