Fast Ethernet Application

Fast Ethernet 100BaseT

Gigabit Ethernet is the preferred network and provides optimum performance. However, there are applications where backward compatibility with Fast Ethernet (100 Base T) may be required.
GigE cameras can be connected to the common Fast Ethernet however at a slower frame rate. There are no hardware changes required for the Fast Ethernet environment.

Setting changes for Fast Ethernet

Because the bandwidth and packet structure have been optimized for the gigabit environment, the data flow structure must be changed to a slower speed. If you connect a GigE cameras to the Fast Ethernet, the device may be detected but images may not be displayed correctly and "time out" errors may occur. The set-up changes required for Fast Ethernet are altered in the IP Engine configuration.

1. Driver: If your are using SDK 2.3.0, 2.3.1 or 2.3.3, the driver installation tool will display the current network adaptor and the driver. For Fast Ethernet, only the Windows Stack driver is used. You can choose Windows Stack in the tab of the Installation Tool dialog.
2. Device detection: Once camera and PC are connected and powered up, open Coyote application and click "Detect". It may take a while to show the device IP address. Click "OK" to connect.
3. Configure IP Engine Flow control: Before starting image grabbing, click "Configuration....." button. In the connection tab, you will see IP Engine and Flow Control. Change at least three critical numbers as shown.

Link speed must be 100 Mbits/sec.
The data rate is 10, 000,000 bytes or less.
Also Inter Packet Delay is required for slow connection and at least a 10 packet delay (300ns) may be required for our GigE camera series.
Inter Packet Delay may vary based on the image size, Fast Ethernet adapter card and the driver as well as PC speed and the OS.
For the best performance, it is suggested to test image capture frame rate by changing number of Inter Packet Delay.

The following is example of GP/GD series cameras.

Inter Packet Delay:	5000	4000	3500	3000
VGA (640x480)	28fps	34fps	38fps	16 error
XGA (1032x779)	10fps	13fps	15fps	error
SXGA (1392x1040)	6fps	7fps	8fps	error
5M (2456x2048)	1.7fps	2.0fps	2.3fps	1 fps

Note: Inter Packet Delay is defined as 1 = 30 ns. (3500 = 105000 ns = 105 µs)

Other Setting Changes

In some cases, skipping frames of image grabbing may be required. This slows down the frame rate.

Camera configuration and all functions should work in the same way as with the Gigabit interface.