

# Chapter 3

## PC Setup

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### *In This Chapter*

- ▶ Putting together your PC
  - ▶ Understanding computer cables
  - ▶ Plugging things into the console
  - ▶ Using a power strip
  - ▶ Managing with a UPS
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I could lie to you and say that setting up a PC is so simple that a child could do it. A Vulcan child, perhaps. Even so, setting up a computer isn't as difficult as assembling backyard play equipment or programming 1980s VCRs. The process does, however, involve a lot of cable plugging, which must be done properly if you want the computer system to work.

## *Computer Assembly*

Consider yourself lucky if your new PC pops right out of the box, ready to run. Many all-in-one PCs work that way — or close to it. Laptops come out of the box ready to go (well, perhaps needing a battery charge). For the rest of the lot, peruse this section on how to get your PC out of the box and assembled.



### *Unpacking the boxes*

Your computer runs faster when you take it out of the box.

If you purchased a computer system, open the console's box first. It may contain a roadmap or diagram of how to attach the other pieces.

As you open boxes, check to ensure that you have all the parts necessary for your computer system. Look through all the packing materials inside the box. Sometimes, manufacturers stick important items inside boxes inside boxes, or nestled in the Styrofoam. Refer to the packing slip or invoice for the list of parts. If you're missing anything, call someone!



- ✓ Keep the packing slip, warranty, sales receipt, and other important pieces of paper together.
- ✓ Don't fill out the warranty card until after the computer is set up and running fine. If you have to return the computer, the store prefers that the warranty card *not* be filled in.
- ✓ Keep all boxes and packing materials. You need them if you have to return the computer. Also, the boxes are the best way to ship the computer if you ever have to move. Some movers don't insure a computer unless it's packed in its original box.



## Setting up the console

The *console* is the main computer box, the locus of all PC activities, so you should set it up first. Put the console in the location where you've always dreamed it would be. If you plan to put the console beneath your desk, put it there now.

Don't back the console up against the wall just yet, because you need to plug things into the console's rump. Not until everything is connected to the console do you want to push it up against the wall. (Even then, leave some room so that you don't crimp the cables.)



- ✓ The console needs to breathe. Don't place it in a confined space or inside a cabinet where there's no air circulation.
- ✓ Avoid setting the console by a window where the sun will heat it up. Computers don't like to operate in extreme heat — or extreme cold, for that matter. A PC is happiest when it operates at temperatures between 40 and 80 degrees Fahrenheit or, for the world outside the United States, between 4 and 27 degrees Celsius.
- ✓ Also avoid humidity, which can gum up a computer. Readers in tropical climes have reported mold growing inside their PCs — the humidity was that bad! If you compute where it's humid, do so in an air-conditioned room.

- ✔ Don't put the console in a cabinet unless the cabinet is well-ventilated. Shoot some bullet holes in the cabinet if it requires more ventilation.
- ✔ A computer by a window makes a tempting target for a smash-and-grab thief.

## Plugging in and connecting

After setting up the console, your next job is to obtain the various other devices — the *peripherals* — and attach them to the console. You'll also need to plug things in to a power supply.

I recommend setting up a peripheral, connecting it to the console, and moving on to the next peripheral. For example, set up the monitor, and then plug it into the console. Set up the keyboard, and then plug it into the console. For specific directions on connecting individual items, refer to the next section.

Some computer peripherals get their power directly from the wall socket. I recommend that you plug in their power cords last. Helpful tips on connecting your PC and its components to a power source are covered in the later section “It Must Have Power.”

## The Plugging-Things-In Guide

It's tempting, but avoid the urge to use glue and adhesive tape when you first set up the computer. Attaching high-tech electronics to each other requires some finesse, and on that topic I'm willing to share my decades of experience.



- ✔ All major parts of a computer system plug directly into the console, which is why I recommend unpacking and setting up the console first.
- ✔ If this is the first time you're setting up the computer, don't plug in the console yet. You can turn on the console after connecting all the pieces.
- ✔ Plug things into the console before you plug them into the wall.
- ✔ It's generally okay to plug something into the console while the computer is on. Exceptions exist to this rule, so read this section carefully!
- ✔ Also see Chapter 10 for information on using USB devices, which includes just about every peripheral known in the PC kingdom. That chapter also covers using Bluetooth to wirelessly connect peripherals to your PC.



## Know your computer cables

A computer cable is known by which hole, or *port*, it plugs into. For example, USB cables plug into USB ports.

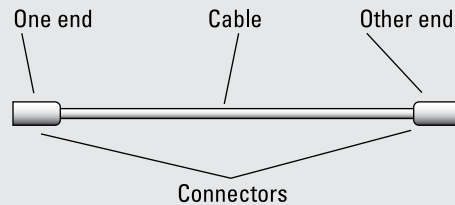
The ends of a computer cable are configured so that you cannot plug in the cable backward: The connector for the console is one shape, and the connector for the gizmo is another shape. When the connectors are the same shape, it doesn't matter which end plugs in where.

All cables fasten snugly. Network cables have little tabs on them that snap when the cable is properly inserted. You must squeeze the tab to remove the cable. Some video connectors have tiny thumbscrews on the side, which help cinch the cable to the connector.

Some cables are permanently attached to their devices: The mouse and keyboard have this

type of cable, for example. Other cables are separate; remember to plug in both ends.

Extra cables, if you need them, can be purchased at any computer or office supply store. As a suggestion, measure the distance for which you need a cable and then double it to get a cable of the proper length. For example, if it's 2 feet between your console and where you want a printer, get a 4-foot printer (USB) cable.



## Attaching the keyboard and mouse

Set up the keyboard right in front of where you sit when you use the computer, between you and the monitor. The mouse lives to the right or left of the keyboard, depending on whether you're right- or left-handed.



- ✓ The PC keyboard plugs into a USB port. The mouse plugs into a USB port. It doesn't matter which one.
- ✓ If the keyboard features its own USB port, connect the mouse to that USB port.
- ✓ Some PCs sports a mixture of USB 3.0 and older USB ports. The USB 3.0 ports are color-coded blue. Save those ports for high-speed devices, like external hard drives. Plug the keyboard and mouse into the older (non-blue) USB ports.

## Setting up the monitor

Set the monitor atop your desk, generally away from where you sit, to accommodate room for the keyboard. For the best results, the monitor should face you.

The monitor's cable may be attached or separate. If separate, attach the cable to the monitor. Plug the monitor's cable into the console's graphics adapter jack. Several jack types are available, though I recommend using either the digital (white) or HDMI (black) jack. Choose the cable that matches the jack.

The monitor also requires power. See the later section "It Must Have Power."



- ✓ If the console has two sets of connectors, use the one on an expansion card rather than the one found on the console's I/O panel. That expansion card jack indicates a high-end graphics adapter, which offers better features.
- ✓ Many high-end graphics adapters feature two digital video jacks. If the PC has only one monitor, you can use either jack. The second digital video jack is for a second monitor.
- ✓ HDMI stands for High-Definition Multimedia Interface.
- ✓ See Chapter 8 for more information about PC monitors and graphics.

## Connecting to the network

Plug the network cable into the network jack on the back of the console. This is how you connect your PC to a network, a gateway, a broadband modem, or any of a number of oddly named networking things. Well, unless you have a Wi-Fi (wireless) connection.

For more info, refer to Chapter 17, which covers computer networking.

## Adding a printer

You can add a printer to the computer system at any time. Try to position the printer where it's within arm's reach of the console so that you can reach over and pluck out whatever it is you're printing.

The printer connects directly to the PC with a USB cable. However, you might need to install the printer's software before you make the connection.

You can also access printers on the network, in which case connecting the network also connects the printers. Job finished!

- ✔ The printer requires power, so you need to plug it into a wall socket. See the section “It Must Have Power,” later in this chapter.
- ✔ See Chapter 11 for all things printer.

## Hooking up the speakers

Computer audio involves both output and input — the famous I/O you probably sang songs about when you went to computer camp as a teen.

Both headphones and speakers use the Line Out, headphone, or speakers jack. Furthermore, speakers may need to be plugged into the wall for more power; see the section “It Must Have Power,” later in this chapter.

Connect the microphone to the Mic or Line In jack. When both jacks are available, use Mic for a microphone because Line In is for unamplified sound sources.

Table 3-1 lists the common color codes for any additional audio connections your PC might require. These colors are found on the ring of the jack where you connect the PC audio device.

<b>Jack Type</b>	<b>Color</b>
Center/subwoofer	Brown
Line In	Gray
Microphone	Pink
Speakers/headphones	Lime
Surround left/right	Black

- ✔ All computer audio uses the standard *mini-DIN* connector, which looks like a tiny pointy thing. Just plug it into the appropriate, color-coded hole.
- ✔ Be sure to check the front of the console for another spot to plug in the headphones or microphone. This location is much handier than using the connector on the back.





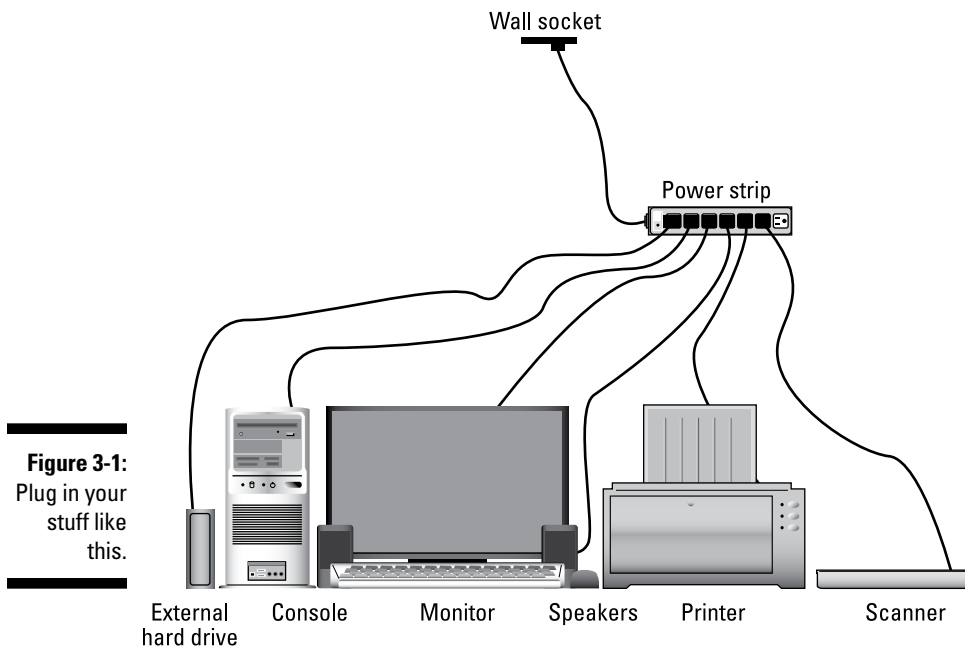
- ✓ Some PCs have special audio hardware, which you can determine by looking at the console's rear for audio connectors on an expansion slot cover. If your PC is configured this way, be sure to plug the speakers into the audio card's output jacks, not into the standard audio output jacks on the I/O panel.
- ✓ Refer to Chapter 12 for more information on PC audio, including some speaker layout instructions.

## *It Must Have Power*

Computer devices crave power like an armband-wearing, social outcast, high school hall monitor. The last thing you need to do, after plugging your computer components into the console, is to plug all those gizmos into the wall.

### *Plugging everything into a power strip*

You may have noticed that the computer system has far more devices that need to be plugged in than the number of available wall sockets. No problem! That's why Thomas Edison invented power strips. The idea is to plug everything into a power strip and then plug that single power strip into the wall, as illustrated in Figure 3-1.



**Figure 3-1:**  
Plug in your  
stuff like  
this.

Follow these steps:

1. **Ensure that all your gizmos with on–off switches are in the Off position.**  
Don't worry if the device has a power button and you can't determine whether it's on or off. If it's not plugged in, it's off.
2. **Ensure that the power strip is in the Off position.**
3. **Plug everything into the power strip.**
4. **Turn your gizmos to the On position.**

To turn on the computer system, turn on the power strip. But not yet! The official on–off information is in Chapter 4. See that chapter for more information.



## Surges, spikes, and lightning strikes

The power that comes from the wall socket into your computer isn't as pure as the wind-driven snow. Occasionally, it may be corrupted by some of the various electrical nasties that, every now and then, come uninvited into your home or office. Here's the lowdown:

**Line noise:** Interference on the power line, most commonly caused by an electric motor on the same circuit. For example, the radio turns to static when you use the blender. That's line noise.

**Surge:** A gradual increase in power.

**Serge:** Some guy from Europe.

**Spike:** A sudden increase in the power. Spikes happen when lightning strikes nearby.

**Dip:** The opposite of a surge; a decrease in power. Some electrical motors don't work, and room lights are dimmer than normal. A dip is also known as a *brownout*.

**Power outage:** An absence of power coming through the line. People in the 1960s called it a *blackout*.

A power strip with surge protection helps keep your electronics happy during a surge. If the power strip has noise filtering or line conditioning, it works even better.

The most expensive form of protection is spike protection, in which the power strip lays down its life by taking the full brunt of the spike and saving your computer equipment.

Because they're particularly nasty, spikes come through not only the power lines but also the phone and cable TV lines. So, if lightning strikes are a common occurrence in your area, use a power strip with phone line, cable, and maybe even network cable filters.





- ✔ Try to find a power strip with line noise filtering. Even better, pay more to buy a power strip that has line conditioning! That's super nice for your electronic goodies.
- ✔ I recommend the Kensington SmartSockets-brand power strips. Unlike cheaper power strips, the SmartSockets brand lines up its sockets in an arrangement that makes it easier to plug in bulky transformers.
- ✔ Most power strips have six sockets, which is plenty for a typical computer system. If not, buy a second power strip, plug it into its own wall socket, and use it for the rest of your computer devices. But:
  - ✔ Don't plug one power strip into another power strip; it's electrically unsafe!
  - ✔ Don't plug a laser printer into a power strip. The laser printer draws too much juice. Instead, you must plug the laser printer directly into the wall socket. (It says so in your laser printer's setup directions — if you ever get around to reading them.)

## Taking advantage of a UPS

UPS stands for *uninterruptible power supply*, and it's the best thing to have for hooking up your computer system to the wall socket. Basically, a *UPS* is a power strip combined with a battery to keep your computer running when the power goes out.

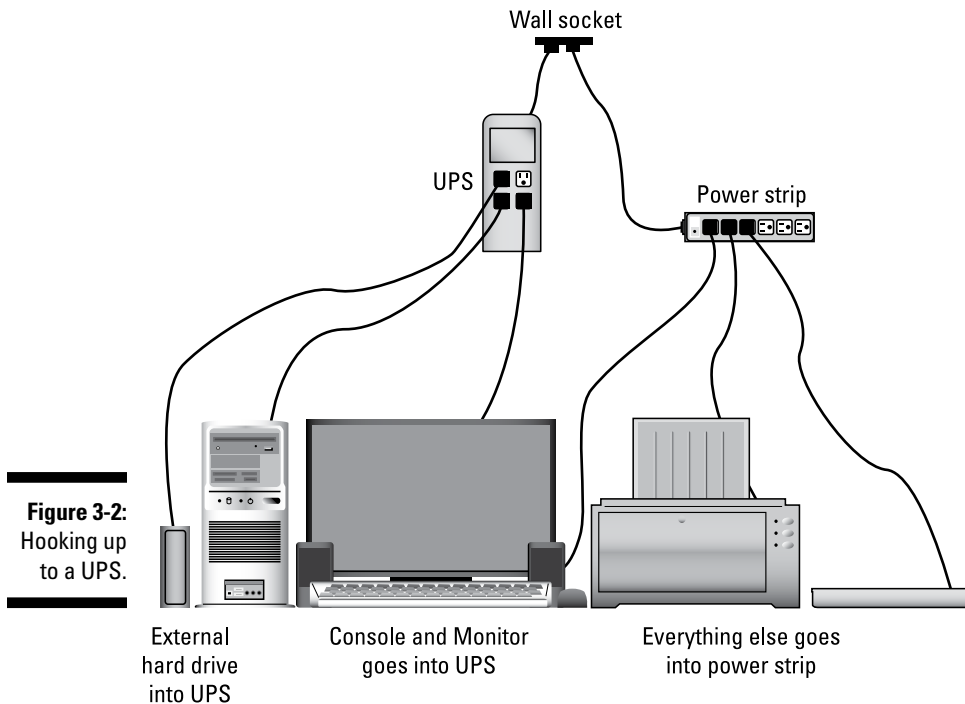
Figure 3-2 illustrates the proper way to set up your computer system with a UPS and power strip. Not shown is a USB cable that connects the UPS to the console to alert the computer about a power outage.

The idea behind a UPS isn't to keep computing while the power is out. Instead, the UPS is designed to keep your basic computer components — the console and monitor — up and running just long enough for you to save your work and properly shut down the computer. That way, you never lose anything from an unexpected power outage.



- ✔ Ignore what it says on the box: A UPS gives you *maybe* five minutes of computer power. Most often, you get only two minutes of power.
- ✔ Some UPS systems also have non-battery-backed-up sockets so that you can plug everything into the UPS directly. Just be sure to plug the monitor and console into the battery-backed-up sockets.
- ✔ I also recommend plugging any external hard drives into the UPS's battery-backed-up sockets.

- ✔ Leave the UPS on all the time. Turn it off only when the power is out and the computer has been properly shut down.
- ✔ In addition to providing emergency power, a UPS provides higher levels of electrical protection for your equipment. Many models offer surge, spike, and dip protection, which keep your PC running smoothly despite any nasties the power company may throw your way.
- ✔ Also see Chapter 24 for information on having your computer shut down automatically when the power goes out.



**Figure 3-2:**  
Hooking up  
to a UPS.

## Using the UPS (a short play)

*Interior upscale kitchen. A thunderclap is heard. The lights flicker and then go out. ROGER, 40ish and nerdy, is left sitting in the dark, his computer still on. The UPS beeps once every few seconds. FELICIA rushes in. She is pretentious, but not insufferably so.*

**FELICIA:** The power is out! The brioche I put in the toaster oven is ruined! Did you lose that urgent doodle you were creating in Paint?

**ROGER:** No, darling, I'm still working on it. See? Our UPS has kept the computer console and monitor turned on despite the power outage.

**FELICIA:** Oh! That explains the beeping.

**ROGER:** Yes, the UPS beeps when the power has gone out. It does that just in case I failed to observe the pitch darkness.

**FELICIA:** Well, hurry up and print your doodle!

**ROGER:** Not now, sugarplum! Printing can wait, which is why I didn't connect the printer to the UPS. It's as powerless as the toaster oven.

**FELICIA:** What can you do? Hurry! The UPS battery won't last forever!

**ROGER:** Relax, gentle spouse. I shall save to the PC's main mass storage device, thus. (*He presses Ctrl+S on the keyboard.*) Now I may shut down the computer, assured with the knowledge that my urgent doodle is safely stored. There. (*He turns off the computer and monitor. He shuts off the UPS and the beeping ceases.*) Now we can weather the storm with peace of mind.

*Two hours later, after the power is back on, FELICIA and ROGER are sipping wine.*

**FELICIA:** Honey, you certainly demonstrated your Ivy League pedigree with the way you used that UPS.

**ROGER:** Well, I'm just thankful I read Dan Gookin's book *PCs For Dummies*, from Wiley Publishing, Inc. I think I shall buy more of his books.

**FELICIA:** Who knew that we could find such happiness, thanks to a computer book?

*They canoodle.*

