**How To Fix a Computer That Won't Turn On**

**What To Do When Your Computer Won't Start**

It's a dreadful way to start a day - you press the power button on your computer and nothing happens. Few computer problems are more frustrating than when your computer won't [boot](http://pcsupport.about.com/od/termsag/g/termboot.htm).

There are many reasons why a computer won't turn on and often very few clues about what might be the problem. The only symptom is usually the simple fact that "nothing works" which isn't much to go on.

Add to this the fact that whatever is wrong could be an expensive part of your PC to replace - like the [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) or [CPU](http://pcsupport.about.com/od/componentprofiles/p/p_cpu.htm).

Do not fear because all may not be lost! Here's what you need to do:

Read #1 below (it'll make you feel better).

Pick the best troubleshooting guide (#2 - #9) based on how your computer is acting or #10 if your PC stops at any point because of an error message.

Note: All of these "computer won't start" troubleshooting guides apply no matter what Windows [operating system](http://pcsupport.about.com/od/termshm/g/term_os.htm) you have installed on your hard drive, including [Windows 8](http://pcsupport.about.com/od/windows-8/a/windows-8.htm),[Windows 7](http://pcsupport.about.com/od/windows7/a/windows-7.htm), [Windows Vista](http://pcsupport.about.com/od/windowsvista/a/windows-vista.htm), and [Windows XP](http://pcsupport.about.com/od/windowsxp/a/windows-xp.htm). Steps 1 through 5 even apply to other PC operating systems like Linux.

1. Don't Panic! Your Files are Probably OK



When faced with a computer that won't start most people tend to panic, worried that all the data on their PC is gone forever.

It's true that the most common reason a computer won't start is because a piece of [hardware](http://pcsupport.about.com/od/termshm/g/hardware.htm) has failed or is causing a problem but that hardware isn't usually a [hard drive](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm), the part of your computer that stores all of your files.

In other words, your music, documents, emails, and videos are probablysafe - just not accessible at the moment.

So take a deep breath and try to relax. There's a good chance you can figure out exactly why your computer won't start and then get it back up and running.

2. [Computer Shows No Sign of Power](http://pcsupport.about.com/od/findbysymptom/ht/nopowertopc.htm)



Try these steps if your computer will not turn on and is showing no sign at all of receiving power - no fans running and no lights on the computer[case](http://pcsupport.about.com/od/componentprofiles/p/p_case.htm).

Important: You may or may not see a light on the back of your PC depending on the kind of [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) you have and the exact cause of the problem.

Note: Don't worry about the [monitor](http://pcsupport.about.com/od/componentprofiles/p/p_monitor.htm) yet. If the computer is not turning on because of a power issue then the monitor certainly can't display anything from the computer. Your monitor light will likely be amber/yellow if your computer has stopped sending information to it.

Here's How:

Believe it or not, the number one reason why a computer won't turn on is because it wasn't turned on!

Before starting a sometimes time consuming troubleshooting process, make sure you've turned on every [power switch and power button](http://pcsupport.about.com/od/termsp/g/powerbutton.htm) on your computer:

Power button/switch on the front of the computer

Power switch on the back of the computer

Power switch on the power strip, surge protector, or [UPS](http://pcsupport.about.com/od/componentprofiles/p/ups_backup.htm) (if you have one)

[Verify that the power supply voltage switch is set correctly](http://pcsupport.about.com/od/termsp/g/psvoltageswitch.htm). If the input voltage for the power supply does not match the correct setting for your country, your computer may not power on at all.

[Check for disconnected computer power cable connections](http://pcsupport.about.com/od/fixtheproblem/ss/loosepower.htm). A loose or unplugged power cable is one of the top reasons why a computer doesn't turn on.

Replace the computer's power cable. This is the power cable that runs between the computer case and the power source.

A bad power cable isn't a common cause of a computer not receiving power but it does happen and is very easy to test for. You can use the one that's powering your monitor (as long as it seems to be getting power), one from another computer, or a new one.

[Perform a "lamp test"](http://pcsupport.about.com/od/toolsofthetrade/ht/lamptest.htm) to verify power is being provided from the wall. Your computer isn't going to turn on if it's not getting power so you need to make sure that the power source is working properly.

Note: I don't recommend testing an outlet with a multimeter. Sometimes a tripped breaker can leak just enough power to show proper voltage on the meter, leaving you with the assumption that your power is working. Putting a real load on the outlet, like a lamp, is a better option.

[Test your power supply](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm). At this point in your troubleshooting, it's very likely that the [power supply unit](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) (PSU) in your computer is no longer working and should be replaced. You should however test it just to be sure. There's no reason to replace a working piece of hardware when testing it is fairly easy.

Exception: An ozone smell or very high pitched noise, combined with no power at all in the computer, is an almost certain indication that the power supply is bad. Unplug your computer immediately and skip the testing.

[Replace your power supply](http://video.about.com/pcsupport/powersupply.htm) if it fails your testing or you experience the symptoms I just described.

Important: In the majority of cases when a computer isn't receiving power, a nonworking power supply is to blame. I bring this up again to help stress that this troubleshooting step should not be skipped. The next few causes to consider aren't nearly as common.

[Test the power button on the front of your computer's case](http://www.techsupportforum.com/hardware-support/case-mod/250966-solved-how-can-i-test-case-power-button.html). It's not a very common point of failure but your computer might not be receiving power because the power button on the front of your PC is damaged and is not actually turning your computer on.

Replace the power button if it fails your testing. Depending on how your computer's case is designed, you may be able to use the reset button in the meantime.

Tip: Some motherboards have tiny power buttons built in to the boards themselves, providing an easier way to test the case's power button. If your motherboard has this, and it works to power on your computer, replace the case power button.

[Replace your motherboard](http://video.about.com/pcsupport/motherboard-mov.htm). If you're confident that your wall power, power supply, and power button are working, it's likely that there is a problem with your PC's [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm)and it should be replaced.

Note: While perfectly doable by anyone with some patience, replacing a motherboard is rarely a quick, easy, or inexpensive task. Be sure you've exhausted all of the other troubleshooting advice I've given above before replacing your motherboard.

Note: I highly recommend that you test your computer with a [Power On Self Test card](http://pcsupport.about.com/od/termsp/g/postcard.htm) to confirm that the motherboard is the cause of your computer not turning on at all.

Tips:

Are you troubleshooting this issue on a PC that you've just built yourself? If so, triple check your configuration! There is a decent chance that your computer isn't powering on due to a misconfiguration and not an actual hardware failure.

Did I miss a troubleshooting step that helped you (or might help someone else) fix a computer that's not showing any sign of power? [Let me know](http://pcsupport.about.com/contact) and I'd be happy to include the information here.

Is your computer still showing no sign of power even after following the steps above? See [Get More Help](http://pcsupport.about.com/od/resources/tp/get-more-help.htm) for information about contacting me on social networks or via email, posting on tech support forums, and more. Be sure to tell me what you've already done to try to fix the problem.

3. [Computer Powers On... and Then Off](http://pcsupport.about.com/od/findbysymptom/ht/pconthenoff.htm)



Follow these steps if, when you turn your computer on, it promptly powers back off.

You'll probably hear the fans inside your computer turn on, see the lights on the front of your computer turn on or flash, and then it will all stop. You won't see anything on the monitor and you may or may not hear beeps coming from the computer before it shuts off by itself.

Note: As in the previous scenario, don't worry about the state your monitor is in. You may have a monitor issue as well but it's not possible to troubleshoot it quite yet.

Here's How:

[Troubleshoot the cause of the beep code](http://pcsupport.about.com/od/nonworkingcomponent/ht/beepcodestb.htm), assuming you're lucky enough to hear one. A[beep code](http://pcsupport.about.com/od/termsb/g/beepcode.htm) will give you a very good idea of exactly where to look for the cause of your computer turning off.

If you don't resolve the problem that way, you can always return here and continue troubleshooting with the more generic information below.

[Verify that the power supply voltage switch is set correctly](http://pcsupport.about.com/od/termsp/g/psvoltageswitch.htm). If the input voltage for the[power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) does not match the correct setting for your country, your computer may not stay powered on.

Chances are your computer wouldn't power on at all if this switch is wrong but an incorrect power supply voltage might also cause your computer turn off by itself.

[Check for causes of electrical shorts](http://pcsupport.about.com/od/fixtheproblem/ss/electricshorts.htm) inside your computer. This is very often the cause of the problem when the computer powers on for a second or two but then powers off completely.

Important: It's very, very important that you spend the time necessary to inspect the inside of your computer for issues that can cause shorting. If you don't take the time to troubleshoot this possibility thoroughly you may end up missing a simple electrical short and instead performing costly hardware replacements later on for no good reason.

[Test your power supply](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm). Just because your computer came on for a few moments doesn't mean that the power supply unit in your computer is working properly. In my experience, the power supply tends to cause more problems than any other piece of hardware and is very often the cause of a computer turning off by itself.

[Replace your power supply](http://video.about.com/pcsupport/powersupply.htm) if it fails any of your tests.

[Test the power button on the front of your computer's case](http://www.techsupportforum.com/hardware-support/case-mod/250966-solved-how-can-i-test-case-power-button.html). If the [power button](http://pcsupport.about.com/od/termsp/g/powerbutton.htm) is shorting out or even just sticking to the [case](http://pcsupport.about.com/od/componentprofiles/p/p_case.htm), it might be the reason your computer is turning off by itself.

Replace the power button if it fails your testing or if you suspect it's not working properly.

[Reseat](http://pcsupport.about.com/od/termsr/g/reseat.htm) everything inside of your computer. Reseating will restablish all of the connections inside your computer which may have wiggled loose over time.

Try reseating the following and then see if your computer stays on:

[Reseat all internal data and power cables](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-power-cables-data-cables.htm)

[Reseat the memory modules](http://pcsupport.about.com/od/fixtheproblem/ss/reseat_memory.htm)

[Reseat any expansion cards](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-excards.htm)

Note: Unplug and reattach your [keyboard](http://pcsupport.about.com/od/componentprofiles/p/p_kb.htm) and [mouse](http://pcsupport.about.com/od/componentprofiles/p/p_mouse.htm) as well. There is little chance that either one is the cause of this problem but we shouldn't overlook them while we're reseating everything else.

Reseat the CPU only if you suspect that it might have come loose or might not have been installed properly.

Note: I call this out separately only because the chance of a [CPU](http://pcsupport.about.com/od/componentprofiles/p/p_cpu.htm) coming loose is very slim and because installing one is a sensitive task. This isn't a big concern if you're careful so don't worry!

Start your PC with essential hardware only. The purpose here is to remove as much hardware as possible while still maintaining your computer's ability to power on.

If your computer turns on, and stays on, with essential hardware only, proceed to Step 9.

If your computer continues to turn off by itself, proceed to Step 10.

Important: This troubleshooting step is easy enough for anyone to complete, takes no special tools, and could give a lot of very valuable information. This isn't a step to skip if, after all the steps above, your computer is still shutting off by itself.

Reinstall each piece of nonessential hardware, one component at a time, testing your computer after each installation.

Since your PC powered on with only the essential hardware installed, those components are working properly. This means that one of the devices you removed is causing your computer to turn off by itself. By installing each device back into your computer and testing after each installation, you'll eventually find the hardware that caused your problem.

Replace the faulty hardware once you've identified it. These [Hardware Installation Videos](http://pcsupport.about.com/od/upgrades/tp/hardware_install_videos.htm)might come in handy as you're reinstalling your hardware.

Test your PC using a Power On Self Test card. If your computer continues to power off by itself with nothing but essential PC hardware installed, a [POST card](http://pcsupport.about.com/od/termsp/g/postcard.htm) will help identify which piece of remaining hardware is to blame.

If you don't already own and are unwilling to purchase a POST card, skip to Step 11.

Replace each piece of essential hardware in your computer with a "known good" identical or equivalent spare piece of hardware, one component at a time, to determine which piece of hardware is causing your computer to shut off automatically. Test after each hardware replacement to determine which device is faulty.

Note: Most normal computer users don't have a collection of working spare computer parts at their disposals. My advice is to revisit Step 10. A POST card is not expensive and is a much more reasonable approach than stocking spare computer parts.

Finally, if all else fails, you'll likely need to seek professional help from a [computer repair service](http://pcsupport.about.com/od/computerservice/) or from your [computer manufacturer's technical support](http://pcsupport.about.com/od/manufacturersupport).

Unfortunately, if you're without a POST card and also without spare parts to swap in and out, you're left not knowing which piece of your essential computer hardware is faulty. In these cases you have little option than to rely on individuals or companies that do have these resources.

Note: See the last tip below for information on requesting more help.

Tips:

Are you troubleshooting this issue on a computer that you've just built? If so, triple check your configuration! There is a significantly greater chance that your computer is turning off by itself due to a misconfiguration and not an actual hardware failure.

Did I miss a troubleshooting step that helped you (or might help someone else) fix a computer that's turning off by itself during the boot process? [Let me know](http://pcsupport.about.com/contact) and I'd be happy to include the information here.

Is your computer still shutting off automatically even after following the troubleshooting above? See [Get More Help](http://pcsupport.about.com/od/resources/tp/get-more-help.htm) for information about contacting me on social networks or via email, posting on tech support forums, and more. Be sure to tell me what you've already done to try to fix the problem.

4. [Computer Powers On But Nothing Happens](http://pcsupport.about.com/od/findbysymptom/ht/nothingonscreen.htm)



TRY I

If your computer seems to be receiving power after turning it on but you don't see anything on your monitor, try these troubleshooting steps.

In these situations, the power lights will stay on, you'll likely hear the fans inside your PC running, and you may or may not hear one or more beeps coming from the computer.

This situation is probably the most common in my experience working with computers that won't start. Unfortunately it's also one of the most difficult to troubleshoot.

Here's How:

[Test your monitor](http://pcsupport.about.com/od/findbysymptom/ht/testmonitor.htm). Before you begin more complicated and time consuming troubleshooting with the rest of your computer, make sure your monitor is working properly.

It's very possible that your computer is working fine and your monitor is your only problem.

Verify that your PC has fully power cycled. In other words, make sure your computer has completely reset - make sure that it's coming on from a completely powered-off state.

Often times a computer will appear to "not be on" when actually it's just having problems resuming from either the Standby/Sleep or Hibernate power saving mode in Windows.

Note: You can power off your computer completely while in a power saving mode by holding the power button down for 3 to 5 seconds. After the power is completely off, turn on your PC and test to see if it will boot normally.

[Troubleshoot the cause of the beep code](http://pcsupport.about.com/od/nonworkingcomponent/ht/beepcodestb.htm) if you're lucky enough to get one. A [beep code](http://pcsupport.about.com/od/termsb/g/beepcode.htm)will give you a very good idea of exactly where to look for the cause of your computer turning off.

If you don't resolve the problem by troubleshooting to the specific beep code, you can always return here and continue with the steps below.

[Clear the CMOS](http://pcsupport.about.com/od/fixtheproblem/tp/clearcmos.htm). Clearing the [BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) memory on your [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) will return the BIOS settings to their factory default levels. A BIOS misconfiguration could be why your PC won't startup all the way.

Important: If clearing the [CMOS](http://pcsupport.about.com/od/termsc/g/cmos.htm) does fix your problem, make sure any changes you make in BIOS are completed one at a time so if the problem returns, you'll know which change caused your issue.

[Verify that the power supply voltage switch is set correctly](http://pcsupport.about.com/od/termsp/g/psvoltageswitch.htm). If the input voltage for the[power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) is not correct (based on your country) then your computer may not turn on completely.

There's a good possibility that your PC wouldn't power on at all if this switch is wrong but an incorrect power supply voltage might also prevent your computer from starting properly in this way too.

[Reseat](http://pcsupport.about.com/od/termsr/g/reseat.htm) everything possible inside your PC. Reseating will reestablish the various connections inside your computer and is very often a "magic" fix to problems like this one.

Try reseating the following and then see if your computer begins to display something on screen:

[Reseat all internal data and power cables](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-power-cables-data-cables.htm)

[Reseat the memory modules](http://pcsupport.about.com/od/fixtheproblem/ss/reseat_memory.htm)

[Reseat any expansion cards](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-excards.htm)

Note: Unplug and reattach your [keyboard](http://pcsupport.about.com/od/componentprofiles/p/p_kb.htm) and [mouse](http://pcsupport.about.com/od/componentprofiles/p/p_mouse.htm) as well. There isn't a great possibility that the keyboard or mouse is causing your computer to not turn on fully but we might as well reconnect them while we're reseating everything else.

Reseat the CPU only if you suspect that it might have come loose or might not have been installed properly.

Note: I call this out separately only because the chance of a [CPU](http://pcsupport.about.com/od/componentprofiles/p/p_cpu.htm) coming loose is very slim and because installing one is a sensitive task. This isn't a big concern if you're careful so don't worry!

[Check for causes of electrical shorts](http://pcsupport.about.com/od/fixtheproblem/ss/electricshorts.htm) inside your computer. This is often the cause of the problem when the computer powers off by itself but certain shorts can also prevent your computer from booting fully or showing anything on the monitor.

[Test your power supply](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm). Just because your computer's fans and lights are working does not mean that the power supply is functioning properly. The PSU tends to cause more problems than any other hardware and is often the cause of a computer not coming on all the way.

[Replace your power supply](http://video.about.com/pcsupport/powersupply.htm) immediately if it fails any test you perform.

Important: I want to make this point very clear - do not skip a test of your power supplythinking that your problem can't be the PSU because "things are getting power." Power supplies can work in varying degrees and one that isn't fully functional needs to be replaced.

Start your computer with essential hardware only. The purpose here is to remove as much hardware as possible while still maintaining your PC's ability to power on.

If your computer starts normally with only essential hardware installed, proceed to Step 11.

If your computer still isn't displaying anything on your monitor, proceed to Step 12.

Important: This step is easy enough for a novice to complete, takes no special tools, and could provide you with a lot of valuable information. This isn't a step to skip if, after all the steps above, your computer is still not turning on completely.

Reinstall each piece of hardware that you removed in Step 10, one piece at a time, testing after each installation.

Since your computer powered on with only the essential hardware installed, those components must working properly. This means that one of the hardware components you removed is causing your PC to not turn on properly. By installing each device back into your PC and testing each time, you'll eventually find the hardware that caused your problem.

Replace the nonworking hardware once you've identified it. These [Hardware Installation Videos](http://pcsupport.about.com/od/upgrades/tp/hardware_install_videos.htm) should come in handy as you're reinstalling your hardware.

Test your computer's hardware using a Power On Self Test card. If your PC still isn't displaying information on your monitor with nothing but essential computer hardware installed, a [POST card](http://pcsupport.about.com/od/termsp/g/postcard.htm) will help identify which piece of remaining hardware is causing your computer to not come on completely.

If you don't have and are unwilling to purchase a POST card, skip to Step 13.

Replace each piece of essential hardware in your computer with an identical or equivalent spare piece of hardware (that you know is working), one component at a time, to determine which piece of hardware is causing your computer to not come on all the way. Test after each hardware replacement to determine which component is faulty.

Note: The average computer user doesn't have a collection of working spare computer parts at home or work. If you don't either, my advice is to revisit Step 12. A POST card is inexpensive and is a more reasonable approach than stocking spare computer parts.

Finally, if all else fails, you'll probably need to seek professional help from a [computer repair service](http://pcsupport.about.com/od/computerservice/) or from your [computer manufacturer's technical support](http://pcsupport.about.com/od/manufacturersupport).

Unfortunately, if you don't have a POST card or spare parts to swap in and out, you're left not knowing which piece of your essential PC hardware is faulty. In these cases you have little option than to rely on the help of individuals or companies that do have these resources.

Note: See the last tip below for information on getting more help.

Tips:

Are you troubleshooting this issue on a computer that you've just built? If so, triple check your configuration! There is a very, very good chance that your computer is not booting up completely due to a misconfiguration and not an actual hardware failure or other problem.

Did I miss a troubleshooting step that helped you (or might help someone else) fix a computer that's not showing anything on screen? [Let me know](http://pcsupport.about.com/contact) and I'd be happy to include the information here.

Is your computer still not showing anything on the monitor? See [Get More Help](http://pcsupport.about.com/od/resources/tp/get-more-help.htm) for information about contacting me on social networks or via email, posting on tech support forums, and more.

TRY II

NOTE: Before making any attempt to remove or replace any part inside the casing, ensure that the power is off.

Well, the first thing that might be causing this is your memory card (RAM). Try to remove it and place it in another memory slot on the motherboard.

To be sure if your motherboard is still in good working condition, remove the memory card and power on the PC.

You should hear continuous beep sounds.

If you hear this then your motherboard is fine.

If placing the memory card in another slot does not work then the problem lies with the memory card itself. You will need to replace it.

It could also be that some faulting PCI cards are causing this error.

Try to remove your PCI cards. Normally a faulting PCI modem causes this type of error. Remove it and then power on the pc.

The processor cannot be faulty but still if you want to check it, remove the CPU Cooler fan. Then turn on the PC.

Place your finger on the processor for 2 seconds. You should find the processor heating up. Then turn it off immediately. If this works then your processor is good.
Remember not to leave it ON for more than 5 secs.

TRY III

Remove all the connection even the power supply.

Then hold down the power on switch of the computer for 1 (One minute).

Reconnect all conection and try to boot. ( It works on many times of this type of computer problem)

5. [Computer Stops or Continuously Reboots During the POST](http://pcsupport.about.com/od/findbysymptom/ht/errorduringpost.htm)



Use this guide when your computer powers on, shows at leastsomething on the monitor, but then stops, freezes, or reboots over and over again during the [Power On Self Test](http://pcsupport.about.com/od/termsns/g/termpost.htm) (POST).

The POST on your computer may look like the screenshot to your left or may instead simply show your computer maker's logo.

Important: Don't use this troubleshooting guide if you encounter an issue during the loading of the operating system, which occurs after the Power On Self Test is complete. Troubleshooting Windows related reasons why your computer won't turn on begin with #6 below.

Here's How:

[Troubleshoot the cause of the BIOS error message you see on the monitor](http://www.pcguide.com/ts/x/sys/booterr.htm). These errors during the POST are usually very specific so if you've been fortunate enough to receive one, your best course of action is to troubleshoot to the specific error you see.

If you don't fix the problem by working through the specific error during the POST, you can always return here and continue with the troubleshooting below.

Disconnect any USB storage devices and remove any discs in any optical drives. If your computer is trying to boot from a location that doesn't actually have bootable data on it, your computer could freeze somewhere during the POST.

Note: If this works, be sure to [change the boot order](http://pcsupport.about.com/od/fixtheproblem/ss/bootorderchange.htm), making sure that your preferred boot device, probably the internal hard drive, is listed before USB or other sources.

[Clear the CMOS](http://pcsupport.about.com/od/fixtheproblem/tp/clearcmos.htm). Clearing the [BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) memory on your [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) will reset the BIOS settings to their factory default levels. A misconfigured BIOS is a common cause of a computer locking up during the POST.

Important: If clearing the [CMOS](http://pcsupport.about.com/od/termsc/g/cmos.htm) does fix your problem, make any future settings changes in BIOS one at a time so if the problem returns, you'll know which change caused your issue.

[Test your power supply](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm). Just because your computer initially turns on does not mean that the power supply is working. The power supply is the cause of startup problems more than any other piece of hardware in a computer. It very well could be the cause of your problems during the POST.

[Replace your power supply](http://video.about.com/pcsupport/powersupply.htm) immediately if your tests show a problem with it.

Important: Do not skip a test of your PSU thinking that your problem can't be with the power supply because your computer is receiving power. Power supplies can, and often do, partially work and one that isn't fully functional must be replaced.

[Reseat](http://pcsupport.about.com/od/termsr/g/reseat.htm) everything inside your computer [case](http://pcsupport.about.com/od/componentprofiles/p/p_case.htm). Reseating will reestablish the cable, card, and other connections inside your computer.

Try reseating the following and then see if your computer boots past the POST:

[Reseat all internal data and power cables](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-power-cables-data-cables.htm)

[Reseat the memory modules](http://pcsupport.about.com/od/fixtheproblem/ss/reseat_memory.htm)

[Reseat any expansion cards](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-excards.htm)

Note: Unplug and reattach your [keyboard](http://pcsupport.about.com/od/componentprofiles/p/p_kb.htm) and [mouse](http://pcsupport.about.com/od/componentprofiles/p/p_mouse.htm) as well. There's little chance that the keyboard or mouse is causing your computer to freeze during the POST but just to be thorough, we should reconnect them while we're reseating other hardware.

Reseat the CPU only if you think that it may have come loose or might not have been properly installed.

Note: I separated out this task only because the chance of a [CPU](http://pcsupport.about.com/od/componentprofiles/p/p_cpu.htm) coming loose is slim and because reseating one could actually create a problem if you're not careful. There's no reason to worry as long as you appreciate how sensitive a CPU and its socket/slot on the motherboard is.

Triple check every hardware configuration if you're troubleshooting this problem after a new computer build or after installation of new hardware. Check every [jumper](http://pcsupport.about.com/od/termshm/g/term_jumper.htm) and [DIP switch](http://pcsupport.about.com/od/termsd/g/dip_switch.htm), verify that the CPU, [memory](http://pcsupport.about.com/od/componentprofiles/p/p_ram.htm), and [video card](http://pcsupport.about.com/od/componentprofiles/p/p_video.htm) you're using is compatible with your motherboard, etc. Rebuild your PC from scratch if necessary.

Important: Do not assume that your motherboard supports certain hardware. Check your motherboard's manual to verify that the hardware you've purchased will work properly.

Note: If you haven't built your own PC or haven't made hardware changes then you can skip this step entirely.

[Check for causes of electrical shorts](http://pcsupport.about.com/od/fixtheproblem/ss/electricshorts.htm) inside your computer. This could be the cause of the problem if your computer freezes during the POST, especially if it does so without a BIOS error message.

Start your PC with essential hardware only. The purpose here is to remove as much hardware as possible while still maintaining your computer's ability to power on.

If your computer starts normally with only essential hardware installed, proceed to Step 9.

If your computer still isn't displaying anything on your monitor, proceed to Step 10.

Important: Starting your PC with its minimum necessary hardware is very easy to do, takes no special tools, and could provide you with valuable information. This isn't a step to skip if, after all the steps above, your computer is still freezing during the POST.

Reinstall each piece of hardware that you removed in Step 8, one piece at a time, testing your PC after each installation.

Since your computer powered on with only the essential hardware installed, those parts must working properly. This means that one of the hardware components you removed is causing your computer to not turn on properly. By installing each device back into your computer and testing each time, you'll eventually find the hardware that caused your problem.

Replace the nonfunctioning hardware once you've identified it. See these [Hardware Installation Videos](http://pcsupport.about.com/od/upgrades/tp/hardware_install_videos.htm) for help reinstalling your hardware.

Test your computer's hardware using a Power On Self Test card. If your computer is still freezing during the POST with nothing but essential computer hardware installed, a [POST card](http://pcsupport.about.com/od/termsp/g/postcard.htm) will help identify which piece of remaining hardware is causing your computer to stop booting.

If you don't already own or are unwilling to buy a POST card, skip to Step 11.

Replace each piece of essential hardware in your PC with an identical or equivalent spare piece of hardware (that you know is working), one component at a time, to determine which piece is causing your computer to stop during the POST. Test after each hardware replacement to determine which component is faulty.

Note: The average computer owner doesn't have a set of working spare computer parts at home or work. If you don't either, my advice is to revisit Step 10. A POST card is very inexpensive and is, in general and in my opinion, a smarter approach than stocking spare computer parts.

Finally, if all else fails, you'll probably need to find professional help from a [computer repair service](http://pcsupport.about.com/od/computerservice/) or from your [computer manufacturer's technical support](http://pcsupport.about.com/od/manufacturersupport).

If you don't have a POST card or spare parts to swap in and out, you're left not knowing which piece of your essential computer hardware is not working. In these cases, you'll have to rely on the help of individuals or companies that do have these tools and resources.

Note: See the first tip below for information on getting more help.

Tips:

Is your computer still not booting past the Power On Self Test? See [Get More Help](http://pcsupport.about.com/od/resources/tp/get-more-help.htm) for information about contacting me on social networks or via email, posting on tech support forums, and more. Be sure to tell us what you've already done to try to fix the problem.

Did I miss a troubleshooting step that helped you (or might help someone else) fix a computer that's freezing or showing an error during the POST? [Let me know](http://pcsupport.about.com/contact) and I'd be happy to include the information here.

6. [Windows Begins to Load But Stops or Reboots on a BSOD](http://pcsupport.about.com/od/fixtheproblem/ht/stoperrors.htm)



If your computer begins to load Windows but then stops and displays a blue screen with information on it then try these steps. You may or may not see the Windows splash screen before the blue screen appears.

This kind of error is called a STOP error but is more commonly referred to as a [Blue Screen of Death](http://pcsupport.about.com/od/termsb/g/bsodbluescreen.htm) or a BSOD. Receiving a BSOD error is a common reason why a computer won't turn on.

Important: Choose this troubleshooting guide even if the BSOD flashes on screen and your PC restarts automatically without giving you time to read what it says.

Here's How:

The most important Blue Screen of Death troubleshooting step you can take is to ask yourself what you just did.

Did you just install a new program or a piece of hardware, update a driver, install an update, etc.? If so, there's a very good chance that the change you made caused the BSOD.

Undo the change you made and test again for the STOP Error. Depending on what change you made, some solutions might include:

[Startup using Last Known Good Configuration](http://pcsupport.about.com/od/fixtheproblem/f/start-windows-last-known-good-configuration.htm) to undo recent registry and driver changes.

[Use System Restore](http://pcsupport.about.com/od/toolsofthetrade/f/windows-system-restore.htm) to undo recent system changes.

[Roll Back device driver](http://pcsupport.about.com/od/driverssupport/f/roll-back-drivers.htm) to version prior to your driver update.

Verify that a minimum amount of free space is available on your Windows partition. Blue Screens of Death and other serious issues, like data corruption, can occur if there's not enough free space on your primary [partition](http://pcsupport.about.com/od/termsp/g/partition.htm) used for the Windows [operating system](http://pcsupport.about.com/od/termshm/g/term_os.htm).

Note: Microsoft recommends that you maintain at least 100MB of free space but I regularly see problems with free space that low. I usually advise Windows users to keep at least 15% of a drive's capacity free at all times.

[Scan your computer for viruses](http://pcsupport.about.com/od/fixtheproblem/ht/virus-scan-malware-scan.htm). Some viruses can cause a Blue Screen of Death, especially ones that infect the [master boot record](http://pcsupport.about.com/od/termsm/g/masterbootrec.htm) (MBR) or [boot sector](http://pcsupport.about.com/od/termsb/g/bootsector.htm).

Important: Make sure your virus scanning software is completely up to date and that it's configured to scan the MBR and boot sector.

[Apply all available Windows service packs and other updates](http://pcsupport.about.com/od/keepingupwithupdates/f/windows-updates.htm). Microsoft regularly releases[patches](http://pcsupport.about.com/od/termsp/g/patch-fix.htm) and [service packs](http://pcsupport.about.com/od/termss/g/servicepack.htm) for their operating systems that may contain fixes for the cause of your BSOD.

[Update drivers for your hardware](http://pcsupport.about.com/od/driverssupport/f/driverupdate.htm). Most Blue Screens of Death are hardware or driver related so updated drivers could fix the cause of the STOP error.

[Check the System and Application logs in Event Viewer (7/Vista](http://www.petri.co.il/vista-event-viewer.htm) | [XP](http://support.microsoft.com/kb/308427)) for errors or warnings that might provide more clues on the cause of the BSOD.

Return hardware settings to default in Device Manager. Unless you have a specific reason to do so, the [system resources](http://pcsupport.about.com/od/termss/g/systemresource.htm) that an individual piece of hardware is configured to use in [Device Manager](http://pcsupport.about.com/od/termsd/p/devicemanager.htm) should be set to default. Non-default hardware settings have been known to cause a Blue Screen of Death.

Return BIOS settings to their default levels. An overclocked or misconfigured [BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) can cause all sorts of random issues, including BSODs.

Note: If you've made several customizations to your BIOS settings and don't wish to load the default ones then at least try returning clock speed, voltage settings, and BIOS memory options to their default settings and see if that fixes the STOP error.

Make sure all internal cables, cards, and other components are installed and seated properly. Hardware that's not firmly in place can cause a Blue Screen of Death so try[reseating](http://pcsupport.about.com/od/termsr/g/reseat.htm) the following and then test for the STOP message again:

[Reseat all internal data and power cables](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-power-cables-data-cables.htm)

[Reseat the memory modules](http://pcsupport.about.com/od/fixtheproblem/ss/reseat_memory.htm)

[Reseat any expansion cards](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-excards.htm)

Perform diagnostic tests on all hardware you're able to test. It's highly likely that the root cause of any given Blue Screen of Death is a failing piece of hardware:

[Test your system memory](http://pcsupport.about.com/od/toolsofthetrade/tp/memorytest.htm)

[Test your hard disk drive](http://pcsupport.about.com/od/toolsofthetrade/tp/tophddiag.htm)

If a test fails, [replace the memory](http://pcsupport.about.com/od/upgrades/f/replace-memory-replace-ram.htm) or [replace the hard drive](http://pcsupport.about.com/od/upgrades/f/replace-hard-drive.htm) as soon as possible.

[Update your BIOS](http://www.wikihow.com/Update-Your-Computer%27s-BIOS). In some situations, and outdated BIOS could cause a Blue Screen of Death due to certain incompatibilities.

Start your PC with essential hardware only. A useful troubleshooting step in many situations, including BSOD issues, is to start your computer with the minimum hardware necessary to run the operating system. If your computer starts successfully it proves that one of the removed hardware devices was the cause of the STOP message.

Tip: Typically, the only necessary hardware for starting your PC through to the operating system includes the [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm), [CPU](http://pcsupport.about.com/od/componentprofiles/p/p_cpu.htm), [RAM](http://pcsupport.about.com/od/componentprofiles/p/p_ram.htm), primary [hard drive](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm), [keyboard](http://pcsupport.about.com/od/componentprofiles/p/p_kb.htm), [video card](http://pcsupport.about.com/od/componentprofiles/p/p_video.htm), and [monitor](http://pcsupport.about.com/od/componentprofiles/p/p_monitor.htm).

Tips:

Find that hardware is the cause of your Blue Screen of Death? Try this:

[Replace the hardware](http://pcsupport.about.com/od/upgrades/tp/hardware_install_videos.htm).

Update the hardware's [firmware](http://pcsupport.about.com/od/termsf/g/firmware.htm).

Make sure the hardware is on the [Hardware Compatibility List](http://pcsupport.about.com/od/termshm/g/windowshcl.htm).

[Check with the manufacturer for support information](http://pcsupport.about.com/od/manufacturersupport).

Find that a software program is the cause of your Blue Screen of Death? Try this:

[Reinstall the software](http://pcsupport.about.com/od/fixtheproblem/f/properly-reinstall-software-program.htm).

Check for and install any available program updates.

Check with the developer for support information.

Try a competing program.

Is your PC restarting before you can read the STOP Code on the Blue Screen of Death?

Most Windows PCs are configured to reboot immediately after receiving a serious error like a BSOD. You can prevent this reboot by [disabling the automatic restart on system failure option](http://pcsupport.about.com/od/tipstricks/f/automatic-restart.htm).

Still Can't Fix Your Blue Screen of Death?

See [Get More Help](http://pcsupport.about.com/od/resources/tp/get-more-help.htm) for information about contacting me on social networks or via email, posting on tech support forums, and more. Be sure to include the STOP code you're getting, if you know it.

7. [Windows Begins to Load But Stops or Reboots Without an Error](http://pcsupport.about.com/od/findbysymptom/ht/windows-freezes-reboots-startup.htm)



Try these steps when your computer powers on, starts to load Windows, but then freezes, stops, or reboots over and over again without generating any kind of error message.

The stopping, freezing, or reboot loop may happen on the Windows splash screen as shown to the left or even on a black screen, with or without a flashing cursor.

Note: If your computer won't start and you see a blue screen flash or remain on the screen, you're experiencing a Blue Screen of Death and should use troubleshooting guide #6 above.

Important: If you suspect that the Power On Self Test is still going on and that Windows has not yet started to boot, a better troubleshooting guide for why your computer won't turn on might be #5 above. It's a fine line and sometimes hard to tell.

Here's How:

Restart your computer if you haven't already done so at least once since seeing this problem.

Many things go on in the background when Windows is starting up. Sometimes things don't work exactly as they should, especially after Windows has installed updates or there were other major changes to the [operating system](http://pcsupport.about.com/od/termshm/g/term_os.htm) the last time it was up and running. A restart might be all Windows needs to get back on track.

[Repair your Windows installation](http://pcsupport.about.com/od/operatingsystems/f/repair-installation-windows.htm). A common reason for Windows to freeze up or reboot automatically during the Windows startup process is because one or more important Windows files are damaged or missing. Repairing Windows replaces these important files without removing or changing anything else on your computer.

Note: In Windows 7 and Vista, this is called a Startup Repair. In Windows XP it's referred to as a Repair Installation.

Important: The Windows XP Repair Installation is more complicated and has more drawbacks than the Startup Repair available in the other operating systems. So, if you're an XP user, you may want to wait until you've tried Steps 3 through 6 before giving this a try.

[Start Windows using Last Known Good Configuration](http://pcsupport.about.com/od/fixtheproblem/f/start-windows-last-known-good-configuration.htm). If you've just made a change to your computer that you suspect might have caused Windows to stop booting properly, starting with the Last Known Good Configuration could help.

Last Known Good Configuration will return many important settings to the states they were in the last time Windows started successfully, hopefully solving this problem and allowing you back in to Windows.

[Start Windows in Safe Mode](http://pcsupport.about.com/od/fixtheproblem/f/windows-safe-mode.htm) and then [use System Restore to undo recent changes](http://pcsupport.about.com/od/toolsofthetrade/f/windows-system-restore.htm). Windows could freeze, stop, or reboot during the startup process because of damage to a [driver](http://pcsupport.about.com/od/termsag/g/term_driver.htm), important file, or part of the [registry](http://pcsupport.about.com/od/termsr/p/registrywindows.htm). A [System Restore](http://pcsupport.about.com/od/termss/p/system-restore.htm) will return all of those things to their last working order which could solve your problem entirely.

Note: Depending on the reason that Windows isn't starting, you might not even be able to enter [Safe Mode](http://pcsupport.about.com/od/termss/p/safe-mode.htm). Luckily, you can also perform a System Restore from [System Recovery Options](http://pcsupport.about.com/od/termss/p/system-recovery-options.htm) which is available from the [Advanced Boot Options](http://pcsupport.about.com/od/termsag/p/advanced-boot-options.htm) menu in Windows 7 and also from your Windows 7 or Windows Vista Setup DVD.

Important: Please know that you will not be able to undo a System Restore if it's done from Safe Mode or from System Recovery Options. You might not care since you can't start Windows normally anyway, but it's something I wanted you to be aware of.

[Scan your computer for viruses](http://pcsupport.about.com/od/fixtheproblem/ht/virus-scan-malware-scan.htm), again from Safe Mode.

A virus or other kind of [malware](http://pcsupport.about.com/od/termsm/g/malware.htm) might have caused a serious enough problem with a part of Windows to cause it to stop starting properly.

[Clear the CMOS](http://pcsupport.about.com/od/fixtheproblem/tp/clearcmos.htm). Clearing the [BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) memory on your [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) will return the BIOS settings to their factory default levels. A BIOS misconfiguration could be the reason that Windows is freezing during startup.

Important: If clearing the [CMOS](http://pcsupport.about.com/od/termsc/g/cmos.htm) does fix your Windows startup problem, make sure future changes in BIOS are completed one at a time so if the problem returns, you'll know which change caused the problem.

Replace the CMOS battery if your computer is more than three years old or if it's been off for an extended amount of time.

CMOS batteries are very inexpensive and one that is no longer keeping a charge can certainly be the cause of Windows freezing, stopping, or rebooting during startup.

[Reseat](http://pcsupport.about.com/od/termsr/g/reseat.htm) everything you can get your hands on. Reseating will reestablish the various connections inside your computer and is very often a "magic" fix to startup problems like this, especially reboot loops and freezes.

Try reseating the following [hardware](http://pcsupport.about.com/od/termshm/g/hardware.htm) and then see if Windows will boot properly:

[Reseat all internal data and power cables](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-power-cables-data-cables.htm)

[Reseat the memory modules](http://pcsupport.about.com/od/fixtheproblem/ss/reseat_memory.htm)

[Reseat any expansion cards](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-excards.htm)

Note: Unplug and reattach your [keyboard](http://pcsupport.about.com/od/componentprofiles/p/p_kb.htm), [mouse](http://pcsupport.about.com/od/componentprofiles/p/p_mouse.htm), and other external devices as well.

[Check for causes of electrical shorts](http://pcsupport.about.com/od/fixtheproblem/ss/electricshorts.htm) inside your computer. An electrical short is often the cause of reboot loops and hard freezes while Windows is starting.

[Test the RAM](http://pcsupport.about.com/od/toolsofthetrade/tp/memorytest.htm). If one of your computer's [RAM](http://pcsupport.about.com/od/componentprofiles/p/p_ram.htm) modules fails completely, your computer won't even turn on. Most of the time, however, memory fails slowly and will work up to a point.

If your system memory is failing, your computer may power on but then freeze, stop, or reboot continuously at some point during Windows startup.

[Replace the memory](http://pcsupport.about.com/od/upgrades/f/replace-memory-replace-ram.htm) in your computer if the memory test shows any kind of problem.

[Test the power supply](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm). Just because your computer initially turns on does not mean that the [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) is working. While it might not be common for your computer to get all the way to the Windows startup process with a damaged power supply, it does happen and is worth a look.

[Replace your power supply](http://video.about.com/pcsupport/powersupply.htm) if your tests show a problem with it.

Replace the hard drive's data cable. If the cable that connects the [hard drive](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm) to the motherboard is damaged or not working then you could see all kinds of issues while Windows is loading - including freezing, stopping, and reboot loops.

Don't have a spare hard drive data cable? You can pick one up at any electronics store or you could borrow the one that another drive, like your [optical drive](http://pcsupport.about.com/od/componentprofiles/p/p_odd.htm), is using, assuming of course that's it's the same type of cable. Newer drives use [SATA](http://pcsupport.about.com/od/termss/g/serialata.htm) cables and older drives use [PATA](http://pcsupport.about.com/od/termsp/g/parallelata.htm) cables.

Note: A loose hard drive data cable can cause the same issues that a damaged one can but hopefully you checked for connection issues with the cable back in Step 8.

Important: Make sure you've tried your best to complete the troubleshooting steps up to this one. Steps 13 and 14 both involve more difficult and destructive solutions to freezing, stopping, and continuous reboot problems during Windows startup. It may be that one of the below solutions is necessary to fix your problem but if you haven't been diligent in your troubleshooting up to this point, you can't know for sure that one of the easier solutions above isn't the right one.

[Test the hard drive](http://pcsupport.about.com/od/toolsofthetrade/tp/tophddiag.htm). A physical problem with your hard drive is certainly a reason why Windows might reboot continuously, freeze completely, or stop in its tracks. A hard drive that can't read and write information properly certainly can't load an operating system properly.

[Replace your hard drive](http://pcsupport.about.com/od/toolsofthetrade/tp/tophddiag.htm) if your tests show an issue. After replacing the hard drive, you'll need to [perform a new installation of Windows](http://pcsupport.about.com/od/operatingsystems/f/new-install-windows.htm).

If your hard drive passes your test, the hard drive is physically fine so the cause of the problem must be with Windows, in which case the next step will solve the problem.

[Perform a Clean Install of Windows](http://pcsupport.about.com/od/operatingsystems/f/clean-install-windows.htm). This type of installation will completely erase the drive and install Windows again from scratch.

Important: In Step 2, I advised that you try to solve Windows-caused startup issues by repairing Windows. Since that method of fixing important Windows files is non-destructive, make certain that you've tried that before the completely destructive, last-resort clean install in this step.

Tips:

Did I miss a troubleshooting step that helped you (or might help someone else) fix a freezing, stopping, or reboot loop problem during Windows startup? [Let me know](http://pcsupport.about.com/contact) and I'd be happy to include the information here.

Is your computer still freezing, stopping, or rebooting during the Windows startup process? See [Get More Help](http://pcsupport.about.com/od/resources/tp/get-more-help.htm) for information about contacting me on social networks or via email, posting on tech support forums, and more.

8. [Windows Repeatedly Returns to the Advanced Boot Options Screen](http://pcsupport.about.com/od/findbysymptom/ht/returns-to-advanced-boot-options.htm)



Use this guide when nothing but the [Advanced Boot Options](http://pcsupport.about.com/od/termsag/p/advanced-boot-options.htm) screen appears every time your restart your computer and none of the Windows startup options work.

In this situation, no matter which [Safe Mode](http://pcsupport.about.com/od/termss/p/safe-mode.htm) option you choose, your computer eventually stops, freezes, or restarts on its own, after which you find yourself right back at the Advanced Boot Options menu.

This is a particularly annoying way in which your computer won't turn on because you're trying to use Windows' built-in ways to solve your problem but you're getting nowhere with them.

Here's How:

Try to start Windows in every startup method available.

You may have already done this but if not, know that each startup method available from the Advanced Boot Options menu is there because it helps avoid one or more specific issues that can cause Windows to stop loading:

[Start Windows in Safe Mode](http://pcsupport.about.com/od/fixtheproblem/f/windows-safe-mode.htm)1

[Start Windows with the Last Known Good Configuration](http://pcsupport.about.com/od/fixtheproblem/f/start-windows-last-known-good-configuration.htm)2

Start Windows in Low-Resolution Display Mode3

Humor me and try the option to start Windows normally as well. You never know.

Note: See Tip #3 at the bottom of the page for help if Windows does actually start in one of the three modes above.

[Repair your Windows installation](http://pcsupport.about.com/od/operatingsystems/f/repair-installation-windows.htm). The most common reason for Windows to continuously return you to the Advanced Boot Options menu is because one or more important Windows files are damaged or missing. Repairing Windows replaces these important files without removing or changing anything else on your computer.

Note: In Windows 7 and Vista, this is called a Startup Repair. In Windows XP it's referred to as a Repair Installation.

Important: The Windows XP Repair Installation is more complicated and has more drawbacks than the Startup Repair available in later Windows [operating systems](http://pcsupport.about.com/od/termshm/g/term_os.htm). So, if you're an XP user, you may want to wait until you've tried Steps 5 through 8 before giving this a try.

[Perform a System Restore](http://pcsupport.about.com/od/toolsofthetrade/f/windows-system-restore.htm) from the System Recovery Options to undo recent changes.

Windows could be returning to the Advanced Boot Options menu because of damage to a[driver](http://pcsupport.about.com/od/termsag/g/term_driver.htm), important file, or part of the [registry](http://pcsupport.about.com/od/termsr/p/registrywindows.htm). A [System Restore](http://pcsupport.about.com/od/termss/p/system-restore.htm) will return all of those things to the state they were in at a time when your computer worked fine, which could solve your problem entirely.

Note: [System Recovery Options](http://pcsupport.about.com/od/termss/p/system-recovery-options.htm) is most easily available when [booting](http://pcsupport.about.com/od/termsag/g/termboot.htm) from your Windows Vista or Windows 7 installation disc. If you're using Windows 7, System Recovery Options is also available right here from the Advanced Boot Options menu as the Repair Your Computer option. This may not work, however, depending on what's causing your overall problem so you may have to boot to the install disc after all.

Another Windows 7 Option: If you don't have your Windows 7 installation disc but you do have access to another computer with Windows 7 installed, like another in the house or a friend's, you can [create a Windows 7 System Repair Disc](http://pcsupport.about.com/od/windows7/ht/system-repair-disc-windows-7.htm) on a blank disc and start System Recovery Options from there as well.

Windows XP & Me Users: This troubleshooting option is not applicable to you. System Restore was made available from a bootable disc starting with the release of Windows Vista.

[Use the System File Checker command to repair protected Windows files](http://pcsupport.about.com/od/toolsofthetrade/ht/sfc-scannow.htm). A damaged operating system related file could be preventing you from getting past the Advanced Boot Options menu and the [sfc command](http://pcsupport.about.com/od/termss/p/sfc-command-system-file-checker.htm) could fix the problem.

Note: Since you can't access Windows right now, you'll need to execute this [command](http://pcsupport.about.com/od/termsc/g/commands.htm)from the [Command Prompt](http://pcsupport.about.com/od/termsc/p/command-prompt.htm) available in System Recovery Options. See the notes in Step 3 about accessing System Recovery Options in Windows 7 and Windows Vista.

Windows XP & Me Users: Again, this troubleshooting option is not available to you. System File Checker is only available from within Windows in your operating system.

Chances are that if the Windows repair you tried in Step 2 didn't work then this won't either, but it's worth a shot considering the hardware-focused troubleshooting up next.

[Clear the CMOS](http://pcsupport.about.com/od/fixtheproblem/tp/clearcmos.htm). Clearing the [BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) memory on your [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) will return the BIOS settings to their factory default levels. A BIOS misconfiguration could be the reason that Windows can't get past the Advanced Boot Options menu.

Important: If clearing the [CMOS](http://pcsupport.about.com/od/termsc/g/cmos.htm) does fix your Windows startup problem, make sure any changes you make in BIOS are completed one at a time so if the problem returns, you'll know which change caused the problem.

Replace the CMOS battery if your computer is more than three years old or if it's been off for an extended amount of time.

CMOS batteries are very inexpensive and one that is no longer keeping a charge can cause all sorts of strange behavior during the Windows startup process.

[Reseat](http://pcsupport.about.com/od/termsr/g/reseat.htm) everything you can get your hands on. Reseating will reestablish the various connections inside your computer and could clear up the issue that's causing Windows to get stuck at the Advanced Boot Options screen.

Try reseating the following [hardware](http://pcsupport.about.com/od/termshm/g/hardware.htm) and then see if Windows will start properly:

[Reseat all internal data and power cables](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-power-cables-data-cables.htm)

[Reseat the memory modules](http://pcsupport.about.com/od/fixtheproblem/ss/reseat_memory.htm)

[Reseat any expansion cards](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-excards.htm)

Note: Unplug and reattach your [keyboard](http://pcsupport.about.com/od/componentprofiles/p/p_kb.htm), [mouse](http://pcsupport.about.com/od/componentprofiles/p/p_mouse.htm), and other external devices as well.

[Test the RAM](http://pcsupport.about.com/od/toolsofthetrade/tp/memorytest.htm). If one of your computer's [RAM](http://pcsupport.about.com/od/componentprofiles/p/p_ram.htm) modules fails completely, your computer won't even turn on. Most of the time, however, memory fails slowly and will work up to a point.

If your system memory is failing, Windows may be unable to start in any mode.

[Replace the memory](http://pcsupport.about.com/od/upgrades/f/replace-memory-replace-ram.htm) in your computer if the memory test shows any kind of problem.

Important: Make sure you've tried your best to complete the troubleshooting steps up to this one. Steps 9 and 10 both involve more difficult and destructive solutions to Windows getting stuck at the Advanced Boot Options menu. It may be that one of the below solutions is necessary to fix your problem but if you haven't been diligent in your troubleshooting up to this point, you can't know for sure that one of the easier solutions above isn't the right one.

[Test the hard drive](http://pcsupport.about.com/od/toolsofthetrade/tp/tophddiag.htm). A physical problem with your [hard drive](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm) is certainly a reason why Windows might not start as it should. A hard drive that can't read and write information properly certainly can't load an operating system properly - even Safe Mode.

[Replace your hard drive](http://pcsupport.about.com/od/toolsofthetrade/tp/tophddiag.htm) if your tests show an issue. After replacing the hard drive, you'll need to [perform a new installation of Windows](http://pcsupport.about.com/od/operatingsystems/f/new-install-windows.htm).

If your hard drive passes your test, the hard drive is physically fine so the cause of your problem must be with Windows, in which case the next step will solve the problem.

[Perform a Clean Install of Windows](http://pcsupport.about.com/od/operatingsystems/f/clean-install-windows.htm). This type of installation will completely erase the drive Windows is installed on and then install the operating system again from scratch.

Important: In Step 2, I advised that you try to solve Windows-caused startup issues by repairing Windows. Since that method of fixing important Windows files is non-destructive, make certain that you've tried that before the completely destructive, last-resort clean install in this step.

Tips:

Did I miss a troubleshooting step that helped you (or might help someone else) fix a computer that can't get past the Advanced Boot Options screen? [Let me know](http://pcsupport.about.com/contact) and I'd be happy to include the information here.

Are you still unable to get past the Advanced Boot Options menu? See [Get More Help](http://pcsupport.about.com/od/resources/tp/get-more-help.htm) for information about contacting me on social networks or via email, posting on tech support forums, and more.

[1] If Windows will start in one or more of the Safe Mode options but that's it, continue on with the troubleshooting steps on this page, which will be a bit easier to complete thanks to your access to Safe Mode.

[2] If Windows starts after enabling Last Known Good Configuration then some change made after the last time your computer started correctly caused this problem and the issue may return if the same changes are made. If you can avoid causing the same problem again then there's nothing more to do and everything should be fine.

[3] If Windows starts with low-resolution video enabled then there's a very good chance that there is an issue related to your computer's [video card](http://pcsupport.about.com/od/componentprofiles/p/p_video.htm) or possibly a problem with the [monitor](http://pcsupport.about.com/od/componentprofiles/p/p_monitor.htm).

First try to adjust the screen resolution to something more comfortable and see if the problem simply goes away. If not, try this troubleshooting:

Borrow a working monitor from another computer and try it in place of yours.

[Update the drivers](http://pcsupport.about.com/od/driverssupport/f/driverupdate.htm) to the video card.

[Test your computer's memory](http://pcsupport.about.com/od/toolsofthetrade/tp/memorytest.htm) and [replace the memory](http://pcsupport.about.com/od/upgrades/f/replace-memory-replace-ram.htm) if tests show any problem.

[Replace the video card](http://video.about.com/desktopvideo/videocardr3-mov.htm) or add a video card if your video is integrated into the motherboard.

9. [Windows Stops or Reboots On or After the Login Screen](http://pcsupport.about.com/od/findbysymptom/ht/windows-freezes-reboots-during-login.htm)



Try this troubleshooting guide when your computer powers on, Windows shows the login screen, but then freezes, stops, or reboots here or anytime after.

The stopping, freezing, or reboot loop may happen on the Windows login screen, as Windows is logging you in (as shown to the left), or any time up to Windows fully loading.

Here's How:

[Start Windows in Safe Mode](http://pcsupport.about.com/od/fixtheproblem/f/windows-safe-mode.htm). If Windows fully starts in [Safe Mode](http://pcsupport.about.com/od/termss/p/safe-mode.htm), just restart you computer from there as you normally would and see if Windows starts correctly.

A failed update or one-time startup process can sometimes cause stopping, freezing, or reboot-loop issues during the login process. Often times all Windows needs is a clean boot into Safe Mode and then a restart to clear up the problem.

[Start Windows with the Last Known Good Configuration](http://pcsupport.about.com/od/fixtheproblem/f/start-windows-last-known-good-configuration.htm). Starting Windows with the Last Known Good Configuration will return [driver](http://pcsupport.about.com/od/termsag/g/term_driver.htm) and [registry](http://pcsupport.about.com/od/termsr/p/registrywindows.htm) settings to the state they were in the last time Windows started up and shut down properly, possibly returning your computer to working order.

Of course this will only work if the cause of your Windows login issue is a registry or driver configuration issue.

Note: It is safe to try Safe Mode before Last Known Good Configuration because the valuable information that's stored in the registry to make Last Known Good Configuration work properly isn't written until Windows starts successfully in [Normal Mode](http://pcsupport.about.com/od/termsns/g/normal-mode.htm).

[Repair your Windows installation](http://pcsupport.about.com/od/operatingsystems/f/repair-installation-windows.htm). A common reason for Windows to fail between the login screen and the successful loading of the desktop is because one or more important Windows files are damaged or missing. Repairing Windows replaces these important files without removing or changing anything else on your computer.

Note: In Windows 7 and Vista, this is called a Startup Repair. In Windows XP it's referred to as a Repair Installation.

Important: The Windows XP Repair Installation is more complicated and has more drawbacks than the Startup Repair available in later Windows [operating systems](http://pcsupport.about.com/od/termshm/g/term_os.htm). If you're using Windows XP, you may want to wait until you've tried Steps 4, 5, and 6 before giving this a try.

[Start Windows in Safe Mode](http://pcsupport.about.com/od/fixtheproblem/f/windows-safe-mode.htm) and then [use System Restore to undo recent changes](http://pcsupport.about.com/od/toolsofthetrade/f/windows-system-restore.htm). Windows could freeze, stop, or reboot during the login process because of damage to a driver, important file, or part of the registry. A [System Restore](http://pcsupport.about.com/od/termss/p/system-restore.htm) will return all of those things to a time when your computer was working, which could solve your problem entirely.

Note: If you can't enter Safe Mode for some reason, you can also perform a System Restore from [System Recovery Options](http://pcsupport.about.com/od/termss/p/system-recovery-options.htm) which is available from the [Advanced Boot Options](http://pcsupport.about.com/od/termsag/p/advanced-boot-options.htm)menu in Windows 7 and also from your Windows 7 or Windows Vista Setup DVD.

Important: You will not be able to undo a System Restore if it's done from Safe Mode or from System Recovery Options. You might not care since you can't get to Windows normally anyway, but it's something I wanted you to be aware of.

[Scan your computer for viruses](http://pcsupport.about.com/od/fixtheproblem/ht/virus-scan-malware-scan.htm), again from Safe Mode.

A virus or other kind of [malware](http://pcsupport.about.com/od/termsm/g/malware.htm) might have caused a specific enough problem with a part of Windows to cause it to fail during login.

[Clear the CMOS](http://pcsupport.about.com/od/fixtheproblem/tp/clearcmos.htm). Clearing the [BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) memory on your [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) will return the BIOS settings to their factory default levels. A BIOS misconfiguration could be the reason that Windows can't get all the way to the desktop.

Important: If clearing the [CMOS](http://pcsupport.about.com/od/termsc/g/cmos.htm) does fix your Windows login problem, make sure any changes you make in BIOS are completed one at a time so if the problem returns, you'll know which change caused the problem.

Replace the CMOS battery if your computer is more than three years old or if it's been off for an extended amount of time.

CMOS batteries are very inexpensive and one that is no longer keeping a charge can cause all sorts of strange behavior at any point during a computer's startup process, all the way up to the loading of the Windows desktop.

[Reseat](http://pcsupport.about.com/od/termsr/g/reseat.htm) everything in your computer that you can. Reseating will reestablish the various connections inside your computer and could clear up the issue that's preventing Windows from fully starting.

Try reseating the following [hardware](http://pcsupport.about.com/od/termshm/g/hardware.htm) and then see if Windows will fully start:

[Reseat all internal data and power cables](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-power-cables-data-cables.htm)

[Reseat the memory modules](http://pcsupport.about.com/od/fixtheproblem/ss/reseat_memory.htm)

[Reseat any expansion cards](http://pcsupport.about.com/od/fixtheproblem/ss/reseat-excards.htm)

Note: Unplug and reattach your [keyboard](http://pcsupport.about.com/od/componentprofiles/p/p_kb.htm), [mouse](http://pcsupport.about.com/od/componentprofiles/p/p_mouse.htm), and other external devices as well.

[Check for causes of electrical shorts](http://pcsupport.about.com/od/fixtheproblem/ss/electricshorts.htm) inside your computer. An electrical short is sometimes the cause of problems during the Windows login process, especially reboot loops and hard freezes.

[Test the RAM](http://pcsupport.about.com/od/toolsofthetrade/tp/memorytest.htm). If one of your computer's [RAM](http://pcsupport.about.com/od/componentprofiles/p/p_ram.htm) modules fails completely, your computer won't even turn on. Most of the time, however, just a part of your computer's memory will fail.

If your system memory is failing, your computer may freeze, stop, or reboot any point, including during or after the Windows login process.

[Replace the memory](http://pcsupport.about.com/od/upgrades/f/replace-memory-replace-ram.htm) in your computer if the memory test shows any kind of problem.

Important: Make sure you've tried your best to complete the troubleshooting steps up to this one. Steps 11 and 12 both involve more difficult and destructive solutions to Windows not starting fully. It may be that one of the below solutions is necessary to fix your problem but if you haven't been diligent in your troubleshooting up to this point, you can't know for sure that one of the easier solutions above isn't the right one.

[Test the hard drive](http://pcsupport.about.com/od/toolsofthetrade/tp/tophddiag.htm). A physical problem with your [hard drive](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm) is certainly a reason why Windows might not start fully. A hard drive that can't read and write information properly can't load the files necessary for Windows to start.

[Replace your hard drive](http://pcsupport.about.com/od/toolsofthetrade/tp/tophddiag.htm) if your tests show an issue. After replacing the hard drive, you'll need to [perform a new installation of Windows](http://pcsupport.about.com/od/operatingsystems/f/new-install-windows.htm).

If no hard drive issues are found then the hard drive is physically fine, meaning the cause of your problem must be with Windows, in which case the next step will solve the problem.

[Perform a Clean Install of Windows](http://pcsupport.about.com/od/operatingsystems/f/clean-install-windows.htm). This type of installation will completely erase the drive Windows is installed on and then install the operating system again from scratch.

Important: In Step 3, I advised that you try to solve this issue by repairing Windows. Since that method of fixing important Windows files is non-destructive, make sure that you've tried that before the completely destructive, last-resort clean install in this step.

10. [Computer Doesn't Fully Start Because of an Error Message](http://pcsupport.about.com/od/findbysymptom/ht/error-message-during-startup.htm)



If your computer turns on but then stops or freezes at any point, showing an error message of any kind, then use this troubleshooting guide.

Error messages are possible at any stage during your computer's boot process, including during the POST, at any time during the loading of Windows, all the way up to the Windows desktop appearing.

Note: The only exception to using this troubleshooting guide for an error message is if the error is a Blue Screen of Death. See #6 above for a better troubleshooting guide for BSOD issues.

Here's How:

Document the error message exactly. While this might seem obvious to some, transcribing the error message in its entirety and without mistake is possibly the most important thing you can do when you encounter an error message while your computer is starting.

Misspelling a [DLL file](http://pcsupport.about.com/od/termsd/g/dll_file.htm) or writing down the wrong characters in a [STOP code](http://pcsupport.about.com/od/supports/g/stopcode.htm) could have you trying to fix a problem with a [file](http://pcsupport.about.com/od/termsf/g/file-definition.htm), [driver](http://pcsupport.about.com/od/termsag/g/term_driver.htm), or piece of [hardware](http://pcsupport.about.com/od/termshm/g/hardware.htm) that you don't actually have a problem with.

As I mentioned above, there are thousands of errors one might see during a computer's startup process. However, there are a select few that seem to show up more regularly.

If you're "fortunate" enough to receive one of these common errors, you can save yourself the trouble of searching around for a solution and instead get started on solving the problem that's causing the error:

[BOOTMGR is missing. Press Ctrl Alt Del to restart.](http://pcsupport.about.com/od/findbyerrormessage/a/bootmgr-is-missing.htm)

[Hal.dll is missing or corrupt. Please re-install a copy of the above file.](http://pcsupport.about.com/od/findbyerrormessage/a/missinghaldll.htm)

[NTLDR is missing. Press any key to restart.](http://pcsupport.about.com/od/findbyerrormessage/a/ntldrmissingxp.htm)

Note: The error message you see doesn't have to be exactly as I've listed above. For example, the hal.dll issue comes in various forms but it will always mention hal.dll.

Have an error other than one listed above? No problem, you just aren't experiencing one of the more common computer startup error messages. Move on to Step 3 below for help.

[Search the PC Support site for a troubleshooting guide specific to the error message](http://pcsupport.about.com/sitesearch.htm?SUName=pcsupport). I have individual troubleshooting guides for well over one thousand specific error messages and likely have one specific to the error you're seeing when you turn on your computer.

An error message during startup is an indication of a specific problem so it's important to troubleshoot the specific issue the error message is indicating and not to waste time testing unrelated pieces of hardware or replacing unrelated files.

Note: I also keep an alphabetical list of my error message troubleshooting guides in my[Find by Error Message](http://pcsupport.about.com/od/findbyerrormessage) directory.

If I don't yet have specific troubleshooting information for your startup error, you might still benefit from a bit more information about the error.

Here are links to lists of error messages that you might see during startup:

List of POST Error Messages

[List of Windows STOP Codes](http://pcsupport.about.com/od/findbyerrormessage/tp/stop_error_list.htm) (Blue Screen of Death Errors)

[List of System Error Codes](http://pcsupport.about.com/od/findbyerrormessage/tp/system_error_codes.htm)

I also keep a list of [Device Manager error codes](http://pcsupport.about.com/od/fixtheproblem/tp/device_manager_error_codes.htm) and [HTTP status codes](http://pcsupport.about.com/od/termshm/g/httpstatuscode.htm) but the types of issues that cause these errors aren't the types that prevent Windows from starting.

Finally, if you can't find a solution, see [Get More Help](http://pcsupport.about.com/od/resources/tp/get-more-help.htm) for information about contacting me on social networks or via email, posting on tech support forums, and more.

When asking for more help, please remember to include the following:

The exact and complete error message

Where exactly the error message is displayed, to the best of your abilities

Your computer's make/model or general stats if your computer is a custom PC

Any other information whatsoever that might provide some context

Tips: If you haven't already, you should also try to search for a solution to your problem using your favorite search engine.

For the best results, your search string should include the complete error message or the file name that the error message references, assuming one is referenced.

No Icons on my PC only Desktop Background

TRY I

CTRL+ALT+Delete en then New task then i type explorer.exe

TRY II

1. Type Regedit on the run task, then located this path HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows NT\Current Version\Image File Execution Option\Explorer.exe <<<--- Delete this folder if you can see this one or
2. HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows NT\Current Version\Image File Execution Option\Your Image File Name Here without a path <<<<--- Delete this one if you cannot find the Explorer.exe
3. Restart your PC then its ok.

TRY III

Right-click the desktop, Arrange Icons By, Show Desktop Icons

TRY IV

Reboot & Boot in Safemode with command prompt.

At the Command Prompt type C:\windows\system32\restore\rstrui.exe and press Enter.

This will bring the System restore window now follow the instruction to system restore to a previous restore point.

How To Troubleshoot Beep Codes

Here's How:

Power on the computer or restart it if it's already on.

Listen very carefully to the beep codes that sound when the computer begins to [boot](http://pcsupport.about.com/od/termsag/g/termboot.htm).

Restart your computer if you need to hear the beeping again. You're not likely to make whatever problem you have worse by restarting a few times.

Write down, in whatever way makes sense to you, how the beeps sound.

Important: Pay close attention to the number of beeps, if the beeps are long or short and if the beeping repeats or not. There is a big difference between a "beep-beep-beep" beep code and a "beep-beep" beep code.

This is all important information that will help determine what issue the beep codes are representing.

What steps you take to solve a particular beep code will differ depending on the BIOS manufacturer.

How To Clear CMOS

3 Easy Ways To Clear Your Motherboard CMOS Memory

Clearing the [CMOS](http://pcsupport.about.com/od/termsc/g/cmos.htm) on your [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) will reset your [BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) settings to their factory defaults. After clearing the CMOS, you'll need to [access the BIOS setup utility](http://pcsupport.about.com/od/fixtheproblem/ht/accessbios.htm) and reconfigure your hardware settings.

You might need to clear the CMOS for several reasons but usually you'll want to clear the CMOS to help troubleshoot or solve certain PC problems like [hardware](http://pcsupport.about.com/od/termshm/g/hardware.htm) compatibility issues.

Here are 3 different ways to clear the CMOS. Any one method is as good as any other but you may find one of them easier or whatever problem you might be having may restrict you to clearing the CMOS in a particular way.

[Clear the CMOS with the "Factory Defaults" BIOS Option Menu](http://pcsupport.about.com/od/fixtheproblem/ht/accessbios.htm)



The easiest way to clear the CMOS is to enter the BIOS setup utility and choose to "Reset BIOS Settings" to their factory default levels.

The exact menu option in your motherboard's BIOS may differ but look for phrases like reset to default, factory default, clear BIOS, load setup defaults, etc. This option is usually located at near the bottom/end of your BIOS options.

Note: The directions I've linked to here are how to access your BIOS utility but do not specifically demonstrate how to clear the CMOS in your BIOS utility. It should be easy enough, however, as long as you can find that "reset" option.

[Clear the CMOS Using the Motherboard Jumper](http://www.computercare.ca/forum/showthread.php?t=817)



Another way to clear the CMOS is to short the "CLEAR CMOS" [jumper](http://pcsupport.about.com/od/termshm/g/term_jumper.htm) on your motherboard, assuming you have one (most motherboards do).

Open your computer and look around your motherboard for a jumper labeled like this. These jumpers are usually located near the BIOS chip itself or near the CMOS battery.

[Clear the CMOS by Reseating the CMOS Battery](http://www.computerhope.com/issues/ch000239.htm)



Yet another way to clear the CMOS is to [reseat](http://pcsupport.about.com/od/termsr/g/reseat.htm) the CMOS battery. By removing and then reinstalling the CMOS battery, you remove the source of power that saves your computer's BIOS settings.

If you can't access BIOS and also can't locate the clear CMOS jumper, clearing the CMOS this way should do the trick.

BIOS Setup Utility Access Keys for Popular Motherboards

BIOS Access Keys for ASUS, MSI, GIGABYTE, EVGA, Intel, and More!

Getting in to the [BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) setup utility on your [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) should be easy, right? If you've tried the [basic steps for accessing your motherboard's BIOS](http://pcsupport.about.com/od/fixtheproblem/ht/accessbios.htm) and haven't been successful - don't worry. This list of keyboard [commands](http://pcsupport.about.com/od/termsc/g/commands.htm) to enter BIOS should be of some help.

Note: If you have a computer system from a major manufacturer like Dell, Gateway, etc. then my [BIOS Setup Utility Access Keys for Popular Computer Systems](http://pcsupport.about.com/od/fixtheproblem/a/biosaccess_pc.htm) list will probably be of more help.

This list of BIOS access keyboard commands is a work in progress so any input from you would be greatly appreciated! If you have any additional information on BIOS access for a motherboard (listed here or not) or if you find a mistake in this list, [please let me know](http://pcsupport.about.com/contact).

abit - ab9, an7, an8, av8, aw9d, be6, bh6, ic7, in9, ip35, kn8, kn9, etc.

Press Del while the PRESS DEL TO ENTER SETUP message is displayed to access the BIOS setup utility.

ASRock - 4coredual, 775dual, 939dual, k7s41gx, p4v88, k7vm3, etc.

Press F2 right after the computer starts up.

ASUS - p5b, a7v600, a7v8x, a8n, a8v, k8v, m2n, p5k, p5n, etc.

Press Del right after starting the computer to enter BIOS. A few ASUS motherboards useIns instead.

BFG - 680i, 8800gtx, 6800gt, 7600gt, 7800gs, 7950gt, etc.

Press Del when the ...enter setup message briefly displays at the bottom of the screen after powering on the computer.

BIOSTAR - 6100, 550, 7050, 965pt, k8m800, p4m80, ta690g, tf7050, etc.

Press the Del key while the full screen logo is showing on screen, immediately after starting the computer.

DFI - LANParty Ultra, Expert, Infinity 975x, NF3, NF4, cfx3200, p965, rs482, etc.

Press the Del key when the Press DEL to enter setup message appears, immediately after the memory test.

ECS Elitegroup - k7s5a, k7vta3, 741gx, 755-a2, 945p, c51gm, gf7100pvt, p4m800, etc.

Press either the Del or F1 key to enter the BIOS Setup Utility.

EVGA - 790i, 780i, 750i, 680i, 650i, e-7150/630i, e-7100/630i, 590, etc.

Enter BIOS by pressing Del immediately after powering on the computer.

Foxconn - c51xem2aa, 6150bk8mc, 6150bk8ma, c51gu01, etc.

Press Del to enter the BIOS Setup Utility.

GIGABYTE - ds3, p35, 965p, dq6, ds3r, k8ns, etc.

Press Del during [POST](http://pcsupport.about.com/od/termsns/g/termpost.htm), right after the computer is turned on.

Intel - d101ggc, d815eea, d845, d850gb, d865glc, d875pbz, d945gccr, d946gtp, d975xbx, etc.

Press F2 during the initial boot process to enter the BIOS setup utility.

JetWay - jm26gt3, ha04, j7f3e, hi03, ji31gm3, jp901dmp, 775gt1-loge, etc.

Enter BIOS setup by powering on the computer and pressing Del immediately.

Mach Speed - Viper, Matrix, pm800, 917gbag, v6dp, s755max, etc.

Press Del after the boot process begins to enter the BIOS configuration utility.

MSI (Micro-Star) - k8n, k9n, p965, 865pe, 975x, k7n2, k9a2, k8t neo, p7n, p35, x48, x38, etc.

Press Del while the Press DEL to enter SETUP message displays on screen after powering on the computer.

PCChips - m810lr, m811, m848a, p23g, p29g, p33g, etc.

Press Del or F1 to enter the BIOS utility.

SAPPHIRE - PURE CrossFire 3200, a9rd580Adv, a9rs480, CrossFireX 770 & 790FX, PURE Element 690V, etc.

Press Del after powering on to get into BIOS.

Shuttle - "bare bones" and motherboards including ak31, ak32, an35n, sn25p, ai61, sd37p2, sd39p2, etc.

Press Del or Ctrl+Alt+Esc at the Press DEL to enter SETUP message that appears right after turning on the computer.

Soyo

Press Del during POST.

Super Micro - c2sbx, c2sbm, pdsba, pdsm4, pdsmi, p8sc8, p4sbe, etc.

Press the Del key at any time during the boot process.

TYAN - Tomcat, Trinity, Thunder, Tiger, Tempest, Tahoe, Tachyon, Transport and Bigby motherboards including K8WE, S1854, S2895, MP S2460, MPX S2466, K8W S2885, S2895, S2507, etc.

After starting the system, press the Del or F4 key to start the BIOS setup utility.

XFX - nForce 500 Series, 600 Series, 700 Series, etc.

Press Del during the boot process, immediately after the computer is turned on.

If you still can't determine what the keyboard commands are to access BIOS for your motherboard, my [BIOS Setup Utility Access Keys for Major BIOS Manufacturers](http://pcsupport.about.com/od/fixtheproblem/a/biosaccess_bios.htm) list should come in handy.

Common Error Messages



Anyone who regularly uses a computer knows all about error messages. Those of you who are also Windows users probably see more than your fair share of them. As a computer service professional, I see more error messages than anyone should in a lifetime!

Listed below are troubleshooting guides for some of the more common error messages that my readers and clients see on their computers.

[404 Not Found](http://pcsupport.about.com/od/findbyerrormessage/a/404error.htm)

[Hal.dll is Missing or Corrupt](http://pcsupport.about.com/od/findbyerrormessage/a/missinghaldll.htm)

**404 Not Found**

**How To Fix a 404 Not Found Error**

**How You Might See the 404 Error**

404 Not Found error messages are frequently customized by individual websites, so keep in mind that the 404 error may show up in just about any way imaginable depending on what website it's shown from.

Here are some common ways in which you might see the HTTP 404 error displayed:

"404 Error"

"404 Not Found"

"Error 404"

"The requested URL [URL] was not found on this server."

"HTTP 404"

"Error 404 Not Found"

"404 File or Directory Not Found"

"HTTP 404 Not Found"

"404 Page Not Found"

404 Not Found error messages can appear in any browser and in any [operating system](http://pcsupport.about.com/od/termshm/g/term_os.htm). Most 404 Not Found errors display inside the Internet browser window just as webpages do.

In Internet Explorer, the message The webpage cannot be found usually indicates an HTTP 404 Internal Server Error but a 400 Bad Request error is another possibility. You can check to see which error IE is referring to by checking for either 404 or 400 in the title bar.

404 errors received when opening links via Microsoft Office applications generate a The Internet site reports that the item you requested could not be found (HTTP/1.0 404) message inside the MS Office program.

When [Windows Update](http://pcsupport.about.com/od/keepingupwithupdates/p/windows-update.htm) produces a 404 error, it appears as a code 0x80244019 or as the message WU\_E\_PT\_HTTP\_STATUS\_NOT\_FOUND.

Cause of HTTP 404 Errors

A 404 error is an [HTTP status code](http://pcsupport.about.com/od/termshm/g/httpstatuscode.htm) that means that the page you were trying to reach on a website couldn't be found on their server.

Technically, an Error 404 is a client-side error, implying that the error is your mistake, either because you typed the [URL](http://pcsupport.about.com/od/termsu/g/termurl.htm) in wrong or the page has been moved or removed from the website and you should have known.

Another possibility is if a website has moved a page or resource but did so without redirecting the old URL to the new one. When that happens, you'll receive a 404 error instead of being automatically routed to the new page.

Note: Microsoft IIS web servers sometimes give more specific information about the cause of 404 Not Found errors by suffixing a number after the 404 as in HTTP Error 404.3 - Not Foundwhich means MIME type restriction. You can see a complete list [here](http://support.microsoft.com/kb/943891).

How To Fix the 404 Not Found Error

Retry the web page by pressing F5, clicking the refresh/reload button, or trying the URL from the address bar again.

The 404 Not Found error might appear for several reasons even though no real issue exists, so sometimes a simple refresh will often load the page you were looking for.

[Check for errors in the URL](http://pcsupport.about.com/od/findtheproblem/ht/wrongurl.htm). Often times the 404 Not Found error appears because the URL was typed wrong or the link that was clicked on points to the wrong URL.

Move up one directory level at a time in the URL until you find something.

For example, if www.web.com/a/b/c.htm gave you the 404 Not Found error, move up to www.web.com/a/b/. If you get nothing here (or an error), move up towww.web.com/a/. This should lead you toward what you're looking for or at least confirm that it's no longer available.

Tip: If you have moved all the way up to the website's homepage, try to run a search for the information you're looking for. If the site doesn't have a search function, try navigating to the page you want using category links to dig deeper into the site.

Search for the page at a popular search engine. It's possible that you simply have the entirely wrong URL in which case a quick [Google](http://www.google.com/) or [Bing](http://www.bing.com/) search should get you where you want to go.

If you do find the page you were after, update your bookmark or favorite to avoid the HTTP 404 error in the future.

[Clear your browser's cache](http://pcsupport.about.com/od/browsers/f/clear-cache.htm) if you have any indication that the 404 Not Found message might just be yours. For example, if you can reach the URL from your phone but not from your tablet, clearing the cache on your tablet's browser might help.

You might also consider [clearing your browser's cookies](http://pcsupport.about.com/od/browsers/f/delete-cookies.htm), or at least the one(s) involved with the website in question, if clearing the cache didn't work.

[Change the DNS servers](http://pcsupport.about.com/od/browsers/f/change-dns-server.htm) used by your computer but usually only if an entire website is giving you a 404 error, especially if the website is available to those on other networks (e.g. your mobile phone network or a friend in another city).

404's on an entire website isn't particularly common unless your ISP or government filters/censors websites. No matter the reason, if it does happen, giving another set of DNS servers a try is a good step to take. See my [Public DNS Servers List](http://pcsupport.about.com/od/tipstricks/a/free-public-dns-servers.htm) for some alternatives.

Finally, if all else fails, contact the website directly. If they've removed the page you're after then the 404 error is completely legitimate and they should be able to tell you that. If they've moved the page, and are generating 404's instead of redirecting visitors to the new page, they might be very happy to hear from you.

A [WHOIS search](http://www.networksolutions.com/whois/index.jsp), using the site's domain name (e.g. weather.com) as your search term, should give you some contact information.

If the WHOIS search isn't helpful, know that many sites can be reached via email at webmaster@website.com, replacing website.com with the real website name. Contacting a site via one of their social networking profiles is another good idea.

Errors Like Error 404

The following error messages are related to the 404 Not Found error because they're all client-side errors:

[400 Bad Request](http://pcsupport.about.com/od/findbyerrormessage/a/400error.htm) | [401 Unauthorized](http://pcsupport.about.com/od/findbyerrormessage/a/401error.htm) | [403 Forbidden](http://pcsupport.about.com/od/findbyerrormessage/a/403error.htm) | [408 Request Timeout](http://pcsupport.about.com/od/findbyerrormessage/a/408error.htm)

**How To Fix Missing Hal.dll Errors in Windows XP**

A Troubleshooting Guide for Missing Hal.dll Errors in Windows XP

Hal.dll Error Message

There are few different ways that the "missing or corrupt hal.dll" error may present itself, with the first listing being the most common:

"Windows could not start because the following file is missing or corrupt:
<Windows root>\system32\hal.dll.
Please re-install a copy of the above file."

"<Winnt\_root>\System32\Hal.dll missing or corrupt:
Please re-install a copy of the above file."

"Cannot find \Windows\System32\hal.dll"

"Cannot find hal.dll"

The "missing or corrupt hal.dll" error displays shortly after the computer is first started. Windows XP has not yet fully loaded when this error message appears.

Windows 8, 7, & Vista: Hal.dll errors in Windows 7, Windows 8, and Windows Vista are often a different issue entirely. See [How To Fix Hal.dll Errors in Windows 7, 8, and Vista](http://pcsupport.about.com/od/errorh/a/hal-dll-missing-windows-7-vista.htm) for help.

Cause

Causes of the "missing or corrupt hal.dll" error include, naturally, a damaged hal.dll [DLL file](http://pcsupport.about.com/od/termsd/g/dll_file.htm) or a hal.dll file that has been deleted or moved from its intended location.

Additional causes may include a damaged or missing boot.ini [file](http://pcsupport.about.com/od/termsf/g/file-definition.htm) or possibly a physically damaged [hard drive](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm).

**Hal.dll Error Troubleshooting**

Restart the PC. The hal.dll error could be a fluke.

[Check for proper boot order in BIOS](http://pcsupport.about.com/od/fixtheproblem/ss/bootorderchange.htm). You might see the hal.dll error if the [boot order](http://pcsupport.about.com/od/termsb/g/bootorder.htm) in[BIOS](http://pcsupport.about.com/od/termsb/p/bios.htm) is first looking at a hard drive other than your main hard drive.

Note: If you've recently changed your boot order or recently flashed your BIOS, this may be what's causing your problem.

[Run Windows XP System Restore from a command prompt](http://pcsupport.about.com/od/fixtheproblem/ht/systemrestorecp.htm). If this doesn't work or you're receiving the hal.dll error message before you're able to complete this process, move on to the next step.

[Repair or replace the boot.ini file](http://pcsupport.about.com/od/fixtheproblem/ht/repairbootini.htm). This will work if the cause of the problem is actually Windows XP's boot.ini file and not the hal.dll file, which is often times the case.

Note: If repairing the boot.ini does correct the hal.dll issue but the problem reappears after a reboot and you've recently installed Internet Explorer 8 in Windows XP, uninstall IE8. In this specific situation, IE8 could be the root cause of your hal.dll problem.

[Write a new partition boot sector to the Windows XP system partition](http://pcsupport.about.com/od/fixtheproblem/ht/newbootsector.htm). If the [partition boot sector](http://pcsupport.about.com/od/termsb/g/volbootsector.htm) has become corrupt or isn't properly configured, you may receive the hal.dll error.

[Recover data from any bad sectors on your hard drive](http://pcsupport.about.com/od/fixtheproblem/ht/locate-recover-bad-sectors-recovery-console.htm). If the physical part of your hard drive that stores any part of the hal.dll file has been damaged, you're likely to see errors like this.

[Restore the hal.dll file from the Windows XP CD](http://pcsupport.about.com/od/fixtheproblem/ht/restorehaldll.htm). If the hal.dll file is truly the cause of the problem, restoring it from the original Windows XP CD may do the trick.

[Perform a repair installation of Windows XP](http://pcsupport.about.com/od/operatingsystems/ss/instxprepair1.htm). This type of installation should replace any missing or corrupt files. Continue troubleshooting if this does not resolve the issue.

[Perform a clean installation of Windows XP](http://pcsupport.about.com/od/operatingsystems/ss/instxpclean1.htm). This type of installation will completely remove Windows XP from your PC and install it again from scratch.

Note: While this will almost certainly resolve any hal.dll errors, it is a time consuming process due to the fact that all of your data must be backed up and then later restored.

Important: If you can't gain access to your files to back them up, you should understand that you will lose them all if you continue with a clean installation of Windows XP.

[Test the hard drive](http://pcsupport.about.com/od/toolsofthetrade/tp/tophddiag.htm). If all else has failed, including the clean installation from the last step, you're most likely facing a [hardware](http://pcsupport.about.com/od/termshm/g/hardware.htm) issue with your hard drive but you'll want to test it to be sure.

If the drive fails any of your tests, [replace the hard drive](http://pcsupport.about.com/od/upgrades/f/replace-hard-drive.htm) and then [complete a "new" installation of Windows XP](http://pcsupport.about.com/od/operatingsystems/ss/installxpnew1.htm).

Applies To

This issue applies to [Windows XP](http://pcsupport.about.com/od/windowsxp/a/windows-xp.htm), including Windows XP Professional and Windows XP Home Edition.

Other Windows [operating systems](http://pcsupport.about.com/od/termshm/g/term_os.htm), like [Windows 8](http://pcsupport.about.com/od/windows-8/a/windows-8.htm), [Windows 7](http://pcsupport.about.com/od/windows7/a/windows-7.htm), and [Windows Vista](http://pcsupport.about.com/od/windowsvista/a/windows-vista.htm), might also experience hal.dll errors but the causes are so different that it constituted an entirely different troubleshooting guide: [How To Fix Hal.dll Errors in Windows 7, 8, and Vista](http://pcsupport.about.com/od/errorh/a/hal-dll-missing-windows-7-vista.htm).

**How To Manually Test a Power Supply With a Multimeter**

Testing a [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) manually with a multimeter is one of [two ways to test a power supply](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm)in a computer. A properly executed PSU test using a multimeter should confirm that the power supply is in good working order or if should be replaced.

Note: These instructions apply to a standard ATX power supply. Essentially all modern consumer power supplies are ATX power supplies.

Here's How:

Read [Important PC Repair Safety Tips](http://pcsupport.about.com/od/safetyconsiderations/qt/safety_tips.htm). Manually testing a power supply involves working closely with high voltage electricity.

Important: Do not skip this step! Safety should be your primary concern during a power supply test and there are several points you should be aware of before starting this process.

[Open your case](http://pcsupport.about.com/od/insidethepc/ss/opencase.htm). In short, this involves turning off the computer, removing the power cable and unplugging anything else connecting to the outside of your computer.

To make testing your power supply easier, you should also move your disconnected and open [case](http://pcsupport.about.com/od/componentprofiles/p/p_case.htm) somewhere easy to work like on a table or other flat, non-static surface.

Unplug the power connectors from each and every internal device.

Tip: An easy way to confirm that each power connector is unplugged is to work from the bundle of power cables coming from the power supply inside the PC. Each group of wires should terminate to one or more power connectors.

Note: There is no need to remove the actual power supply unit from the computer nor is there any reason to disconnect any data cables or other cables not originating from the power supply.

Group all of the power cables and connectors together for easy testing.

As you're organizing the power cables, I highly recommend rerouting them and pulling them as far away from the computer case as possible. This will make it as easy as possible to test the power supply connections.

Short out pins 15 and 16 on the 24-pin motherboard power connector with a small piece of wire.

You'll probably need to take a look at the [ATX 24 pin 12V Power Supply Pinout](http://pcsupport.about.com/od/insidethepc/a/atx-pinout-24-pin-12v-psu.htm) table to determine the locations of these two pins.

Confirm that the [power supply voltage switch](http://pcsupport.about.com/od/termsp/g/psvoltageswitch.htm) located on the power supply is properly set for your country.

Note: In the US, the voltage should be set to 110V/115V. Check the [Foreign Electricity Guide](http://www.voltagevalet.com/elec_guide.html) for voltage settings in other countries.

Plug the PSU into a live outlet and flip the switch on the back of the power supply. Assuming that the power supply is at least minimally functional and that you've properly shorted the pins in Step 5, you should hear the fan begin to run.

Important: Just because the fan is running does not mean that your power supply is supplying power to your devices properly. You'll need to continue testing to confirm that.

Note: Some power supplies do not have a switch on the back of the unit. If the PSU you're testing does not, the fan should begin to run immediately after plugging the unit into the wall.

Turn on your multimeter and turn the dial to the VDC (Volts DC) setting.

Note: If the multimeter you're using does not have an auto-ranging feature, set the range to 10.00V.

First we'll test the 24 pin [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) power connector:

Connect the negative probe on the multimeter (black) to any ground wired pin and connect the positive probe (red) to the first power line you want to test. The 24 pin main power connector has +3.3 VDC, +5 VDC, -5 VDC (optional), +12 VDC, and -12 VDC lines across multiple pins.

You'll need to reference the [ATX 24 pin 12V Power Supply Pinout](http://pcsupport.about.com/od/insidethepc/a/atx-pinout-24-pin-12v-psu.htm) for the locations of these pins.

I recommend testing every pin on the 24 pin connector that carries a voltage. This will confirm that each line is supplying the proper voltage and that each pin is properly terminated.

Document the number that the multimeter shows for each voltage tested and confirm that the reported voltage is within approved tolerance. You can reference [Power Supply Voltage Tolerances](http://pcsupport.about.com/od/insidethepc/a/power-supply-voltage-tolerance.htm) for a list of proper ranges for each voltage.

Are any voltages outside the approved tolerance? If yes, [replace the power supply](http://video.about.com/pcsupport/powersupply.htm). If all voltages are within tolerance, your power supply is not defective.

Important: If your power supply passes your tests, I highly recommend you continue testing to confirm that it can operate properly under a load. If you're not interested in testing your PSU further, skip to Step 15.

Turn off the switch on the back of the power supply and unplug it from the wall.

Reconnect all of your internal devices to power. Also, don't forget to remove the short you created in Step 5 before plugging back in the 24 pin motherboard power connector.

Note: The biggest mistake made at this point is forgetting to plug everything back in. Aside from the main power connector to the motherboard, don't forget to provide power to your [hard drive(s)](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm), [optical drive(s)](http://pcsupport.about.com/od/componentprofiles/p/p_odd.htm), and [floppy drive](http://pcsupport.about.com/od/componentprofiles/p/p_fdd.htm). Some motherboards require an additional 4, 6, or 8 pin power connector and some [video cards](http://pcsupport.about.com/od/componentprofiles/p/p_video.htm) need dedicated power too.

Plug in your power supply, flip the switch on the back if you have one, and then turn on your computer as you normally do with the [power switch](http://pcsupport.about.com/od/termsp/g/powerbutton.htm) on the front of the PC.

Note: Yes, you'll be running your computer with the case cover removed which is perfectly safe as long as you're careful.

Note: It's not common, but if your PC does not turn on with the cover removed, you may have to move the appropriate [jumper](http://pcsupport.about.com/od/termshm/g/term_jumper.htm) on the motherboard to allow this. Your computer or motherboard manual should explain how to do this.

Repeat Step 9 and Step 10, testing and documenting the voltages for other power connectors like the 4 pin [peripheral](http://pcsupport.about.com/od/termsns/g/peripheral.htm) power connector, the 15 pin [SATA](http://pcsupport.about.com/od/termss/g/serialata.htm) power connector, and the 4 pin floppy power connector.

Note: The pinouts necessary to test these power connectors with a multimeter can be found in my [ATX Power Supply Pinout Tables](http://pcsupport.about.com/od/insidethepc/tp/atx-pinout-power-supply.htm) list.

Just as with the 24 pin motherboard power connector, if any voltages fall too far outside the listed voltage (see [Power Supply Voltage Tolerances](http://pcsupport.about.com/od/insidethepc/a/power-supply-voltage-tolerance.htm)) you should replace the power supply.

Once your testing is complete, turn off and unplug the PC and then put the cover back on the case.

Assuming your power supply tested good or you've replaced your power supply with a new one, you can now turn your computer back on and/or continue troubleshooting the problem you are having.

Tips:

Did your power supply pass your tests but your computer still isn't turning on properly?

There are several reasons a computer won't start other than a bad power supply. See my [How to Troubleshoot a Computer That Won't Turn On](http://pcsupport.about.com/od/findbysymptom/ht/wontstart.htm) guide for more help.

**ATX Power Supply Pinout Tables**

**Pinout Tables for ATX v2.2 Power Supply Connectors**

ATX [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) pinout tables are useful references when [testing a power supply](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm). You need to know which pins correspond to ground or specific voltages before you can successfully test a PSU.

Each ATX power supply pinout table linked below conforms to [Version 2.2 of the ATX Specification (PDF)](http://www.formfactors.org/developer%5Cspecs%5Catx2_2.pdf).

[24 pin Motherboard Power Connector Pinout](http://pcsupport.about.com/od/insidethepc/a/atx-pinout-24-pin-12v-psu.htm)



The ATX 24 pin main power connector is the standard motherboard power connector used in nearly every computer.

This is the large 24 pin connector that usually attaches near the edge of the motherboard.

The ATX 24 pin [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) connector is the standard[motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) power connector in computers today.

The connector itself is a Molex 39-01-2240 connector, often called a Molex Mini-fit Jr.

Note: The original ATX standard supported a 20 pin connector with a very similar pinout as the 24 pin connector but with pins 11, 12, 23, and 24 omitted.

Below is the complete pinout table for the standard ATX 24 pin 12V power supply connector as of [Version 2.2 of the ATX Specification (PDF)](http://www.formfactors.org/developer%5Cspecs%5Catx2_2.pdf).

Note: If you're using this pinout table to [test power supply voltages](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm), be aware that the voltages must be within [ATX specified tolerances](http://pcsupport.about.com/od/insidethepc/a/power-supply-voltage-tolerance.htm).

You can see other ATX power supply connector pinouts in my [ATX Power Supply Pinout Tables](http://pcsupport.about.com/od/insidethepc/tp/atx-pinout-power-supply.htm)list.

|  |  |  |  |
| --- | --- | --- | --- |
| Pin | Name | Color | Description |
| 1 | +3.3V | Orange | +3.3 VDC |
| 2 | +3.3V | Orange | +3.3 VDC |
| 3 | COM | Black | Ground |
| 4 | +5V | Red | +5 VDC |
| 5 | COM | Black | Ground |
| 6 | +5V | Red | +5 VDC |
| 7 | COM | Black | Ground |
| 8 | PWR\_ON | Gray | Power Good |
| 9 | +5VSB | Purple | +5 VDC Standby |
| 10 | +12V1 | Yellow | +12 VDC |
| 11 | +12V1 | Yellow | +12 VDC |
| 12 | +3.3V | Orange | +3.3 VDC |
| 13 | +3.3V | Orange | +3.3 VDC |
| 14 | -12V | Blue | -12 VDC |
| 15 | COM | Black | Ground |
| 16 | PS\_ON# | Green | Power Supply On |
| 17 | COM | Black | Ground |
| 18 | COM | Black | Ground |
| 19 | COM | Black | Ground |
| 20 | NC | White | -5 VDC (Optional - Removed in ATX12V v2.01) |
| 21 | +5V | Red | +5 VDC |
| 22 | +5V | Red | +5 VDC |
| 23 | +5V | Red | +5 VDC |
| 24 | COM | Black | Ground |

[15 pin SATA Power Connector Pinout](http://pcsupport.about.com/od/insidethepc/a/sata-pinout-15-pin-psu.htm)



The SATA 15 pin power supply connector is one of several standard peripheral power connectors.

SATA power connectors only connect to SATA drives like hard drives and optical drives. SATA power connectors do not work with older PATA devices.

The SATA 15 pin [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) connector is one of the standard[peripheral](http://pcsupport.about.com/od/termsns/g/peripheral.htm) power connectors in computers today.

This power connector is the standard connector for all [SATA](http://pcsupport.about.com/od/termss/g/serialata.htm) based[hard drives](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm) and [optical drives](http://pcsupport.about.com/od/componentprofiles/p/p_odd.htm).

Below is the pinout for the standard SATA 15 pin peripheral power connector as of [Version 2.2 of the ATX Specification (PDF)](http://www.formfactors.org/developer%5Cspecs%5Catx2_2.pdf).

Note: There also exists two less common SATA power connectors: a 6 pin connector called a slimline connector (supplies +5 VDC) and also a 9 pin connector called a micro connector (supplies +3.3 VDC and +5 VDC). The pinout tables for those connectors differ from the one below.

Note: If you're using this pinout table to [test power supply voltages](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm), be aware that the voltages must be within [ATX specified tolerances](http://pcsupport.about.com/od/insidethepc/a/power-supply-voltage-tolerance.htm).

You can see other ATX power supply connector pinouts in my [ATX Power Supply Pinout Tables](http://pcsupport.about.com/od/insidethepc/tp/atx-pinout-power-supply.htm)list.

|  |  |  |  |
| --- | --- | --- | --- |
| Pin | Name | Color | Description |
| 1 | +3.3VDC | Orange | +3.3 VDC |
| 2 | +3.3VDC | Orange | +3.3 VDC |
| 3 | +3.3VDC | Orange | +3.3 VDC |
| 4 | COM | Black | Ground |
| 5 | COM | Black | Ground |
| 6 | COM | Black | Ground |
| 7 | +5VDC | Red | +5 VDC |
| 8 | +5VDC | Red | +5 VDC |
| 9 | +5VDC | Red | +5 VDC |
| 10 | COM | Black | Ground |
| 11 | COM | Black | Ground (Optional or other use) |
| 12 | COM | Black | Ground |
| 13 | +12VDC | Yellow | +12 VDC |
| 14 | +12VDC | Yellow | +12 VDC |
| 15 | +12VDC | Yellow | +12 VDC |

[4 pin Peripheral Power Connector Pinout](http://pcsupport.about.com/od/insidethepc/a/molex-pinout-4-pin-psu.htm)



The Molex 4 pin power supply connector is a standard peripheral power connector.

Molex power connectors connect to many differnt kinds of internal peripherals including PATA hard drives and optical drives, some video cards, and even some other devices..

The Molex 4 pin [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) connector is one of the standard[peripheral](http://pcsupport.about.com/od/termsns/g/peripheral.htm) power connectors in computers today. The power connector itself is a Molex 8981 connector called the AMP MATE-N-LOK.

This power connector is the standard connector for all [PATA](http://pcsupport.about.com/od/termsp/g/parallelata.htm) based[hard drives](http://pcsupport.about.com/od/componentprofiles/p/p_hdd.htm), many high end [video cards](http://pcsupport.about.com/od/componentprofiles/p/p_video.htm), and some older [optical drives](http://pcsupport.about.com/od/componentprofiles/p/p_odd.htm) and other internal devices.

Below is the pinout for the standard Molex 4 pin peripheral power connector as of [Version 2.2 of the ATX Specification (PDF)](http://www.formfactors.org/developer%5Cspecs%5Catx2_2.pdf).

Note: If you're using this pinout table to [test power supply voltages](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm), be aware that the voltages must be within [ATX specified tolerances](http://pcsupport.about.com/od/insidethepc/a/power-supply-voltage-tolerance.htm).

You can see other ATX power supply connector pinouts in my [ATX Power Supply Pinout Tables](http://pcsupport.about.com/od/insidethepc/tp/atx-pinout-power-supply.htm)list.

Molex 4 pin Peripheral Power Connector Pinout (ATX v2.2)

|  |  |  |  |
| --- | --- | --- | --- |
| Pin | Name | Color | Description |
| 1 | +12VDC | Yellow | +12 VDC |
| 2 | COM | Black | Ground |
| 3 | COM | Black | Ground |
| 4 | +5VDC | Red | +5 VDC |

[4 pin Motherboard Power Connector Pinout](http://pcsupport.about.com/od/insidethepc/a/atx-pinout-4-pin-12v-psu.htm)



The ATX 4 pin power supply connector is a standard motherboard power connector used to provide +12 VDC to the processor voltage regulator.

This small connector usually attaches to the motherboard near the CPU.

The ATX 4 pin [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) connector is a standard [motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm)power connector used to provide +12 VDC to the processor voltage regulator.

Below is the complete pinout table for the standard ATX 4 pin (2x2) 12V power connector as of [Version 2.2 of the ATX Specification (PDF)](http://www.formfactors.org/developer%5Cspecs%5Catx2_2.pdf).

Note: If you're using this pinout table to [test power supply voltages](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm), be aware that the voltages must be within [ATX specified tolerances](http://pcsupport.about.com/od/insidethepc/a/power-supply-voltage-tolerance.htm).

You can see other ATX power supply connector pinouts in my [ATX Power Supply Pinout Tables](http://pcsupport.about.com/od/insidethepc/tp/atx-pinout-power-supply.htm)list.

|  |  |  |  |
| --- | --- | --- | --- |
| Pin | Name | Color | Description |
| 1 | COM | Black | Ground |
| 2 | COM | Black | Ground |
| 3 | +12VDC | Yellow | +12 VDC |
| 4 | +12VDC | Yellow | +12 VDC |

The plug (male) is a Molex 39-01-2040 connector, the vertical receptacle (female) is a Molex 39-28-1043, and the right-angle receptacle is a Molex 39-29-1048.

[6 pin Motherboard Power Connector Pinout](http://pcsupport.about.com/od/insidethepc/a/atx-pinout-6-pin-12v-psu.htm)



The ATX 6 pin power supply connector is a motherboard power connector used to provide +12 VDC to the processor voltage regulator but the 4-pin variety is the more commonly used connector.

This small connector usually attaches to the motherboard near the CPU.

The ATX 6 pin [power supply](http://pcsupport.about.com/od/componentprofiles/p/p_ps.htm) connector is a seldom used[motherboard](http://pcsupport.about.com/od/componentprofiles/p/p_mobo.htm) power connector used to provide +12 VDC to the processor voltage regulator.

The more common connector used for this purpose is the [ATX 4 pin Power Connector](http://pcsupport.about.com/od/insidethepc/a/atx-pinout-4-pin-12v-psu.htm).

Below is the pinout for the standard ATX 6 pin (3x2) 12V power connector as of [Version 2.2 of the ATX Specification (PDF)](http://www.formfactors.org/developer%5Cspecs%5Catx2_2.pdf).

Note: If you're using this pinout table to [test power supply voltages](http://pcsupport.about.com/od/toolsofthetrade/f/powersupplytest.htm), be aware that the voltages must be within [ATX specified tolerances](http://pcsupport.about.com/od/insidethepc/a/power-supply-voltage-tolerance.htm).

You can see other ATX power supply connector pinouts in my [ATX Power Supply Pinout Tables](http://pcsupport.about.com/od/insidethepc/tp/atx-pinout-power-supply.htm)list.

|  |  |  |  |
| --- | --- | --- | --- |
| Pin | Name | Color | Description |
| 1 | COM | Black | Ground |
| 2 | COM | Black | Ground |
| 3 | COM | Black | Ground |
| 4 | +12VDC | Yellow | +12 VDC |
| 5 | +12VDC | Yellow | +12 VDC |
| 6 | +12VDC | Yellow | +12 VDC |

**RUNNING SYSTEM RESTORE FROM COMMAND PROMPT IN WIN XP, WIN 7**

At the [Command Prompt](http://pcsupport.about.com/od/termsc/p/command-prompt.htm), type C:\windows\system32\restore\rstrui.exe and press Enter.

**COMMAND PROMPT USE IN WINDOWS XP, WIN-7 & WIN-8**

Below is a complete list of Command Prompt commands, often called CMD commands (and sometimes incorrectly as [Command Prompt codes](http://pcsupport.about.com/od/commandlinereference/f/command-prompt-codes.htm)) available from the Command Prompt in[Windows 8](http://pcsupport.about.com/od/windows-8/a/windows-8.htm), [Windows 7](http://pcsupport.about.com/od/windows7/a/windows-7.htm), [Windows Vista](http://pcsupport.about.com/od/windowsvista/a/windows-vista.htm), and [Windows XP](http://pcsupport.about.com/od/windowsxp/a/windows-xp.htm). As I mentioned above, I've also included DOS commands from MS-DOS and Windows 98/95:

Note: The command information below is current to the latest [version number](http://pcsupport.about.com/od/termsv/g/version-number.htm) or [service pack](http://pcsupport.about.com/od/termss/g/servicepack.htm): MS-DOS 6.22, Windows 98 SE, Windows XP SP3, Windows Vista SP2, Windows 7 SP1, and Windows 8.

Commands and Their Availability from MS-DOS 6.22 through Windows 8

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Command | DSiscription | Win 98 | Win XP | Win Vista | Win 7 | Win 8 |
| Append | The append command can be used by programs to open files in another directory as if they were located in the current directory. | Y | Y1 | Y1 | Y1 | Y1 |
| Arp | The arp command is used to display or change entries in the ARP cache. | Y | Y | Y | Y | Y |
| Assoc | The assoc command is used to display or change the file type associated with a particular file extension. | N | Y | Y | Y | Y |
| [At](http://pcsupport.about.com/od/commandlinereference/p/at-command.htm) | The at command is used to schedule commands and other programs to run at a specific date and time. | N | Y | Y | Y | Y |
| Atmadm | The atmadm command is used to display information related to asynchronous transfer mode (ATM) connections on the system. | N | Y | N | N | N |
| Attrib | The attrib command is used to change the attributes of a single file or a directory. | Y | Y | Y | Y | Y |
| Auditpol | The auditpol command is used to display or change audit policies. | N | N | Y | Y | Y |
| Bcdboot | The bcdboot command is used to copy boot files to the system partition and to create a new system BCD store. | N | N | N | Y | Y |
| Bcdedit | The bcdedit command is used to view or make changes to Boot Configuration Data. | N | N | Y | Y | Y |
| Bdehdcfg | The bdehdcfg command is used to prepare a hard drive for BitLocker Drive Encryption. | N | N | N | Y | Y |
| Bitsadmin | The bitsadmin command is used to create, manage, and monitor download and upload jobs. | N | N | Y | Y | Y |
| Bootcfg | The bootcfg command is used to build, modify, or view the contents of the boot.ini file, a hidden file that is used to identify in what folder, on which partition, and on which hard drive Windows is located | N | Y | Y | Y | Y |
| Bootsect | The bootsect command is used to configure the master boot code to one compatible with BOOTMGR (Vista and later) or NTLDR (XP and earlier). | N | N | Y10 | Y10 | Y |
| Break | The break command sets or clears extended CTRL+C checking on DOS systems. | Y | Y | Y | Y | Y |
| Cacls | The cacls command is used to display or change access control lists of files. | N | Y | Y | Y | Y |
| Call | The call command is used to run a script or batch program from within another script or batch program. | Y | Y | Y | Y | Y |
| Cd | The cd command is the shorthand version of the chdir command. | Y | Y | Y | Y | Y |
| Certreq | The certreq command is used to perform various certification authority (CA) certificate functions. | N | N | Y | Y | Y |
| Certutil | The certutil command is used to dump and display certification authority (CA) configuration information in addition to other CA functions. | N | N | Y | Y | Y |
| Change | The change command changes various terminal server settings like install modes, COM port mappings, and logons | N | N | Y | Y | Y |
| Chcp | The chcp command displays or configures the active code page number. | Y | Y | Y | Y | Y |
| Chdir | The chdir command is used to display the drive letter and folder that you are currently in. Chdir can also be used to change the drive and/or directory that you want to work in. | Y | Y | Y | Y | Y |
| Checknetisolation | The checknetisolation command is used to test apps that require network capabilities. | N | N | N | N | Y |
| Chglogon | The chglogon command enables, disables, or drains terminal server session logins | N | N | Y | Y | Y |
| Chgport | The chgport command can be used to display or change COM port mappings for DOS compatibility. | N | N | Y | Y | Y |
| Chgusr | The chgusr command is used to change the install mode for the terminal server. | N | N | Y | Y | Y |
| Chkdsk | The chkdsk command, often referred to as check disk, is used to identify and correct certain hard drive errors. | Y | Y | Y | Y | Y |
| Chkntfs | The chkntfs command is used to configure or display the checking of the disk drive during the Windows boot process. | N | Y | Y | Y | Y |
| Choice | The choice command is used within a script or batch program to provide a list of choices and return the value of that choice to the program. | Y | N | Y | Y | Y |
| Cipher | The cipher command shows or changes the encryption status of files and folders on NTFS partitions. | N | Y | Y | Y | Y |
| Clip | The clip command is used to redirect the output from any command to the clipboard in Windows. | N | N | Y | Y | Y |
| Cls | The cls command clears the screen of all previously entered commands and other text. | Y | Y | Y | Y | Y |
| Cmd | The cmd command starts a new instance of the cmd.exe command interpreter. | N | Y | Y | Y | Y |
| Cmdkey | The cmdkey command is used to show, create, and remove stored user names and passwords. | N | N | Y | Y | Y |
| Cmstp | The cmstp command installs or uninstalls a Connection Manager service profile. | N | Y | Y | Y | Y |
| Color | The color command is used to change the colors of the text and background within the Command Prompt window | N | Y | Y | Y | Y |
| Command | The command command starts a new instance of the command.com command interpreter. | Y | Y1 | Y1 | Y1 | Y1 |
| Comp | The comp command is used to compare the contents of two files or sets of files. | N | Y | Y | Y | Y |
| Compact | The compact command is used to show or change the compression state of files and directories on NTFS partitions. | N | Y | Y | Y | Y |
| Convert | The convert command is used to convert FAT or FAT32 formatted volumes to the NTFS format. | N | Y | Y | Y | Y |
| Copy | The copy command does simply that - it copies one or more files from one location to another. | Y | Y | Y | Y | Y |
| Cscript | The cscript command is used to execute scripts via Microsoft Script Host. | Y | Y | Y | Y | Y |
| Ctty | The ctty command is used to change the default input and output devices for the system. | Y | N | N | N | N |
| Date | The date command is used to show or change the current date. | Y | Y | Y | Y | Y |
| Dblspace | The dblspace command is used to create or configure DoubleSpace compressed drives. | Y | N | N | N | N |
| Debug | The debug command starts Debug, a command line application used to test and edit programs. | Y | Y1 | Y1 | Y1 | Y1 |
| Defrag | The defrag command is used to defragment a drive you specify. The defrag command is the command line version of Microsoft's Disk Defragmenter. | Y | Y | Y | Y | Y |
| Del | The del command is used to delete one or more files. | Y | Y | Y | Y | Y |
| Deltree | The deltree command is used to delete a directory and all the files and subdirectories within it. | Y | N | N | N | N |
| Diantz | The diantz command is used to losslessly compress one or more files. The diantz command is sometimes called Cabinet Maker. | N | Y | Y | Y | N |
| Dir | The dir command is used to display a list of files and folders contained inside the folder that you are currently working in. The dir command also displays other important information like the hard drive's serial number, the total number of files listed, their combined size, the total amount of free space left on the drive, and more. | Y | Y | Y | Y | Y |
| Diskcomp | The diskcomp command is used to compare the contents of two floppy disks. | Y | Y | Y | Y | Y |
| Diskcopy | The diskcopy command is used to copy the entire contents of one floppy disk to another. | Y | Y | Y | Y | Y |
| Diskpart | The diskpart command is used to create, manage, and delete hard drive partitions. | N | Y | Y | Y | Y |
| Diskperf | The diskperf command is used to manage disk performance counters remotely. | N | Y | Y | Y | Y |
| Diskraid | The diskraid command starts the DiskRAID tool which is used to manage and configure RAID arrays. | N | N | Y | Y | Y |
| Dism | The dism command starts the Deployment Image Servicing and Management tool (DISM). The DISM tool is used to manage features in Windows images. | N | N | N | Y | Y |
| Dispdiag | The dispdiag command is used to output a log of information about the display system. | N | N | Y | Y | Y |
| Djoin | The djoin command is used to create a new computer account in a domain. | N | N | Y | Y | Y |
| Doskey | The doskey command is used to edit command lines, create macros, and recall previously entered commands. | Y | Y | Y | Y | Y |
| Dosshell | The dosshell command starts DOS Shell, a graphical file management tool for MS-DOS. | Y | N | N | N | N |
| Dosx | The dosx command is used to start DOS Protected Mode Interface (DPMI), a special mode designed to give MS-DOS applications access to more than the normally allowed 640 KB. | N | Y1 | Y1 | Y1 | Y1 |
| Driverquery | The driverquery command is used to show a list of all installed drivers. | N | Y | Y | Y | Y |
| Drvspace | The drvspace command is used to create or configure DriveSpace compressed drives. | Y | N | N | N | N |
| Echo | The echo command is used to show messages, most commonly from within script or batch files. The echo command can also be used to turn the echoing feature on or off. | Y | Y | Y | Y | Y |
| Edit | The edit command starts the MS-DOS Editor tool which is used to create and modify text files. | Y | Y1 | Y1 | Y1 | Y1 |
| Edlin | The edlin command starts the Edlin tool which is used to create and modify text files from the command line. | Y | Y1 | Y1 | Y1 | Y1 |
| Emm386 | The emm386 command is used to give MS-DOS access to more than 640 KB of memory. | Y | N | N | N | N |
| Endlocal | The endlocal command is used to end the localization of environment changes inside a batch or script file. | N | Y | Y | Y | Y |
| Erase | The erase command is used to delete one or more files. | Y | Y | Y | Y | Y |
| Esentutl | The esentutl command is used to manage Extensible Storage Engine databases. | N | Y | Y | Y | Y |
| Eventcreate | The eventcreate command is used to create a custom event in an event log. | N | Y | Y | Y | Y |
| Eventtriggers | The eventtriggers command is used to configure and display event triggers. | N | Y | N | N | N |
| Exe2Bin | The exe2bin command is used to convert a file of the EXE file type (executable file) to a binary file. | N | Y1 | Y1 | Y1 | Y1 |
| Exit | The exit command is used to end the cmd.exe (Windows) or command.com (MS-DOS) session that you're currently working in. | Y | Y | Y | Y | Y |
| Expand | The expand command is used to extract a single file or a group of files from a compressed file. | Y | Y1 | Y | Y | Y |
| Extrac32 | The extrac32 command is used to extract the files and folders contained in Microsoft Cabinet (CAB) files. | Y | Y | Y | Y | Y |
| Extract | The extract command is used to extract the files and folders contained in Microsoft Cabinet (CAB) files. | Y | N | N | N | N |
| Fasthelp | The fasthelp command provides more detailed information on any of the other MS-DOS commands. | N | N | N | N | N |
| Fastopen | The fastopen command is used to add a program's hard drive location to a special list stored in memory, potentially improving the program's launch time by removing the need for MS-DOS to locate the application on the drive. | Y | Y1 | Y1 | Y1 | Y1 |
| Fc | The fc command is used to compare two individual or sets of files and then show the differences between them. | Y | Y | Y | Y | Y |
| Fdisk | The fdisk command is used to create, manage, and delete hard drive partitions. | Y | N | N | N | N |
| Find | The find command is used to search for a specified text string in one or more files. | Y | Y | Y | Y | Y |
| Findstr | The findstr command is used to find text string patterns in one or more files. | N | Y | Y | Y | Y |
| Finger | The finger command is used to return information about one or more users on a remote computer that's running the Finger service. | N | Y | Y | Y | Y |
| Fltmc | The fltmc command is used to load, unload, list, and otherwise manage Filter drivers. | N | Y | Y | Y | Y |
| Fondue | The fondue command, short for Features on Demand User Experience Tool, is used to install any of the several optional Windows features from the command line. | N | N | N | N | Y |
| For | The for command is used to run a specified command for each file in a set of files. The for command is most often used within a batch or script file. | Y | Y | Y | Y | Y |
| Forcedos | The forcedos command is used to start the specified program in the MS-DOS subsystem. | N | Y | N | N | N |
| Forfiles | The forfiles command selects one or more files to execute a specified command on. The forfiles command is most often used within a batch or script file. | N | N | Y | Y | Y |
| [Format](http://pcsupport.about.com/od/commandlinereference/p/format-command.htm) | The format command is used to format a drive in the file system that you specify. | Y | Y | Y | Y | Y |
| Fsutil | The fsutil command is used to perform various FAT and NTFS file system tasks like managing reparse points and sparse files, dismounting a volume, and extending a volume. | N | Y | Y | Y | Y |
| Ftp | The ftp command can used to transfer files to and from another computer. The remote computer must be operating as an FTP server. | Y | Y | Y | Y | Y |
| Ftype | The ftype command is used to define a default program to open a specified file type. | N | Y | Y | Y | Y |
| Getmac | The getmac command is used to display the media access control (MAC) address of all the network controllers on a system. | N | Y | Y | Y | Y |
| Goto | The goto command is used in a batch or script file to direct the command process to a labeled line in the script. | Y | Y | Y | Y | Y |
| Gpresult | The gpresult command is used to display Group Policy settings. | N | Y | Y | Y | Y |
| Gpupdate | The gpupdate command is used to update Group Policy settings. | N | Y | Y | Y | Y |
| Graftabl | The graftabl command is used to enable the ability of Windows to display an extended character set in graphics mode. | Y | Y1 | Y1 | Y1 | Y1 |
| Graphics | The graphics command is used to load a program that can print graphics. | Y | Y1 | Y1 | Y1 | Y1 |
| [Help](http://pcsupport.about.com/od/commandlinereference/p/help-command.htm) | The help command provides more detailed information on other Command Prompt or DOS commands. | Y | Y | Y | Y | Y |
| Hostname | The hostname command displays the name of the current host. | N | Y | Y | Y | Y |
| Hwrcomp | The hwrcomp command is used to compile custom dictionaries for handwriting recognition. | N | N | N | Y | Y |
| Hwrreg | The hwrreg command is used to install a previously compiled custom dictionary for handwriting recognition. | N | N | N | Y | Y |
| Icacls | The icacls command is used to display or change access control lists of files. | N | N | Y | Y | Y |
| If | The if command is used to perform conditional functions in a batch file. | Y | Y | Y | Y | Y |
| Interlnk | The interlnk command is used to connect two computers via a serial or parallel connection to share files and printers. | N | N | N | N | N |
| Intersvr | The intersvr command is used to start the Interlnk server and to copy Interlnk files from one computer to another. | N | N | N | N | N |
| Ipconfig | The ipconfig command is used to display detailed IP information for each network adapter utilizing TCP/IP. The ipconfig command can also be used to release and renew IP addresses on systems configured to receive them via a DHCP server. | Y | Y | Y | Y | Y |
| Ipxroute | The ipxroute command is used to display and change information about IPX routing tables. | N | Y | N | N | N |
| Irftp | The irftp command is used to transmit files over an infrared link. | N | N | Y | Y | Y |
| Iscsicli | The iscsicli command starts the Microsoft iSCSI Initiator, used to manage iSCSI. | N | N | Y | Y | Y |
| Kb16 | The kb16 command is used to support MS-DOS files that need to configure a keyboard for a specific language. | N | Y1 | Y1 | Y1 | Y1 |
| Keyb | The keyb command is used to configure a keyboard for a specific language. | Y | N | N | N | N |
| Klist | The klist command is used to list Kerberos service tickets. The klist command can also be used to purge Kerberos tickets. | N | N | N | Y | Y |
| Ksetup | The ksetup command is used to configure connections to a Kerberos server. | N | N | N | Y | Y |
| Ktmutil | The ktmutil command starts the Kernel Transaction Manager utility. | N | N | Y | Y | Y |
| Label | The label command is used to manage the volume label of a disk. | Y | Y | Y | Y | Y |
| Lh | The lh command is the shorthand version of the loadhigh command. | Y | N | N | N | N |
| Licensingdiag | The licensingdiag command is a tool used to generate a text-based log and other data files that contain product activation and other Windows licensing information. | N | N | N | N | Y |
| Loadfix | The loadfix command is used to load the specified program in the first 64K of memory and then runs the program. | Y | Y1 | Y1 | Y1 | Y1 |
| Loadhigh | The loadhigh command is used to load a program into high memory and is usually used from within the autoexec.bat file. | Y | N | N | N | N |
| Lock | The lock command is used to lock a drive, enabling direct disk access for a program. | Y | N | N | N | N |
| Lodctr | The lodctr command is used to update registry values related to performance counters. | Y | Y | Y | Y | Y |
| Logman | The logman command is used to create and manage Event Trace Session and Performance logs. The logman command also supports many functions of Performance Monitor. | N | Y | Y | Y | Y |
| Logoff | The logoff command is used to terminate a session. | N | Y | Y | Y | Y |
| Lpq | The lpq command displays the status of a print queue on a computer running Line Printer Daemon (LPD). | Y | Y | Y2 | Y2 | Y2 |
| Lpr | The lpr command is used to send a file to a computer running Line Printer Daemon (LPD). | Y | Y | Y2 | Y2 | Y2 |
| Makecab | The makecab command is used to losslessly compress one or more files. The makecab command is sometimes called Cabinet Maker. | N | Y | Y | Y | Y |
| Manage-bde | The manage-bde command is used to configure BitLocker Drive Encryption from the command line. | N | N | N9 | Y | Y |
| Md | The md command is the shorthand version of the mkdir command. | Y | Y | Y | Y | Y |
| Mem | The mem command shows information about used and free memory areas and programs that are currently loaded into memory in the MS-DOS subsystem. | Y | Y1 | Y1 | Y1 | Y1 |
| Memmaker | The memmaker command is used to start MemMaker, a memory optimization tool. | Y | N | N | N | N |
| Mkdir | The mkdir command is used to create a new folder. | Y | Y | Y | Y | Y |
| Mklink | The mklink command is used to create a symbolic link. | N | N | Y | Y | Y |
| Mode | The mode command is used to configure system devices, most often COM and LPT ports | Y | Y | Y | Y | Y |
| Mofcomp |  | N | Y | Y | Y | Y |
| More | . The more command is used to display the information contained in a text file. The more command can also be used to paginate the results of any other Command Prompt or MS-DOS command. | Y | Y | Y | Y | Y |
| Mount | The mount command is used to mount Network File System (NFS) network shares | N | N | Y3 | Y3 | N |
| Mountvol | The mountvol command is used to display, create, or remove volume mount points. | N | Y | Y | Y | Y |
| Move | The move command is used to move one or files from one folder to another. The move command is also used to rename directories. | Y | Y | Y | Y | Y |
| Mrinfo | The mrinfo command is used to provide information about a router's interfaces and neighbors. | N | Y | Y | Y | Y |
| Msav | The msav command starts Microsoft Antivirus. | N | N | N | N | N |
| Msbackup | The msbackup command starts Microsoft Backup, a tool used to back up and restore one or more files. | N | N | N | N | N |
| Mscdex | The mscdex command is used to provide CD-ROM access to MS-DOS. | Y | N | N | N | N |
| Msd | The msd command starts Microsoft Diagnostics, a tool used to display information about your computer. | N | N | N | N | N |
| [Msg](http://pcsupport.about.com/od/commandlinereference/p/msg-command.htm) | The msg command is used to send a message to a user. | N | Y | Y | Y | Y |
| Msiexec | The msiexec command is used to start Windows Installer, a tool used to install and configure software. | N | Y | Y | Y | Y |
| Muiunattend | The muiunattend command starts the Multilanguage User Interface unattended setup process | N | N | Y | Y | Y |
| Nbtstat | The nbtstat command is used to show TCP/IP information and other statistical information about a remote computer. | Y | Y | Y | Y | Y |
| [Net](http://pcsupport.about.com/od/commandlinereference/p/net-command.htm) | The net command is used to display, configure, and correct a wide variety of network settings. | Y | Y | Y | Y | Y |
| [Net1](http://pcsupport.about.com/od/commandlinereference/p/net-command.htm) | The net1 command is used to display, configure, and correct a wide variety of network settings. | N | Y | Y | Y | Y |
| Netcfg | The netcfg command is used to install the Windows Preinstallation Environment (WinPE), a lightweight version of Windows used to deploy workstations. | N | N | Y | Y | Y |
| Netsh | The netsh command is used to start Network Shell, a command-line utility used to manage the network configuration of the local, or a remote, computer. | N | Y | Y | Y | Y |
| [Netstat](http://pcsupport.about.com/od/commandlinereference/p/netstat-command.htm) | The netstat command is most commonly used to display all open network connections and listening ports. | Y | Y | Y | Y | Y |
| Nfsadmin | The nfsadmin command is used to manage Server for NFS or Client for NFS from the command line. | N | N | Y3 | Y3 | N |
| Nlsfunc | The nlsfunc command is used to load information specific to a particular country or region. | Y | Y1 | Y1 | Y1 | Y1 |
| Nltest | The nltest command is used to test secure channels between Windows computers in a domain and between domain controllers that are trusting other domains. | N | N | N | Y | Y |
| Nslookup | The nslookup is most commonly used to display the hostname of an entered IP address. The nslookup command queries your configured DNS server to discover the IP address. | N | Y | Y | Y | Y |
| Ntbackup | The ntbackup command is used to perform various backup functions from the Command Prompt or from within a batch or script file. | N | Y | N | N | N |
| Ntsd | The ntsd command is used to perform certain command line debugging tasks. | N | Y | N | N | N |
| Ocsetup | The ocsetup command starts the Windows Optional Component Setup tool, used to install additional Windows features. | N | N | Y | Y | Y |
| Openfiles | The openfiles command is used to display and disconnect open files and folders on a system. | N | Y | Y | Y | Y |
| Path | The path command is used to display or set a specific path available to executable files. | Y | Y | Y | Y | Y |
| Pathping | The pathping command functions much like the tracert command but will also report information about network latency and loss at each hop. | N | Y | Y | Y | Y |
| Pause | The pause command is used within a batch or script file to pause the processing of the file. When the pause command is used, a "Press any key to continue…" message displays in the command window. | Y | Y | Y | Y | Y |
| Pentnt | The pentnt command is used to detect floating point division errors in the Intel Pentium chip. The pentnt command is also used to enable floating point emulation and disable floating point hardware. | N | Y | N | N | N |
| [Ping](http://pcsupport.about.com/od/commandlinereference/p/ping-command.htm) | The ping command sends an Internet Control Message Protocol (ICMP) Echo Request message to a specified remote computer to verify IP-level connectivity. | Y | Y | Y | Y | Y |
| Pkgmgr | The pkgmgr command is used to start the Windows Package Manager from the Command Prompt. Package Manager installs, uninstalls, configures, and updates features and packages for Windows. | N | N | Y | Y | Y |
| Pnpunattend | The pnpunattend command is used to automate the installation of hardware device drivers. | N | N | Y | Y | Y |
| Pnputil | The pnputil command is used to start the Microsoft PnP Utility, a tool used to install a Plug and Play device from the command line. | N | N | Y | Y | Y |
| Popd | The popd command is used to change the current directory to the one most recently stored by the pushd command. The popd command is most often utilized from within a batch or script file. | N | Y | Y | Y | Y |
| Power | The power command is used to reduce the power consumed by a computer by monitoring software and hardware devices. | Y | N | N | N | N |
| Powercfg | The powercfg command is used to manage the Windows power management settings from the command line. | N | Y | Y | Y | Y |
| Print | The print command is used to print a specified text file to a specified printing device. | Y | Y | Y | Y | Y |
| Prompt | The prompt command is used to customize the appearance of the prompt text in Command Prompt or MS-DOS. | Y | Y | Y | Y | Y |
| Pushd | The pushd command is used to store a directory for use, most commonly from within a batch or script program. | N | Y | Y | Y | Y |
| Pwlauncher | The pwlauncher command is used to enable, disable, or show the status of your Windows To Go startup options. | N | N | N | N | Y |
| Qappsrv | The qappsrv command is used to display all Remote Desktop Session Host servers available on the network. | N | Y | Y | Y | Y |
| Qbasic | The qbasic command starts QBasic, the MS-DOS based programming environment for the BASIC programming language. | Y4 | N | N | N | N |
| Qprocess | The qprocess command is used to display information about running processes. | N | Y | Y | Y | Y |
| Query | The query command is used to display the status of a specified service. | N | N | Y | Y | Y |
| Quser | The quser command is used to display information about users currently logged on to the system. | N | N | Y | Y | Y |
| Qwinsta | The qwinsta command is used to display information about open Remote Desktop Sessions. | N | Y | Y | Y | Y |
| Rasautou | The rasautou command is used to manage Remote Access Dialer AutoDial addresses. | N | Y | Y | Y | Y |
| Rasdial | The rasdial command is used to start or end a network connection for a Microsoft client. | N | Y | Y | Y | Y |
| Rcp | The rcp command is used to copy files between a Windows computer and a system running the rshd daemon. | N | Y | Y8 | Y8 | N |
| Rd | The rd command is the shorthand version of the rmdir command. | Y | Y | Y | Y | Y |
| Rdpsign | The rdpsign command is used to sign a Remote Desktop Protocol (RDP) file. | N | N | N | Y | N |
| Reagentc | The reagentc command is used to configure the Windows Recovery Environment (RE). | N | N | N | Y | Y |
| Recimg |  | N | N | N | N | Y |
| Recover | The recover command is used to recover readable data from a bad or defective disk. | N | Y | Y | Y | Y |
| Reg | The reg command is used to manage the Windows Registry from the command line. The reg command can perform common registry functions like adding registry keys, exporting the registry, etc. | N | Y | Y | Y | Y |
| Regini | The regini command is used to set or change registry permissions and registry values from the command line. | N | Y | Y | Y | Y |
| Register-cimprovider | The register-cimprovider command is used to register a Common Information Model (CIM) Provider in Windows. | N | N | N | N | Y |
| Regsvr32 | The regsvr32 command is used to register a DLL file as a command component in the Windows Registry | N | Y | Y | Y | Y |
| Relog | The relog command is used to create new performance logs from data in existing performance logs. | N | Y | Y | Y | Y |
| Rem | The rem command is used to record comments or remarks in a batch or script file. | Y | Y | Y | Y | Y |
| Ren | The ren command is the shorthand version of the rename command. | Y | Y | Y | Y | Y |
| Rename | The rename command is used to change the name of the individual file that you specify. | Y | Y | Y | Y | Y |
| Repair-bde | The repair-bde command is used to repair or decrypt a damaged drive that's been encrypted using BitLocker. | N | N | N | Y | Y |
| Replace | The replace command is used to replace one or more files with one or more other files. | Y | Y | Y | Y | Y |
| Reset | The reset command, executed as reset session, is used to reset the session subsystem software and hardware to known initial values. | N | Y | Y | Y | Y |
| Restore | The restore command is used to restore files that were backed up using the backup command. | N | N | N | N | N |
| Rexec | The rexec command is used to run commands on remote computers running the rexec daemon. | N | Y | Y8 | N | N |
| Rmdir | The rmdir command is used to delete an existing or completely empty folder. | Y | Y | Y | Y | Y |
| Robocopy | The robocopy command is used to copy files and directories from one location to another. This command is also called Robust File Copy. | N | N | Y | Y | Y |
| Route | The route command is used to manipulate network routing tables. | Y | Y | Y | Y | Y |
| Rpcinfo | The rpcinfo command makes a remote procedure call (RPC) to an RPC server and reports what it finds. | N | N | Y3 | Y3 | N |
| Rpcping | The rpcping command is used to ping a server using RPC. | N | N | Y | Y | Y |
| Rsh | The rsh command is used to run commands on remote computers running the rsh daemon. | N | Y | Y8 | Y8 | N |
| Rsm | The rsm command is used to manage media resources using Removable Storage. | N | Y | Y | N | N |
| Runas | The runas command is used to execute a program using another user's credentials. | N | Y | Y | Y | Y |
| Rwinsta | The rwinsta command is the shorthand version of the reset session command. | N | Y | Y | Y | Y |
| Sc | The sc command is used to configure information about services. The sc command communicates with the Service Control Manager. | N | Y | Y | Y | Y |
| Scandisk | The scandisk command is used to start Microsoft ScanDisk, a disk repair program. | Y | N | N | N | N |
| Scanreg | The scanreg command starts Windows Registry Checker, a basic registry repair program and backup utility. | Y | N | N | N | N |
| Schtasks | The schtasks command is used to schedule specified programs or commands to run a certain times. The schtasks command can be used to create, delete, query, change, run, and end scheduled tasks. | N | Y | Y | Y | Y |
| Sdbinst | The sdbinst command is used to deploy customized SDB database files. | N | Y | Y | Y | Y |
| Secedit | The secedit command is used to configure and analyze system security by comparing the current security configuration to a template. | N | Y | Y | Y | Y |
| Set | The set command is used to display, enable, or disable [environment variables](http://pcsupport.about.com/od/termse/g/enviro_variable.htm) in MS-DOS or from the Command Prompt. | Y | Y | Y | Y | Y |
| Setlocal | The setlocal command is used to start the localization of environment changes inside a batch or script file. | N | Y | Y | Y | Y |
| Setspn | The setspn command is used to manage the Service Principal Names (SPN) for an Active Directory (AD) service account. | N | N | N | Y | Y |
| Setver | The setver command is used to set the MS-DOS [version number](http://pcsupport.about.com/od/termsv/g/version-number.htm) that MS-DOS reports to a program. | Y | Y1 | Y1 | Y1 | Y1 |
| Setx | The setx command is used to create or change environment variables in the user environment or the system environment. | N | N | Y | Y | Y |
| [Sfc](http://pcsupport.about.com/od/termss/p/sfc-command-system-file-checker.htm) | The sfc command is used to verify and replace important Windows system files. The sfc command is also referred to as System File Checker or Windows Resource Checker depending on the operating system. | N | Y | Y | Y | Y |
| Shadow | The shadow command is used to monitor another Remote Desktop Services session. | N | Y | Y | Y | N |
| Share | The share command is used to install file locking and file sharing functions in MS-DOS. | Y | Y1 | Y1 | Y1 | Y1 |
| Shift | The shift command is used to change the position of replaceable parameters in a batch or script file. | Y | Y | Y | Y | Y |
| Showmount | The showmount command is used to display information about NFS mounted file systems. | N | N | Y3 | Y3 | N |
| [Shutdown](http://pcsupport.about.com/od/commandlinereference/p/shutdown-command.htm) | The shutdown command can be used to shut down, restart, or log off the current system or a remote computer. | N | Y | Y | Y | Y |
| Smartdrv | The smartdrv command installs and configures SMARTDrive, a disk caching utility for MS-DOS. | Y | N | N | N | N |
| Sort | The sort command is used to read data from a specified input, sort that data, and return the results of that sort to the Command Prompt screen, a file, or another output device. | Y | Y | Y | Y | Y |
| Start | The start command is used to open a new command line window to run a specified program or command. The start command can also be used to start an application without creating a new window. | Y | Y | Y | Y | Y |
| Subst | The subst command is used to associate a local path with a drive letter. The subst command is a lot like the [net use command](http://pcsupport.about.com/od/commandlinereference/p/net-use-command.htm) except a local path is used instead of a shared network path. | Y | Y | Y | Y | Y |
| Sxstrace | The sxstrace command is used to start the WinSxs Tracing Utility, a programming diagnostic tool. | N | N | Y | Y | Y |
| Sys | The sys command is used to copy the MS-DOS system files and command interpreter to a disk. | Y | N | N | N | N |
| Systeminfo | The systeminfo command is used to display basic Windows configuration information for the local or a remote computer. | N | Y | Y | Y | Y |
| Takeown | The takedown command is used to regain access to a file that that an administrator was denied access to when reassigning ownership of the file. | N | N | Y | Y | Y |
| Taskkill | The taskkill command is used to terminate a running task. The taskkill command is the command line equivalent of ending a process in Task Manager in Windows. | N | Y | Y | Y | Y |
| Tasklist | Displays a list of applications, services, and the Process ID (PID) currently running on either a local or a remote computer. | N | Y | Y | Y | Y |
| Tcmsetup | The tcmsetup command is used to setup or disable the Telephony Application Programming Interface (TAPI) client. | N | Y | Y | Y | Y |
| Telnet | The telnet command is used to communicate with remote computers that use the Telnet protocol. | Y | Y | Y5 | Y5 | Y5 |
| Tftp | The tftp command is used to transfer files to and from a remote computer that's running the Trivial File Transfer Protocol (TFTP) service or daemon. | N | Y | Y6 | Y6 | Y6 |
| Time | The time command is used to show or change the current time. | Y | Y | Y | Y | Y |
| Timeout | The timeout command is typically used in a batch or script file to provide a specified timeout value during a procedure. The timeout command can also be used to ignore keypresses. | N | N | Y | Y | Y |
| Title | The title command is used to set the Command Prompt window title. | N | Y | Y | Y | Y |
| Tlntadmn | The tlntadmn command is used to administer a local or remote computer running Telnet Server. | N | Y | Y7 | Y7 | Y7 |
| Tpmvscmgr | The tpmvscmgr command is used to create and destroy TPM virtual smart cards. | N | N | N | N | Y |
| Tracerpt | The tracerpt command is used to process event trace logs or real-time data from instrumented event trace providers. | N | Y | Y | Y | Y |
| [Tracert](http://pcsupport.about.com/od/commandlinereference/p/tracert-command.htm) | The tracert command sends Internet Control Message Protocol (ICMP) Echo Request messages to a specified remote computer with increasing Time to Live (TTL) field values and displays the IP address and hostname, if available, of the router interfaces between the source and destination. | Y | Y | Y | Y | Y |
| Tree | The tree command is used to graphically display the folder structure of a specified drive or path. | Y | Y | Y | Y | Y |
| Tscon | The tscon command is used to attach a user session to a Remote Desktop session. | N | Y | Y | Y | Y |
| Tsdiscon | The tsdiscon command is used to disconnect a Remote Desktop session. | N | Y | Y | Y | Y |
| Tskill | The tskill command is used to end the specified process. | N | Y | Y | Y | Y |
| Tsshutdn | The tsshutdn command is used to remotely shut down or restart a terminal server. | N | Y | N | N | N |
| Type | The type command is used to display the information contained in a text file. | Y | Y | Y | Y | Y |
| Typeperf | The typerperf command displays performance data in the Command Prompt window or writes the data to specified log file. | N | Y | Y | Y | Y |
| Tzutil | The tzutil command is used to display or configure the current system's time zone. The tzutil command can also be used to enable or disable Daylight Saving Time adjustments. | N | N | N | Y | Y |
| Umount | The umount command is used to remove Network File System (NFS) mounted network shares | N | N | Y3 | Y3 | N |
| Undelete | The undelete command is used to undo a deletion performed with the MS-DOS delete command. | N | N | N | N | N |
| Unformat | The unformat command is used to undo the formatting on a drive performed by the MS-DOS format command. | N | N | N | N | N |
| Unlock | The unlock command is used to unlock a drive, disabling direct disk access for a program. | Y | N | N | N | N |
| Unlodctr | The unlodctr command removes Explain text and Performance counter names for a service or device driver from the Windows Registry. | N | Y | Y | Y | Y |
| Vaultcmd | The vaultcmd command is used to create, remove, and show stored credentials. | N | N | N | Y | Y |
| Ver | The ver command is used to display the current Windows or MS-DOS [version number](http://pcsupport.about.com/od/termsv/g/version-number.htm). | Y | Y | Y | Y | Y |
| Verify | The verify command is used to enable or disable the ability of Command Prompt, or MS-DOS, to verify that files are written correctly to a disk. | Y | Y | Y | Y | Y |
| [Vol](http://pcsupport.about.com/od/commandlinereference/p/vol-command.htm) | The vol command shows the volume label and serial number of a specified disk, assuming this information exists. | Y | Y | Y | Y | Y |
| Vsafe | The vsafe command is used to start VSafe, a basic virus protection system for MS-DOS. | N | N | N | N | N |
| Vssadmin | The vssadmin command starts the Volume Shadow Copy Service administrative command line tool which displays current volume shadow copy backups and all installed shadow copy writers and providers | N | Y | Y | Y | Y |
| W32tm | The w32tm command is used to diagnose issues with Windows Time. | N | Y | Y | Y | Y |
| Waitfor | The waitfor command is used to send or wait for a signal on a system. | N | N | Y | Y | Y |
| Wbadmin | The wbadmin command is used start and stop backup jobs, display details about a previous backup, list the items within a backup, and report on the status of a currently running backup. | N | N | Y | Y | Y |
| Wecutil | The wecutil command is used to mange subscriptions to events that are forwarded from WS-Management supported computers. | N | N | Y | Y | Y |
| Wevtutil | The wevtutil command starts the Windows Events Command Line Utility which is used to manage event logs and publishers. | N | N | Y | Y | Y |
| Where | The where command is used to search for files that match a specified pattern. | N | N | Y | Y | Y |
| Whoami | The whoami command is used to retrieve user name and group information on a network. | N | N | Y | Y | Y |
| Winmgmt |  | N | Y | Y | Y | Y |
| Winrm | The winrm command is used to start the command line version of Windows Remote Management, used to manage secure communications with local and remote computers using web services. | N | N | Y | Y | Y |
| Winrs | The winrs command is used to open a secure command window with a remote host. | N | N | Y | Y | Y |
| Winsat | The winsat command starts the Windows System Assessment Tool, a program that assesses various features, attributes, and capabilities of a computer running Windows. | N | N | Y | Y | Y |
| Wmic | The wmic command starts the Windows Management Instrumentation Command line (WMIC), a scripting interface that simplifies the use of Windows Management Instrumentation (WMI) and systems managed via WMI. | N | Y | Y | Y | Y |
| Wsmanhttpconfig | The wsmanhttpconfig command is used to manage aspects of the Windows Remote Management (WinRM) service. | N | N | Y | Y | Y |
| [Xcopy](http://pcsupport.about.com/od/commandlinereference/p/xcopy-command.htm) | The xcopy command can copy one or more files or directory trees from one location to another. The xcopy command is generally considered a more "powerful" version of the copy command though the robocopy command trumps even xcopy. | Y | Y | Y | Y | Y |
| Xwizard | The xwizard command, short for Extensible Wizard, is used to register data in Windows, often from a preconfigured XML file. | N | N | N | Y | Y |

[1] This command is not available in 64-bit versions of this operating system.

[2] This command is only available in this version of Windows when LPD Print Service is turned on from Windows Features.

[3] This command is only available in this version of Windows when Services for NFS is turned on from Windows Features.

[4] This command is only available in this version of Windows when copied from the installation media.

[5] This command is only available in this version of Windows when Telnet Client is turned on from Windows Features.

[6] This command is only available in this version of Windows when TFTP Client is turned on from Windows Features.

[7] This command is only available in this version of Windows when Telnet Server is turned on from Windows Features.

[8] This command is only available in this version of Windows when Subsystem for UNIX-based Applications is turned on from Windows Features and Utilities and SDK for UNIX-based Applications is downloaded for Windows Vista [here](http://www.microsoft.com/en-us/download/details.aspx?id=23754) or Windows 7 [here](http://www.microsoft.com/en-us/download/details.aspx?id=2391).

[9] While there is no actual manage-bde command in Windows Vista, there is a manage-bde.wsf script that can be used to perform similar tasks via CScript.

[10] This command is only available in this version of Windows from the Command Prompt available in [System Recovery Options](http://pcsupport.about.com/od/termss/p/system-recovery-options.htm).

**21 Command Prompt Tricks and Hacks**

Command Prompt Tricks, Hacks, and Secrets in Windows 7, 8, Vista, and XP

The Windows [Command Prompt](http://pcsupport.about.com/od/termsc/p/command-prompt.htm) tool, and many of its [commands](http://pcsupport.about.com/od/termsc/g/commands.htm), might seem boring or even relatively useless at first glance, but as anyone who has ever used the Command Prompt very often can tell you, there's much to love!

Below are several Command Prompt tricks and other Command Prompt hacks that I guarantee will get you excited about many of the mundane sounding [Command Prompt commands](http://pcsupport.about.com/od/commandlinereference/tp/command-prompt-commands-p1.htm) like telnet, tree, or robocopy... okay, robocopy sounds pretty cool.

Some of these Command Prompt tricks and hacks are special features or uses of the Command Prompt itself, while others are just neat or relatively unknown things you can do with certain commands. Enjoy!

**1. Use Ctrl-C to Abort a Command**



Just about any command can be stopped in its tracks with the abort command: [Ctrl-C](http://pcsupport.about.com/od/termsc/g/ctrl-c.htm).

If you haven't actually executed a command, you can just backspace and erase what you've typed, but if you've already executed it then you can do a Ctrl-C to stop it.

Warning: Ctrl-C isn't a magic wand and it can't undo things that aren't undoable, like a partially complete [format command](http://pcsupport.about.com/od/commandlinereference/p/format-command.htm). However, for things like the dir command that seem to go on forever or questions you're asked at the prompt that you don't know the answer to, the abort command is an excellent Command Prompt trick to know.

**2. View a Command's Results One Page (or Line) at a Time**



Ever run a command, like the dir command, that produces so much information on the screen that it's almost useless? You're not alone.

One way around this is to execute the command in a special way so whatever information is generated is shown to you one page, or one line, at a time.

To do this, just type the command, the dir command for example, and then follow it with the pipe [redirection operator](http://pcsupport.about.com/od/termsr/a/redirection-operator.htm) and then the more command.

For example, executing dir /s | more will generate the thousands of lines of results that you expect from the dir command, but the more command will pause each page of results with -- More -- at the bottom of the page, indicating that the command is not done running.

Just press the space bar to advance by page or press the Enter key to advance one line at a time.

See Command Prompt Trick #7 below for a different solution to this problem.

**3. Run Command Prompt as an Administrator Automatically**



Many commands require that you execute them from an [elevated Command Prompt](http://pcsupport.about.com/od/commandlinereference/f/elevated-command-prompt.htm) in Windows - in other words, execute them from a Command Prompt that's run as an administrator.

You can always right-click on any Command Prompt shortcut and chooseRun as administrator but creating a shortcut to do the same thing can be a huge time saver if you're a frequent Command Prompt power user.

To complete this Command Prompt trick, just create a Command Prompt shortcut on the desktop, enter the shortcut's properties and then select the Run as administrator box located in the Advanced button on theShortcut tab.

**4. Become a Command Prompt Power User with Function Keys**



The fact that the function keys actually do something in the Command Prompt is maybe one of the best kept secrets about the tool:

F1: Pastes the last executed command (character by character)
F2: Pastes the last executed command (up to the entered character)
F3: Pastes the last executed command
F4: Deletes current prompt text up to the entered character
F5: Pastes recently executed commands (does not cycle)
F6: Pastes ^Z to the prompt
F7: Displays a selectable list of previously executed commands
F8: Pastes recently executed commands (cycles)
F9: Asks for the number of the command from the F7 list to paste

Command Prompt Trick #17 is full of arrow key shortcuts, a few of which are similar to these function key tricks.

**5. Hack the Prompt Text**



Did you know that the prompt itself in the Command Prompt is completely customizable thanks to the prompt command? It is, and when I say customizable, I mean really customizable.

Instead of C:\>, you can set the prompt to any text you want, have it include the time, the current drive, the Windows [version number](http://pcsupport.about.com/od/termsv/g/version-number.htm), you name it.

One useful example is prompt $m$p$g which will show the full path of a mapped drive in the prompt, alongside the drive letter.

You can always execute prompt alone, without options, to return it to its sometimes boring default.

**6. Get Help for Any Command**



Believe it or not, the [help command](http://pcsupport.about.com/od/commandlinereference/p/help-command.htm) does not provide help for every Command Prompt command. However, any command can be suffixed with the /? option, usually called the [help switch](http://pcsupport.about.com/od/termshm/g/help-switch.htm), to display detailed information about the command's syntax and often times even some examples.

I doubt that the help switch is the coolest Command Prompt trick you've ever heard of, but it's hard to disagree that it's one of the more useful.

Unfortunately, neither the help command nor the help switch offer much in the way of explaining how to interpret the syntax. See [How To Read Command Syntax](http://pcsupport.about.com/od/commandlinereference/a/command-syntax.htm) if you need help with that.

**7. Save a Command's Output to a File**



An incredibly useful Command Prompt trick is the use of [redirection operators](http://pcsupport.about.com/od/termsr/a/redirection-operator.htm), specifically the > and >> operators.

These little characters let you redirect the output of a command to a file, giving you a saved version of whatever data the command produced in the Command Prompt window.

For example, let's say you're about to post a computer problem to an online forum and you want to provide really accurate information about your computer. An easy way to do that would be to use the systeminfo command with a redirection operator.

For example, you might execute systeminfo > c:\mycomputerinfo.txtto save the information provided by the systeminfo command to a file. You could then attach the file to your forum post.

See [How To Redirect Command Output to a File](http://pcsupport.about.com/od/commandlinereference/a/redirect-command-output-to-file.htm) for more examples and a better explanation of how to use redirection operators.

**8. View Your Hard Drive's Entire Directory Structure**



I think one of the neatest little commands is the tree command. With tree, you can create a kind of map of your computer's directories.

Execute tree from any directory to see the folder structure under that directory.

Tip: With so much information, it's probably a good idea to export the results of the tree command to a file. For example, tree /a > c:\treeresults.txt, just as explained in Command Prompt Trick #7.

**9. Customize the Command Prompt Title Bar Text**



Tired of that Command Prompt title bar text? No problem, just use the title command to change it to whatever you like.

For example, let's say your name is Maria Smith, and you want to express your ownership of the Command Prompt: execute title Property of Maria Smith and the Command Prompt's title bar will change immediately.

The change won't stick, so the next time you open Command Prompt the title bar will be back to normal.

The title command is usually used to help give a custom appearance in script files and batch files... not that I'm saying titling it with your name isn't a good idea!

**10. Copy From the Command Prompt**



As you may or may not know, copying from the Command Prompt is not as easy as copying from other programs, which is part of the reason why saving a command's output to a file, Command Prompt Trick #7, is so handy.

But what if you do just want to copy a short section of text to the clipboard? It's not too hard but it's not very intuitive either.

Right-click anywhere in the Command Prompt window and choose Mark. Now, highlight with your left mouse button whatever you'd like to copy. Once your selection is made, press Enter.

Now you can paste that information into whatever program you'd like.

**11. Open the Command Prompt From Any Location**



If you've ever worked in the Command Prompt for very long, you know that it can be really frustrating executing the cd/chdir command over and over again to get to the right directory you want to work from.

Luckily, there's a super easy Command Prompt trick that will let you open a Command Prompt window from whatever folder you're viewing in Windows.

All you have to do is navigate, in Windows, to the folder you want to start working from in the Command Prompt. Once there, hold down yourShift key while you right-click anywhere in the folder. Once the menu pops up, you'll notice an entry that's not usually there: Open command window here.

Click it and you'll start a new instance of the Command Prompt, ready and waiting at the right location!

If you're a Command Prompt power user, you'll immediately recognize the value in this little trick.

**12. Drag and Drop For Easy Path Name Entry**



Most Command Prompt commands require you, or have options, to specify full paths to files or folders but typing out a long path can be frustrating, especially when you miss a character and have to start over.

For example, in Windows 7, the path to the Accessories group in my Start Menu isC:\Users\Tim\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Accessories. Who wants to type that all in manually? Not me.

Luckily there's a Command Prompt trick that makes this much easier: drag and drop.

Just navigate to the folder you want the path for in Windows Explorer. Once there, drag the folder or file to the Command Prompt window and let go. Like magic, the full path is inserted, saving you a considerable amount of typing depending on the length and complexity of the path name.

Note: Unfortunately, the drag and drop feature does not work in an elevated Command Prompt.

**13. Shut Down or Restart Another Computer**



System administrators in a business environment do this all the time for lots of reasons, but you can also shut down or restart another computer on your network, all from your computer's Command Prompt.

The easiest way to shut down a computer remotely is to executeshutdown /i from the Command Prompt which will open the Remote Shutdown Dialog, shown here. Just enter the name of the remote computer (which you can get by running the hostname command on the other PC), choose what you want to do (restart or shutdown), select some other options and then click OK.

So whether you're brushing up on your command skills or just scaring a family member, this Command Prompt trick is a fun one.

You can also shut down or restart another computer strictly from the Command Prompt with the [shutdown command](http://pcsupport.about.com/od/commandlinereference/p/shutdown-command.htm), without using the Remote Shutdown Dialog.

**14. Use Robocopy as a Backup Solution**



Thanks to the robocopy command, you don't need to use Window's backup software or install a third party program to manage your backups.

Just execute robocopy c:\users\tim\documents f:\backup\documents /copyall /e /r:0 /dcopy:t /mir, obviously replacing the source and destination folders with whatever you'd like to backup and where. The robocopy command with these options functions identically to an incremental backup software tool, keeping both locations in sync.

You don't have the robocopy command if you're using Windows XP or earlier. However, you do have the [xcopy command](http://pcsupport.about.com/od/commandlinereference/p/xcopy-command.htm), which can be used to do something very similar: xcopy c:\users\tim\documents f:\backup\documents /c /d /e /h /i /k /q /r /s /x /y.

No matter which command you choose to use, just create a script file containing the command and schedule it to run in Task Scheduler and you'll have your own custom made backup solution.

I've chosen to use the robocopy command on my personal computers as my only local backup solution because I like the level of control it gives me. Hopefully you take that as a vote of confidence in this incredibly useful Command Prompt trick.

**15. View Your Computer's Important Network Information**



Maybe just for your own information, but certainly when you're troubleshooting a network or Internet problem, you'll probably at some point need to know details about your computer's network connection.

Everything you'd want to know about your network connection is available somewhere in the Control Panel in Windows, but it's much easier to find, and much better organized, in the results from the ipconfig command.

Open Command Prompt and execute ipconfig /all. What displays on screen next is everything important about your network connection: your [IP address](http://pcsupport.about.com/od/termsi/g/ip-address.htm), [hostname](http://pcsupport.about.com/od/termshm/g/hostname.htm), [DHCP](http://pcsupport.about.com/od/termsd/g/dhcp-dynamic-host-configuration-protocol.htm) server, [DNS](http://pcsupport.about.com/od/termsd/g/dns.htm) information, and much, much more.

Combine this hack with Command Prompt Trick #7 and you've got a very easy way to get information about your connection to someone helping you with a problem.

**16. Map a Local Folder Just Like a Network Drive**



The [net use command](http://pcsupport.about.com/od/commandlinereference/p/net-use-command.htm) is used to assign shared drives on a network to your own computer as a drive letter, but did you know there's another command that can be used to do the same thing to any folder on any of your local hard drives?

There is and it's called the subst command. Just execute the subst command, followed by the path of the folder you wish to appear as a drive. For example, let's say you want your C:\Windows\Fonts folder to appear as the Q: drive. Just execute subst q: c:\windows\fonts and you're set!

This Command Prompt trick makes accessing a particular location from the Command Prompt much easier.

**17. Access Previously Used Command with the Arrow Keys**



Another great Command Prompt trick has to be the use of the keyboard arrow keys to cycle through previously executed commands. The up and down arrow keys cycle through the commands you've entered and the right arrow automatically enters, character by character, the last command you executed.

This might not sound that interesting, but there are several situations where the arrow keys become huge time savers.

Consider this example: You've typed out 75 characters of a command and then try to execute it, only to find that you forgot to add an option at the very end. No problem, just hit the up arrow and the entire command is automatically entered in the Command Prompt window, ready for you to edit to make it work.

**18. Automatically Complete Commands with Tab Completion**



Tab completion is another Command Prompt trick that can save you lots of time, especially if your command has a file or folder name in it that you're not completely sure of.

To use tab completion in the Command Prompt, just enter the command and then the portion of the path that you do know, if at all. Then press the tab key over and over to cycle through all of the available possibilities.

For example, let's say you want to change directories to some folder in the Windows directory but you're not sure what it's named. Type cd c:\windows\ and then press tab until you see the folder you're looking for. The results cycle or you can use Shift+Tab to step through the results in reverse.

**19. Find a Website's IP Address**



Like to know the [IP address](http://pcsupport.about.com/od/termsi/g/ip-address.htm) of a website? There are a few different commands you can use to find it.

Let's use the nslookup command to find the IP address of About.com. Just execute nslookup about.com and view the result. Make sure you don't confuse any [private IP addresses](http://pcsupport.about.com/od/termsp/g/private-ip-address.htm) that also show up in the nslookup results alongside About.com's [public IP address](http://pcsupport.about.com/od/termsp/g/public-ip-address.htm).

Another way to find a site's IP address is to use the [ping command](http://pcsupport.about.com/od/commandlinereference/p/ping-command.htm). Execute ping about.com and then look at the IP address between the brackets in the results shown.

Using either Command Prompt trick, the result is 207.241.148.80.

**20. Copy & Paste Easier with QuickEdit Mode**



How about an even easier way to copy from the Command Prompt? And a secret way to easily paste?

Just right-click on the Command Prompt title bar and select Properties. On the Options tab, in the Edit Options section, check the QuickEdit Mode box and then click OK.

Enabling QuickEdit Mode is like having Mark enabled all the time so selecting text to copy is really easy.

But it also enables an easy way to paste into the Command Prompt: just right click once and whatever is in the clipboard is pasted in the Command Prompt window. Normally, pasting involves right-clicking and selecting Paste.

**21. Watch Star Wars Episode IV**



Yes, you read that correctly, you can watch an ASCII version of the full Star Wars Episode IV movie right in the Command Prompt window!

Just open Command Prompt and execute telnet towel.blinkenlights.nl. The movie will start immediately. This isn't a terribly productive use of the Command Prompt, nor is it really a trick of the Command Prompt or any command, but it sure is fun!

Note: The telnet command is not enabled by default in Windows 7 or Windows Vista but can be turned on by enabling Telnet Client from Windows Features in the Programs and Features [applet](http://pcsupport.about.com/od/termsc/g/control-panel-applet.htm) in [Control Panel](http://pcsupport.about.com/od/termsc/p/control-panel.htm). If you'd rather not enable [Telnet](http://pcsupport.about.com/od/termstz/g/telnet.htm) but would like to see the movie, you can also watch it in your browser [here](http://www.asciimation.co.nz/).

**Add Command Prompt to the Windows Explorer Right Click Menu**

You can also use other .exe files instead of Command Prompt Simply change the @=” your choice:” in line 3 & @=”your choice.exe /k cd #1” in last line.

Here is how to add Command Prompt to the right click menu on a file in Windows Explorer. Create a text file, type in the following lines and save it as addprompt.reg.(file name can be name as you like)

Windows Registry Editor Version 5.00

 [HKEY\_CLASSES\_ROOT\\*\shell\Command]

 @="Command Prompt:"

 [HKEY\_CLASSES\_ROOT\\*\shell\Command\Command]

 @="cmd.exe /k cd %1"

Here is how to add Command Prompt to the right click menu on a folder in Windows Explorer. Create a text file, type in the following lines and save it as addprompt.reg.

 Windows Registry Editor Version 5.00

 [HKEY\_CLASSES\_ROOT\Directory\shell\Command]

 @="Command Prompt:"

 [HKEY\_CLASSES\_ROOT\Directory\shell\Command\Command]

 @="cmd.exe /k cd %1"

Here is how to add Command Prompt to the Desktop right click menu in Windows Explorer. Create a text file, type in the following lines and save it as addprompt.reg.

Windows Registry Editor Version 5.00

 [HKEY\_CLASSES\_ROOT\Directory\Background\shell\Command]

 @="Command Prompt:"

 [HKEY\_CLASSES\_ROOT\Directory\Background\shell\Command\Command]

 @="cmd.exe /k cd %1"

Save this out and double click the file. Note this will modify the registry but we promise it is safe. Your anti-virus software might ask you to confirm the registry change and it is safe to allow it.

This adds [Command Prompt](http://cplus.about.com/od/glossar1/g/commanddefn.htm) to the Windows Explorer right click menu. Just right click on a folder, click Command Prompt and you will be at the command prompt in the selected folder. No need to type CD and the full path anymore.

**Adding Restart & Shutdown menu in desktop right click**

Windows Registry Editor Version 5.00

[HKEY\_CLASSES\_ROOT\DesktopBackground\Shell\Restart Computer]

"icon"="shell32.dll,-221"

"Position"="Bottom"

[HKEY\_CLASSES\_ROOT\DesktopBackground\Shell\Shutdown Computer]

"icon"="shell32.dll,-329"

"Position"="Bottom"

[HKEY\_CLASSES\_ROOT\DesktopBackground\Shell\Restart Computer\command]

@="shutdown.exe -r -t 00 -f"

[HKEY\_CLASSES\_ROOT\DesktopBackground\Shell\Shutdown Computer\command]

@="shutdown.exe -s -t 00 -f"

Other Option id directly editing registry : Startmanu—run—regedit enter key will open the registry key folders and edit there directly.

Open up regedit.exe through the start menu search or run box, and then browse down to the following key: Examples are belows:-

[Add Control Panel to the Desktop Right-Click Menu](http://www.howtogeek.com/howto/windows-vista/add-control-panel-to-the-desktop-right-click-menu/)

HKEY\_CLASSES\_ROOT\Directory\Background\shell

Once you are there, you’ll want to right-click on “shell” and create a new key called Control Panel.



Under that one, you’ll want to right-click and create a new key called “command”.

Select the “command” key on the left-hand side, and then set the (Default) value on the right-hand side to the following:

Control.exe

You should immediately see the new item in your context menu, and it should be working. To remove, simply delete the Control Panel key.

Change the Registered Owner in Windows with regedit.exe

If you’ve ever wondered how to change the name of the person that Windows is registered to, this is the quick tip for you. It’s not all that useful, but it might come in handy if you got a computer from somebody else.

Open up regedit.exe through the start menu search box, and then locate the following registry key:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion



Now you can find the RegisteredOwner and RegisteredOrganization keys in the right-hand pane. Change them to whatever values you want.

To show off the registry owner/new changes, just type winver.exe into the start menu search box to see the About Windows box.

Prevent Windows Update from Forcibly Rebooting Your Computer with regedit

You’ve probably seen the dialog box prompting you to reboot your computer to finish installing important updates when you were very busy and could not reboot. It’s probably designed to pop up when we are the most busy.

However, there are a couple of ways that you can disable this behavior. The prompt will still display, but you won’t be forced to shut down your computer. The following article explains how to do it.

Open up regedit.exe through the start menu search box or run dialog, and navigate down to the following key, creating new keys if they don’t exist.

HKEY\_LOCAL\_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate\AU



Create a new 32-bit DWORD value named NoAutoRebootWithLoggedOnUsers and give it a value of 1 to prevent automatic reboot while users are logged on. Delete the value to put things back to the way they were.

**How To Open Disk Management From the Command Prompt**

Here's How:

In the Run Box type the following command or open Command prompt and type

diskmgmt.msc

...and then hit the Enter key or press the OK button.

Note: Technically, opening Disk Management from the Command Prompt would require that you actually open the Command Prompt program. However, running an executable program like diskmgmt.msc from the search or run box accomplishes the same thing.

**HOW TO MAKE AN NON-DELETE ABLE FOLDER**

[0](http://www.way2hacking.com/2012/03/how-to-make-non-delete-able-folder.html)

There is a way that if you want to create a folder that cannot be deleted by any user, then how could you proceed.

**Open Command Prompt as administrator**

             md\\.\<YourDrivehere>:\con  (Replace YourDriveHere with your desired drive and you can add further path too.)

Example : c:\md\\.\c:\con (will create a folder name con)

             Now, ask your friends to delete it, and they will be amazed as folder cannot be deleted. Actually, this is due to the bug that windows cannot create a folder named con, So, it can`t delete a folder which it don`t think is created.

To delete

However, if you ever want to delete this folder, Do remember that it won`t get deleted by normal deletion but rather by this command:

            rd\\.\ <YourDrivehere> :\con (Replace YourDriveHere with your desired drive and you can add further path too.)

Examle : c:\rd\\.\c:\con

ENABLE THE HIDDEN ADMINISTRATOR ACCOUNT ON WINDOWS 7 OR VISTA

Open Command Prompt as administrator

Type the command : net user administrator /active:yes (for Vista& Windows 7)

You should see a message that the command completed successfully. Log out, and you’ll now see the Administrator account as a choice.

**To Disable Administrator Account**

Open Command Prompt as administrator

Type the command : net user administrator /active:no (for Vista & Windows 7)

I don’t know for Windows 7

[How to Make an Exe File](http://www.wikihow.com/Make-an-Exe-File)

An Exe file, or a file with the ".exe" extension, is a type of executable file commonly used with Windows operating systems. The Exe file is one of the most useful files in Windows, as it is commonly used to install or run programs. Nearly all installers will be packaged as executables, and many small software programs (such as the games included with Windows) run entirely out of Exe files. If you need to package a program or a script for distribution or installation, you will need to learn how to make an Exe file yourself. Fortunately, Windows comes with a built-in utility for packaging executables, and using it is fairly simple.

Run the iExpress application in Windows. IExpress is a utility that is included with Windows, and it provides an easy way to package your program as an executable. To run the program, press the "Start" button and then click "Run." In the dialog box, type "iexpress.exe" and press the Enter key. If you use Windows Vista, you can just press the "Start" button and begin typing "iexpress," and the program's icon will appear in the search results.

2. Specify that you want to create a new executable. When the iExpress program launches, you will be asked to choose between opening an existing executable or creating a new one. Choose to create a new one by selecting the radio button that reads, "Create new self extraction directive file."



3. Specify the type of executable package you want to create. The next screen will ask you to choose between 3 options for the action that should be taken when a user opens your Exe file. The first is to extract the files and then run an additional command (for instance, to make changes to the registry). The second is to extract the files only (this is the recommended option). The third option is only applicable for distributing Active-X controls.



4. Give your installer package a title. The next screen will ask you to specify the title for your executable package. This is not the filename for the Exe file; this is the title that will appear across the top of all windows opened by the installer.



5. Choose a confirmation prompt for your Exe file if desired. The next screen in iExpress will allow you to specify a text prompt given to the user upon opening the executable. If you don't wish to provide a prompt, check the radio button that reads "No prompt."



6. Specify the license agreement governing the use of your executable. The next screen will allow you to choose a license agreement for your software. The installer will inform the user that the agreement you pick governs the use of the software. To display a license agreement, type the agreement into a plain text file (using the ".txt" extension) and attach it after selecting the radio button reading, "Display a license."



7. Select the files that your Exe file will install on the user's computer. The next screen will allow you to choose the files that your executable should install; you can select as many or as few as needed. Add a file by clicking the "Add" button and then navigating to the file's location on your hard drive. You will be able to see the files you've added in the iExpress window.



8. Specify the executable's filename. The next screen will ask you to specify the filename for the Exe file; remember it must end with the ".exe" extension. This screen also includes a check box for either hiding or showing the full extraction process to the user.



9. Create the executable.

Click Next to create the package.



10. Click the Finish button on the final iExpress screen to compile the Exe file and save it in the location you specified. You can test the executable by double-clicking on it to extract the files.

