

Lab - Investigate BIOS or UEFI Settings

Introduction

In this lab, you will boot the computer, explore the firmware setup utility program, and change the boot order sequence.

Recommended Equipment

- Computer with or without operating system
- Motherboard manual

Instructions

Part 1: Enter BIOS or UEFI.

Step 1: Power on the computer.

- Plug the power supply cable into an AC wall outlet.
- If there is a power switch on the power supply, set the switch to “1” or “on”.
- Turn on the computer with the power button on the front panel.

Note: If the computer beeps more than once, or if the power does not come on, notify your instructor.

Step 2: Enter the firmware setup program.

During POST, press the firmware setup key or key combination. The firmware setup utility program screen will appear.

Questions:

What is the key or combination of keys used to enter the firmware setup utility program?

- **F2**

Who manufactures the BIOS or UEFI system for your computer?

- **ASUS (American Megatrends Inc.)**

What is the BIOS or UEFI version?

- **1007**

Part 2: Explore the Settings.

Step 1: List the main menu options.

Question:

List the main menu options and describe what is monitored in each menu?

After pressing F7 (Advanced Mode) here is the following menu tabs;

1. Main - System information including BIOS version, CPU, memory details

2. Ai Tweaker - CPU/RAM frequency and voltage control

3. Advanced - Configuration for CPU, storage, chipset, and peripherals

4. Monitor - Hardware monitoring such as temperatures, voltages, and fan speeds

5. Boot - Boot order and boot options

6. Tool - Utilities such as ASUS EZ Flash

7. Exit - Save/discard changes and reset to defaults.

Step 2: Find the security settings.

Navigate through each screen to find the security settings.

Question:

What security settings and features are available?

- ***Administrator Password and User Password, Secure Boot, and TPM (Trusted Platform Mobile) Support.***

Step 3: Find the CPU settings.

Navigate through each screen to find the CPU settings.

Questions:

What is the CPU speed?

- ***3600 MHz or 3.60 GHz***

What other information is listed for the CPU?

- ***Intel Core i3-8100, 4 Cores; 4 Threads, Virtualization Support***

Step 4: Find the RAM settings.

Navigate through each screen to find the RAM settings.

Questions:

What is the RAM speed?

- ***2400 MHz (DDR4)***

What other information is listed for the RAM?

- ***Total capacity: 8192 MB (8 GB)***
- ***Brand/Model: Transcend 8192 MB 2666 MHz module***
- ***Slot usage: DIMM_A1 populated, DIMM_B1 empty***
- ***XMP: Disabled***

Step 5: Find the hard drive settings.

Navigate through each screen to find the hard drive settings.

Questions:

What information is listed for the hard drive?

- ***Model: WDC WDS240G2G0A-00JH30***

- *Capacity: 240 GB*
- *Connection Port: SATA6G_3 (6 Gbps SATA port)*

Step 6: Find the boot order sequence.

Navigate through each screen to find the boot order sequence.

Questions:

What is the first boot device in the boot order sequence?

- *SATA6G_3; WDC WDS240G2G0A WDC or WDS240G2G0A-00JH30 SSD*

How many additional devices can be assigned in the boot order sequence?

- *Up to 2 or more devices can be listed but this computer only has 1.*

Step 7: Set the device boot order settings.

- Ensure that the first boot order device is the optical drive.
- Ensure that the second boot order device is the hard disk drive.

Optical drive: Not available / not installed.

First boot device: [Your SSD name] WDC WDS240G2G0A-00JH30.

Second boot device: (None, or USB/Network if shown).

Questions:

Why would you change the first boot device to the optical drive?

- *To allow the computer to boot from a CD or DVD, such as when installing an operating system, running a system repair disc, or using other bootable media*

What happens when the computer boots and the optical drive does not contain bootable media?

- *The BIOS/UEFI will automatically check the next device in the boot order. If no other device contains a bootable operating system, it will display an error message such as "No operating system found."*

Step 8: Find the power management setup or ACPI screen.

Navigate through each screen to find the power management setup screen, or ACPI screen.

Question:

What power management settings are available?

- *Power management settings not available at the computer in BIOS menus, or it may be handled automatically by system.*

But it should contain and be able to the following:

Restore on AC Power Loss, Power On by PCI-E/PCI, Wake on LAN, ErP Ready.

Step 9: Find the PnP settings.

Navigate through each screen to find the PnP settings.

Question:

What PnP settings are available?

- *PnP settings not available. Modern UEFI automatically manages Plug and Play devices.*

Step 10: Find the splash screen settings.

Navigate through each screen to find the splash screen settings.

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Question:

What splash screen settings are available?

- Splash screen settings not available in this BIOS/UEFI version. The system automatically displays the manufacturer logo during startup.

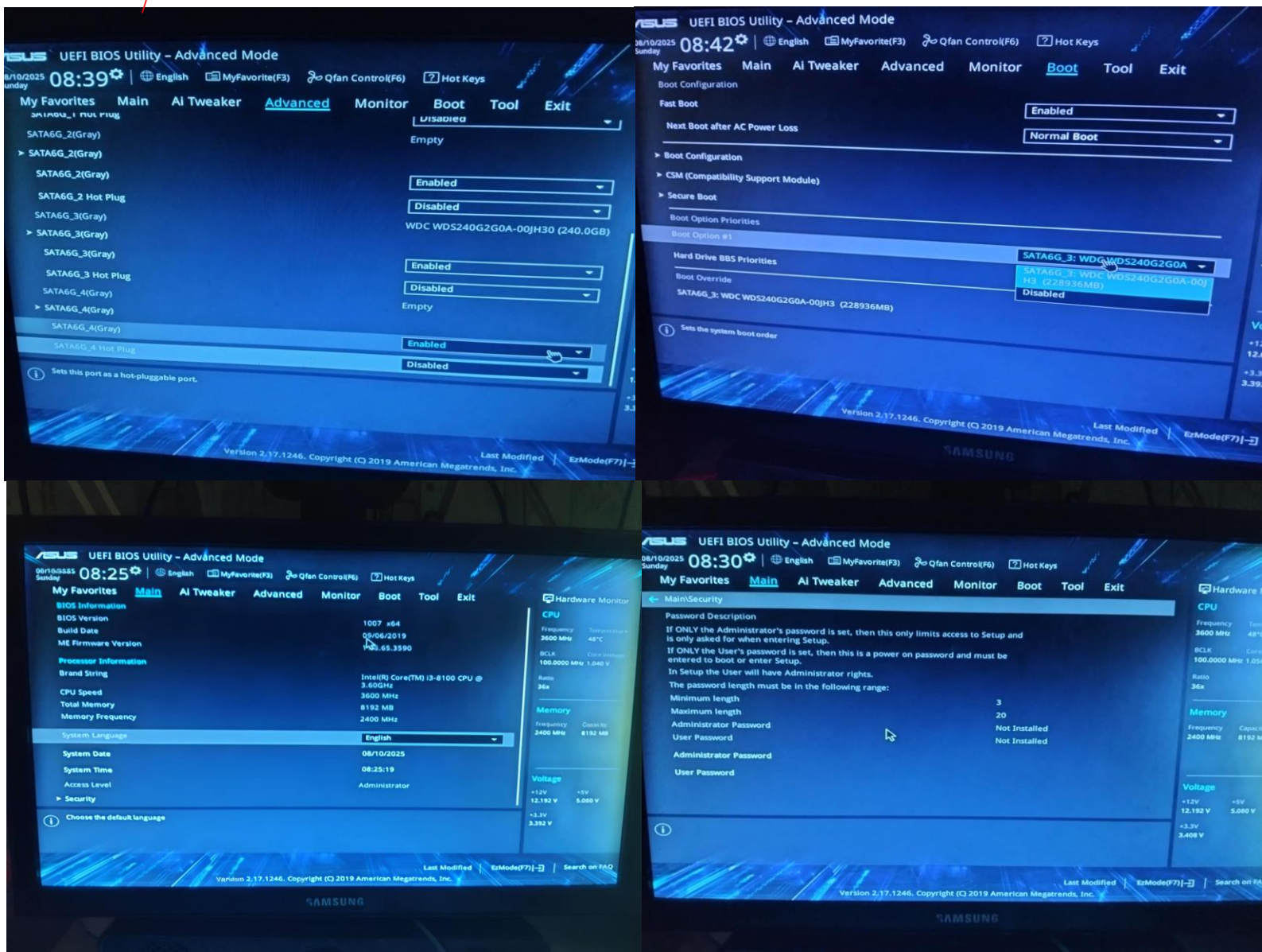
Step 11: Save and exit the setup utility program.

Save the new BIOS/UEFI settings and exit the setup utility program. The computer should restart automatically.

Note: An error message stating that an OS cannot be found (or a similar error) will appear on the screen after the computer boots. An operating system must now be installed to prevent this error. It is safe to turn off the computer at this time.

This lab is complete. Please have the instructor verify your work.

Image Proofs:



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