Quickly Repair the Most Common Problems that Prevent Windows XP from Starting Up

With the information in this article you can:

- The four most common Windows Startup errors and instant solutions for fixing them
- Overcome serious Windows errors with the Recovery Console
- Perform a Windows Repair installation to keep your existing data intact

Windows XP is the most stable operating system Microsoft have ever produced; it is designed to work with a wide-range of hardware and software which is produced by a myriad of different companies. To expect an operating system with such a wide remit to never experience the odd hiccup would be unrealistic. So, in this article, we will be looking at some of the worst case scenarios a Windows user can be presented with; you start your PC only to be met with a constantly re-booting loop, a 'no operating system' error or a KERNEL32 error message. When Windows won't load, this article will show you how to get your PC up and running again.

Paul Whyte:

"When Windows won't load, panic can set in immediately with thoughts of lost data and a lengthy Windows re-install springing to mind. However, there are other avenues to explore before you need to think of completely reformatting your hard drive."

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Overcome problems
when Windows will
not load.

Quick Solutions to Common Windows XP Startup Problems

There are many different reasons why Windows XP can fail to load properly. In this article, we will look at some of the most common, and most troublesome, errors Windows XP can produce at startup. If the well-known ways of tracking down the source of problems during startup, such as using Safe Mode, have not worked, then we will show you how to use the Windows Recovery Console to solve the difficult startup problems that seemingly cannot be overcome because Windows will not load.

Startup problems
are common after
configuration
changes.

There are many different methods of troubleshooting problems with Windows startup. Startup problems generally occur following changes to the system configuration, usually after the installation of new software or hardware. Startup problems can also be caused by a defective hardware device or a corrupt driver. The table below summarises the most common types of Windows startup errors and potential ways to remedy any problems you may be having:

Error	Cause	Solution
Windows restarts continuously	No error report is shown because the Automatic Restart option is enabled.	Boot into Safe Mode and disable the Automatic Restart option.
Faulty BOOT.INI	The BOOT.INI file is missing, damaged or contains incorrect entries.	Repair the BOOT.INI file using the BOOTCFG command in the Recovery Console.
KERNEL32.DLL error	The KERNEL32.DLL file is missing or damaged.	Use the Extract command in the Recovery Console to extract a new file from the Windows installation CD.

Error	Cause	Solution
Windows does not start after alterations to the system	New hardware, drivers or software hinders normal Windows startup.	Try to start the system using the Last Known Good Configuration or deactivate the faulty hardware in Safe Mode via the Device Manager.

Using the Windows Advanced Options Menu

Windows has many built-in tools which can help you to diagnose and correct problems. They are presented to the user in a text menu, called the Advanced Options menu, when F8 is pressed before Windows has begun loading. These tools are your first port of call if Windows will not load normally.

Using the Advanced Options menu, you can perform many useful troubleshooting tasks. To call the Advanced Options menu, restart the computer and as the system boots press the F8 key. You must ensure you press the F8 key before Windows begins loading, that is, before you see the Windows XP logo screen with the blue or green progress bar. We will be covering some of the options on the menu in depth later in the article, but briefly the options presented to you by this menu are:

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Windows has built-in tools to help you diagnose problems.

- **Safe Mode (optionally with Networking or Command Prompt)** – selecting Safe Mode will start Windows with the bare minimum of drivers and all the programs in the autostart list will be ignored. Further to standard Safe Mode, by selecting with Networking you can enable the networking components of Windows. Selecting Command Prompt will load Safe Mode and open a DOS Window and nothing else.

Safe Mode loads Windows without any drivers.

- **Enable Boot Logging** – this tells Windows to boot normally but to log every step of the boot process in a

Boot logging can reveal the source of a problem.

file called NTBTLOG.TXT. This file is saved to C:\Windows. If a problem is encountered during startup, first startup with boot logging, then re-boot into Safe Mode and open the NTBTLOG.TXT file in Notepad. The last entry in the list is usually points to the cause of the problem.

- **Enable VGA Mode –** starts Windows normally, but the standard Windows VGA graphics driver is used instead of the user installed driver, giving a screen resolution of 640 x 480 in 16 colours. This is especially useful for troubleshooting graphics card problems.

- **Last Known Good Configuration –** used to boot Windows with the last configuration which resulted in a successful normal Windows boot.

- **Directory Services Restore Mode –** this option is only applicable if your computer is a domain controller, and is only used by servers in business networks.

- **Debugging Mode –** mainly used by software developers, Debugging Mode sends information on the progress of a program to the computer's serial port for analysis by the developer of the program. It is of no practical use to end users.

- **Start Windows Normally –** select this option to boot Windows as normal.

Stop Windows from Endlessly Restarting

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Many PC users will have experienced the following nightmare scenario: you turn your PC on, the black Windows startup screen is shown only for a short moment and your PC restarts. It is difficult to determine the cause of this error as you cannot see any error messages or get to the Event Log to investigate further.

The problem could well be a STOP error. You can break the annoying constant restart cycle by disabling the Automatic Restart option as follows:

1. Restart the computer. As the system boots, press F8 to get to the text menu. Use the cursor keys to highlight **Safe Mode** and press Enter to boot into Safe Mode.

2. Right-click **My Computer,** select **Properties,** go to the **Advanced** tab and click the **Settings** button under Startup and Recovery.

3. Under System Failure remove the tick in the box marked **Automatically Restart.** Click **OK** twice and restart the system.

Disable the Automatically Restart feature.

The system should now halt at the error message that is causing the re-boot cycle. This will allow you to gain the necessary information to enable you to tackle the cause of the error, which the remainder of this article will help you to resolve.

Repair Startup Problems Caused by System Configuration Changes

Following the installation of a new piece of software, a new driver, or new hardware device, startup errors are quite common. Your system may seem to be operating normally until Windows loads the new device driver or application and suddenly your PC crashes.

Use the Last Known Good Configuration to recover after you made changes to the system and it will not boot.

If you have made changes to the configuration of Windows and the system no longer boots up, then the cause of the problem is clear. You need to undo the last change you made, but how can you do this when the operating system will not load? Use the Last Known Good Configuration option from the Advanced Options menu.

Windows keeps a log of successful and unsuccessful attempts to boot and shutdown the system. When you invoke the Last Known Good Configuration, Windows looks in the log to find the last successful boot, cross references this with the configuration settings it used to boot at that time, and uses

Windows keeps track of successful startups and shutdowns.

these configuration settings to startup Windows.

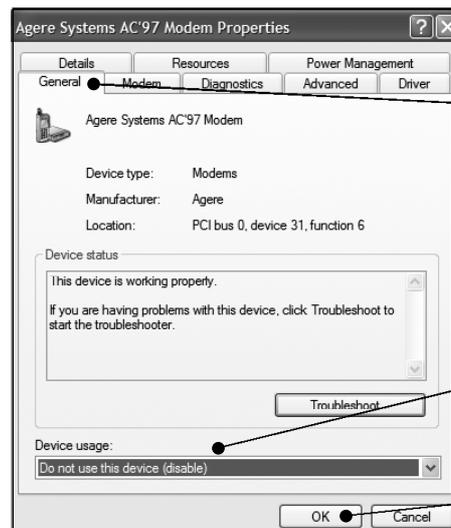**Access the Last Known Good Configuration from the (F8) menu.**

To use the Last Known Good Configuration, boot to the Safe Mode menu by restarting the system and pressing (F8) as it boots. From the menu which appears, use the cursor keys to highlight Last Known Good Configuration and confirm by pressing (Enter). The Last Known Good Configuration should always boot, even if you have installed new software or hardware which is preventing Windows from starting normally. Once Windows is loaded, you can remove or make changes to the item which is causing the problem. For hardware, the best place to do this is in the Device Manager. For software, uninstall it via the Add or Remove Programs icon in Control Panel.

Disable problem devices via the Device Manager.

Use the Roll Back driver option to quickly recover from errors.

If an updated driver for a piece of hardware is causing a problem, instead of uninstalling the driver you can use the Roll Back Driver option in the properties of the hardware device. Click **Start** > **Control Panel** > **System** > **Hardware** > **Device Manager**. Double-click the device for which the problem has occurred and go to the Driver tab. Click the **Roll Back Driver** button. Windows will remove the current driver and reinstate the previous one.

Disable a problem device in Safe Mode

Disable problem devices in Safe Mode.

If the Last Known Good Configuration will not restore the system to a fully working state, you should try using Safe Mode to disable the problem device:

1. Boot into Safe Mode using the steps given earlier.

2. Open Device Manager by clicking **Start** > **Control Panel** > **System** > **Hardware** and then click the **Device Manager** button.

3. Double-click the device to open the its **Properties** and under Device usage from the drop-down box, select **Do Not Use This Device (Disabled)**. Click **OK** and re-boot the system.

Disable a device in the device's properties

If a newly installed piece of software is causing a problem, boot to Safe Mode and go to **Start** > **Control Panel** > **Add or Remove Programs**. Locate and highlight the problem software and click the **Change/Remove** button to uninstall the software. Re-boot the system into normal mode.

*Click on the **General** tab of the device's properties.*

*Select **Do not use this device (disabled).***

*Click **OK.***

Remove problematic software.

Recover from Persistent Errors with System Restore

The other option for recovering from errors caused by configuration changes would be to use System Restore to undo the changes to the system configuration. The System Restore can only be run while in Windows. Therefore, you must as least be able to boot the system into Safe Mode. To run System Restore:

Use System Restore to solve errors.

1. Boot into Safe Mode as you were shown earlier in this article.

2. Go to **Start** > **Help and Support** > **Undo Changes to your Computer with System Restore**.

3. Check **Restore My Computer to an Earlier Time**, then click **Next**.

4. Next, select a date you would like to restore back to.

Note: only the dates in bold are available as restore points. Click **Next**.

5. Verify that you want to restore back to that point. Make sure any open programs are closed. Hint: check that all the programs in the System Tray (next to the clock) are closed. Click **Next**.

6. The computer will shutdown automatically and re-boot. Once re-booted you will see a message saying restoration complete. Click **OK** to close.

You need to investigate the cause of the problem rather than curing the symptoms of the problem.

Your system will be back to a workable configuration. However, the System Restore feature, although it can fix the problem, is very much easing the symptoms rather than curing the cause. You need to find out why the hardware or software caused the problem in the first place. The manufacturer or the developer's websites are good places to look for troubleshooting information.

Fix Problems using the XP Recovery Console

You can enter DOS commands via the Recovery Console.

If the system will not start normally and all attempts to enter Safe Mode have failed, the only option left is to try to fix the error using the Recovery Console.

The Recovery Console is a command line interface in which you can enter DOS commands to repair and diagnose faults in Windows and on the hard drive.

Note: you should not attempt to use the Recovery Console commands unless all other avenues of repair have failed as, if used incorrectly, the Recovery Console can damage the boot sector of your hard drive.

How to launch the Recovery Console

1. Insert your original Windows XP installation CD into the CD drive and restart the computer in order to boot from the CD. You may need to amend the boot options in the system's BIOS to make the system boot

from the CD drive – consult your motherboard's manual for details of how to do this on your system.

2. Once the system has loaded the Windows XP Welcome to Setup screen, press the ⌊R⌋ key to launch the Recovery Console.

3. The system will ask you which Windows installation you would like to use the Recovery Console on. Select **1: C:\Windows**.

4. You must now enter the Administrator password, if you have not set a password on the Administrator's account simply press ⌊Enter⌋. The system will take you to a command line.

You are now in the Recovery Console. A list of available commands can be viewed by typing **help** followed by ⌊Enter⌋ and more detailed usage of each command can be obtained by typing the command name followed by **/?** for example, **FIXBOOT /?** followed by ⌊Enter⌋.

Fix Essential Startup File Problems

If, when you start your computer, you receive the following error message:

```
Windows could not be started as the
following file is missing or faulty:
WINDOWS\SYSTEM32\HALL.DLL
```

The cause of this error could well be that the BOOT.INI file is corrupted or contains invalid entries. To resolve this problem, start the Recovery Console from the Windows installation CD and use the BOOTCFG.EXE command to repair the BOOT.INI file.

1. Start the Recovery Console as you were shown earlier in this article.

2. At the command prompt enter the command: **BOOTCFG /LIST** and press ⌊Enter⌋. The current BOOT.INI file's options will be displayed.

To launch the Recovery Console, boot from the Windows installation CD.

*Type **help** to receive a list of Recovery Console commands.*

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Windows may not boot because the BOOT.INI file is damaged.

Use the Recovery Console to fix the boot files.

3. In order to rebuild the BOOT.INI file, at the command prompt type: **BOOTCFG /REBUILD** and press (Enter).

4. The program will scan the hard drive for Windows installations and then present you with its findings. Note: BOOTCFG can only detect WINDOWS XP/2000. You are then given the opportunity to add any installations to the BOOT.INI file. Press (Y) to add the currently offered installation.

5. When asked to Enter the Load Identifier, you should enter a name for the installation, for example: Microsoft Windows XP Home users would enter **Microsoft Windows XP Home Edition** and press (Enter).

6. When asked to Enter OS Load Options, type: **/FASTDETECT** and press (Enter).

7. Remove the CD from the CD drive and type: **exit** followed by (Enter) to restart the computer.
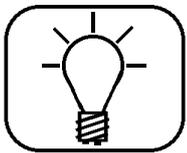
Problems with the boot files may be caused by a faulty hard drive.

Problems with the BOOT.INI file can stem from problems with the hard drive, usually when bad sectors have developed on the surface of the disk. If you have rebuilt the BOOT.INI file and find the computer still will not boot, you can check the hard drive for bad sectors via the Recovery Console by entering the command **CHKDSK /R** at the command prompt and press (Enter). If CHKDSK finds any bad sectors that it can't repair, you should replace the hard drive.

Fix NTLDR and NTDETECT file problems

Windows will not boot if NTLDR and NTDETECT are missing.

If, when Windows boots, it does not even try to load the operating system but reports that NTLDR is not found, this means the boot sector or associated files, NTLDR and NTDETECT, are missing or damaged. If this is the case, you can correct this problem by copying new versions of the boot files from the Windows installation CD to the hard drive via the Recovery Console.

To restore fresh copies of NTLDR and NTDETECT do the following:

1. Start the Recovery Console.

2. At the command prompt type the following commands:
   COPY D:\i386\NTLDR C\:
   and then press (Enter).
   COPY D:\i386\NTDETECT.COM C:
   and then press (Enter).
   Where **D:** is the letter of your CD drive.

3. Remove the CD from the CD drive and type: **exit** followed by (Enter) to restart the computer.

Restore fresh copies of NTLDR and NTDETECT from the Windows installation CD.

Further problems with the boot sector (such as a report that no operating system is present) indicate a corruption in the boot sector of the hard drive. You can fix these problems using the FIXBOOT and FIXMBR commands via the Recovery Console.

1. Start the Recovery Console

2. At the command prompt type the following commands:
   FIXBOOT and then press (Enter).
   FIXMBR and then press (Enter).

3. Remove the CD from the CD drive and type: **exit** followed by (Enter) to restart the computer.

Tools to fix boot sector problems.

The boot sector will be rewritten and the operating system will be found.

Serious Windows Kernel32 Errors Solved

When you start your computer and Windows halts reporting a KERNEL32.DLL error, this crucial Windows system file may have been damaged. KERNEL32.DLL is at the heart of the Windows operating system, it handles all the important instructions, including memory management, input/output operations and the interrupts allocated to hardware.

KERNEL32 is an essential Windows system file.

KERNEL32.DLL is at the key to Windows and due to the nature of the file it is highly susceptible to damage. If you are receiving the error mentioned above, you can try to recover from this problem by extracting a new copy of KERNEL32.DLL from your original Windows XP installation CD. The process is as follows:

Restore a fresh copy of KERNEL32 DLL file from the Windows CD.

1. Start the Recovery Console as described earlier in this article.

2. At the command prompt type **CD SYSTEM32** and press (Enter).

3. Rename the old file; type:
   REN KERNEL32.DLL KERNEL32.OLD
   and press (Enter).

4. Type the following command to extract a new copy of KERNERL32.DLL from the CD drive: **EXPAND D:\I386\KERNEL32.DL_**
   where **D:** is the letter of your CD drive.

5. When the following message appears:
   KERNEL32.DLL 1 File(s) Have Been Expanded, the file has been restored.

6. Remove the CD from the CD drive and type **EXIT** followed by (Enter) to restart the computer.

Note: the _ in the extension of the KERNEL32 file in step 4, this must be entered for the command to work.

A last resort is a Repair Install of Windows to fix problems deep in the operating system.

Perform a Windows Repair Install to Solve the Most Serious Problems

Sometimes the problems can run too deep into the operating system to be repaired by the Recovery Console. For example, if a lot of system files have been accidentally deleted and Windows will no longer boot.

There is a way to repair this without having to do a fresh install of Windows, which would result in you losing all of your programs and data: a Windows Repair Install. To

perform a Repair Install you will need an actual Windows XP installation CD – a recovery CD from a PC manufacturer will not work. A Windows installation CD will usually be bronze in colour and carry the Microsoft and XP logos.

The Repair Install will re-install the operating system but this method of installation will preserve the data, programs and settings within the installation of a new set of Windows system files. This makes the Repair Install a very convenient way to fix deep problems within Windows. You will find that Windows behaves exactly as it did before the problem occurred. Performing a Repair Install is a feature of the newer versions of Windows, which is a great improvement over earlier versions (such as Windows 98), where your only option was to re-install, meaning that all of your data and programs would be lost.

To perform a Repair Install follow the procedure below:

1. Boot the computer using the Windows XP installation CD.

2. When the Welcome to Setup screen is reached, press `Enter` to setup Windows now. Note: you should not press `R` as this will launch the Recovery Console.

3. On the next screen accept the license agreement by pressing `F8`.

4. The system will now report any instances of Windows XP installations, these will be shown in the lower half of the screen. To perform a Repair Install highlight the installation you want to repair, usually the first in the list and press `R`.

5. The system will then begin configuring the installation to copy files to. After some files have been copied to the hard drive, the computer will restart. You should allow the computer to boot from the hard drive, but leave the Windows installation CD in the CD drive to continue the installation of Windows. The computer will load a graphical

A Repair Install of Windows will preserve user data, programs and settings.

Performing a Windows Repair Install.

> interface and copy the rest of the files from the CD to the hard drive.
>
> 6. When prompted, follow the on-screen instructions to complete the installation. When the procedure is complete, remove the CD from the CD drive and re-boot the system, which will boot normally into Windows.

After the installation files have been copied, you should be able to use Windows normally again, with all of your documents and program settings remaining untouched.

Using Full System Install.

If you find that your system still doesn't work after you have performed a Repair Install, then your only option left is to completely reformat your hard drive, then re-install Windows. Unfortunately, this will mean that you lose all of the data and programs on your drive, but it will certainly get your PC working again. To re-install Windows, follow the previous steps, but at step 4, choose to do a Full System Install, rather than a Repair Install.
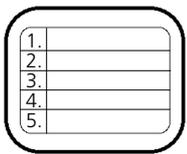
This article has introduced you to ways of overcoming some of the worst startup problems that your computer can throw at you. If the worst should happen and you find yourself in a situation where Windows will not boot at all, there are still many troubleshooting avenues that you can take before you have to resort to drastic steps of re-installing Windows. This article has taken you through the best strategies for dealing with an XP system that won't boot, and shown you how you can do a Windows Repair Install that won't wipe all the data from your hard drive.