Whitepaper

Optimal network adapter settings for GigE/10GigE (Windows7/8/10)

| Created:			
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This whitepaper explains how to configure your network adapter/card or grabber to give the best performance when used with a 1GigE/10GigE camera.

If the NIC is not set optimally, it can lead to loss of performance, lost network packets, lost frames, and connection losses.

1. We recommend inserting the network card or network grabber into the topmost PCIe interface (closest to CPU).

2. Please make sure that you use the latest driver for your network adapter. For Intel network adapters, we recommend the Intel Pro network driver which can be downloaded from the Intel website.

3. If you are using a laptop, please operate it connected with the power supply unit and not just with the battery.
   Reason: Windows slows down the network speed in battery mode. It is important that the laptop is booted with the power supply connected.

4. Please set the PC to "High Performance" in the Power Options (Windows Control Panel).

5. In Control Panel\Network Connections you can find all your network devices. Please right click on your network adapter which is connected to the camera and go to "Properties".
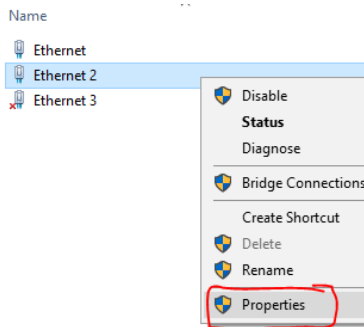
6. Disable all GigE Vision filter drivers that you do not need. Only activate the driver of your software e.g. our SVGigE FilterDriver x.x.x SVS-VISTEK GmbH.
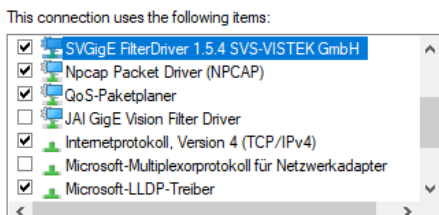
7. Go to Settings (Configure) and "Performance Options" Properties and set the following parameters:

   - Interrupt throttling: **activated**
   - Jumbo Packages: **9014 Byte (9K)**
   - Max. number of RSS queues: **1 queue (depends on CPU and used Image Acquisition Software)**

   - Receive buffer: **4096 (or the supported maximum)**
   - Flow control: **RX and TX activated**
   - Interrupt throttling rate: **Adaptive**
   - Transmission buffer: **4096 (or the supported maximum)**

   - If setting available: Log connection event: **deactivated**
   - If setting available: Energy-efficient Ethernet: **deactivated**

   Please note, not all these parameters must be available. It depends on NIC manufacture/type and driver version.

MYRICOM 10GigE Grabber:

If you use a Myricom grabber in conjunction with our 10GigE camera and SDK, please be sure that only the MVA driver is installed on your system. No nVoy, Myri10G, DBL, or SNF driver (all available on the driver download area of CSPI) should be installed on your system, otherwise it can lead to problems.

With Myricom 10GigE Grabber card and MVA driver, it is only necessary to set the MTU (Jumbo Packages) to 9000.

Make sure that only the **SVS-Vistek GevMvaTL** is enabled in the SVCapture2 **GenTL Manager** (Discovery->TL Settings ->GigE Vision).
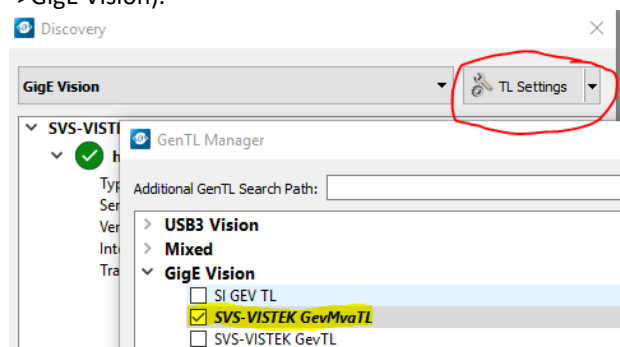
Please note, if you use a camera which has images bigger than 50-60MB (like shr461/411 or hr455), you must increase the buffer size of the grabber from 60MB (default) to 508MB. For this, please see description below or **CSPI Release Notes MVA** which is available on the CSPI MVA driver download area:
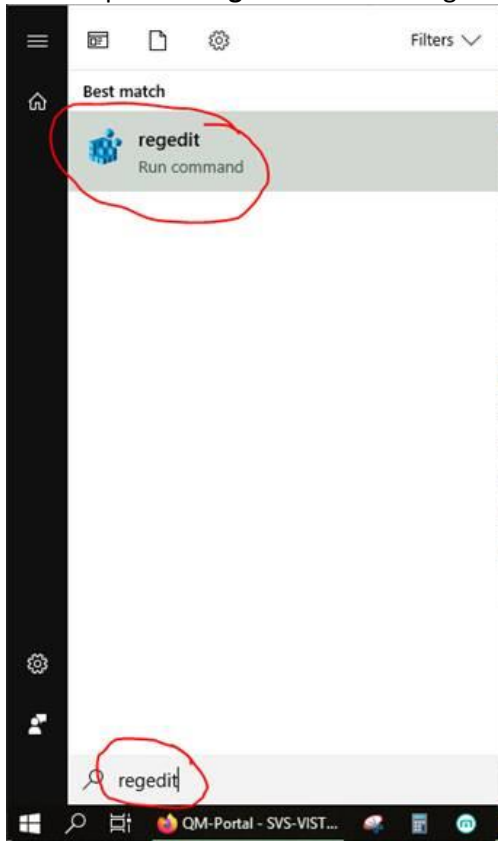
Register settings description for Windows:

Set the registry key: **PS C:\MVA_Myri-10G> REG ADD HKLM\SYSTEM\CurrentControlSet\services\mva /v myri_mva_desc_count /t REG_DWORD /d 64**
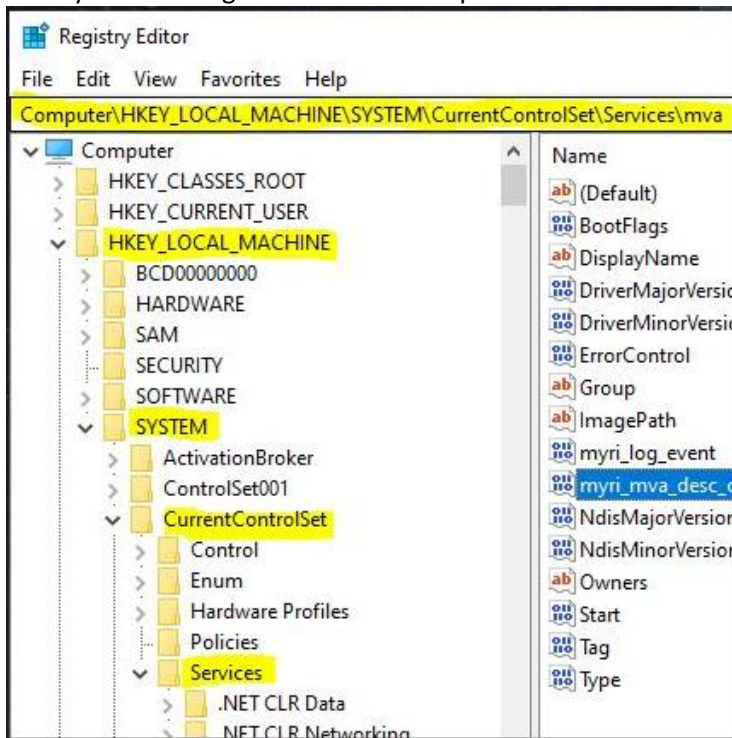
Matrix of allowed myri_mva_desc_count:

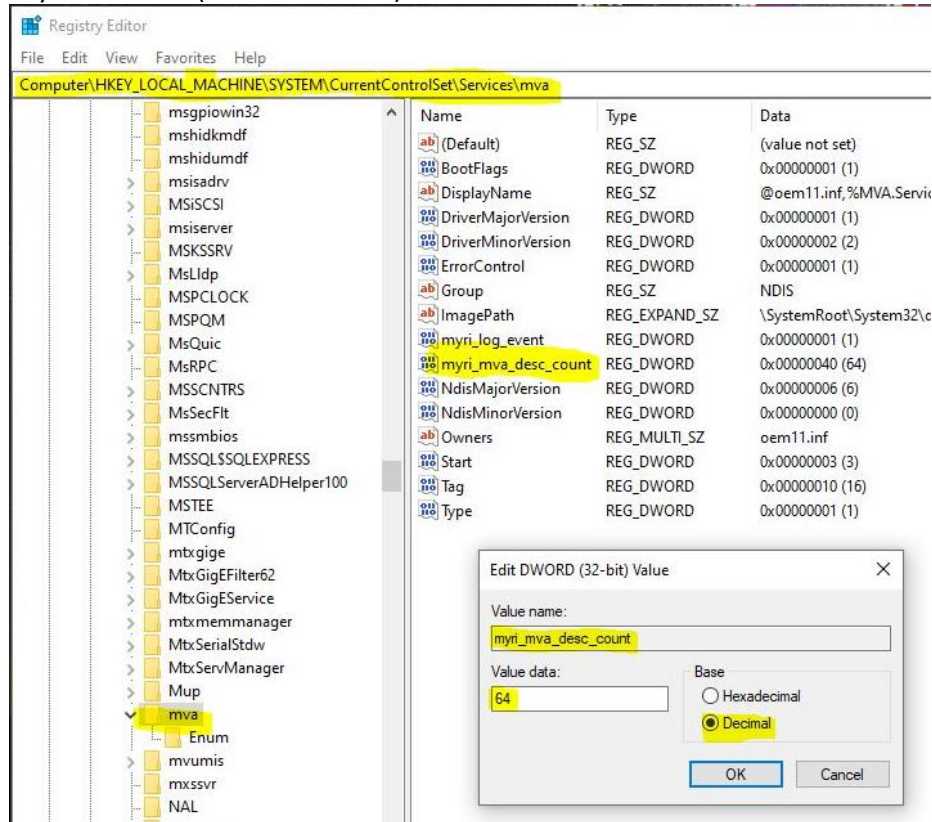| descriptors	size	max buffer
512	256	60 MB (default)
256	512	124 MB
128	1024	252 Mb
64	2048	508 MB

Please open the **regedit** to set the register:

Then you need to go to the described path in the HKEY LOCAL_MACHINE :

Go to the "mva" path. Right click on the "myri_mva_desc_count" and choose "Modify.." to set the registry key value to 64 (max. buffer size).

If the myri_mva_desc_count is not in the mva path included, you may have to create the REG_DWORD path first. For this right click in the path window, choose New and "DWORD (32-bit) Value" and name it to myri_mva_desc_count.
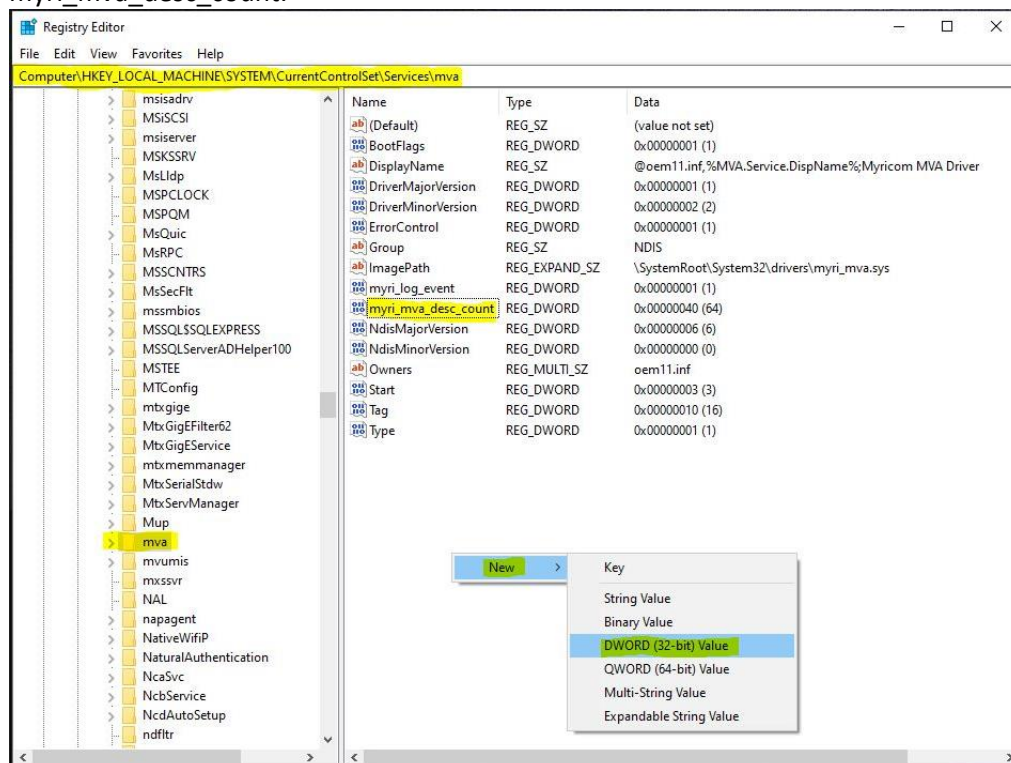
After set the register key value, please restart the network devices:

a. Select Control Panel > Network and Internet > **Network Connections**.
b. Click the first Myri-10G PCIe NIC with MVA and select **Disable this network device**.
c. Click the second Myri-10G PCIe NIC with MVA and select **Disable this network device**.
d. Click the first Myri-10G PCIe NIC with MVA and select **Enable this network device**.
e. Click the second Myri-10G PCIe NIC with MVA and select **Enable this network device**.