



[Jarek](#) > Use 4GB+ of your RAM with 32-bit Windows



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SOFT

PMING

I have this old Win7 32-bit laptop with 4 GB of RAM, but it was only able to use about 2.9 GB, the rest was "reserved for hardware". Recently I came across an interesting article by Raymond.CC "[Make Windows 7, 8 and Vista 32-bit \(x86\) Support More Than 4GB Memory](#)" and [PatchPae2](#) by Wen Jia Liu aka wj32 , which should enable PAE up to 128 GB for all current 32-bit Windows versions.

However, the patch of my current Windows 7 SP1 `winload.exe` version 6.1.7601.23569 failed, so I fixed it.

The result: [PatchPae2.exe](#)  
[Source and install instructions](#)

I looked into [wj32's code](#) and disassembled my `winload.exe` . Apparently it has changed in revision 23569. The original patch was for `ImgpLoadPEImage` , but I decided it would be more robust to patch the end of `ImgpValidateImageHash` . The offsets may change, but it is probably easier to maintain, as the error code `C0000428h` should stay constant.

```
.text:004295F7   loc_4295F7:
.text:004295F7   C7 44 24 18 28 04 00 C0
.text:004295F7       mov     [esp+70h+var_58],
.text:004295FF
.text:004295FF       jmp     4295FF
```

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