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Created on September 25, 2016

Why is Windows 10 compressing memory when I appear to have plenty available.

(edit: updated hyperlinks)

I do a lot of scientific/engineering computing simulation with bespoke and memory hungry applications. Perhaps not memory hungry in a 8tb supercomputer sense, but memory hungry in the 'more than word/email/youtube and even chrome' sense. Historically my worksets have occupied anywhere from 4-30 gb of RAM.

Since the anniversary update I have experienced significant performance issues with my machine, and while investigating I noticed that windows appears to be fairly aggressively compressing memory. For example, when opening a particular model I experience this:

<http://imgur.com/a/73SXk>

If task manager is to believed (and I know it might not be, as the notion of memory is quite nebulous) I am using 11.5gb of memory, 4.7gb of which is compressed. However there is effectively 17.5 gb free.

Some notes about this:

- This behaviour is not consistent. Sometimes when I open the same model I do not have any compressed memory
- Because of the above I am fairly certain that the memory set does not uncompress to more than 24 gb (even this is a high order)
- I have attempted to disable what I can of memory compression as per <http://superuser.com/questions/1000485/how-to-disable-windows-10-memory-compression>
- I've noticed that at times my system seems very unwilling to go above ~16gb of RAM usage. Even if I were to open multiple copies of the same model, the memory usage will ramp up to 16gb, and then start very aggressively compressing instead of using the available memory.
- When I use the sysinternals process explorer I can often see the 'System/Memory Compression' process using an entire core at times when my system appears to be sluggish/nonresponsive
- My system:
 - Freshly formatted 10 days ago (updated previous install to anniversary but had performance issues. attempted a flatten-and-reinstall to see if that would help)
 - Windows 10 Home (meant to install professional but probably chose wrong option in installer)
 - 1607 14393.187
 - Lenovo W540 laptop with 32gb of ram
 - This is an optimus system (hybrid intel/nvidia graphics)
- My behaviour (this is mentioned because some of it is uncommon and my merit of being an edge case has been historically problematic in other areas):
 - Suspend/resume a lot as I move between home/various areas of work
 - Multiple high resolution monitors
 - Use multiple Lenovo docks (home/work)

As mentioned I have been experiencing significant performance issues with my machine since the anniversary update. My suspicion is that this is due to changes in memory compression policy as I have often noticed the CPU churning and fans spinning up at times when system appears to be acting sluggishly. However I have not been able to confirm this as I had not been monitoring memory compression prior to the anniversary update - it is entirely possible that similar compression behaviour was occurring prior to the update but working fine.

I've tried reading about W10 memory policies and compression but haven't been able to find a lot on the internet that goes into specifics. If someone could answer my question, explain what is going on here, or otherwise provide some resources for me to research in greater detail it would be appreciated.

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Question Info

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Replies (6) ▼**Edgar Pan**

Microsoft Agent | Moderator

Replied on September 26, 2016

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Hi,

We certainly want to get this taken cared of.

To resolve Windows 10 memory issues, we suggest you refer to the suggestions provided by Anup Karkal on July 27, 2016 in this Microsoft Community [link](#).

Let us know how it goes.

Was this reply helpful? [Yes](#) [No](#)**adantemoo**

EP

Replied on September 26, 2016

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↳ In reply to Edgar Pan's post on September 26, 2016

Hi Edgar,

Thank you for bringing that to my attention.

To answer Anup's questions, no I am not using any third party security software in the system.

I have attempted a clean boot as suggested and the result is much the same.
Screenshots of task manager are here: <http://imgur.com/a/hChdF>

As in my original post, I end up using 7.2gb of memory, 3.9gb of which is compressed, with 24.3 gb still nominally available.

Was this reply helpful? [Yes](#) [No](#)

AD

adantemoo

Replied on September 28, 2016

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↳ In reply to adantemoo's post on September 26, 2016

Anup Karkal's suggestions did not resolve my Windows 10 memory issues.

Is it possible to confirm at least that there was a memory compression behaviour/policy change in the Windows 10 anniversary update? If so do Microsoft consider this an issue they are looking at or as far as they are concerned is it all good?

Was this reply helpful? [Yes](#) [No](#)**ZigZag3143 (MS -MVP)**

MVP

Replied on September 28, 2016

AD

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↳ In reply to adantemoo's post on September 28, 2016

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Cat herder
Windows Insider MVP
MVP-Windows and Devices for IT
<http://www.zigzag3143.com/>

Was this reply helpful? Yes No

[adantemoo](#)

Replied on September 29, 2016

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↳ In reply to ZigZag3143 (MS -MVP)'s post on September 28, 2016

Apologies if it was not clear, this was an open question and anybody who is in the know or can make educated speculation is welcome to answer. I did not intend to exclude anybody from from the conversation.

I have been [burned by Microsoft memory bugs before](#) and have found them extremely costly in terms of time, effort and productivity.

I am trying to gather sufficient information to make a determination if it is going to be like this forever, and whether I should revert systems to Win7/pre-anniversary and advise my users to do the same, or whether it is worth attempting to wait out.

The fact that nobody else appears to be experiencing this makes me suspect the former, but figured it was worth asking.

AD Was this reply helpful? Yes No

[MacGyverBE](#)

Replied on October 24, 2016

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Hello adantemoo,

Windows 10 has had memory compression since release (RTM). The only changes that have been made (public) since the Anniversary Update is the way it is made visible in Task Manager; you now clearly see it mentioned and the working set that contains the compressed memory is in a child process of the system process. That said it's very possible other changes were made but not disclosed.

Now for several reasons it's a good thing that windows is compressing memory, since previously it would have been paged instead. There is some conflicting evidence on how it works exactly with regards to CPU usage since the original article detailing it (found here: <http://feedbackhub.online>) mentions compression and decompression is parallelized which I mean to understand multi-threaded but I guess it need not be.

More unofficial info here: <https://aloiskraus.wordpress.com>

Of course it's not impossible for it to contain bugs or, if an intelligent algorithm is involved, to make odd decisions at times and resulting in wrong behaviour.

MA

Edit: the same site (<https://aloiskraus.wordpress.com>) mentions how to disable Memory Compression (so you can rule out if that is the cause of your problems):

Open Powershell and verify current status with:
Get-MMAgent

Disable Memory Compression (requires a reboot which means this change is persistent):
Disable-MMAgent -MemoryCompression

Enable Memory Compression:
Enable-MMAgent -MemoryCompression

Let us know if this was the problem; will help other people to figure out their issues and, if there is a bug, notifies Microsoft of the issue.

Good luck.

Edit2: More here (haven't viewed it myself yet): <https://channel9.msdn.com>

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