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LAB- 3.1.1.6

Lab- Investigate BIOS or UEFI Settings

Main Menu Options (Typical Dell BIOS/UEFI)

General (System Information): *Displays system overview such as BIOS version, service tag, CPU type/speed, installed memory (RAM), storage devices, and system date/time.*

System Configuration (Advanced): *Provides options for enabling/disabling onboard devices (USB controllers, SATA operation mode, integrated NIC), power management features, and virtualization settings.*

Boot: *Shows and allows configuration of the boot sequence, including the order of devices (hard drive, optical drive, USB, network/PXE). Also lets you enable/disable UEFI vs. Legacy boot.*

Security: *Contains password management (system, setup, admin, HDD), Secure Boot configuration, and Trusted Platform Module (TPM) settings.*

Power Management: *Configures how the system handles power states, wake-on-LAN, AC recovery, and battery options.*

Maintenance: *Includes service-related options such as BIOS recovery, system logs, and load defaults.*

Exit: *Options to save changes, discard changes, or restore BIOS defaults before exiting the firmware utility.*

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Security Settings (Dell BIOS/UEFI)

Available features typically include:

Administrator/Setup Password: *Restricts access to BIOS setup.*
System/Power-On Password: *Requires a password before the operating system boots.*
Hard Drive Password: *Adds an extra layer of security to protect data on the HDD/SSD.*
Trusted Platform Module (TPM): *Provides hardware-based encryption support (used by BitLocker in Windows).*
Secure Boot: *Ensures the system only boots with trusted software signed by the manufacturer.*
Drive Encryption Support: *Works with TPM to protect data at rest.*
Password Bypass/Strong Password Options: *Controls whether users can bypass BIOS passwords or enforce strong complexity requirements.*

CPU Settings

CPU Speed: *Example: 3.20 GHz (speed may vary depending on installed processor).*
Other Details: *The BIOS displays the processor model (e.g., Intel Core i5 or i7), number of cores/threads, L1/L2/L3 cache sizes, and whether technologies like* ***Intel Virtualization (VT-x)****,* ***Hyper-Threading****, and* ***Turbo Boost*** *are enabled.*

RAM Settings

RAM Speed: *Example: 2666 MHz (shown in the memory section of BIOS; actual value depends on installed DIMMs).*
Other Information: *Total installed capacity (e.g., 8 GB or 16 GB), how much is currently usable, how many slots are populated versus empty (e.g., 1 of 2 slots used), and whether* ***ECC (Error-Correcting Code)*** *support is enabled.*

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Hard Drive Settings

Information Listed: *BIOS will show the* ***capacity*** *(e.g., 512 GB),* ***type*** *(HDD vs. SSD),* ***interface*** *(e.g., SATA or NVMe), and the drive model/serial number. Some Dell BIOS menus also show whether the drive is set to* ***AHCI*** *or* ***RAID*** *mode.*

Boot Order Sequence

First Boot Device: *Initially, the hard drive is usually listed first by default.*
Number of Devices: *Up to four main devices can be ordered (Hard Drive, Optical Drive, USB, Network/PXE).*

- ***Change Boot Order:***

  - *Optical Drive set as* ***1st*** *boot device.*

  - *Hard Drive set as* ***2nd*** *boot device.*

  - ***Why Optical Drive First:*** *Booting from an optical drive is useful for installing an operating system or running recovery/diagnostic media.*

If No Bootable Media: *The system skips the optical drive and attempts to boot from the next device in the sequence (the hard drive).*

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Power Management (ACPI)

- ***Available Options:*** *Includes AC recovery (system behavior after power loss),* ***Wake-on-LAN*** *(allow system to boot when triggered by network activity), sleep states (S1, S3, S4), power button behavior (sleep, shutdown), and battery/power adapter reporting options.*

Plug and Play (PnP) Settings

- ***Available Options:*** *Typical options include* ***OS-controlled Plug and Play*** *(lets the operating system configure devices automatically), IRQ/DMA resource allocation, and device enumeration settings.*

Splash Screen Settings

- ***Available Options:*** *Option to* ***enable or disable the vendor splash/logo screen*** *during POST. If disabled, detailed POST diagnostics (memory test, device initialization) are displayed instead of the Dell logo.*