Technical Advisory

Extremely demanding Notch blocks can cause an oversubscription of available memory resources – dısguıse statement

Issue:
Memory allocations are oversubscribed for tasks that rely heavily on the GPU and its VRAM. In extreme cases this can cause the system to crash from lack of available system memory.

Affected machines:
All Nvidia-based machines: gx1, gx2, 2x4pro, solo, and 2x2plus

Workaround:
For large quantities of Notch blocks, merge these into one block before exporting from Notch and importing to disguise.

If the issue prevails, for example with Notch blocks containing demanding or complex 3d scenes, the following steps will help navigate to and change the operating system's behaviour when allocating additional pagefile resources.

(note these screenshots were captured from a gx2 running Windows 10. The 2x2plus running Windows 8.1 will be very similar)
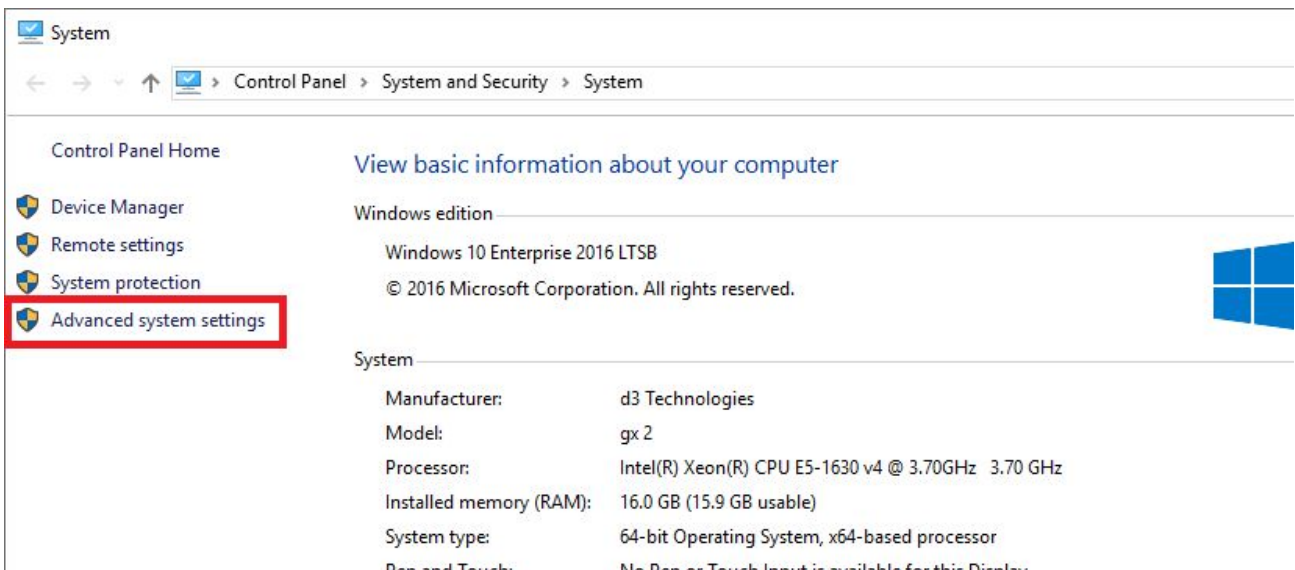
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Document Title:	Version: **1.0**	Date: 20.07.2018

1 Access System settings

Right-click the Start Menu icon and select "System"
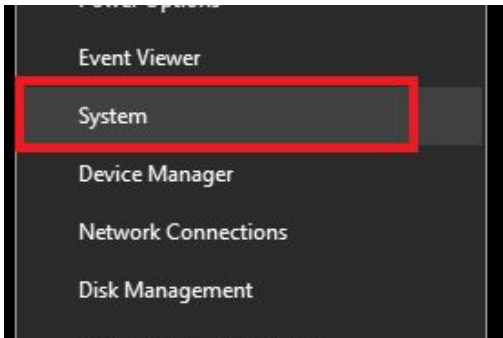
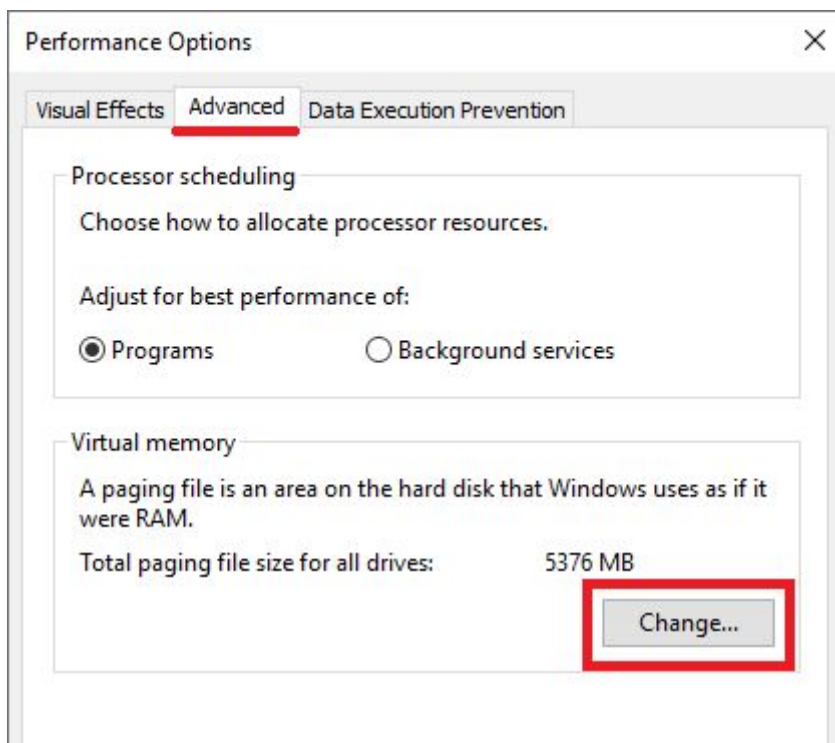## 2 In the System Control Panel window, select Advanced System Settings

3 In the Advanced tab, click the Settings button

System Properties   ✕

| Computer Name | Hardware | Advanced | System Protection | Remote |

You must be logged on as an Administrator to make most of these changes.

Performance

Visual effects, processor scheduling, memory usage, and virtual memory

Settings...

User Profiles

Desktop settings related to your sign-in

Settings...
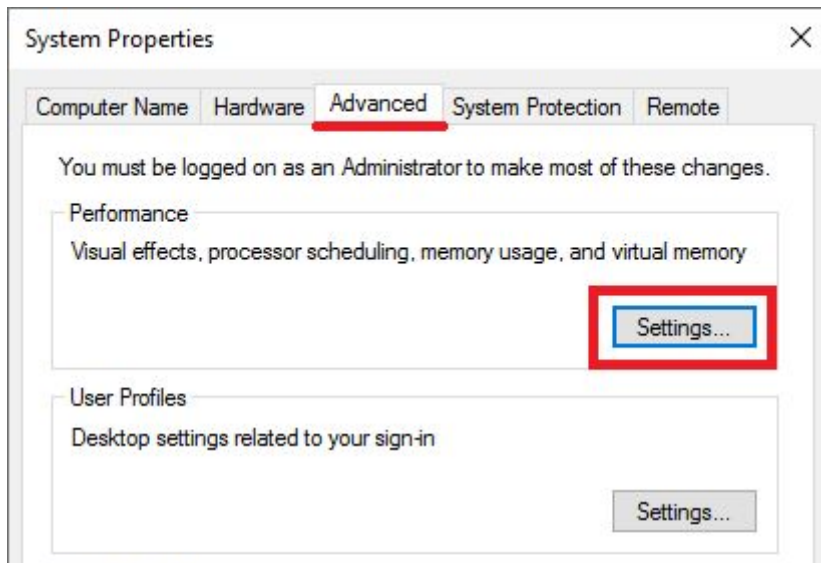
4 In the Advanced tab of the Performance Options, click the Change button

Performance Options   ✕

| Visual Effects | Advanced | Data Execution Prevention |

Processor scheduling

Choose how to allocate processor resources.

Adjust for best performance of:

◉ Programs   ○ Background services

Virtual memory

A paging file is an area on the hard disk that Windows uses as if it were RAM.

Total paging file size for all drives: 5376 MB

Change...

5 Enable the Media drive as a System managed paging file location
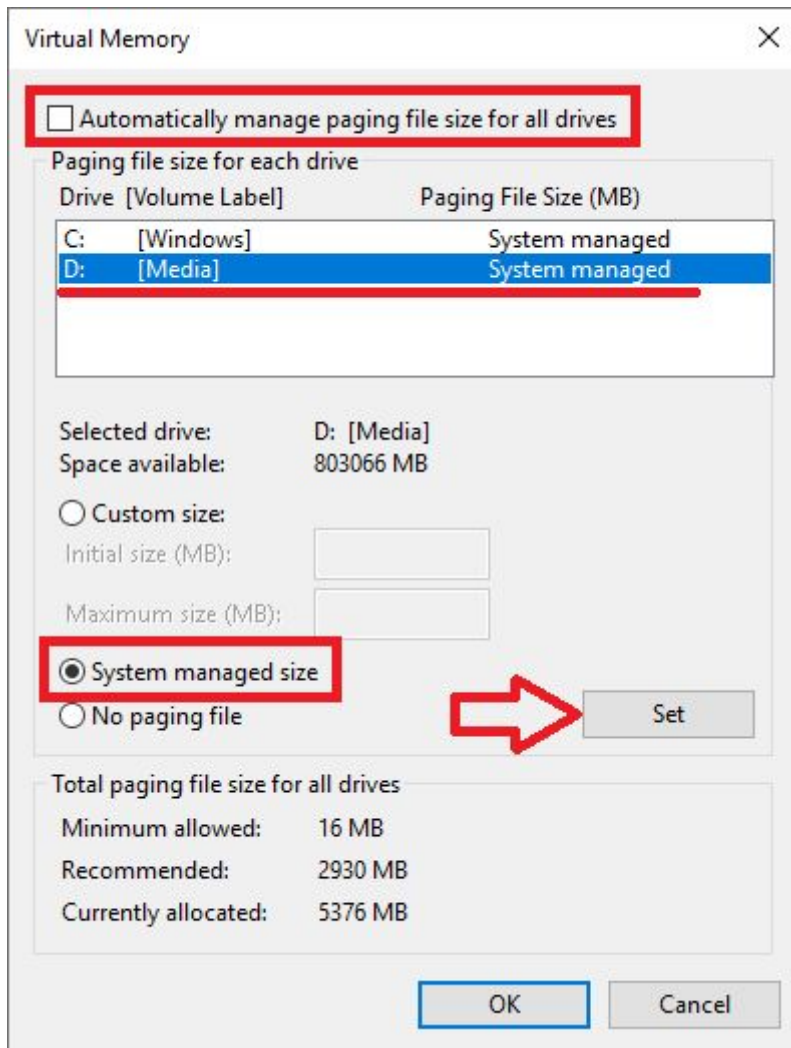
To do this:

> **Uncheck** the "Automatically manage paging file size for all drives" option if it is not already.

>Select the D: drive from the list of drives.

>Change this drive from "No paging file" to **"System managed size"**.

>Click the **Set** button. The set button must be clicked for these changes to take effect.

6 Confirm changes and restart the server

Changes will only take effect if the **Set** button has been clicked. Click OK on every window opened and **Restart** immediately.

Impact of this workaround

This will give Windows the option to write to a temporary paging file on the Media drive during times of very high memory usage. The file will dynamically grow and shrink as needed, but has a finite maximum size - 48GB on the gx2/gx1/2x4pro, for example.

Our testing has found that the only scenario that requires this much additional memory is when complex and demanding Notch blocks - such as detailed 3D scenes with high resolution textures - are in use. This change only has the ability to impact performance in scenarios that, without this workaround, would lead to a crash. At these times, a momentary slowdown is possible when accessing resources that have been moved to the pagefile(s) - for example, dropping 2 or 3 frames as a Notch block reloads.

A project made up of conventional video content and a handful of more straightforward Notch effects is extremely unlikely to ever be affected by this workaround, nor exhibit the issue this advisory addresses.