Troubleshooting NTVDM and WOW Startup Errors

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IMPORTANT: This article contains information about modifying
the registry. Before you modify the registry, make sure to back
it up and make sure that you understand how to restore the
registry if a problem occurs. For information about how to back up, restore, and edit the registry, click
the following article number to view the article in the Microsoft Knowledge Base:

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256986 (http://support.microsoft.com/kb/256986/EN-US/) Description of the Microsoft Windows
Registry

SUMMARY

This is a step-by-step troubleshooter for troubleshooting NTVDM or WOW startup issues. Please note
that Sysedit.exe is a 16-bit program available in Windows NT available for troubleshooting these issues.
If it starts up, both the WOW and NTVDM DLLs and executables are okay and you need to concentrate
on the environmental steps below. If SYSEDIT does not start up, try to run only the MS-DOS shell
"command.com" from the command prompt. Please note that, if SYSEDIT does not run, all of the steps
below apply.

MORE INFORMATION

1. Check the Autoexec.nt and Config.nt for anything unusual or anything that can be commented
   out.

2. Rename Autoexec.bat.

3. Check for changes in Win.ini or System.ini, or replace by expanding the original files off of the
   installation media.

4. Rename all other *.ini files if possible

5. In the Config.nt file, allow only:

   ```
   dos=high, umb
   device=%SystemRoot%\system32\himem.sys
   files=60
   shell=%SystemRoot%\system32\command.com /e:4096
   ```

   NOTE:
   - The default entries off of the installation disk will allow SYSEDIT to run, but other entries
     as outlined above may be needed for other applications to run.
   - Files has a valid range of: files = 5 to 254.

6. Verify the environment variables by doing either of the following:

   - Click **Start**, click **Settings**, click **Control Panel**, double-click **System**, and then click the
     Environment tab. In Windows 2000, click **Settings**, click **Control Panel**, double-click
     System, click the **Advanced** tab, and then click **Environment Variables**.

     -or-
   - Run the SET command at the command prompt and check all environmental variables for
     nulls, blanks, double equal sign (==) marks, or other unknown entries.

7. Ensure that the path is the same as the default path off of the CD; that is, that there are no
   entries prepended to the path; if a nonstandard entry is there, remove it.

8. Check path length for lengths after expansion that are near 200 characters. Path is a
   combination of path in Autoexec.nt and on the Environment tab in the System tool of Control
   Panel. If the path is over 100 characters, change it for testing.

9. Check the following registry entries. The easiest way is to check them out is to see if they are
   populated first. (There are some cases where keys or subkeys just disappear.) Then, if the
   keys are fully populated, do not try to determine the correct values, just download them and
   load on a test system to see if the problem can be reproduced.

   WARNING: Using Registry Editor incorrectly can cause serious problems that may require you
   to reinstall your operating system. Microsoft cannot guarantee that problems resulting from the
   incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

   For information about how to edit the registry, view the "Changing Keys And Values" Help topic
   in Registry Editor (Regedit.exe) or the "Add and Delete Information in the Registry" and "Edit
   Registry Data" Help topics in Regedt32.exe. Note that you should back up the registry before
   you edit it. If you are running Windows NT, you should also update your Emergency Repair
   Disk (ERD).

- HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\WOW: Parameters for WOW startup
- HKEY_LOCAL_MACHINE\Software\Microsoft\Windows NT\CurrentVersion\WOW: System.ini settings
- HKEY_LOCAL_MACHINE\Software\Microsoft\Windows NT\CurrentVersion\IniFile\Mapping: Mappings for Win.ini, System.ini, Winfile.ini,Progman.ini, and Control.ini
- HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Session Manager\Environment: Environment Settings
- Other INI settings that can be found in the registry: see pages 905 through 908 of the Windows NT Workstation 4.0 Resource Kit.

10. If this does not work, you have missing or corrupted files. (More likely, the files will be corrupted rather than missing; try to replace these first.)

- Ntio.sys
- Ntdos.sys
- Ntvdm.exe
- Ntvdm.dll (3.1 only)
- Redir.exe
- Wowexec.exe
- Vdmredir.dll
- Krnl386.exe
- Krnl286.exe (Windows NT 3.1 only)
- Gdi.exe
- User.exe
- Wow32.dll (not in Windows 3.1)
- Commdlg.dll
- Version.dll
- Shell32.dll
- Gdi32.dll
- User32.dll
- Advapi32.dll
- Compobj.dll
- Ddeml.dll
- Ole2.dll
- Ole2dist.dll
- Storage.dll
- Rpcrt4.dll

Under system look for:

- Avicap.dll
- Avifile.dll
- Commdlg.dll
- Keyboard.drv
- Lzexpand.dll
- Mciavi.drv
- Mciseq.drv
- Mciwave.drv
- Mmsystem.dll
- Mmtask.tsk
- Mouse.drv
- Msvideo.dll
- Olecli.dll
- Olesvr.dll
- Setup.inf

- Shell.dll
- Sound.drv
- System.drv
- Tapi.dll
- Timer.drv
- Ver.dll
- Vga.drv
- Wfwnet.drv
- Winspool.drv

Missing or corrupted DLLs second step:

If it was not one of those, you can try the DLLs under the following registry key:
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\W

Value: Known DLLs; here is the list of the DLLs, but most are in the list above.

At this point, you may want to try the brute force method: do a parallel installation with all updates and just copy over %SystemRoot%\System and %SystemRoot%\System32 from the parallel installation to the new system.

- Comm.drv
- Commdlg.dll
- Ctl3dv2.dll
- Ddeml.dll
- Keyboard.drv
- Lanman.drv
- Mapi.dll
- Mmsystem.dll
- Mouse.drv
- Netapi.dll
- Olecli.dll
- Olesvr.dll
- Pmspl.dll
- Shell.dll
- Sound.drv
- System.drv
- Toolhelp.dll
- Vga.drv
- Wfwnet.drv
- Win87em.dll
- Winoldap.mod
- Winsock.dll
- Winspool.exe
- Wowdeb.exe
- Timer.drv
- Rasapi16.dll
- Compobj.dll
- Storage.dll
- Ole2.dll
- Ole2disp.dll
- Ole2nls.dll
- Typelib.dll
- Msvideo.dll
- Avifile.dll
- Msacm.dll
- Mciavi.drv

- Mciseq.drv
- Mciwave.drv
- Progman.exe
- Avicap.dll

APPLIES TO

- Microsoft Windows 2000 Server
- Microsoft Windows 2000 Advanced Server
- Microsoft Windows NT Server 4.0 Standard Edition

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