Servers selection guide

for vehicle number plate recognition systems

Comparison table

Computer configuration	Frame resolution				
	720x288	720x576	1360x512	1360x896	2336x1752
Intel Core i5-2500 3.3Ghz 2Gb RAM	240	128	68	38	10
Intel Xeon DP Quad-Core E5620 8Gb RAM	274	180	94	54	--*
Intel Core i7-2600 3.4Ghz 8Gb RAM	386	220	102	66	20
Intel Core i7-3930K 3.2Ghz 16Gb RAM	642	370	192	110	32
2* Intel Xeon X5650 2.66GHz 12Gb RAM	1034	569	299	--*	54

* testing for such configuration was not conducted

The table shows the number of frames that can be processed by recognition module on one computer with specified resolution and configuration.
Configuration was chosen randomly to determine the approximate performance of different types of processors.
Processor is loaded the most in number plate recognition process, the amount of used RAM is 2GB.

CONDITIONS:

1. Processor is busy with recognition only
2. Processor is loaded on 80-90%
3. XVID or MJPEG format of the input video for recognition module

To determine the number of cameras from which your computer can perform recognition, divide the number from the table by the number of frames processed by the module.

For example: for 1360x512 resolution, Intel Xeon DP Quad-Core E5620 8Gb RAM computer configuration, and recognition module with up to 6 frames per second, we get: 94/6 = 15 channels of recognition.

Video Internet Technologies Ltd.
Predslavinskaya str. 34-b
03150 Kiev, Ukraine
tel/fax +380 44 585 48 42
www.vitcompany.com

PLEASE NOTE that much of the processing power is used for decoding video when using encoded video (boards with hardware compression, ip-cameras and ip-encoders). Moreover, the entire stream is decoded, regardless of the type of the module. So, even if you have a module designed to recognize 6 fps, but the video stream contains 25 fps, decoding of the whole stream will be performed anyway.
To calculate approximate processing cost of the video stream decoding, you can run the surveillance system with output to the operator and with required parameters (number of channels, resolution, frame rate, and codec).
In addition, part of the computer's resources may be used by other tasks: video archive recording, work with the database, virus protection, etc.
You need to consider these data when selecting computer configuration.

Installation experience data of our partners:

1. Configuration: Intel Core i5-2500T (2.3Ghz), 2Gb RAM
   Camera Axis P1344
   Codec h.264
   Frames per second - 20
   Resolution 1280x800
   Number of processing channels (with video decoding) - 3

2. Configuration: 2 x Intel Xeon X5650 (2.66GHz), 12 Gb RAM
   Camera Axis P1344
   Codec h.264
   Frames per second - 25
   Resolution 800x600
   Number of processing channels (with video decoding) - 20

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