

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.

- a. Plug the power supply cable into an AC wall outlet.
- b. If there is a power switch on the power supply, set the switch to “1” or “on”.
- c. 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?

To enter the BIOS (or at least with mine) I had to spam the DELETE key.

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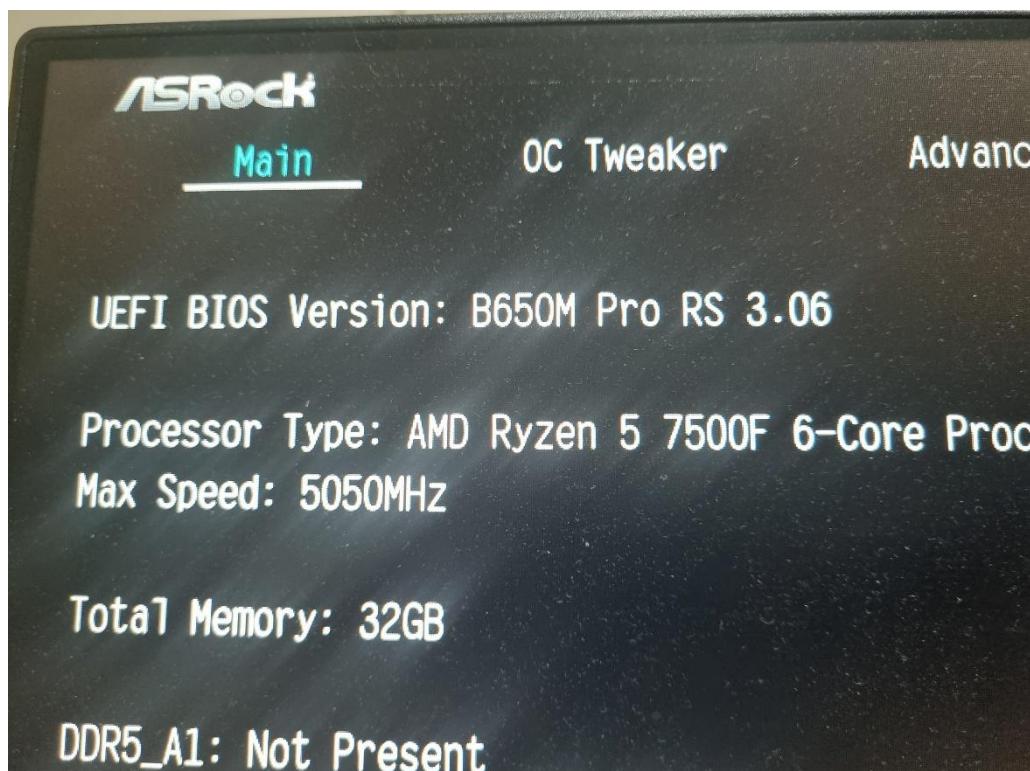
Who manufactures the BIOS or UEFI system for your computer?

ASRock

The screenshot shows a software interface titled "System Information" with a tab bar at the top. The "System Summary" tab is selected. On the left, there's a sidebar with options: "System Summary", "Hardware Resources", "Components", and "Software Environment". The main pane displays a table of system information. A red box highlights the "BaseBoard Product" row, which shows "ASRock B650M Pro RS". Other visible rows include "OS Name: Microsoft Windows 11 Pro", "Processor: AMD Ryzen 5 7500F 6-Core Processor, 3701 Mhz, 6 Core(s), 12 Logical Proc...", and "BIOS Version/Date: American Megatrends International, LLC, 3.06, 7/26/2024". At the bottom of the table, it says "Virtualization-based security Re... Base Virtualization Support". Below the table, there are search and filter options: "Find what:", "Find", "Close Find", "Search selected category only", and "Search category names only".

What is the BIOS or UEFI version?

The UEFI BIOS Version is B650 Pro RS 3.06



Part 2: Explore the Settings.

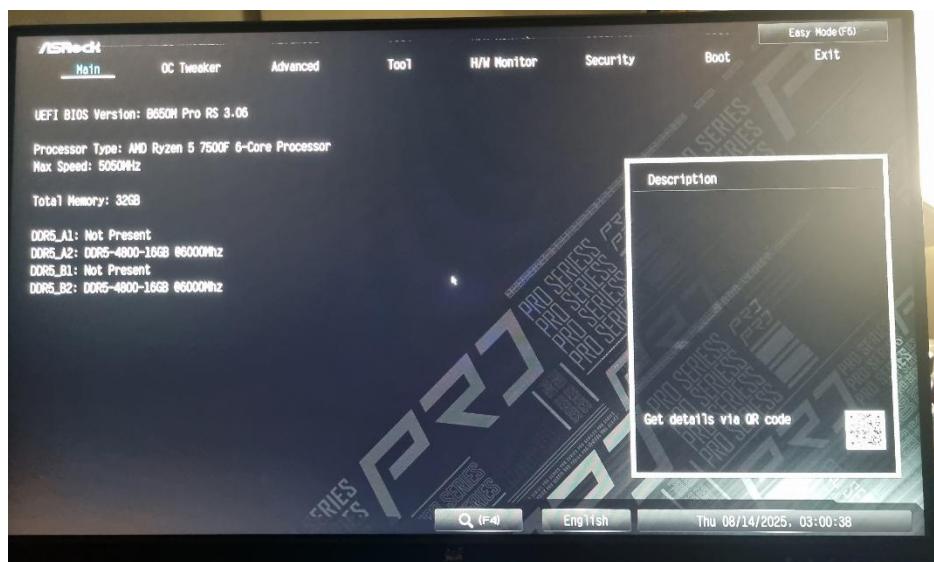
Step 1: List the main menu options.

Question:

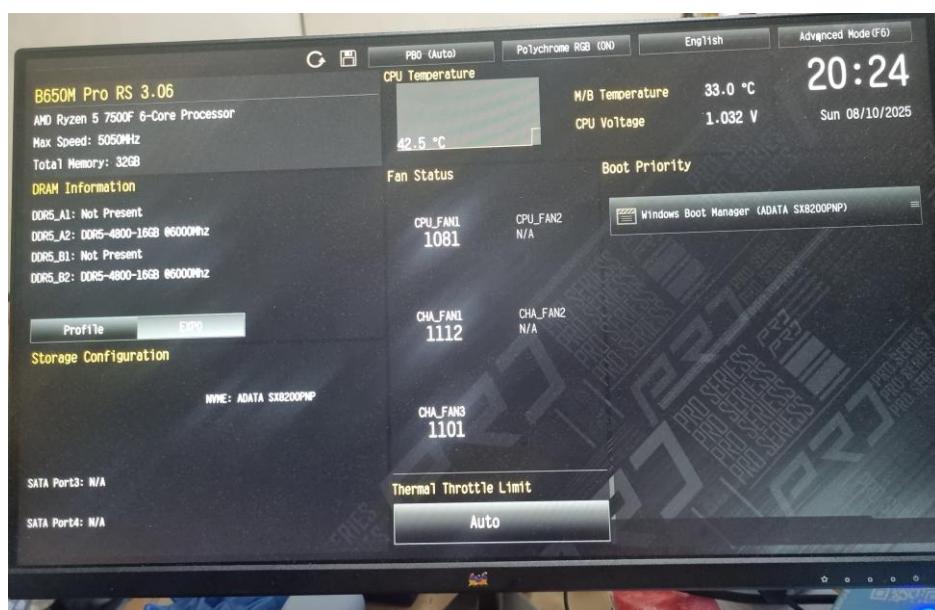
List the main menu options and describe what is monitored in each menu?

There are no clickable/configurable options in the main menu, but it does display the BIOS version, the CPU, the total memory, the slots where the RAM was installed, and a QR code of the digital manual for the motherboard. That was only for Easy Mode; for Advanced Mode, it's all the same but with a few more add-ons. It displays the CPU/motherboard temps, status of the fans and their RPM, CPU voltage, thermal throttle limit, boot priority, PBO, SATA, and the Polychrome I use to change the color of my aRGB fans.

EASY MODE:



ADVANCED MODE:



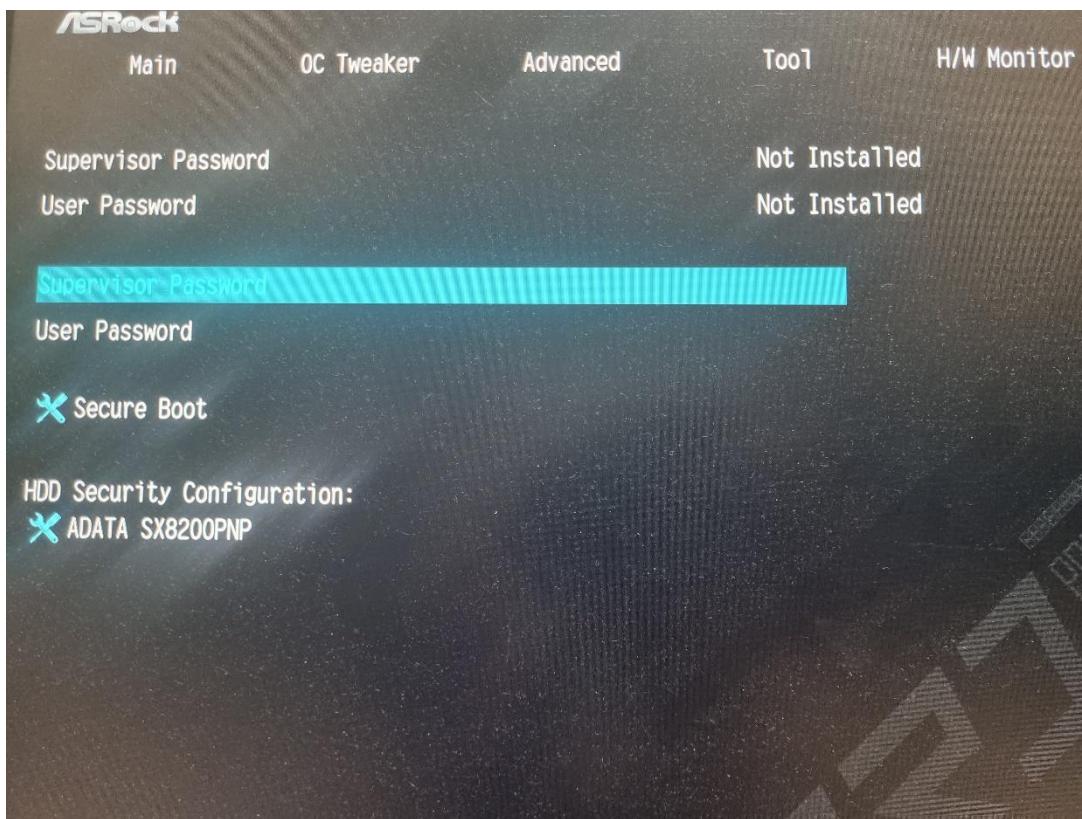
Step 2: Find the security settings.

Navigate through each screen to find the security settings.

Question:

What security settings and features are available?

The settings and features that are available are the supervisor password, user password, secure boot, and HDD security configuration. I haven't set up any passwords for my UEFI BIOS yet.



Step 3: Find the CPU settings.

Navigate through each screen to find the CPU settings.

Questions:

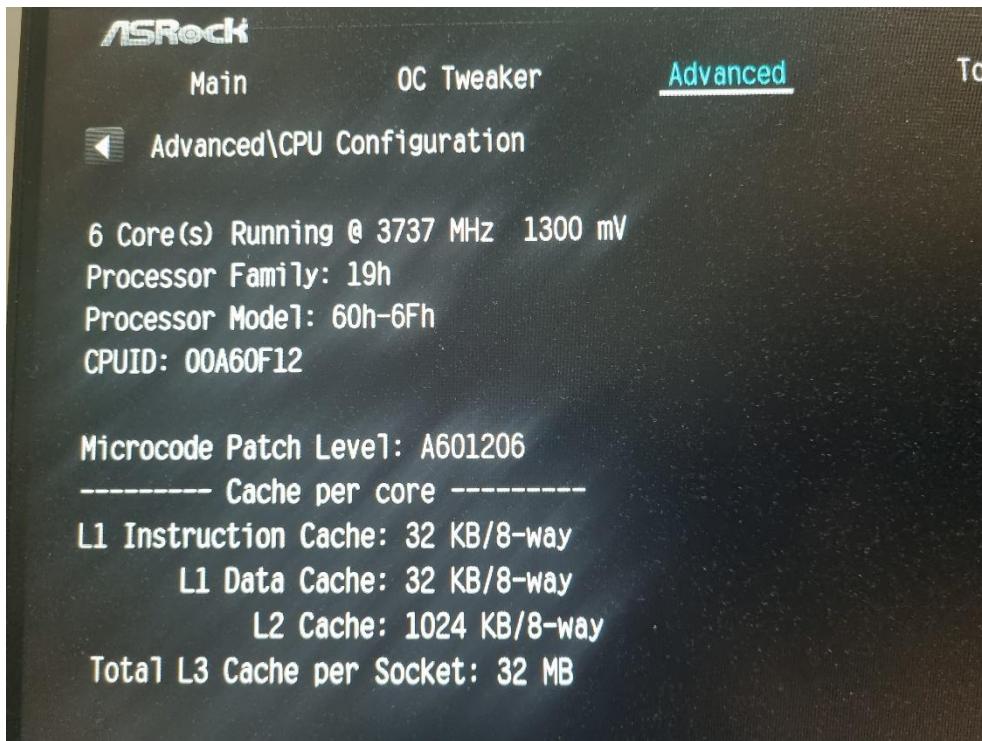
What is the CPU speed?

The speed of the CPU is 3737 Mhz or 3.7 GHz



What other information is listed for the CPU?

The processor family, processor model, CPUID, Microcode Patch Level, the L1, L2 and L3 cache information.



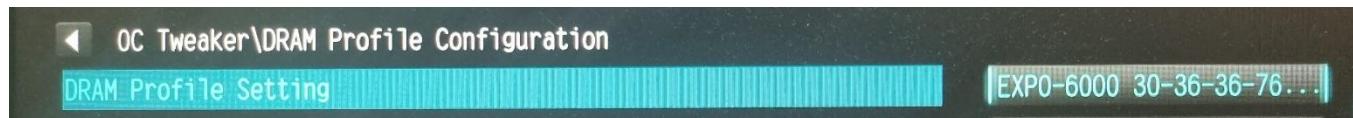
Step 4: Find the RAM settings.

Navigate through each screen to find the RAM settings.

Questions:

What is the RAM speed?

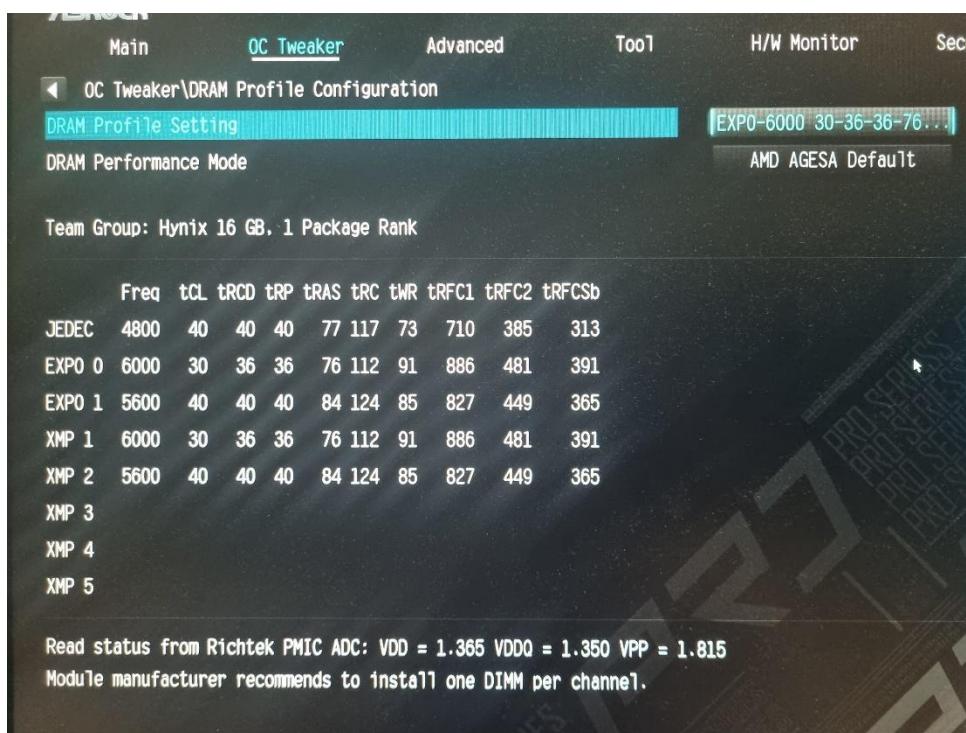
The base speed is 4800Mt/s but I currently have it on my EXPO profile which is 6000 Mt/s



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What other information is listed for the RAM?

The brand of the ram, the chip manufacturer, the amount of memory, the available speeds that was set with the ram and the timings of the ram



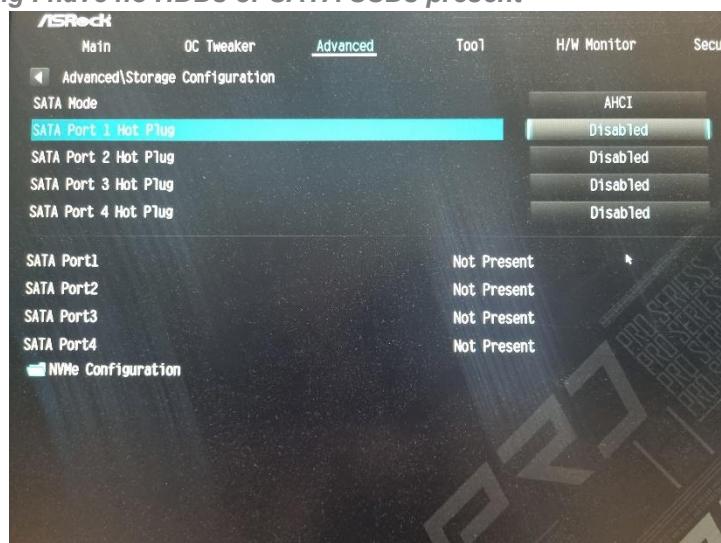
Step 5: Find the hard drive settings.

Navigate through each screen to find the hard drive settings.

Questions:

What information is listed for the hard drive?

I do not have any HDDs connected to my computer so all the information that is displayed is the 4 SATA ports indicating I have no HDDs or SATA SSDs present



Step 6: Find the boot order sequence.

Navigate through each screen to find the boot order sequence.

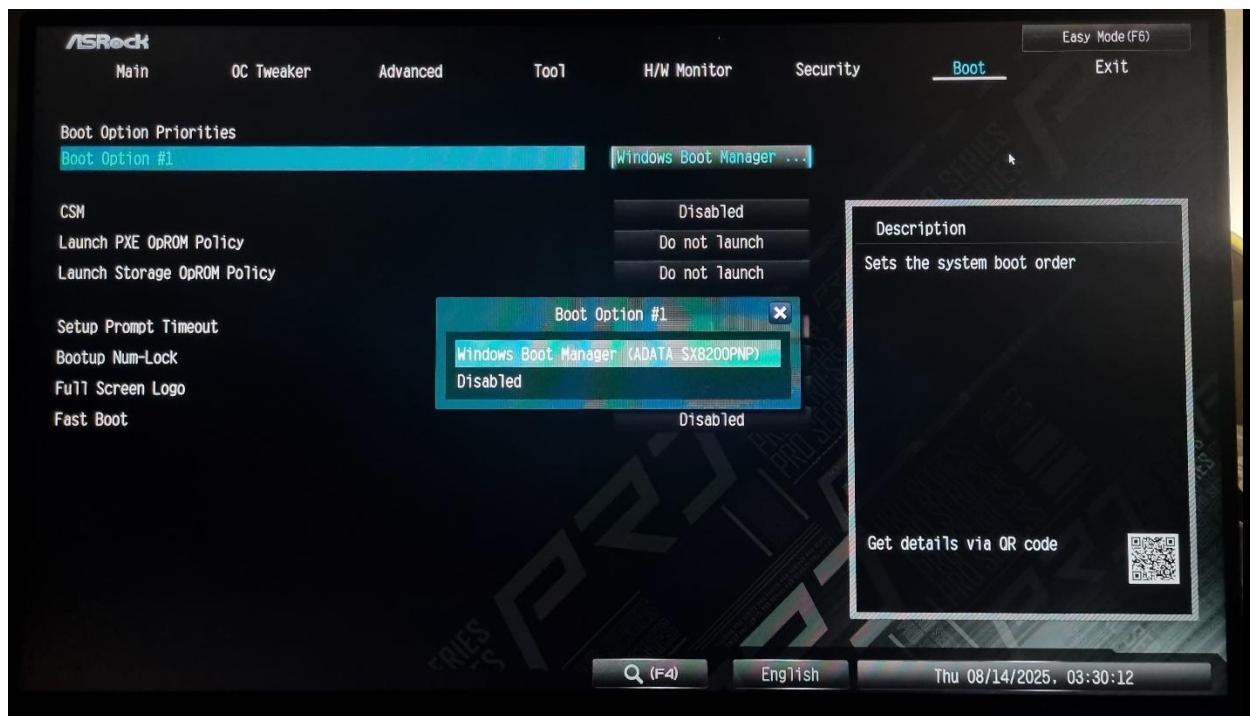
Questions:

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

My nvme m.2 (ADATA sx8200 Pro)

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

Well, I only have one device, which is my M.2, so that is the only thing that is currently displayed, but it will automatically detect if I have any other devices I can assign in the boot order sequence.



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.

Questions:

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

NO OPTICAL DRIVE AVAILABLE

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

NO OPTICAL DRIVE AVAILABLE

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

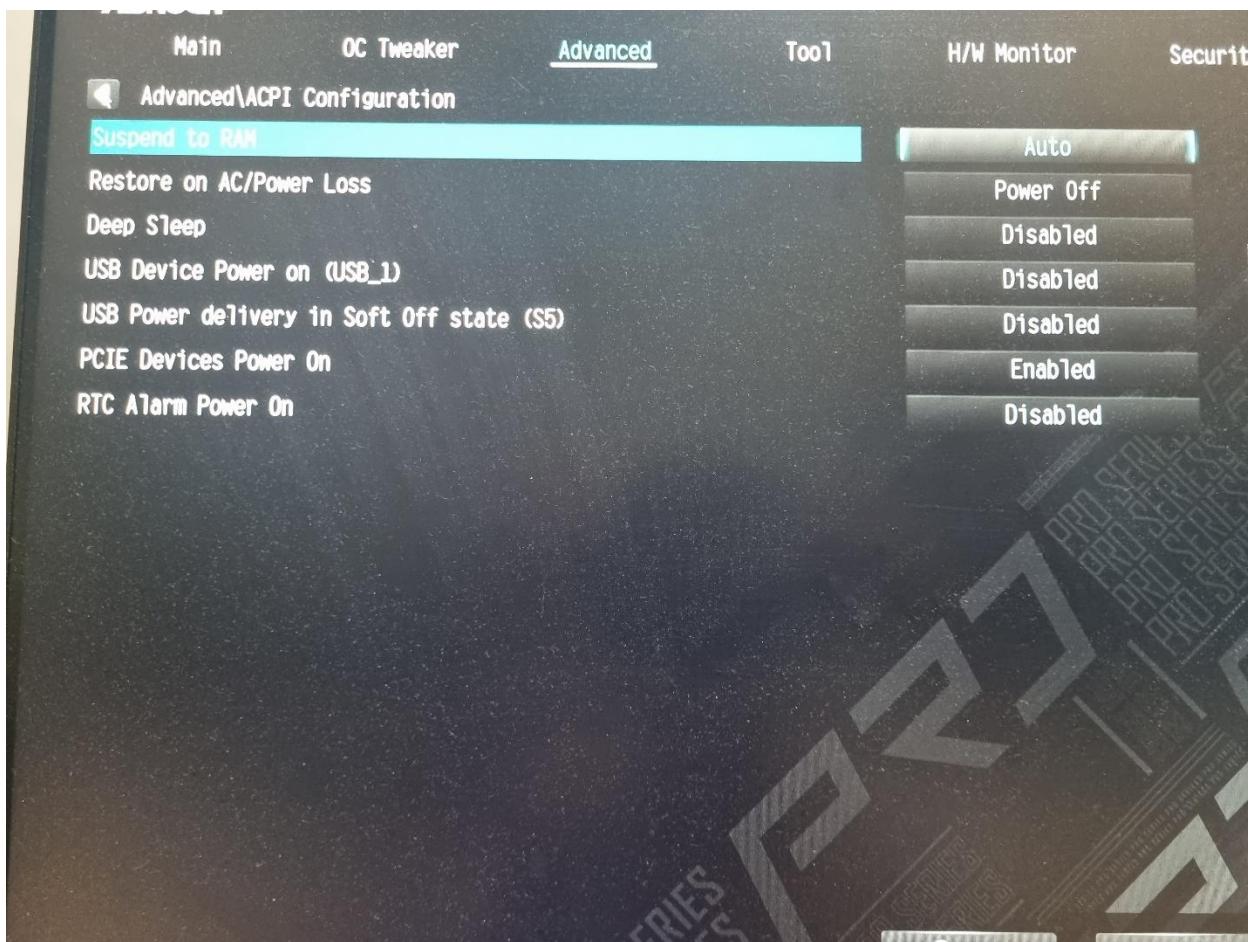
Navigate through each screen to find the power management setup screen, or ACPI screen.

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Question:

What power management settings are available?

The configurable settings that are available are the Suspend to RAM, Restore on AC/Power Loss, Deep Sleep, USB Device Power on (USB_1), USB Power delivery in Soft Off state (S5), PCIE Device Power On, and RTC Alarm Power On.



Step 9: Find the PnP settings.

Navigate through each screen to find the PnP settings.

Question:

What PnP settings are available?

PnP is automatically enabled but doesn't have any dedicated screen setting for it.

Step 10: Find the splash screen settings.

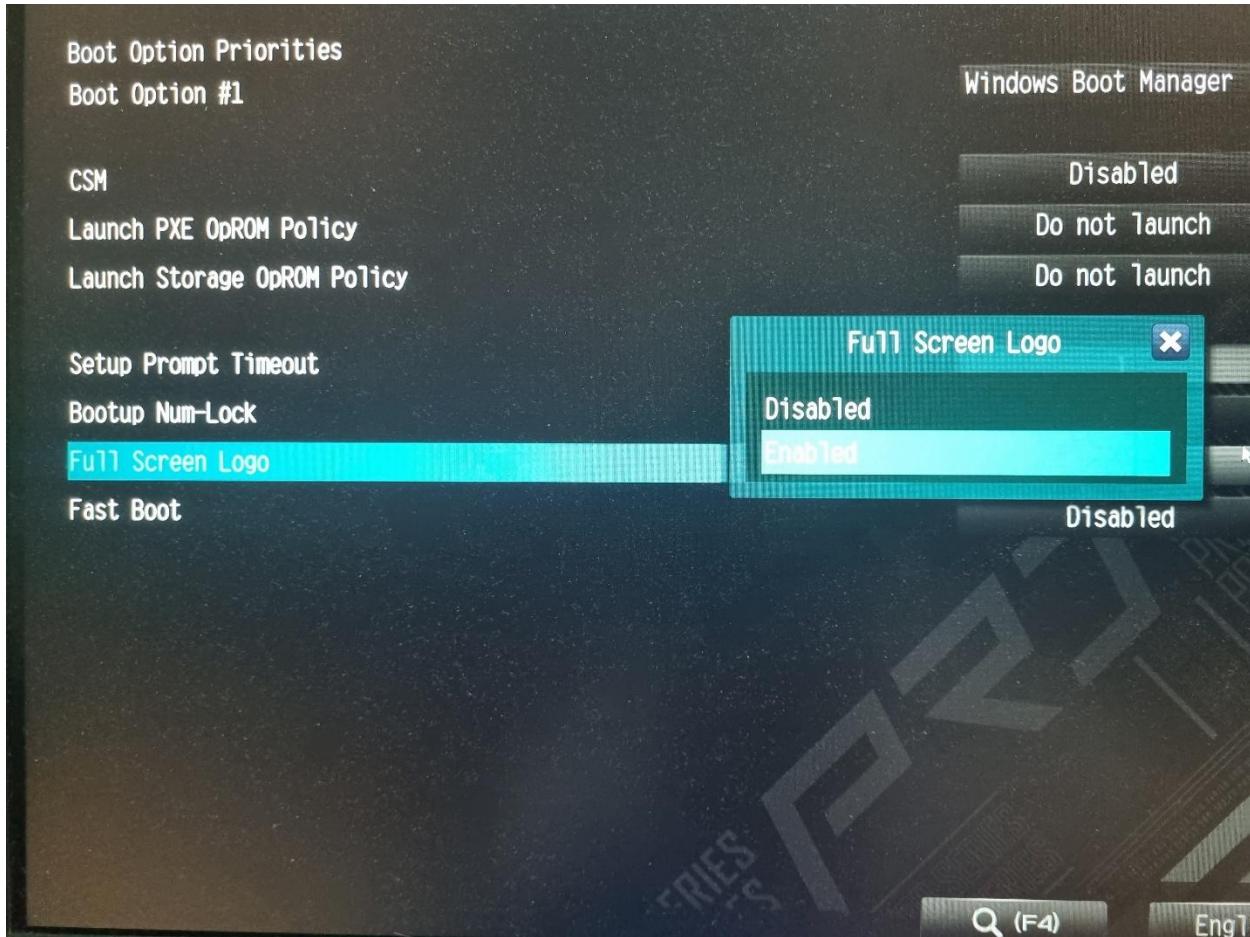
Navigate through each screen to find the splash screen settings.

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Question:

What splash screen settings are available?

In the boot category there is only one available setting, in my case instead of “splash screen” its called “Full Screen Logo” and you can either enable it or disable it.



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.

PROOF THAT THIS IS MY PC:

