

How to Troubleshoot Printer Problems

Most of the time, there's no magic to figuring out why a system is not working properly. If there is a perceived "magic," it's probably because an end user either does not have an adequate understanding of the cause and effect relationship that exists in making computers and software work together, or the time and/or inclination to fix it. Using a basic, logical approach can help solve most non-technical problems. The logic we're referring to is the order of the steps taken to identify and effect a solution -- by approaching a situation in an orderly, systematic way, most problems can be solved quite quickly. There's no question that fixing the problem as quickly as possible is a major goal for anyone encountering a problem with their computer system.

Concept: *The person standing at the computer is almost always in the best position to implement the solution because he/she can actually see and physically touch the equipment.* The technical support person on the other end of a telephone call cannot do either and therefore, must ask a lot of questions to get the lay of the land *through the caller's eyes and hands* before any valuable help can be offered. Asking questions to discover what the root of the issue is takes *time*. This delays the server from performing his/her normal tasks, causes frustration, and eventually costs real money in either lost productivity time or in lost sales or for the purchase of extra technical support.

This guide provides some easy checklists to follow that may help you fix common problems quickly on your own, saving time *and expense*. After you read these, you'll have a roadmap to a more efficient computing experience.

Proactive Problem Solving

If your operation relies on a POS system to manage sales and serve your customers, then having a solid, working computer and printing infrastructure is a *necessity*, not a luxury. Here are seven tips that can help:

1. Understand that computers and printers are just *machines* and that machines sometimes break. Rather than plan that they all will work properly all the time, you should expect that one or more of them will likely fail during any calendar year. Also remember that Murphy's Law dictates that such failure will almost always happen at the worst time imaginable.
2. Install top-quality computing and printing equipment and related wiring. Don't skimp to save a couple hundred bucks – it will come back to bite you and probably cost much more than what you originally saved. Also resist the offer from friends or family for a "donated" computer they no longer use. There's a *reason* why they don't use it anymore; don't turn that reason into *your problem*.
3. Use like-printers throughout your POS operation. Don't use a Star with a parallel interface here, an old Epson with a serial interface there and a Samsung with a USB interface at a third location: you can't swap equipment between computers that way.
4. Likewise with computers. If they're all the same, they become more-or-less interchangeable on the sales floor and it becomes easy and quick to swap equipment in or out should a quick-fix solution not be available.
5. Learn how to solve common, basic printer problems. It seems so obvious yet so many people never take the time to learn how to support and solve simple printer problems quickly, on their own, thus minimizing down-time, needless expense and the resulting inconvenience to customers.
6. Train your staff in solving simple problems. Don't just show them how, *test them!* We know of one general manager who periodically unplugs a printer or removes the paper deliberately just to test his staff. Smart! Show them how to fix simple problems and then provide them with periodic chances to practice their skills. Then when they fix it correctly, *praise them!*

7. Keep a spare handy. We heard of one manager who has a spare computer and POS printer ready just in case one of his super-busy POS terminals or his kitchen printer fails. The equipment is pre-configured, ready to plug in and turn on – if a problem arises that’s bigger than a simple one, rather than try to diagnose it on-the-spot, he can simply replace the bad unit with the spare and the solution is in place in only moments, not hours. Later, he can deal with the original problem when he’s not so busy. That’s *really* smart -- for only a few hundred dollars he’s bought his own little hassle-free on-site hardware insurance program that enables his staff to remain focused on serving customers instead of trying to fix printer/computer problems!

Quick fix-it-yourself checkpoints

Fact: most printer problems can be solved by the user. Rather than waste the time to make an emergency call to tech support, you should train *all* staff members who use the printer(s) to follow these simple fix-it-yourself procedures; you might even print the list and keep it in the cash drawer under the currency tray. If the problem remains after exhausting this short list, then the issue is deeper and may indeed require technical support assistance.

1. **Determine if the printer has electrical power.** This can usually be seen by indicator or error lights on the printer or by turning it off for a few seconds and then back on again because some printers make some sort of a small noise as they power up. Of course, if the printer doesn’t have power, it can’t print anything. Obvious: check the power plugs at *both* the back of the printer and the electrical socket. If the printer uses an external power supply, check any cables that connect to it, too. If an “error light” is lit on the printer, try turning the printer off and on again to clear the error.
2. **Determine if the printer can physically print anything.** Usually there’s a test mode that can be invoked on the printer: try turning the printer off, holding down a “form feed” or other button, and while holding the button down, turning the printer back on. Obvious: check the paper supply.
3. **Check for physical damage.** Is the printer’s case cracked? Did it fall onto the floor? Try pressing the form feed button to see if any paper comes out of the printer – the paper should come out relatively quickly and rather quietly. Listen for any binding or grinding sounds and if you hear any, it’s likely that something fell into the printer or something is jammed in the printer’s mechanism. Obvious: open the cover and take a look.
4. **Is it wet?** If the printer is wet, it’s likely something spilled into it – or a piece of ice could be jammed inside the mechanism. Electrical devices and liquids are generally incompatible with one another. Obvious: open the cover and take a look – dump out the ice/liquid, let it dry for a couple hours and try it again.
5. **Is the data cable plugged in?** If it’s a remote printer in a kitchen or bar, is the printer’s data cable plugged into the network? If it’s not a remote, is it plugged directly into the computer? Obvious: unplug and reconnect the cable – at *both* the printer and computer ends.
6. **What do the printer’s cables connect to?** There are usually two and possibly three cables that are connected to a printer. One is a power cable that supplies electricity; this usually plugs into a common electrical outlet and is generally quite easy to identify. Another one is usually a thick and sometimes stiff data cable that carries the data signal from the computers to the printer; this may be plugged directly into the back of a computer’s case or depending on the installation, it may be plugged into a network wall outlet using a large telephone-like plastic connector. The third may be a small telephone-like wire that connects to the cash drawer (POS printers only); this carries a small electrical pulse to the cash drawer causing it to spring open when a receipt is printed. Knowing which cable goes where isn’t rocket scienc, it’s just common sense that requires that the user actually look and visibly follow the cable from the printer to whatever it connects to. Why is this important? Because cables sometimes work loose and become disconnected. It happens.

Describing the problem correctly to Tech Support

“It didn’t print” is a rather common complaint from a computer user. However, “*it didn’t print*” is not the problem – that’s the *symptom* of something else not working. *Why* the printer didn’t print is the problem that needs solving – and the issue may not actually be the printer itself. There is a reason why the situation happened, and finding and solving it quickly involves a step-by-step logical approach to computer problem solving.

Note: If you’ve already tried the fix-it-yourself checklist you can tell the tech support person that you’ve tried all the obvious remedies such as checking for electricity, cables plugged in, paper supply, visible damage, etc. Otherwise, the tech support person is probably going to go through the quick checkpoint listed again, which will delay the resolution even further and cause more frustration.

“It didn’t print.”

1. **Does the printer have electrical power?** If yes, move on to #2...
 - a. This may seem like a ridiculous question to ask, but you’d be amazed how many calls tech support people receive that are solved by simply asking the user to flip the power switch once or twice. Most printers perform some sort of internal reset or make a little noise when they’re turned on, and if it doesn’t have a power indicator light, listen for a noise. If flipping the printer’s power switch doesn’t do anything, try the next step...
 - b. Is the printer plugged into an electrical socket? This is where one has to physically check by looking at both the plug end that goes into the printer and the other end that goes into the electrical socket. If the printer is plugged into a multi-outlet power strip, is the power strip itself plugged into a wall socket and is it turned on? Most power strips are designed with a built-in circuit breaker that may have tripped and needs to be reset. Again, you’d be amazed how often the solution is simply plugging a cord into a socket.
2. **Check the printer’s basics**
 - a. If the printer has an “error” indicator light, it is on? If so, check the paper supply or if it uses a ribbon, check the ribbon. This involves physically opening the printer’s cover(s). Paper-out and broken ribbons are most often the culprits.
 - b. If the printer worked 5 minutes ago but has stopped working or stopped in the middle of printing something, check the paper supply or if it uses a ribbon, check the ribbon. This involves physically opening the printer’s cover(s).
 - c. Is the printer making a buzzing or annoying noise? If so, it’s likely jammed – perhaps the paper or ribbon has become stuck. Flip the power switch off and on again – if the condition continues, power the printer off and open the printer’s covers. Look for any foreign objects that may have fallen into it. A common cause is that something fell into the printer and a server used a knife or other sharp object to try to extract it, was unsuccessful and simply told the others, “Don’t use that computer – it doesn’t print.” Solution: keep a spare printer handy of the same type you normally use and swap it out.
 - d. If the printer is in a food service area, is the printer wet or is there liquid around or under the printer? Printers and liquids are not compatible with one another. Solution: keep a spare printer handy of the same type you normally use and swap it out.
 - e. Is the printer cable still plugged into both the back of the printer and the computer? Often, users may clean counters, move printers around or even accidentally knock them off the counter and onto the floor. Moving computer parts can easily cause a loose cable connection. You must physically check not only by looking, but by pressing the cable in again at both the printer and computer ends. You like will have to power the printer back off and then on again afterwards.
 - f. Have the lights flickered a couple times or did an electrical storm just go through? If so, static electricity and other power fluctuations can wreak havoc with printer connections

as well as network connections, too. Solution: shut both the printer and the computer completely off, wait about 10 seconds and then turn them both back on again. It's not good enough just to restart Windows – you must physically turn the computer and printer off, let their internal electronics discharge and then start them up again.

3. If the printer is plugged directly into a computer, does it print anything at all?

- a. Try to print a diagnostics page on the printer itself. Usually this is done by turning the printer off, then pressing the “form feed” button on the printer and holding the button down while you turn the printer on, then release the “form feed” button. Most printers go into a self-test mode and print a diagnostics page.
 - i. If the diagnostics page does NOT print, the problem is likely local to the printer itself. Check the paper supply, ribbon and the insides to make sure nothing is binding or jammed. Generally, if the printer won't advance paper by itself or print a self-diagnostics page, the printer has encountered a hardware failure and repair is needed. Solution: keep a spare printer handy of the same type you normally use and swap it out.
- b. If the diagnostics page prints, then the printer is likely okay but there's something wrong with either the physical connection to the computer or a configuration setting in the computer or application's software.
 - i. Open the Windows Printers folder and try to print a Windows test page to the problem printer. If it prints, then the problem is likely a configuration setting in the application itself. Solution: open the application and change the configuration.
- c. If the Windows test page does NOT print, it could be the printer cable. There are many small wires inside a printer cable and if the cable was kinked or pinched, one of them could be broken.
 - i. Try a different cable of the same type. If the test page now prints then you know the problem was the cable itself. Solution: replace the cable.
- d. If changing the cable doesn't work and you have another computer that uses exactly the same printer that *is* working, try swapping the printer with the other computer's working printer.
 - i. If the “problem” printer doesn't print from the other computer either, it's likely an internal hardware problem with the printer. Solution: keep a spare printer handy of the same type you normally use and swap it out.
- e. If the “problem” printer suddenly works with the other computer but now the *other* computer's working printer doesn't work with *this* computer, then the problem is with *this* computer. Solution: try reinstalling the printer.
- f. Reinstalling the printer
 - i. First, uninstall the existing problem printer – follow this order:
 - Check the Windows Programs menu for an option to uninstall the printer.
 - If there isn't one, then check the Windows control panel in the “Add/Remove Programs” area for the desired printer.
 - If the printer doesn't show up there either, *only then* can you delete the printer from the Windows printer folder instead.
 - ii. Reinstall the printer driver software *and print a Windows test page*. If the test page prints properly, the solution is to reconfigure the application to use the reinstalled printer.
 - iii. If the Windows test page still does not print, the issue may be the computer's printer port that the printer is plugged into. Solution:
 - Uninstall the printer driver again.

- Delete the port from the Windows Device Manager.
 - Shut down and turn off the computer. Then restart it and let Windows re-recognize the port and reconfigure itself to it.
 - Reinstall the printer driver software and try the Windows test page again.
- iv. If the printer does not print after this, it's likely one of the following:
- Windows has become corrupt and must be completely reinstalled on the computer, after which all the applications must be reloaded and reconfigured.
 - A severe hardware problem exists that can only be solved via equipment replacement.

4. If the printer is a remote, networked printer, does it print anything at all?

- a. Try to print a diagnostics page on the printer itself. Usually this is done by turning the printer off, then pressing the “form feed” button on the printer and holding the button down while you turn the printer on, then release the “form feed” button. Most printers go into a self-test mode and print a diagnostics page.
- i. If the diagnostics page does NOT print, the problem is likely local to the printer itself. Check the paper supply, ribbon and the insides to make sure nothing is binding or jammed. Generally, if the printer won't advance paper by itself or print a self-diagnostics page, the printer has encountered a hardware failure and repair is needed. Solution: keep a spare printer handy of the same type you normally use and swap it out.
- b. If the diagnostics page prints, then the printer's mechanics are likely okay but there's something wrong elsewhere.
- c. Can ANY of the computers print to the printer or is it only one that can't?
- i. If it's only one computer that's having trouble, go to that computer and try *pinging* the printer's IP address. If you don't know how to do that, click Start – Help – type PING into the search box and click the GO button to find out. If ping doesn't work then this computer's network address, firewall, anti-virus, printer driver or other setting needs configuring so the computer can talk to the printer. This is beyond the scope of this document – refer to the manuals of those respective products or use Windows Help again, type NETWORK PRINTER into the search box and click the GO button.
- d. If NONE of the computers can print to the remote printer, then there's either a physical/wiring connection problem between the printer itself and the network or the printer's network address settings have been reset so that nothing can connect to it.
- i. Is the network wire plugged into both the printer and the network switch/hub? If not, make sure it's plugged in and try it again.
- ii. Try powering the switch off and then on again. Sometimes a switch's port will either go dead or go dormant and resetting the switch will fix it. Try plugging it into a different port on the switch/hub. Sometimes switch ports go completely dead and can't be reset. Note: even though an indicator light on the switch for that port is lit, it doesn't necessarily mean all 8 wires are working.
- iii. Is the network wire snug inside the plastic network connector on each end of the wire or is it loose? If it's loose, it's could be the plastic network connector: replace it and try again.
- You can purchase an inexpensive network cable tester for under \$20. These are easy to use and generally come with two units: you connect a unit to the connectors at each end of the wire and diagnostic lights tell you if the cable is okay. It's one of the most useful \$20 you'll ever spend.

- iv. Open the Windows Printers folder and try to print a Windows test page to the problem printer. If it prints, then the problem is likely a configuration setting in the application itself. Solution: open the application and change the configuration.
- e. If the Windows test page does NOT print, it could be the printer cable. There are many small wires inside a printer's data cable and if the cable was kinked or pinched, one of them could be broken.
 - i. Try a different cable of the same type. If the test page now prints then you know the problem was the cable itself. Solution: replace the cable and throw the bad one away. (Some people keep them "just in case." But why would anyone want to keep a bad printer cable? Would you want to keep old, burned-out light bulbs, too?)
- f. If changing the cable doesn't work and you have another computer that uses exactly the same printer that *is* working, try swapping the printer with the other computer's working printer.
 - i. If the "problem" printer doesn't print from the other computer either, it's likely an internal hardware problem with the printer. Solution: keep a spare printer handy of the same type you normally use and swap it out.
- g. If the "problem" printer suddenly works with the other computer but now the *other* computer's working printer doesn't work with *this* computer, then the problem is with *this* computer. Solution: try reinstalling the printer.
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 - i. First, uninstall the existing problem printer – follow this order:
 - Check the Windows Programs menu for an option to uninstall the printer.
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 - If the printer doesn't show up there either, *only then* can you delete the printer from the Windows printer folder instead.
 - ii. Reinstall the printer driver software *and print a Windows test page*. If the test page prints properly, the solution is to reconfigure the application to use the reinstalled printer.
 - iii. If the Windows test page still does not print, the issue may be the computer's printer port that the printer is plugged into. Solution:
 - Uninstall the printer driver again.
 - Delete the port from the Windows Device Manager.
 - Shut down and turn off the computer. Then restart it and let Windows re-recognize the port and reconfigure itself to it.
 - Reinstall the printer driver software and try the Windows test page again.
 - iv. If the printer does not print after this, it's likely one of the following:
 - Windows has become corrupt and must be completely reinstalled on the computer, after which all the applications must be reloaded and reconfigured.
 - A severe hardware problem exists that can only be solved via equipment replacement.

“It worked yesterday/earlier today but now it’s not working”

This is so similar to “It didn’t print” that you should check the same items. In addition, you need to check the following topics:

1. **Have the computer’s general Windows printer settings been changed?** This is hard to know because a typical user might answer, “I don’t know” or “Not to my knowledge.” But the fact is that if Windows is set to automatically update itself or the computer’s software has been updated by other staff, such updates can cause connection problems because the new Windows or other software components may provide additional options that now require manual attention and configuration in order for the printers to work properly again. Solution: open the Printers folder, choose the printer that’s not working and try to print a Windows test page.
 - a. If the test page prints but the application software does not, it’s probably a configuration setting in the application’s software that needs adjustment. Check the application’s settings – perhaps the order of the printers in the list has changed so that what used to be printer #2 is now printer #3 on the list: simply changing a setting likely will solve the problem.
 - b. If the test page does NOT print, the best solution is:
 - i. Uninstall the problem printer. Check the Windows Programs menu for an option to uninstall the printer. If there isn’t one, then check the Windows control panel in the “Add/Remove Programs” area. If the printer doesn’t show there either, you can just delete the printer from the Windows printer folder instead.
 - ii. Reinstall the printer driver software and print a Windows test page. Then restart the computer, after which you can reconfigure the application to use the newly installed printer.
 - iii. If reinstalling the printer does not solve the problem, the issue is probably the computer’s printer port. Solution:
 - Uninstall the printer again.
 - Delete the port from the Windows Device Manager.
 - Shut down and turn off the computer. Then restart it and let Windows re-recognize the port and reconfigure itself to it.
 - Reinstall the printer driver software.
 - If this does not solve the problem, more drastic action is needed such as possibly making a backup of the computer, completely reformatting the hard disk (which also erases it), reinstalling and reconfiguring Windows, reinstalling the application software and finally, restoring the backed-up data.
 - If THAT doesn’t solve the problem, then the computer needs replacement.

Matching the Solution to the Solution's Cost

Solving printer problems often incurs expense in one way or another – either in personal time or actual cost by scheduling an on-site visit from a computer expert. In some cases, hardware cost becomes a reality when a printer, computer or other infrastructure component fails and requires replacement. You must weigh the relative nature of the expense for its worth. For example, completely wiping a computer's hard disk clean by reformatting it, reinstalling Windows, and the necessary software applications plus restoring data can easily cost as much as a new computer because of the hourly fee to hire a qualified tech support person to perform those tasks.

One of the worst expenses to incur is to pay for an on-site visit only to discover the circuit breaker on a \$5 multi-outlet strip had tripped or that printer's network cable had become disconnected, yet it's amazing how frequently a tech support person is summoned to fix such simple, user-solvable problems.

What's *even more* amazing to tech support people is how frequently business owners expect simple service calls like this to be *free!* When was the last time you had a plumber come to your home to fix a plugged drain *for free?*