

BIOS/UEFI

- BIOS (Basic Input Output System)
- UEFI (Unified Extensible Firmware Interface)
 - UEFI supports larger drives (over 2 TB), faster boot times, and more advanced features

Boot Process

- Power is applied, POST (Power-On Self Test), Boot loader loads OS.
 - checks CPU, RAM, storage devices, and connected peripherals.
- UEFI supports secure boot, legacy BIOS does not.
- Diagnostics include memory tests, hard drive checks, and hardware component status.
- Useful for troubleshooting startup and hardware issues.
- Flash BIOS is done using a USB drive or the manufacturer's software.

BIOS/UEFI Security

- passwords for setup utility and boot.
- restricts system access.

TPM and drive encryption options may be available.

3.9 Processors

- CPU (Central Processing Unit)
- Performance influenced by cache size, clock speed, cores, and architecture.
- Overclocking increases speed but can cause instability.
- Check BIOS version for CPU support if installing newer models.

3.5 RAM

Single-sided RAM has memory modules in a single logical bank

Double-sided RAM has modules organized into two banks.

- Can access data in only one bank at a time.
 - single-sided RAM allows access to all the memory
 - double-sided RAM requires the computer to switch between banks.
- Some double-sided RAM on only one side
 - Memory divided in separate banks internally.
- Most motherboards support both single-sided and double-sided memory.
 - Older pcs and laptops might not support the other
 - Allow double-sided memory but can use only up to half the total memory when all memory slots are filled.
 - Do not allow mixing single-sided and double-sided together.

5.3 Optical drives

CD ROM

- Read Only Memory (ROM)
- 737 MB error correction
- 847 MB total
- 150 KBps

CD RW

- Re-Writeable
- 650 MB capacity
- Burn,Erase,Read

DVD

- Digital Versatile(Video) Disc (DVD)
- Holds
- Video
- Audio
- Data
- 4.7 GB capacity

DVD ROM

- 4.7 GB capacity
- Read Only Memory

- 11 Mbps

DVD RW

- 4.7 Gb
- Read/Write

- Portable
- Crystal encoding
- Limited life

Dual Layer

- 8.5 GB capacity
- Backward compatible for older systems
- Opposite Track Path (OTP)
- Slower write speeds

Blu-ray

- 25 GB capacity
- double layer disc 50 GB capacity
- reads data at 4.5 MBps