

Multicast for machine vision applications

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Description

As the GigE Vision standard is a real network standard it can be used to provide data from one server (a Baumer GigE Camera) to many clients, this feature is called multicast.

Products

All Baumer GigE and 10 GigE cameras, Baumer GAPI SDK from v2.9.1

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1 Introduction

Some applications require that a camera streams images to multiple devices. This could be an application where a process is monitored with an automated system and requires a separate system for human observation. Baumer GAPI and Baumer cameras support this multicast mode. Multicasting could also be an interesting feature to distribute work to many clients. In this use-case many receiving clients could work in parallel on one image and only return the results to a central system and therefore reduce the necessary time for complex machine vision analysis tasks.

In a multicast scenario a server (e.g. a Baumer GigE camera) will provide the data stream to many devices in a network. It is important to understand that only one device can open and configure the camera all other receiving devices can read but not change the configuration and will only receive the data stream as is. Multicast can also be used to serve two independent applications running concurrently on one system (PC).

Notice

Both the camera and the receiving clients IP addresses must be on the same local subnet to enable multicasting. Please ensure all network components do support the multicast mode as multicasting will cause large amount of unnecessary traffic on the network if not configured correctly.

2 Baumer GAPI multicast example

The SDK-example 103_Multicast.cpp shows in detail how to configure the camera to use the multicast feature. After compiling the example you can start the application once and it will become the controlling instance, having read and write access to the camera. So the application will go ahead and configure the camera to allow multicast, set all other parameters and starts an image stream.

The following Features control the multicast for a Baumer Camera:

GVCP	
> Control Channel Retries	3
> Control Channel Timeout	500
> Message Channel DestinationAddress	232.129.248.6
> Message Channel DestinationPort	0
> Message Channel Retries	2
> Message Channel Timeout	10
> MulticastMessage	<input checked="" type="checkbox"/>
> UseControlChannelLocking	<input checked="" type="checkbox"/>
StreamEnumeration	
> DisableTLParamsLocked	<input type="checkbox"/>
> Stream Channel DestinationAddress	232.1.248.6
> Stream Channel DestinationPort	0
> MulticastStream	<input checked="" type="checkbox"/> True

"MulticastStream" enables multicast for the image stream if set to **"true"**, it will also set a multicast IP address.

"StreamChannelDestinationAddress" specifies the IP address where the multicast is provided.

"MulticastMessage" enables multicast for the camera events if set to **"true"**, it will also set a multicast IP address.

"MessageChannelDestinationAddress" specifies the IP address where the multicast events are provided.

You can now start the example a second time, this time it will recognize that the camera is in read-only mode and will start receiving images as a slave application.

3 Related topics

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4 Support

In the case of any questions or for troubleshooting please contact our support team.

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5 Legal notes

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