

Blue Screen – Windows Stop Errors:

Windows Stop Errors, more commonly known as THE BLUE SCREEN OF DEATH (BSODs), are actually a very informative screen for PC technicians. It is very important to state however, that BSODs are not all the same issue. Just because you get a BSOD and your friend gets a BSOD, doesn't necessarily mean it's the same exact issue. There are actually SEVERAL different BLUE SCREEN errors caused by windows. We will attempt here to cover the most common ones, to help you better understand. It is best to know that with any Windows Stop Error, it should be checked out by your local computer repair professional.

What Is A Blue Screen Error:

When Windows encounters certain situations, it halts and the resulting diagnostic information is displayed in white text on a blue screen. The appearance of these errors is where the term "Blue Screen" or "Blue Screen of Death" has come from.

Blue Screen errors occur when:

- Windows detects an error it cannot recover from without losing data
- Windows detects that critical OS data has become corrupted
- Windows detects that hardware has failed in a non-recoverable fashion
- The exact text displayed has changed over the years from a dense wall of information in Windows NT 4.0 to the comparatively sparse message employed by modern versions of Windows.
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Troubleshooting Common Blue Screen Errors:

Stop 0x000000ED (UNMOUNTABLE_BOOT_VOLUME)

Stop 0x0000007B (INACCESSIBLE_BOOT_DEVICE)

These two errors have similar causes and the same troubleshooting steps apply to both of them. These stop codes always occur during the startup process. When you encounter one of these stop codes, the following has happened:

- 1 The system has completed the Power-On Self-Test (POST).

- 2 The system has loaded NTLDR and transferred control of the startup process to NTOSKRNL (the kernel).

3 NTOSKRNL is confused. Either it cannot find the rest of itself, or it cannot read the file system at the location it believes it is stored.

When troubleshooting this error, your task is to find out why the Windows kernel is confused and fix the cause of the confusion

Things to check:

- **The SATA controller configuration in the system BIOS** If the SATA controller gets toggled from ATA to AHCI mode (or vice versa), then Windows will not be able to talk to the SATA controller because the different modes require different drivers. Try toggling the SATA controller mode in the BIOS.
- **RAID settings** You may receive this error if you've been experimenting with the RAID controller settings. Try changing the RAID settings back to Autodetect (usually accurate).
- **Improperly or poorly seated cabling** Try reseating the data cables that connect the drive and its controller at both ends.
- **Hard drive failure** Run the built-in diagnostics on the hard drive. Remember: **Code 7** signifies correctable data corruption, **not** disk failure.
- **File system corruption** Launch the recovery console from the Windows installation disc and run `chkdsk /f /r`.
- **Improperly configured BOOT.INI (Windows Vista)**. If you have inadvertently erased or tinkered with the boot.ini file, you may receive stop code 0x7B during the startup process. Launch the recovery console from the Windows installation disc and run `BOOTCFG /REBUILD`

STOP 0x00000024 (NTFS_FILE_SYSTEM)

This stop code indicates the NTFS file system driver encountered a situation it could not handle, and is almost always caused by 3 things:

- Data corruption on the disk
- Data corruption in memory
- The system completely running out of memory (this typically only happens on heavily-loaded servers)

Things to check:

1 Reseat the memory and all drive data cables to eliminate data corruption issues stemming from poorly or improperly seated hardware.

2 Run a complete memory and hard drive diagnostic. The quick test will not be thorough enough here. You need to run the full system diagnostic.

3 If those diagnostics pass, run a full file system check from the Recovery Console (`chkdsk /f /r`) to detect and (potentially) fix any corrupted data.

4 If none of the above solves the issue, reinstall Windows.

5 If that does not fix the issue, replace the hard drive.

STOP 0x0000007E (SYSTEM_THREAD_EXCEPTION_NOT_HANDLED)

STOP 0x0000008E (KERNEL_MODE_EXCEPTION_NOT_HANDLED)

These two errors indicate that a program running in the kernel encountered an unexpected condition it could not recover from. They have identical troubleshooting and resolution steps, and you will probably need to use the Windows Debugger to find out what caused the error.

Things to check:

- If the Blue Screen message mentions a driver or library file, figure out what driver or application that file is part of and update or disable it.
- Update the system BIOS to the latest available revision.
- Uninstall any recently installed programs, and roll-back any recently installed drivers.
- Run diagnostics on the computer's memory

STOP 0x00000050 (PAGE_FAULT_IN_NON_PAGED_AREA)

This stop code means the system tried to access a nonexistent piece of memory, almost always due to:

- A driver trying to access a page of memory that is not present
- A system service (ex. virus scanner) failing in an exceptional way

- Faulty or incorrectly seated memory
- Corrupted data on the hard drive

Use the Windows Debugger to pinpoint the exact cause of these errors.

Things to check:

1 If the Blue Screen error mentions a driver or library file, figure out what driver or program the file is a part of and either upgrade to the latest version or uninstall the driver or program.

2 If the error happens during the startup process, try booting to the Last Known Good Configuration.

3 If the error started appearing after a program or driver was installed, uninstall that program or driver.

4 Try running a full hard drive and memory diagnostic after reseating the memory and hard drive data cables.

STOP 0x000000D1 (DRIVER_IRQL_NOT_LESS_THAN_OR_EQUAL_TO)

This stop code indicates a driver tried to access a certain area of memory when it should not have, meaning there is a flaw in the driver itself. The goal of your troubleshooting is to find that driver and either disable or replace it. Use the Windows Debugger to troubleshoot this error.

Without the debugger, you are limited to uninstalling/updating/rolling back the driver that contains the driver file the Blue Screen mentions.

STOP 0x000000EA (THREAD_STUCK_IN_DEVICE_DRIVER)

This Blue Screen error indicates that a device driver-almost always a video card driver-is stuck waiting for something (usually a hardware operation) to happen. Most of you have probably seen **nv4_disp.sys** associated with this Blue Screen.

Things to check:

1 Ensure the video drivers are updated to the latest Dell version.

2 The system BIOS is fully up-to-date.

3 If both the video driver and the system BIOS are fully up-to-date, check with the manufacturer for recent driver updates.

4 As a last resort, try exchanging the video card.

Reinstalling Windows is not likely to prevent this error from reoccurring.