

Microsoft Knowledge Base Article - 319043

Driver May Not Be Loaded with the /3GB Switch

The information in this article applies to:

- Microsoft Windows XP Professional

This article was previously published under Q319043

SYMPTOMS

If you use the **/3GB** switch in the Boot.ini file to support a program that can use more than 2 GB of virtual address space, a driver may not be loaded when Windows starts. This is more likely to occur with video adapter drivers. This is especially likely to occur if the hardware device contains a lot of onboard random access memory (RAM) that is used as a buffer.

CAUSE

This problem occurs because the driver is trying to reserve a large block of contiguous virtual memory addresses in the kernel address space to map the device's buffer. When you use the **/3GB** switch, the memory that is available to the kernel is halved. The kernel might not be able to allocate a large enough block of memory to satisfy the driver's request.

RESOLUTION

To resolve this problem, obtain the latest service pack for Windows XP. For additional information, click the following article number to view the article in the Microsoft Knowledge Base:

[322389](#) How to Obtain the Latest Windows XP Service Pack

The English version of this fix should have the following file attributes or later:

Date	Time	Version	Size	File name

10-Jun-2002	15:44	5.1.2600.48	1,836 KB	Ntoskrnl.exe
10-Jun-2002	15:44	5.1.2600.48	1,804 KB	Ntkrnlmp.exe
10-Jun-2002	15:44	5.1.2600.48	1,858 KB	Ntkrnlpa.exe
10-Jun-2002	15:44	5.1.2600.48	1,831 KB	Ntkrnpamp.exe

After you install this hotfix, you can use the new **/USERVA** memory-management switch. You can use this switch to tune the memory that is allocated above 2 GB to

User mode and taken from the kernel. By doing this, you can find a number that permits the driver to be loaded.

For example, using the **/USERVA=2900** switch in the Boot.ini file configures a User mode virtual address space of 2900 MB and a Kernel mode virtual address space of 1100 MB.

STATUS

Microsoft has confirmed that this is a problem in the Microsoft products that are listed at the beginning of this article. This problem was first corrected in Windows XP Service Pack 1.

REFERENCES

For more information about using the **/USERVA** switch, see the following Microsoft Knowledge Base article:

[316739](#) How to Use the /USERVA Switch in the Boot.ini File to Tune /3GB Configurations

Last Reviewed: 9/5/2002

Keywords: kbbug kbOSWin2000fix kbWinXPsp1fix KB319043

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