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DIGITAL INFO

HOW TO TROUBLESHOOT WINDODOWS EASILY

How to troubleshoot Windows XP startup problems

Easily in 16 steps..

One of the most common troubleshooting problems in Microsoft Windows XP involves the failure of a system to start up properly. These failures can be caused by a number of issues, including poorly written or malicious software, faulty device drivers, hardware incompatibilities, corrupt or missing system files and incorrect system configurations. Determining the source of the problem -- and fixing it -- is easier if you use a methodical, step-by-step approach.

1. **Where to start**

The first question that should be asked when troubleshooting Windows XP startup problems is: What changed? If a user has just loaded new software, added new hardware, updated drivers or made a change to the Windows XP system configuration, you should assume this was the cause of the issue until you have ruled it out by undoing the change. This includes operating system updates from Microsoft, which have been known to cause an occasional issue. If a recent change is not a potential cause of the Windows XP startup failure, you should suspect hardware failure, viruses or malicious software or data corruption. Troubleshooting the issue will depend on the point at which startup fails. The further along in the startup process the failure occurs, the easier it is to troubleshoot and repair.

If the workstation starts normally and fails after logon, then the problem may be related to a user profile, network logon script, application, driver or service. If Windows XP produces an error message or blue screen, copy the message and check Microsoft's Knowledge Base to see if it is a known issue and if a workaround or patch exists. If the issue is not in Microsoft's database, try searching technical discussion groups, third-party sites or Usenet.

If you do not receive an error message, and the system simply hangs or continually restarts, there are several troubleshooting techniques you can try. For example, you can try logging in with a different account, or a local account. You can also perform a clean boot or try booting into Safe Mode.

When troubleshooting Windows XP, if the system will not start in Normal Mode or Safe Mode -- it's usually not a good sign. This may be the result of corrupt or missing system files, a corrupt registry, hardware drivers or failed services. Your first step is to press F8 during Windows XP Startup and select the Last Known Good Configuration option from the Windows Advanced Options Menu. If Windows XP boots normally, check the event logs and hardware manager for clues as to what may have caused the failure. You may also want to check the Add/Remove Programs menu for any new applications that may have contributed to the failure.

2. **The Last Known Good Configuration and Chkdsk**

If the Last Known Good Configuration fails, the next step is to start the Windows XP Recovery Console. The Windows XP Recovery Console is a command line utility that can be used to

troubleshoot a number of issues in the event that Windows XP cannot start, including starting and stopping services and drivers. You can start the Recovery Console by booting from the Windows XP Startup CD and pressing "R" to repair when the "Welcome to System Setup" screen appears, then press "C" to start the Recovery Console. If you receive an error on startup stating that a system file is missing or corrupt, Recovery Console can be used to replace those files as well.

If you are unable to determine if a driver or service is responsible for the Windows XP startup failure, you should run the Windows XP Checkdisk utility from the Recovery Console by typing CHKDSK at the command prompt. This utility scans your hard drive and checks for problems with the disk or file system, which may result in corrupt or missing system files.

These Windows XP troubleshooting techniques should usually help you figure out the source of the startup problems. However, if you are still unable to determine the cause of startup failure at this point, you do have a few options left.

If your Windows XP machine won't boot at all, you can try using your emergency Windows XP boot floppy. If your hard drive's boot sector or Windows' basic boot files have been corrupted, this disk will circumvent the problem and boot you into Windows XP. If you don't have an emergency boot floppy, you may be able to use one created on another PC running Windows XP, but there's no guarantee that it will boot your machine.

3. Troubleshooting Windows XP slow startup issues

One way to troubleshoot Windows XP when the system is slow to startup is by disabling annoying and unnecessary Windows XP startup programs. By far the easiest way to temporarily disable startup programs is to boot the system into Safe Mode, as Safe Mode boots Windows XP using a bare configuration. It loads only the essential device drivers, and Windows does not load any startup programs. That way, if a particular device driver or startup program is causing problems, you can boot Windows XP without loading it. You are then free to disable or remove the driver, service or application that is causing the problem.

You can access Safe Mode by pressing the F8 key just before Windows XP begins to boot (you may have to press F8 repeatedly). Upon doing so, the Windows boot menu will be displayed, which gives you several different boot modes to choose from, such as Safe Mode with Networking, Safe Mode with Command Prompt and Directory Services Restore Mode.

4. Using the Shift key

You can also prevent some Windows XP startup programs from running by simply using the Shift key. When you boot Windows XP, enter your username and password and click OK. Immediately after that, hold down on the Shift key until all of your desktop icons appear. However, be aware that this troubleshooting trick will not give you quite as clean of a boot as booting to Safe Mode, and all of the usual device drivers will be loaded. Holding the Shift key down only prevents Windows XP applications from launching automatically from certain locations.

5. **Editing the registry in Windows XP**

One of the more advanced techniques for troubleshooting Windows XP startup problems involves editing the registry, as the Windows registry can be configured to launch applications at startup. While many processes that are launched from a call in the registry are related to malware, many legitimate Windows XP applications are launched through the registry as well. This is particularly true of antivirus software and other applications that run in the background.

As far as troubleshooting goes, the most effective way to prevent an application from running on startup is to simply delete the registry key that calls it. Before you do, though, it is extremely important that you know exactly what it is that you are deleting. Also, remember that editing the Windows registry is dangerous. Making an incorrect modification to the registry can destroy Windows XP and/or your applications, so it is highly recommended that users make a full system backup before attempting this troubleshooting technique.

For users working in large networks, Group Policy can be used to prevent the registry from launching applications on system startup in Windows XP. Keep in mind though that using Group Policy settings as a troubleshooting technique here is usually an all or nothing proposition, as the Group Policy Object Editor isn't flexible enough to allow users to selectively enable and disable various processes. You have the option of preventing Windows XP from using the registry to launch processes at startup, but, by doing so, you may disable desirable processes as well as unwanted ones. You do, however, have the option of specifying the processes you want to run when a user logs in directly through the Group Policy rather than through the registry.

6. **The Windows XP System Configuration Utility**

Other ways to disable Windows XP startup programs include making changes to the Startup folder and WIN.INI file. For example, any application placed in the Startup folder will load automatically when Windows XP is booted. Although you can edit the Startup folder and the WIN.INI file manually, it's sometimes easier to use the System Configuration Utility when troubleshooting Windows XP instead, because it allows you to enable or disable commands by simply selecting or deselecting check boxes. This is handy since sometimes you might see an entry for a startup program that you don't recognize.

The System Configuration Utility allows you to temporarily disable such an entry -- and learn the effects of doing so -- without making a permanent configuration change to your system. Once you are confident in the changes that you have made, you can then make them permanent. You can access the System Configuration Utility by entering the MSCONFIG command at the Run prompt.

7. Troubleshooting the Blue Screen of Death

When Windows XP encounter a serious system problem, the result is what has become known as the Blue Screen of Death, which is an error displayed in a full-screen, non-windowed text mode, with white text on a blue background providing information about why Windows XP crashed.

The first step in troubleshooting the Windows XP Blue Screen of Death is figuring out what is causing the error to occur. Whenever a Blue Screen of Death error is displayed, the error contains a Stop message -- a short error message meant to give you a clue as to the cause of the problem. When troubleshooting Windows XP, it's important to knwo that the Stop message is broken into four different parts, each of which has its own purpose. These parts include Bug Check Information, Recommended User Action, Driver Information and Debug Port and Status Information.

8. How to troubleshoot a Windows XP Stop message

The Bug Check Information is made up of a stop error number immediately followed by four additional parameters that are listed in parenthesis. From a Windows administrator's standpoint, the four numbers found in parenthesis are almost always unimportant, as knowing the stop error code is typically sufficient.

The second part of the Stop message in Windows XP is the Recommended User Action, which is usually a generic message telling you to try disabling or removing whatever hardware or software was recently installed. While this is good advice, it won't always fix the problem. By far the most important part of the Recommended User Action is the very first line. This line directly corresponds to the stop error number. Using this bit of text in conjunction with the stop error number can give admins a lot of insight into what the problem is.

The Driver Information section tells you which file triggered the stop error. By looking at the driver listed in this section and the information provided in the Bug Check Information and Recommended User Action sections, you can usually gain a fairly clear picture of what has happened.

The Debug Port and Dump Status Information section tells you few things. First, it tells you is which COM port is being used by the debugger and what speed the COM port is running at (information that can be ignored with Windows XP). The other thing that this section tells you is that a dump file was created. Essentially this means that the entire contents of the system's memory were written to a file and placed on the hard drive. Some Windows administrators like to use this file as a tool for troubleshooting the problem, though it is usually possible to fix the problem without delving into that level of complexity.

9. Different types of Stop messages

There are five different Stop messages that are commonly displayed when a Windows XP Blue Screen of Death error is disk-related.

One example is the inaccessible boot disk error message, which means that Windows XP either was unable to initialize the disk hardware, or it did, but did not recognize the data found on the system volume. You can troubleshoot this Blue Screen of Death error by trying the Last Known Good Configuration utility. If that doesn't work, the next step would be to boot your Windows XP recovery CD to repair the problem in Recovery Console Mode. Typing chkdsk drive: /F /R at the command prompt windows should fix the error.

In most cases, stop errors will occur immediately after installing a piece of hardware or software, or changing some aspect of Windowsx XP's configuration. If you notice this type of cause and effect pattern, then a good Windows XP troubleshooting best practice would be to boot Windows XP into Safe Mode and then troubleshoot whatever action it was that caused the problem (or remove the new hardware).

If the problem just starts happening for no apparent reason, then there are two things that you should look for; file corruption and memory problems. Try reinstalling the latest Windows XP service pack (to refresh the system files) and download the latest versions of all of the device drivers that are used by the system. If that doesn't work, then try removing the computer's memory and replacing it with known good memory. Nine times out of ten this will fix the problem.

10. How to recover from changes to Windows XP

As a Windows administrator, there are times when changes are made to Windows XP that cause serious system problems. Fortunately, troubleshooting Windows XP to recover from these configuration changes can be easier than you might think -- depending on the changes that have been made.

The first troubleshooting trick for Windows XP involves the Last Known Good Configuration feature. This will reverse the most recent system and driver changes within the hardware profile, and If you are lucky and able to boot Windows XP using the Last Known Good Configuration, then there is nothing else that you need to do (i.e. Windows should boot successfully on the next attempt without you having to do anything special).

While that may seem simple enough, some admins still prefer to try and boot the system into Safe Mode and manually troubleshoot the problem. This involves booting Windows XP using a minimal set of drivers, making any necessary configuration repairs, and then booting Windows XP normally. The disadvantage to using Safe Mode is that it is only effective if you know how to fix the problem that rendered the system unbootable in the first place. The Last Known Good Configuration feature, on the other hand, usually fixes the problem even if you don't know what caused it.

11. Device driver rollback

Another troubleshooting technique for recovering from changes to Windows XP involves device driver rollback. This is usefull when someone installs an invalid device driver, which can result

in anything from a single hardware device not working to the entire Windows XP system being rendered unbootable.

It's difficult to protect against faulty device drivers because they pose so many potential problems. For example, although some are built into Windows XP, most are supplied by third-parties, and they require intimate contact with the guts of the system. They can also interact in odd ways, and a faulty one can cause problems at a point far removed from the applications it services. In short, like dynamic link libraries, device drivers don't just affect the application they are intended for. They can affect many other applications that are performing quite different tasks but occasionally use the services of the particular device driver in question.

To use the device driver rollback technique with Windows XP, simply boot into Safe Mode and open the Control Panel. Then click on the Performance and Maintenance link, followed by the System link. When you do, Windows will open the System Properties sheet. Select the sheet's Hardware tab and click the Device Manager button to open it. When the Device Manager opens, scroll through the list of devices until you find the device that has an invalid driver associated with it. Next, right-click on that device and choose the Properties command from the resulting shortcut menu to access the device's properties sheet. Finally, select the sheet's Driver tab and click the Roll Back Driver button. Windows XP will now revert the device driver to the previous version.

12. Windows XP System Restore

There are a number of activities ranging from registry changes to software installations that can cause Windows XP configuration problems. In such situations, often you can troubleshoot with Windows XP System Restore to take your computer back to where it was prior to the change. Basically, Windows XP creates system restore points just prior to various types of configuration changes. If the change is catastrophic, then you can revert back to the system restore point.

Simple boot to Safe Mode, log in as an admin and select the following commands from the Start menu: All Programs | Accessories | System Tools | System Restore. When the Windows XP System Restore application loads, choose the Restore My Computer to an Earlier Time option and click Next. You will be taken to a screen that allows you to choose a point in time that you want to revert the system to.

It's important to remember that while System Restore can be very a helpful troubleshooting tool, it also isn't perfect, and is not a good substitute for a normal backup. System Restore information is stored on the drive that System Restore is protecting. Therefore, if a hard drive goes bad, then the System Restore information may be lost as well.

You also might need to troubleshoot Windows XP System Restore itself. If you find that you are unable to create or roll back system restore points, then the suggested troubleshooting technique is to reinstall System Restore. The one drawback to doing this is that all existing System Restore points will be deleted. If you need to get System Restore working, however, this may be a relatively small price to pay. Remember that if you have a virus or malware infection and System Restore still seems to be working properly (i.e., you can create restore points), do not attempt to

reinstall System Restore until after you have dealt with the other issues. Reinstalling System Restore will delete all your existing restore points, and those restore points may be the only way to get back what's been damaged in Windows XP.

13. Windows XP Automated System Recovery

The last resort for troubleshooting Windows XP changes would be to use the Automated System Recovery feature. In Windows XP Professional, Automated System Recovery is much more powerful than restore points and requires careful use. Microsoft recommends that it only be used as a last resort before going through the process of wiping the disk and restoring everything from the installation CDs on up.

Recovery with Automated System Restore in Windows XP is a two-step process. In the boot recovery process, a new copy of Windows XP is installed on the system from the original CD. Next, restore a previously saved copy of the installation you're trying to recover. This overwrites some of the files installed in the boot recovery process and restores the system state. To make this work, you need three things: an Automated System Recovery recovery floppy (which you create and keep current yourself), an Automated System Recovery backup and the original Windows XP installation CD. Microsoft provides instructions on using Automated System Recovery, but the fact is, you're much better off if you can avoid using it entirely.

14. Troubleshooting Windows XP hardware issues

The Windows XP Device Manager is a centralized console for configuring system hardware. If a piece of hardware is malfunctioning, the Device Manager will usually let you know about it. While that may seem simple enough, Windows XP Device Manager errors tend to consist of error codes and a brief, often cryptic description of the problem, and the tricky part involves deciphering and troubleshooting those error codes.

Some Device Manager errors are fairly simple and straightforward. Error codes 1, for example, usually mean that an incorrect device driver is associated with the device. Troubleshooting this particular error in Windows XP is relatively easy, simply visit the hardware manufacturer's Web site and downloading the correct driver for the device.

Other errors, however, can be a bit more complicated to troubleshoot in Windows XP, such as Device Manager error code 12. The most common cause of this error code is a resource conflict. Essentially, this means that two hardware devices have been assigned overlapping resources. The overlapping resources might be IRQs, DMAs or even memory address ranges. Troubleshooting and correcting resource overlaps in Windows XP is a very tedious process. For a quick and dirty fix, you can disable one of the devices that is using overlapping resources, at which point the other device that requires those resources will usually begin to function.

Manually troubleshooting hardware issues is a more in-depth way to go. In fact, this technique can be used to troubleshoot *any* hardware resource conflict. However, it is not without risk, as it can result in a Blue Screen of Death error message, making it necessary to then install Windows XP from scratch. That being said, it is still worth looking into for some occasions. Of course,

there are also other steps admins can take for troubleshooting a wide variety of Device Manager errors in Windows XP.

15. USB and printer problems

Universal Serial Bus is the standard for connecting USB devices from printers to external USB hard drives on Windows XP computers. Unfortunately, transferring files between a USB 2.0 hub and a Windows XP system can fail in several strange ways. For example, if you are using a USB keyboard, the transfer may fail. Troubleshooting problems like this is fairly simple, as Microsoft has issued a hotfix to solve the issue. For most hardware related problems, though, it's not that easy.

Printer driver and hardware incompatibilities are often at the heart of many printer problems, especially if you are using the 64-bit edition of Windows XP. Most often, the issues involve hardware drivers since so many low-end or inexpensive hardware devices that have 32-bit drivers for Windows XP do not have a corresponding 64-bit version. This problem can be solved failty easily with printers that use PCL or PostScript, but printers that use the driver to perform the actual rasterization but have no 64-bit driver, it creates a problem, as in this case 32-bit hardware drivers cannot be used at all. Fortunately there is a workaround (though a rather elaborate one) for troubleshooting this Windows XP printer problem.

16. Troubleshooting print queue overload and network congestion

Common network printer problems involve print queue overload, which is caused by too many users trying to print at the same time. For admins using Windows XP with Windows Server 2003, one way to troubleshoot this problem is by creating a printer pool, which is a group of printers attached to a common print queue, allowing multiple documents to be printed at the same time. Once the printer pool is created, users can print to the pool by connecting to it using a defined share, immediately reducing print queue overload.

There is more than one cause of network printer congestion, too. For example, frivolous users send out large and unnecessary print jobs, it can slow everything down. If you notice that a particular user has a reputation for printing large jobs and creatibg problems, you can troubleshoot the problem be creating a priority print queue just for that user. If you are looking for freeware to put an end to printer congestion, there are several usefull options out there, such as PaperCut.

That’s it with pretty straight forward tutorial I think you will be able to troubleshoot simple windows related errors, system malfunction al by yourself.