Knowledge Base

Available switch options for the Windows 2000 Boot.ini file

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The information in this article applies to:

- Microsoft Windows 2000 Advanced Server
- Microsoft Windows 2000 Datacenter Server
- Microsoft Windows 2000 Professional
- Microsoft Windows 2000 Server

SUMMARY

You can add many different switches to the Boot.ini file that will modify the way that Microsoft Windows 2000 starts. For additional information about the Boot.ini file, click the following article number to view the article in the Microsoft Knowledge Base:

102873 Boot.ini and ARC path naming conventions and usage

MORE INFORMATION

You can add the following switches to the Boot.ini file:

/basevideo

The **/basevideo** switch forces the system into standard 640x480 16-color VGA mode by using a video driver that is compatible with any video adapter. This switch permits the system to load if you select the wrong video resolution or the wrong refresh rate. Use this switch in conjunction with the **/sos** switch. If you install a new video driver, and it does not work correctly, you can select the Windows 2000 entry with this switch to start the computer and to change to a different driver.

/baudrate=*number*

This switch sets the baud rate of the debug port that is used for kernel debugging. The default baud rate is 9600 kilobits per second (Kbps) if a modem is attached. The default baud rate is 19200 Kbps for a null-modem cable. 9,600 is the normal rate for remote debugging over a modem. For example, type `/baudrate=9600` to specify a baud rate of 9600. If this switch is in the Boot.ini file, the **/debug** switch is automatically enabled.

For additional information about modem configuration, click the following article number to view the article in the Microsoft Knowledge Base:

148954 How to set up a remote debug session using a modem

For additional information about null modem configuration, click the following article number to view the article in the Microsoft Knowledge Base:

151981 How to set up a remote debug session using a null modem cable

/crashdebug

This switch turns on the COM port for debugging when Windows 2000 crashes. **/crashdebug** is useful if you experience random kernel errors. With this switch, you can use the COM port for normal operations while Windows is running. If Windows crashes, the switch converts the port to a debug port. (This action turns on remote debugging.)

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

151981 How to set up a remote debug session using a null modem cable

/debug

This switch turns on the kernel debugger when you start Windows. The switch can be activated at any time by a host debugger that is connected to the computer, if you want to turn on live remote debugging of a Windows system through the COM ports. Unlike the **/crashdebug** switch, **/debug** uses the COM port whether you are

debugging or not. Use this switch when you are debugging problems that are reproducible.

For additional information about remote debugging, click the following article number to view the article in the Microsoft Knowledge Base:

121543 Setting up for remote debugging

/debugport=comnumber

This switch specifies the communications port to use for the debug port, where *number* is the communications port, such as COM1, that you want to use. For example, type /debugport=com1, where the com port is COM1. By default, **/debugport** uses COM2 if it exists. Otherwise, the switch uses COM1. If you include this switch in the Boot.ini file, the **/debug** switch becomes active.

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

151981 How to set up a remote debug session using a null modem cable

/maxmem=number

This switch specifies the maximum amount of RAM that Windows can use. Do not make this setting less than 12. Use this parameter to confirm whether a memory chip is faulty.

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

108393 MAXMEM option in Windows NT Boot.ini file

/nodebug

This switch turns off debugging. This switch can cause a Stop error if a program has a debug hardcoded breakpoint in its software.

/numproc=number

This switch sets the number of processors that Windows will run at startup. With this switch, you can force a multiprocessor system to use only the quantity of processors (*number*) that you specify. This switch can help you troubleshoot performance problems and defective CPUs.

/fastdetect:comnumber

This switch turns off serial and bus mouse detection in the Ntdetect.com file for the specified port. Use this switch if you have a component other than a mouse that is attached to a serial port during the startup process. For example, type /fastdetect:comnumber, where number is the number of the serial port. Ports may be separated with commas to turn off more than one port. If you use **/fastdetect**, and you do not specify a communications port, serial mouse detection is turned off on all communications ports.

This switch is also used with uninterruptible power supplies (UPS), such as those supplies from American Power Conversion brand (APC), that connect to a serial port. If this switch is not available when Windows starts, and Windows tries to detect a mouse on this port, the UPS incorrectly starts its shutdown mode.

Note In earlier versions of Windows, including Windows NT 4.0, this switch was named **/noserialmice**.

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

131976 How to disable detection of devices on serial ports

/sos

The **/sos** switch displays the device driver names while they are being loaded. By default, the Windows Loader screen only echoes progress dots. Use this switch with the **/basevideo** switch to determine the driver that is triggering a failure.

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

99743 Purpose of the Boot.ini file in Windows 2000 or Windows NT

/PAE

Use the **/PAE** switch with the corresponding entry in Boot.ini to permit a computer that supports physical address extension (PAE) mode to start normally. In Safe Mode, the computer starts by using normal kernels, even if the **/PAE** switch is specified.

/HAL=filename

With this switch, you can define the actual hardware abstraction layer (HAL) that is loaded at startup. For example, type `/HAL=halmps.dll` to load the Halmps.dll in the System32 folder. This switch is useful to try out a different HAL before you rename the file to Hal.dll. This switch is also useful when you want to try to switch between starting in multiprocessor mode and starting in single processor mode. To do this, use this switch with the **/kernel** switch.

/kernel=filename

With this switch, you can define the actual kernel that is loaded at startup. For example, type `/kernel=ntkrnlmp.exe` to load the Ntkrnlmp.exe file in the System32 folder. With this switch, you can switch between a debug-enabled kernel that is full of debugging code and a regular kernel.

/bootlog

This switch turns on boot logging to a file that is named systemroot\Ntbtlog.txt. For more information about boot logging, see Windows Help.

/3GB

With this switch, user mode programs can access 3 GB of memory instead of the usual 2 GB that Windows allocates to user mode programs. The switch moves the starting point of kernel memory to 3 GB. This switch is used only with Windows 2000 Server Enterprise Edition. Some configurations of Microsoft Exchange Server 2000 and Microsoft Windows 2000 Advanced Server may require this switch.

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

266096 XGEN: Exchange 2000 requires /3GB switch with more than 1 gigabyte of physical ram

171793 Information on application use of 4GT RAM tuning

/safeboot:

This switch causes Windows to start in Safe Mode. This switch uses the following parameters:

- **/safeboot:minimal/sos/bootlog/noguiboot**
  This switch starts Windows in Safe Mode.
- **/safeboot:network/sos/bootlog/noguiboot**
  This switch starts Windows in Safe Mode with networking.
- **/safeboot:minimal(alternateshell)/sos/bootlog/noguiboot**
  This switch starts Windows in Safe Mode with a command prompt.
- **/safeboot:dsrepair/sos**
  On domain controllers only, this switch starts Windows in Directory Services Restore Mode.

Note The **/sos**,**/bootlog**, and**/noguiboot** switches are not required with any one of these settings, but the switches can help with troubleshooting. These switches are included if you press F8 and then select one of the modes.

For additional information about the Safe Mode boot switches for the Windows Boot.ini file, click the following article number to view the article in the Microsoft Knowledge Base:

239780 Safe-Mode boot switches for Windows Boot.ini file

For additional information about how to edit the Boot.ini file in Windows 2000, click the following article number to view the article in the Microsoft Knowledge Base:

311578 HOW TO: Edit the Boot.ini file in Windows 2000

Keywords: kbwinservsetup kbinfo KB833722
Technology: kbwin2000AdvServ kbwin2000AdvServSearch kbwin2000DataServ kbwin2000DataServSearch kbwin2000Pro kbwin2000ProSearch kbwin2000Search kbwin2000Serv kbwin2000ServSearch kbWinAdvServSearch kbWinDataServSearch