

# Whitepaper

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

Created:			
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	26.10.2020	Support	A.Ritzinger



## 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.

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## **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.

Eigenschaften von Myri-10G PCIe NIČ with MVA



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	<u>max buffer</u>
512	256	60 MB (default)
256	512	124 MB
128	1024	252 Mb
64	2048	508 MB



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

Then you need to go to the described path in the HKEY LOCAL\_MACHINE :





-	msgpiowin32	^	Name	Туре	Data
	mshidkmdf		ab (Default)	REG SZ	(value not set)
	mshidumdf		88 BootFlags	REG DWORD	0x00000001 (1)
>	msisadrv		ab DisplayName	REG SZ	@oem11.inf %MVA.Sen
>	MSiSCSI		W DriverMajorVersion	REG DWORD	0x00000001 (1)
>	msiserver		100 DriverMinorVersion	REG DWORD	0x00000002 (2)
	MSKSSRV		Street Control	REG DWORD	0x00000001 (1)
>	> 🛃 MsLldp	ab Group		REG SZ	NDIS
	MSPCLOCK		ablmageDath	REG_SZ	\SurtomPoot\Surtom27
	MSPQM			REG_EAPAND_32	(System (OUL) System 52
>	MsQuic		on horizon and hor	REG_DWORD	0x0000001(1)
	MsRPC		myri_mva_desc_count	REG_DWORD	0x00000040 (64)
2	MSSCNIRS		indisiviajorversion	REG_DWORD REG_DWORD REG_MULTI_SZ REG_DWORD	0x00000008 (6) 0x00000000 (0) oem11.inf 0x00000003 (3)
>	MsSecFit		NdisMinorVersion		
>	mssmbios		ab Owners		
2	MSSQLSSQLEXPRESS		Start		
	MSSQLServerADHelper100		100 Tag	REG_DWORD	0x00000010 (16)
	MSTEE		🛍 Туре	REG_DWORD	0x00000001 (1)
	MIConfig				
>	mtxgige		Edit DWORD (32	-hit) Value	×
2	MtxGigEFiltero2		Edit Divono (SE	. Dicj value	~
2	MitxGigEService		Value name:		
2	mtxmemmanager		myri mya desc i	count	
2	MtxSerialStdw				
	MitxServivianager		Value data:	Base	Internet and a
2	мир		64	() He	xadecimal
Ť	miva			🖲 De	cimal
	cnum				
	mvumis			0	K Cancel
	mxssvi				

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.

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>	msisadrv 🔺	Name	Туре	Data
	MSiSCSI	ab (Default)	REG SZ	(value not set)
>	msiserver	88 BootElags	REG DWORD	0x00000001 (1)
	MSKSSRV	ab DisplayName	REG SZ	@oem11.inf %MVA.Service.DispName%:Myricom MVA Drive
>	MsLldp	11 DriverMajorVersion	REG DWORD	0x00000001 (1)
	MSPCLOCK	10 DriverMinorVersion	REG DWORD	0x00000002 (2)
	MSPQM	Star Error Control	REG DWORD	0x00000001 (1)
	MsQuic	ab Group	REG SZ	NDIS
FL.	MsRPC	ab ImageDath	REG EXPAND S7	SystemBoot/System32) drivers/myri myra sys
>	MSSCNIRS	muri log event	REG DWORD	0-0000001 (1)
	Missechit	100 myri mya dess count	REG DWORD	0x00000001(1)
2	MSSOL SOL EVERESS	NdisMajor/Jersion	REG DWORD	0x0000006 (6)
	MSSQLSSQLEAFRESS	20 NdicMinorVersion	REG DWORD	0~0000000 (0)
	MSSQESERVERADITEIPETIO	ab Ownerr	REG MULTI SZ	com11 inf
	MTConfig	Start	REG_DWORD	0~0000002 (2)
	mtxaiae	90 Tag	REG_DWORD	0x0000003 (3)
3	MtxGigEFilter62	200 Tune	REG_DWORD	0x00000010(10)
5	MtxGigEService	tio iype	KEG_DWORD	0x0000001(1)
5	mtxmemmanager			
5	MtxSerialStdw			
5	MtxServManager			
>	Mup			
5	mva			
>	mvumis	N	ew > Ke	w l
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	NAL		Sti	ring Value
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>	NaturalAuthentication		0	WORD (64-bit) Value
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	NcaAutoSetup		Ex	pandable String Value

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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.