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Troubleshooting MS-DOS-based programs in Windows XP

This article was previously published under Q314106. For a Microsoft Windows 2000 version of this article, see [165214](#) (<http://support.microsoft.com/kb/165214/EN-US/>).

SUMMARY

This article describes how to troubleshoot MS-DOS-based programs in Windows.

MORE INFORMATION

Test the Ntvdm subsystem

The first thing to test when you are having problems with MS-DOS-based programs is the Windows Virtual DOS Machine (NTVDM) subsystem. You can use the Command.com utility to test whether the NTVDM subsystem is running properly. To start Command.com, follow these steps:

1. Click the **Start** button, and then click **Run**.
2. In the **Open** box, type **command.com**, and then click **OK**.

This should start a command prompt window. If this does not work properly, then there is a problem with the NTVDM subsystem, and you should check the following items:

- Check the **Config.nt** and **Autoexec.nt** files in the SystemRoot%\System32 folder for non-standard settings.

Use a REM statement to remark out all entries except the following default entries:

```
Config.nt ----- dos=high, umb device=%SystemRoot%\System32\Himem.sys files=20 Autoexec.nt
----- lh %SystemRoot%\System32\Mscdexnt.exe lh %SystemRoot%\System32\Redir lh
%SystemRoot%\System32\Dosx lh %SystemRoot%\System32\Nw16 (only if CSNW is installed) lh
%SystemRoot%\System32\Vwipxspx (only if CSNW is installed)
```

Another way to accomplish this is to expand Autoexec.nt_ and Config.nt_ from the Windows CD-ROM to the %SystemRoot%\System32 folder.

- Press CTRL+SHIFT+ESC to start Task Manager, close all running programs that are running, and make sure that there are no other NTVDM processes running.
- Prevent all programs from running at startup. Programs can run from two places at startup: the Startup groups, and the Run and RunOnce lines in the registry. You can check these places as follows:
 1. The Startup groups are folders on the local hard disk. They are in the following locations:
 - %SystemRoot%\Profiles*user_name*\Start menu\Programs
 - %SystemRoot%\Profiles\Default user\Start menu\Programs
 2. The Run and RunOnce lines are in the registry, under the following registry key: HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\
- Examine the NTVDM system files in the %SystemRoot%\System32 folder. Check the following files and make sure that they are the correct version by checking the size and date:

```
Ntios.sys Ntdos.sys Ntvdm.exe Ntvdm.dll (Windows NT 3.1 only) Redir.exe
```

- The registry entries that are associated with the NTVDM subsystem are:
 - HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Session Manager\Environment This key stores the environment variables from the Config.sys and Autoexec.bat files for use in Windows.
 - HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\VirtualDeviceDrivers This key stores the device drivers that are used in an NTVDM session. Windows Setup creates these entries when a device driver is installed.

Check program-specific issues

The following functions do not work in Windows XP:

- All MS-DOS functions except task-switching API (application programming interface) functions are supported.
- Block mode device drivers are not supported. Block devices are not supported, so MS-DOS I/O control (IOCTL) APIs that deal with block devices and SETDPB functions are not supported.
- Interrupt 10 function 1A returns 0; all other functions are passed to read-only memory (ROM).
- Interrupt 13 calls that deal with prohibited disk access are not supported.
- Interrupt 18 (ROM BASIC) generates a message that says that ROM BASIC is not supported.
- Interrupt 19 does not restart the computer, but cleanly closes the current virtual DOS machine (VDM).
- Interrupt 2F, which deals with the DOSKEY program callouts (AX = 4800), is not supported.
- Microsoft CD-ROM Extensions (MSCDEX) functions 2, 3, 4, 5, 8, E, and F are not supported.
- The 16-bit Windows subsystem on an x86 computer supports enhanced mode programs; it does not, however, support 16-bit virtual device drivers (VxDs). The subsystem on a non-x86 computer emulates the Intel 40486 instruction set, which lets the computer run Enhanced-mode programs, such as Microsoft Visual Basic, on reduced instruction set computers (RISC).

This means that Windows does not support 16-bit programs that require unrestricted access to hardware. If your program requires this, your program will not work in Windows NT, Windows 2000, or Windows XP.

You should next check to see whether the Autoexec.nt and Config.nt file settings are correct. Always try the default settings that are listed earlier in this article. Some programs require special settings or drivers to run in the Config.sys or Autoexec.bat file. If this is the case, there are two options for initializing these files when you starting your program:

- Enter these lines in the Config.nt and Autoexec.nt files in the %SystemRoot%\System32 folder.
- Create new Config and Autoexec files to be run when starting this program. To do so, follow these steps:
 1. Create the files and save them with the extension .nt in a folder other than %SystemRoot%\System32 (these files are usually saved in the same folder as the program).
 2. Right-click the desktop, point to **New**, and then click **Shortcut**.
 3. In the **Type the location of the item** box, type the full path to the file that you want to run, and then click **Next**.
 4. In the **Type a name for this shortcut** box, type the name for the shortcut, and then click **Finish**. This creates a new shortcut on the desktop.
 5. Right-click the new shortcut, and then click **Properties**.
 6. On the **Program** tab, click **Windows** to open a dialog box for the path to the Autoexec and Config files.
 7. Type the full path to the files that you created, and then click **OK** in both dialog boxes.

Clicking this icon runs the Autoexec and Config file specified for the program. These settings are subject to the same restrictions as those listed for MS-DOS-based programs.

There are other settings in a program's properties. If your program is not working properly, check all of the tabs and make sure that the program settings are set to the manufacturer's specification. If the program is still not working, contact the vendor of the program to make sure that the program is supported under Windows.

For additional information, click the following article numbers to view the articles in the Microsoft Knowledge Base:

[171940](http://support.microsoft.com/kb/171940/) (<http://support.microsoft.com/kb/171940/>) MS-DOS application I/O operations cause floppy drive access

[156687](http://support.microsoft.com/kb/156687/) (<http://support.microsoft.com/kb/156687/>) Entries in CONFIG.NT or AUTOEXEC.NT may cause NTVDM errors

[102418](http://support.microsoft.com/kb/102418/) (<http://support.microsoft.com/kb/102418/>) NTVDM error: There is no disk in the drive [142026](http://support.microsoft.com/kb/142026/)

(<http://support.microsoft.com/kb/142026/>) Err: 'Hidden console of WOW VDM' running 16-bit or DOS app The third-party products that this article discusses are manufactured by companies that are independent of Microsoft. Microsoft makes no warranty, implied or otherwise, regarding the performance or reliability of these products.

APPLIES TO

- Microsoft Windows XP Home Edition
- Microsoft Windows XP Professional

Keywords: kbregistry kbenv kbinfo kbtshoot KB314106



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