How to pause / resume any external process under Windows?

Asked 16 years, 3 months ago Modified 4 years, 8 months ago

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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.

PsSuspend 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

Chilledrat

2,605 ● 3 ● 30 ● 39

asked Sep 19, 2008 at 8:26

MechanTOurS

1,525 ● 2 ● 15 ● 18

5 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

Sorted by: Highest score (default)

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5

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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.

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

bk1e

24.3k ● 6 ● 57 ● 65

4

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

It's been said here: https://superuser.com/a/155263 and I found it there too.

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edited Mar 20, 2017 at 10:18

Community Bot
1 ● 1

answered May 4, 2012 at 12:17

Highmastdon
7,470 ● 7 ● 45 ● 71

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

3

read here and you also have psutil for python that you can use it like that:

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

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edited May 23, 2017 at 12:32

Community Bot
1 ● 1

answered Dec 27, 2012 at 11:27

Hanan
1,179 ● 3 ● 23 ● 40

1

I tested http://www.codeproject.com/KB/threads/pausep.aspx on few softwares:

it works fine.

PsSuspend and Pausep are two valid options.

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answered Nov 20, 2008 at 7:25
MechanTOurS
1,525 ● 2 ● 15 ● 18

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

1

So, after I found about UniversalPauseButton, Googling for this ("windows SIGSTOP"), getting this question as the first search result (thanks Ilia K. your comment 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 UniversalPauseButton's main.**cpp**, basically 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

Wis
514 ● 8 ● 23

0

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.

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answered Sep 19, 2008 at 11:46

Andre
1,597 ● 1 ● 13 ● 25

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