How to pause / resume any external process under Windows?

Asked 16 years, 3 months ago Modified 4 years, 8 months ago Viewed 23k times



11

I am looking for different ways to pause and resume programmatically a particular process via its process ID under Windows XP.



Process suspend/resume tool does it with SuspendThread / ResumeThread but warns about multi-threaded programs and deadlock problems.



<u>PsSuspend</u> looks okay, but I wonder if it does anything special about deadlocks or uses another method?

Prefered languages: C++ / Python

windows process process-management

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edited May 1, 2012 at 19:24



asked Sep 19, 2008 at 8:26



A SEO comment follows: PsSuspend looks like a windows equivalent of Linux/UNIX's kill -SIGSTOP or kill -SIGCONT (and even killall). – Ilia K. Oct 21, 2010 at 21:30

6 Answers

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5

If you "debug the debugger" (for instance, using logger.exe to trace all API calls made by windbg.exe), it appears that the debugger uses



SuspendThread() / ResumeThread() to suspend all of the threads in the process being debugged.



43

PsSuspend may use a different way of suspending processes (I'm not sure), but it is still possible to hang other processes: if the process you're suspending is holding a shared synchronization object that is needed by another process, you may block that other process from making any progress. If both programs are well-written, they should recover when you resume the one that you suspended, but not all programs are well-written. And if this causes your program that is doing the suspending to hang, then you have a deadlock.

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answered Sep 19, 2008 at 14:22



24.3k • 6 • 57 • 65



I'm not sure if this does the job, but with ProcessExplorer from MS Systemals you can suspend a process.







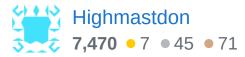
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edited Mar 20, 2017 at 10:18



answered May 4, 2012 at 12:17



1 Wow! This is it! Thank you very much! – Tomas Jan 26, 2022 at 10:30



read <u>here</u> and you also have psutil for python that you can use it like that:

3



```
>>> import psutil
>>> pid = 7012
>>> p = psutil.Process(pid)
>>> p.suspend()
>>> p.resume()
```



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edited May 23, 2017 at 12:32



answered Dec 27, 2012 at 11:27



I tested

http://www.codeproject.com/KB/threads/pausep.aspx on

1 few softwares:



it works fine.

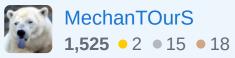


PsSuspend and Pausep are two valid options.



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answered Nov 20, 2008 at 7:25



If you're careful in using it then it works fine. If you use it to create a deadlock then you create a deadlock.

Windows programmer Nov 20, 2008 at 8:00



So, after I found about <u>UniversalPauseButton</u>, Googling for this ("windows SIGSTOP"), getting this question as the first search result (thanks Ilia K. <u>your comment</u> did its job), and reading the answers, I went back to checkout the code.



Apparently, it uses undocumented NT kernel and Win32



APIS _NtSuspendProcess, _NtResumeProcess and _HungWindowFromGhostWindow.

PsSuspend, the utility you mentioned and linked to probably uses these APIs, I couldn't verify this, the source

code isn't supplied, only executables and a EULA, you can probably figure that out by disassembling the binary but it's against the EULA.

so, to answer your specific question, checkout

<u>UniversalPauseButton</u>'s main.cpp, <u>basically</u> you call

_NtSuspendProcess(ProcessHandle) and

_NtResumeProcess(ProcessHandle), ProcessHandle being the handle of the process you want to pause or resume.

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edited Apr 22, 2020 at 17:46

answered Apr 22, 2020 at 17:29





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I think there is a good reason why there is no SuspendProcess() function in Windows. Having such a function opens the door for an unstable system. You shall not suspend a process unless you created that process yourself. If you wrote that process yourself, you could use an event (see ::SetEvent() etc. in MSDN) or another kind of messaging to trigger a pause command in the process.

answered Sep 19, 2008 at 11:46



- 1 Linux with it's Ctrl+Z process pause function is quite stable.
 - ogurets Dec 11, 2018 at 8:02