

## Lab – Disassemble a Computer

### Introduction

In this lab, you will disassemble a desktop computer using safe lab procedures and the proper tools. Use extreme care and follow all safety procedures. Familiarize yourself with the tools you will be using in this lab.

The goal of this lab is to separate the components and practice using tools properly. The separated components can be used in a later lab for assembly.

This lab does not include removing the motherboard, CPU, and cooling device from the computer due to the replacement cost of these items. If possible, allow students to remove these components from spare or broken computers that are kept in the classroom for part identification and demonstration.

#### Part 1: Preparation

#### Part 2: Parts Removal

### Recommended Tools

Safety glasses	Part retriever
Antistatic wrist strap	Thermal compound
Antistatic mat	Can of compressed air
Flat head screwdrivers	Cable ties
Phillips head screwdrivers	Parts organizer
Torx screwdrivers	Containers for storing computer parts
Hex driver	Antistatic bags for electronic parts

### Instructions

#### Part 1: Preparation

##### Step 1: Power off the Computer and remove peripheral items.

- Turn off the power to the computer and disconnect the power cable from the wall and the power supply.
- Remove all external peripheral items, such as Ethernet cables, monitors, keyboards.

##### Step 2: Open the Computer Case.

Generally, computer cases are held in place using one or a combination of these three ways below:

###### Screwless

These cases are held together using metal or plastic clips. To open the case, the clips are released by pressing buttons or switches to remove the side panel.

###### Screw

Locate all the screws that secure the side panels to the back of the computer. These screws are located at the edge of the case. Use the proper size and type of screwdriver to remove the side panel screws. Do not remove the screws that secure the power supply to the case. Put all the screws in one place, such as a compartment in the parts organizer or small cup. Label the compartment or cup with a piece of masking tape on which you have written **side panel screws**. Remove the side panels from the case.

### Thumbscrew

These cases come with screws that you can tighten or loosen with your fingers. Loosen the thumbscrews to remove the side panel. The thumbscrews are located on the edge of the computer case.

If you have a camera or smartphone, take a picture of the inside of the computer case to be used as a reference when reassembling the computer.

What type of screwdriver did you use to remove the screws?

How many screws secured the side panels?

### Step 3: Antistatic Wrist Strap.

Put on an antistatic wrist strap. Connect one end of the conductor to the wrist strap. Clip the other end of the conductor to an unpainted, metal part of the case.

If you have an antistatic mat, place it on the work surface and put the computer case on top of it. Ground the antistatic mat to an unpainted, metal part of the case.

## Part 2: Parts Removal

In this part, you will remove the internal drives and data cables, adapter cards, memory modules, and power supply.

**Note:** Some manufacturers do not use screws to fasten components inside of the computer case. Some may use plastic or metal clips that fasten components to the computer chassis. When in doubt, perform a web search for manufacturer of the computer case or computer system.

**Note:** Be careful to remove only screws that are holding components in place, and not the screws that hold components together.

### Step 1: Remove the Hard Drive.

- a. Locate the hard drive. Carefully disconnect the power and data cables from the back of the hard drive.

Which type of data cable did you disconnect?

- b. Locate all the screws that secure the hard drive in place. Use the proper size and type of screwdriver to remove the hard drive screws. Put all the screws in one place and label them.

What type of screws secured the hard drive to the case?

How many screws secured the hard drive to the case?

Is the hard drive connected to a mounting bracket? If so, what type of screws secure the hard drive to the mounting bracket?

**Caution:** Do NOT remove the screws that hold the hard drive together.

- c. Gently remove the hard drive from the case. Look for a jumper reference chart on the hard drive. If there is a jumper installed on the hard drive, use the jumper reference chart to see if the hard drive is set for a Master, Slave, or Cable Select (CS) drive. Place the hard drive in an antistatic bag.

What is the jumper setting of the hard drive?

### Step 2: Remove Optical Drive.

- a. Locate the optical drive (Blu-ray, DVD, etc.). Carefully disconnect the power and data cables from the optical drive. Remove the audio cable from the optical drive if there is one connected.

What kind of data cable did you disconnect?

Is there a jumper on the optical drive? What is the jumper setting?

- b. Locate and remove all the screws that secure the optical drive to the case. Put all the screws in one place and label them. Place the optical drive in an antistatic bag.

How many screws secured the optical drive to the case?

### Step 3: Remove the Power Supply.

- a. Locate the power supply. Find the power connection(s) to the motherboard.
- b. Gently remove the power connection(s) from the motherboard.

How many pins are there in the motherboard connector?

- c. Disconnect the power cables from any case fans.
- d. Disconnect the power cable from the video card if it requires one.
- e. Disconnect any other power supply cables from where they were connected.

If there were additional cables disconnected, to what were they connected?

- f. Locate and remove all the screws that secure the power supply to the case. Put all the screws in one place and label them.

How many screws secure the power supply to the case?

- g. Carefully remove the power supply from the case. Place the power supply with the other computer components.

### Step 4: Remove Adapter Cards.

- a. Locate any adapter cards that are installed in the computer, such as a video, NIC, or sound card.
- b. Locate and remove the screw that secures the adapter card to the case. Put the adapter card screws in one place and label them.
- c. Carefully remove the adapter card from the slot. Be sure to hold the adapter card by the mounting bracket or by the edges. Place the adapter card in an antistatic bag. Repeat this process for all the adapter cards.

**Note:** Be very careful when removing video adapters. There is often a locking tab on the slot that must be released before the card can be removed.

- d. List the adapter cards and the slot types below.

Adapter Card	Slot Type

### Step 5: Remove Memory Modules.

- a. Locate the memory modules on the motherboard.

What type of memory modules are installed on the motherboard?

How many memory modules are installed on the motherboard?

- b. Remove the memory modules from the motherboard. Be sure to release any locking tabs that may be securing the memory module. Hold the memory module by the edges and gently lift out of the slot. Put the memory modules in an antistatic bag.

### Step 6: Remove Data Cables.

- a. Remove all data cables from the motherboard. Make sure to note the connection location of any cable you disconnect.

What types of cables were disconnected?

- b. You have completed this lab. The computer case should contain the motherboard, the CPU, and any cooling devices. Do not remove any additional components.