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Milestone Systems

XProtect® Smart Client 2018 R1

Hardware acceleration guide

milestone

Contents

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Hardware acceleration (explained)

Hardware acceleration improves the decoding capability and performance of the computer running XProtect Smart Client. This is particularly useful when you view multiple video streams with high frame rate and high resolution.

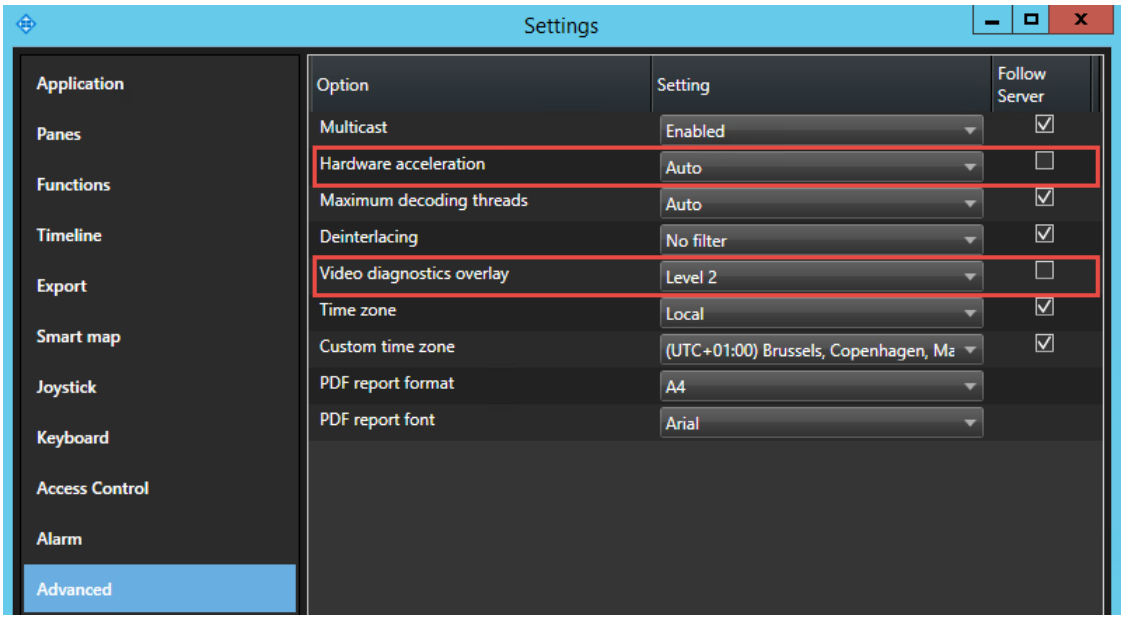
Note: XProtect Smart Client supports hardware accelerated decoding using Intel® and NVIDIA® GPUs.

Follow the steps described in the next sections to examine your PC to make sure that all hardware acceleration resources are available.

Check hardware acceleration settings

1. Go to **Settings** > **Advanced** > **Hardware acceleration**.
2. There are two settings for hardware acceleration: **Auto** and **Off**.

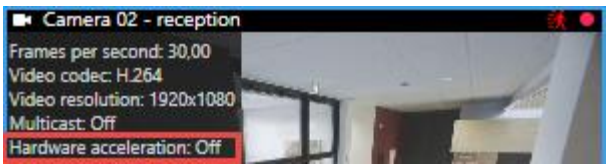
   Select the default setting **Auto**.



3. Go to **Video diagnostics overlay**.
4. To make the current status of the stream, including the GPU resource used for hardware acceleration visible, select **Level 2**.

Note: This setting applies to all view items. The default setting is **Hide**.

The video diagnostics overlay status for **Hardware acceleration** can be: **Intel**, **Nvidia** or **Off**.



If the status is **Off**, continue to examine your computer so you can enable hardware acceleration, if possible.

Next, verify your operating system (on page 6).

Verify your operating system

Make sure your operating system is Microsoft® Windows® 8.1, Windows® Server 2012, or newer.

Note: Only non-virtual environments are supported.

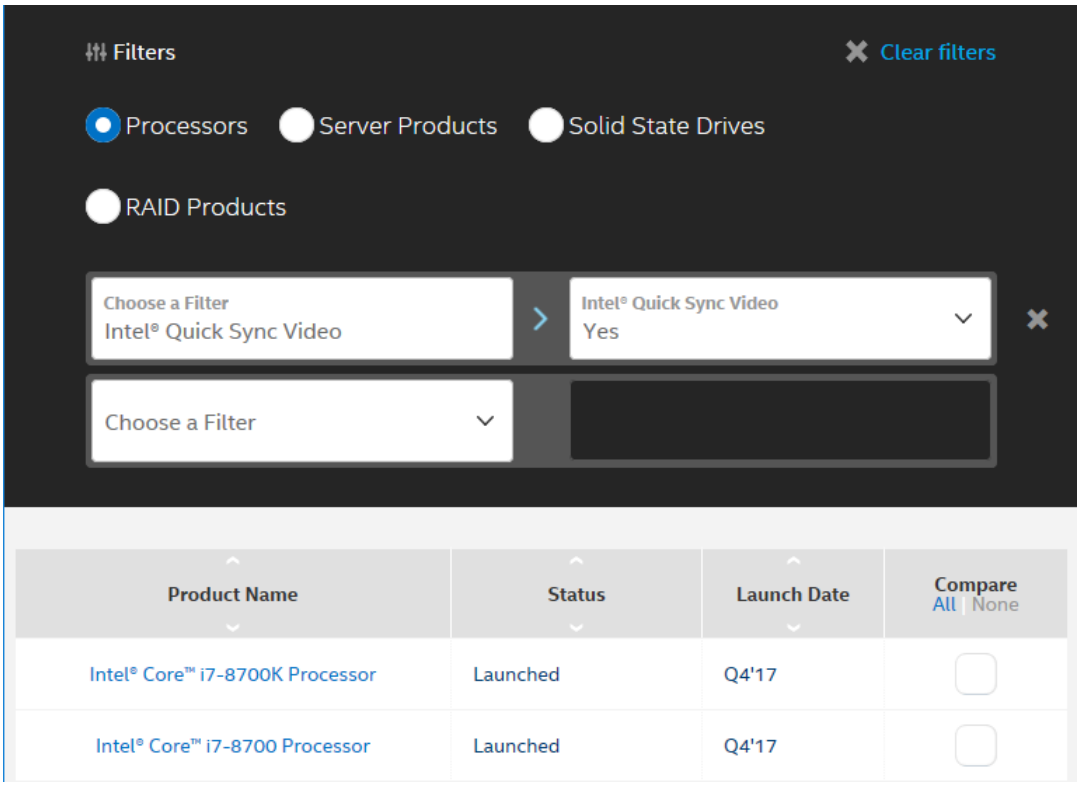
NVIDIA hardware acceleration is only supported by 64-bit operating systems.

Next, check CPU Quick Sync support (on page 7).

Check CPU Quick Sync support

To verify that your processor supports Intel Quick Sync Video:

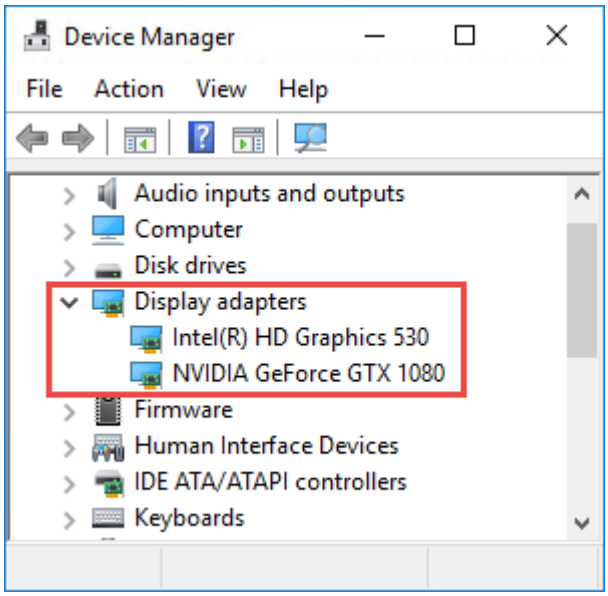
1. Visit the Intel website (https://ark.intel.com/Search/FeatureFilter?productType=processors&QuickSyncVideo=true).
2. In the menu, set **Processors** and **Intel Quick Sync Video** filter to **Yes**.
3. Find your CPU in the list.



Next, examine the Device Manager (on page 8).

Examine the Device Manager

Make sure that an Intel or NVIDIA display adapter is present in Windows Device Manager.



Important: You can connect your displays to any display adapter available. If a more powerful display adapter is available in your computer, typically NVIDIA or AMD®, connect your displays to this adapter to use all available GPU resources for hardware accelerated decoding and rendering.

Not all NVIDIA display adapters supports hardware acceleration. Check NVIDIA hardware acceleration support (on page 9).

If the Intel display adapter is not present, enable the Intel display adapter in the BIOS (on page 10).

Next, update the video driver (on page 11)

Check NVIDIA hardware acceleration support

NVIDIA products have different compute capabilities. To verify that your NVIDIA product supports hardware acceleration for the codecs used in your Milestone XProtect system, look up the supported codecs for the compute capability version in the table below.

To find out the compute capability version for your NVIDIA product, visit the NVIDIA website (https://developer.nvidia.com/cuda-gpus).

Compute capability	Architecture	JPEG	H.264	H.265
3.x	Kepler	✓	✓	-
5.x	Maxwell	✓	✓	-
6.x	Pascal	✓	✓	✓
7.x	Volta	✓	✓	✓

Next, update the video driver (on page 11).

Enable the Intel display adapter in the BIOS

If another display adapter card, for example NVIDIA or AMD, is available in your computer, the onboard Intel display adapter may be disabled, and you must enable it.

The Intel display adapter is located on the motherboard as a part of the CPU. To enable it, look for graphics, CPU or display settings in the computer BIOS. The vendor's motherboard manual may be helpful to find the relevant settings.

Tip: If changing the settings does not enable the onboard Intel display adapter, you can try to move the display adapter card to another slot and then connect the display to the motherboard. In some cases, this can enable the onboard display adapter.

Next, update the video driver (on page 11).

Update the video driver

Make sure that the driver version for all your display adapters are updated to the newest version available from Intel or NVIDIA.

Note: The Intel driver version provided by the PC vendor can be an older version and may not support Intel Quick Sync Video.

There are two ways of updating your video driver. Manual download and install or using a driver update utility.

Intel

Manual download and install:

1. Go to the Intel download website (https://downloadcenter.intel.com/).
2. Enter the name of your integrated display adapter.
3. Manually download and install the driver.

For automatic detection and updates of Intel components and drivers:

1. Download Intel Driver and Support Assistant (http://www.intel.com/p/en_us/support/detect).
2. Run the assistant to auto search for the drivers.
3. Choose to update the driver for Graphics.

NVIDIA

Option 1: Manually find drivers for my NVIDIA products.

1. Go to the NVIDIA download drivers website (http://www.nvidia.com/Download/index.aspx).
2. Enter the name of your product and the operating system.
3. Manually download and install the driver.

Option 2: Automatically find drivers for my NVIDIA products.

1. Go to the NVIDIA download drivers website (http://www.nvidia.com/Download/index.aspx).
2. Click **GRAPHICS DRIVERS**.
3. Your system is scanned.
4. Download and update the driver.

Next, check memory modules configuration (on page 12).

Check memory modules configuration

If your system supports more than one memory channel, you can increase the system performance by making sure that a minimum of two channels have a memory module inserted in the correct DIMM slot. Refer to the motherboard manual to find the correct DIMM slots.

Example:

A system with two memory channels and a total of 8 GB of memory obtains the best performance using a 2 x 4 GB memory module configuration.

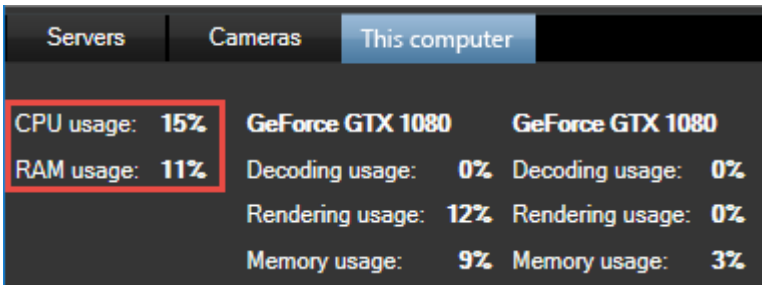
If you use a 1 x 8 GB memory module configuration, you only use one of the memory channels.

Next, monitor client resources (on page 13).

Monitor client resources

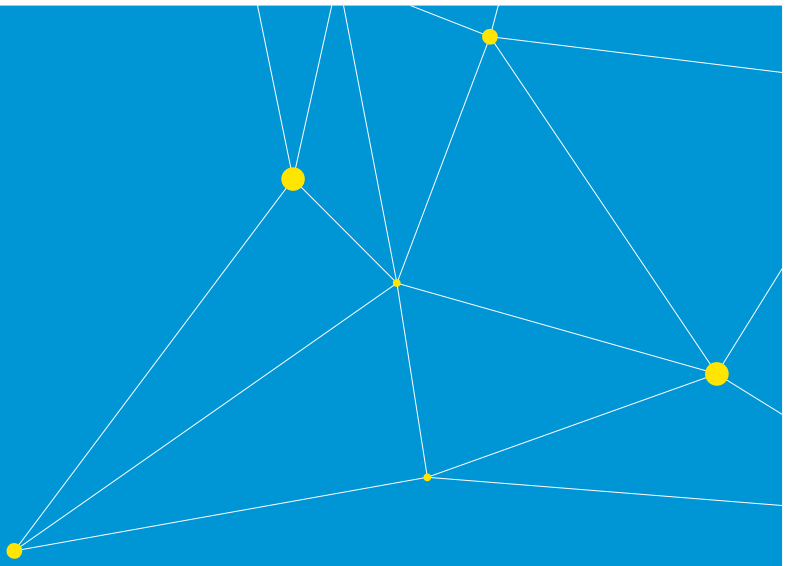
The number of cameras in a view together with the resolution, frame rate, and codec results in a load on your PC running XProtect Smart Client. To observe the current load on **CPU**, **RAM**, and NVIDIA GPU resources:

1. Click and drag the **System Monitor** tab to undock it to a separate window.
2. Select **This computer**.
3. To monitor the load of the current view, select the **Live** or **Playback** tab.



Note: If your client PC has additional NVIDIA display adapters installed, the load on these GPU's are also visible.

Tip: If the load is to high you can add GPU resources to your PC by installing multiple NVIDIA display adapters.



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About Milestone Systems

Milestone Systems is a leading provider of open platform video management software; technology that helps the world see how to ensure safety, protect assets and increase business efficiency. Milestone enables an open platform community that drives collaboration and innovation in the development and use of network video technology, with reliable and scalable solutions that are proven in more than 150,000 sites worldwide. Founded in 1998, Milestone is a stand-alone company in the Canon Group. For more information, visit: http://www.milestonesys.com.