Fun with processes - Suspend and Resume

cyberstoph.org/posts/2021/05/fun-with-processes-suspend-and-resume

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Did you ever wonder how process suspension in Windows works? Nevermind, I'm writing this anyway.

Since you're reading this blog you're either totatlly lost or into Windows anyway. So I assume you alread tried suspending and resuming a process with process explorer for example. There are actually different ways to suspend a process and we'll go with the one that's officially undocumented (more fun).

NTSuspendProcess

The API we're using is called **NTSuspendProcess** and lives inside NTDLL. It is not documented officially as mentioned above, however it is already well known for years and you find a lot of information about it on the internet. It looks like this:

```
[DllImport("ntdll.dll", PreserveSig = false)]
public static extern void NtSuspendProcess(IntPtr processHandle);
```

Quite simple, the only thing we need is a process handle with the appropriate (= ALL) permissions. And you might already guessed it, resuming the process works the same way.

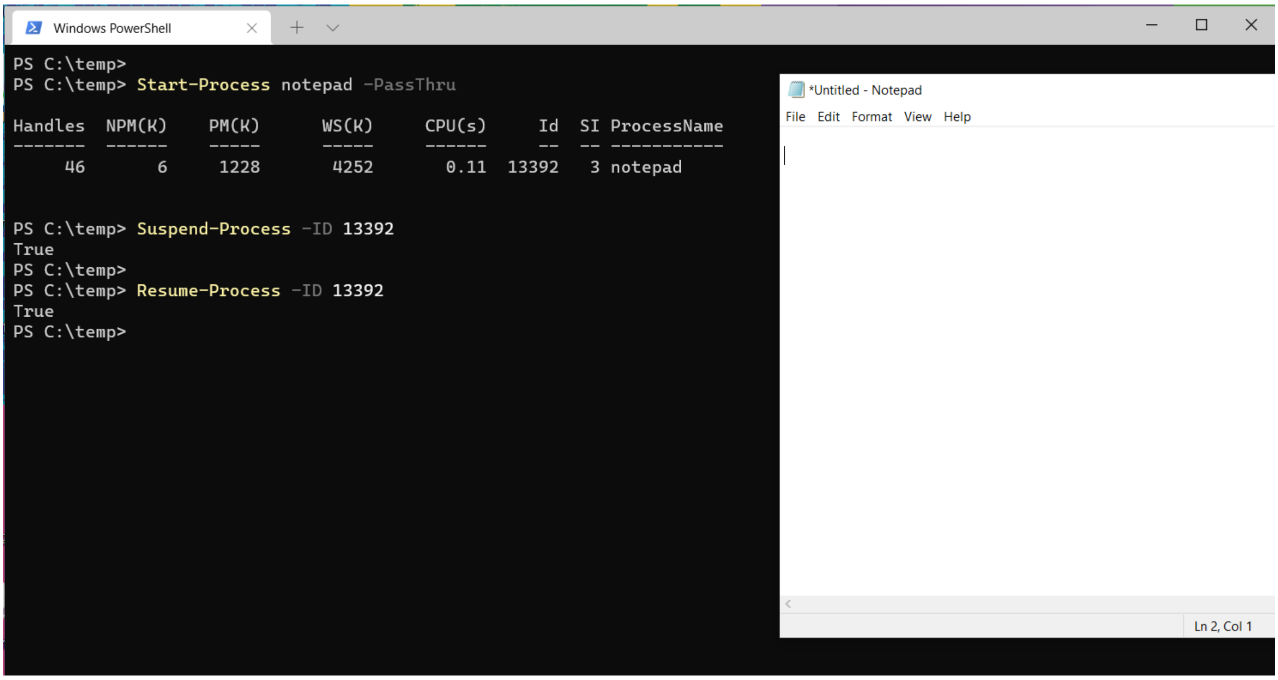
```
[DllImport("ntdll.dll", PreserveSig = false, SetLastError = true)]
public static extern void NtResumeProcess(IntPtr processHandle);
```

To make things work, we also need **OpenProcess** and **CloseHandle** from kernel32 to acquire and release the process handle.

```
[DllImport("kernel32.dll", SetLastError = true)]
public static extern IntPtr OpenProcess(ProcessAccessFlags processAccess,bool
bInheritHandle,int processId);
[DllImport("kernel32.dll", SetLastError=true)]
public static extern bool CloseHandle(IntPtr hObject)
```

And that's it. Nothing fancy here today ;-)

If you're interested, here's a Powershell function to play with.



```
PS C:\temp>
PS C:\temp> Start-Process notepad -PassThru

Handles  NPM(K)    PM(K)      WS(K)     CPU(s)     Id  SI ProcessName
-------  ------    -----      -----     ------     --  -- -----------
     46       6     1228       4252       0.11  13392   3 notepad


PS C:\temp> Suspend-Process -ID 13392
True
PS C:\temp>
PS C:\temp> Resume-Process -ID 13392
True
PS C:\temp>
```