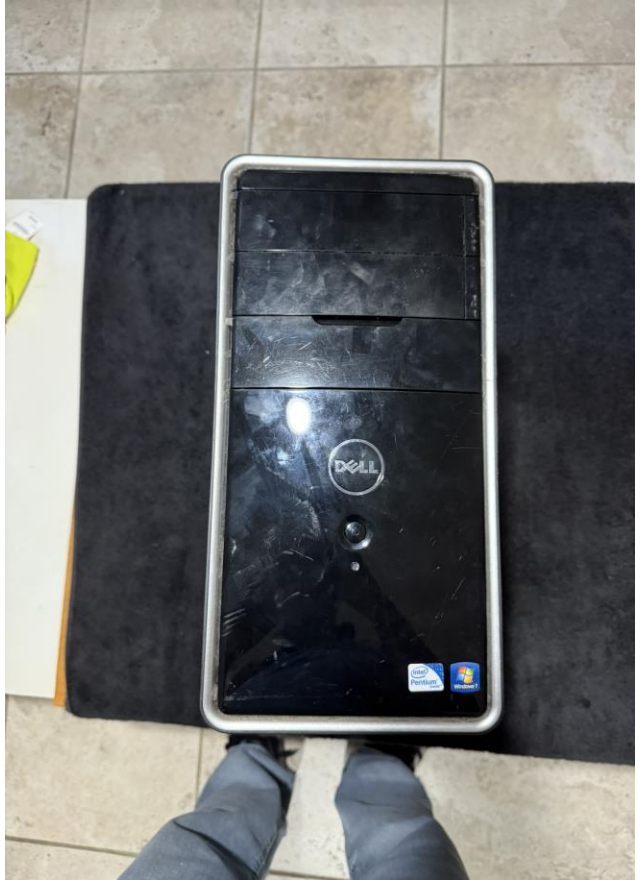
PC Disassembly and Reassembly: Dell Inspiron 660

By Kenjee Polanco

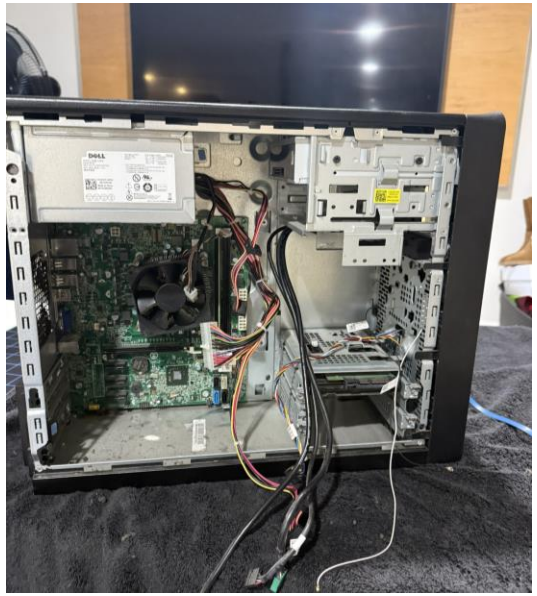
System Setup and Preparation

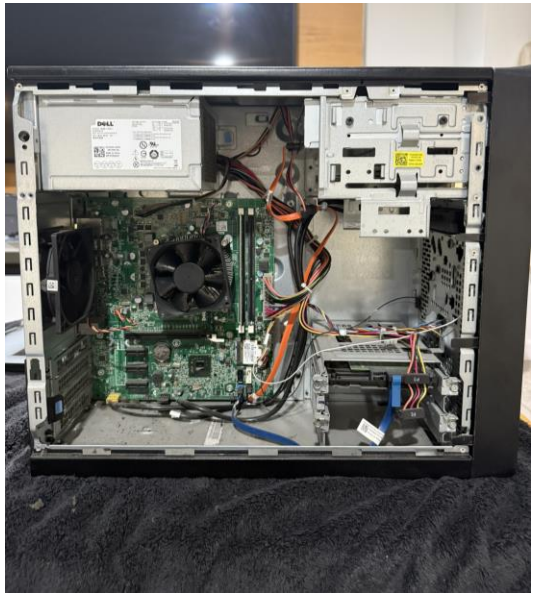
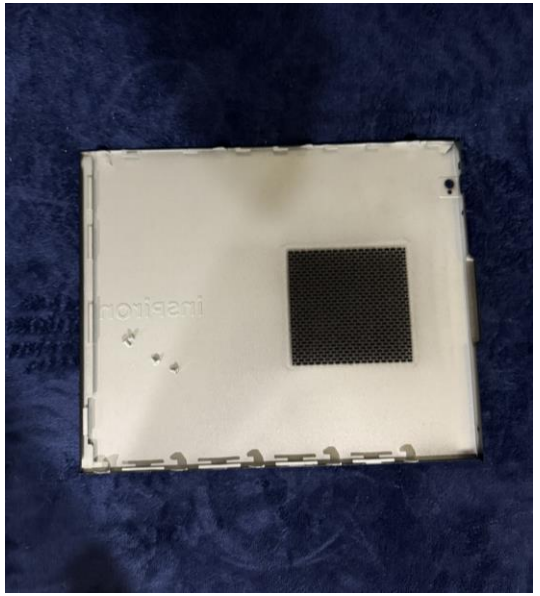
Shown here are the back panel, front panel, and side panel of the Dell Inspiron 660 desktop. This slide also includes the workspace setup used to safely perform the disassembly and reassembly process.



Optional: System Reset – Backing Up and Cloning Prior System

- Before performing a system reset or OS installation, it is recommended to back up existing data and create a clone of the current drive. This ensures that important files, applications, and system configurations can be restored if needed. Use disk imaging or cloning software to copy the contents of the original drive to a secondary storage device or external drive. Verify the integrity of the backup or clone before proceeding with the reset or installation process. This process can be accomplished using a variety of different methods, depending on available tools and user preference. It may not be necessary if the old system is simply being replaced and there is no need for data recovery.

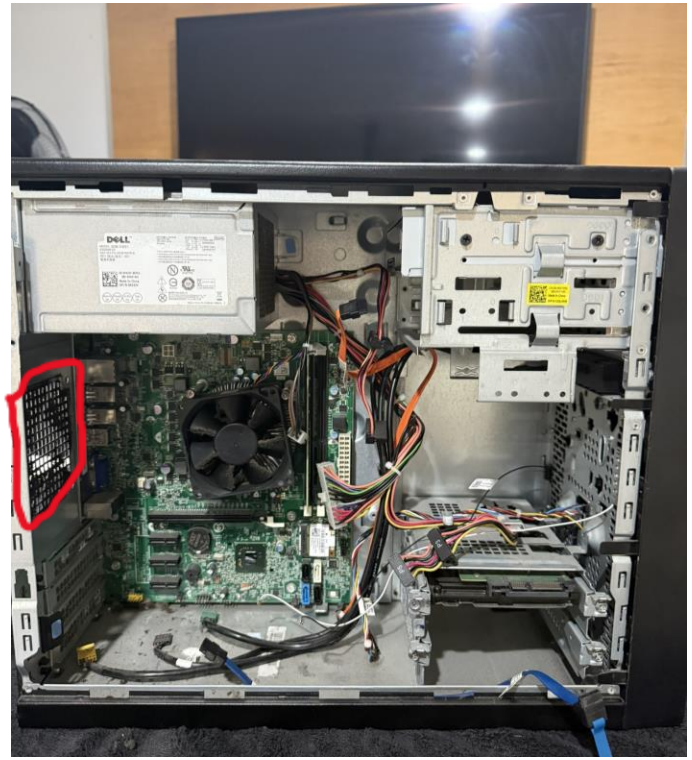


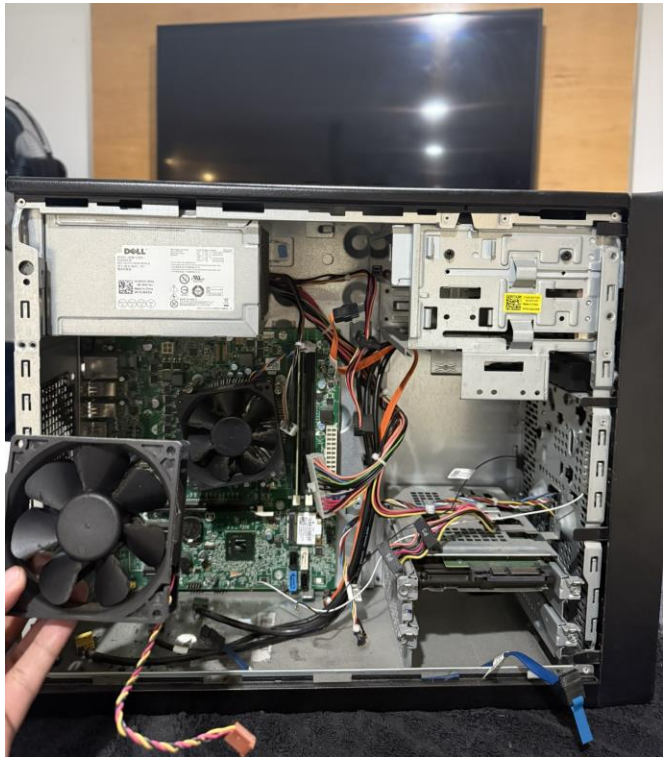



Side Panel Removal and Internal Access

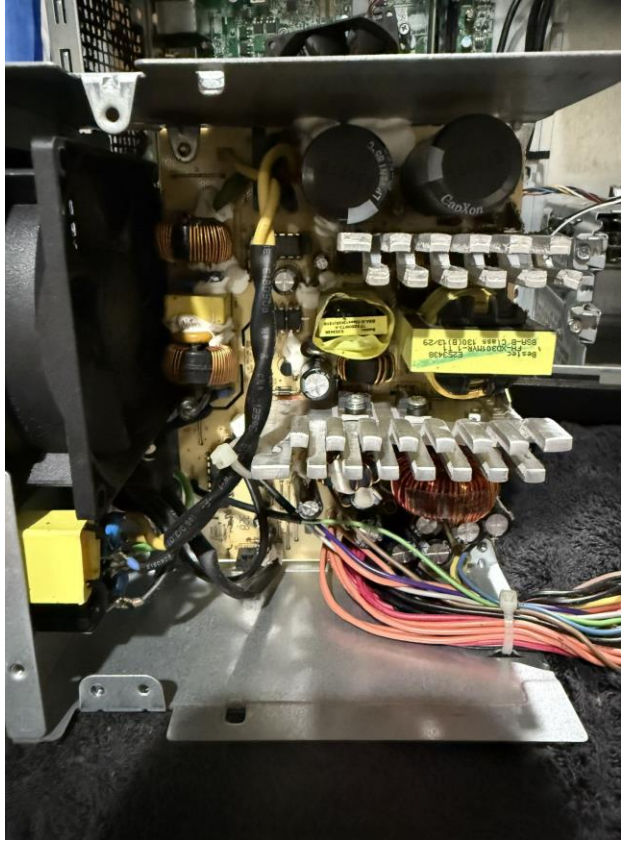
- The process begins by removing the side panel, which was secured with screws on the rear of the case. After sliding off the panel, proceed to systematically disconnect all internal wiring to allow safe component removal. This includes the 24-pin ATX motherboard power connector, the 4-pin ATX12V CPU power connector, SATA data and power cables for storage devices, CPU and system fan headers, and the front panel connectors responsible for the power switch, reset switch, power and HDD LEDs, and internal speaker. Each connection is carefully detached to prevent damage to the motherboard pins or connectors, ensuring that all components can be safely removed for further disassembly.

Main Cooling Fan Removal



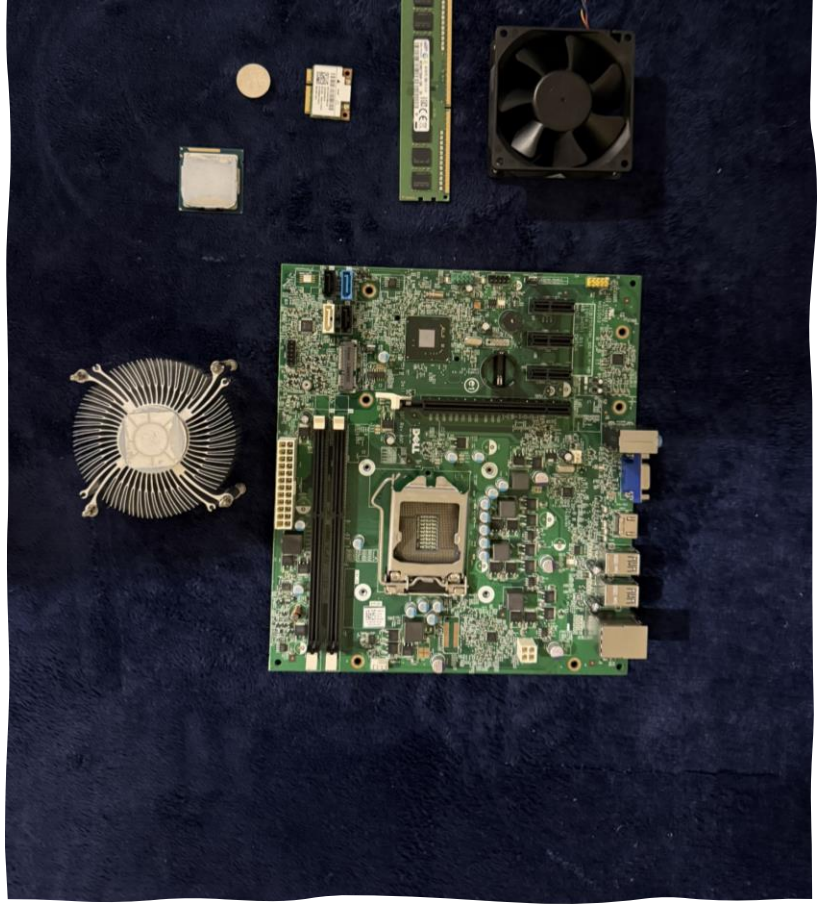


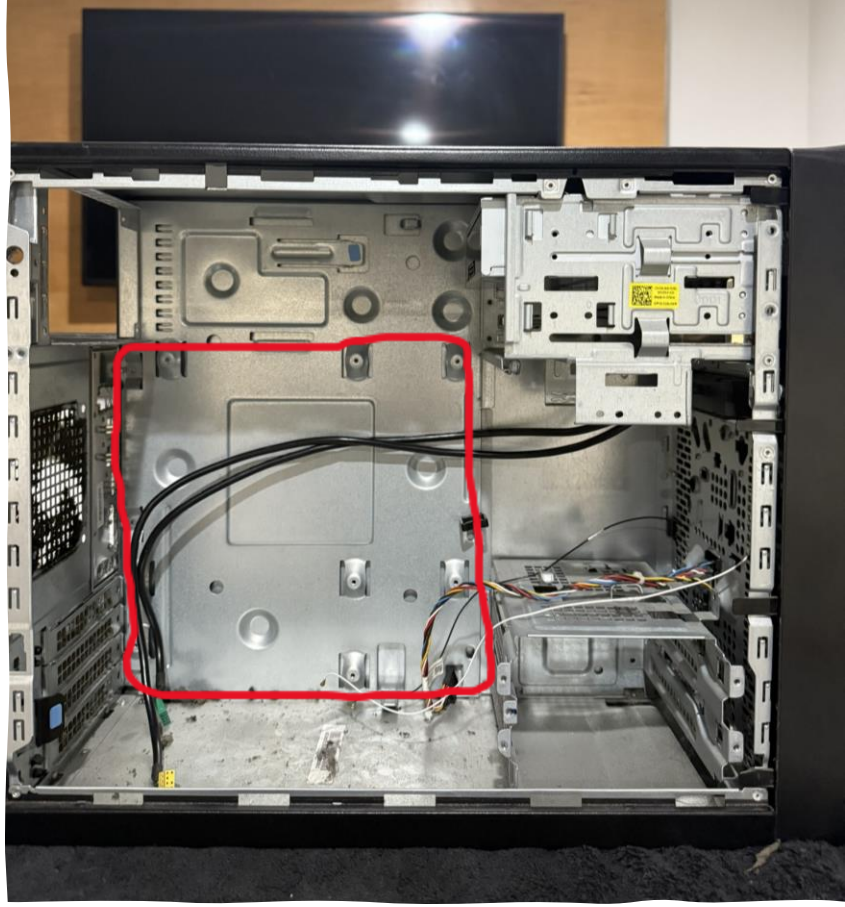
First, ensure the cooling fan’s power cable is disconnected from the motherboard. Next, remove the mounting screws located on the rear panel of the case. Finally, carefully detach and remove the cooling fan from the chassis.



Power Supply Unit (PSU) Removal and Disassembly

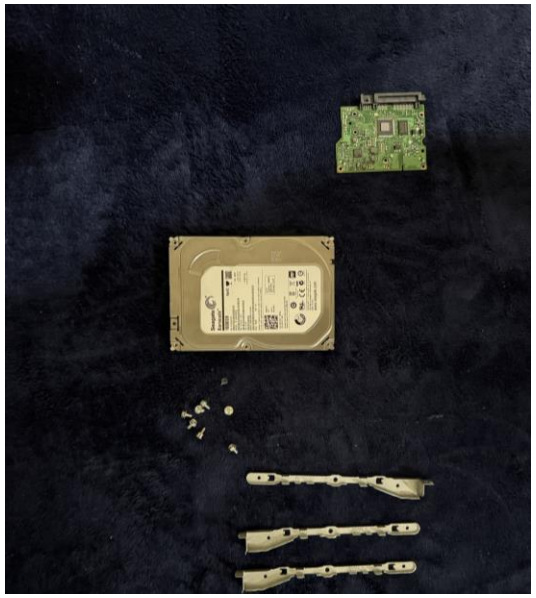
- Before removing the PSU, ensure all power cables are disconnected from internal components. Unscrew the PSU from the rear panel and carefully slide it inward toward the case to detach it. After removal, disassemble the PSU by unscrewing the screws along the edges and pressing inwards on the hinges. Once opened, remove the PSU fan and dust it off as well as the the interior of the PSU, and the motherboard, taking care to avoid contact with exposed connectors and sensitive components.





Motherboard Removal and Disassembly

- Remove the motherboard by unscrewing the screws along its edges that secure it to the case. After detachment, remove the CPU fan, CPU cover, and the latch holding the CPU in place, as well as the WLAN card, CMOS battery, and RAM modules. Once the CPU is removed, clean the contact surfaces between the CPU and its cover and apply a small amount of thermal paste to ensure proper heat transfer during reassembly.

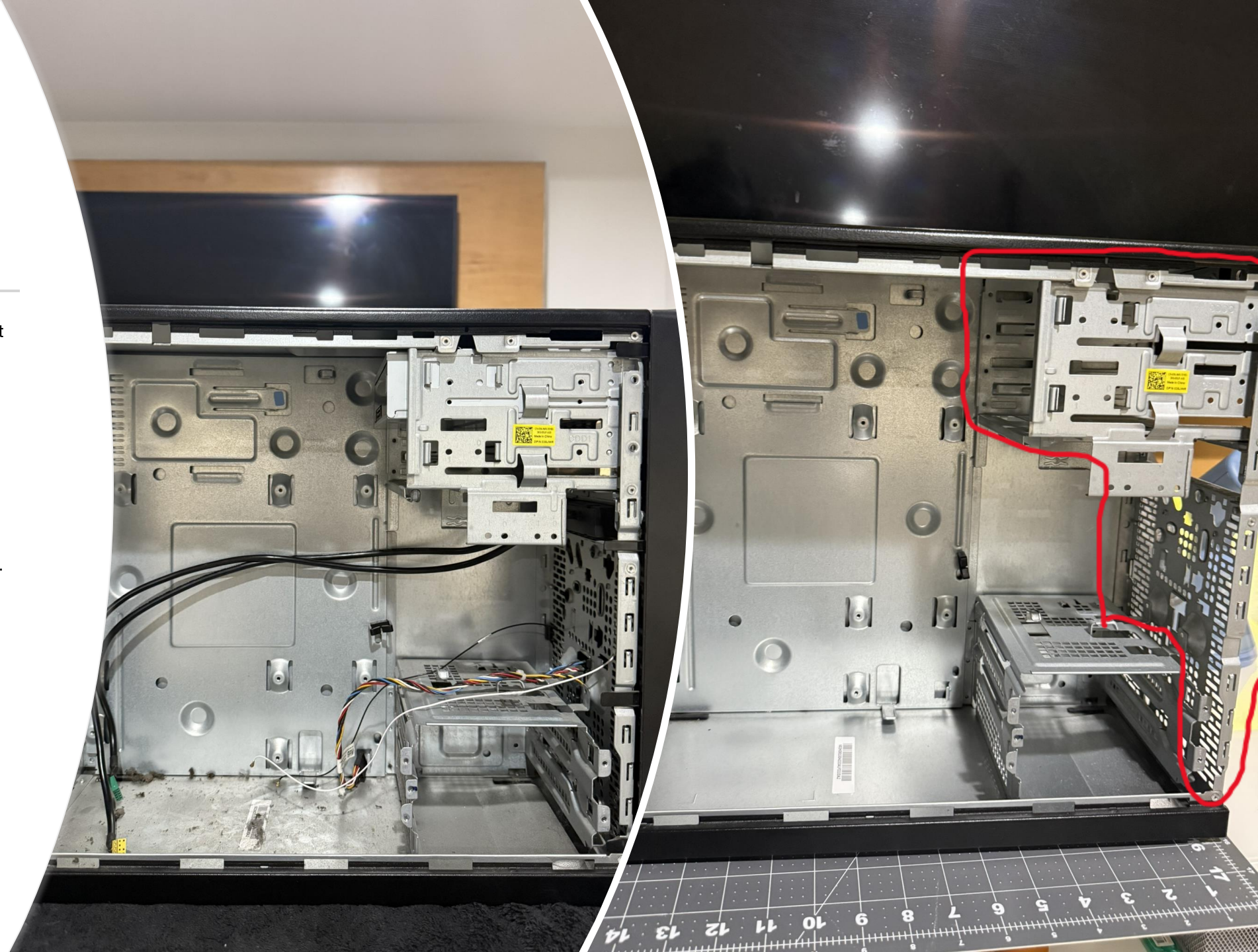


Hard Drive (HDD) Removal and Maintainence

- The hard disk drive (HDD) is one of the more easily removable components. After disconnecting the SATA data cable and power connector, remove the mounting screw, allowing the drive to slide out of its slot.
- I began to disassemble the HDD and carefully detached the PCB (printed circuit board) from the back. Recognizing the delicate nature of the internal spinning platters and read/write heads, and given that I did not have a backup drive at the time, I chose not to proceed further to avoid making the drive inoperable and not being able to proceed.

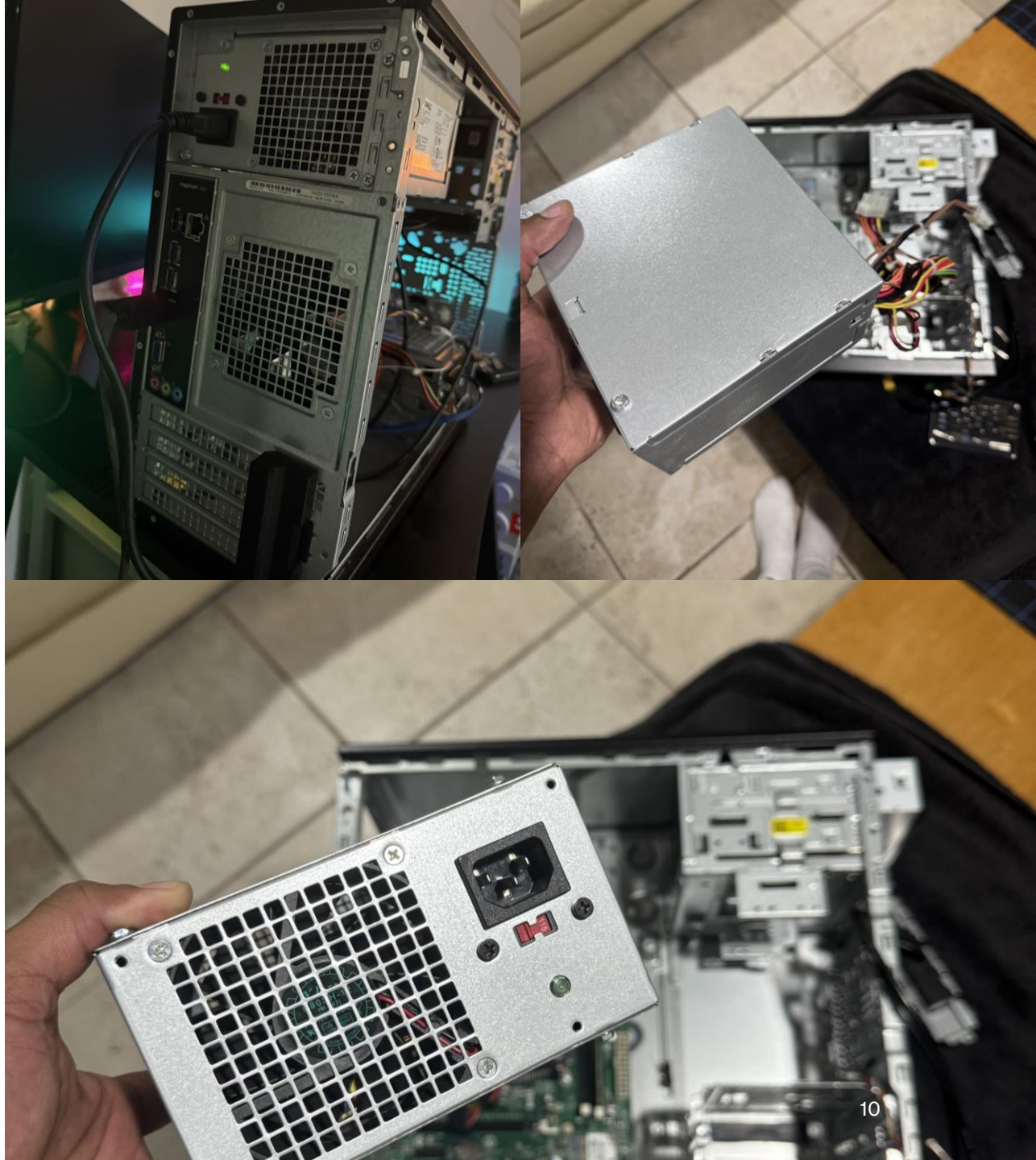
Front Panel Removal and Inspection

- This slide shows the removal of the front panel, which houses the CD-ROM drive, USB interface, power button, and front panel connectors. The CD-ROM is detached by unscrewing its mounting screws and carefully sliding it out through the front. The flat metal panel underneath the CD-ROM is then removed by pulling it forward lightly. Next, the USB interface is unscrewed and carefully pushed inward to detach it. The power button is unclipped and removed, along with the white and black front panel connectors, which interface with the motherboard to control the power switch, LEDs, and other indicators. Carefully detach these connectors to avoid damaging the wires or motherboard pins.



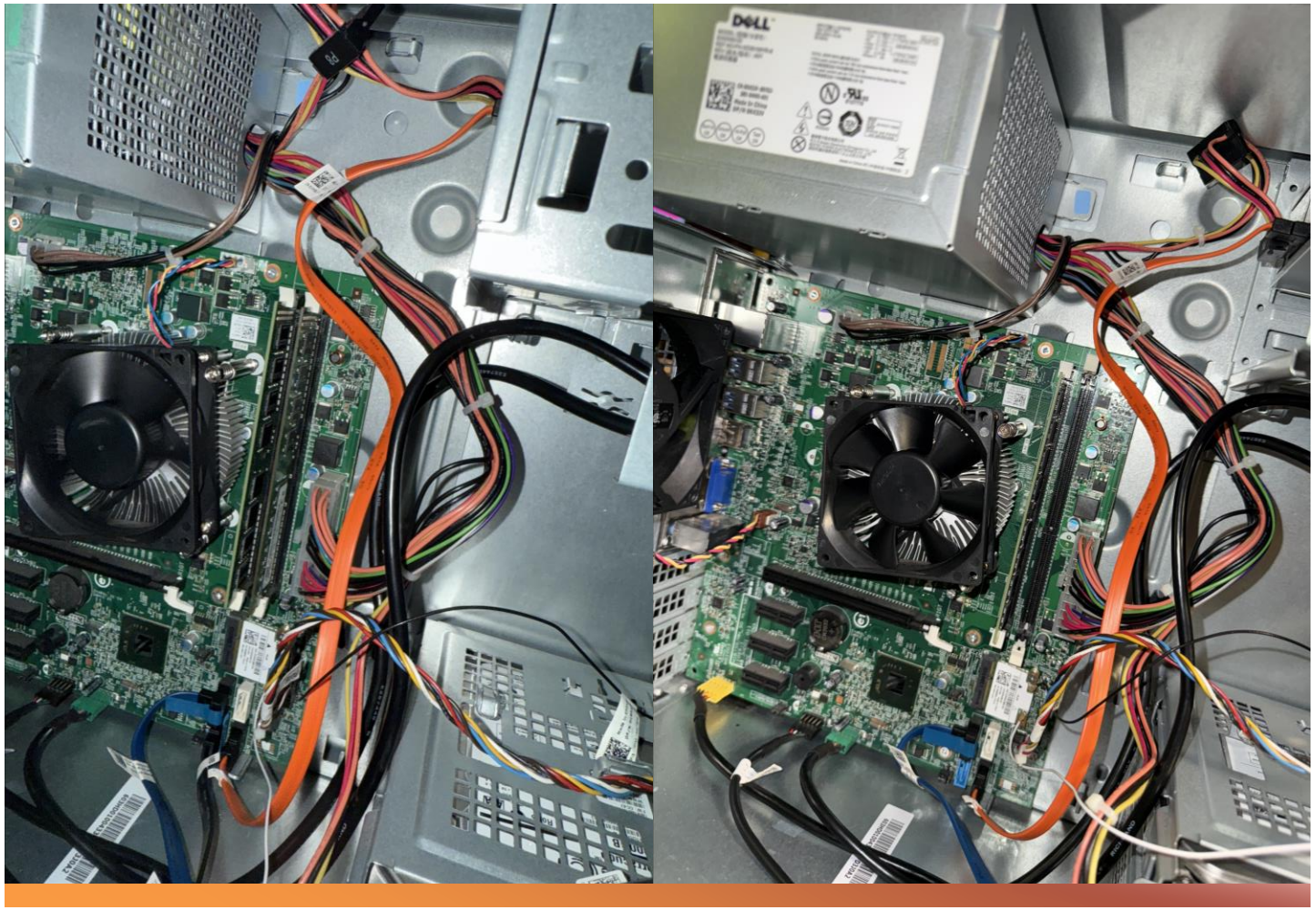
Power Supply Unit (PSU) Reassembly

- To reassemble the PSU, position the cover back onto the unit, ensuring all internal wires pass through the designated openings. Align the cover with the hinges and secure it by tightening the screws, making sure the hinges click into place for proper fitment.



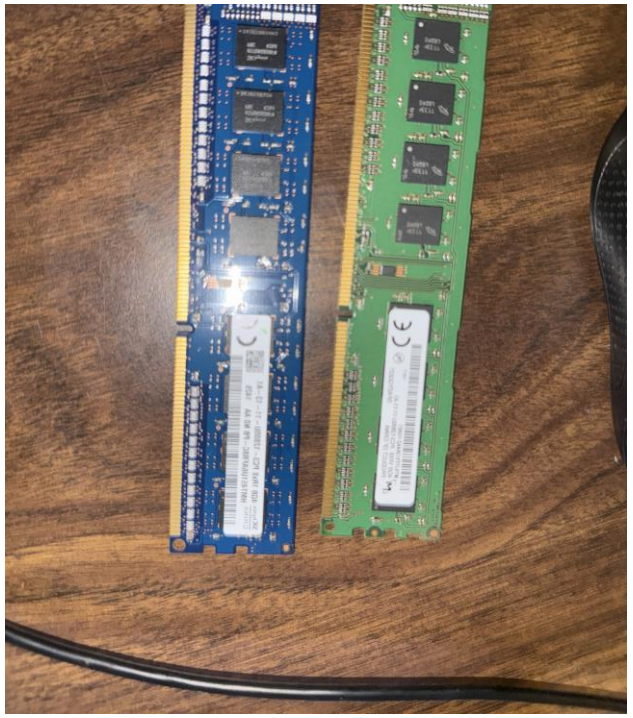
Motherboard Reassembly

- To reassemble the motherboard, insert the CMOS battery into its socket and install the WLAN card into its slot, securing it with screws. Firmly seat the RAM modules in their slots, ensuring each clicks into place for proper connection, and add an additional 4GB DDR3 RAM stick to maximize the system's 8GB capacity. Place the CPU into its socket, secure it with the latch and screw, then attach and fasten the CPU cover with its screws. Finally, install the CPU fan over the cover, securing it with its four mounting screws to ensure proper contact and cooling.



Hard Disk Drive (HDD) Reassembly

- To reassemble the hard disk drive (HDD), carefully reseat the PCB (printed circuit board) onto the back of the drive and secure it with its screws. Do not attempt to disassemble the drive casing itself, as HDDs are not user-serviceable. Internal components, including the spinning platters and read/write heads, are extremely sensitive, and improper handling can easily render the drive inoperable. Full disassembly should only be performed by trained professionals in controlled environments.



Optional: Component Salvage from Dell OptiPlex 790

- For hardware reuse, a 4GB DDR3 RAM module and a 2.5-inch SSD were extracted from a Dell OptiPlex 790 and installed into the Dell Inspiron 660. To access the OptiPlex 790 components, the side panel was removed by pressing the release mechanism and sliding it off. Covers protecting the SSD were removed, and the drive was unplugged and carefully clicked out of its slot. With the PC open, the 4GB DDR3 RAM module was also carefully unseated from its slot. All components were handled to avoid static discharge and properly seated into their corresponding slots in the Inspiron 660 to ensure full functionality in the target system.

System Reassembly: Motherboard

- To reassemble the motherboard, align it with the standoffs at the back of the case and secure it using screws at all mounting points along the edges. Ensure the board is firmly seated and properly aligned with the I/O shield before proceeding with component connections.

System Reassembly: Power Supply Unit (PSU)

- To reinstall the PSU, carefully slide it into its designated position from inside the case and secure it by tightening the mounting screws. Ensure the unit is properly seated and all power cables are accessible for connection to the motherboard and other components.

System Reassembly: Main Cooling Fan

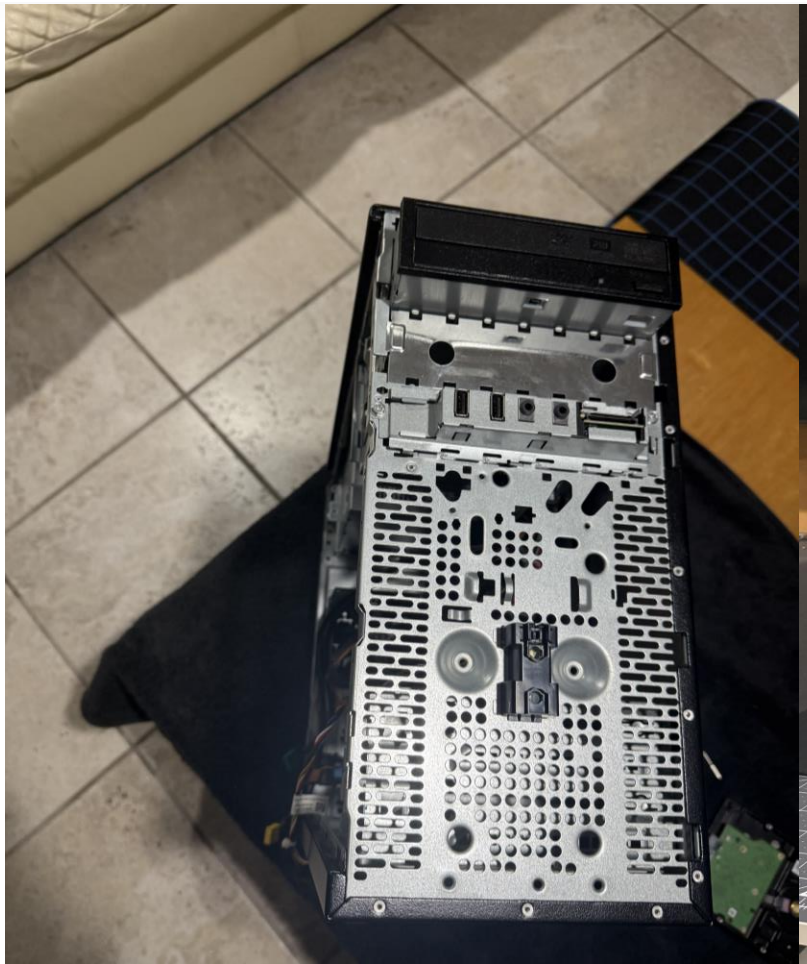
- To reinstall the main cooling fan, position it in the designated mounting area, secure it with the appropriate screws, and reconnect the fan header to the motherboard to ensure proper power and operation.

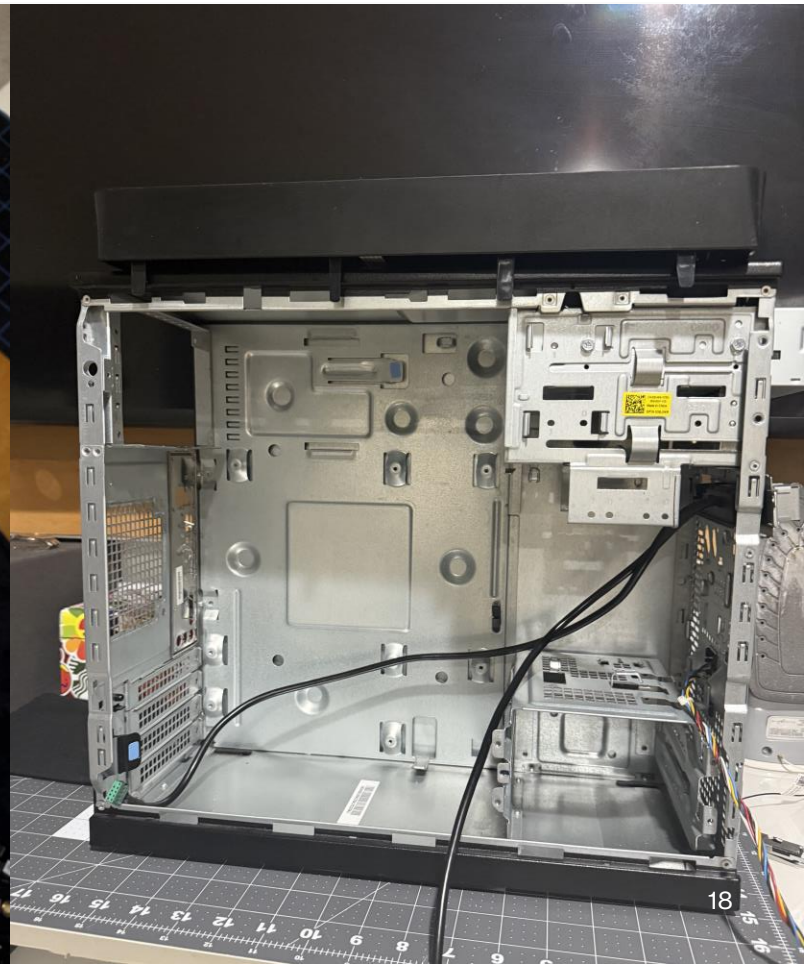
System Reassembly: Hard Disk Drive (HDD) and SSD Integration

- To reinstall storage devices, place the HDD back into its designated mounting rack and secure it with screws. Position the SSD in its corresponding mounting rack beneath the HDD, ensuring it is properly seated and aligned for stable installation.

System Reassembly: Front Panel Components

- To reinstall the front panel, first insert the CD-ROM drive from inside the case and secure it with screws. Next, click the metal tray beneath it into place. Align and screw in the USB interface, then clip the power button and the black and white front panel connectors into their respective positions. These connectors correspond to the motherboard's front panel header, handling the power switch and LED indicators. During installation, ensure all wires are neatly routed inside the case to maintain proper cable management and prevent interference with other components.





System Reassembly: Case Panels (Front and Side)

- To reinstall the panels, first align and click the front panel into its designated position. Next, slide the side panel into place, ensuring it aligns with the case frame, and secure it by pressing it until it clicks. Finally, fasten the side panel from the rear using the mounting screws to complete the enclosure.

System Reset: OS Installation via USB Boot

Once the PC has been fully reassembled, power it on to verify that all components function correctly. If no issues are present, restart the system and press F12 during startup to access the boot menu. Insert the USB boot drive, created by downloading the operating system directly from Microsoft onto another PC and transferring it to a USB flash drive. From the F12 boot menu, select the USB boot option and proceed with the operating system installation process.

System Reset: Windows Setup Process

- After the OS is installed, proceed with the Windows setup, which will ask you to configure your region, keyboard layout, time zone, create a user account, set a password, connect to a network, and many other personal preferences.

System Upgrade Verification

- After completing the reassembly and OS installation, verify that all hardware and software upgrades are functioning correctly. Check the installed RAM by opening the System Properties or Task Manager to confirm the total memory matches the expected amount (including any new modules). Verify that all storage devices, including the HDD and newly added SSD, are recognized in File Explorer and Disk Management. Confirm that the CPU is correctly detected with the proper model and speed in System Properties or Task Manager. Ensure all peripheral devices (keyboard, mouse, USB devices, display adapters) are functioning, and that the operating system runs smoothly without errors. Finally, confirm that all device drivers are installed and up to date through Device Manager, resolving any flagged components.